

**AGENDA**  
**CITY COUNCIL REGULAR MEETING AND WORK SESSION**  
**G.L. Gilleland Council Chambers on 2<sup>nd</sup> Floor**  
**Monday, November 15, 2021**  
**5:00 P.M.**

---

1. Call to Order
2. Roll Call
3. Invocation and Pledge
4. Announcements
5. Approval of the Agenda
6. Public Input
7. Consent Agenda
  - a. Approve Minutes
    - Special Called Meeting held October 27, 2021
    - Regular Meeting held November 1, 2021
  - b. Approve 2022 Georgia Municipal Association Cities United Summit and Municipal Training
  - c. Approve 2022 Newly Elected Officials Training
  - d. Approve Reappointment for Planning Commission and Historic Preservation Commission Members
8. Employee Recognition
9. Introduction of Law Enforcement Officers

**BUSINESS**

10. Board of Education Fee Waiver
11. Resolution – Opioid Litigation
12. An Ordinance Of The City Of Dawsonville, Georgia, To Provide For Application Of Rates To Customer Accounts; To Provide For Discounts In Specifically Approved Circumstances; To Provide For Methodology For Determining Approval Of Discount; To Provide For Severability; To Provide For An Effective Date; And For Other Purposes. (First Reading: November 1, 2021; Second Reading and Consideration to Adopt: November 15, 2021)
13. An Ordinance To Regulate Post Development Stormwater Management, To Provide For Responsibility For Maintenance Of Facilities, To Provide For Penalties, To Provide For An Effective Date, And For Other Purposes. (First Reading: November 1, 2021; Second Reading and Consideration to Adopt: November 15, 2021)
14. An Ordinance To Repeal And Replace Portions Of The Existing Fee Schedule And Provide A New Fee Schedule For Utilities, Garbage, Buildings And Building Regulations, And Planning And Zoning; And For Other Purposes. (First Reading: November 15, 2021; Second Reading and Consideration to Adopt: December 6, 2021)

**WORK SESSION**

15. Proposed IGA with Dawson County – Right of Way Mowing
16. Standard Details Update
17. Standard Specifications for Roadway and Drainage Systems
18. Standard Specifications for Water Distribution and Sanitary Sewerage Systems

**STAFF REPORTS**

19. Bob Bolz, City Manager
20. Robin Gazaway, Finance Administrator

**EXECUTIVE SESSION, IF NEEDED**

**ADJOURNMENT**

***The next scheduled City Council meeting is Monday, December 6, 2021***

*Those persons with disabilities who require reasonable accommodations in order to allow them to observe and/or participate in this meeting or who have questions regarding the accessibility of the meeting, should contact the Clerk at Dawsonville City Hall at 706-265-3256 at least two (2) business days prior to the meeting.*



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 7

---

SUBJECT: CONSENT AGENDA

CITY COUNCIL MEETING DATE: 11/15/2021

---

PURPOSE FOR REQUEST:

**CONSIDERATION AND APPROVAL OF ITEMS BELOW; SEE ATTACHED  
SUPPORTING DOCUMENTS**

- a. **Approve Minutes**
    - **Special Called Meeting held October 27, 2021**
    - **Regular Meeting held November 1, 2021**
  - b. **Approve 2022 GMA Cities United Summit and Municipal Training**
  - c. **Approve 2022 Newly Elected Officials Training**
  - d. **Approve Reappointment for Planning Commission and Historic Preservation Commission Members**
-



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 7a

---

SUBJECT: APPROVE MINUTES

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # NA

Funds Available from:      Annual Budget      Capital Budget Other     

Budget Amendment Request from Reserve:      Enterprise Fund      General Fund

---

PURPOSE FOR REQUEST:

**TO APPROVE THE MINUTES FROM:**

- **SPECIAL CALLED MEETING HELD OCTOBER 27, 2021**
  - **REGULAR MEETING HELD NOVEMBER 1, 2021**
- 

HISTORY/ FACTS / ISSUES:

---

OPTIONS:

**AMEND OR APPROVE AS PRESENTED**

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Beverly Banister, City Clerk

**MINUTES  
SPECIAL CALLED MEETING  
CITY OF DAWSONVILLE CITY COUNCIL  
G.L. Gilleland Council Chambers on 2<sup>nd</sup> Floor  
Wednesday, October 27, 2021  
5:00 P.M.**

---

1. **CALL TO ORDER:** Mayor Eason called the meeting to order at 5:00 pm.
2. **ROLL CALL:** Present were Councilmember John Walden, Councilmember Mark French, Councilmember William Illg, Councilmember Caleb Phillips, City Attorney Kevin Tallant, City Manager Bob Bolz, City Clerk Beverly Banister, Utilities Operation Manager Jacob Barr and Finance Administrator Robin Gazaway.
3. **INVOCATION AND PLEDGE:** Invocation and Pledge were led by Councilmember Illg.
4. **ANNOUNCEMENTS:** Mayor Eason reminded the public that Advanced Voting for the Municipal Election for Councilmember Post #2 and Post #4 is going on through Friday and Election Day is November 2, 2021. He encouraged all City residents to go out and cast their votes.
5. **APPROVAL OF THE AGENDA:** Motion to approve the agenda as presented made by J. Walden; second by C. Phillips. Vote carried unanimously in favor.
6. **PUBLIC INPUT:** None

**BUSINESS**

7. **FUNDING APPLICATION FOR AIRPORT IMPROVEMENTS AND LAND ACQUISITION:** Motion to approve pre-application to qualify for a grant from the State Fiscal Recovery Fund for airport improvements and land acquisition made by J. Walden; second by C. Phillips. Vote carried unanimously in favor.
8. **WASTEWATER TREATMENT PLANT DESIGN AND FUNDING REQUEST:** Motion to approve pre-application to qualify for a grant from the State Fiscal Recovery Fund for the Wastewater Treatment Plant project made by M. French; second by C. Phillips. Vote carried unanimously in favor.
9. **FUNDING FOR WELL #112 ENGINEERING AND BID PACKAGE:** Motion to approve pre-application to qualify for a grant from the State Fiscal Recovery Fund for the development of Well #112 made by J. Walden; second by W. Illg. Vote carried unanimously in favor.
10. **RECIPIENT AND FISCAL AGENT FOR DAWSONVILLE HISTORY MUSEUM APPLICATION FOR IMPROVEMENTS:** Motion to approve the City of Dawsonville to be the recipient and fiscal agent for the Dawsonville History Museum for any grant funds received from the State Fiscal Recovery Fund made by M. French; second by J. Walden. Vote carried unanimously in favor.

**ADJOURNMENT**

At 5:09 p.m. a motion to adjourn the meeting was made by W. Illg; second by J. Walden. Vote carried unanimously in favor.

***Approved this 15<sup>th</sup> day of November 2021.***

By: CITY OF DAWSONVILLE

\_\_\_\_\_  
Mike Eason, Mayor

\_\_\_\_\_  
Caleb Phillips, Councilmember Post 1

**MINUTES  
SPECIAL CALLED MEETING  
CITY OF DAWSONVILLE CITY COUNCIL  
G.L. Gilleland Council Chambers on 2<sup>nd</sup> Floor  
Wednesday, October 27, 2021  
5:00 P.M.**

---

\_\_\_\_\_  
William Illg, Councilmember Post 2

\_\_\_\_\_  
John Walden, Councilmember Post 3

\_\_\_\_\_  
Mark French, Councilmember Post 4

Attested: \_\_\_\_\_  
Beverly A. Banister, City Clerk

DRAFT

**MINUTES**  
**CITY COUNCIL REGULAR MEETING**  
**G.L. Gilleland Council Chambers on 2<sup>nd</sup> Floor**  
**Monday, November 1, 2021**  
**5:00 P.M.**

---

1. **CALL TO ORDER:** Mayor Eason called the meeting to order at 5:00 pm.
2. **ROLL CALL:** Present were Councilmember John Walden, Councilmember Mark French, Councilmember Caleb Phillips, Councilmember William Illg, City Attorney Kevin Tallant, City Manager Bob Bolz, City Clerk Beverly Banister, Public Works Director Trampas Hansard, Utilities Operation Manager Jacob Barr, Planning Director David Picklesimer and Finance Administrator Robin Gazaway.
3. **INVOCATION AND PLEDGE:** Invocation and Pledge were led by Councilmember French.
4. **ANNOUNCEMENTS:** Mayor Eason announced the Christmas Tree Lighting and Parade will take place at City Hall on Saturday, December 4, 2021 and all are invited. He also announced there will be a Public Information Meeting regarding the Elliott Field Airport on Thursday, December 9, 2021 from 5:30 pm – 7:00 pm at City Hall. Lastly, he reminded residents tomorrow is Election Day for the Municipal Election.
5. **APPROVAL OF THE AGENDA:** Motion to approve the agenda as presented made by J. Walden; second by W. Illg. Vote carried unanimously in favor.
6. **PUBLIC INPUT:** None
7. **CONSENT AGENDA:** Motion to approve the consent agenda for the following items (a, b) made by M. French; second by W. Illg. Vote carried unanimously in favor.
  - a. Approve Minutes
    - Regular Meeting and Work Session held October 18, 2021
    - Executive Session held October 18, 2021
  - b. Approve Resolution in Support of Amicalola Falls Scenic Byway (Exhibit “A”)

**BUSINESS**

8. **NAMING PUBLIC ROAD IN CITY HALL COMPLEX:** Determination was made the road is already named Main Street; no action taken.
9. **MAPLE HILL DRIVE DETENTION POND:** Motion to table this item until the December 20, 2021 City Council meeting made by C. Phillips; second by M. French. Vote carried unanimously in favor.
10. **BUDGET AMENDMENT – PREPARATION OF APPLICATION FOR AMERICAN RESCUE PLAN GRANT FUNDING:** Motion to approve a budget amendment from General Fund Reserves in the amount of \$2,200.00 payable to Lead Edge Design Group, Inc. for the preparation of an ARP Grant Application made by C. Phillips; second by J. Walden. Vote carried unanimously in favor.
11. **2022 LEASE RECOMMENDATIONS:** Motion to table this item until the December 6, 2021 City Council meeting made by M. French; second by J. Walden. Vote carried unanimously in favor.
12. An Ordinance Of The City Of Dawsonville, Georgia, To Provide For Application Of Rates To Customer Accounts; To Provide For Discounts In Specifically Approved Circumstances; To Provide For Methodology For Determining Approval Of Discount; To Provide For Severability; To Provide For An Effective Date; And For Other Purposes. (First Reading: November 1, 2021; Second Reading and Consideration to Adopt: November 15, 2021)  
Attorney Tallant read the first reading of the ordinance amendment.
13. An Ordinance To Regulate Post Development Stormwater Management, To Provide For Responsibility For Maintenance Of Facilities, To Provide For Penalties, To Provide For An Effective Date, And For Other Purposes. (First Reading: November 1, 2021; Second Reading and Consideration to Adopt: November 15, 2021)  
Attorney Tallant read the first reading of the ordinance amendment.

**MINUTES  
CITY COUNCIL REGULAR MEETING  
G.L. Gilleland Council Chambers on 2<sup>nd</sup> Floor  
Monday, November 1, 2021  
5:00 P.M.**

---

**ADJOURNMENT:**

At 5:11 p.m. a motion to adjourn the meeting was made by J. Walden; second by C. Phillips. Vote carried unanimously in favor.

***Approved this 15<sup>th</sup> day of November 2021.***

By: CITY OF DAWSONVILLE

\_\_\_\_\_  
Mike Eason, Mayor

\_\_\_\_\_  
Caleb Phillips, Councilmember Post 1

\_\_\_\_\_  
William Illg, Councilmember Post 2

\_\_\_\_\_  
John Walden, Councilmember Post 3

\_\_\_\_\_  
Mark French, Councilmember Post 4

Attested: \_\_\_\_\_  
Beverly A. Banister, City Clerk

**RESOLUTION R2021-07**

**A RESOLUTION OF SUPPORT FOR THE AMICALOLA FALLS SCENIC  
BYWAY**

**WHEREAS**, the Dawson County Chamber of Commerce has identified a route that follows City of Dawsonville down Hwy 183 and Hwy 136, past Amicalola Falls State Park and over Burnt Mountain, which contains significant scenic, natural, historic, cultural, archeological, or recreational qualities; and

**WHEREAS**, the Dawson County Chamber of Commerce is seeking to gain "Georgia Scenic Byway" designation for the route from the Georgia Department of Transportation; and

**WHEREAS**, the Dawsonville City Council has been advised on details of the Georgia Scenic Byways Program, the proposed byway, and the benefits of designation; and

**WHEREAS**, designation of this route will support the objectives of this body to protect, promote, enhance, and interpret the outstanding intrinsic qualities of Dawsonville; and

**WHEREAS**, the Georgia Scenic Byways Program is a tool to encourage tourism and responsible development, bringing positive economic benefits and opportunities to this community.

**NOW THEREFORE BE IT RESOLVED** that the Dawsonville City Council having met and considered the matter in open session on November 1, 2021, hereby fully endorses the Designation Application, for the proposed Amicalola Falls Scenic Byway;

**FURTHER**, the Dawsonville City Council in its endorsement of this application, acknowledges the efforts of the Dawson County Chamber of Commerce in undertaking this project and will support the completion of the designation process.

**SO RESOLVED this 1<sup>st</sup> day of November, 2021**

**MAYOR AND DAWSONVILLE CITY  
COUNCIL**

By:



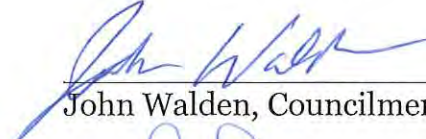
Mike Eason, Mayor



Caleb Phillips, Councilmember Post 1

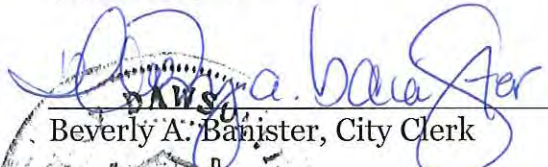



  
William Illg, Councilmember Post 2

  
John Walden, Councilmember Post 3

  
Mark French, Councilmember Post 4

ATTESTED TO BY:

  
Beverly A. Banister, City Clerk





DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 7b

---

SUBJECT: APPROVE 2022 GEORGIA MUNICIPAL ASSOCIATION CITIES UNITED  
SUMMIT AND MUNICIPAL TRAINING

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO APPROVE GMA CITIES UNITED SUMMIT AND TRAINING EXPENSES FROM 01/21 – 01/24/2022  
FOR MIKE EASON TO INCLUDE REGISTRATION, TRAINING, LODGING, PER DIEM AND MILEAGE.**

**REGISTRATION AND TRAINING: \$985**

**LODGING (APPROX): \$795**

**MEAL AND DAILY PER DIEM: \$580**

**MILEAGE (APPROX): \$65**

**APPROX TOTAL: \$2425 TO BE PAID OUT OF FY2022 BUDGETED FUNDS**

---

HISTORY/ FACTS / ISSUES:

**FORMERLY KNOWN AS MAYOR'S DAY**

**SUMMIT WILL BE HELD AT THE HILTON ATLANTA**

---

OPTIONS:

**APPROVE, AMEND, DENY OR TABLE**

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Beverly Banister, City Clerk

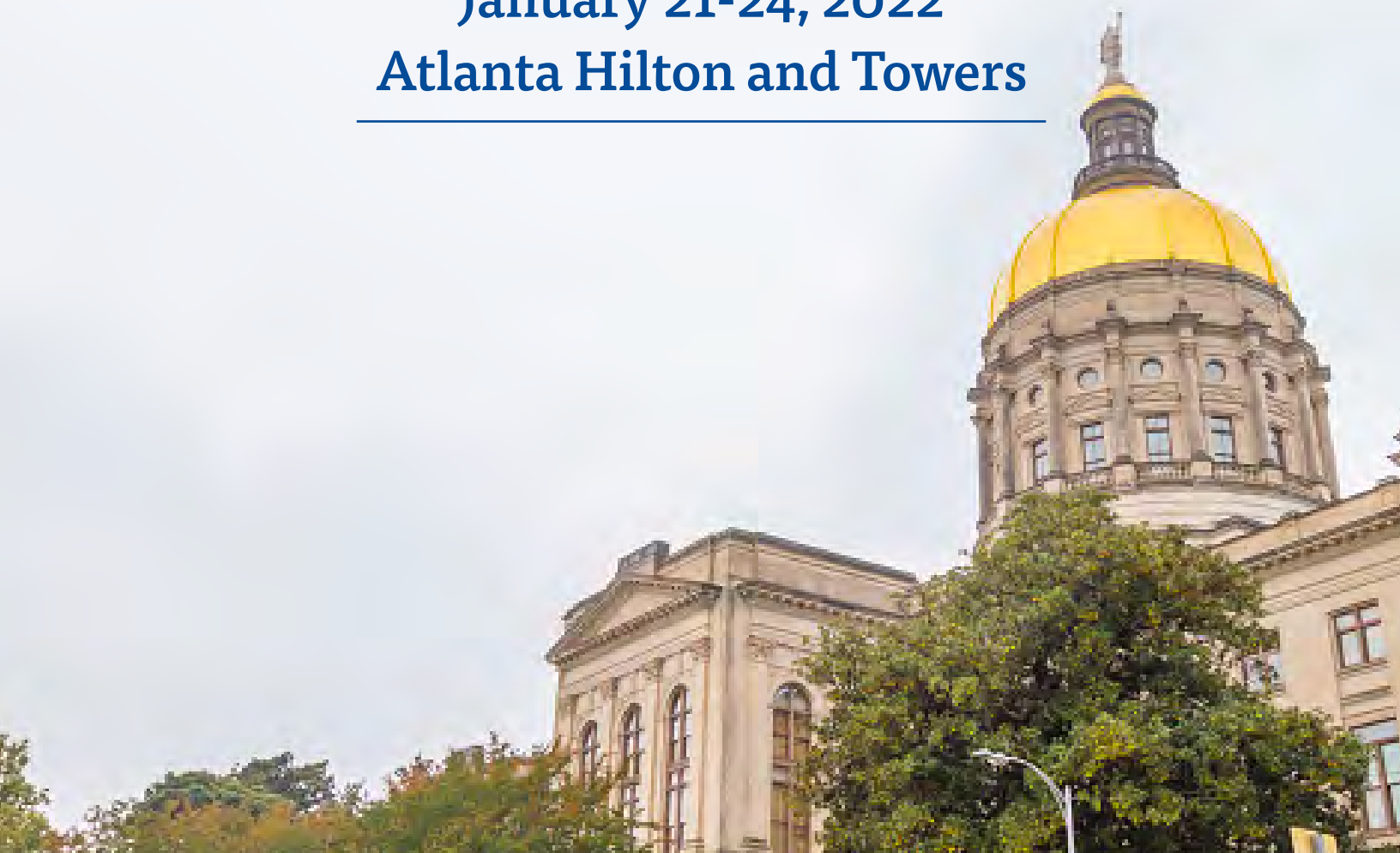


# REGISTRATION & SCHEDULE

---

January 21-24, 2022  
Atlanta Hilton and Towers

---





# HIGHLIGHTS INCLUDE



Invited special  
guests including  
Georgia's  
top leaders



More than six  
opportunities to  
engage directly with  
Georgia legislators



The Capitol Connection  
Breakfast followed by a  
“Cities United” trip to the  
Gold Dome\*



Unmatched training  
opportunities offered by the  
Harold F. Holtz Municipal  
Training Institute

*\*If COVID-19 protocols at the State Capitol permit*

---

Contact Erica Grier for questions regarding Cities United Summit at [epowell@gacities.com](mailto:epowell@gacities.com)

---

## VENUE

The 2022 GMA Cities United Summit will take place at the Atlanta Hilton and Towers.  
The Capitol Connection Breakfast will take place at the hotel on Monday morning.

---

The Governor, Lieutenant Governor and Speaker of the House will be invited to address attendees and, as usual, all members of the Georgia General Assembly will be invited to attend, providing a great opportunity for networking with state leaders. After breakfast, if COVID protocols permit, city officials will be encouraged to visit the Capitol to celebrate GMA Cities United Day at the Capitol. Shuttle service from the Atlanta Hilton to the Capitol will be available through the lunch hour.



# SCHEDULE

## FRIDAY, JANUARY 21

- 9:30 am – 4:30 pm: Municipal Training Institute classes (6-hour classes)
- 9:30 am – 12:30 pm: Municipal Training Institute classes (3-hour classes)
- 2:00 pm – 5:00 pm: Municipal Training Institute classes (3-hour classes)
- 5:15 pm – 6:15 pm: Municipal Training Board Meeting

## SATURDAY, JANUARY 22

- 8:30 am – 3:30 pm: Municipal Training Institute classes (6-hour classes)
- 3:45 pm – 5:30 pm: GMA Board of Directors Meeting

## SUNDAY, JANUARY 23

- 7:30 am – 8:00 am: Devotional service
- 8:00 am – 9:00 am: Federal Policy Council Meeting
- 8:00 am – 9:00 am: Orientation for First-Time Attendees
- 9:15 am – 10:30 am: Policy Committee Meetings
- 10:45 am – 12:00 pm: Policy Committee Meetings
- 12:15 pm – 2:15 pm: Awards Luncheon
- 2:45 pm – 4:00 pm: Policy Committee Meetings
- 4:15 pm – 5:00 pm: Legislative Policy Council Meeting
- 4:15 pm – 5:15 pm: Workshop: Preparing for Local Option Sales Tax Negotiations
- 5:30 pm – 6:30 pm: Networking Reception

## MONDAY, JANUARY 24

- 7:15 am – 8:00 am: Legislative Networking and Capitol Connection Breakfast
- 8:00 am – 9:00 am: Capitol Connection Breakfast Program
  - Speakers: Governor Brian Kemp (invited)
  - Lt. Governor Geoff Duncan (invited)
  - Speaker David Ralston (invited)
- 9:30 am – 12:00 pm: Cities United Day at the Capitol (if State Capitol COVID protocols permit)

Cities United Summit full registration includes all Sunday and Monday events (training courses on Friday and Saturday require a separate registration fee).



2022 GMA Cities United Summit and Municipal Training Institute

**REGISTRATION FORM**

Online registration available at [www.gacities.com](http://www.gacities.com)

Full Name:		
Preferred name for badge:		
Title (including certifications):		
City or Organization:		
Street Address:		
City:	State:	Zip:
Spouse/Guest name (if spouse/guest is registering):		

Early Registration By December 10	Late Registration After December 10	Onsite Registration After December 31
--------------------------------------	--	--

**Cities United Summit Registration** - includes all Sunday and Monday events (training courses require a separate registration fee)

City Officials/All City Employees	<input type="checkbox"/> \$360	<input type="checkbox"/> \$380	<input type="checkbox"/> \$400
Spouses/Guests of Registered Attendees	<input type="checkbox"/> \$135	<input type="checkbox"/> \$155	<input type="checkbox"/> \$175
Business Alliance Program Members	<input type="checkbox"/> \$385	<input type="checkbox"/> \$405	<input type="checkbox"/> \$425
Non-Members (all others)	<input type="checkbox"/> \$560	<input type="checkbox"/> \$580	<input type="checkbox"/> \$600

First-time attendee

**Municipal Training Institute (You may register for training only)**

Friday, January 21 (each course is from 9:30 am – 4:30 pm and provides 6 hours of training credit – Lunch is included)

Ethics *	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Public Problems, Democratic Decisions – The Governing Role of Mayors and Councilmembers*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Planning and Zoning*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305

Friday, January 21 (each course is 9:30 am – 12:30 pm and provides 3 hours of training credit – Lunch is NOT included)

Beyond the Beltway: Influencing Federal Policy Through Grassroots Engagement	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190
Information Privacy and Security Breaches: Prevention and Response	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190
Living Beyond Expectations: The Opportunities and Challenges of the Growing Senior Population	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190
Practices for Successful Meetings*	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190

Friday, January 21 (each course is 2:00 pm – 5:00 pm and provides 3 hours of training credit – Lunch is NOT included)

Economics of Education	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190
Funding and Programming Transportation Projects in your Community	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190
Municipal Annexation: Growing Pains and Growth Spurts	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190
New and Emerging Technology for Cities	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190
Open Meetings*	<input type="checkbox"/> \$170	<input type="checkbox"/> \$180	<input type="checkbox"/> \$190



2022 GMA Cities United Summit and Municipal Training Institute

**REGISTRATION FORM**

Online registration available at [www.gacities.com](http://www.gacities.com)

**Saturday, January 22** (each course is 8:30 am - 3:30 pm and provides 6 hours of training credit – Lunch is included)

Building a Hometown Connection: GMA Lobbying 101	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Community and Media Relations*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Conflict Resolution*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Current Issues: Workforce Development	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Downtown Development Authority Basic Training (ends at 4:30pm)	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Economic Development*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Emergency Management*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Governing the Commons: Collective Decision Making in Complex Systems*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Human Resources*	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Law Enforcement Services: Trends and Best Practices	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Navigating the Future: Thinking, Planning, and Acting Strategically	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Regional Approaches to Cooperation	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
Revitalizing Neighborhoods - Tools for Local Officials	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305
** CLERKS COURSE - Review of Alcohol Excise Tax, Laws and Regulations	<input type="checkbox"/> \$285	<input type="checkbox"/> \$295	<input type="checkbox"/> \$305

Total:	\$ _____	\$ _____	\$ _____
--------	----------	----------	----------

\* This course is on the “required” list for the Municipal Training Institute certificate program.  
 \*\* This course is for Clerks and not a part of the Harold F. Holtz Municipal Training Certificate Program.

All changes and cancellations must be submitted in writing to [scollins@gacities.com](mailto:scollins@gacities.com). Cancellations after December 10th will be assessed a \$100 administrative fee. Cancellations after December 31st will not be eligible for refund.

If paying by credit card, you are encouraged to register online at the Cities United Summit webpage. If you are unable to register online, fax your registration to our secure line at 404-577-6663 or 678-651-1021. GMA is not allowed to accept credit card payments by email. If paying by check, please mail to GMA, Attn: Sharon Collins, P.O. Box 105377, Atlanta, Georgia 30348.

- Check here if you need special assistance or have dietary restrictions.  
 Additionally, please send ADA and dietary accommodation requests to Erica Grier at [epowell@gacities.com](mailto:epowell@gacities.com)  
 Check Enclosed (to GMA)    Visa    MC    AMEX

Card #: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Signature: \_\_\_\_\_

GMA has reserved a block of rooms at the Atlanta Hilton and Towers at a room rate of \$166 (other room types are available for additional costs). For reservations, please call 404-659-2000 and ask for the GMA rate of \$166. To get the GMA rate, all reservations MUST be made by Tuesday, December 21. You may also register and make your hotel reservation online at <https://book.passkey.com/go/GAMunicipal> or [www.gacities.com](http://www.gacities.com).

For the mailed-in registration forms send to GMA, Attn: Sharon Collins/GMA events, Georgia Municipal Association PO Box 105377 Atlanta, GA 30348



# COURSES

FRIDAY, JANUARY 21, 2022

9:30 am - 4:30 pm

(Lunch will be provided during 6-hour classes)

**Ethics\* (6-hour class)** This class examines the importance of ethical conduct in the administration of one's public duties and how ethical lapses can severely damage the reputation of both individual officeholders and the city. An overview of state ethics laws and regulations that apply to municipal officials, including campaign financing and private interest disclosure requirements, is provided. Ethical dilemmas that often confront public officials and the value of strong local ethics ordinances are also discussed.

**Public Problems, Democratic Decisions – The Governing Role of Mayors and Councilmembers\*\*\* (6-hour class)** Public officials will explore the democratic context of leading and governing. It addresses the role of elected officials in a democratic society, the relationship between elected and appointed officials, the core values underlying public problems and choices, and the reasons why councils can make better choices than individuals. The goals of this class are to help public officials better understand their roles in leading and governing their communities, to develop a better understanding of what councils do and why, and to develop practical skills in public problem solving and decision making. Participants learn how to use public problems to discuss the kind of community they want to build and how to ensure that their choices and decisions preserve the fundamental goals of our democratic society.

**Planning and Zoning (6-hour class)\*** This class examines the difficult choices municipal officials encounter in stimulating economic well-being, protecting public infrastructure investment and maintaining environmental integrity. It examines legal considerations for planning and zoning, the role of the mayor and council and practical steps for maintaining a comprehensive plan and effective zoning procedures. In addition, the class highlights issues, barriers and policy solutions associated with efforts to achieve desirable patterns of development.





# COURSES

FRIDAY, JANUARY 21, 2022

9:30 a.m.-12:30 p.m.

(Lunch is not included for the 3-hour classes)

**Beyond the Beltway: Influencing Federal Policy through Grassroots Engagement (3-hour class)** Decisions made in Washington, D.C. on issues ranging from environmental regulations to tax reform and the federal budget have a direct impact on municipal operations. Federal policies may create unfunded mandates and result in unintended consequences. Local officials have a key role in influencing federal policy. By sharing information with federal leaders about local challenges and needs, federal leaders can make more informed decisions. This class provides information about Congress, federal agencies, and how municipal officials can engage most effectively with leaders at the federal level to advocate for municipal priorities. Participants obtain tips for communicating with members of Congress and engage in role playing exercises to hone their negotiating skills.

**Information Privacy and Security Breaches: Prevention and Response (3-hour class)** Elected officials are the “face” of a city’s commitment to information privacy and security. This class covers what municipal officials “need to know” about information privacy and security policies including: risk assessment, access controls, security provisions in contracts, disaster recovery / business continuity, workforce training and incident / breach readiness. Class attendees review actual municipal and county information privacy and security breaches. They also learn how to champion for the resources to secure city information and how to designate the city as a HIPAA “hybrid entity.”

**Living Beyond Expectations: The Opportunities and Challenges of the Growing Senior Population (3-hour class)** Never in the history of humankind have we experienced a more radical population shift. Advances in technology and health care are increasing longevity for many Americans. Increased numbers of older residents is not a temporary situation that will end with any generation but rather a permanent state for communities throughout the nation. By 2029, it is estimated that persons over 65 years of age will make up 20 percent of the U.S. population. This class examines the implications of an aging population on cities and how municipal leaders can maintain and attract the older residents, a vital plank of economic vitality and development. Public administrators can play a unique role in preparing communities for residents of all ages and abilities to live healthy and independent lives. Critical components are the adoption of age-friendly practices that address fundamental aspects of housing, transportation and services through decisions about land use, zoning and investments. This session discusses ways for communities to enact change through integrated public policy, community design and engagement.

**Practices for Successful Meetings\* (3-hour class)** The success of a city is often gauged by how its residents perceive city council meetings. This class is designed to give elected officials and others a practical understanding of the most commonly-used procedures available to govern meetings. The basic tenants of Robert’s Rules of Order, as well as alternatives to Robert’s, are taught in a manner that seeks to arm presiding officials with the tools necessary to run successful and productive gatherings of their elected officials and other meetings necessary to operate their cities.



# COURSES

FRIDAY, JANUARY 21, 2022

2:00 p.m.-5:00 p.m.

(Lunch is not included for the 3-hour classes)

**Economics of Education (3-hour class)** This class provides a basic overview of the economic development process, with a focus on the strategies, resources and programs employed by the state of Georgia to assist communities in achieving success in today's global economy. Topics such as community development building blocks, business development strategies, regional cooperation, and the role of local leadership in economic development are covered.

**Funding and Programming Transportation Projects In Your Community (3-hour class)** Funding local transportation projects is a complex process with many federal, state, regional and local stakeholders. Changing project requirements and shifting political priorities can further complicate the process. This class will help participants understand the full array of transportation funding options for road, bridge, transit, sidewalk, trail and bike lane projects that are available in Georgia. Information will be provided on the advantages/disadvantages of each funding option, limitations (if there are any), key partners, and time frames for application and/or expenditure. Class discussion will include key components of project management, including public engagement, project design, right-of-way acquisition, public utility relocation, construction start, and conclusion. Additionally, a panel of transportation funding experts will help participants understand the importance of developing a comprehensive transportation funding plan based on sound process and best practices.

**Municipal Annexation: Growing Pains and Growth Spurts (3-hour class)** Annexation is an important and unique power of city governments. It often can be a difficult and complex undertaking. This class will describe the different methods of annexation permitted by Georgia law, the steps for zoning annexed territory, and handling county objections to annexation. Participants will discuss why cities annex property and the potential impacts of annexation to the cities, newly-annexed stakeholders, and the county government.

**New and Emerging Technology for Cities (3-hour class)** Today, technology is essential to most aspects of our public and private lives. For mayors, councilmembers and other community leaders, technology has become a critical factor in governance, communication and citizen engagement. In this advanced class, your role regarding local government technology is outlined and you are made aware of the ways your city might better utilize available technology or digital solutions. These solutions include applications and services that enhance opportunities for increased operational effectiveness and productivity such as engaging citizens on a more consistent basis, increasing quality services, facilitating transparency, and enhancing efficient operational procedures. Participants hear from those with technology expertise who have had success with digital solutions in their communities.

**Open Meetings\* (3-hour class)** Open, accessible meetings are a hallmark of local government and are important for communicating with residents and businesses. This class examines the requirements of Georgia's Open Meetings Act, what constitutes a "meeting," and the limited circumstances authorizing executive sessions. The importance of proper notice as well as meeting agendas, summaries and minutes are discussed. Class participants are apprised of potential consequences for failing to follow the law.



# COURSES

**SATURDAY, JANUARY 22, 2022**

**8:30 a.m.-3:30 p.m.**

(Breakfast and lunch will be provided for these 6-hour classes)

**Building a Hometown Connection: GMA Lobbying 101 (6-hour class)** This class provides an overview of the state legislative process and helps city officials understand how they can be effective advocates of issues important to their community and cities throughout the state. Participants receive ideas for establishing productive year-round relationships with members of the General Assembly as well as practical lobbying tips they can use during the legislative session. The class also includes a hands-on exercise using real-life legislative scenarios.

**Community and Media Relations\* (6-hour class)** This class examines the importance of building effective working relationships with the media and the role the media plays in informing the public and shaping their opinion of municipal governments. Advice for repairing poor relationships is provided, along with insights on when and how to speak with reporters, especially during times of crisis. *This class is limited to 40 participants.*

**Conflict Resolution\* (6-hour class)** This class explores strategies and techniques for successfully resolving conflict through negotiation and mediation. Emphasis is placed on identifying the sources of conflict and the personality styles of the parties involved.

**Current Issues Class: Workforce Development (6-hour class)** This class provides participants with information pertaining to workforce trends in local government and Georgia's workforce, as well as the role of elected officials and key players throughout our state.

**Downtown Development Authority Basic Training (8-hour class – 6-hour credit) Ends at 4:30 p.m.** This class is primarily directed at those who serve on Downtown Development Authorities, but it is open to all city officials. Topics include: management of downtown as a valuable resource; the role of the authority, board members and staff; DDA laws; and the day-to-day operations of a Downtown Development Authority. *This class is limited to 50 participants.*

**Economic Development\* (6-hour class)** This class provides a basic overview of the economic development process, with a focus on the strategies, resources and programs employed by the state of Georgia to assist communities in achieving success in today's global economy. Topics such as community development building blocks, business development strategies, regional cooperation, and the role of local leadership in economic development are covered.

**Emergency Management\* (6-hour class)** This class is aimed at providing municipal officials with a general understanding of the roles of local, state and federal government in responding to and helping communities recover from both natural and man-made disasters. The functions of local emergency management agencies and important legal and financial issues that arise during times of emergency and disaster are also discussed.



# COURSES

**SATURDAY, JANUARY 22, 2022**

**8:30 a.m.-3:30 p.m.**

(Breakfast and lunch will be provided for these 6-hour classes)

**Governing the Commons: Collective Decision Making in Complex Systems\*\*\* (6-hour class)** Making decisions within a single jurisdiction is complicated enough, but relatively simple compared to the complexity of decisions multiple jurisdictions must often make among themselves. In this class, participants explore first-hand some of the critical leadership challenges involved in collective decision making, such as: How should such decisions be made? What form should they take? How should they be governed, monitored and enforced? How should costs and benefits be allocated? *This class is limited to 35 participants.*

**Human Resources\* (6-hour class)** This class provides an overview of state and federal personnel law that apply to municipal governments and the basics of human resource management. Key topics include day-to-day issues facing human resource staff, the role of the personnel manager, establishing and adhering to sound personnel policies and procedures, and dealing with the media.

**Law Enforcement Services: Trends and Best Practices (6-hour class)** This class familiarizes municipal officials with the basic concepts of law enforcement. In addition to reviewing applicable laws, funding mechanisms and staffing models, the class addresses emerging public safety issues, trends and innovations.

**Navigating the Future: Thinking, Planning, and Acting Strategically (6-hour class)** All organizations, institutions, associations, and jurisdictions must respond to change, either because they happen to change or change happens to them. This is why virtually every city and town engages in some form of what is commonly referred to as strategic planning. But having a strategic plan and thinking strategically are not the same. If they were, so many so-called strategic plans wouldn't sit on the shelf. Municipal leaders must be able to engage colleagues, constituents, citizens, and their community in strategic thinking if they are to address not only the challenges facing them today, but also those of tomorrow. This class uses a strategic simulation that incorporates strategic thinking, visioning, and navigating to address the what, why, and how of strategic planning. Class participants work together in small groups to simulate a strategic process that includes an environmental scan, building scenarios of most likely and most preferred futures, identifying driving and restraining forces, conducting a gap analysis, identifying key themes, framing goals and strategies, and developing an action plan to guide how to navigate from today to tomorrow. *This class is limited to 35 participants.*

**Regional Approaches to Cooperation (6-hour class)** Municipal governments face many challenges today in delivering services to their citizens with resources that continue to diminish. These challenges have provided new opportunities for cities to work across jurisdictional boundaries to effectively support community and economic development efforts, as well as many other local projects and programs. This cooperation can be accomplished through informal and formal agreements, and partnerships may extend to public, non-profit and private sector entities. This class examines the concept of regional cooperation, tools for implementation, opportunities to explore best practices around the state and strategies for establishing successful regional partnerships.



# COURSES

**SATURDAY, JANUARY 22, 2022**

**8:30 a.m.-3:30 p.m.**

(Breakfast and lunch will be provided for these 6-hour classes)

**Revitalizing Neighborhoods – Tools for Local Officials (6-hour class)** This class provides an overview of the tools and resources available to cities interested in effectively responding to neighborhood problems such as dilapidated and unsafe structures, unsightly property, junk automobiles, weeds, trash and other nuisances. Topics include Georgia's Urban Redevelopment law, code enforcement and land bank authorities.

**\*\* CLERKS COURSE - Review of Alcohol Excise Tax, Laws and Regulations(6-hour class)** Each year we see an overwhelming number of alcohol bills introduced to the state legislature. This course will examine the new laws and regulations and how the changes impact the excise tax received by local governments. A review of the Alcohol Statewide Centralized Application Process (2020 HB 879) will also be a topic of discussion.

---

Classes with an \* are on the "required" list for the Municipal Training Institute certificate program.

Class with an \*\* is a Clerks Course and not a part of the Harold F. Holtz Municipal Training Certificate Program.

Classes with an \*\*\* are part of the Advanced Leadership Track and are needed to complete the Certificate of Dedication.



# YOUTH LEADERSHIP PROGRAM

Many city officials see their younger citizens as a resource for community problem-solving as well as potential future city and civic leaders. In these cities, youth councils are working with elected officials and city staff to tackle important issues and are discovering that their voices matter. To further engage with the future leaders of Georgia's cities, GMA will be offering a Youth Leadership Program during the 2022 Cities United Summit.

## Who Can Attend?

- Attendees must be enrolled in city sponsored youth council or leadership programs.
- We will accept up to five students per youth council.
- Students must be accompanied by a chaperone, who will be dedicated to these group activities at all times.
- We will limit youth attendance to 50 on a first-come, first-served basis.

## Costs

The registration fee for each youth and chaperone is \$150 to cover three meal events, breaks, meeting materials and transportation to the Sunday night event and the Monday morning activity at the Capitol (if COVID protocols allow). Lunch and dinner on Sunday and breakfast on Monday morning are included in the registration fee.

## Hotel

The hotel rate at the Atlanta Hilton is \$166 and we are holding a special block of rooms with two beds so that you will not have any trouble finding accommodations.

## Program

### SATURDAY, JANUARY 22

2:00 pm-4:00 pm Icebreaker Session

### SUNDAY, JANUARY 23

9:00 am - 12:00 pm Leadership Session

9:15 am - 12:00 pm Youth Advisors Roundtable

12:00 pm - 1:00 pm Lunch

1:00 pm - 2:30 pm Youth Engagement Session and Feedback

2:30 pm - 2:45 pm Break

2:45 pm - 4:00 pm City Officials Panel with Youth/Q&A

5:30 pm Bus pickup for dinner

6:00 pm - 8:00 pm Group Dinner/Team Building. Transportation will be provided.

### MONDAY, JANUARY 24

7:30 am - 10:30 am Cities United Breakfast and, if COVID protocols allow, visit to the Capitol.

## Event Registration

You may register your youth attendees and chaperones online using the following link: <https://members.gacities.com/Event.aspx?EventKey=22CUS> or you may fill-out the paper registration and fax or mail to GMA.

## Hotel Registration

GMA has reserved a block of rooms at the Atlanta Hilton at a room rate of \$166. For reservations, please call the Hilton at (404) 659-2000 and ask for the GMA Youth Block or visit [this site](#). To receive the GMA rate, all reservations MUST be made by December 21, 2021.



2022 GMA Cities United Summit Youth Leadership Program

## YOUTH LEADERSHIP PROGRAM REGISTRATION FORM

Online registration available at <https://members.gacities.com/Event.aspx?EventKey=22CUS>

Name of Youth Group: \_\_\_\_\_

Coordinator Contact Info: \_\_\_\_\_

	Name	Title
Phone	Cell Phone	Email

Youth Names:

_____	\$150
_____	\$150
_____	\$150
_____	\$150
_____	\$150

Chaperone Name(s) and Contact Cell:

_____	\$150
_____	\$150

Total Registration Due: \$ \_\_\_\_\_

- Please indicate if your group plans on attending the Monday morning Legislative Breakfast.
- Check Enclosed (to GMA)    Visa    MC    AMEX

Card #: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**If you have paid by credit card, please fax your registration to our secure fax line at 404-577-6663.**

If by check, please mail to GMA, Attn: Sharon Collins, P.O. Box 105377, Atlanta, Georgia, 30348.



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 7c

---

SUBJECT: APPROVE 2022 NEWLY ELECTED OFFICIALS TRAINING

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO APPROVE NEWLY ELECTED OFFICIALS TRAINING EXPENSES FROM 02/23 – 02/25/2022 FOR WILLIAM ILLG TO INCLUDE REGISTRATION, TRAINING, LODGING, PER DIEM AND MILEAGE.**

**REGISTRATION AND TRAINING: \$420**

**LODGING (APPROX): \$500**

**MEAL AND DAILY PER DIEM: \$440**

**MILEAGE (APPROX): \$75**

**APPROX TOTAL: \$1435 TO BE PAID OUT OF FY2022 BUDGETED FUNDS**

---

HISTORY/ FACTS / ISSUES:

**TRAINING IS REQUIRED FOR ALL NEWLY ELECTED OFFICIALS**

**TRAINING WILL BE HELD AT THE UGA CENTER FOR CONTINUING EDUCATION**

---

OPTIONS:

**APPROVE, AMEND, DENY OR TABLE**

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Beverly Banister, City Clerk



---

Share this page

## 2022 Newly Elected Officials Institute Athens

---



The Newly Elected Officials Institute provides a general overview of the function of municipal government in Georgia and the roles and responsibilities of mayors and councilmembers. The class includes an introduction to key issues such as ethics, municipal finance, planning and zoning, open meetings, open records and parliamentary procedures. All municipal elected officials taking office since July 1, 1990 are required by state law to complete the Newly Elected Officials Institute.

LODGING: GMA has a reserved block of rooms at the UGA Hotel and Conference Center. The block rate is \$114-\$159 per night depending on room type. For reservations, please use block code 91784 at [www.UGAHotel.com](http://www.UGAHotel.com) or call 1-800-884-1381 or 706-542-2134 and ask for the GMA block rate. Reservations at the special block rate MUST be made by January 20, 2022.

Cancellation Policy: Cancellations after February 8 will incur a \$100 cancellation fee. Cancellations after February 18 will not be refunded.

### **Tentative Newly Elected Officials Institute Agenda**

#### **Wednesday**

9:30 – 11:00 am      **Institute Registration**

11:00 - 11:30 am      **Welcome, Opening Remarks, and Program Overview**

- 11:30 – 12 30 am      **Lunch – Georgia Municipal Association President’s Remarks**
- 12:45 - 2:00 pm      **Legal Foundation, Structure, Charters, and Policies for Municipal Officials**
- 2:00 - 2:15 pm      **Break**
- 2:15 – 3:30 pm      **Ethics and the City Official**
- 3:30 – 3:45 pm      **Break**
- 3:45 – 5:00 pm      **Building Collaborative Relationships – Facilitated Panel**

*Dinner on Your Own*

### **Thursday**

- 8:15 - 8:30 am      **Welcome Back**
- 8:30 – 9:45 am      **Successful Meeting Management**
- 9:45 - 10:00 am      **Break**
- 10:00 – 11:15 am      **An Introduction to Diversity, Equity and Inclusion**
- 11:30 -12:30 pm      **Lunch**
- 12:45 – 2:00 pm      **Resources for Municipal Services**
- 2:00–3:00 pm      **Introduction to Transportation and Public Works**
- 3:00 -3:15 pm      **Break**
- 3:15 – 4:30 pm      **City Government 101 - Land Use Issues: Planning, Zoning, and Other Considerations**
- 4:30 – 5:30 pm      **Municipal Resource Fair**

*Dinner on Your Own*

### **Friday**

- 8:15 – 9:15 am      **City Government 101 - Personnel: Roles and Responsibilities of Municipal Elected Officials and Municipal Workforce**

## Development

9:15 – 9:30 am	<b>Break</b>
9:30 – 11:00 am	<b>Municipal Financial Policies</b>
11:15 – 12:15 pm	<b>City Council Meeting Simulation</b>
12:15 – 12:30 pm	<b>Program Closing and Words to Lead By</b>

-

-

**Price** 420.00

**When** 2/23/2022 11:00 AM - 2/25/2022 12:15 PM

**Where** UGA Center for Continuing Education and Hotel  
1197 South Lumpkin Street  
Athens, GA 30602-3603  
UNITED STATES

[Register Myself](#)

[Register Someone Else](#)

**Last day to register is 2/16/2022**

**My registration status:** Not registered

## Registrants

---



Mr. William Illg

**Event Contact**

[Ms. Aileen L. Harris](#) - Phone: (678) 686-6293

Connect With Us

Contact Us  
[info@gacities.com](mailto:info@gacities.com)

Copyright © Georgia Municipal Association.



# DAWSONVILLE CITY COUNCIL EXECUTIVE SUMMARY FOR AGENDA ITEM # 7d

---

SUBJECT: **APPROVE REAPPOINTMENT FOR PLANNING COMMISSION AND HISTORIC PRESERVATION COMMISSION MEMBERS**

CITY COUNCIL MEETING DATE: 11/15/2021

**PURPOSE FOR REQUEST:** Reappoint Randy Davis, Matt Fallstrom and Perry Bohn to a three-year Commission term extension.

**HISTORY/ FACTS / ISSUES:**

- Randy Davis appointed to the Planning Commission member at large 4/20/20.
- Matt Fallstrom appointed to the Planning Commission post one 1/7/19.
- Perry Bohn appointed to the Historic Preservation Commission 9/9/19.

---

**OPTIONS:** Approve, deny, postpone

---

**RECOMMENDED SAMPLE MOTION:**

**APPROVE THE FOLLOWING MEMBERS TO PLANNING COMMISSION FOR A THREE-YEAR TERM:**

- **RANDY DAVIS (MEMBER AT LARGE), TERM: 01/01/2022 – 12/31/2024**
- **MATT FALLSTROM (POST 1), TERM: 01/01/2022 – 12/31/2024**

**APPROVE THE FOLLOWING MEMBER TO HISTORIC PRESERVATION COMMISSION FOR A THREE-YEAR TERM:**

- **PERRY BOHN, TERM: 01/01/2022 – 12/31/2024**

---

DEPARTMENT: Planning and Zoning

REQUESTED BY: David Picklesimer



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 8

---

SUBJECT: EMPLOYEE RECOGNITION

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO RECOGNIZE AND PRESENT THE FOLLOWING:**

- **OCTOBER 2021 EMPLOYEE OF THE MONTH**
  - **SERVICE AWARDS FOR THE MONTH OF DECEMBER**
- 

HISTORY/ FACTS / ISSUES:

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Bob Bolz, City Manager



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 9

---

SUBJECT: INTRODUCTION OF LAW ENFORCEMENT OFFICERS

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO INTRODUCE THE TWO DAWSON COUNTY DEPUTIES WHO WILL BE SERVING THE CITY**

- **VIC GAZAWAY**
  - **KYLE BAILEY**
- 

HISTORY/ FACTS / ISSUES:

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Bob Bolz, City Manager



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 10

---

SUBJECT: BOARD OF EDUCATION DEVELOPMENT AND BUILDING PERMIT FEE WAIVER

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO CONSIDER WAIVING FEES FOR THE DAWSON COUNTY BOARD OF EDUCATION NEW CONSTRUCTION FOR AN AGRICULTURE CENTER AND ATHLETIC CENTER**

---

HISTORY/ FACTS / ISSUES:

- **FEES TOTAL \$15,934.20 – INVOICE BREAKDOWN ATTACHED.**
  - **PLAN REVIEW COSTS OF \$3,029.60 WILL BE PAID BY THE CITY TO OUR ENGINEERING FIRM.**
  - **FUTURE BUILDING PLAN REVIEWS AND BUILDING INSPECTIONS CAN BE DONE BY A BOE THIRD PARTY ENGINEER TO ELIMINATE CITY EXPENSES.**
  - **DEVELOPMENT INSPECTION AND DEVELOPMENT PLAN REVIEW CANNOT BE DONE BY A THIRD PARTY.**
- 

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Bob Bolz, City Manager





*Dawson County Schools*  
*28 Main Street*  
*Dawsonville, GA 30534*  
*(706) 265-3246*  
*FAX (706) 265-1226*  
[www.dawsoncountyschools.org](http://www.dawsoncountyschools.org)  
*Damon Gibbs, Superintendent*

*Board Members:*  
*Karen Armstrong*  
*Doris Cook*  
*Nathan Ingram*  
*Barry Slaton*  
*Elaine Wilson*

November 5, 2021

Mayor Mike Eason  
Dawsonville City Council  
415 Highway 53 E, Suite 100  
Dawsonville, GA 30534

Dear Mayor Eason and City Council,

Please consider this letter a request from Dawson County Schools to waive the newly implemented fees for construction.

We have a long-standing relationship with the City of Dawsonville and have entered into various mutual agreements that have been in the best interest of the community that we both serve. A recent example is the agreement that the city would waive sewer and tap fees for the school system for unlimited access to our parking areas, free of any potential fees, for city events. The idea of one governmental organization charging fees to another does not seem, in our opinion, in the best interest of the citizens of Dawson County.

We have contacted our colleagues from surrounding districts to verify that our concerns are valid. At this time, Hall County, Forsyth County, Pickens County, and Lumpkin County School Districts have indicated no similar fees for construction projects within their districts.

Your consideration of this request would be greatly appreciated.

Sincerely,

Scott Morgan  
Director of Facilities & Maintenance



**City of Dawsonville**  
 415 HIGHWAY 53 STE 100  
 DAWSONVILLE, GA 30534

ATTN: Beverly Banister, City Clerk  
 (706)265-3256

<b>INVOICE #</b>
12200194

INVOICE DATE: 09/17/21  
 DUE DATE: 10/17/21

ACCOUNT ID: CARRO005 PIN: 9247  CARROLL DANIEL CONSTRUCTION CO BRANDON HARMON 330 MAIN STREET GAINESVILLE, GA 30501
--

PERMIT INFORMATION  
 PERMIT NO: C2200041  
 LOCATION: 1665 PERIMETER RD  
 OWNER: DAWSON COUNTY HIGH SCHOOL

QUANTITY/UNIT	SERVICE ID	DESCRIPTION	UNIT PRICE	AMOUNT
		Permit No: C2200041		
1.0000	PC-00001	COMMERCIAL DEVELOPMENT FEE Permit No: C2200041	200.000000	200.00
1.0000	P-0097	1ST SITE PLAN REVIEW Permit No: C2200041	1,000.000000	1,000.00
1.0000/AC	P-0048C	COM - LAND DISTURBANCE FEE Permit No: C2200041	200.000000	200.00
1.0000	P-0047	STATUTORY FEE PER ACRE Permit No: C2200041	40.000000	40.00
1.0000	P-0101	STORMWATER MNGMT PLAN REVIEW Permit No: C2200041	10.000000	10.00
		TOTAL DUE:		<u>\$ 1,450.00</u>

Plan Review

3,029.60

-----  
 PAYMENT COUPON - PLEASE DETACH AND RETURN THIS PORTION ALONG WITH YOUR PAYMENT

City of Dawsonville  
 415 HIGHWAY 53 STE 100  
 DAWSONVILLE, GA 30534

INVOICE #: 12200194  
 DESCRIPTION: Permit No: C2200041  
 ACCOUNT ID: CARRO005 PIN: 9247  
 DUE DATE: 10/17/21  
 TOTAL DUE: \$ 1,450.00

CARROLL DANIEL CONSTRUCTION CO  
 BRANDON HARMON  
 330 MAIN STREET  
 GAINESVILLE, GA 30501







**City of Dawsonville**  
 415 HIGHWAY 53 STE 100  
 DAWSONVILLE, GA 30534

ATTN: Beverly Banister, City Clerk  
 (706)265-3256

<b>INVOICE #</b>
I2200141

INVOICE DATE: 09/01/21  
 DUE DATE: 10/01/21

ACCOUNT ID: CARRO005 PIN: 9247  
 CARROLL DANIEL CONSTRUCTION CO  
 BRANDON HARMON  
 330 MAIN STREET  
 GAINESVILLE, GA 30501

PERMIT INFORMATION  
 PERMIT NO: C2200024 *Building plan*  
 LOCATION: 1665 PERIMETER ROAD  
 OWNER: DAWSON CO BOARD OF

QUANTITY/UNIT	SERVICE ID	DESCRIPTION	UNIT PRICE	AMOUNT
		Permit No: C2200024		
1.0000	P-0002	COMM CERTIFICATE OF COMPLETION	100.000000	100.00
		Permit No: C2200024		
1.0000	P-0100	BUILDING PLAN REVIEW	1,000.000000	1,000.00
		Permit No: C2200024		
27.0000	P-0008	4001 - 5000 SQFT ELEC	70.000000	1,890.00
		Permit No: C2200024		
23.0000	P-0009	ADDITIONAL 1000 SQFT ELEC	10.000000	230.00
		Permit No: C2200024		
27.0000	P-0053	4001 - 5000 SQFT HVAC	70.000000	1,890.00
		Permit No: C2200024		
23.0000	P-0054	ADDITIONAL 1000 SQFT HVAC	10.000000	230.00
		Permit No: C2200024		
27.0000	P-0077	4001 - 5000 SQFT PLUM	70.000000	1,890.00
		Permit No: C2200024		
23.0000	P-0078	ADDITIONAL 1000 SQFT PLUM	10.000000	230.00
		Permit No: C2200024		
1.0000/SQF	P-0111	COVERED SPACE - UNDER ROOF	5,526.200000	5,526.20
		Permit No: C2200024		

TOTAL DUE: \$ 12,986.20

*Building permit*      *11,986.20*

-----  
 PAYMENT COUPON - PLEASE DETACH AND RETURN THIS PORTION ALONG WITH YOUR PAYMENT

City of Dawsonville  
 415 HIGHWAY 53 STE 100  
 DAWSONVILLE, GA 30534

INVOICE #: I2200141  
 DESCRIPTION: Permit No: C2200024  
 ACCOUNT ID: CARRO005 PIN: 9247  
 DUE DATE: 10/01/21  
 TOTAL DUE: \$ 12,986.20

CARROLL DANIEL CONSTRUCTION CO  
 BRANDON HARMON  
 330 MAIN STREET  
 GAINESVILLE, GA 30501





**City of Dawsonville**  
 415 HIGHWAY 53 STE 100  
 DAWSONVILLE, GA 30534

ATTN: Beverly Banister, City Clerk  
 (706)265-3256

<b>INVOICE #</b>
I2200071

INVOICE DATE: 08/02/21  
 DUE DATE: 09/01/21

ACCOUNT ID: P-000039 PIN: 8535  
 DAWSON CO BOARD OF  
 1665 PERIMETER ROAD  
 Dawsonville, GA 30534

PERMIT INFORMATION  
 PERMIT NO: C2200003  
 LOCATION: 1665 PERIMETER ROAD  
 OWNER: DC HIGH SCHOOL ATHLETIC BUILDING

QUANTITY/UNIT	SERVICE ID	DESCRIPTION	UNIT PRICE	AMOUNT
		Permit No: C2200003		
1.0000	P-0097	1ST SITE PLAN REVIEW Permit No: C2200003	1,000.000000	1,000.00
1.0000/AC	P-0048C	COM - LAND DISTURBANCE FEE Permit No: C2200003	200.000000	200.00
1.9600	P-0047	STATUTORY FEE PER ACRE Permit No: C2200003	40.000000	78.40
1.0000	P-0101	STORMWATER MNGMT PLAN REVIEW Permit No: C2200003	19.600000	19.60
1.0000	PC-00001	COMMERCIAL DEVELOPMENT FEE Permit No: C2200003	200.000000	200.00
		TOTAL DUE:		<u>\$ 1,498.00</u>

*Development Inspection*

*918.40*

*Total 15934.20*

PAYMENT COUPON - PLEASE DETACH AND RETURN THIS PORTION ALONG WITH YOUR PAYMENT

City of Dawsonville  
 415 HIGHWAY 53 STE 100  
 DAWSONVILLE, GA 30534

INVOICE #: I2200071  
 DESCRIPTION: Permit No: C2200003  
 ACCOUNT ID: P-000039 PIN: 8535  
 DUE DATE: 09/01/21  
 TOTAL DUE: \$ 1,498.00

DAWSON CO BOARD OF  
 1665 PERIMETER ROAD  
 Dawsonville, GA 30534





DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 11

---

SUBJECT: **RESOLUTION – OPIOID LITIGATION**

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO CONSIDER APPROVAL OF RESOLUTION REGARDING OPIOID LITIGATION**

---

HISTORY/ FACTS / ISSUES:

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Kevin Tallant, City Attorney

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY OF DAWSONVILLE, GEORGIA (“CITY”) AGREEING TO BE BOUND BY THE MEMORANDUM OF UNDERSTANDING BETWEEN THE STATE OF GEORGIA AND CERTAIN LOCAL GOVERNMENT ENTITIES CONCERNING THE NATIONAL DISTRIBUTOR AND J&J SETTLEMENTS AND DIRECTING THE EXECUTION OF THE “ACKNOWLEDGMENT AND AGREEMENT TO BE BOUND BY MEMORANDUM OF UNDERSTANDING,” “SUBDIVISION DISTRIBUTOR SETTLEMENT PARTICIPATION FORM,” AND “JANSSEN SETTLEMENT PARTICIPATION FORM.”**

WHEREAS, the City initiated litigation against certain manufacturers and distributors of prescription opioids in *In re: National Prescription Opiate Litigation*, MDL 2804, to hold them accountable for the opioid epidemic and to seek equitable and monetary relief;

WHEREAS, opioid distributor defendants McKesson Corporation, AmerisourceBergen Corporation, and Cardinal Health, Inc. (“Settling Distributors”), and opioid manufacturer defendants Johnson & Johnson, Janssen Pharmaceuticals, Inc., Ortho-McNeil-Janssen Pharmaceuticals, Inc., and Janssen Pharmaceutica, Inc. (“J&J”) have separately reached settlement frameworks (otherwise known as the “National Distributor Settlement” and “J&J Settlement”) with certain states and local government entities that the State of Georgia and Georgia’s local government entities have the option to join;

WHEREAS, the State of Georgia and certain Georgia local government entities seek to enter a Memorandum of Understanding that would enable them to join the National Distributor and J&J Settlements and maximize the recovery to the State of Georgia and Georgia local government entities from those settlements; and

WHEREAS, the City desires to agree to be bound by the Memorandum of Understanding and to participate in the National Distributor and J&J Settlements.

NOW, THEREFORE, BE IT RESOLVED BY THE DAWSONVILLE CITY COUNCIL, AS FOLLOWS:

Section 1. The City Council, as the governing body of the City, hereby agrees to be bound by the Memorandum of Understanding between the State of Georgia and certain Georgia local government entities concerning the National Distributor and J&J Settlements.

Section 2. The City Council, as the governing body of the City, hereby agrees to participate in the National Distributor and J&J Settlements.

Section 3. The City Council hereby appoints \_\_\_\_\_, as the duly-appointed representative of the City for the purposes of agreeing to be bound by the Memorandum of Understanding and participating in the National Distributor and J&J Settlements.

Section 4. The City Council directs the duly-appointed representative of the City to execute the “ACKNOWLEDGMENT AND AGREEMENT TO BE BOUND BY MEMORANDUM OF UNDERSTANDING,” attached hereto and incorporated herein as **Exhibit A**.

Section 5. The City Council directs the duly-appointed representative of the City to execute the “Subdivision Distributor Settlement Participation Form,” attached hereto and incorporated herein as **Exhibit B**.

Section 6. The City Council directs the duly-appointed representative of the City to execute the “Janssen Settlement Participation Form,” attached hereto and incorporated herein as **Exhibit C**.

Section 7. If any section, paragraph or provision of this Resolution shall be held to be invalid or unenforceable for any reason, the invalidity or unenforceability of such section, paragraph or provision shall not affect any of the remaining provisions of this Resolution.

Section 8. This Resolution shall be in full force and effect from and after its adoption as provided by law.

This Resolution was introduced, seconded and adopted at a duly convened meeting of the City of Dawsonville City Council, held on \_\_\_\_\_, 2021.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

**EXHIBIT "A"**

---

Acknowledgment and Agreement to Be Bound By Memorandum of Understanding



**EXHIBIT 1**

**ACKNOWLEDGEMENT AND AGREEMENT  
TO BE BOUND BY MEMORANDUM OF UNDERSTANDING**

WHEREFORE, the undersigned, as a duly-appointed representative of the below-referenced entity, acknowledges the following:

- The City of Dawsonville, Georgia has received the State of Georgia and Local Governments: Memorandum of Understanding Concerning National Distributor and Johnson & Johnson Opioid Settlements.
- The undersigned is a duly-appointed representative of the City of Dawsonville, Georgia, and has the authority to execute this document and bind the City of Dawsonville, Georgia to the Memorandum of Understanding.
- The City of Dawsonville, Georgia is either represented by legal counsel, or has the ability to obtain advice from legal counsel, concerning the contents and implication of the Memorandum of Understanding.
- The undersigned, on behalf of the City of Dawsonville, Georgia, understands and acknowledges the terms of the Memorandum of Understanding, and the City of Dawsonville, Georgia agrees to be bound by its terms.
- No party is under duress or undue influence.

/s/ \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

Entity City of Dawsonville, Georgia

**EXHIBIT “B”**

---

Subdivision Distributor Settlement Participation Form

**Subdivision Distributor Settlement Participation Form**

Governmental Entity:	State:
Authorized Official:	
Address 1:	
Address 2:	
City, State, Zip:	
Phone:	
Email:	

The governmental entity identified above (“*Governmental Entity*”), in order to obtain and in consideration for the benefits provided to the Governmental Entity pursuant to the Settlement Agreement dated July 21, 2021 (“*Distributor Settlement*”), and acting through the undersigned authorized official, hereby elects to participate in the Distributor Settlement, release all Released Claims against all Released Entities, and agrees as follows.

1. The Governmental Entity is aware of and has reviewed the Distributor Settlement, understands that all terms in this Participation Form have the meanings defined therein, and agrees that by signing this Participation Form, the Governmental Entity elects to participate in the Distributor Settlement and become a Participating Subdivision as provided therein.
2. The Governmental Entity shall, within 14 days of the Reference Date and prior to the filing of the Consent Judgment, secure the dismissal with prejudice of any Released Claims that it has filed.
3. The Governmental Entity agrees to the terms of the Distributor Settlement pertaining to Subdivisions as defined therein.
4. By agreeing to the terms of the Distributor Settlement and becoming a Releasor, the Governmental Entity is entitled to the benefits provided therein, including, if applicable, monetary payments beginning after the Effective Date.
5. The Governmental Entity agrees to use any monies it receives through the Distributor Settlement solely for the purposes provided therein.
6. The Governmental Entity submits to the jurisdiction of the court in the Governmental Entity’s state where the Consent Judgment is filed for purposes limited to that court’s role as provided in, and for resolving disputes to the extent provided in, the Distributor Settlement. The Governmental Entity likewise agrees to arbitrate before the National Arbitration Panel as provided in, and for resolving disputes to the extent otherwise provided in, the Distributor Settlement.

7. The Governmental Entity has the right to enforce the Distributor Settlement as provided therein.
8. The Governmental Entity, as a Participating Subdivision, hereby becomes a Releasor for all purposes in the Distributor Settlement, including, but not limited to, all provisions of Part XI, and along with all departments, agencies, divisions, boards, commissions, districts, instrumentalities of any kind and attorneys, and any person in their official capacity elected or appointed to serve any of the foregoing and any agency, person, or other entity claiming by or through any of the foregoing, and any other entity identified in the definition of Releasor, provides for a release to the fullest extent of its authority. As a Releasor, the Governmental Entity hereby absolutely, unconditionally, and irrevocably covenants not to bring, file, or claim, or to cause, assist or permit to be brought, filed, or claimed, or to otherwise seek to establish liability for any Released Claims against any Released Entity in any forum whatsoever. The releases provided for in the Distributor Settlement are intended by the Parties to be broad and shall be interpreted so as to give the Released Entities the broadest possible bar against any liability relating in any way to Released Claims and extend to the full extent of the power of the Governmental Entity to release claims. The Distributor Settlement shall be a complete bar to any Released Claim.
9. The Governmental Entity hereby takes on all rights and obligations of a Participating Subdivision as set forth in the Distributor Settlement.
10. In connection with the releases provided for in the Distributor Settlement, each Governmental Entity expressly waives, releases, and forever discharges any and all provisions, rights, and benefits conferred by any law of any state or territory of the United States or other jurisdiction, or principle of common law, which is similar, comparable, or equivalent to § 1542 of the California Civil Code, which reads:

**General Release; extent.** A general release does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release, and that if known by him or her would have materially affected his or her settlement with the debtor or released party.

A Releasor may hereafter discover facts other than or different from those which it knows, believes, or assumes to be true with respect to the Released Claims, but each Governmental Entity hereby expressly waives and fully, finally, and forever settles, releases and discharges, upon the Effective Date, any and all Released Claims that may exist as of such date but which Releasors do not know or suspect to exist, whether through ignorance, oversight, error, negligence or through no fault whatsoever, and which, if known, would materially affect the Governmental Entities' decision to participate in the Distributor Settlement.

11. Nothing herein is intended to modify in any way the terms of the Distributor Settlement, to which Governmental Entity hereby agrees. To the extent this Participation Form is interpreted differently from the Distributor Settlement in any respect, the Distributor Settlement controls.
  
12. The effective date of this Participation Form shall be the date on which the State of Georgia enters into the Distributor Settlement. In the event that the State of Georgia elects not to enter into the Distributor Settlement, this Participation Form shall be null and void and shall confer no rights or obligations on the State of Georgia, the Released Entities (as defined in the National Settlement Agreement dated July 21, 2021), or the Governmental Entity.

I have all necessary power and authorization to execute this Participation Form on behalf of the Governmental Entity.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**EXHIBIT “C”**

---

Janssen Settlement Participation Form

**Janssen Settlement Participation Form**

Governmental Entity:	State:
Authorized Official:	
Address 1:	
Address 2:	
City, State, Zip:	
Phone:	
Email:	

The governmental entity identified above (“Governmental Entity”), in order to obtain and in consideration for the benefits provided to the Governmental Entity pursuant to the Settlement Agreement dated July 21, 2021 (“Janssen Settlement”), and acting through the undersigned authorized official, hereby elects to participate in the Janssen Settlement, release all Released Claims against all Released Entities, and agrees as follows.

1. The Governmental Entity is aware of and has reviewed the Janssen Settlement, understands that all terms in this Election and Release have the meanings defined therein, and agrees that by this Election, the Governmental Entity elects to participate in the Janssen Settlement and become a Participating Subdivision as provided therein.
2. The Governmental Entity shall, within 14 days of the Reference Date and prior to the filing of the Consent Judgment, dismiss with prejudice any Released Claims that it has filed.
3. The Governmental Entity agrees to the terms of the Janssen Settlement pertaining to Subdivisions as defined therein.
4. By agreeing to the terms of the Janssen Settlement and becoming a Releasor, the Governmental Entity is entitled to the benefits provided therein, including, if applicable, monetary payments beginning after the Effective Date.
5. The Governmental Entity agrees to use any monies it receives through the Janssen Settlement solely for the purposes provided therein.
6. The Governmental Entity submits to the jurisdiction of the court in the Governmental Entity’s state where the Consent Judgment is filed for purposes limited to that court’s role as provided in, and for resolving disputes to the extent provided in, the Janssen Settlement.
7. The Governmental Entity has the right to enforce the Janssen Settlement as provided therein.

8. The Governmental Entity, as a Participating Subdivision, hereby becomes a Releasor for all purposes in the Janssen Settlement, including but not limited to all provisions of Section IV (Release), and along with all departments, agencies, divisions, boards, commissions, districts, instrumentalities of any kind and attorneys, and any person in their official capacity elected or appointed to serve any of the foregoing and any agency, person, or other entity claiming by or through any of the foregoing, and any other entity identified in the definition of Releasor, provides for a release to the fullest extent of its authority. As a Releasor, the Governmental Entity hereby absolutely, unconditionally, and irrevocably covenants not to bring, file, or claim, or to cause, assist or permit to be brought, filed, or claimed, or to otherwise seek to establish liability for any Released Claims against any Released Entity in any forum whatsoever. The releases provided for in the Janssen Settlement are intended by the Parties to be broad and shall be interpreted so as to give the Released Entities the broadest possible bar against any liability relating in any way to Released Claims and extend to the full extent of the power of the Governmental Entity to release claims. The Janssen Settlement shall be a complete bar to any Released Claim.
9. In connection with the releases provided for in the Janssen Settlement, each Governmental Entity expressly waives, releases, and forever discharges any and all provisions, rights, and benefits conferred by any law of any state or territory of the United States or other jurisdiction, or principle of common law, which is similar, comparable, or equivalent to § 1542 of the California Civil Code, which reads:

**General Release; extent.** A general release does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release that, if known by him or her, would have materially affected his or her settlement with the debtor or released party.

A Releasor may hereafter discover facts other than or different from those which it knows, believes, or assumes to be true with respect to the Released Claims, but each Governmental Entity hereby expressly waives and fully, finally, and forever settles, releases and discharges, upon the Effective Date, any and all Released Claims that may exist as of such date but which Releasors do not know or suspect to exist, whether through ignorance, oversight, error, negligence or through no fault whatsoever, and which, if known, would materially affect the Governmental Entities' decision to participate in the Janssen Settlement.

10. Nothing herein is intended to modify in any way the terms of the Janssen Settlement, to which Governmental Entity hereby agrees. To the extent this Election and Release is interpreted differently from the Janssen Settlement in any respect, the Janssen Settlement controls.



11. The effective date of this Participation Form shall be the date on which the State of Georgia enters into the Janssen Settlement. In the event that the State of Georgia elects not to enter into the Janssen Settlement, this Participation Form shall be null and void and shall confer no rights or obligations on the State of Georgia, the Released Entities (as defined in the National Settlement Agreement dated July 21, 2021), or the Governmental Entity.

I have all necessary power and authorization to execute this Election and Release on behalf of the Governmental Entity.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

# Brinson Askew Berry

BRINSON, ASKEW, BERRY, SEIGLER, RICHARDSON & DAVIS, LLP

Attorneys at Law

J. Anderson Davis  
706.295.0566  
adavis@brinson-askew.com

November 9, 2021

*Via E-Mail*

City of Dawsonville

**Re: *In Re: National Prescription Opiate Litigation***  
**Case No.: 1:17-mdl-2804, United States District Court for**  
**the Northern District of Ohio, Eastern Division (Hon. Dan A. Polster)**

Dear Client:

Earlier this year, you signed a form agreeing to the settlement described below. **The State wants another form signed, as do the Pharmaceutical Companies.** New forms and a Resolution are enclosed.

Opioid distributor defendants McKesson Corporation, AmerisourceBergen Corporation, and Cardinal Health, Inc., and opioid manufacturer defendants Johnson & Johnson, Janssen Pharmaceuticals, Inc., Ortho-McNeil-Janssen Pharmaceuticals, Inc., and Janssen Pharmaceutica, Inc. (collectively the "Settling Defendants") reached separate settlement frameworks (referred to as the "National Distributor Settlement" and the "J&J Settlement") with certain states and local government entities for a collective \$26 billion. The National Distributor and J&J Settlements are attached for your review and more information regarding these settlements can be found at: <https://nationalopioidsettlement.com/>.

In order for the National Distributor and J&J Settlements to become effective, enough states and local government entities must agree to participate in the settlements. If, in the Settling Defendants' discretion, not enough states and local government entities agree to participate in the settlements, the Settling Defendants can back out of the settlements, the settlements will not become effective, and litigation against the Settling Defendants will continue in *In Re: National Prescription Opiate Litigation*, MDL 2804 (the "MDL").

The National Distributor and J&J Settlements have widespread support from the Plaintiffs' Executive Committee, which represents the interests of local governments and leads the MDL, and the MDL Judge. The National Distributor and J&J Settlements also have widespread support in the State of Georgia, including from Governor Brian Kemp, Attorney General Chris Carr, and attorneys representing all of the other Georgia litigating cities, counties, sheriffs, and hospital authorities. We believe the National Distributor and J&J Settlements are the best way to maximize recovery to the State of Georgia and Georgia local government entities from the Settling Defendants and ensure that resources flow, particularly sooner rather than later, to local governments to abate the opioid epidemic.

In anticipation of the National Distributor and J&J Settlements, which have been the subject of negotiations since October 2019, there have been discussions concerning how to allocate settlement funds between the State of Georgia and Georgia local government entities. We have been actively involved in these discussions and the resultant Memorandum of Understanding (“MOU”) between the State of Georgia and Certain Local Government Entities. A copy of the MOU, which only concerns the National Distributor and J&J Settlements and does not impact any claims you have pending against other defendants in the MDL, is attached for your review.<sup>1</sup> A copy of the represented local government entities involved in the MOU is also attached.

The purpose of the MOU is to maximize the monetary recovery from the National Distributor and J&J Settlements to the State of Georgia and local government entities and to memorialize an agreement between the State of Georgia and certain Georgia local government entities regarding how settlement funds will be distributed intrastate before the State of Georgia officially joins the National Distributor and J&J Settlements. We believe your agreeing to the MOU is in your best interests and in the best interests of all our clients.

Section III of the MOU describes how funds allocated to Georgia by the National Distributor and J&J Settlements will be allocated intrastate. At least 70% of the funds must be used for future abatement purposes.

Participating Local Governments will receive 25% of the funds allocated to Georgia under the National Distributor and J&J Settlements. Those funds will be paid to the national Settlement Administrator and distributed in accordance with the conditions in the settlements and the additional conditions contained in Section III of the MOU. Section III provides that: (1) if a county who is a Participating Local Government has a sheriff who is listed as a Litigating Subdivision in Exhibit C of the National Distributor Settlement, at least 9.45% of the funds paid to the county will be allocated to the county’s sheriff; (2) if a county who is a Participating Local Government has a hospital that is listed as a Litigating Subdivision in Exhibit C of the Distributor Settlement Agreement, at least 2% of the funds paid to the county will be allocated to the hospital; and (3) if a county who is a Participating Local Government has a school district that is listed as a Litigating Subdivision in Exhibit C of the National Distributor Settlement, at least 1% of the funds paid to the county will be allocated to the school district.

It is not possible for us to provide a precise amount of recovery for each local government entity under the MOU. Many variables, including nationwide levels of participation among states and local government entities, will impact the amount of money the State of Georgia will receive under the National Distributor and J&J Settlements and, therefore, the amount of money that will be allocated to local governments subject to the provisions of the MOU. However, we are working

---

<sup>1</sup> Please be aware that, as discussed in Section VI of the MOU, the MOU is conditioned on the passage of a “Litigation Bar” (a prohibition of litigation against the Settling Defendants for claims released in the settlement agreements) by the General Assembly and approval of the same by the Governor. Although we anticipate a Litigation Bar being passed and approved, the MOU will become null and void if a Litigation Bar is not enacted by July 15, 2023.

with individuals who have created recovery models, and have been appointed by the MDL Judge to create recovery models under the settlements, to provide a range of recovery for each of our clients.

The State of Georgia will receive 75% of the funds allocated to Georgia by the National Distributor and J&J Settlements. At least 40% of the State's share will be expended on a regional basis, which will benefit you and all other local government entities. As detailed in Section III of the MOU, the State of Georgia will be divided into Regions at a future date. Funds will be distributed to each Region based on an assigned regional allocation percentage. The original regional allocation percentage will be based on the Negotiation Class Allocation Model, which is based on the following: (1) opioid use disorder cases; (2) overdose deaths; and (3) the number of opioids distributed at the county level. The Negotiation Class Allocation Map, which includes calculations for each county in the United States, can be found here: <https://allocationmap.iclaimsonline.com/>.<sup>2</sup> Following the original regional allocation percentages calculated using the Negotiation Class Allocation Model, the regional allocation percentages will be recalculated every three years based on the following metrics: (1) number of fatal opioid overdoses within the Region; (2) non-addiction treatment morphine milligram equivalents (MME) shipped into the Region; and (3) addiction treatment MME shipped into the Region.

**We recommend that you agree to be bound by the MOU, which has the unanimous support of attorneys representing all of the Georgia litigating local government entities, and agree to participate in the National Distributor and J&J Settlements for the following reasons:**

1. Maximize your recovery. The National Distributor and J&J Settlements are dependent on levels of participation by states and local government entities. Your participation is critical to these settlements becoming effective. Further, the incentives built into the settlements reward higher rates of participation with accelerated and larger payments. We believe that the settlements and the MOU are the best way to maximize the recovery for the State of Georgia, you, and all of the Georgia litigating local government entities from the Settling Defendants.

2. You do not want to be on the outside looking in. The National Distributor and J&J Settlements have the support of the Plaintiffs' Executive Committee, the MDL Judge, and all of the attorneys representing Georgia litigating local government entities, and we expect that all litigating local government entities will elect to participate in the settlements, as they did when the Negotiation Class was an available option in 2019. Being one of the few local government entities that does not participate in the settlements may result in your claims being overlooked or ignored by the Settling Defendants, significantly delay or eliminate the opportunity for pre-trial resolution of your claims against the Settling Defendants, and risk your claims being subject to state legislated litigation bars or additional bankruptcies.

---

<sup>2</sup> As you recall, you previously agreed to the Negotiation Class Allocation Model when you opted to join the Negotiation Class in 2019. Although certification of the Negotiation Class was reversed by the Sixth Circuit, and the Negotiation Class is no longer being used as a settlement vehicle, the Negotiation Class Allocation Model is still being utilized to allocate settlement funds.

3. Reduce your workload. All non-trial track cases in the MDL, including your case, have been stayed. Accordingly, your involvement in this litigation has largely been your cooperation in the Plaintiff Fact Sheet process and you have not had to devote significant time to fact discovery or expert hiring and discovery. However, if you decide not to participate in the National Distributor and J&J Settlements, the Court has ordered that the stay of your case be partially lifted – the “Non-Participating Subdivision” case management order partially lifts the MDL stay for subdivisions who decline to participate in the settlements and sets deadlines for completing updated Plaintiff Fact Sheets, producing documents, identifying suspicious orders, identifying experts, and providing a detailed explanation of the damages, abatement, and other relief sought. (Doc. 3795). The Court’s order sends a strong message to local government entities that don’t participate in the settlements. You should expect to devote hundreds of hours to discovery, document production, experts, depositions, and damages calculations next year if the stay of your case is partially lifted. Consider whether this is feasible for you.

4. Attorneys’ Fees and Costs. Under the National Distributor and J&J Settlements, attorneys can seek fees from a separate Contingency Fee Fund, which will be administered by a Fee Panel, if they waive their contingency fee agreements with their clients. If attorneys seek to enforce their contingency fee agreements, their fees will be capped at 15%. (Doc. 3814). The intent of the Contingency Fee Fund is to maximize the recovery of participating states and local governments. Assuming the settlements go into effect, and you participate in the settlements, we intend to seek fees from the Contingency Fee Fund and waive our contingency fee contract.

Under the National Distributor and J&J Settlements, attorneys can also seek reimbursement of litigation costs from a separate Litigating Subdivision Cost Fund, which will be administered by the Cost and Expense Fund Administrator. Like the Contingency Fee Fund, the Litigating Subdivision Cost Fund is intended to maximize the recovery of participating states and local governments. Assuming the settlements go into effect, and you participate in the settlements, we intend to seek reimbursement of the costs associated with your case from the Litigating Subdivision Cost Fund.

At this time, we cannot provide an estimate on the amount of fees or costs that may be awarded given the multiple variables involved, including the level of participation in the settlement agreements, the number of firms that may apply to the funds, and the discretion of the panel/administrator in making any fee or cost awards. However, a detailed discussion of the attorneys’ fees and costs funds set up by the settlement agreements can be found in Exhibit R to the National Distributor and J&J Settlements.

In accordance with Section VII of the MOU, a local fee fund called the Local Government Cost and Fee Fund will also be established for attorneys representing participating Georgia local government entities. The Local Government Cost and Fee Fund is the local fund from which we intend to seek fees and costs for our work. As provided in Section VII, participation in the local fund requires us to waive enforcement of our contingency fee agreements with our clients, seek fees from the national funds discussed above, and not collect more for our work than we would under our contingency fee agreements. Again, at this time, we cannot provide an estimate on the amount of fees or costs that may be awarded from the Local Government Cost and Fee Fund given the multiple variables involved.

We recommend that you agree to be bound by the MOU and participate in the National Distributor and J&J Settlements. For your convenience, we have included a draft resolution for you to agree to be bound by the MOU and participate in the National Distributor and J&J Settlements. The following documents, which are attached as exhibits to the resolution, will need to be executed by a duly-authorized representative:

1. Exhibit A: Acknowledgment and Agreement To Be Bound By Memorandum of Understanding;
2. Exhibit B: Subdivision Distributor Settlement Participation Form; and
3. Exhibit C: Janssen Settlement Participation Form.

Upon receipt of this letter, please advise us of the date of the meeting where the resolution will be considered.

If you agree to be bound by the MOU and participate in the National Distributor and J&J Settlements, please send us a copy of the resolution and executed Exhibits A, B, and C by December 8, 2021. It is critical that we receive these documents by December 8, 2021 because the State of Georgia will not join the National Distributor and J&J Settlements until it receives acknowledgments from all of the Georgia litigating local government entities. If the State of Georgia does not join the settlements, Georgia local government entities will not have the option to participate in the \$26 billion National Distributor and J&J Settlements.

If you do not want to be bound by the MOU, and do not intend to participate in the National Distributor and J&J Settlements, you must contact Madison Wigley at [mwigley@brinson-askew.com](mailto:mwigley@brinson-askew.com) or 706-291-8853 by November 22, 2021.

If you have questions, please feel free to contact Madison Wigley.

Kind regards.

Very truly yours,



J. ANDERSON DAVIS

JAD/mrw  
Enclosure



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 12

---

SUBJECT: ORDINANCE AMENDMENT- WATER/SEWER RATE DISCOUNT FOR SENIOR CITIZENS

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # NA

Funds Available from:      Annual Budget      Capital Budget Other     

Budget Amendment Request from Reserve:      Enterprise Fund      General Fund

---

PURPOSE FOR REQUEST: **SECOND READING AND VOTE**

AN ORDINANCE OF THE CITY OF DAWSONVILLE, GEORGIA, TO PROVIDE FOR APPLICATION OF RATES TO CUSTOMER ACCOUNTS; TO PROVIDE FOR DISCOUNTS IN SPECIFICALLY APPROVED CIRCUMSTANCES; TO PROVIDE FOR METHODOLOGY FOR DETERMINING APPROVAL OF DISCOUNT; TO PROVIDE FOR SEVERABILITY; TO PROVIDE FOR AN EFFECTIVE DATE; AND FOR OTHER PURPOSES. (FIRST READING: NOVEMBER 1, 2021; SECOND READING AND CONSIDERATION TO ADOPT: NOVEMBER 15, 2021)

---

HISTORY/ FACTS / ISSUES:

- RECOMMENDATION TO UPDATE THE EXISTING ORDINANCE WERE HEARD AT THE 10/18/2021 MEETING; COUNCIL VOTED TO PROCEED
- LEGAL DEVELOPED ORDINANCE TO INCORPORATE THE CHANGES

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Bob Bolz, City Manager

**AN ORDINANCE OF THE CITY OF DAWSONVILLE, GEORGIA, TO PROVIDE FOR APPLICATION OF RATES TO CUSTOMER ACCOUNTS; TO PROVIDE FOR DISCOUNTS IN SPECIFICALLY APPROVED CIRCUMSTANCES; TO PROVIDE FOR METHODOLOGY FOR DETERMINING APPROVAL OF DISCOUNT; TO PROVIDE FOR SEVERABILITY; TO PROVIDE FOR AN EFFECTIVE DATE; AND FOR OTHER PURPOSES.**

**ORDINANCE NUMBER 04-2021**

**WHEREAS**, the City of Dawsonville Georgia operates a water and sewer utility system for which customers pay monthly fees in exchange for services provided;

**WHEREAS**, the City of Dawsonville recognizes that the provision of water and sewer service is a vital function to promote the health, prosperity, safety and general welfare of the City of Dawsonville and its citizens;

**WHEREAS**, the City of Dawsonville has been generally able to provide water and waste water service at lower rates than other providers of similar services within the geographical limits of Dawson County, Georgia;

**WHEREAS**, the City of Dawsonville is nevertheless open to exploring avenues for making this vital service more affordable to persons whose financial situation make even the City of Dawsonville's reasonable rates a fiscal challenge;

**WHEREAS**, it is often senior citizens living on fixed incomes who struggle with paying for water and sewer service even at the reasonable rates charged by the City of Dawsonville;

**AND WHEREAS**, part of providing more affordable rates and service to persons is making sure that the persons receiving the rates are entitled to them, while asking those who are able, to pay the normally applicable highly competitive rates.

**NOW THEREFORE**, premises considered, the Council for the City of Dawsonville hereby ordains as follows:

**Section 1.**

Chapter 14, Article II, Section 14.22 of the Code of Ordinances for the City of Dawsonville is hereby deleted in its entirety, and in its place is inserted a new Section 14.22 which shall read as follows:

**Sec. 14-22. Rate schedule.**



- (a) All water furnished by the City of Dawsonville to users or property situated within or without the corporate limits shall be metered and computed monthly and paid for at the rates set forth in section 2-110 of this Code.
- (b) All sewer service furnished by the City of Dawsonville to users or property situated within or without the corporate limits shall be computed monthly and paid at the rates set forth in section 2-110 of this Code.
- (c) Upon the approval of the utilities director for the City of Dawsonville, individuals and entities may purchase water in bulk from the city at a rate set out in section 2-110 of this Code.
- (d) Upon annual application to the city clerk, individuals may be eligible to receive an annual exclusion of 15% from the applicable rates as set forth in section 2-110 of this Code for water and sewer service furnished by the City of Dawsonville to property situated within or without the corporate limits if the applicant meets the following requirements:
  - 1. The applicant is age 65 or older at the time of application with the city clerk;
  - 2. The applicant's household has an annual gross income equal to or less than \$25,000.00;
  - 3. The applicant is the record owner or lessee of the property to be serviced; and
  - 4. The application is signed by the applicant and contains an affirmation by the applicant that the information contained in the application and all materials submitted with it are true and correct to the actual knowledge of the applicant.
- (e) Applications for annual exclusions under subsection (d) hereinabove shall be filed annually and, upon application, the applicant's qualification for the annual exclusion must be demonstrated by tendering to the city clerk the following, all of which shall be returned to the applicant after inspection and review by the clerk:
  - 1. A valid Georgia driver's license, birth certificate, passport or other government issued identification card demonstrating the applicant's date of birth, and
  - 2. A recorded deed or executed lease showing the applicant's right to possession of the property to be serviced with water and sewer by the City of Dawsonville;
  - 3. Financial information in compliance with the following:
    - a. A tax return or returns for the period of filing immediately preceding the submission of the application to the city clerk, which application must include all schedules and forms submitted as part of the tax return(s) and which must cover all household income for the property being serviced; OR,
    - b. In the event the applicant's household has total income of less than the amount required to file a tax return for the period in question, a statement from the Social Security Administration setting forth the total income received by the applicant and any other person residing therein, in the form of social security payments, which payments shall total less than the threshold for filing a tax return.
- (f) All applications for renewal of annual exclusions provided for in subsection (d) hereinabove shall be submitted from May 1 through and including June 30 of each successive calendar year and if not timely renewed, the exclusion shall lapse on June 30.

## **Section 2. Severability**

If any provision of this Ordinance or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications

of the Ordinance which may be given effect without the invalid provision or application, and to this end the provisions of this Ordinance are declared severable.

**Section 3. Repealer and Restatement.**

All ordinances and resolutions and parts thereof in conflict herewith are repealed. However, to the extent not in conflict, all remaining ordinances, resolutions, or parts thereof shall not be amended or repealed and shall remain in full force and effect, except as expressly stated in this ordinance.

**Section 4. Effective Date.**

This ordinance shall take effect and be in force from and after its adoption.

**SO ADOPTED** this \_\_\_\_ day of \_\_\_\_\_, 2021.

\_\_\_\_\_  
Mike Eason  
Mayor

Attested: \_\_\_\_\_ (seal)  
Beverly Banister  
City Clerk

\_\_\_\_\_  
Caleb Phillips  
Council Member

\_\_\_\_\_  
Mark French  
Council Member

\_\_\_\_\_  
John Walden  
Council Member

\_\_\_\_\_  
William Illg  
Council Member



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 13

---

SUBJECT: **ORDINANCE AMENDMENT- STORMWATER MANAGEMENT**

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # NA

Funds Available from:      Annual Budget      Capital Budget      Other     

Budget Amendment Request from Reserve:      Enterprise Fund      General Fund

---

PURPOSE FOR REQUEST: **SECOND READING AND VOTE**

**AN ORDINANCE TO REGULATE POST DEVELOPMENT STORMWATER MANAGEMENT, TO PROVIDE FOR RESPONSIBILITY FOR MAINTENANCE OF FACILITIES, TO PROVIDE FOR PENALTIES, TO PROVIDE FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES (FIRST READING: NOVEMBER 1, 2021; SECOND READING AND CONSIDERATION TO ADOPT: NOVEMBER 15, 2021)**

---

HISTORY/ FACTS / ISSUES:

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: David Picklesimer, Planning Director

Subject Matter: Stormwater Management  
Date of First Reading: November 1, 2021  
Date of Second Reading: November 15, 2021  
Date of Adoption:

**AN ORDINANCE TO REGULATE POST DEVELOPMENT STORMWATER MANAGEMENT, TO PROVIDE FOR RESPONSIBILITY FOR MAINTENANCE OF FACILITIES, TO PROVIDE FOR PENALTIES, TO PROVIDE FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES**

**ORDINANCE NUMBER 05-2021**

WHEREAS the City of Dawsonville has previously adopted an ordinance to regulate stormwater in and around the City of Dawsonville;

WHEREAS, the continued purpose of the City of Dawsonville stormwater ordinance is to ameliorate the impacts of post-development stormwater runoff, through the regulation of quality and quantity through both structural and non-structural measures;

WHEREAS, structural measures involving stormwater runoff require, from time to time, maintenance to ensure they remain operational and effective for their intended purpose;

AND WHEREAS, the responsibility for the periodic maintenance would be properly borne by the parties contributing stormwater to the infrastructure in need of maintenance.

NOW, THEREFORE, be it ORDAINED by the Mayor and City Council of the City of Dawsonville, and it is hereby enacted by the authority of the same:

Section 1. Definitions: the definition of the term “Person” is deleted in its entirety from Section 107-41, and in its place is inserted the following new definition of the term “Person.”

*Person* means, except to the extent exempted from this chapter, any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, city, county or other political subdivision of the state, any interstate body or any other legal entity, in the singular or in the plural as the case may be under this Code.

Section 2. Maintenance responsibility: Section 107-191 of the Code of the City of Dawsonville is hereby deleted in its entirety, and in its place is inserted the following language which shall form a new Section 107-191:

**§ 107-191. Maintenance Responsibility**

- (a) Except as provided below, the owner of the property on which work has been done pursuant to this chapter for private stormwater management facilities, regional stormwater facilities, and stormwater BMPs, or any other person or

agent in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and sedimentation controls, and other protective devices. Such repairs or restoration and maintenance shall be in accordance with the approved inspection and maintenance agreement and covenant.

- (b) If the owner of the stormwater management facility, regional stormwater facility, or stormwater BMP is an owner's association, unit owners' association, or homeowners' association, the owner shall provide the city a copy of the association's recorded declaration. The declaration must provide:
1. That the facility or BMP is part of the common elements and shall be subject to the inspection and maintenance agreement and covenant;
  2. That membership in the association shall be mandatory and automatic for all unit owners or homeowners of the development and their successors;
  3. That the association shall have lien authority to ensure the collection of dues from all members;
  4. That the requirements of the inspection and maintenance agreement and covenant shall receive the highest priority for expenditures by the association except for any other expenditures which are required by law to have a higher priority;
  5. That a separate fund shall be maintained by the association for the routine maintenance, reconstruction and repair of the facilities and/or BMPs, separate from all other funds of the association; that it shall be kept in an account insured by the FDIC or by another entity acceptable to the city;
  6. That the routine maintenance, reconstruction, and repair fund shall contain at all times the dollar amount reasonably determined from time to time by city to be adequate to pay for the probable reconstruction and repair cost (but not routine maintenance cost) for a three-year period;
  7. That, to the extent permitted by law, the association shall not enter into voluntary dissolution unless the facilities and/or BMPs are transferred to a successor owner.
- (c) The city, in lieu of an inspection and maintenance agreement and covenant, may accept dedication of any existing or future stormwater management facility or BMP for maintenance, provided such facility or BMP meets all the requirements of this chapter, is in proper working order at the time of dedication, and includes adequate and perpetual access and sufficient area for inspection and regular maintenance. Such adequate and perpetual access shall be accomplished by granting of an easement to the city or through fee simple dedication to the city.
- (d) Stormwater management facilities and practices included in a stormwater management plan which are subject to an inspection and maintenance agreement and covenant must undergo ongoing inspections to document maintenance and repair needs and ensure compliance with the requirements of

the agreement and covenant, the stormwater management plan, and this chapter.

- (e) In the event that a stormwater detention facility is located in a residential development which development does not have an owner's association, unit owners' association, or homeowners' association which is responsible for periodic maintenance of the facility, then and in that event the person, persons or owners, whose properties contribute stormwater runoff to the detention facility, shall bear responsibility for the said periodic maintenance required to keep the detention facility working properly as determined by the City.

Section 3. Failure to Maintain: Section 107-195 of the Code of the City of Dawsonville is hereby deleted in its entirety, and in its place the following language is inserted as a new Section 107-195.

**§ 107-195 Failure to Maintain**

If a responsible person fails or refuses to meet the requirements of this chapter and/or the inspection and maintenance agreement and covenant, the City, after 30 days written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours-notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work to place the facility or practice in proper working condition. The City may assess the parties responsible for maintenance of the facility penalties as described in § 107-240, or may assess for the cost of repair work which shall be a lien on the property, and may be collected in any manner allowed by law, including but not limited to the manner in which liens for taxes are collected.

Section 4. All Ordinances or parts of ordinances in conflict with this ordinance are hereby repealed.

Section 5. This ordinance shall become effective upon adoption, the public good demanding the same.

SO ORDAINED THIS \_\_\_ DAY OF \_\_\_\_\_, 2021.

\_\_\_\_\_  
Mike Eason, Mayor

\_\_\_\_\_  
Caleb Phillips, Council Member Post 1

\_\_\_\_\_  
William Illg, Council Member, Post 2

\_\_\_\_\_  
John Walden, Council Member Post 3

\_\_\_\_\_  
Mark French, Council Member Post 4

DRAFT



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 14

---

SUBJECT: ORDINANCE AMENDMENT – FEE SCHEDULE

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # NA

Funds Available from:      Annual Budget      Capital Budget      Other     

Budget Amendment Request from Reserve:      Enterprise Fund      General Fund

---

PURPOSE FOR REQUEST: **FIRST READING**

**AN ORDINANCE TO REPEAL AND REPLACE PORTIONS OF THE EXISTING FEE SCHEDULE AND PROVIDE A NEW FEE SCHEDULE FOR UTILITIES, GARBAGE, BUILDINGS AND BUILDING REGULATIONS, AND PLANNING AND ZONING; AND FOR OTHER PURPOSES. (FIRST READING: NOVEMBER 15, 2021; SECOND READING AND CONSIDERATION TO ADOPT: DECEMBER 6, 2021)**

---

HISTORY/ FACTS / ISSUES:

- **RECOMMENDATION TO UPDATE THE EXISTING FEE SCHEDULE ORDINANCE WERE HEARD AT THE 09/20/2021 AND 10/04/2021 MEETING; COUNCIL VOTED TO PROCEED**
- **LEGAL DEVELOPED ORDINANCE TO INCORPORATE THE CHANGES**
- **EFFECTIVE DATE: 01/01/2022**

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: David Picklesimer, Planning Director and Robin Gazaway, Finance Administrator



Subject Matter: Fee Schedule, Sec. 2-110  
Date of First Reading: November 15, 2021  
Date of Second Reading: December 6, 2021  
Date of Adoption:  
Effective Date: January 1, 2022

**AN ORDINANCE TO REPEAL AND REPLACE PORTIONS OF THE EXISTING FEE SCHEDULE AND PROVIDE A NEW FEE SCHEDULE FOR UTILITIES, GARBAGE, BUILDINGS AND BUILDING REGULATIONS, AND PLANNING AND ZONING; AND FOR OTHER PURPOSES.**

**ORDINANCE NUMBER 06-2021**

WHEREAS, the Mayor and Council of the City of Dawsonville find that the adoption of a partially revised fee schedule that is consistent with current ordinances and needs of the City to be in the best interest of the citizens of the City of Dawsonville;

WHEREAS, the revision of the fee schedule will make more effective the operation of the government of the City of Dawsonville; and

WHEREAS, the Mayor and Council desire to adopt such fee schedule amendment; and

WHEREAS, this Ordinance is necessary for the purposes of promoting the health, safety, morals, convenience, order, prosperity and the general welfare of the City of Dawsonville.

**NOW, THEREFORE, THE COUNCIL OF THE CITY OF DAWSONVILLE HEREBY ORDAINS AS FOLLOWS:**

**SECTION 1.**

Chapter 2, Article II of the Code of the City of Dawsonville, Georgia, is hereby amended by repealing only the following subsections of section 2-110, and replacing them with new subsections of section 2-110 as indicated hereinbelow:

**Sec. 2-110. – Fee Schedule.**

The fees or charges provided for or required by the below listed sections shall be as shown below:

**A. (7) UTILITIES (CHAPTER 14):**

- A. Water/sewer fees. "+" indicates that the cost is the amount listed plus the actual cost of material and labor expended by the city, if installed by the city.

See, "Exhibit A"

- B. Garbage Fees

See, "Exhibit B"

**B. (8) BUILDINGS AND BUILDING REGULATIONS (CHAPTER 102; APPENDIX A-36):**

See, "Exhibit C"

**C. (9) SIGNS (CHAPTER 105):**

See, "Exhibit C"

**D. (10) SOIL EROSION AND SEDIMENTATION CONTROL (CHAPTER 106):**

See, "Exhibit C"

**E. (11) STORMWATER MANAGEMENT (CHAPTER 107):**

Intentionally deleted.

**F. (12) ZONING, VARIANCE, APPEAL, CHANGE OF ZONING CONDITION AND ANNEXATION REQUESTS (APPENDIX A):**

See, "Exhibit C"

**SECTION 2.**

If any section, provision or clause of any part of this Ordinance shall be declared invalid or unconstitutional, or if the provisions of any part of this Ordinance as applied to any particular situation or set of circumstances shall be declared invalid or unconstitutional, such invalidity shall not be construed to affect the portions of this Ordinance not so held to be invalid, or the application of this Ordinance to other circumstances not so held to be invalid. It is hereby declared as the intent that this Ordinance would have been adopted had such invalid portion not been included herein.

**SECTION 3.**

All Ordinances or parts of ordinances in conflict with this ordinance are hereby repealed.

**SECTION 4.**

This ordinance shall become effective on January 1, 2022, the public good demanding the same.

**SO ADOPTED AND ORDAINED** by the City Council of Dawsonville, Georgia, this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

**MAYOR AND DAWSONVILLE CITY COUNCIL**

By: \_\_\_\_\_  
Mike Eason, Mayor

\_\_\_\_\_  
Caleb Phillips, Council Member Post 1

\_\_\_\_\_  
William Illg, Council Member Post 2

\_\_\_\_\_  
John Walden, Council Member Post 3

\_\_\_\_\_  
Mark French, Council Member Post 4

ATTESTED TO BY:

\_\_\_\_\_  
Beverly A. Banister, City Clerk

**Sec. 2-110. Fee schedule.**

(7) *Utilities (chapter 14):*

- a. Water/sewer fees. "+" indicates that the cost is the amount listed plus the actual cost of material and labor expended by the city, if installed by the city.

14-22(a). Residential water service rates — within corporate limits:	
0—1,500 gallons, minimum (base charge)	\$ <del>21.00</del> 23.10
1,501—5,000, per 1,000 gallons	<del>5.00</del> 5.50
5,001—10,000, per 1,000 gallons	<del>5.25</del> 5.80
>10,000, per 1,000 gallons	<del>5.50</del> 6.05
14-22(a). Commercial/industrial water service rates — within corporate limits:	
0—1,500 gallon users (flat fee)	<del>27.00</del> 29.70
>1,500 gallon users, minimum (base charge)	<del>31.00</del> 34.10
1,501—5,000, per 1,000 gallons	<del>7.00</del> 7.70
5,001—10,000, per 1,000 gallons	<del>7.50</del> 8.25
>10,000, per 1,000 gallons	<del>8.00</del> 8.80
14-22(a). Residential water service rates — outside corporate limits:	
0—1,500 gallons, minimum (base charge)	<del>31.00</del> 34.10
1,501—5,000, per 1,000 gallons	<del>7.00</del> 7.70
5,001—10,000, per 1,000 gallons	<del>7.50</del> 8.25
>10,000, per 1,000 gallons	<del>8.00</del> 8.80
14-22(a). Commercial/industrial water service rates — outside corporate limits:	
0—1,500 gallon users (flat fee)	<del>32.00</del> 35.20
>1,500 gallon users, minimum (base charge)	<del>42.00</del> 46.20
1,501—5,000, per 1,000 gallons	<del>7.00</del> 7.70
5,001—10,000, per 1,000 gallons	<del>7.50</del> 8.25
>10,000, per 1,000 gallons	<del>8.00</del> 8.80
14-22(b). Residential sewer service rates — within corporate limits:	
0—1,500 gallons, minimum (base charge)	<del>25.00</del> 27.50
1,501—5,000, per 1,000 gallons	<del>7.00</del> 7.70
5,001—10,000, per 1,000 gallons	<del>8.00</del> 8.80
>10,000, per 1,000 gallons	<del>9.00</del> 9.90
14-22(b). Commercial/industrial sewer service rates — within corporate limits:	
0—1,500 gallon users (flat fee)	<del>42.00</del> 46.20
>1,500 gallon users, minimum (base charge)	<del>60.00</del> 66.00
1,501—5,000, per 1,000 gallons	<del>8.50</del> 9.35
5,001—10,000, per 1,000 gallons	<del>9.50</del> 10.45
>10,000, per 1,000 gallons	<del>10.50</del> 11.55
14-22(b). Residential sewer service rates — outside corporate limits:	
0—1,500 gallons, minimum (base charge)	<del>37.50</del> 41.25
1,501—5,000, per 1,000 gallons	<del>8.50</del> 9.35
5,001—10,000, per 1,000 gallons	<del>9.50</del> 10.45
>10,000, per 1,000 gallons	<del>10.50</del> 11.55
14-22(b). Commercial/industrial sewer service rates — outside corporate limits:	



0—1,500 gallon users (flat fee)	<del>65.00</del> <u>71.50</u>
>1,500 gallon users, minimum (base charge)	<del>75.00</del> <u>82.50</u>
1,501—5,000, per 1,000 gallons	<del>10.00</del> <u>11.00</u>
5,001—10,000, per 1,000 gallons	<del>11.00</del> <u>12.10</u>
>10,000, per 1,000 gallons	<del>12.00</del> <u>13.20</u>
14-22(c). Bulk water purchase from city water plant by truck or portable device	
Per every 1,000 gallons, or any portion thereof	<del>10.00</del> <u>11.00</u>
14-23(a). Water service connection fees (times the number of connections desired):	
¾ inch (irrigation only)	<del>2,000.00</del> <u>2,500.00</u>
¾ inch, (only be available for residential purposes appropriate to the anticipated usage)	<del>3,500.00</del> <u>4,000.00</u>
1 inch (irrigation only)	<del>4,000.00</del> <u>4,500.00</u>
1 inch	<del>5,000.00</del> <u>5,500.00</u>
1½ inches	<del>8,000.00</del> + <u>8,500.00</u>
2 inches	<del>12,500.00</del> + <u>13,000.00</u>
3 inches	<del>25,000.00</del> + <u>25,500.00</u>
4 inches	<del>40,000.00</del> + <u>40,500.00</u>
6 inches	<del>60,000.00</del> + <u>60,500.00</u>
8 inches	<del>90,000.00</del> <u>90,500.00</u>
2" through 8" (fire line only to be used in the event of a firefighting/fire suppression; unauthorized use requires payment of standard connection fee)	<del>3,500.00</del> <u>4,000</u>
14-23(b). Sewer service connection fees (times the number of connections desired):	
¾ inch, (only be available for residential purposes appropriate to the anticipated usage)	<del>4,750.00</del> <u>5,250.00</u>
1 inch	<del>6,750.00</del> <u>7,250.00</u>
1½ inches	<del>9,500.00</del> <u>10,000.00</u>
2 inches	<del>17,500.00</del> <u>18,000.00</u>
3 inches	<del>30,000.00</del> <u>30,500.00</u>
4 inches	<del>50,000.00</del> <u>50,500.00</u>
6 inches	<del>75,000.00</del> <u>75,500.00</u>
8 inches	<del>105,000.00</del> <u>105,500.00</u>

14-23(c). First time reconnect within a 24-month period, in addition to any outstanding bills, late fees, and/or interest charges	50.00
14-23(c). Second time reconnect within a 24-month period, in addition to any outstanding bills, late fees, and/or interest charges	100.00
14-23(c). Third time reconnect within a 24-month period, in addition to any outstanding bills, late fees, and/or interest charges	200.00
14-23(c). Fourth and subsequent violation within a 24-month period, in addition to any outstanding bills, late fees, and/or interest charges, per violation, + \$100.00 per each additional violation above third violation	200.00
14-23.1(a). Residential security deposit for applicant owning/renting the property to be serviced	150.00
14-23.1(b). Commercial security deposit for applicant with a meter size ¾" and 1" meter (amount doubles if business has 10 or more employees)	150.00
14-23.1(b). Commercial security deposit for applicant with a meter size 1½", 2" and 3" meter (amount doubles if business has 10 or more employees)	300.00
14-23.1(b). Commercial security deposit for applicant with a meter size 4" and above (amount doubles if business has 10 or more employees)	500.00
14-23.1(c). Administrative start-up fee	15.00
14-25(a)(l). Late fee for non-payment of water, sewer, and/or garbage bill within 20 days of bill date	10.00

DRAFT

**Sec. 2-110. Fee schedule.**

The fees or charges provided for or required by the below listed sections shall be as shown below:

b. Garbage fees:

Garbage service regulatory fees within city limits:	
14-134(a)(1). For licenses obtained prior to July 1 in any given calendar year, per customer	\$ 6.00
14-134(a)(2). For licenses obtained after July 1 in any given calendar year, per customer	3.00
License renewals and garbage deposits:	
14-134(b). Renewal fee	6.00
14-142. Garbage security deposit	<del>25.00</del> <u>60.00</u>

DRAFT

(8) Buildings and building regulations (chapter 102; appendix A-36):

a. Residential/mobile home building permits.

	Current	Proposed
<b>Residential building permit</b> <del>Plan</del> review fee	\$50.00	
<b>Residential building permit inspection fee</b>		500.00
Covered space building permit, per square foot	<del>0.20</del>	0.35
Uncovered space building permit, per square foot	<del>0.10</del>	0.20
Residential re-inspection fee	60.00	
Residential minimum permit fee	<del>60.00</del>	100.00
<b>Residential electrical/plumbing/HVAC mechanicals, per trade area when purchased with a building permit:</b>		
<del>0—1,000 square feet, each</del>	<del>30.00</del>	
<del>1,001—2,000 square feet, each</del>	40.00	
<del>2,001—3,000 square feet, each</del>	50.00	
<del>3,001—4,000 square feet, each</del>	60.00	
<del>4,001 square feet and up + \$10.00 for every additional 1,000 sq. ft., each</del>	60.00	
Residential certificate of occupancy fee	40.00	50.00
<b>Generator permit inspection fee</b>		100.00
<b>Accessory building permit inspection fee</b>		200.00

Sec. 2-110. - Fee schedule.

Commercial plan review—Building permits:

	Current	Proposed
Commercial development permit fee	200.00	400.00
<del>1<sup>st</sup> site plan review, + \$5.00 per lot</del>	200.00	
<del>2<sup>nd</sup> site plan review, + \$5.00 per lot</del>	100.00	



<b>Commercial</b> building plan review fee	200.00	1,000.00
Covered space building permit, per square foot	0.20	0.35
Uncovered space building permit, per square foot	0.10	0.20
Commercial re-inspection fee	100.00	
Commercial minimum permit fee	100.00	
<b>Commercial electrical/plumbing/HVAC mechanicals, per trade area when purchased with a building permit:</b>		
<del>0—1,000 square feet, each</del>	40.00	
<del>1,001—2,000 square feet, each</del>	50.00	
<del>2,001—3,000 square feet, each</del>	60.00	
<del>3,001—4,000 square feet, each</del>	70.00	
<del>4,001 square feet and up, + \$10.00 for every additional 1,000 sq. ft., each</del>	70.00	
Commercial certificate of occupancy fee	100.00	
<b>Commercial building permit inspection fee</b>		<b>530.00</b>

For required land disturbance permits and statutory fees associated with land disturbing activity, refer to subsection 2-110(10) below.

c. Other permits and fees:

	Current	Proposed
Demolition, flat rate <b>(each structure)</b>	50.00	
<b>Swimming pool permit inspection fee</b>		<b>325.00</b>
Swimming pool (in-ground/private), per sq. ft.	0.20	0.35
Swimming pool deck (aboveground/private), per sq. ft.	0.10	0.20
Moved structures, flat rate	200.00	

Communication tower (new) permit fee:	500.00	
Communication tower (new) review fee:	200.00	
<b>Minor plat review fee</b>		<b>50.00</b>
Communication tower (co-locate and repair), plus mechanical fees	250.00	
Stop work order administrative fee	100.00	
<b>Stop work per day fine (residential and commercial)</b>		<b>50.00</b>
Work commencing before permit issuance, plus required permit fee	100% of usual permit fee	
<b>Retaining wall &gt; 6 ft building permit</b>		<b>250.00</b>
<b>Retaining wall &gt;6 ft plan review fee</b>		<b>750.00</b>
<b>Retaining wall &gt; 6 ft inspection fee</b>		<b>200.00</b>
<b>Residential building, commercial building, commercial development, residential development, swimming pool permit renewal fee</b>		<b>1<sup>st</sup> 200.00</b> <b>2<sup>nd</sup> 400.00</b>

(9) *Signs (chapter 105):*

105-5(h). Sign permit fee	100.00
105-8(c). Sign variance application fee	300.00
105-40(b). Temporary sign permit fee, per month	30.00
105-41(m). Banner over public property fee, per month, in addition to sign permit fee	50.00
105-43(c). Banner in commercial district, per display period, in addition to sign permit fee	30.00
<b>Sign permit inspection fee</b>	<b>100.00</b>

(10) *Soil erosion and sedimentation control / **Land development** (chapter 106):*



<del>106-5(b)(3). Residential land disturbance permit fee, + statutory fee per acre</del>	<del>\$200.00</del>
106-5(b)(3). Commercial land disturbance permit fee + statutory fee per acre	400.00
Residential land disturbing activity statutory fee, disturbing less than one acre	No charge
106-5(b)(4). Land disturbing activity statutory fee ( <b>residential or commercial</b> ), per acre of land-disrupting activity or any part thereof <del>(\$40.00 to city and \$40.00 to state)</del>	<b>40.00 RES</b> <b>40.00 COM</b>
Residential development preliminary and final plat plan review fee of \$40.00 per lot for developments less than 50 lots <b>and minimum fee \$1,000.00</b>	
Residential development preliminary and final plat plan review fee of \$25.00 per lot for developments greater than 50 lots	
Commercial civil development plan review fee	\$1,000.00
<b>Commercial as built civil development plan review</b>	<b>1,000.00</b>
<b>Commercial land development permit inspection fee</b>	<b>500.00</b>
<b>Residential development preliminary plat development fee \$20.00 per lot with \$200.00 minimum</b>	
<b>Residential development final plat development fee \$10.00 per lot with \$100.00 minimum</b>	
<del>Residential land disturbance statutory fee \$40.00 per disturbed acre</del>	<del>40.00</del>
<b>Residential land development permit inspection fee</b>	<b>500.00</b>

(11) *Stormwater management (chapter 107):*

<del>107-57. Stormwater management permit application and plan review fee, per disturbed acre</del>	<del>\$10.00</del>
---	--------------------

(12) *Zoning, variance, appeal, change of zoning condition, certificate of appropriateness, site plan, and annexation requests (appendix A),*

a. The fee for all rezoning applications regardless of zoning category is the base amount set forth in the table below plus \$50.00 per acre for each acre or part of an acre beyond one acre in the subject tract with a maximum fee of \$5,000.00 regardless of the number of acres involved.

b. Any required public notices to adjoining landowners shall be charged to the applicant at the current U.S. Postal Service rate in addition to the fees stated below.

Current      Proposed

Zoning Action Requested:	Current	Proposed
AP	\$250.00	
R-1	250.00	
R-2	250.00	
R-3	350.00	
R-3R	350.00	
R-6	350.00	
RHMT	250.00	
PUD	500.00	
TB	500.00	
PCS	350.00	
O	500.00	
CBD	500.00	
NB	500.00	
LI	500.00	
HB	500.00	
CIR	500.00	

INST	500.00	
RA	500.00	
Variance, per ordinance amendment	300.00	
Conditional use permit	300.00	
Appeals and change of zoning conditions	500.00	
Postponement, per occurrence	300.00	
Annexation, plus applicable rezoning fee	250.00	
Certificate of appropriateness	300.00	
Site Plan	400.00	
Administrative fee, plus cost of all mailings	100.00	



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 15

---

SUBJECT: **PROPOSED IGA WITH DAWSON COUNTY – RIGHT OF WAY MOWING**

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO REVIEW AND DISCUSS INTERGOVERNMENTAL AGREEMENT WITH DAWSON COUNTY REGARDING THE MOWING OF RIGHT OF WAYS**

---

HISTORY/ FACTS / ISSUES:

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Bob Bolz, City Manager

**STATE OF GEORGIA  
COUNTY OF DAWSON**

**INTERGOVERNMENTAL AGREEMENT BETWEEN THE CITY OF  
DAWSONVILLE AND DAWSON COUNTY REGARDING  
CROSS-JURISDICTIONAL RIGHT-OF-WAY MOWING**

**THIS AGREEMENT**, effective as of \_\_\_\_\_, 2021, is by and between the **CITY OF DAWSONVILLE**, a Georgia municipal corporation (“City”), and **DAWSON COUNTY**, a political subdivision of the State of Georgia (“County”). Individually, the City and the County may be referred to herein as a “Party,” and, collectively, as the “Parties.”

**WHEREAS**, pursuant to Article IX, Section III, Paragraph I of the Constitution of the State of Georgia, the City and the County are authorized to contract with each other for a period not exceeding 50 years for the provision of services, or for the joint or separate use of facilities or equipment, so long as such contracts deal with activities, services, or facilities which both the City and the County are authorized by law to undertake or provide; and

**WHEREAS**, pursuant to Article IX, Section II, Paragraph III of the Constitution of the State of Georgia, the City and the County are authorized, jointly and severally, to exercise powers and provide services related maintenance of streets and roads constructed by counties and municipalities or any combination thereof; and

**WHEREAS**, pursuant to Article IX, Section II, Paragraph III of the Constitution of the State of Georgia, the County is prohibited from exercising these powers or providing any such service inside the boundaries of the City except by contract with the City; and

**WHEREAS**, pursuant to O.C.G.A. § 32-4-112(b), the City is authorized to contract with the County for the maintenance of a public road within the limits of the City; and

**WHEREAS**, pursuant to O.C.G.A. § 32-4-62, the County is authorized to contract with the City for work on any public road system within their jurisdictions; and

**WHEREAS**, the City and the County desire to coordinate and consolidate efforts related to right-of-way maintenance (i.e., mowing) of certain streets or roads that are within both the City and the County jurisdiction; and

**WHEREAS**, the Parties agree that coordination of maintenance efforts for cross-jurisdictional street and roads provides cost savings and efficiencies that are in the best interest of the citizens of both the City and the County.

**NOW THEREFORE**, for and in consideration of the mutual promises, the public purposes, and the acknowledgment and agreements contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties mutually agree to the above recitals and as follows:

1. **Agreement.** The Parties agree as follows:
  - a. The County will mow the following roads in their entirety:
    - i. Gold Mine Road,
    - ii. Cleve Right Road, and
    - iii. Duck Thurmond Road.
  - b. The County will mow both sides of Howser Mill Road beginning at Calvary Baptist Church (up to the northwest corner of Tax Parcel No. 082 017 002) and terminating at SR 183.
  - c. The City will mow both sides of Howser Mill Road beginning at SR 53 West and terminating at Calvary Baptist Church (through to the northwest corner of Tax Parcel No. 082 017 002).
  - d. The City will mow the following roads in their entirety:
    - i. J.C. Burt Road, and
    - ii. Perimeter Road.
  - e. The City will mow all of the State Routes within the City's jurisdictional boundary.
  - f. The term "mow" as used above shall mean periodic (minimum of 3 times per year) grass mowing maintenance of the right-of-way areas between the paved area and the outside right-of-way boundary lines.
  - g. The term "entirety" as used above shall mean both sides and the full length of a roadway right-of-way.
  - h. Each Party agrees to follow any safety protocols, signage requirements, and traffic control procedures that may apply to the performance of right-of-way mowing.
  - i. Each Party retains the discretion to have its obligations hereunder performed in full or in part by one or more qualified, independent contractors.
  - j. The Parties' agreement to maintain (i.e., mow) certain right-of-way as specified herein shall not impute any obligation for either Party to undertake any other type of roadway or right-of-way maintenance (e.g., trash collection, limb removal, paving, storm water repair, etc.).
  - k. The Parties understand and acknowledge that right-of-way mowing may be inhibited or delayed based on the condition of the roadway (e.g., necessary repair,



debris in the right-of-way) and the responsible Party agrees to properly address and remedy the cause of such delay before such right-of-way may thereafter be mowed.

2. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the State of Georgia. If any action at law or in equity is brought to enforce or interpret the provisions of this Agreement, the rules, regulations, statutes and laws of the State of Georgia will control.
3. **Cooperation.** Each Party shall, at the request of the other, make, execute and deliver or obtain and deliver all instruments and documents and shall do or cause to be done all such other things which either Party may reasonably require to effectuate the provisions and intention of this Agreement.
4. **Authority to Execute.** Each of the individuals executing this Agreement on behalf of his or her respective Party agrees and represents that he or she is authorized to do so and further agrees and represents that this Agreement has been duly passed upon by the required governmental agency or board in accordance with all applicable laws and spread upon the minutes thereof.
5. **Force Majeure.** In case by reason of force majeure, any Party hereto shall be rendered unable, wholly or in part, to carry out its obligations under this Agreement, then if such Party shall give notice and full particulars of such force majeure in writing to the other Party within a reasonable time after occurrence of the event or cause relied on, the obligation of the Party giving such notice, so far as it is affected by such force majeure, shall be suspended during the continuance of the inability then claimed, but for no longer period. Such Party shall endeavor to remove or overcome such inability with all reasonable dispatch. The term "force majeure," as employed herein, shall mean (a) any cause beyond the Party's reasonable control; (b) any act(s) of God; (c) any change in applicable governmental rules or regulations rendering the performance of any portion of this Agreement legally impossible; (d) strikes, lockout(s) or other labor disputes or industrial disturbance(s); (e) any war, hostility, embargo, sabotage, civil disturbance, riot, insurrection, pandemic/epidemic, invasion or act(s) of a public enemy; (f) order(s) of any kind of the Government of the United States or the State of Georgia or any civil or military authority; and (g) natural disaster, catastrophe, epidemics, landslides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, or explosions, or breakage or accidents outside the Party's control which prevent performance under this Agreement.
6. **Entire Agreement; Modification; Termination.** This Agreement constitutes the entire agreement between the Parties and supersedes and replaces any and all other agreements, either oral or in writing, between the Parties with respect to the subject matter of this Agreement. No other agreement, statement or promise relating to the subject matter of this Agreement not contained in this Agreement shall be valid or binding. This Agreement may

be modified or amended only by a written document signed by representatives of all Parties with appropriate authorization. This Agreement may be terminated by either Party upon notice to the other as required herein, provided the obligations of the terminating Party as stated above have been completed in full within ninety (90) days prior to the stated termination date.

7. **Waiver.** No failure by either Party to enforce any right or power granted under this Agreement, or to insist upon strict compliance, and no custom or practice of either Party at variance with the terms and conditions of this Agreement shall constitute a general waiver of any future breach or default or affect a Party's right to demand exact and strict compliance with the terms and conditions of this Agreement. Further, no express waiver shall affect any term or condition other than the one specified in such waiver, and that one only for the time and manner specifically stated.
8. **Severability.** Should any provision of this Agreement or application thereof to any person or circumstance be held invalid or unenforceable, the remainder of this Agreement or the application of such provision to any person or circumstance, other than those to which it is held invalid or unenforceable, shall not be affected thereby, and each provision of this Agreement shall be valid and enforceable to the full extent permitted by law.
9. **Agreement Jointly Drafted by the Parties.** Each Party represents that it has reviewed and become familiar with this Agreement and has notified the other Party of any discrepancies, conflicts or errors herein. The Parties agree that, if any ambiguity or question of intent or interpretation arises, this Agreement is to be construed as if the Parties had drafted it jointly, as opposed to being construed against a Party because it was responsible for drafting one or more provisions of the Agreement.
10. **Notices.** All notices, demands or requests required or permitted to be given pursuant to this Agreement shall be in writing and shall be deemed to have been properly given or served and shall be effective on being deposited or placed in the United States mail, postage prepaid and registered or certified with return receipt requested to the addresses appearing below, or when delivered by hand to the addresses indicated below:

If to the County:

Dawson County Board of Commissioners  
Attn: County Manager  
25 Justice Way, Suite 2313  
Dawsonville, Georgia 30534

If to the City:

City of Dawsonville  
Attn: City Manager  
415 Highway 53 East, Suite 100  
Dawsonville, Georgia 30534

(The remainder of this page intentionally left blank.)

(Signature page follows.)

**IN WITNESS WHEREOF**, the Parties hereto, acting by and through their duly authorized officials and officers pursuant to appropriate ordinances and resolutions hereinbefore duly and properly adopted by each, have caused this Agreement to be executed in duplicate counterparts and the official seals of each Party properly affixed, each delivering to the other one of said duplicate counterparts, the day and year first above written.

**CITY OF DAWSONVILLE, GEORGIA**

By: \_\_\_\_\_  
Mike Eason, Mayor

ATTEST:

By: \_\_\_\_\_  
Beverly A. Banister, City Clerk

[CITY SEAL]

**DAWSON COUNTY, GEORGIA**

By: \_\_\_\_\_  
Billy Thurmond, Chairman

ATTEST:

By: \_\_\_\_\_  
Kristen Cloud, County Clerk

[COUNTY SEAL]



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 16

---

SUBJECT: **STANDARD DETAIL UPDATE**

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO REQUEST COUNCIL TO REVIEW AND RECOMMEND ANY CORRECTIONS OF THE  
UPDATED STANDARD DETAILS**

**CONSIDERATION OF APPROVAL AT THE DECEMBER 6, 2021 MEETING**

---

HISTORY/ FACTS / ISSUES:

- **DETAILS LAST UPDATED IN 2018**
  - **SIXTEEN DETAILS ADDED**
  - **TWENTY-ONE DETAILS UPDATED**
- 

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: David Picklesimer, Planning Director

415 Highway 53 E. Suite 100  
Dawsonville, Georgia 30534



(706) 265-3256  
Fax (706) 265-4214  
[www.dawsonville-ga.gov](http://www.dawsonville-ga.gov)

**Date:** 10/25/2021

**To:** Mayor and Council

**Reference:** Standard Details

The Planning and Zoning Department has provided the following pertinent information to help you decide on this request:

1. Planning, Public Works and Water & Sewer Department request approval of the updated and additional details.
2. Following details updated: 1.1, 3.1, 4.1, 6.1, 6.2, 7.1, 10.1, 11.1, 12.1, 12.2, 18.1, 19.1, 21.2, 22.1, 25.1, 25.2, 29.1, 30.1, 31.1, 33.1, 34.1
3. Following details added: 4.2, 5.1, 13.1, 14.1, 16.2, 19.2, 19.3, 21.1, 33.2, 34.2, 35.1, 36.1, 36.2, 38.1, 39.1, 40.1
4. Details last updated in 2018.

Kindest Regards,

  
David Picklesimer  
Planning Director

**STANDARD DETAILS**



**CITY OF DAWSONVILLE, GEORGIA**

# **STANDARD DETAILS**

---

**CITY OF DAWSONVILLE, GEORGIA**  
**415 Highway 53 East**  
**Dawsonville, Georgia 30534**  
**Office: (706) 265- 3256/ Fax: (706) 265- 4214**

---

*Prepared by:*



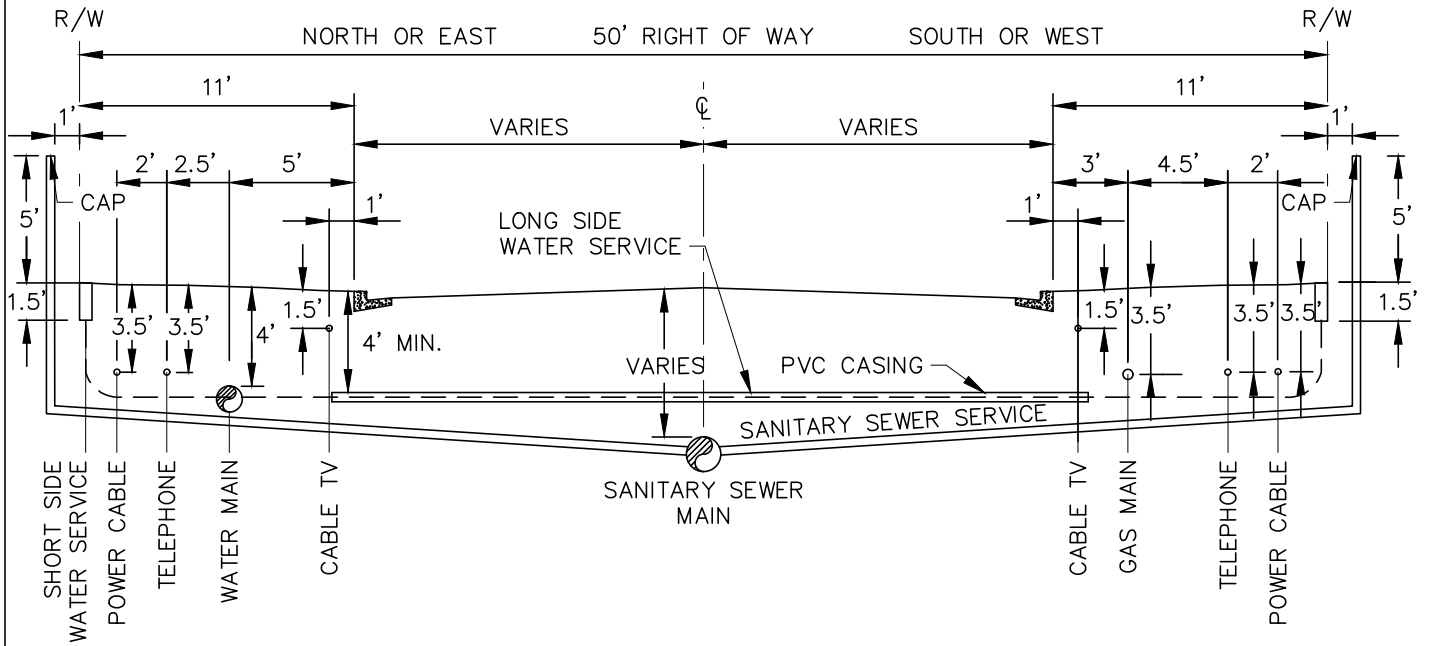
**Adopted:** \_\_\_\_\_

## TABLE OF CONTENTS

- 1.1 Underground Utilities Locations
- 2.1 Typical Ductile Iron Water Pipe Bedding
- 3.1 Pipe Depth at Edge of Pavement
- 4.1 Typical Fire Hydrant Detail
- 4.2 Fire Hydrant Detail (Curbed Street)
- 5.1 Fire Hydrant in Cul-de-Sac
- 6.1 Valve Box Detail
- 6.2 Valve Marker Post
- 6.3 Valve Anchor
- 7.1 Thrust Block Dimensions
- 7.2 Connect to Existing Water Line
- 8.1 Typical Concrete Anchor
- 9.1 Thrust Restraint at Fitting
- 10.1 Long Side Service
- 11.1 Short Side Service
- 12.1 1.5" to 2" Meter
- 12.2 2" RPZ Back Flow Preventer Detail
- 13.1 Water Meter Box 3" and Larger
- 14.1 Fire Meter and Vault
- 15.1 Fire Meter Vault
- 16.1 FDC Vault
- 16.2 Deadman for Plug
- 17.1 Raw Sewage Pump Station Emergency By-Pass Connection
- 18.1 Typical PVC Sewer Pipe Bedding
- 18.2 Typical Ductile Iron Sewer Pipe Bedding
- 19.1 Sewer Lateral Connection
- 19.2 Cleanout
- 19.3 Traffic Rated Cleanout Box
- 20.1 Pipe Collar
- 21.1 Precast Manhole
- 21.2 Typical Drop Manhole Connection Detail
- 21.3 Typical Dog House Manhole Detail
- 22.1 Combination Air/Vacuum Release Valve
- 23.1 Typical Standard C.I. D.I. Manhole Frame and Cover
- 23.2 Typical Vented C.I. D.I. Manhole Frame and Cover
- 23.3 Typical Watertight C.I. D.I. Manhole Frame and Cover
- 24.1 Pier Dimensions and Section
- 25.1 Force Main Connection to Manhole
- 25.2 Force Main Connection to Manhole (Drop Bowl)
- 26.1 Yard Hydrant
- 27.1 Chain Link Fence
- 28.1 Typical Asphalt Replacement
- 29.1 Typical Asphalt to Curb Replacement
- 30.1 Typical Cleanout Assembly
- 31.1 D.I. Pipe and PVC Pipe Connection Detail
- 32.1 Water Line Creek Crossing Detail



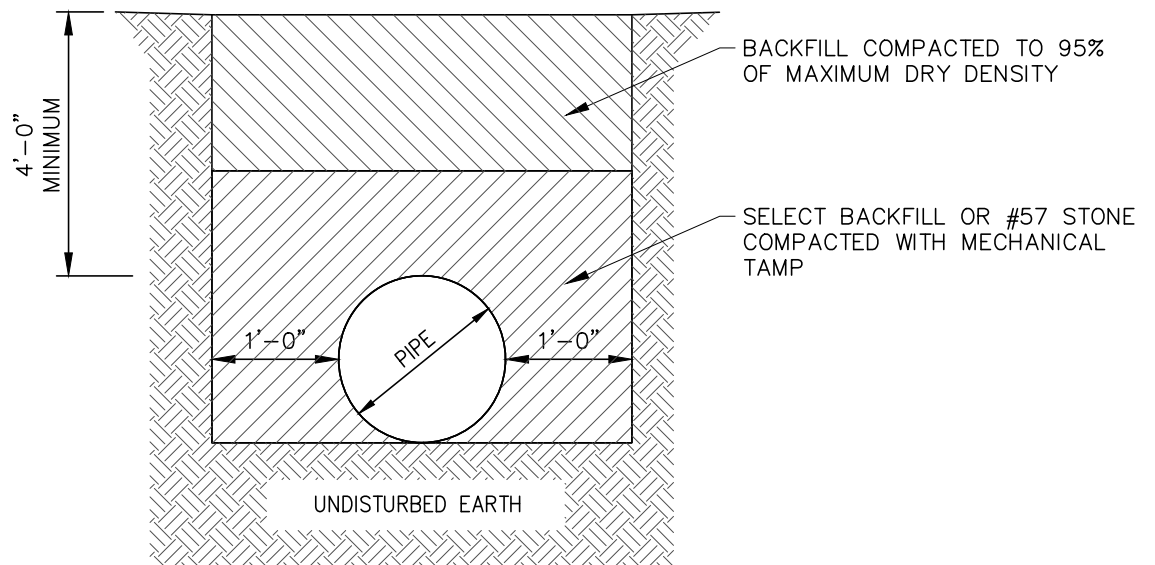
- 32.2 Sewer Line Creek Crossing Detail
- 33.1 Typical Encased Crossing Detail
- 33.2 Grease/Solids/Oil Interceptor
- 34.1 Typical Section Subdivision Road
- 34.2 Typical Road Section
- 35.1 Typical Section of a 5'-0" Sidewalk
- 36.1 Typical Construction Details - Curbing
- 36.2 Street Sign Location & Specification
- 37.1 Ornamental Steel Handrail Detail
- 38.1 Weir Inlet Detail (Pedestal Inlet)
- 39.1 Deceleration Lane
- 40.1 Intersection Sight Distance Requirements



**NOTE:**

1. ON ALL UNCURBED STREET, UTILITY LOCATIONS SHALL BE AT THE SAME DISTANCES FROM EDGE OF PAVEMENT AS SHOWN.
2. NO TREES OR FENCES ALLOWED WITHIN THE ROAD R/W OR UTILITY EASEMENT EXCEPT WHERE REQUIRED BY CITY, COUNTY, OR OTHER GOVERNMENT ORDINANCE.
3. ALL TREES SHALL BE CLEARED AND SHOULDERS GRADED WITHIN 6" OF FINAL GRADE (INCLUDING UTILITY EASEMENT) PRIOR TO THE INSTALLATION OF ANY UTILITIES.
4. PROPERTY CORNER REFERENCE SHALL BE PLACED ON CURB AND GUTTER AND ON 10' OFFSET STAKE.
5. WATER METERS SHALL BE MARKED WITH A BLUE "W" ON CURB AS SOON AS POSSIBLE AFTER INSTALL. SEWER LATERALS SHALL BE MARKED WITH A GREEN "S" ON CURB.
6. DEPTH REQUIREMENTS INDICATE MINIMUM DEPTH AT TIME OF INSTALLATION BELOW CURB LINE.
7. PEDESTALS, TRANSFORMERS AND SECURITY LIGHTS MUST BE OUTSIDE SIDEWALK LOCATIONS.

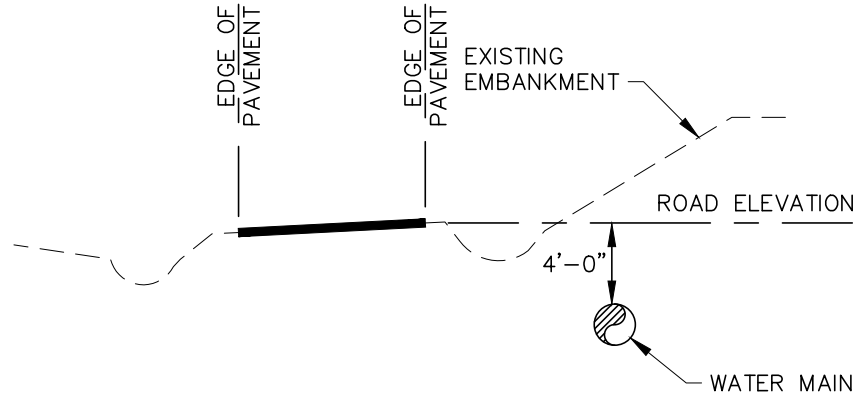
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>UNDERGROUND UTILITIES LOCATIONS</b>	<b>1.1</b>



NOTE:

1. UNSUITABLE SOILS ENCOUNTERED IN BOTTOM OF EXCAVATED TRENCH SHALL BE EXCAVATED & REPLACED WITH #57 STONE.
2. ONLY SUITABLE SOIL SHALL BE USED AS BACKFILL.

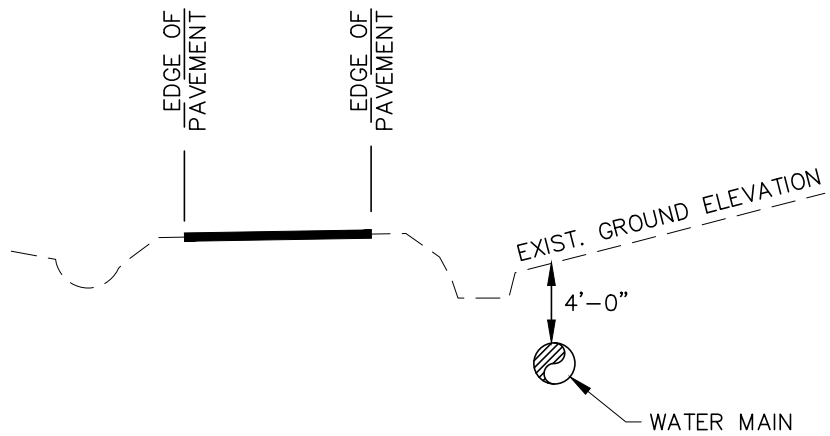
CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TYPICAL DUCTILE IRON WATER PIPE BEDDING	2.1



NOTE:

1. UNLESS OTHERWISE NOTED ON PLANS MINIMUM SOIL COVER ABOVE PIPE IS 4 FEET.
2. PIPE SHALL BE INSTALLED IN THE BACK 5' OF R/W.

WHERE GROUND ELEVATION IS ABOVE ROAD ELEVATION

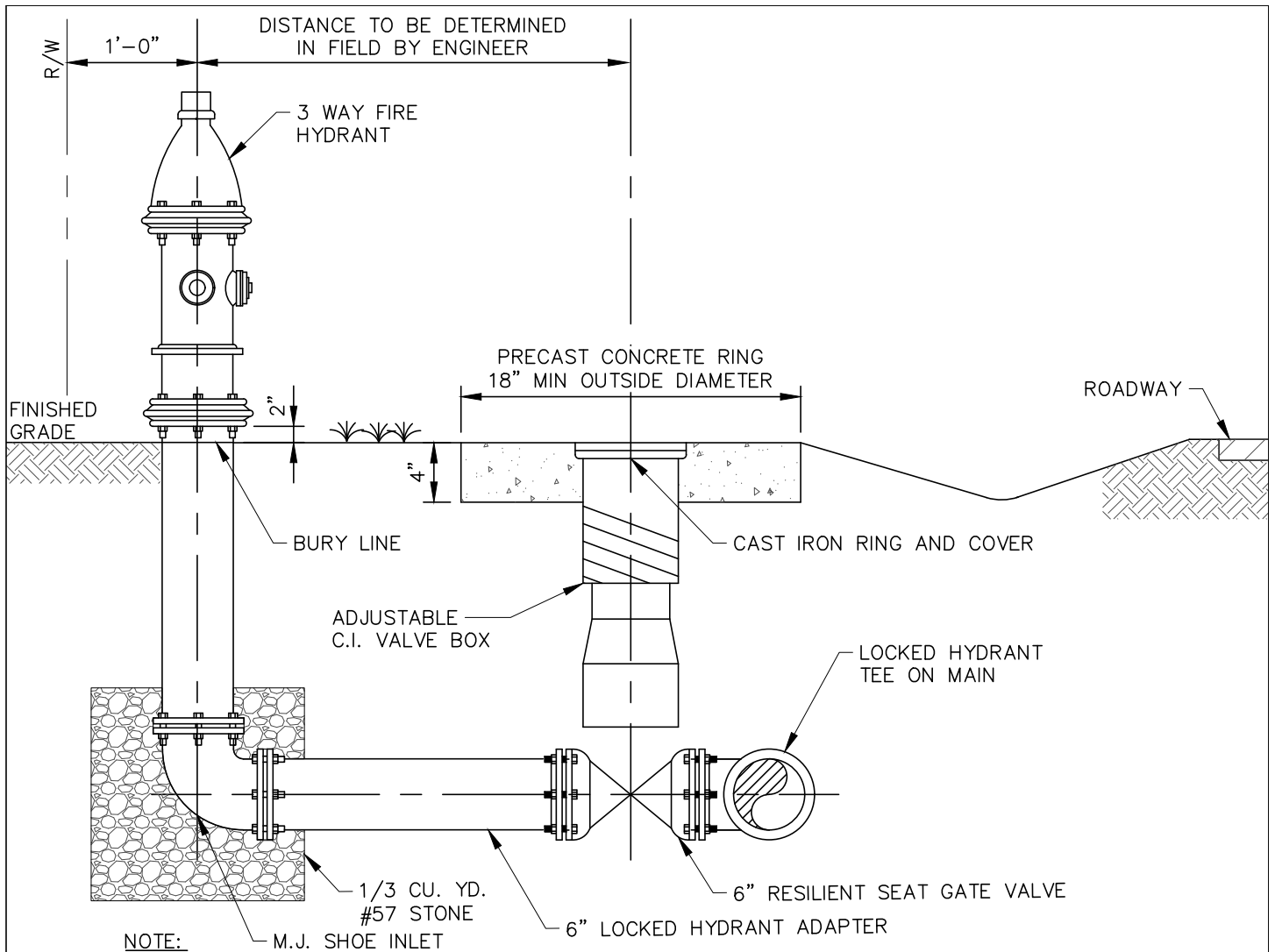


NOTE:

1. UNLESS OTHERWISE NOTED ON PLANS MINIMUM SOIL COVER ABOVE PIPE IS 4 FEET.
2. PIPE SHALL BE INSTALLED IN THE BACK 5' OF R/W.

WHERE GROUND ELEVATION IS BELOW ROAD ELEVATION

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
PIPE DEPTH AT EDGE OF PAVEMENT	3.1



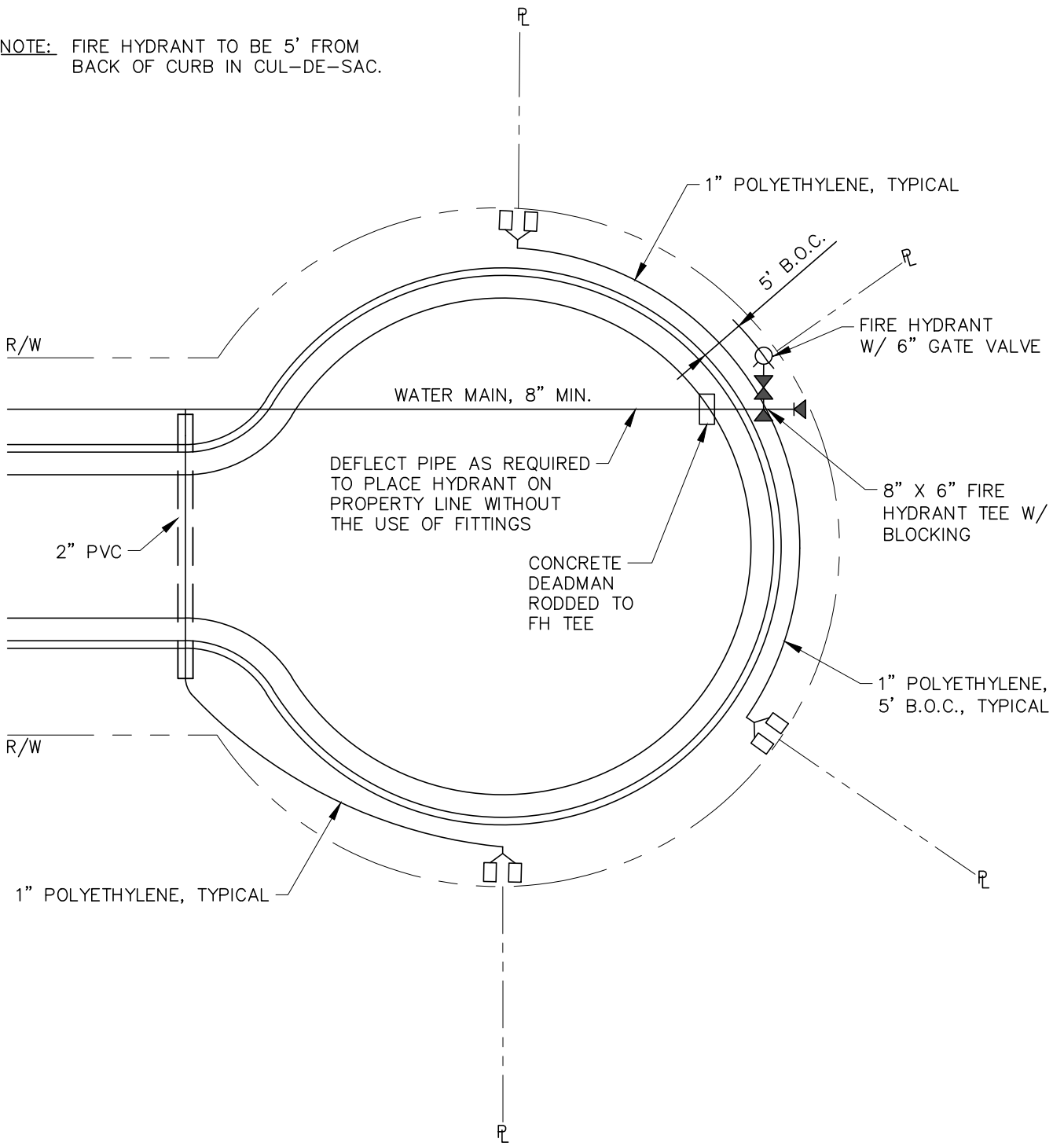
**NOTE:**

1. HYDRANT NOZZLE TO FACE STREET.
2. HYDRANT AND VALVE BOX SHALL BE SET PLUMB AND ADJUSTED TO GRADE.
3. ALL MATERIAL AND CONSTRUCTION SHALL BE I.A.W. THE SPECIFICATIONS.
4. FIRE HYDRANTS, VALVES & VALVE BOXES SHALL NOT BE LOCATED IN DITCH LINE.
5. ALL FIRE HYDRANT VALVES ARE TO HAVE 5 1/4" OPENINGS.
6. CONCRETE COLLAR REQ'D. WHERE VALVE BOX IS NOT LOCATED IN PAVED AREA.
7. GRAVEL TO BE PLACED AROUND HYDRANT DRAIN, MINIMUM DIMENSIONS 2' x 2' x 2.25'.
8. OFFSET ANCHOR ALLOWED TO ADJUST F.H. TO GRADE.
9. INSTALL 2" +/- ABOVE /BELOW GRADE.
10. WHERE LOCKED HYDRANT TEES OR LOCKED HYDRANT ADAPTORS CANNOT BE USED, D.I. PIPE SHALL BE RESTRAINED WITH MEGALUGS AND THREADED RODS.

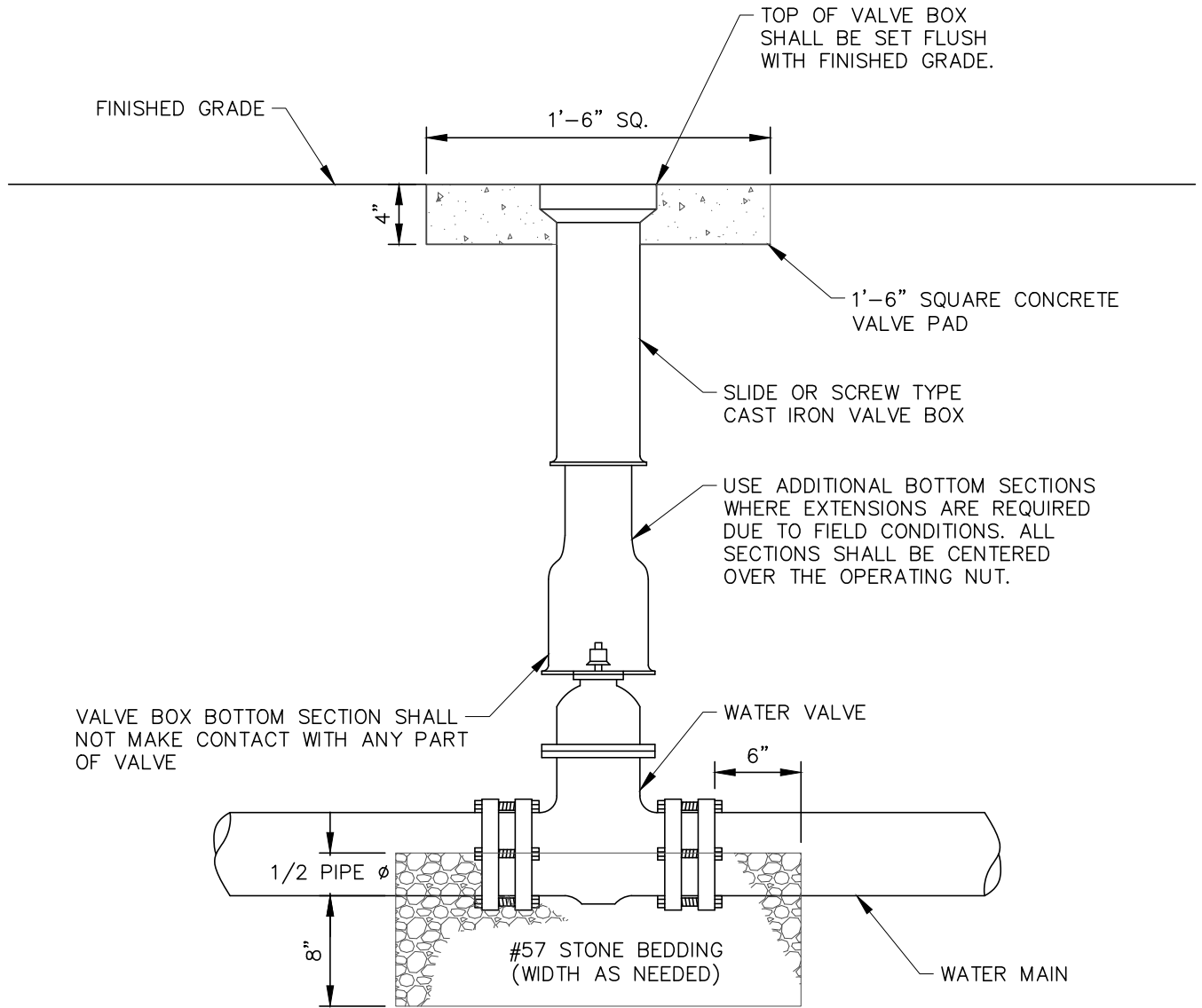
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>TYPICAL FIRE HYDRANT DETAIL</b>	<b>4.1</b>



NOTE: FIRE HYDRANT TO BE 5' FROM BACK OF CURB IN CUL-DE-SAC.



<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>FIRE HYDRANT IN CUL-DE-SAC</b>	<b>5.1</b>

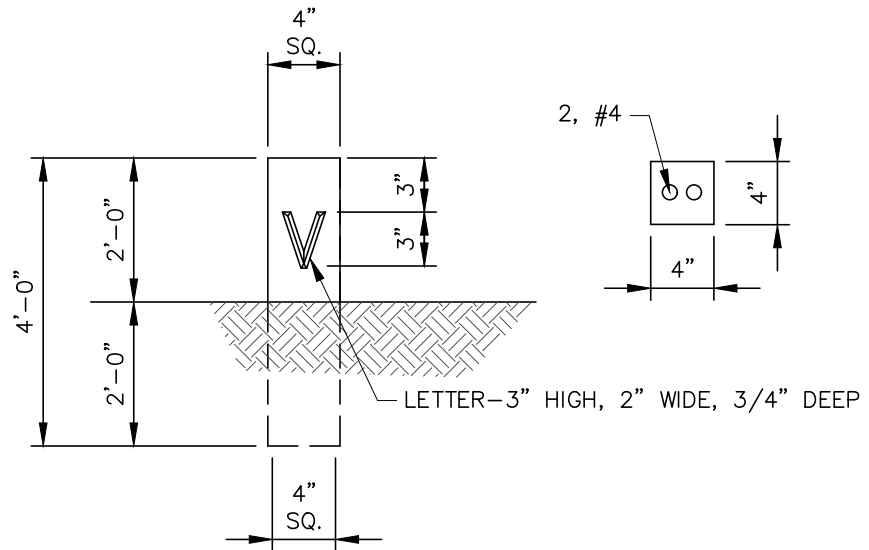


**NOTE:**

1. VALVE BOX SHALL NOT BE SET IN DEPRESSED AREA.
2. VALVE STEM EXTENSION REQUIRED IF VALVE IS OVER 5' DEEP.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>VALVE BOX DETAIL</b>	<b>6.1</b>

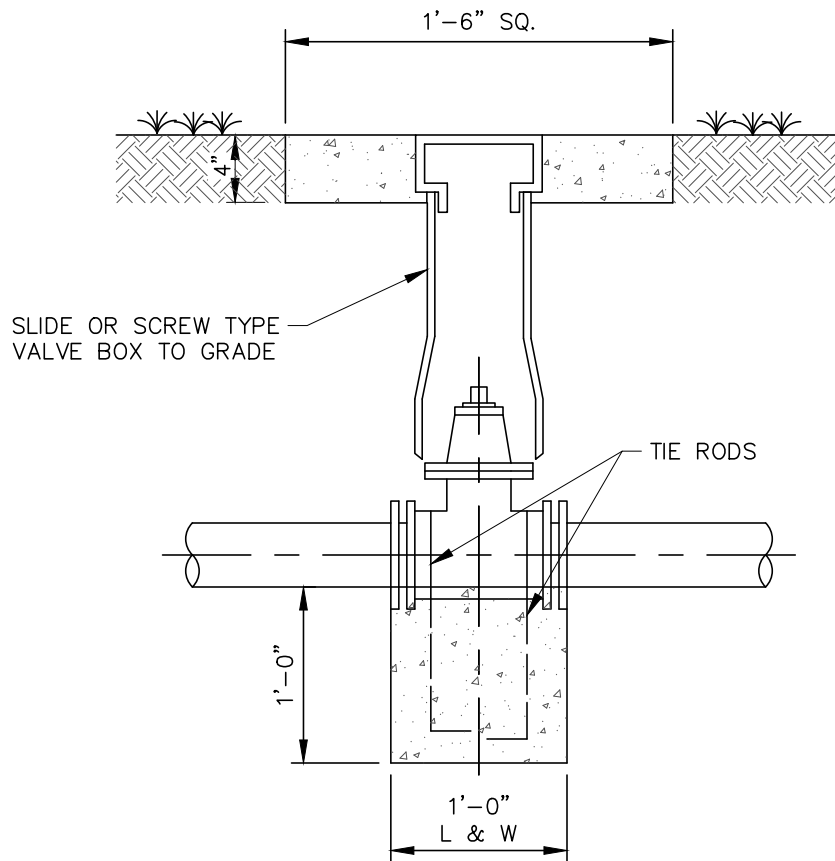




NOTE:

1. #5 x 2'-9" REBAR TO BE CAST IN CENTER.
2. CONCRETE SHALL BE MIN. 3,000 PSI W/ MAX. AGGREGATE SIZE OF 1/2".
3. VALVE MARKERS TO BE LOCATED BY THE ENGINEER.

CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
VALVE MARKER POST	6.2



CITY OF DAWSONVILLE

SCALE: NOT TO SCALE

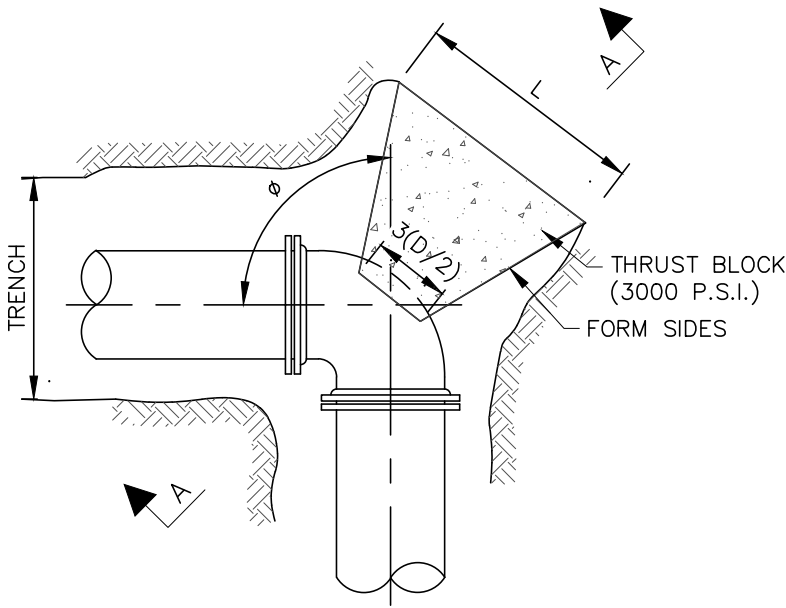
DATE: OCTOBER 15, 2021

DETAIL TITLE

DETAIL NO.

VALVE ANCHOR

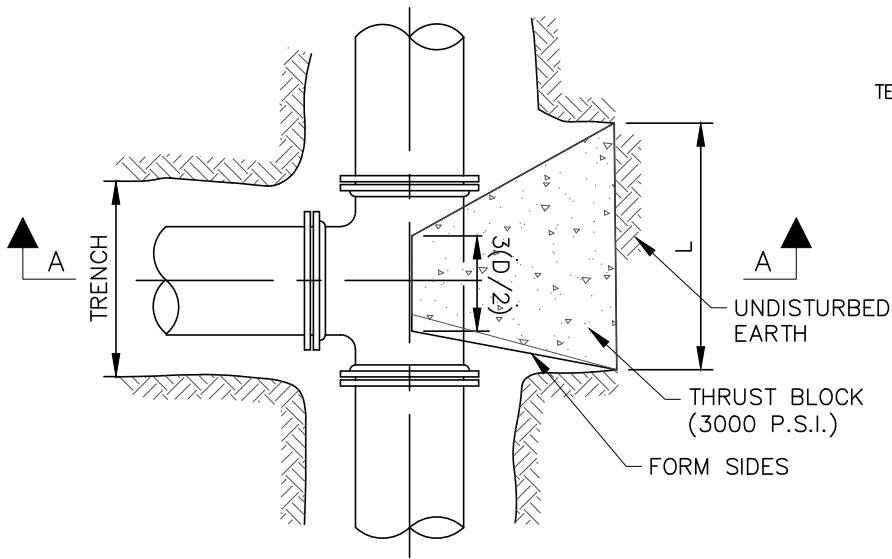
6.3



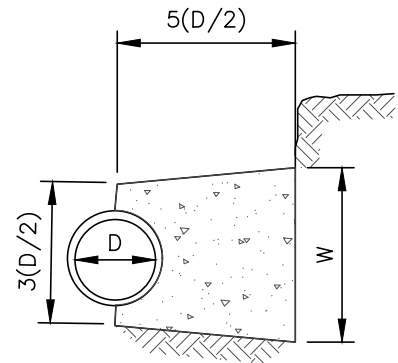
BEND PLAN

MINIMUM DIMENSIONS FOR CONCRETE BLOCKING

BEND	PIPE SIZE	$\frac{5D}{2}$	L	$\frac{3D}{2}$	W
11 1/4°	4"	10"	9"	6"	8"
	6"	15"	14"	9"	12"
	8"	20"	21"	12"	14"
	10"	25"	28"	15"	16"
	12"	30"	32"	18"	20"
	16"	40"	41"	24"	27"
	24"	60"	62"	36"	41"
22 1/2°	4"	10"	9"	6"	8"
	6"	15"	14"	9"	12"
	8"	20"	21"	12"	14"
	10"	30"	28"	15"	16"
	12"	40"	32"	18"	20"
	16"	40"	41"	24"	27"
	24"	60"	62"	36"	41"
45°	4"	10"	14"	6"	10"
	6"	15"	23"	9"	14"
	8"	20"	31"	12"	18"
	10"	30"	40"	15"	22"
	12"	40"	48"	18"	26"
	16"	40"	64"	24"	35"
	24"	60"	96"	36"	52"
90°	4"	10"	19"	6"	14"
	6"	15"	29"	9"	20"
	8"	20"	40"	12"	26"
	10"	30"	50"	15"	32"
	12"	40"	61"	18"	38"
	16"	40"	82"	24"	50"
	24"	60"	153"	36"	60"
TEE	4"	10"	15"	6"	12"
	6"	15"	23"	9"	18"
	8"	20"	31"	12"	24"
	10"	30"	38"	15"	30"
	12"	40"	46"	18"	36"
	16"	40"	61"	24"	48"
	24"	60"	92"	36"	71"



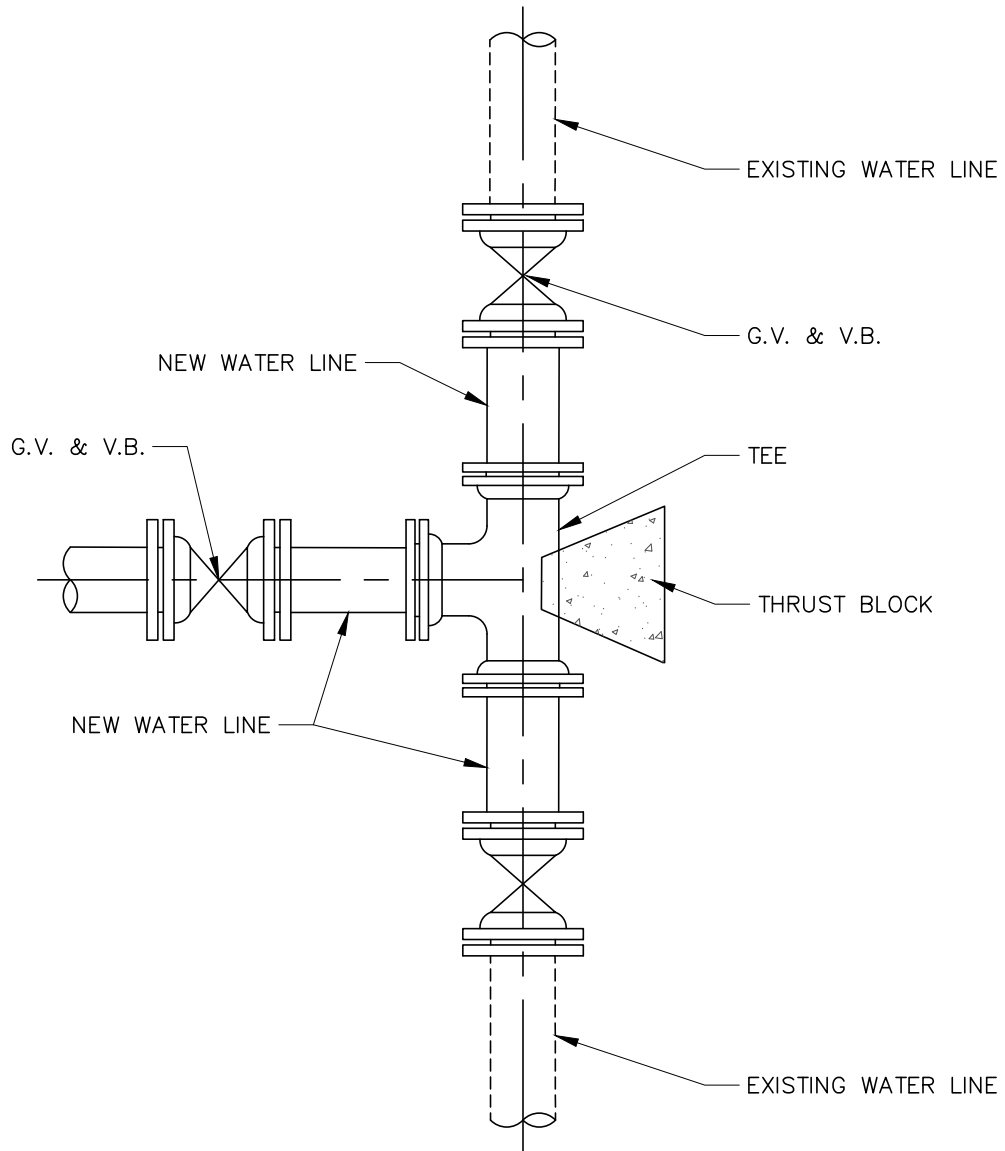
TEE PLAN



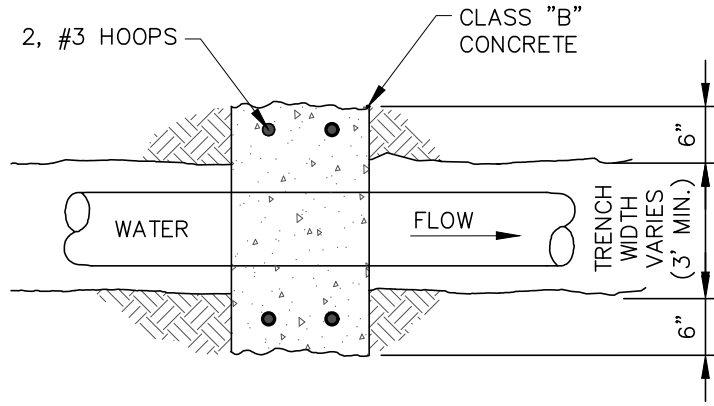
SECTION A-A

NOTE: INSTALL 6 MIL POLY BETWEEN CONCRETE AND FITTINGS.

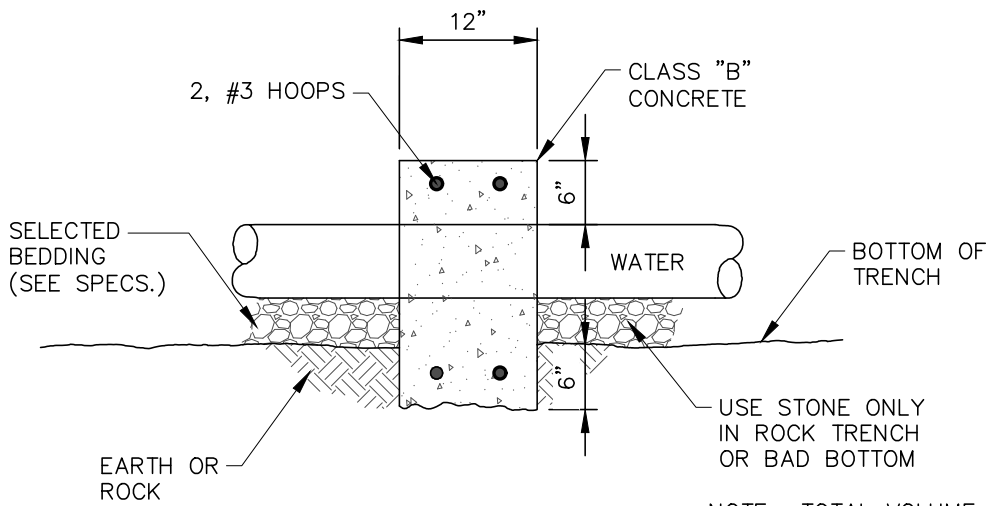
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>THRUST BLOCK DIMENSIONS</b>	<b>7.1</b>



<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>CONNECT TO EXISTING WATER LINE</b>	<b>7.2</b>



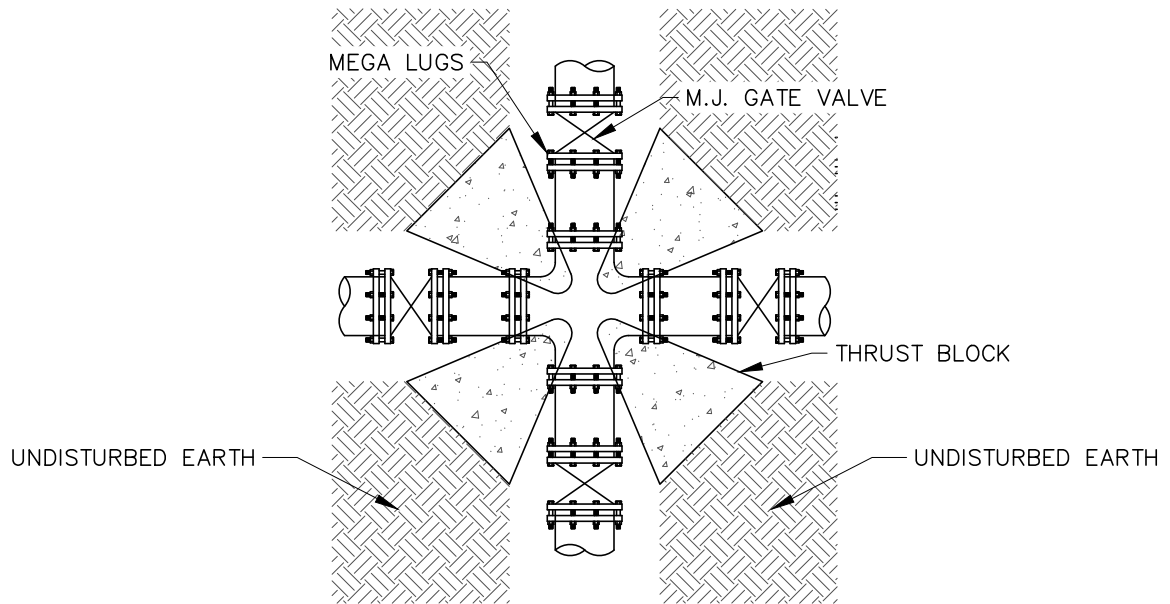
PLAN



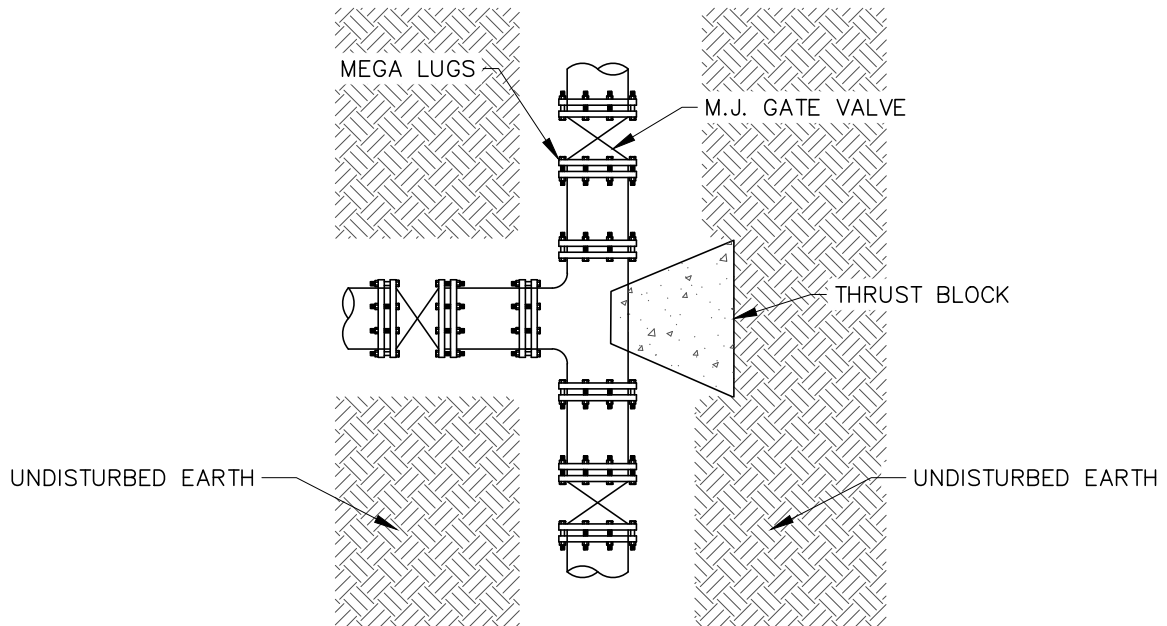
SECTION

NOTE: TOTAL VOLUME OF CONCRETE SHALL BE MINIMUM 10 CU. FT.

CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TYPICAL CONCRETE ANCHOR	8.1



CROSS INSTALLATION

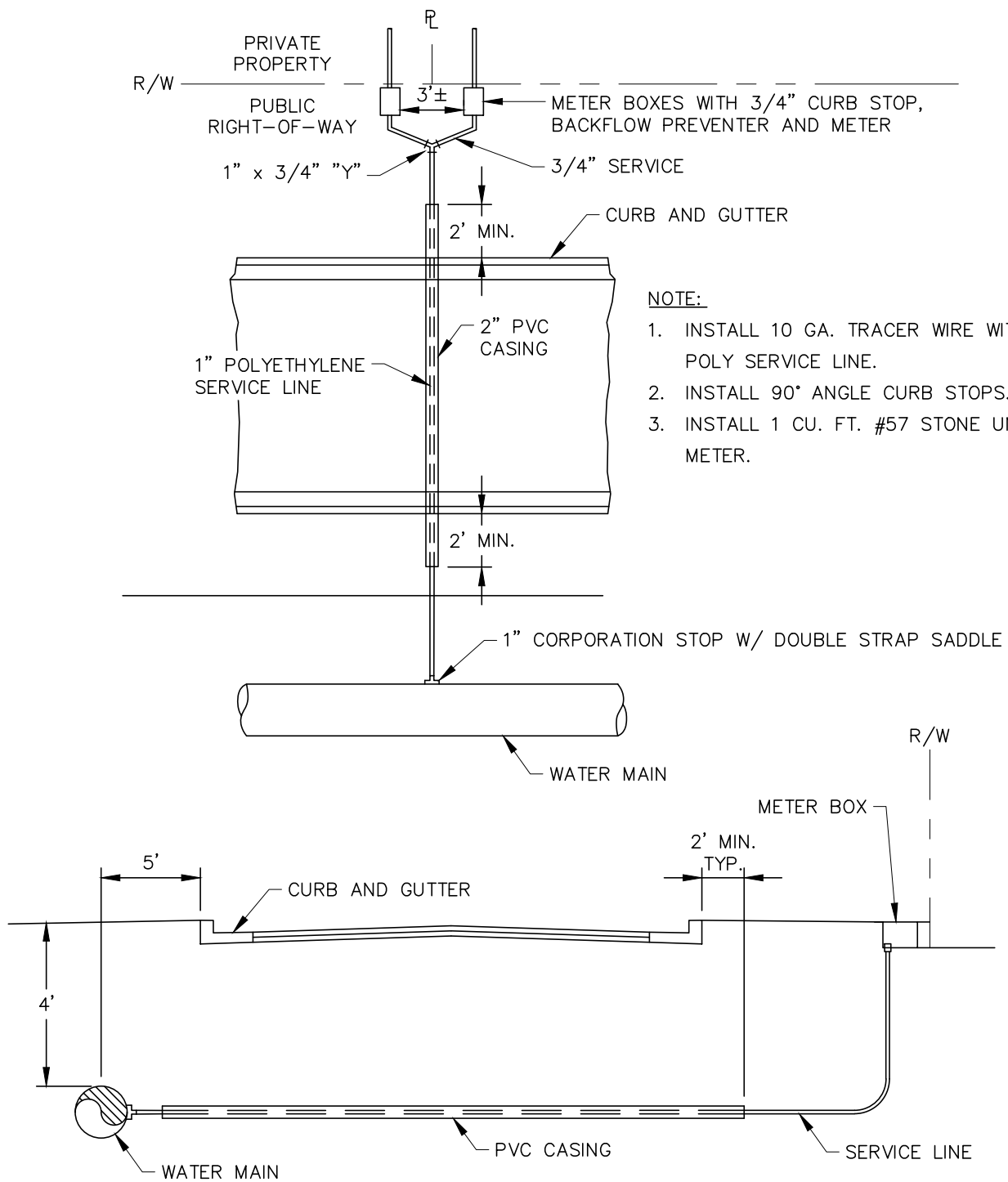


TEE INSTALLATION

NOTE:

1. ALL CONNECTIONS SHALL BE RESTRAINED JOINT USING MEGA LUGS.
2. BOLTS/NUTS SHALL BE PROTECTED FROM CONCRETE COVERAGE.

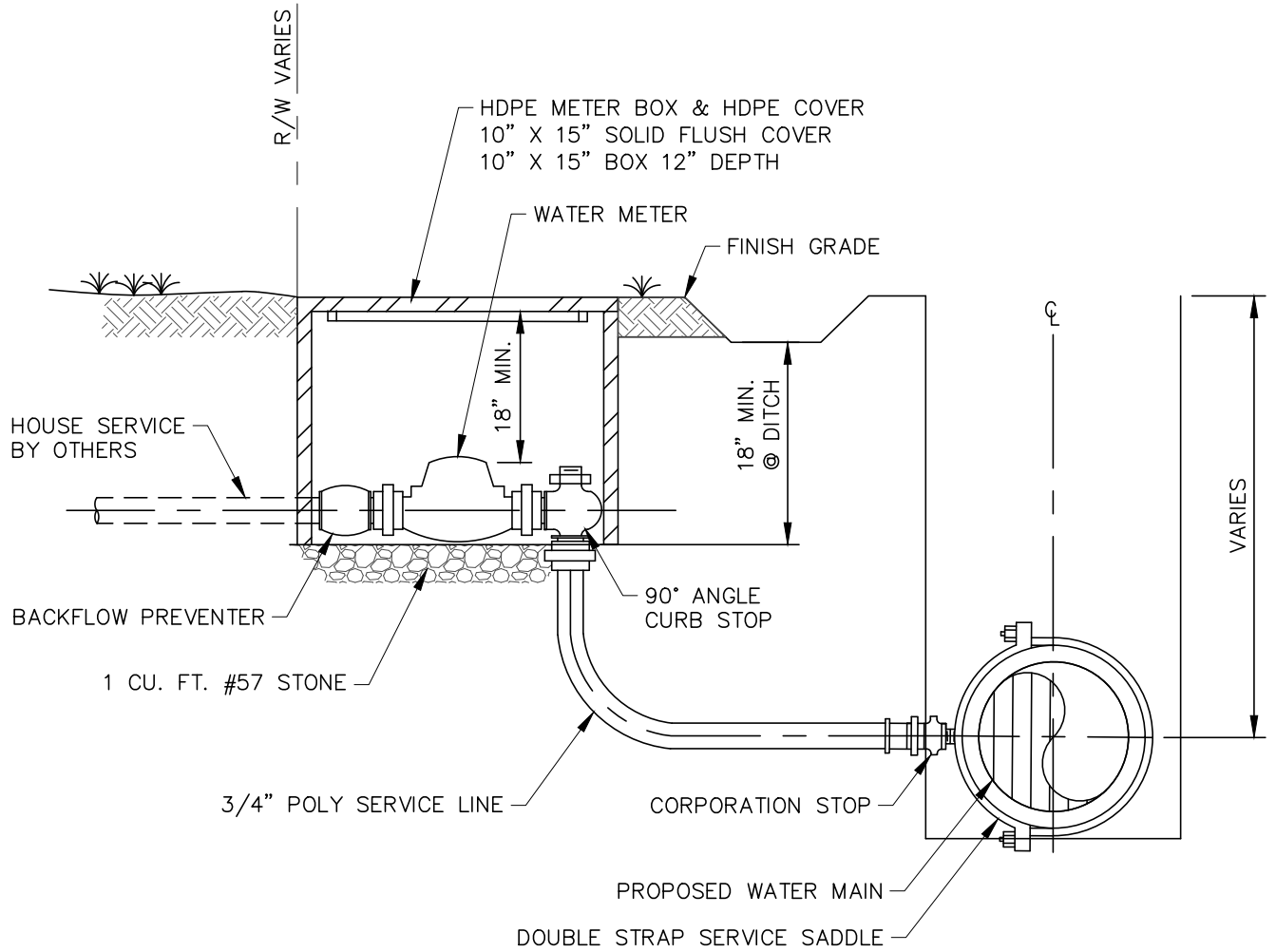
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>THRUST RESTRAINT AT FITTING</b>	<b>9.1</b>



**NOTE:**

1. INSTALL 10 GA. TRACER WIRE WITH POLY SERVICE LINE.
2. INSTALL 90° ANGLE CURB STOPS.
3. INSTALL 1 CU. FT. #57 STONE UNDER METER.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>LONG SIDE SERVICE</b>	<b>10.1</b>

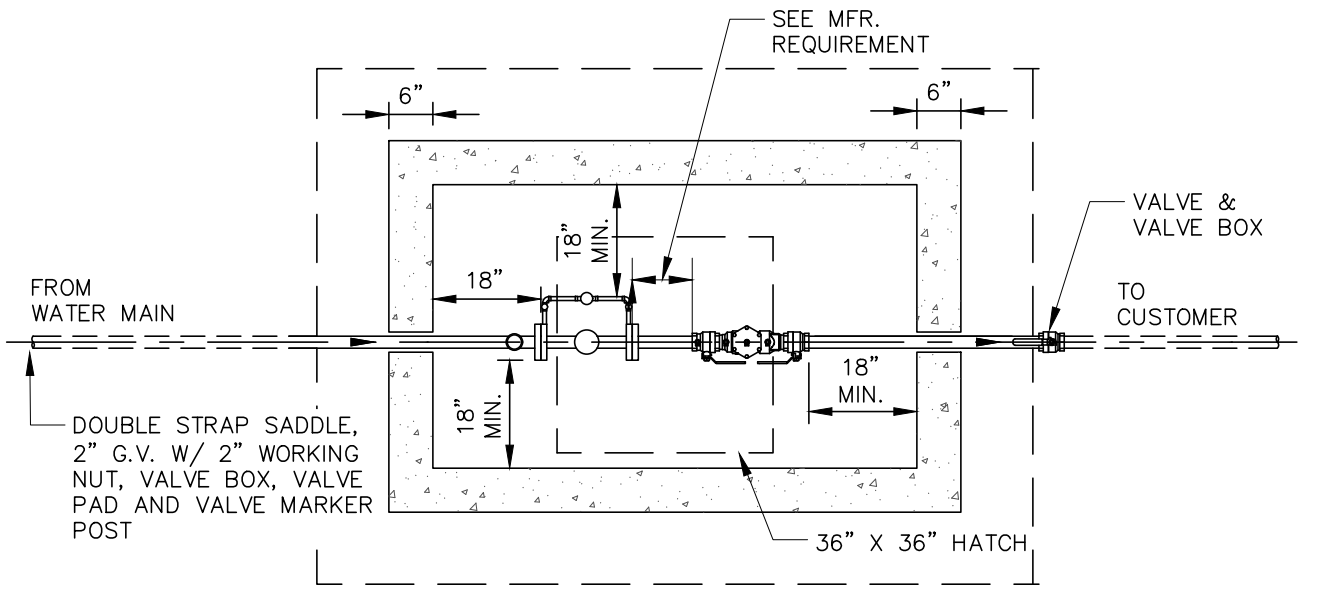


**NOTE:**

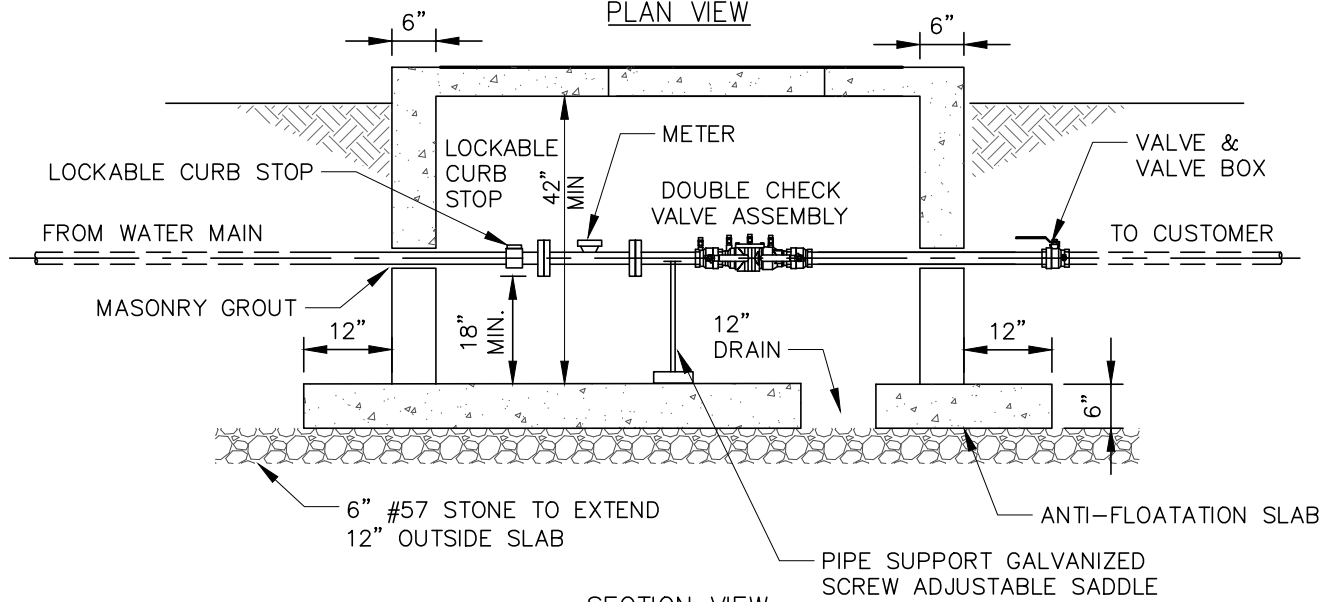
1. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
2. INSTALL 10 GA. TRACER WIRE WITH POLY SERVICE LINE.
3. INSTALL 90° ANGLE CURB STOP.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>SHORT SIDE SERVICE</b>	<b>11.1</b>





PLAN VIEW

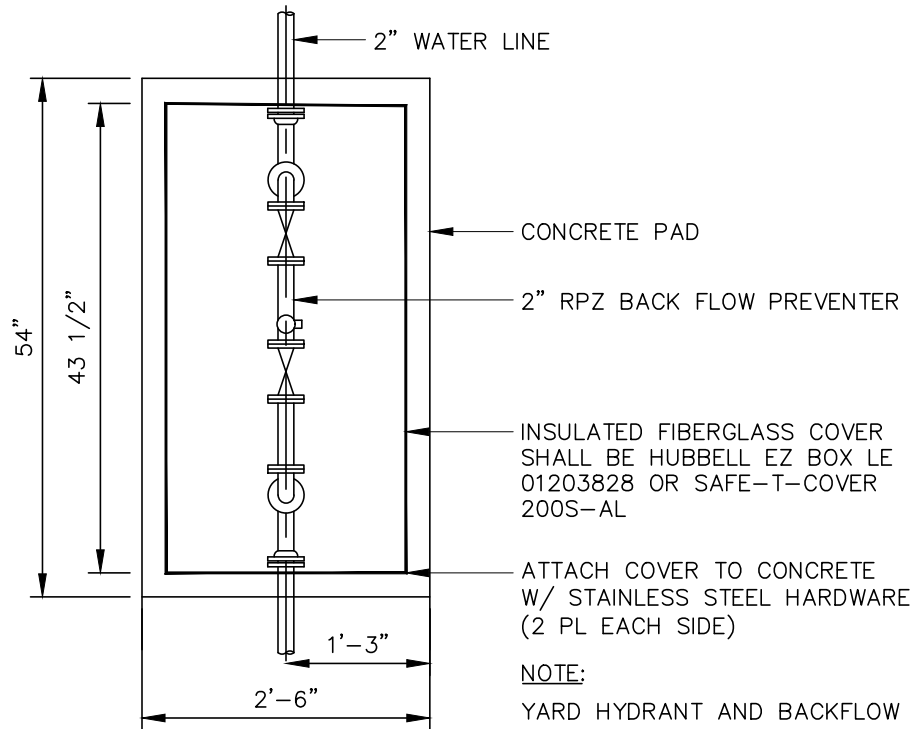


SECTION VIEW

**GENERAL NOTES:**

1. LOCATION OF PIT SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL PIPING SHALL HAVE 18" OF CLEARANCE ON ALL SIDES.
3. CONTRACTOR SHALL SUPPORT ALL PIPING INSIDE PIT AS REQUIRED (2 PLACES).
4. CONTRACTOR MAY USE PRECAST CONCRETE OR POLYMER REINFORCED CONCRETE VAULT IN LIEU OF CAST IN PLACE VAULT.
5. IF POLYMER REINFORCED CONCRETE VAULTS ARE USED, THEY SHALL BE ANSI TIER 22 RATED AND HAVE ADEQUATE PROTECTION AGAINST BUOYANCY.
6. CONTRACTOR MAY INSTALL METER AND BACKFLOW PREVENTER IN TWO SEPARATE VAULTS.
7. ALL EXCAVATION INCLUDING TRENCHING, BORE PITS, ETC., SHALL BE BACKFILLED AT THE END OF EACH WORK DAY.
8. STRAIGHT PIPE REQUIREMENTS UPSTREAM AND DOWNSTREAM OF METER SHALL BE AS SPECIFIED BY THE METER MANUFACTURER.
9. VAULT SHALL HAVE 12"  $\phi$  DRAIN.
10. PIPE MATERIAL SHALL BE POLY OR HDPE

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>1.5" TO 2" METER</b>	<b>12.1</b>



2" WATER LINE

CONCRETE PAD

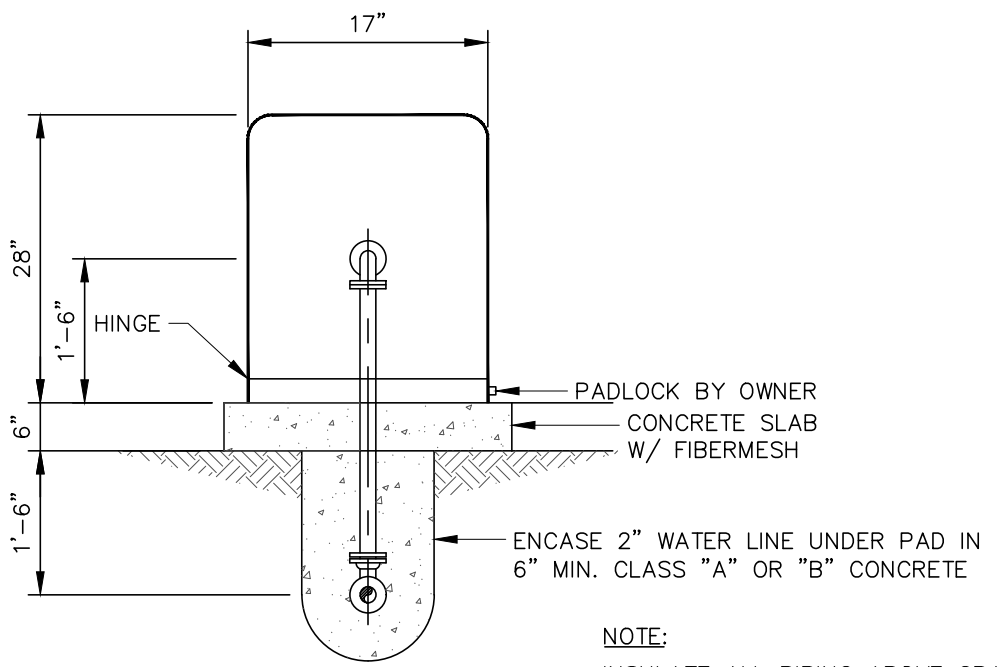
2" RPZ BACK FLOW PREVENTER

INSULATED FIBERGLASS COVER SHALL BE HUBBELL EZ BOX LE 01203828 OR SAFE-T-COVER 200S-AL

ATTACH COVER TO CONCRETE W/ STAINLESS STEEL HARDWARE (2 PL EACH SIDE)

**NOTE:**  
YARD HYDRANT AND BACKFLOW PREVENTER ARE REQUIRED FOR EACH PUMP STATION.

PLAN



PADLOCK BY OWNER

CONCRETE SLAB W/ FIBERMESH

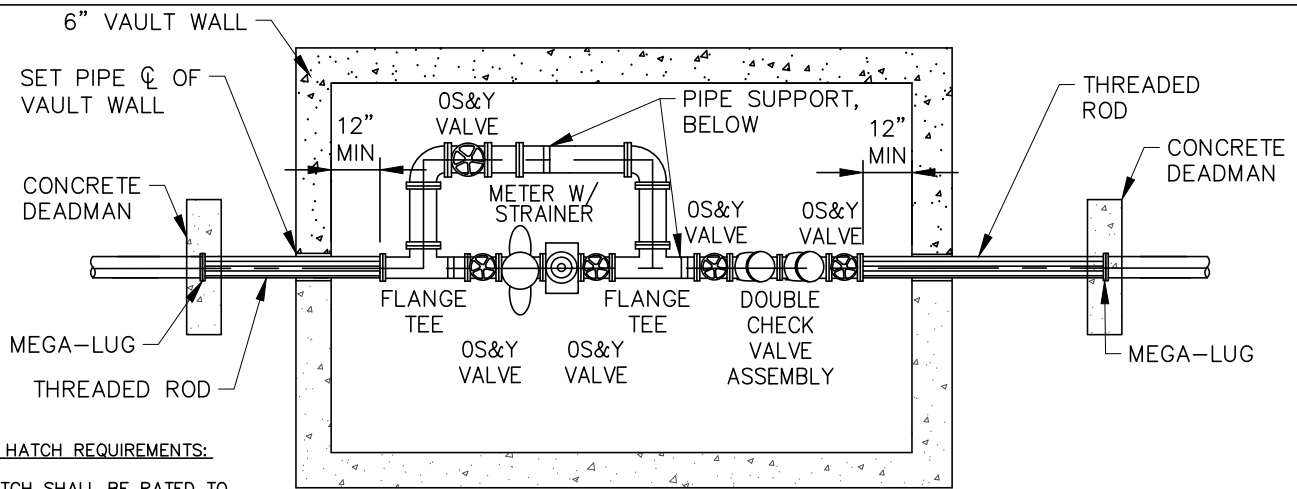
ENCASE 2" WATER LINE UNDER PAD IN 6" MIN. CLASS "A" OR "B" CONCRETE

**NOTE:**  
INSULATE ALL PIPING ABOVE GRADE.

SECTION

CITY OF DAWSONVILLE

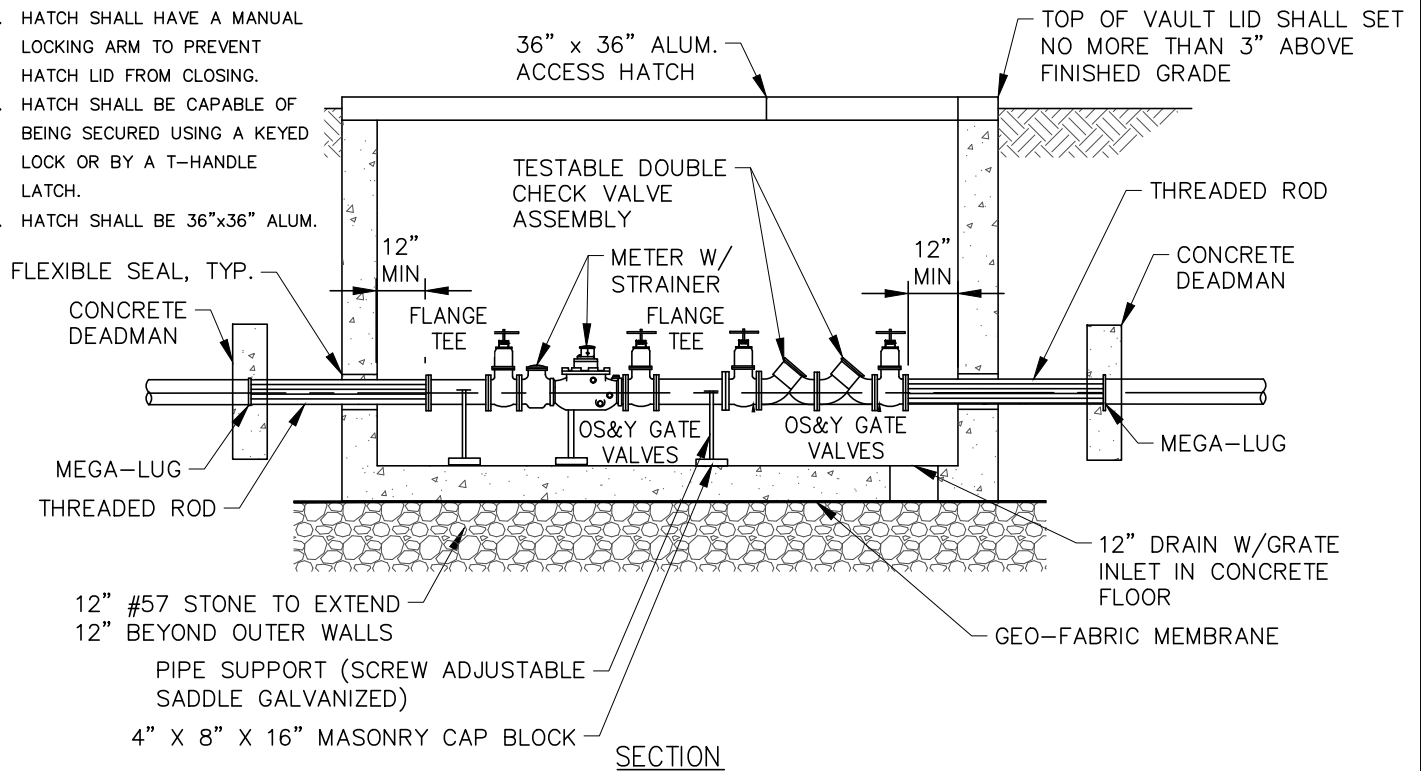
DETAIL TITLE	DETAIL NO.
2" RPZ BACK FLOW PREVENTER DETAIL	12.2



PLAN

VAULT HATCH REQUIREMENTS:

1. HATCH SHALL BE RATED TO WITHSTAND A MIN. H-10 LIVE LOAD.
2. HATCH SHALL HAVE A MANUAL LOCKING ARM TO PREVENT HATCH LID FROM CLOSING.
3. HATCH SHALL BE CAPABLE OF BEING SECURED USING A KEYED LOCK OR BY A T-HANDLE LATCH.
4. HATCH SHALL BE 36"x36" ALUM.



SECTION

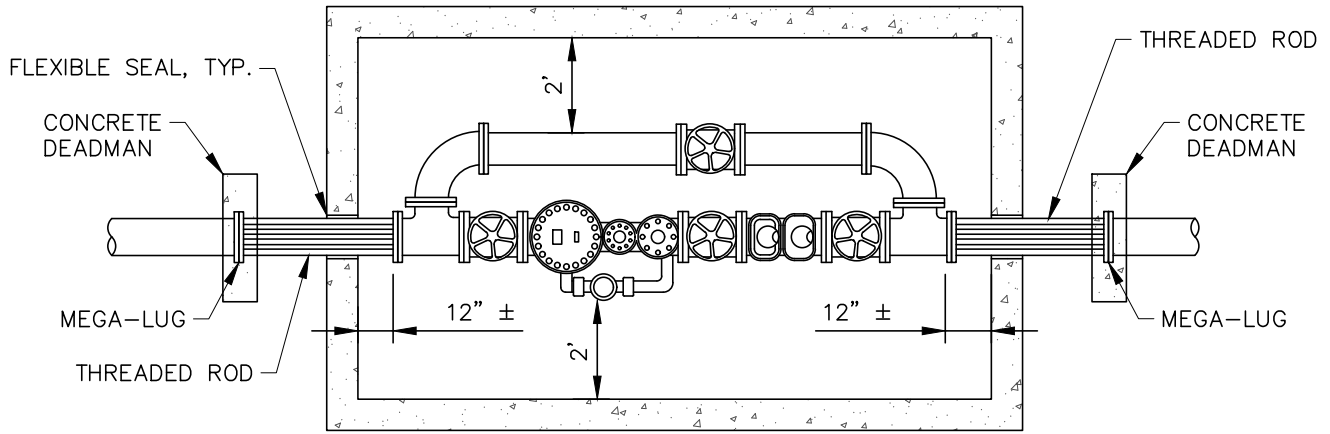
VAULT SPECIFICATIONS:

1. VAULT SHALL BE PRECAST REINFORCED CONCRETE.
2. VAULT TOP SHALL BE REINFORCED CONCRETE WITH HATCH OPENING OFFSET TO ONE SIDE.
3. ACCESS LADDER SHALL BE DOWELED TO WALL AND CENTERED AT HATCH OPENING.
4. PIPE PENETRATIONS (ANNULUS BETWEEN CONCRETE AND OUTSIDE OF PIPE) SHALL BE SEALED WITH BRICK AND GROUTED.
5. BFP DEVICE SHALL BE SUPPORTED AT ONE (1) POINT WITH PIPE STANDS.
6. THRUST BLOCKING (AS REQUIRED).
7. VAULT SHALL BE INSTALLED ON OWNERS PRIVATE PROPERTY, PROVIDING A 20' X 30' EASEMENT.
8. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CUSTOMER/OWNER.
9. VAULTS SHALL BE 2 PIECE.
10. VAULT SHALL HAVE 36" X 36" ALUMINUM HATCH.
11. STRAIGHT PIPE REQUIREMENTS UPSTREAM & DOWNSTREAM OF METER SHALL BE SPECIFIED BY METER MANUFACTURER.

VAULT SIZING REQUIREMENT

1. VAULTS SHALL BE ADEQUATELY SIZED TO CONTAIN ALL PIPING, VALVES, BYPASS, FITTINGS, METER AND STRAINER ASSOCIATED WITHIN THE METER INSTALLATION.
2. A MINIMUM DISTANCE OF 18" SHALL BE MAINTAINED BETWEEN ANY PIPING AND 1) THE VAULT FLOOR AND 2) THE WALL RUNNING PARALLEL TO THE PIPING.
3. RECOMMENDED VAULT SIZES:  
 3" - 10'-6" X 6'-0"  
 4" - 12'-0" X 6'-0"  
 6" AND GREATER - AS APPROVED BY CITY

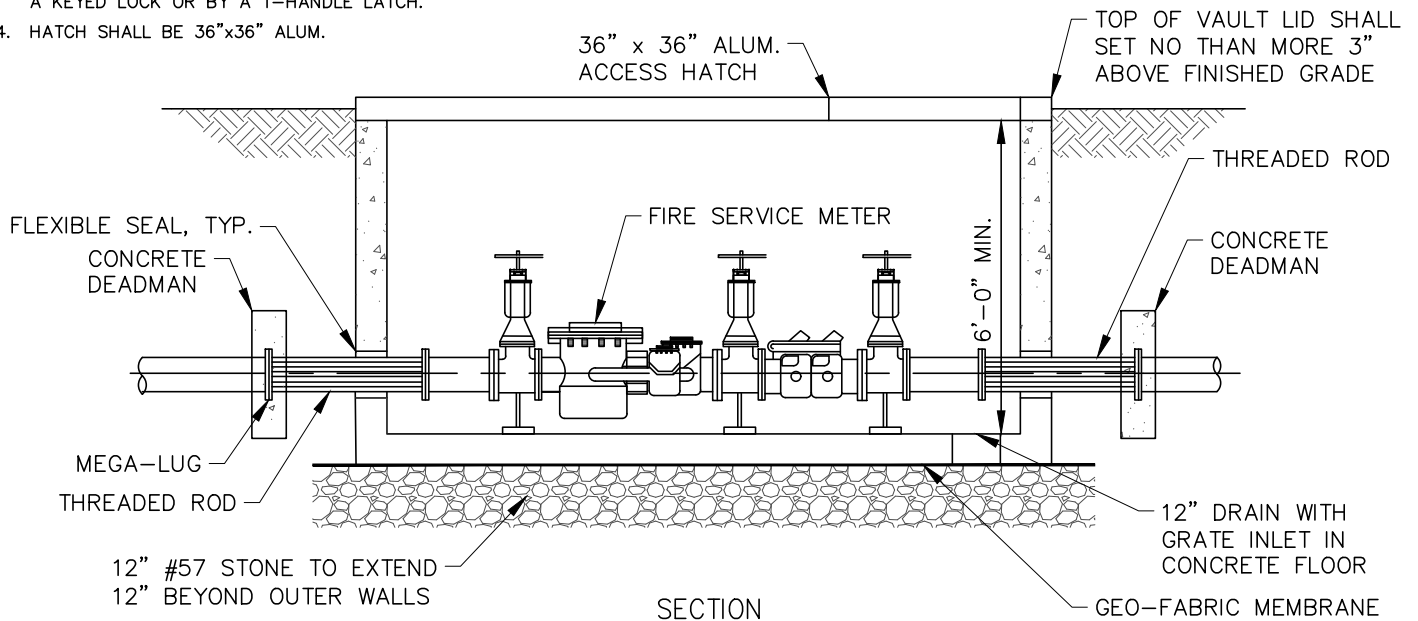
<b>CITY OF DAWSONVILLE</b>		
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021	
DETAIL TITLE		DETAIL NO.
<b>WATER METER BOX 3" AND LARGER</b>		<b>13.1</b>



PLAN

VAULT HATCH REQUIREMENTS:

1. HATCH SHALL BE RATED TO WITHSTAND A MIN. H-20 LIVE LOAD.
2. HATCH SHALL HAVE A MANUAL LOCKING ARM TO PREVENT HATCH LID FROM CLOSING.
3. HATCH SHALL BE CAPABLE OF BEING SECURED USING A KEYED LOCK OR BY A T-HANDLE LATCH.
4. HATCH SHALL BE 36"x36" ALUM.

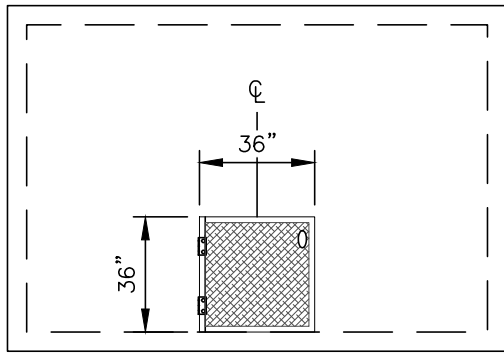


SECTION

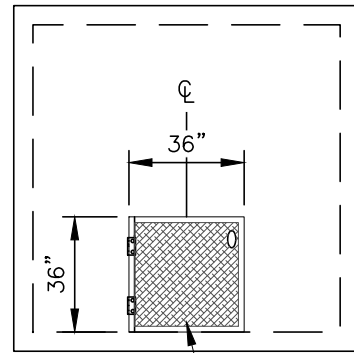
VAULT SPECIFICATIONS:

1. VAULT SHALL BE PRECAST REINFORCED CONCRETE.
2. VAULT TOP SHALL BE REINFORCED CONCRETE WITH HATCH OPENING OFFSET TO ONE SIDE.
3. ACCESS LADDER SHALL BE DOWELED TO WALL AND CENTERED AT HATCH OPENING.
4. PIPE PENETRATIONS (ANNULUS BETWEEN CONCRETE AND OUTSIDE OF PIPE) SHALL BE SEALED WITH BRICK AND GROUTED.
5. BFP DEVICE SHALL BE SUPPORTED AT ONE (1) POINT WITH PIPE STANDS.
6. THRUST BLOCKING (AS REQUIRED).
7. VAULT SHALL BE INSTALLED ON OWNERS PRIVATE PROPERTY, PROVIDING A 20' X 30' EASEMENT.
8. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CUSTOMER/OWNER.
9. VAULTS SHALL BE 2 PIECE.
10. VAULT SHALL HAVE 36" X 36" ALUMINUM HATCH.
11. STRAIGHT PIPE REQUIREMENTS UPSTREAM & DOWNSTREAM OF METER SHALL BE SPECIFIED BY METER MANUFACTURER.

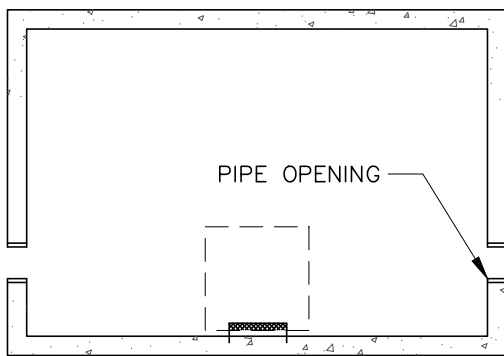
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>FIRE METER AND VAULT</b>	<b>14.1</b>



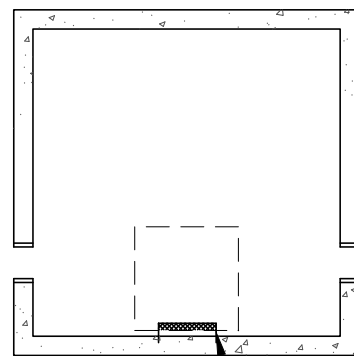
TOP VIEW



36" x 36"  
ALUMINUM ACCESS  
HATCH, TYP.

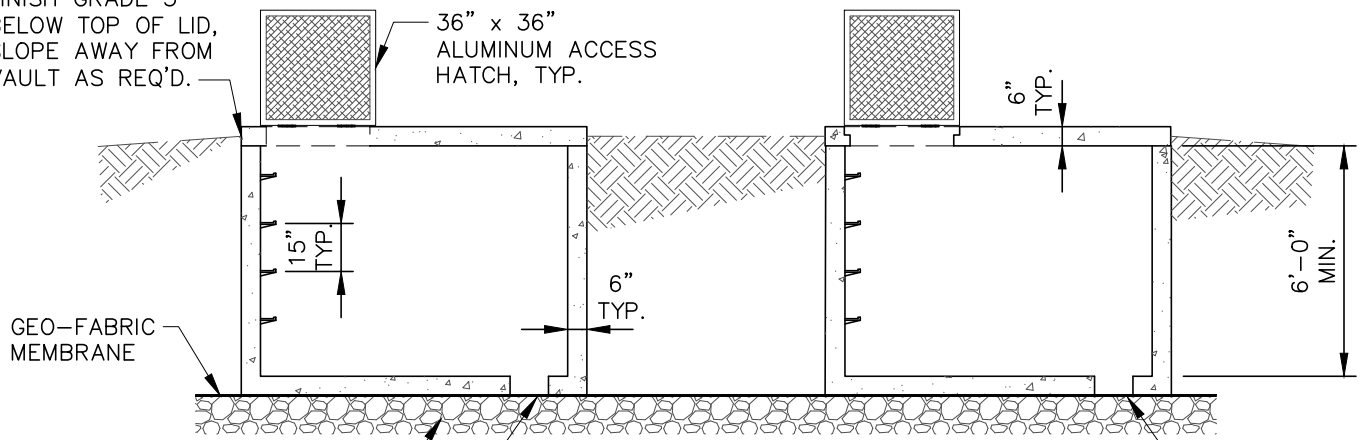


PLAN VIEW



MANHOLE STEPS  
@ 15" O.C.

FINISH GRADE 3"  
BELOW TOP OF LID,  
SLOPE AWAY FROM  
VAULT AS REQ'D.



SECTION VIEW

GEO-FABRIC  
MEMBRANE

36" x 36"  
ALUMINUM ACCESS  
HATCH, TYP.

6"  
TYP.

15"  
TYP.

6"  
TYP.

6'-0"  
MIN.

12" LAYER #57 STONE TO EXTEND  
12" BEYOND OUTER WALLS

12" DRAIN

12" DRAIN

CITY OF DAWSONVILLE

SCALE: NOT TO SCALE

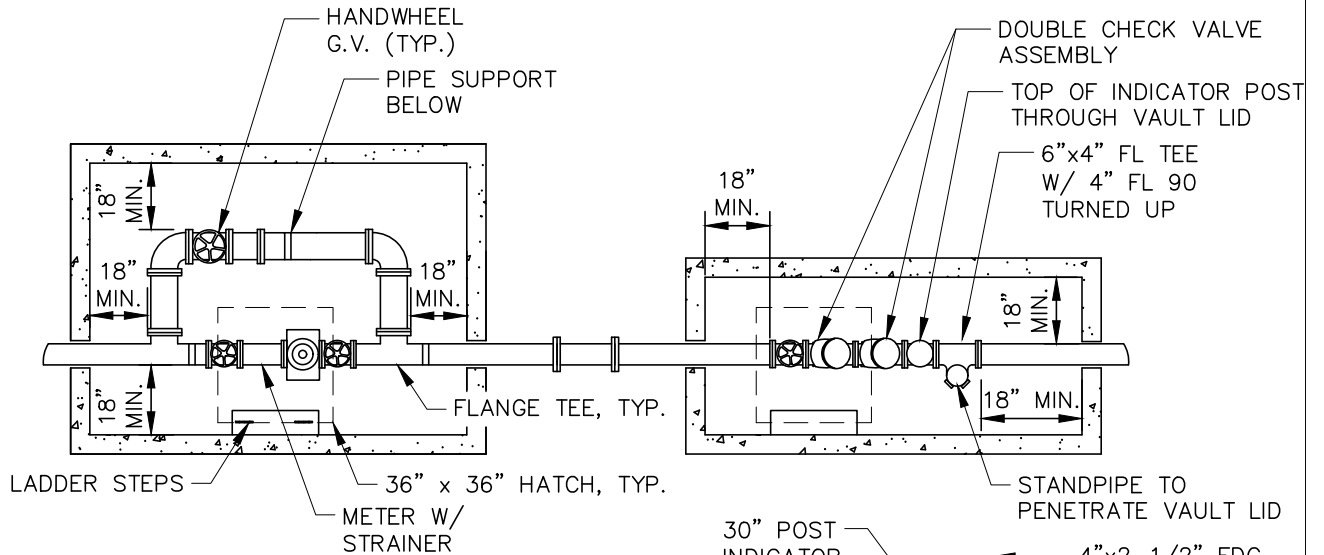
DATE: OCTOBER 15, 2021

DETAIL TITLE

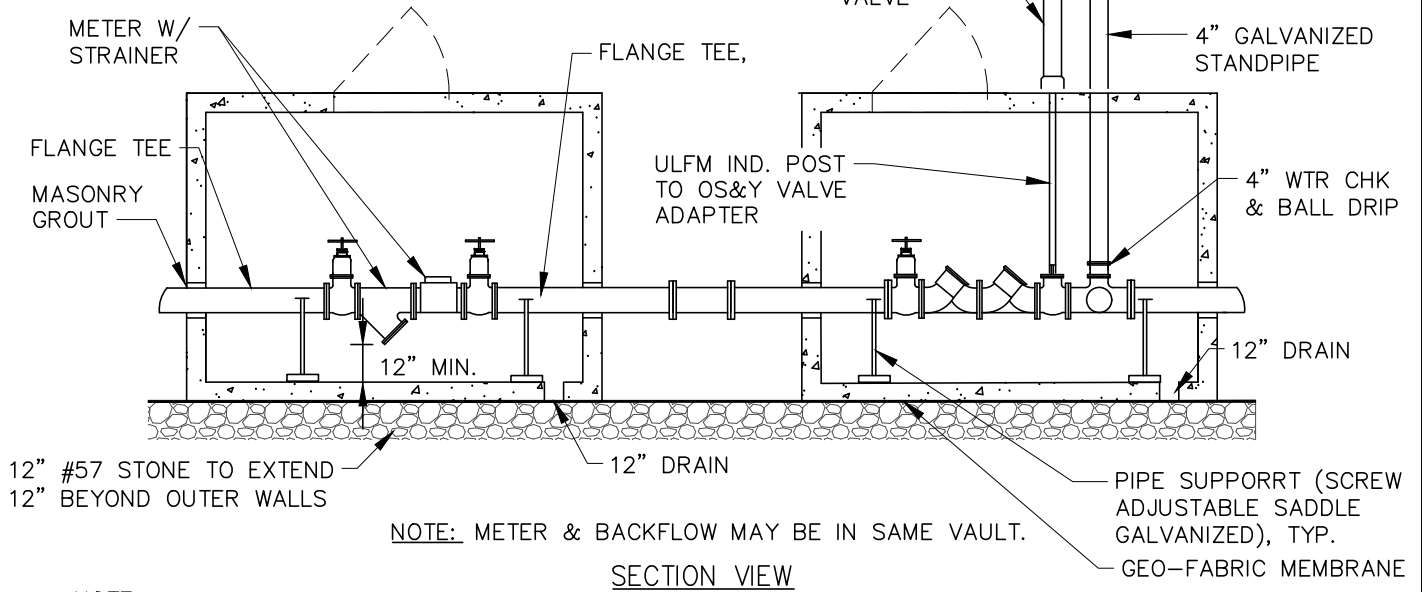
DETAIL NO.

FIRE METER VAULT

15.1



PLAN VIEW



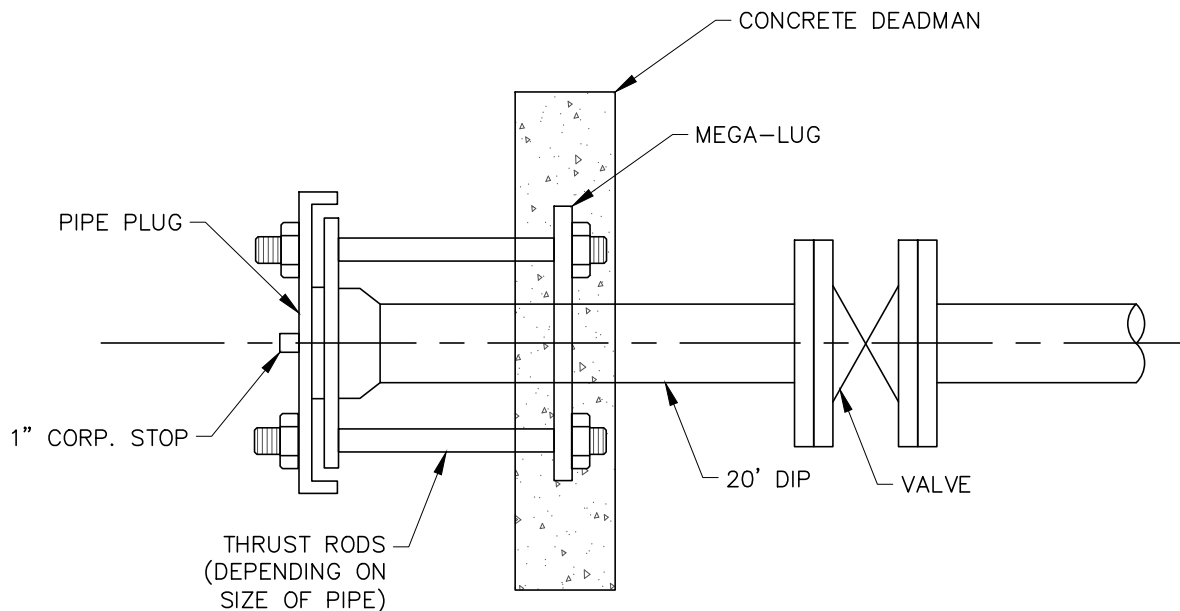
SECTION VIEW

NOTE: METER & BACKFLOW MAY BE IN SAME VAULT.

NOTE:

1. VAULT TO BE SIZED TO ALLOW 18" MIN. CLEARANCE AROUND ALL INSTALLED EQUIPMENT.
2. VAULT COATING TO BE
  - A. BITUMINOUS TAR ON UNDERGROUND PORTION OF VAULT.
  - B. ASSEMBLY TO BE COATED WITH SPECIAL NON-SKID EPOXY.
3. THE HATCHES SHALL BE CONSTRUCTED W/ 6" DEEP FRAME AND OF 1/4" DIAMOND PLATE ALUMINUM.
4. THE HATCHES SHALL BE REINFORCED FOR H-20 LOADING, AND SHALL HAVE A FALL-IN-PLACE HOLD-OPEN ARM AND STAINLESS STEEL SNAP LOCK.
5. HATCHES SHALL MEET ALL CURRENT ASTM STANDARDS.
6. SIX (6") INCH THICK PRECAST CONCRETE SHALL BE USED FOR CONSTRUCTION AS A MINIMUM.
7. 12" LAYER OF #57 STONE, 12" LARGER THAN FOOTPRINT OF VAULT.
8. VAULT SHALL HAVE 12" Ø DRAIN.
9. POSITION HATCH OVER METER & ALIGN EDGE AGAINST VAULT INTERIOR WALL.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>FDC VAULT</b>	<b>16.1</b>



PIPE SIZE	ROD SIZE	NUMBER OF RODS
6"	3/4"	2
8"	3/4"	3
10"	3/4"	4
12"	3/4"	4
14"	3/4"	4
16"	3/4"	6
20"	3/4"	6
24"	3/4"	8
30"	1"	8
36"	1"	10

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>DEADMAN FOR PLUG</b>	<b>16.2</b>

REQ'D: (ABOVE GRADE)

- 1 - 4" QUICK DISCONNECT 90° BEND
- 1 - 4" PIPE FLANGE ADAPTER
- 1 - 4" DUST CAP

#3 @ 9" E.W.

3'-0"

PRECAST CONC. SURROUND

SLIDE OR SCREW TYPE VALVE BOX TO GRADE

4" PLUG VALVE

EXIST. D.I. FORCE MAIN

REQ'D: (BELOW GRADE)

- 1 - 4" 90° BEND
- CONCRETE BLOCKING

TIE RODS

4" D.I.

4'-0"

REQ'D: (BELOW GRADE)

- 1 - TAPPING SLEEVE & VALVE
- CONCRETE BLOCKING

4'-0"  
L&W

SECTION

REQ'D: (BELOW GRADE)

- 1 - TAPPING SLEEVE & VALVE
- 1 - 4" 90° BEND
- CONCRETE BLOCKING

EXIST. PIPE

PLAN

CITY OF DAWSONVILLE

SCALE: NOT TO SCALE

DATE: OCTOBER 15, 2021

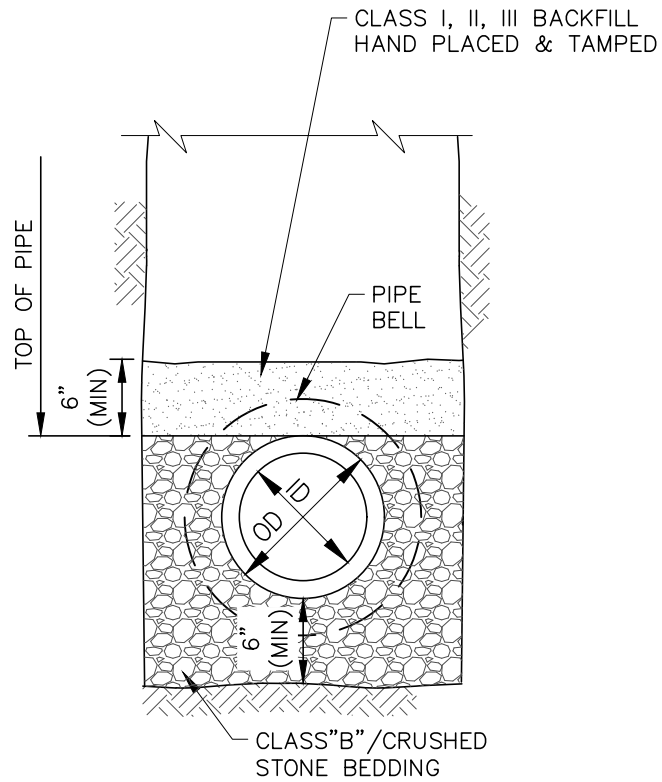
DETAIL TITLE

DETAIL NO.

RAW SEWAGE PUMP STATION  
EMERGENCY BY-PASS CONNECTION

17.1

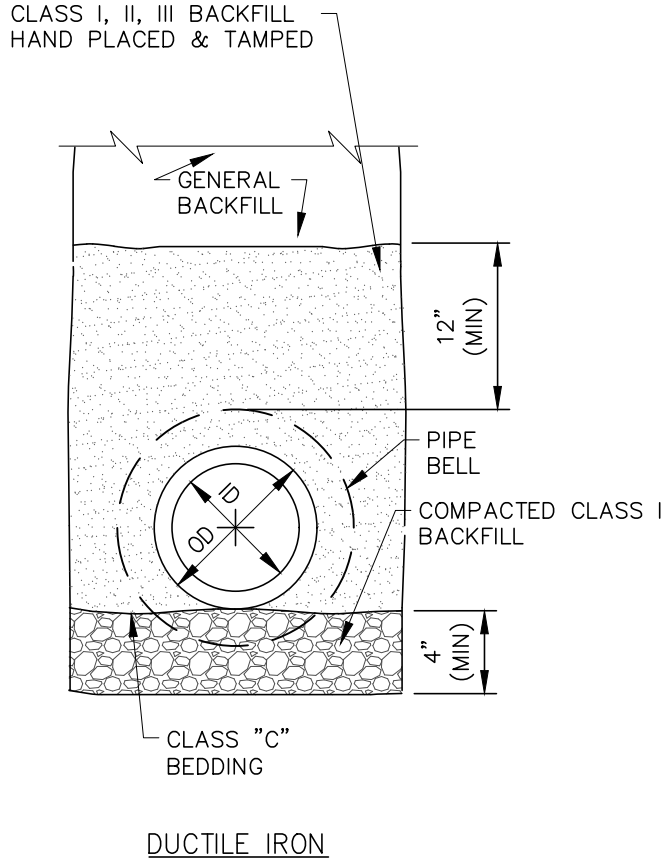




**NOTE:**

1. UNSUITABLE SOILS ENCOUNTERED IN BOTTOM OF EXCAVATED TRENCH SHALL BE EXCAVATED & REPLACED WITH #57 STONE.
2. ONLY SUITABLE SOIL SHALL BE USED AS BACKFILL.

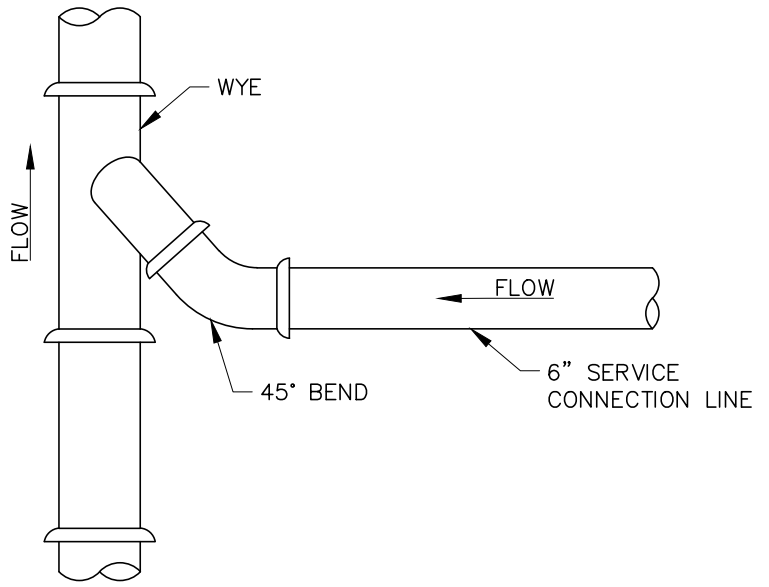
<b>CITY OF DAWSONVILLE</b>		
SCALE: NOT TO SCALE		DATE: OCTOBER 15, 2021
DETAIL TITLE		DETAIL NO.
<b>TYPICAL PVC SEWER PIPE BEDDING</b>		<b>18.1</b>



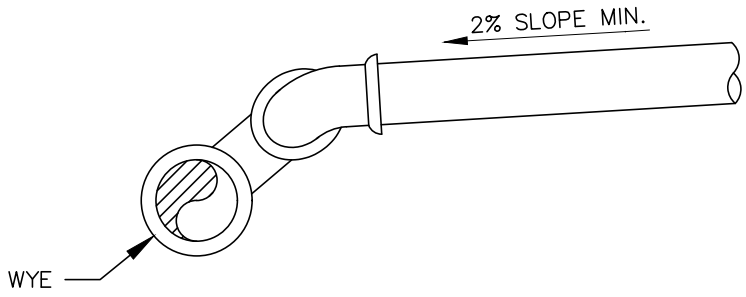
NOTE: APPLICABLE TO BOTH EARTH \* ROCK TRENCHES  
 MAX. DEPTH OF COVER FOR DUCTILE IRON PIPE OF THE VARIOUS CLASSES & SIZES TO BE INSTALLED  
 ARE AS FOLLOWS:  
LAYING CONDITION – DUCTILE IRON

<u>PIPE SIZE IN</u>	<u>THICK CLASS</u>	<u>NOMINAL THICK IN</u>	<u>MAX. DEPTH &amp; COVER (FT.)</u>	
			<u>(1) FLAT BOT TRENCH</u>	<u>(2) SELECTED MATERIAL</u>
8	50	0.27	46	64
	51	0.30	61	81
	52	0.33	77	99

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>TYPICAL DUCTILE IRON SEWER PIPE BEDDING</b>	<b>18.2</b>



PLAN

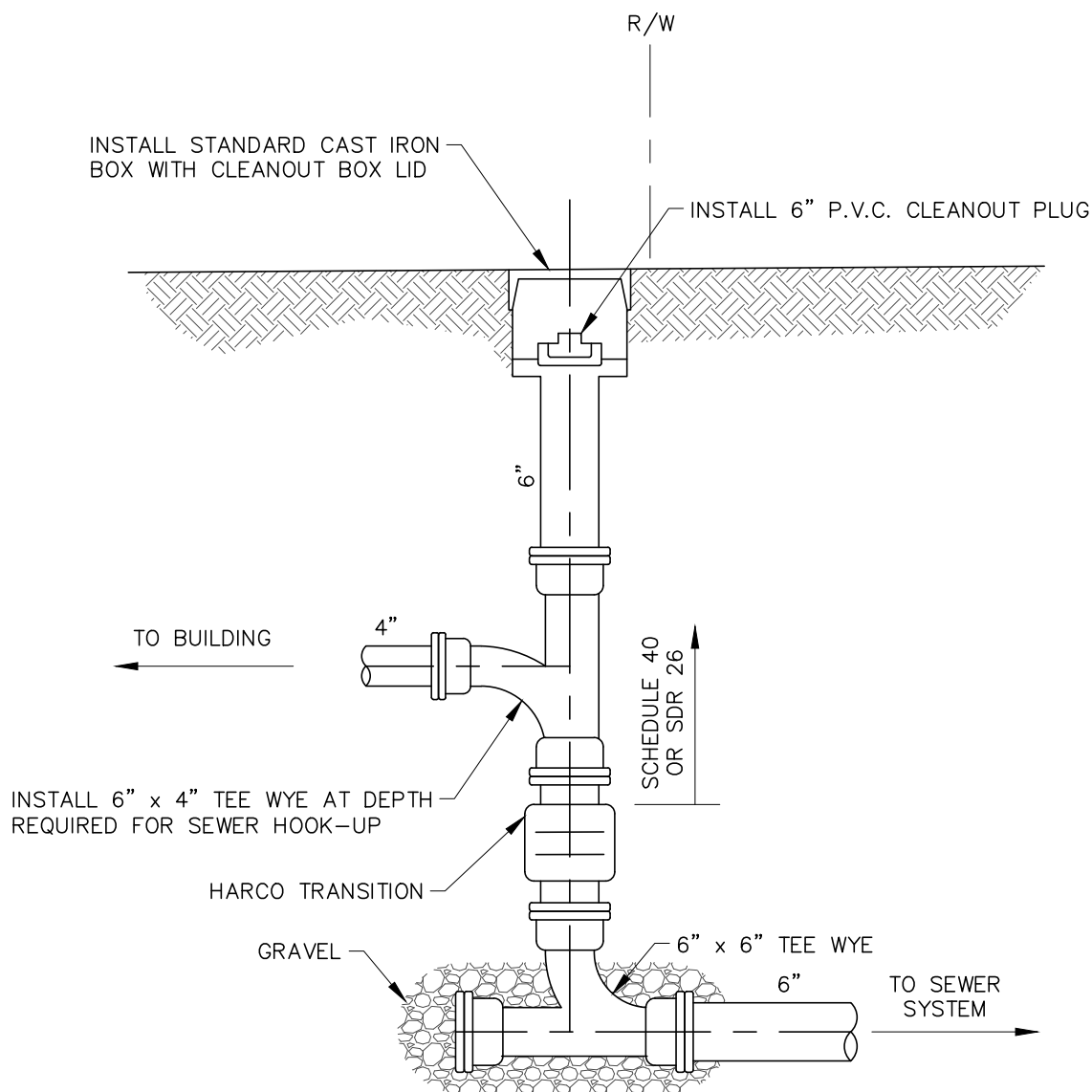


SECTION

NOTE:

1. CONNECTION TO NEW SEWER SHALL BE WITH TEE WYE.
2. NO TEES WYES ON SEWERS LARGER THAN 18"  $\phi$ .
3. LATERAL MATERIAL SHALL BE SAME TYPE AS MAIN LINE
4. LATERAL BEDDING SHALL BE SAME AS MAIN LINE.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>SEWER LATERAL CONNECTION</b>	<b>19.1</b>



**NOTE:** THIS CLEANOUT DETAIL TO BE USED FOR 10' OR DEEPER CONDITIONS AND ONLY AFTER APPROVAL BY CITY OF DAWSONVILLE.

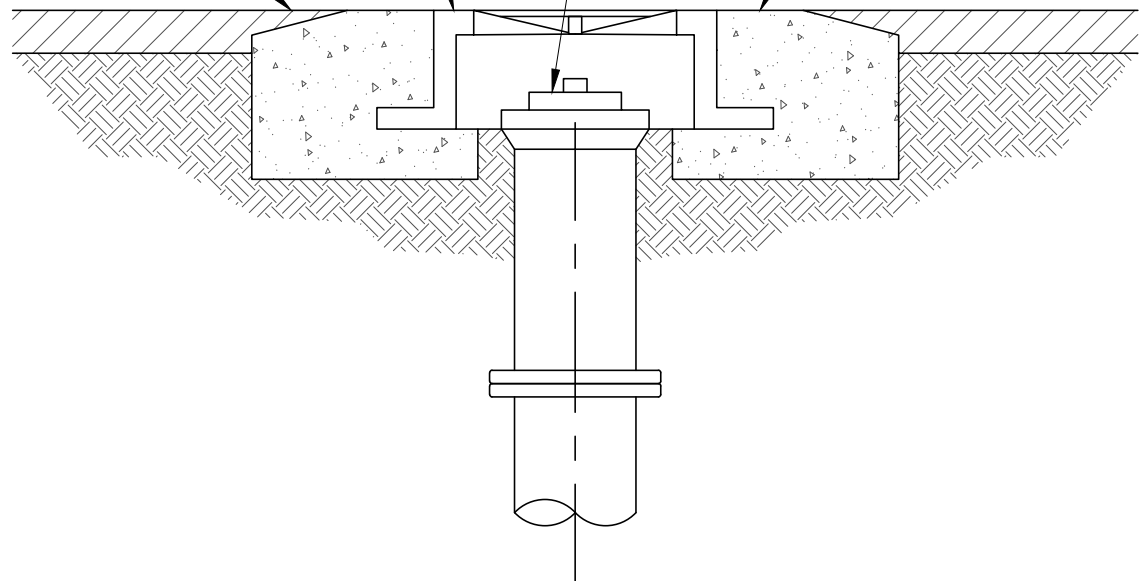
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
CLEANOUT	19.2

STANDARD RISER FRAME & COVER  
AS APPROVED BY CITY. USE  
NEENAH INSPECTION FRAME AND  
COVER MODEL R-1976, USF COVER  
MODEL 7621, OR APPROVED EQUAL.

FINISHED PAVEMENT  
OR CONCRETE

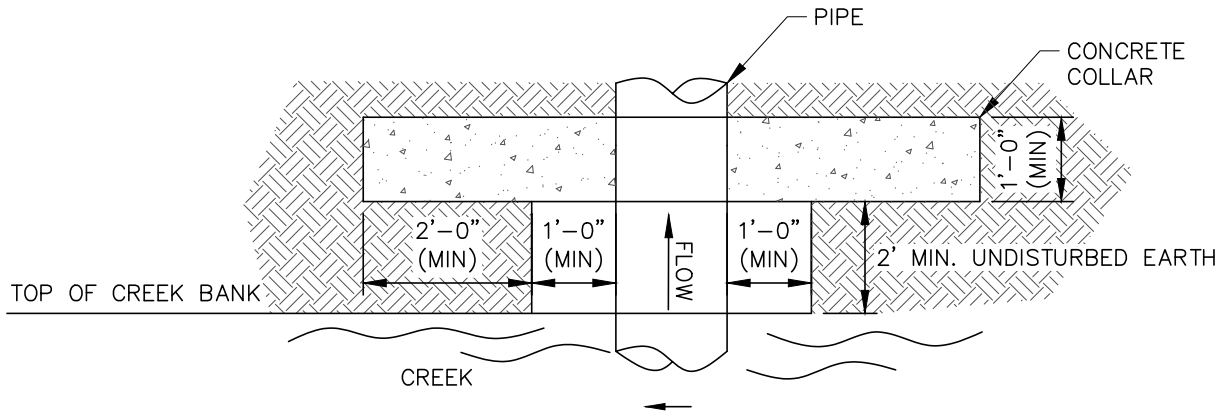
THREADED  
BRASS CAP

NEENAH INSPECTION FRAME  
& COVER TO BE SET IN  
REINFORCED CONCRETE  
COLLAR.

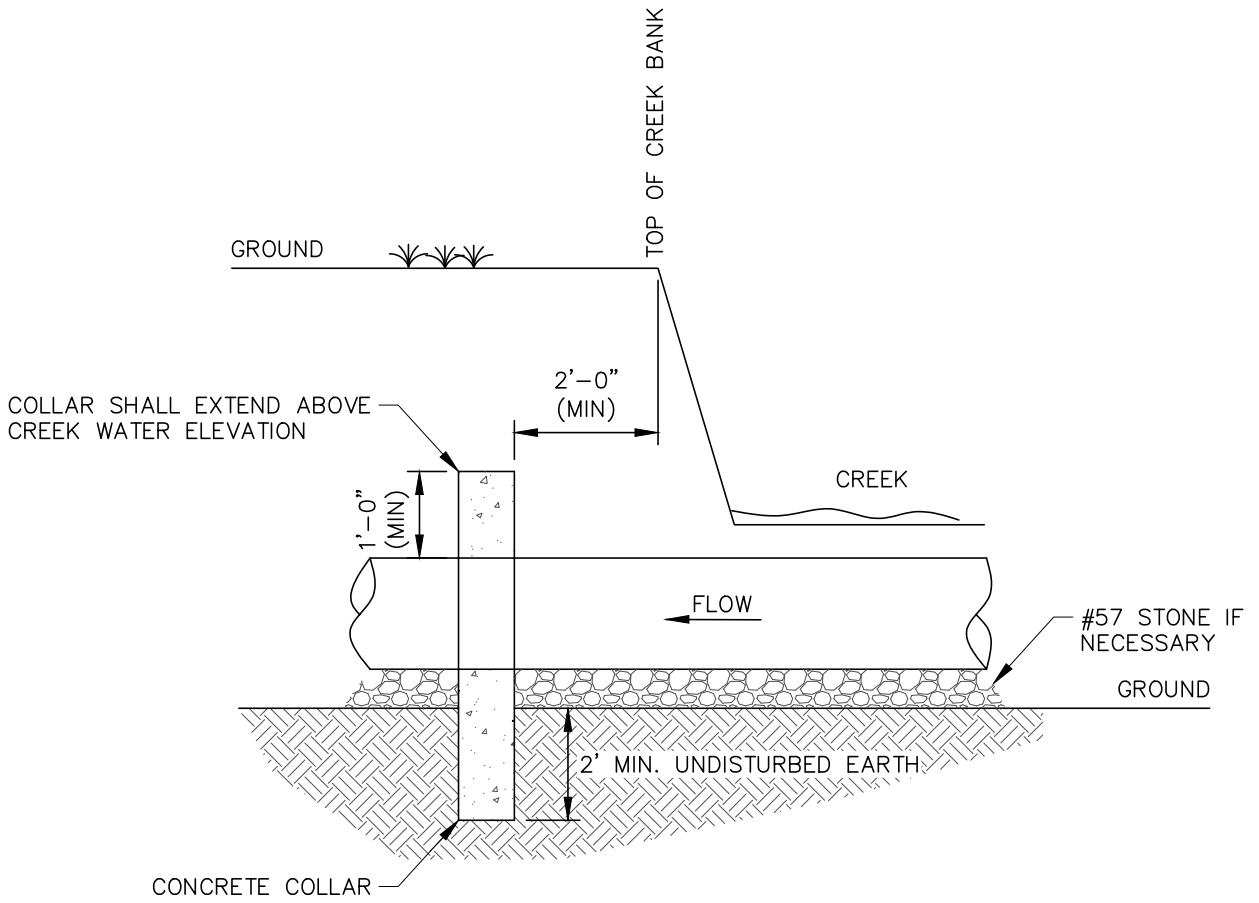


NOTE: THE INSPECTION FRAME AND COVER IS TO BE USED  
IN ALL PAVED AND CONCRETE APPLICATIONS.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TRAFFIC RATED CLEANOUT BOX	19.3

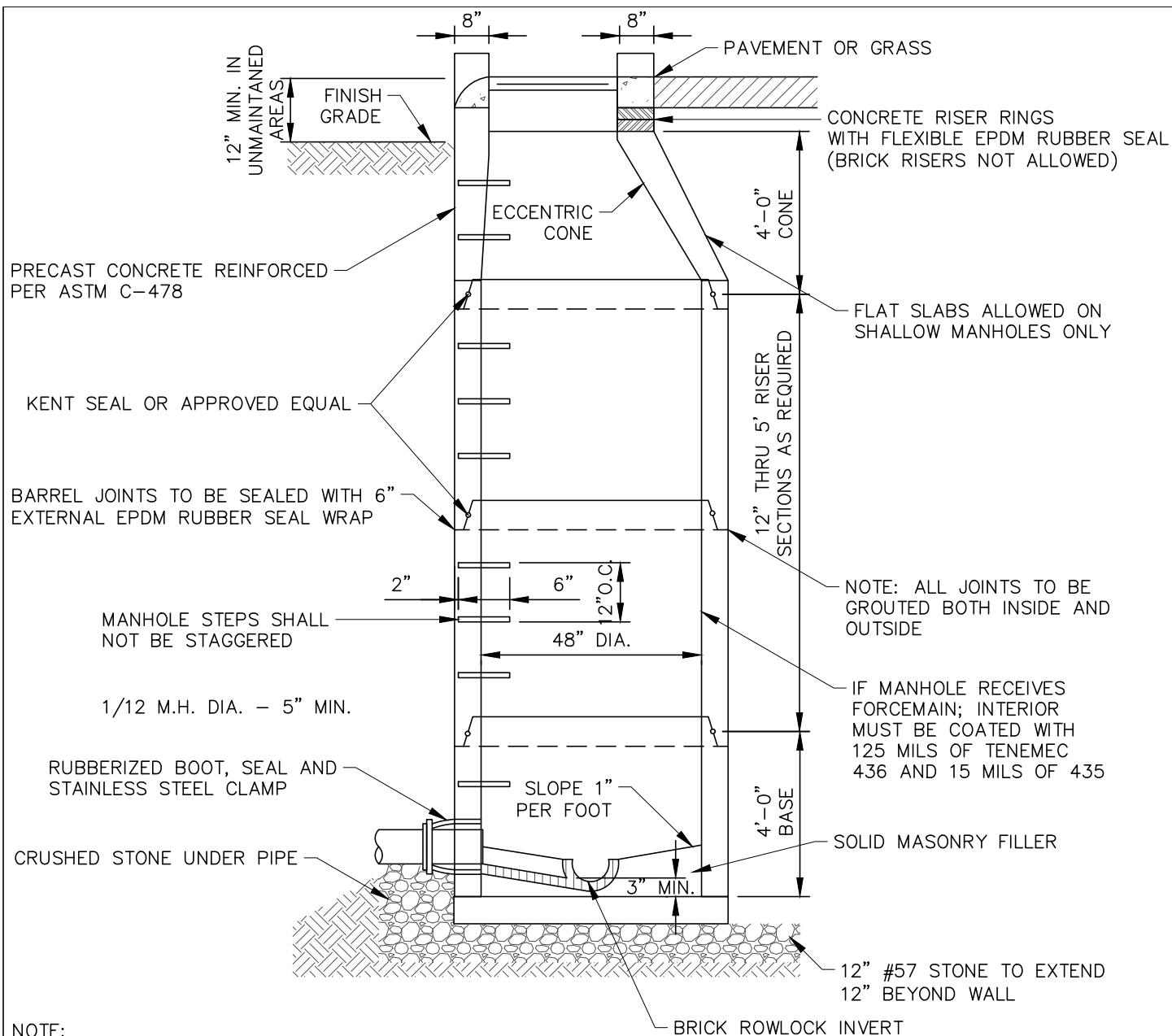


PLAN VIEW



SIDE VIEW

CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
PIPE COLLAR	20.1

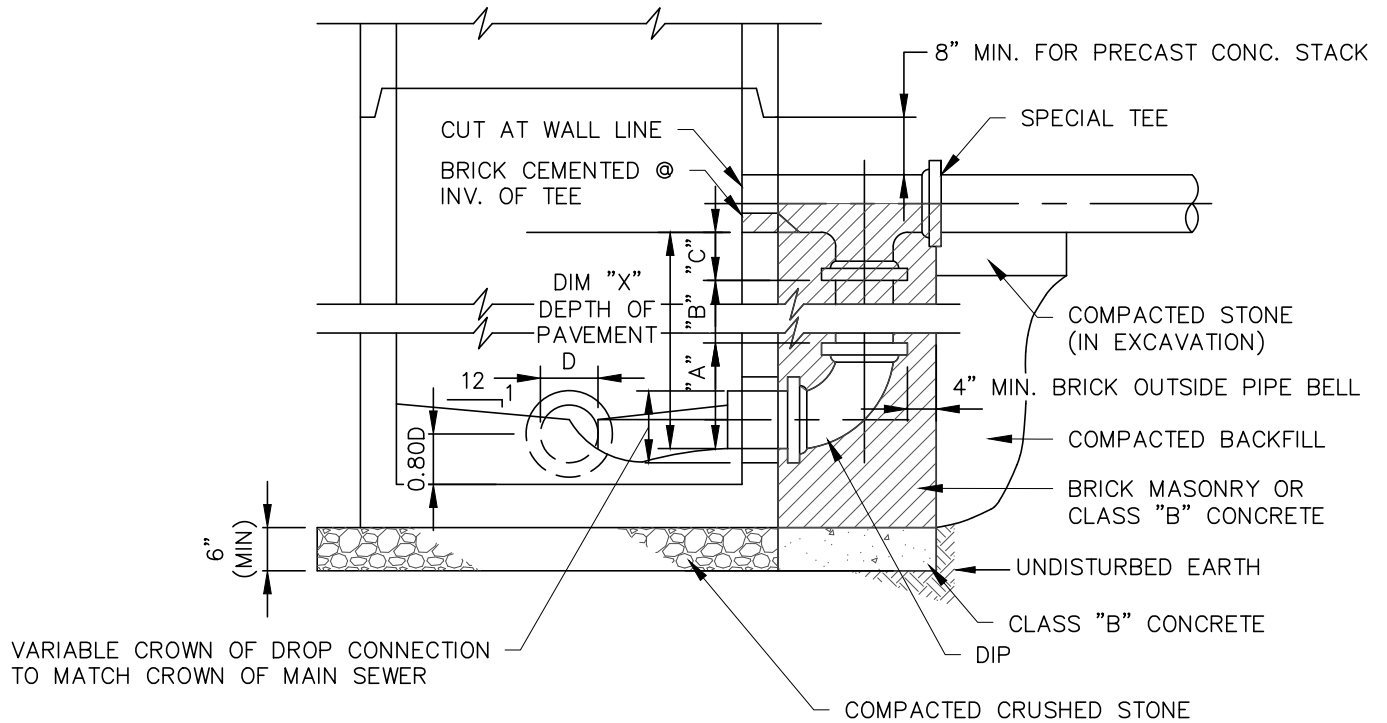


**NOTE:**

1. TABLES ARE TO BE GENTLY SLOPED AND TROWELED SMOOTH FROM M.H. WALL TO INVERT WALL AND CONSTRUCTED OF SOLID MASONRY.
2. BASES LARGER THAN 48" (INCH) MUST USE TRANSITION SLAB AND 48" (INCH) RISER SECTIONS
3. CONES WITH BOLT DOWN CAST IN PLACE FRAMES ARE REQUIRED ON OUTFALL SEWERS IN UNMAINTAINED AREAS
4. TRAFFIC FRAME AND COVER SHALL BE USED IN PAVED AREAS.
5. NO MANHOLE RISER SECTION SHALL BE MORE THAN 1/2" (ONE HALF INCH) OUT OF ROUND.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>PRECAST MANHOLE</b>	<b>21.1</b>

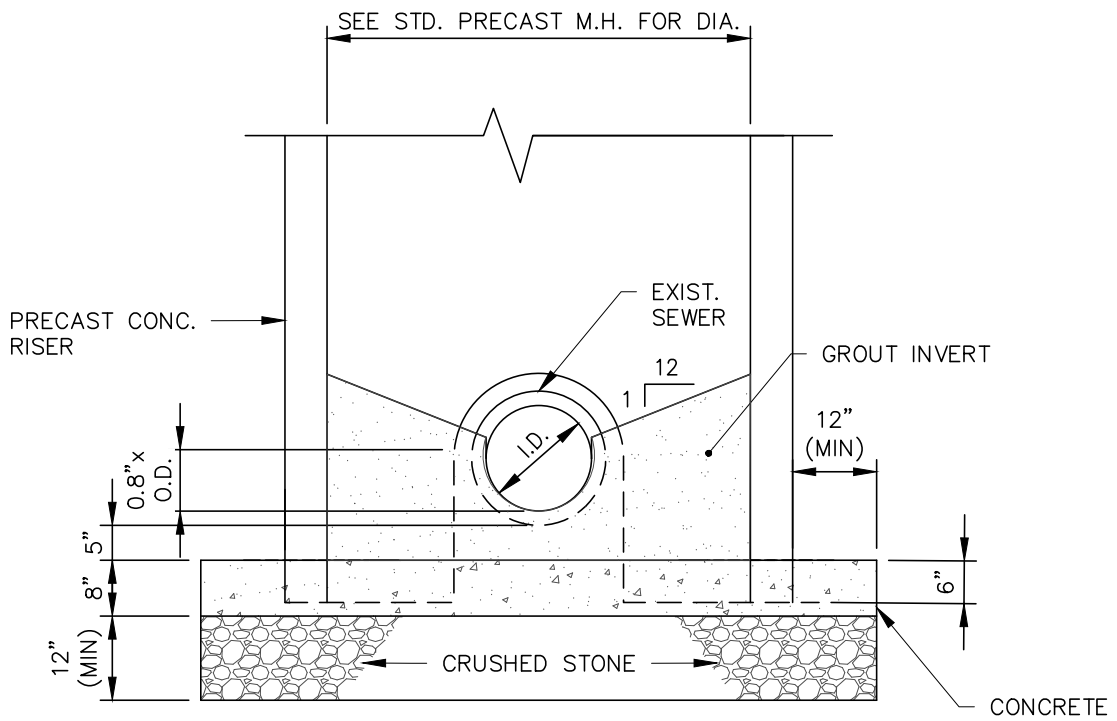
SCHEDULE FOR DROP CONNECTIONS DIMENSION "X"		
PIPE SIZE	DROP SIZE	MIN. DROP
6"	6"	24"
8"	8"	24"
10"	8"	24"
12"	10"	35"
15"	12"	37"
18"	15"	39"
21"	18"	41"
24"	18"	43"
30"	18"	45"



**NOTE:** ALL PIPING INSIDE MANHOLE SHALL BE DUCTILE IRON W/ STAINLESS STEEL HARDWARE.

CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TYPICAL DROP MANHOLE CONNECTION DETAIL	21.2





CITY OF DAWSONVILLE

SCALE: NOT TO SCALE

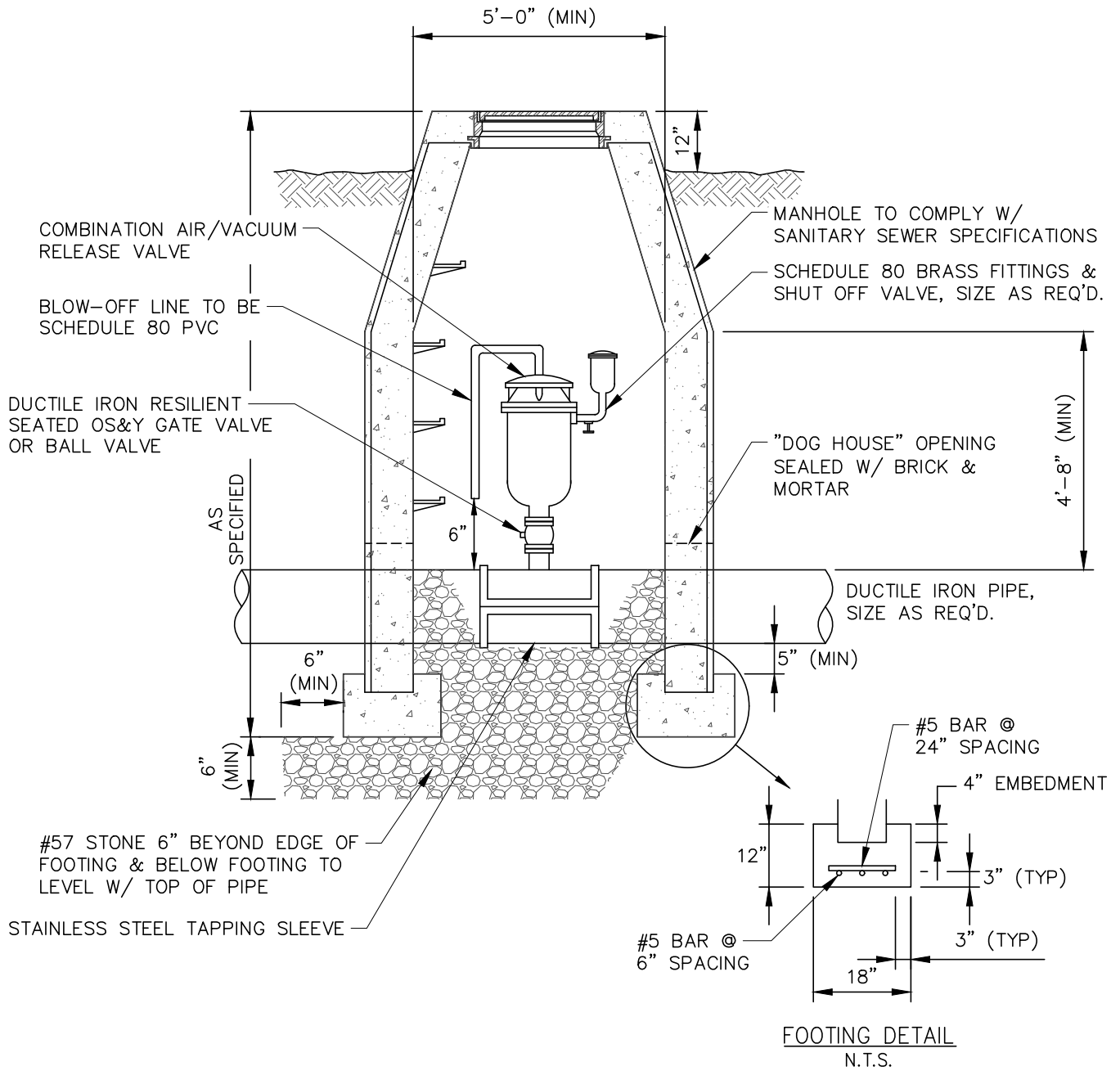
DATE: OCTOBER 15, 2021

DETAIL TITLE

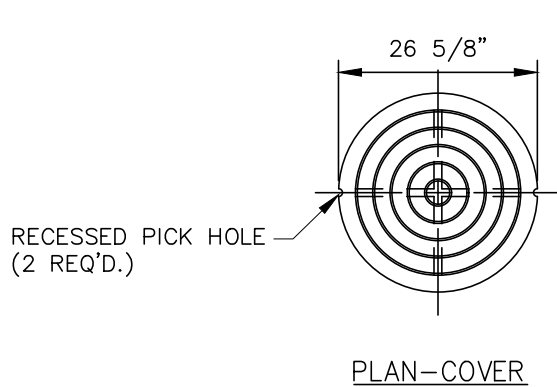
DETAIL NO.

TYPICAL DOG HOUSE MANHOLE DETAIL

21.3



<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>COMBINATION AIR/VACUUM RELEASE VALVE</b>	<b>22.1</b>

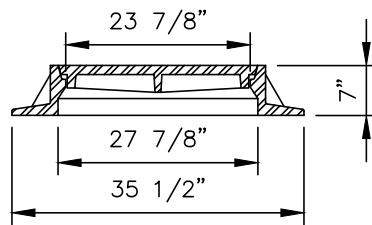


NOTE:

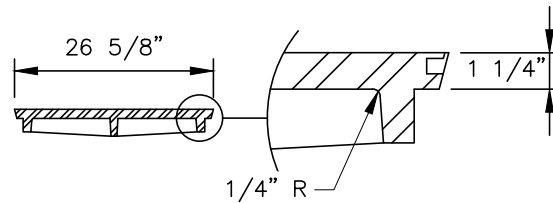
SEATING SURFACE OF  
FRAMES & COVERS TO  
BE MACHINED TO FIT.

APPROX TOTAL WT. OF FRAME & COVER IS  
370# OR GREATER

SHALL BE:  
U.S. FOUNDRY 223 BN,  
NEENAH R-1423-BN,  
EAST JORDAN V1349 OR EQUAL

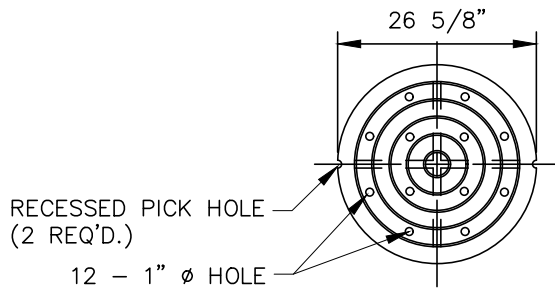


SECTION-FRAME & COVER



SECTION-COVER

<b>CITY OF DAWSONVILLE</b>		
SCALE: NOT TO SCALE		DATE: OCTOBER 15, 2021
DETAIL TITLE		DETAIL NO.
<b>TYPICAL STANDARD C.I. D.I. MANHOLE FRAME AND COVER</b>		<b>23.1</b>



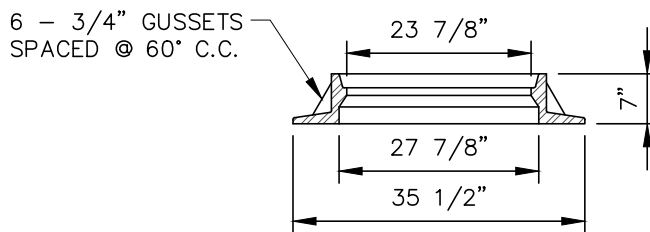
PLAN-COVER

NOTE:

SEATING SURFACE OF  
FRAMES & COVERS TO  
BE MACHINED TO FIT.

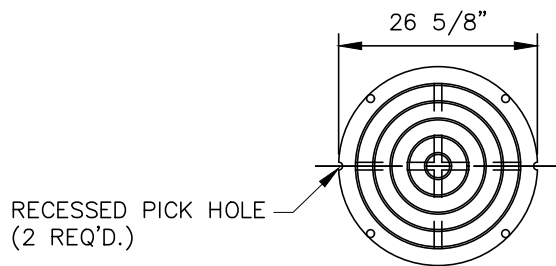
APPROX TOTAL WT. OF FRAME & COVER IS  
370# OR GREATER

SHALL BE:  
U.S. FOUNDRY 223 BN,  
NEENAH R-1423-BN,  
EAST JORDAN V1349 OR EQUAL



SECTION-FRAME

CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TYPICAL VENTED C.I. D.I. MANHOLE FRAME AND COVER	23.2



RECESSED PICK HOLE  
(2 REQ'D.)

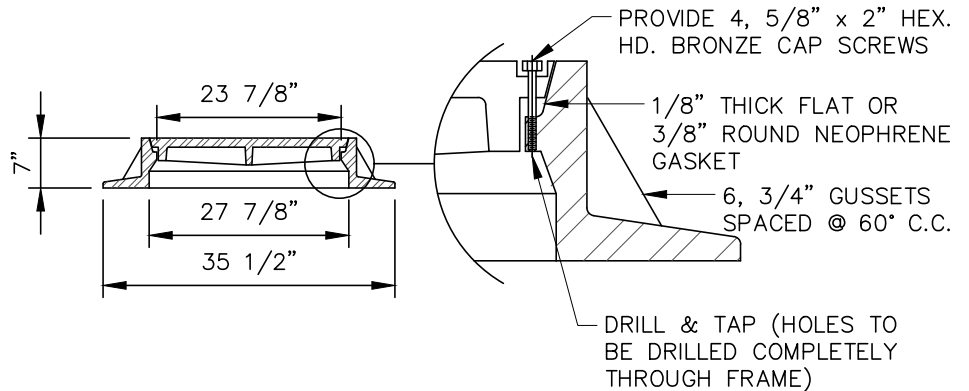
PLAN-COVER

NOTE:

SEATING SURFACE OF  
FRAMES & COVERS TO  
BE MACHINED TO FIT.

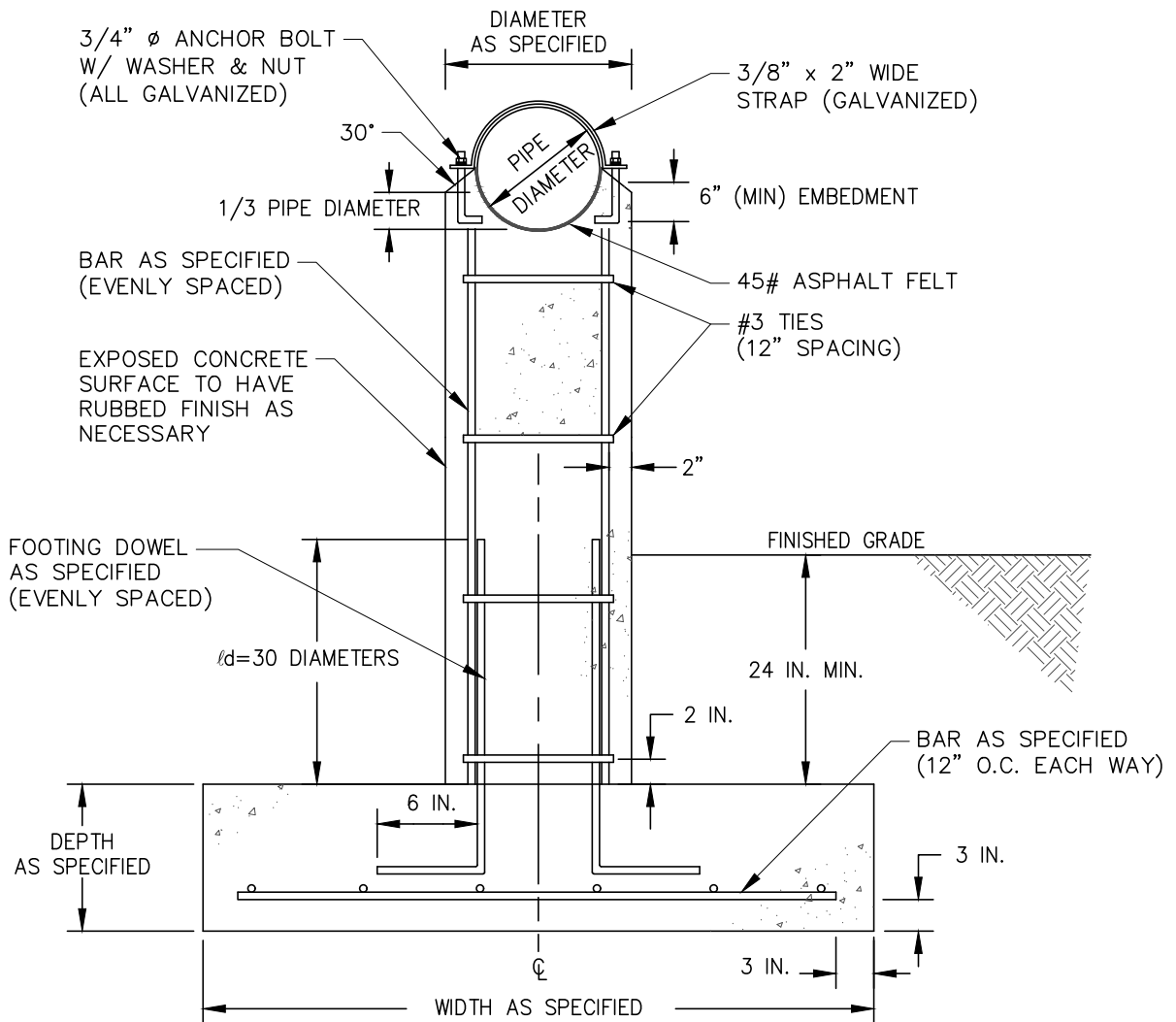
APPROX TOTAL WT. OF FRAME & COVER IS  
370# OR GREATER

SHALL BE:  
U.S. FOUNDRY 223 BN,  
NEENAH R-1423-BN,  
EAST JORDAN V1349 OR EQUAL



SECTION-FRAME & COVER

CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TYPICAL WATERTIGHT C.I. D.I. MANHOLE FRAME AND COVER	23.3



**CONCRETE PIERS**

PIPE SIZE (INCHES)	PIER DIAMETER (INCHES)	PIER REINFORCING STEEL (EVENLY SPACED)
8	16	6 : # 5 BAR, # 3 TIE AT 12" O.C.
10	18	6 : # 5 BAR, # 3 TIE AT 12" O.C.
12	20	6 : # 5 BAR, # 3 TIE AT 12" O.C.
14	22	6 : # 6 BAR, # 3 TIE AT 12" O.C.
16	24	6 : # 6 BAR, # 3 TIE AT 12" O.C.

**CONCRETE FOOTINGS**

PIER DIAMETER (INCHES)	FOOTING WIDTH AND DEPTH (INCHES)	FOOTING REINFORCING STEEL (EVENLY SPACED, 12 INCH MAX. SPACING EACH WAY)	FOOTING DOWELS (EVENLY SPACED)
16	40 X 40 X 12 DEPTH	# 5 BAR	# 5 BAR
18	42 X 42 X 15 DEPTH	# 5 BAR	# 5 BAR
20	44 X 44 X 15 DEPTH	# 5 BAR	# 5 BAR
22	46 X 46 X 18 DEPTH	# 6 BAR	# 6 BAR
24	48 X 48 X 20 DEPTH	# 6 BAR	# 6 BAR

**CITY OF DAWSONVILLE**

SCALE: NOT TO SCALE

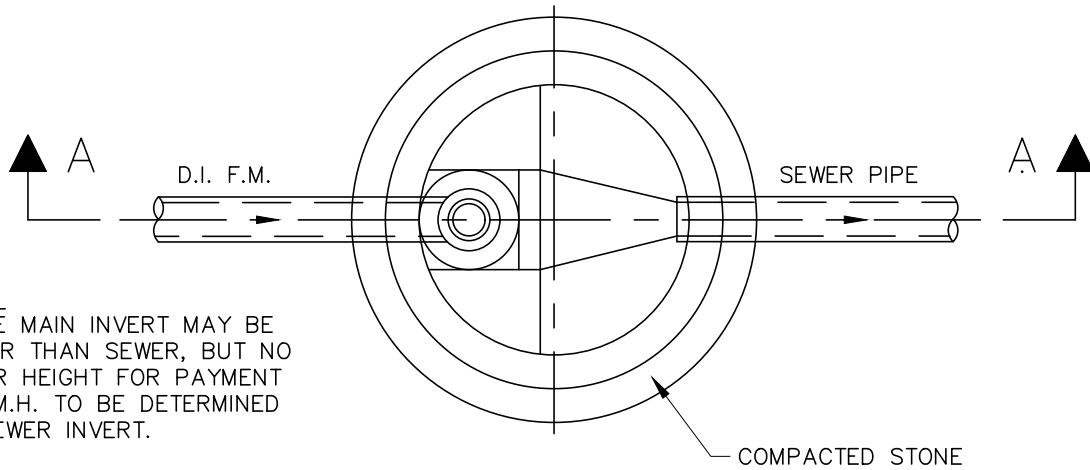
DATE: OCTOBER 15, 2021

DETAIL TITLE

DETAIL NO.

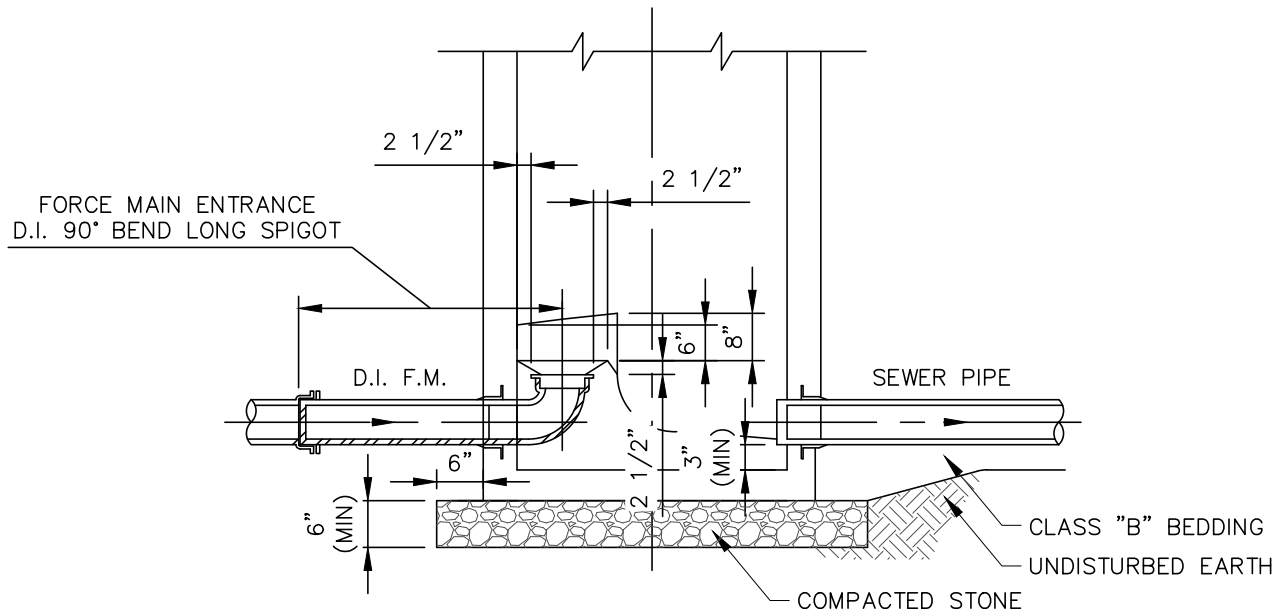
**PIER DIMENSIONS AND SECTION**

**24.1**



**NOTE:**  
 FORCE MAIN INVERT MAY BE HIGHER THAN SEWER, BUT NO LOWER HEIGHT FOR PAYMENT FOR M.H. TO BE DETERMINED BY SEWER INVERT.

**PLAN**

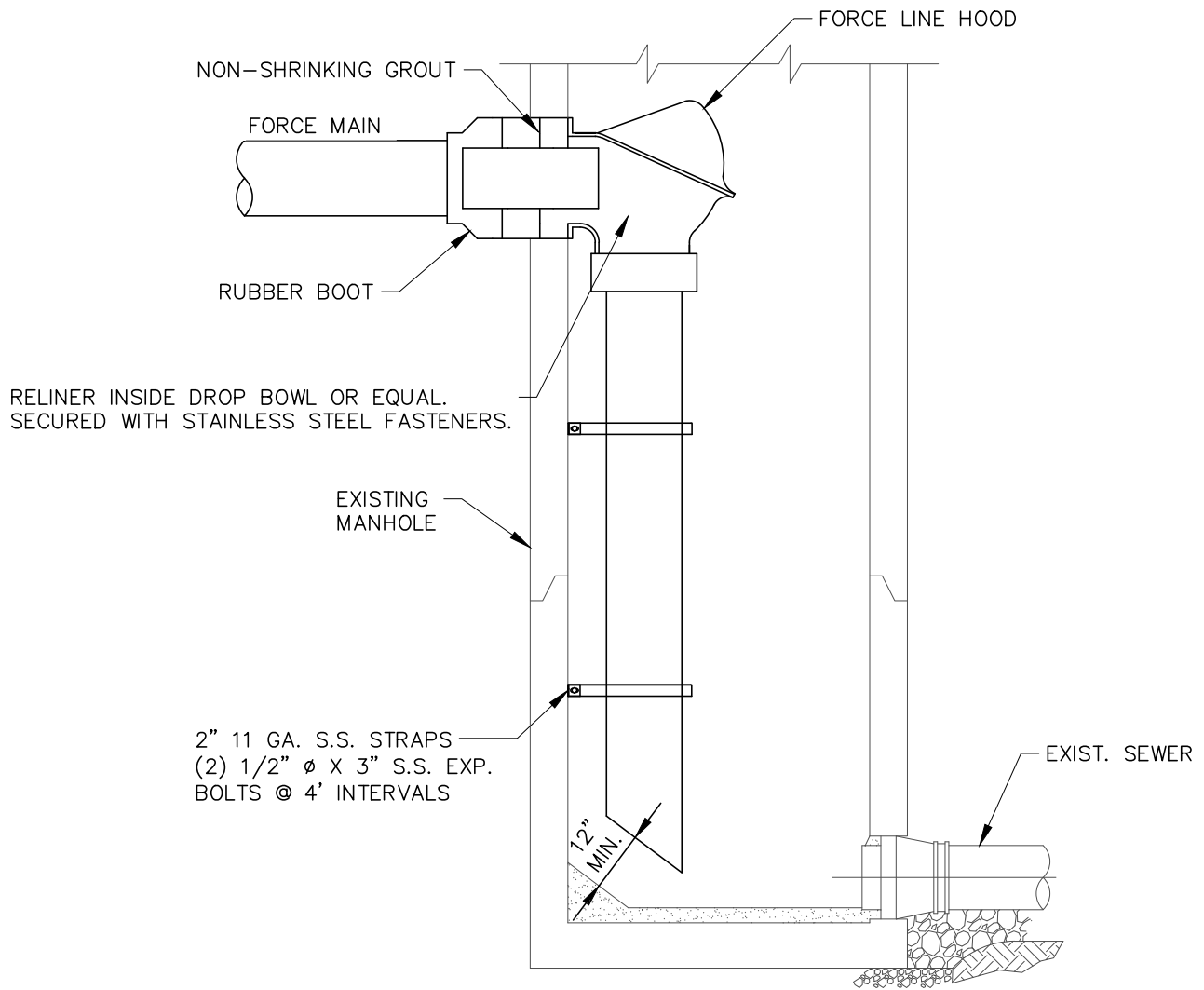


**SECTION A-A**

**NOTE:**

1. WASTEWATER PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE IN SUCH A MANNER THAT THE FINISHED WORK SHALL CONFORM AS NEARLY AS PRACTICABLE TO THE ESSENTIAL REQUIREMENTS SPECIFIED FOR NEW MANHOLES. THE CONTRACTOR SHALL CORE AN OPENING IN THE EXISTING MANHOLE AS NECESSARY TO INSERT THE NEW WASTEWATER PIPE. THE EXISTING CONCRETE FOUNDATION BENCH SHALL BE CHIPPED TO THE CROSS-SECTION OF THE NEW PIPE IN ORDER TO FORM A SMOOTH CONTINUOUS INVERT SIMILAR TO WHAT WOULD BE FORMED IN A NEW CONCRETE BASE. NON-SHRINK GROUT SHALL BE USED TO SEAL THE NEW LINE SO THE JUNCTION IS WATERTIGHT. THE BYPASSING OF RAW WASTEWATER ONTO THE GROUND OR INTO A RECEIVING STREAM IS STRICTLY PROHIBITED.
2. INTERIOR MUST BE COATED WITH 125 MILS OF TNEMEC 436 AND 15 MILS OF 435.

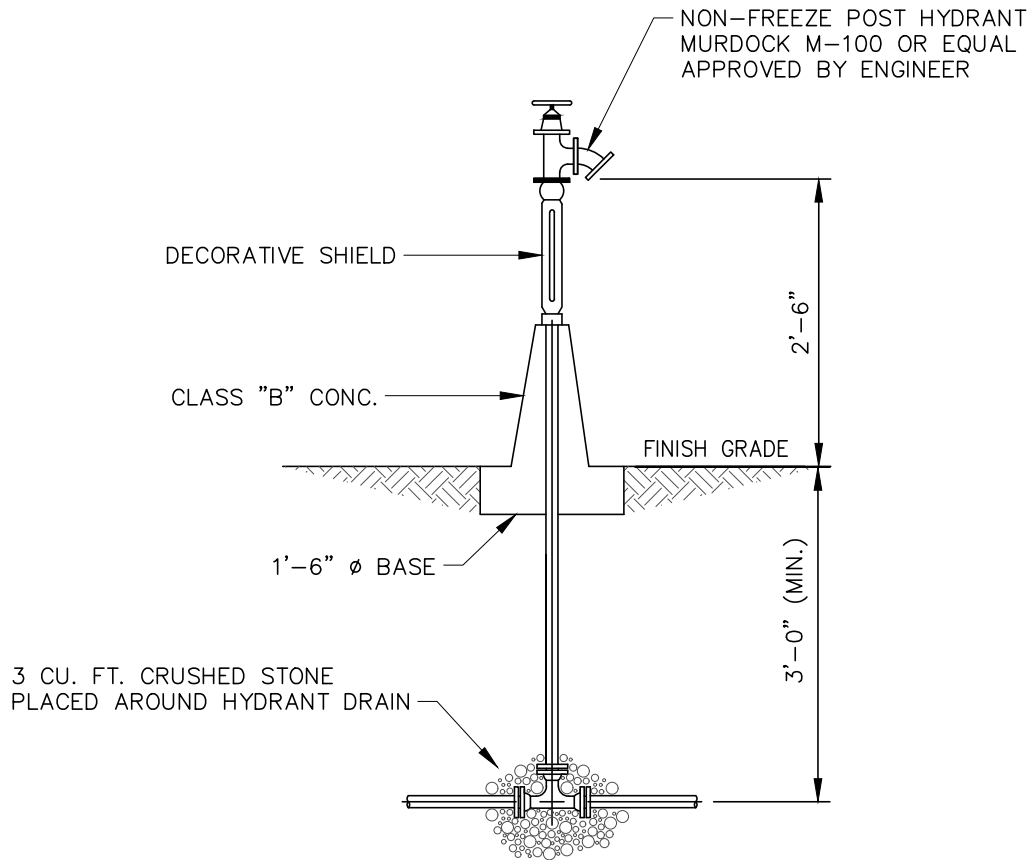
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>FORCE MAIN CONNECTION TO MANHOLE</b>	<b>25.1</b>



NOTE: INTERIOR MUST BE COATED WITH 125 MILS OF TNE MEC 436 AND 15 MILS OF 435.

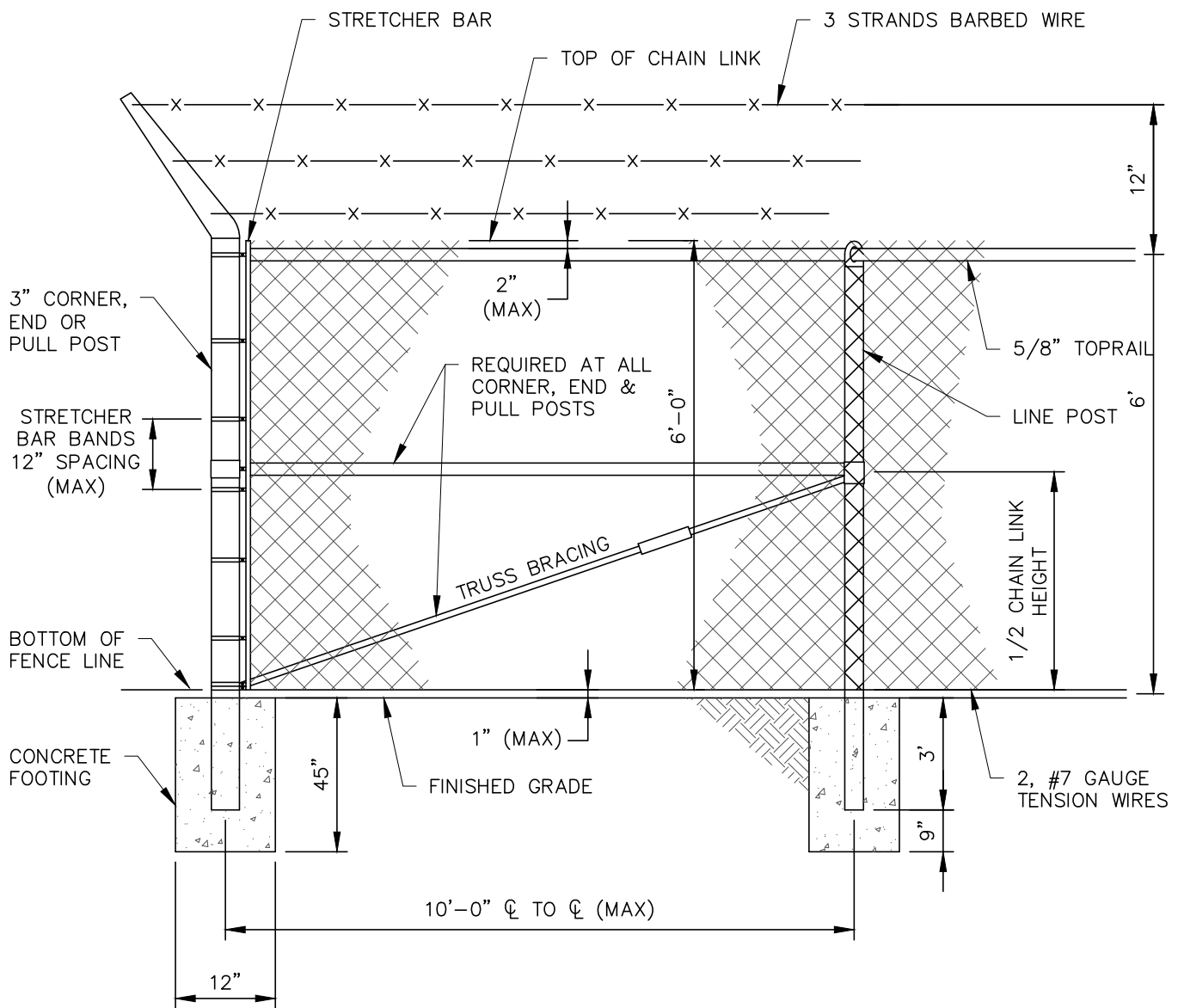
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>FORCE MAIN CONNECTION TO MANHOLE (DROP BOWL)</b>	<b>25.2</b>





**NOTE:** THE DISTANCE FROM THE WATER MAIN TO THE YARD HYDRANT SHALL BE DETERMINED IN FIELD BY ENGINEER.

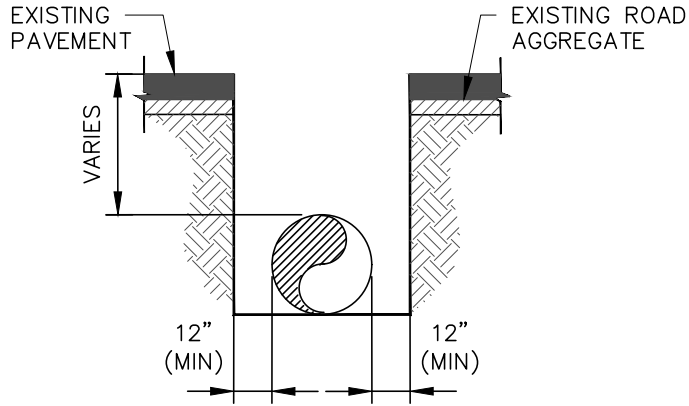
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
YARD HYDRANT	26.1



**NOTE:**

1. PROVIDE PVC COATED CHAIN LINK FOR FENCE.
2. INSTALL 14' WIDE DOUBLE SWING GATE.

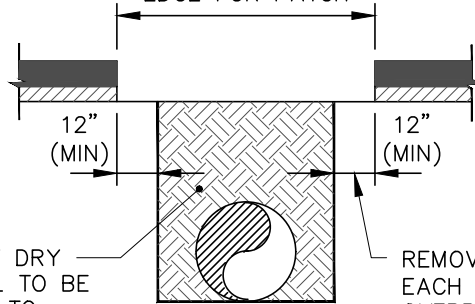
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>CHAIN LINK FENCE</b>	<b>27.1</b>



PAVEMENT TO BE SAW CUT TO NEAT LINES AND REMOVED

STAGE 1

CUT W/ CONCRETE SAW TO INSURE A STRAIGHT VERTICAL EDGE FOR PATCH

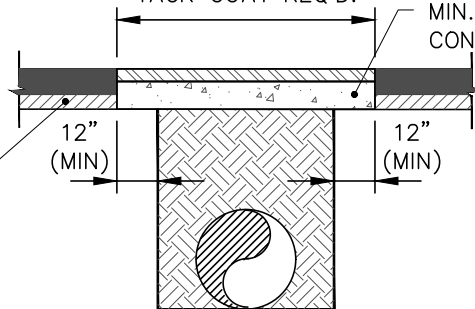


FILL COMPACTED TO 95% OF DRY MAXIMUM DENSITY. MATERIAL TO BE COMPACTED IN LAYERS NOT TO EXCEED 6".

REMOVE EXTRA 12" OF PAVEMENT ON EACH SIDE OF TRENCH OR TO VISIBLE OVERBREAK WHICHEVER IS GREATER

STAGE 2

TOP 2" TO BE REPLACED W/ SAME MATERIAL AS EXISTING SURFACE. TACK COAT REQ'D.



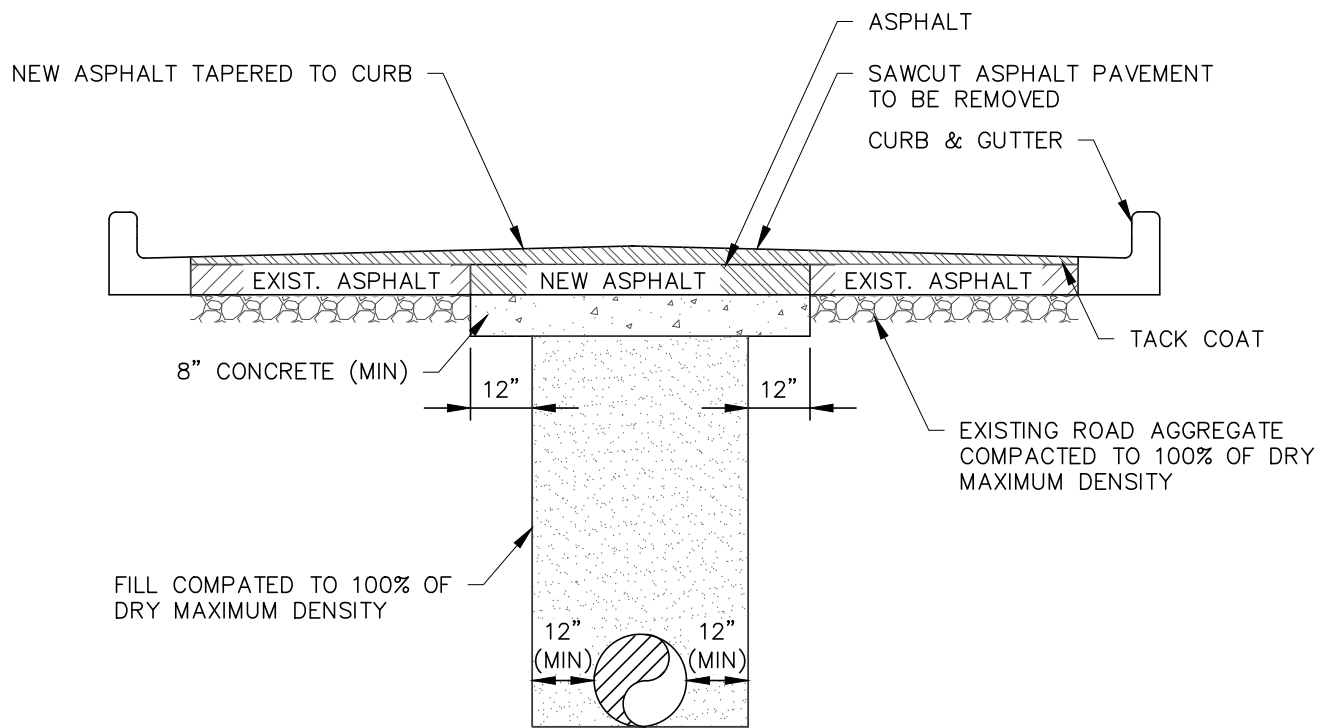
EXISTING ROAD AGGREGATE COMPACTED TO 100% OF DRY MAXIMUM DENSITY

MIN. 8" CLASS "B" PORTLAND CEMENT CONCRETE OR MIN. 12" SOIL CEMENT BASE

SURFACES TO BE CLEANED AND BITUMINOUS TACK COAT APPLIED BEFORE PLACEMENT OF TYPE "E" OR "F" ASPHALTIC.

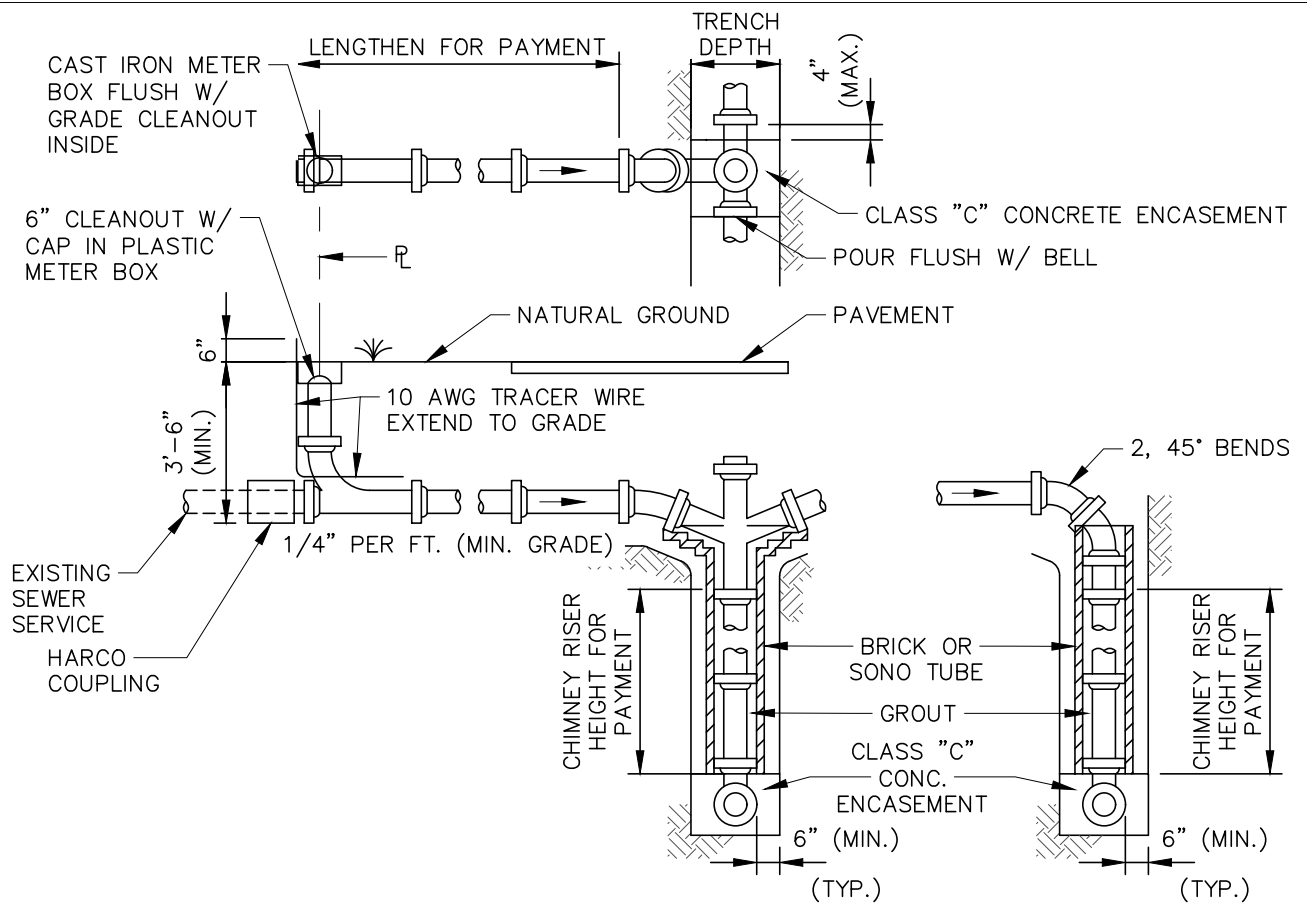
STAGE 3

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>TYPICAL ASPHALT REPLACEMENT</b>	<b>28.1</b>

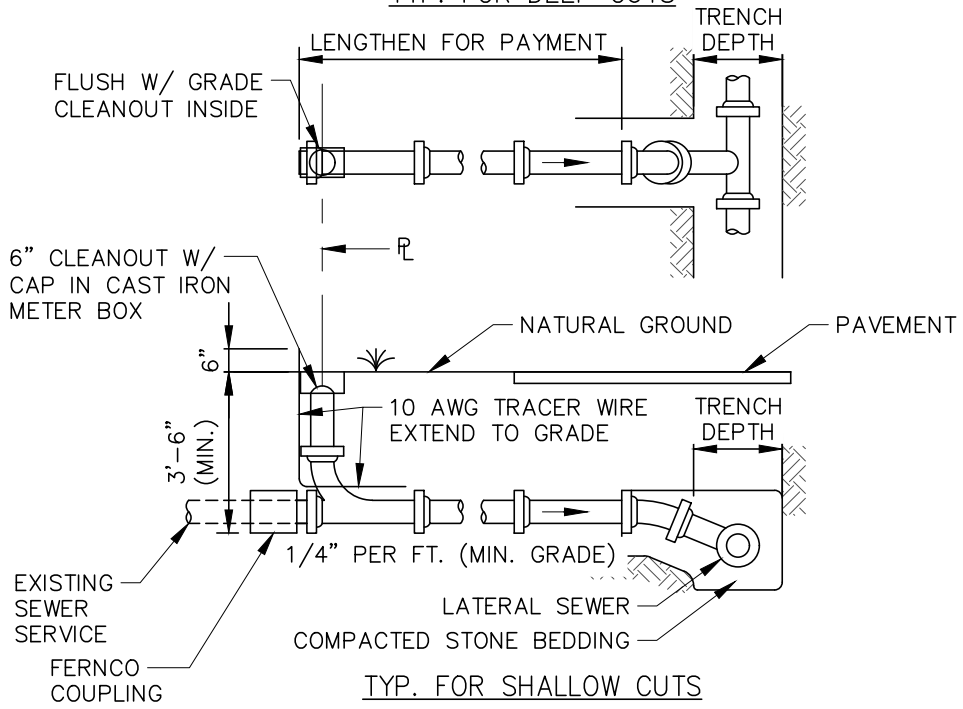


- NOTE:**
1. TAPER NEW ASPHALT PAVEMENT TO EXISTING PAVEMENT
  2. USE 9.5MM ASPHALT 1 1/8" TO 1.5" TYPE 2
  3. USE 12.5MM ASPHALT 1 3/8" TO 2.5"

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>TYPICAL ASPHALT TO CURB REPLACEMENT</b>	<b>29.1</b>

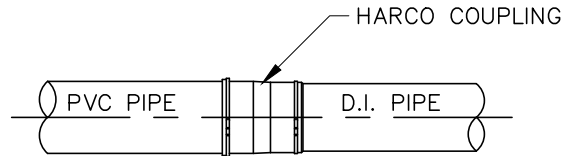


TYP. FOR DEEP CUTS



TYP. FOR SHALLOW CUTS

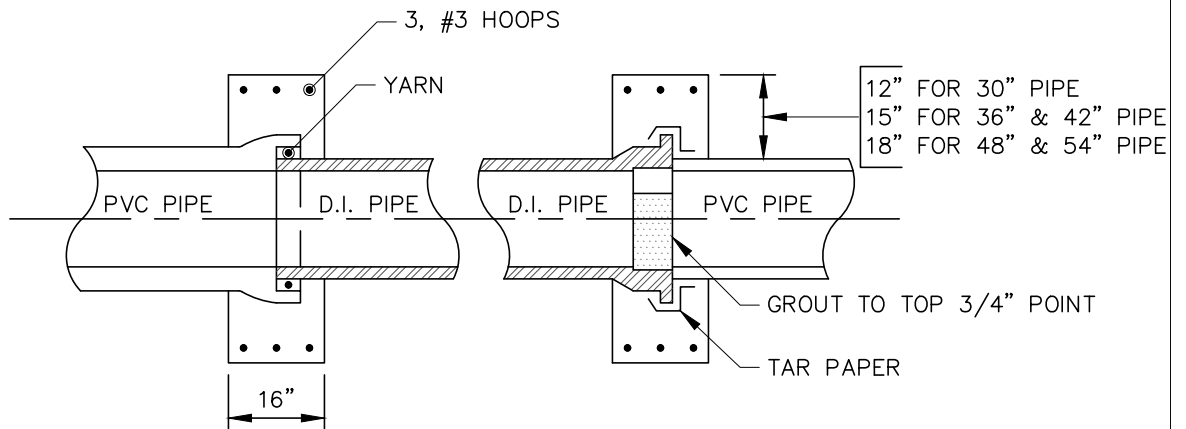
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>TYPICAL CLEANOUT ASSEMBLY</b>	<b>30.1</b>



**NOTE:**

1. CONTRACTOR TO USE COUPLING AS RECOMMENDED BY MFG. IN JOINTING UNLIKE TYPES OF PIPE.
2. CONTRACTOR TO USE HARCO COUPLING IN LIEU OF CONCRETE COLLAR, PIPE SIZES 4" THRU 24".

FLEXIBLE COUPLING

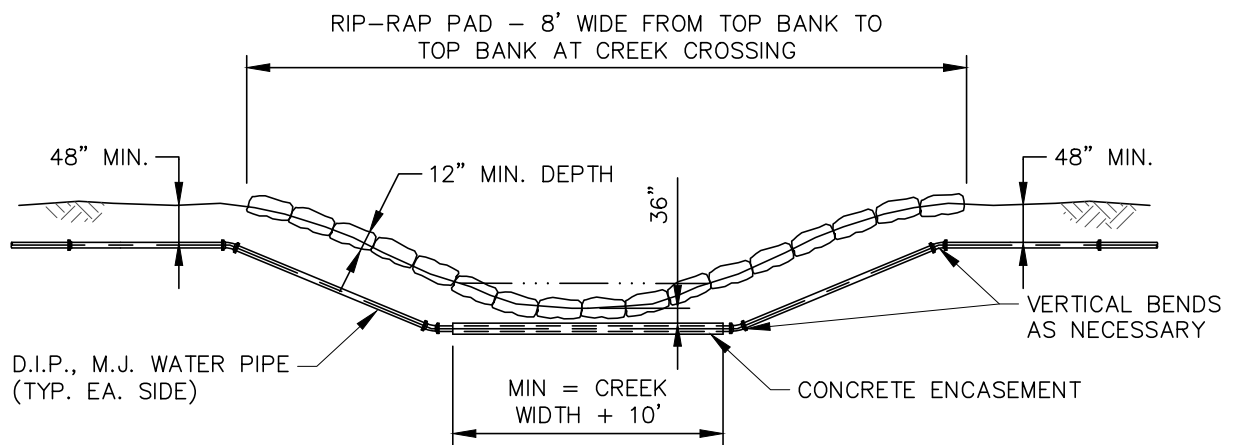


**NOTE:**

COLLAR TO BE CLASS "B" CONCRETE.

CONCRETE COLLAR

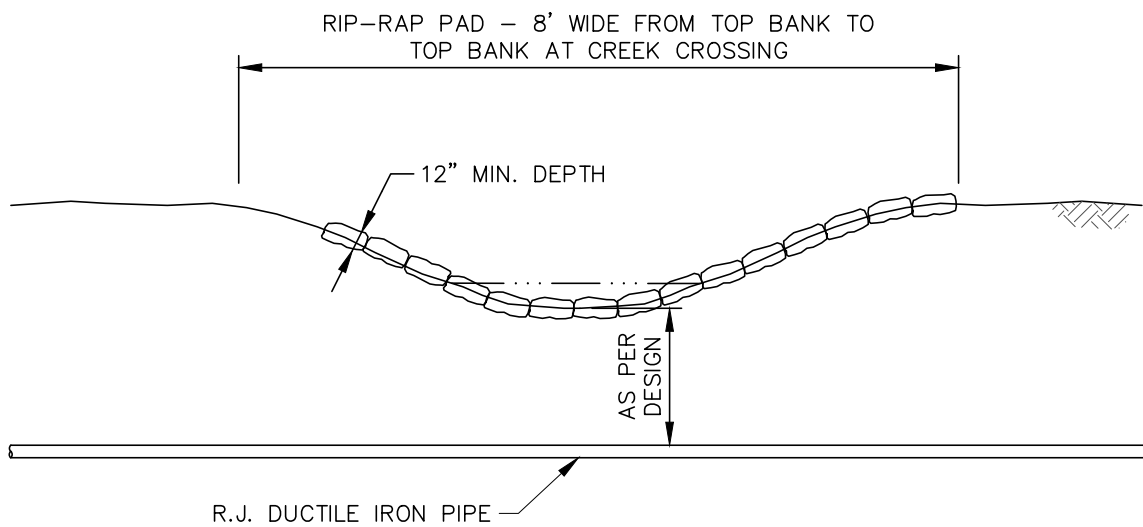
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>D.I. PIPE AND PVC PIPE CONNECTION DETAIL</b>	<b>31.1</b>



**NOTE:**

1. ALL JOINTS IN D.I.P.. M.J. USED IN CREEK CROSSINGS SHALL BE RESTRAINED WITH M.J. RETAINER GLANDS—EBAA IRON OR EQUAL.
2. PROVIDE CONCRETE ENCASEMENT WHERE INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>WATER LINE CREEK CROSSING DETAIL</b>	<b>32.1</b>

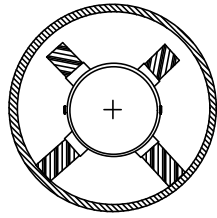


**NOTE:**

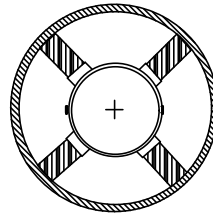
1. ALL JOINTS IN D.I.P.. M.J. USED IN CREEK CROSSINGS SHALL BE RESTRAINED WITH M.J. RETAINER GLANDS—EBAA IRON OR EQUAL.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
SEWER LINE CREEK CROSSING DETAIL	32.2

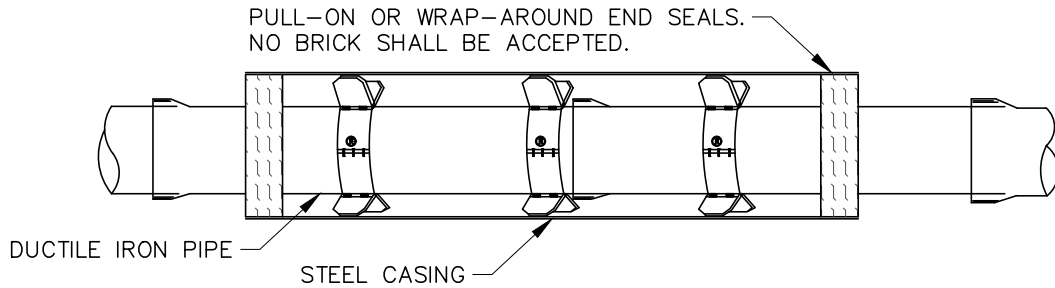




STANDARD  
POSITIONING FOR  
SANITARY SEWER



CENTERED/RESTRAINED  
POSITIONING FOR WATER MAINS  
MECHANICAL JOINT PIPE  
REQUIRED FOR WATER MAINS



**NOTES:**

1. STEEL PIPE CASING SHALL BE MANUFACTURED FROM STEEL CONFORMING TO ASTM A252 GRADE 2 AS AMENDED TO DATE, WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI BEFORE COLD FORMING. PIPE MAY BE STRAIGHT SEAM OR SPIRAL WELD.
2. CASING PIPE SHALL EXTEND A MINIMUM OF 10' BEYOND TOE OF FILL SLOPES, DITCH LINES, EDGE OF PAVEMENT OR BACK OF CURB.
3. DUCTILE IRON PIPE SHALL BE RESTRAINED JOINT WITH FIELD LOK-GASKETS.

D.I. PUSH-ON JOINT CARRIER PIPE SIZE	CASING PIPE ROADWAY	
	SIZE	THICKNESS*
4"	10"	.250"
6"	12"	.250"
8"	16"	.250"
10"	16"	.312"
12"	18"	.312"
14"	22"	.312"
16"	24"	.375"
18"	30"	.375"
20"	30"	.500"
24"	36"	.500"

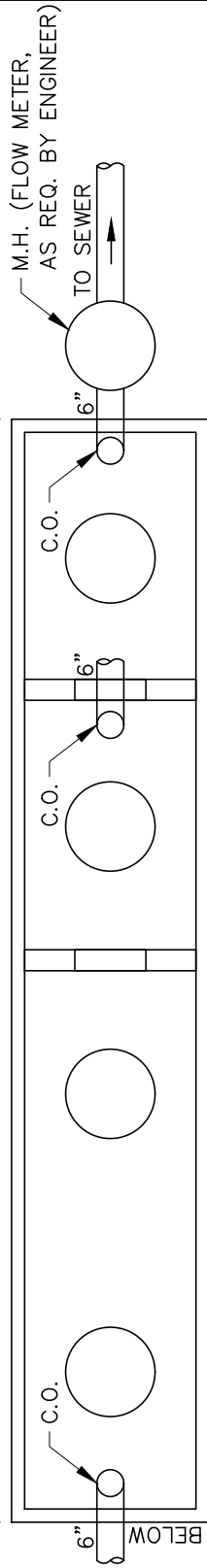
\* .063" HAS BEEN ADDED TO MIN. FOR CORROSION ALLOWANCE

**SPACER NOTES:**

1. SPACER OPTIONS: 8" WIDE BAND OR 12".
2. APPROVED TYPES ARE CASCADE OR PSI.
3. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS STANDARDS.
4. WOODEN SKIDS SHALL NOT BE ACCEPTABLE.

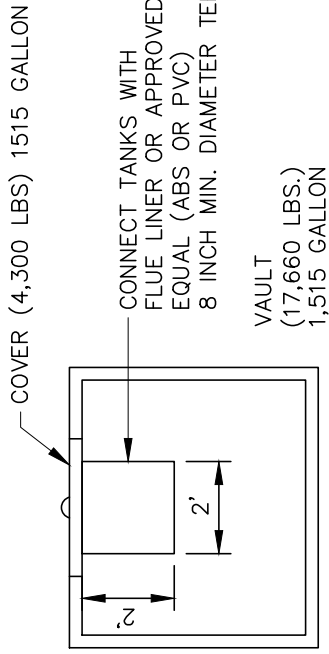
<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TYPICAL ENCASED CROSSING DETAIL	33.1

LENGTH (SEE TABLE BELOW)



GALLON CAPACITY	OUTSIDE DIMENSIONS		HEIGHT
	LENGTH	WIDTH	
1,515	9'-10"	5'-4"	7'-0"
1,077	9'-10"	4'-10"	5'-10"
785	8'-4"	4'-4"	5'-10"

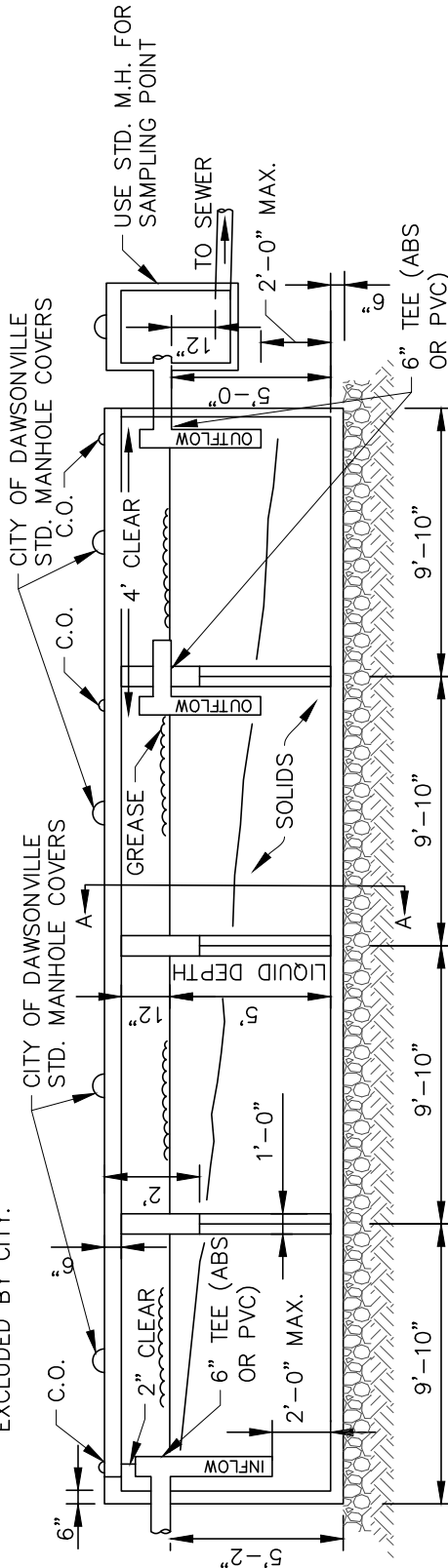
PLAN



TYPICAL SECTION A-A

SPECIFICATIONS:

1. CONCRETE MINIMUM STRENGTH 5,000 PSI AT 28 DAYS.
2. STEEL REINFORCEMENT ASTM A615-75 GRADE 60, ONE INCH COVER MINIMUM.
3. DESIGN LOADING AASHO HS20-44.
4. CONSTRUCTION JOINT SEALED WITH ONE INCH DIA. BUTYL RUBBER OR EQUIVALENT.
5. SAMPLING MANHOLE SHALL BE INSTALLED UNLESS EXCLUDED BY CITY.



SECTION

NOTES:

1. ANY ALTERNATIVE PRETREATMENT SYSTEMS SHALL BE APPROVED BY CITY PRIOR TO INSTALLATION.
2. USE 1515 GALLON PREFABRICATED TANKS,
3. NO INTERCEPTOR SHALL BE LESS THAN 750 GALLONS WHERE SEATING IS LESS THAN 50 AND NO SINGLE CHAMBER INTERCEPTOR SHALL BE GREATER THAN 3,000 GALLONS.
4. FOR RESTAURANTS USE MINIMUM ONE 1,515 GALLON TANK PER 50 SEATS.
5. ALL MULTI-CHAMBERED SYSTEMS SHALL HAVE AT LEAST 2 BAFFLED OR OUTLET CONTROL CHAMBERS PRIOR TO DISCHARGE TO THE SEWER.

CITY OF DAWSONVILLE

SCALE: NOT TO SCALE

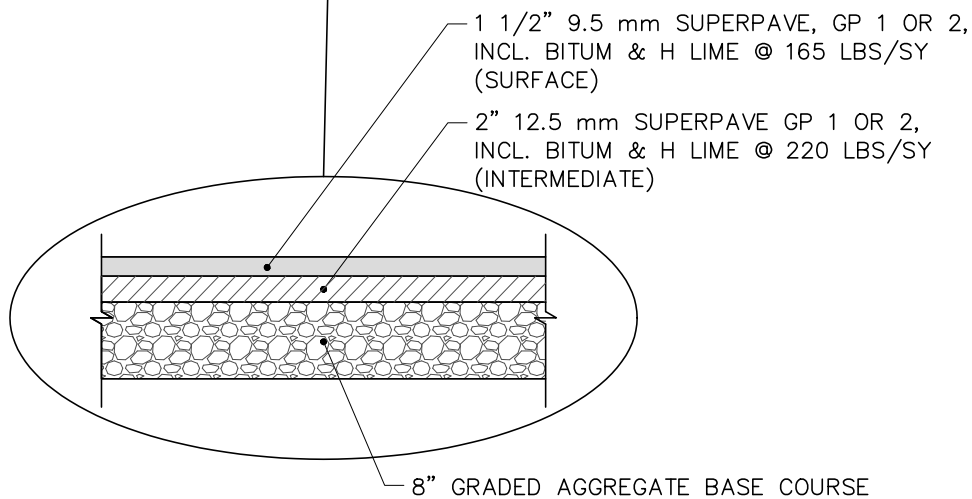
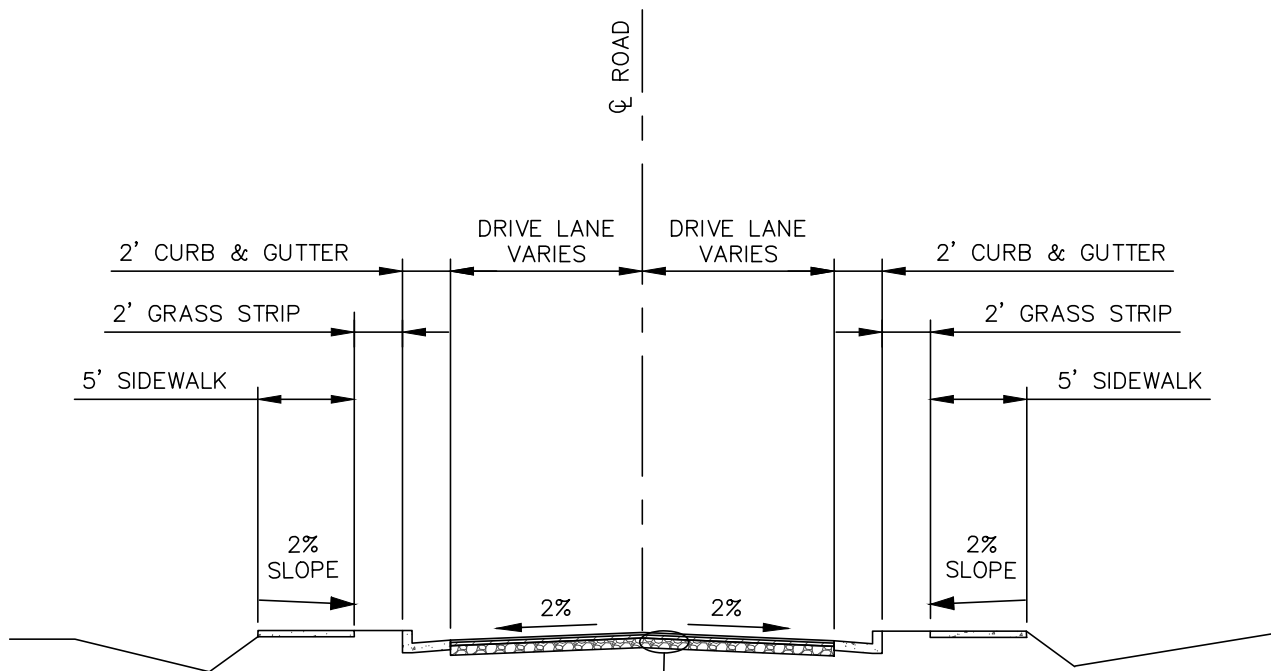
DATE: OCTOBER 15, 2021

DETAIL TITLE

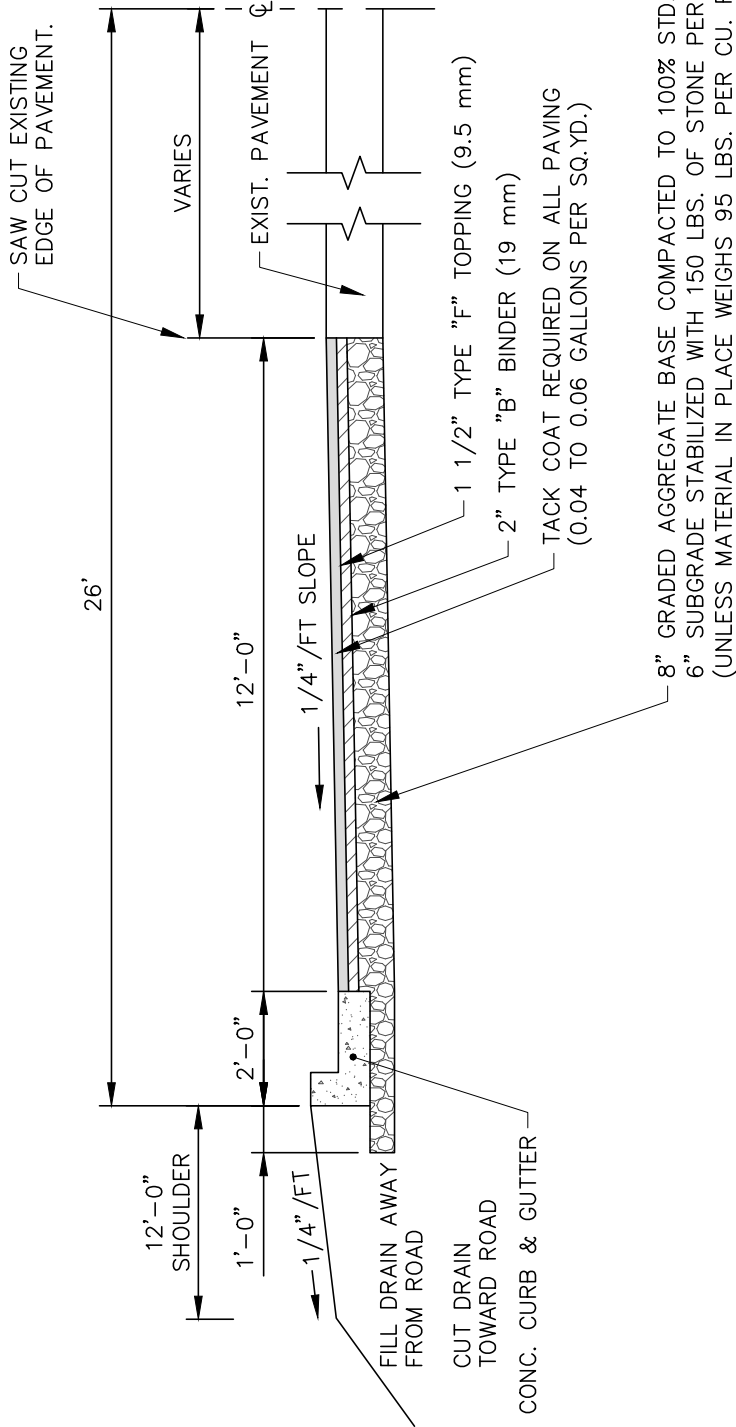
DETAIL NO.

GREASE/SOLIDS/OIL INTERCEPTOR

33.2



<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>TYPICAL SECTION SUBDIVISION ROAD</b>	<b>34.1</b>

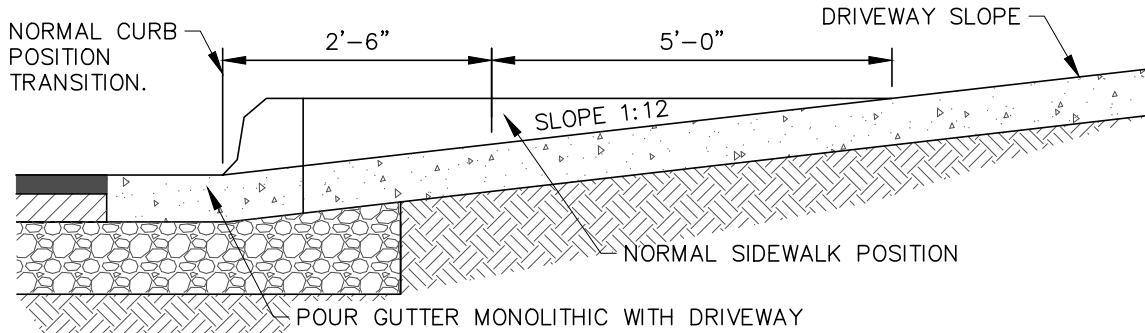
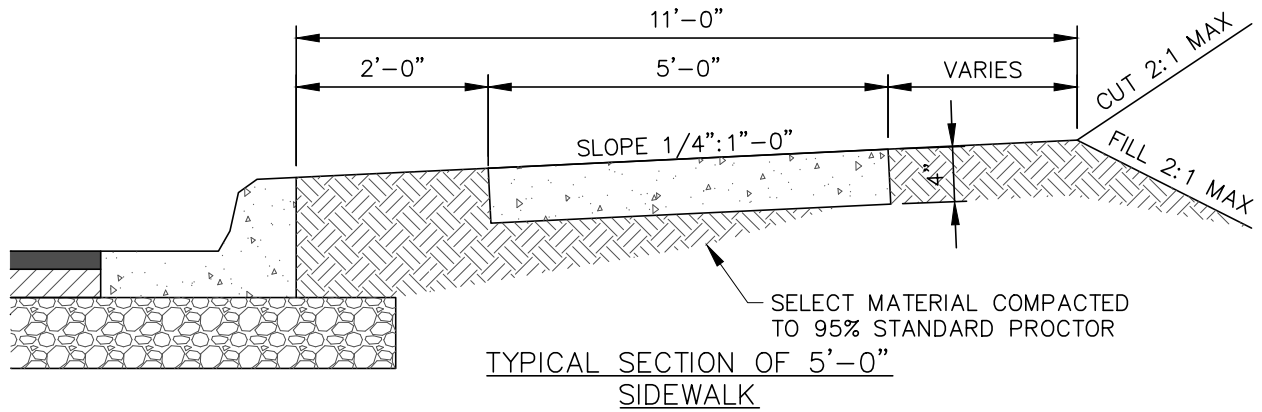


DECELERATION LANE TYPICAL SECTION

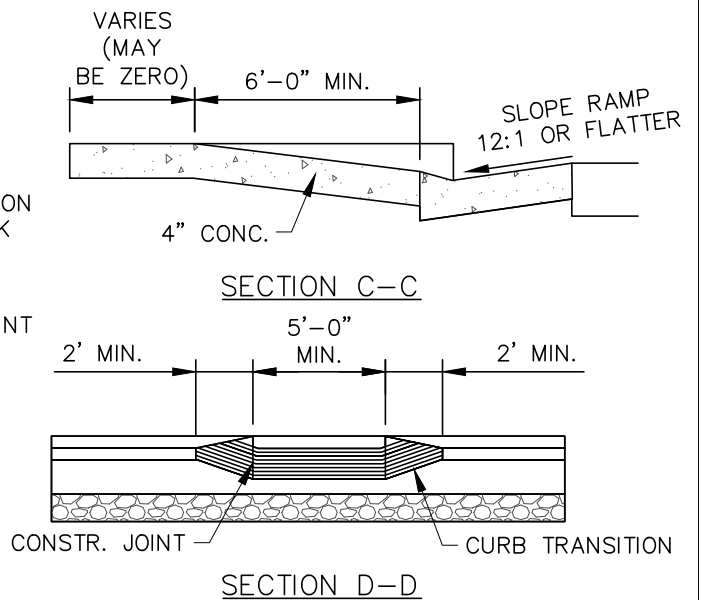
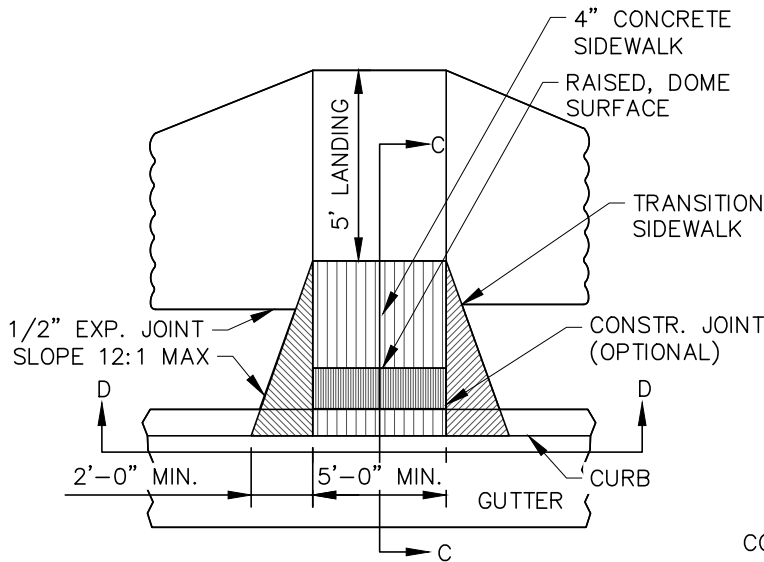
NOTE:

1. ALL ASPHALT MIX MUST HAVE A MINIMUM 5% ASPHALT CEMENT CONTENT.
2. DIVIDED HIGHWAYS OR MAJOR COLLECTOR ROADS WILL REQUIRE MATCHING MAIN LINE TYPICAL SECTION OF 10" GAB, 4" ASPHALT BASE, 2" ASPHALT BINDER, 1 1/2" (12.5 MM) TOPPING.

CITY OF DAWSONVILLE	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
TYPICAL ROAD SECTION	34.2



SIDEWALK SECTION AT DRIVEWAY  
(STREET WITH CURB & CUTTER)

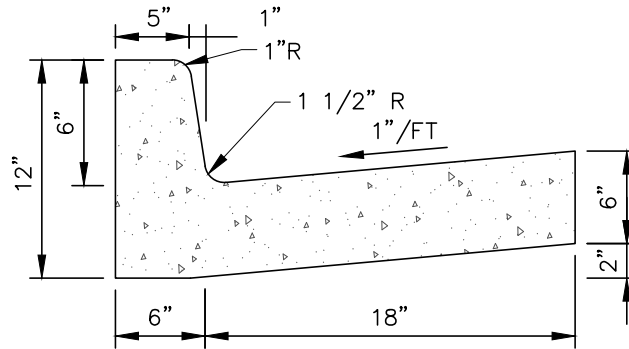


TYPICAL SIDEWALK TO CURB TRANSITION DETAILS  
(MODIFY AS NECESSARY FOR CURVE)

NOTE:

- 1/2" PREMOULDED EXPANSION JOINT AT DRIVEWAYS, CATCH BASINS AND AT MIN. 60'-0" O.C. HORIZONTALLY.
- MATERIAL OF 95#/CU. FT. OR BETTER OF SELECT MATERIAL.
- ALL EXPOSED UNPAVED AREAS TO BE COVERED WITH A STAND OF GRASS.
- SIDEWALK TO BE CONSTRUCTED OF CLASS "A" 3,000 P.S.I. CONCRETE.
- ALL CURB CUTS AREA TO BE SAW CUT PERPENDICULAR TO CURB LINE. CONTRACTION JOINTS 3/8" WIDE X 1/2" DEEP EVERY 10'.

<b>CITY OF DAWSONVILLE</b>		
SCALE: NOT TO SCALE		DATE: OCTOBER 15, 2021
DETAIL TITLE		DETAIL NO.
<b>TYPICAL SECTION OF A 5'-0" SIDEWALK</b>		<b>35.1</b>

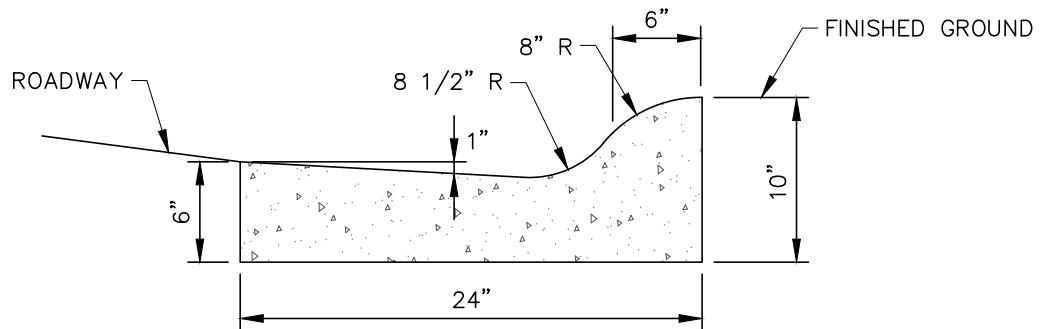


24" STANDARD CURB

6" X 24" X 12"  
 3,000 P.S.I. CONC. @ 28 DAYS  
 1/2" EXPANSION JOINTS OR PREMOLDED BITUMINOUS  
 EXPANSION JOINT MATERIAL SHALL BE PROVIDED AT ALL  
 STRUCTURES AND RADIUS POINTS & AT INTERVALS NOT TO  
 EXCEED 200' IN THE REMAINDER OF THE CURB & GUTTER.

\*REQUIRED FOR COMMERCIAL USE AND NEGATIVE GRADE CUL-DE-SACS.

NOTE: CONTRACTION JOINTS SHALL BE INSTALLED 1/2" DEEP AT 10' INTERVALS  
 HOT & COLD WEATHER PROTECTION MUST BE PROVIDED PER GDOT SPEC.

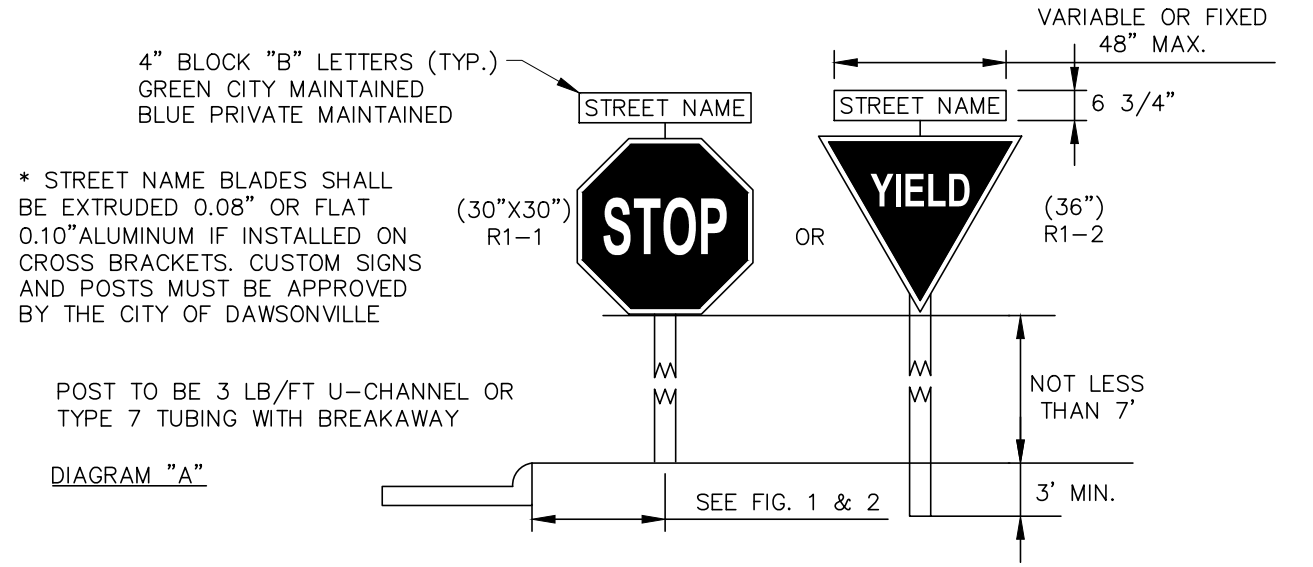
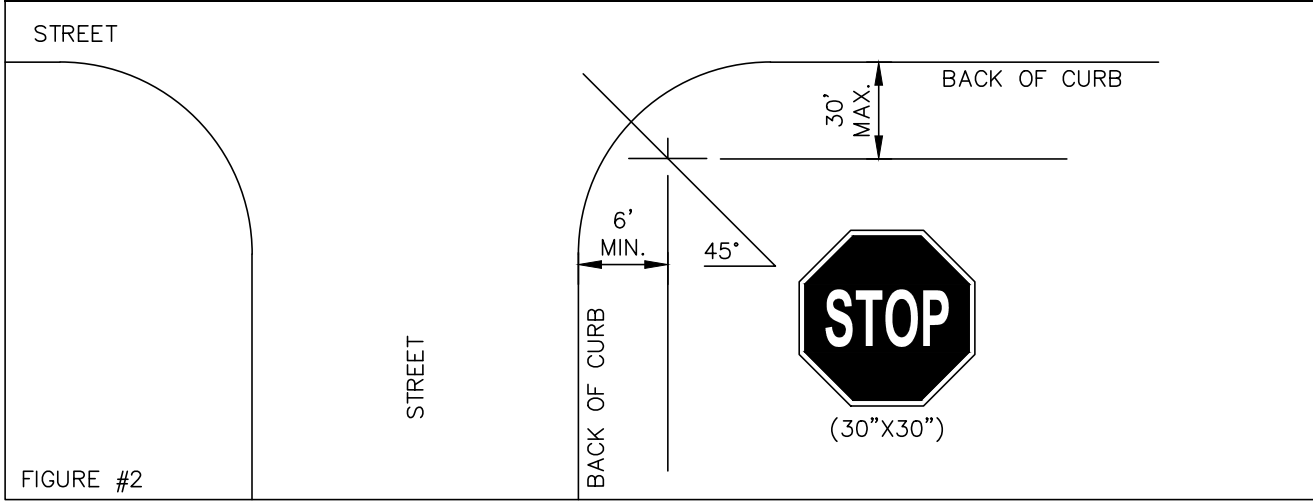
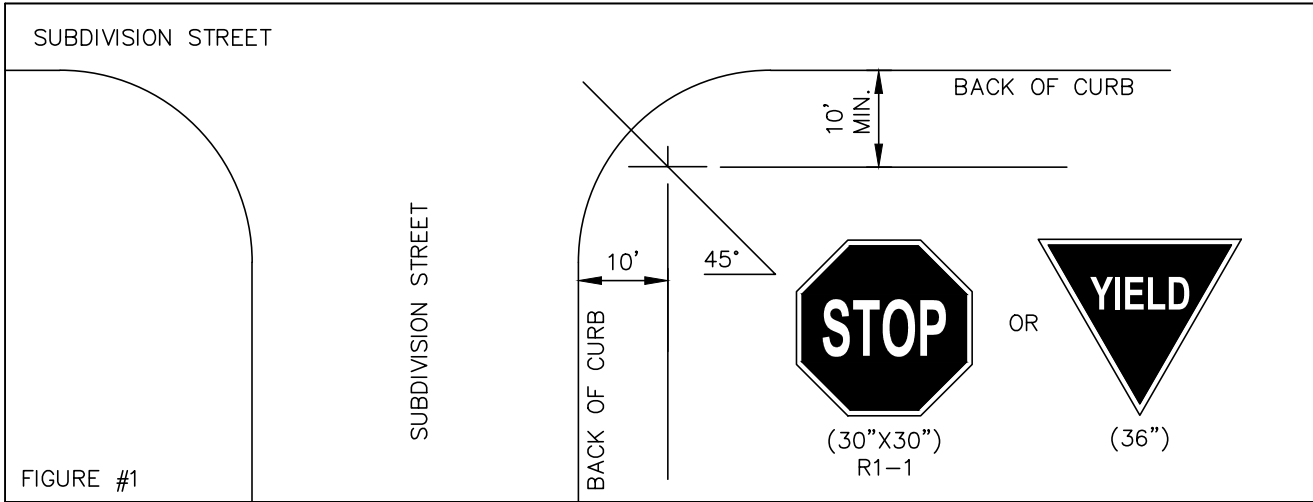


TYPICAL ROLL CURB

3,000 P.S.I. CONC. @ 28 DAYS  
 1/2" EXPANSION JOINTS OR PREMOLDED BITUMINOUS  
 EXPANSION JOINT MATERIAL SHALL BE PROVIDED AT ALL  
 STRUCTURES AND RADIUS POINTS & AT INTERVALS NOT TO  
 EXCEED 200' IN THE REMAINDER OF THE CURB & GUTTER.

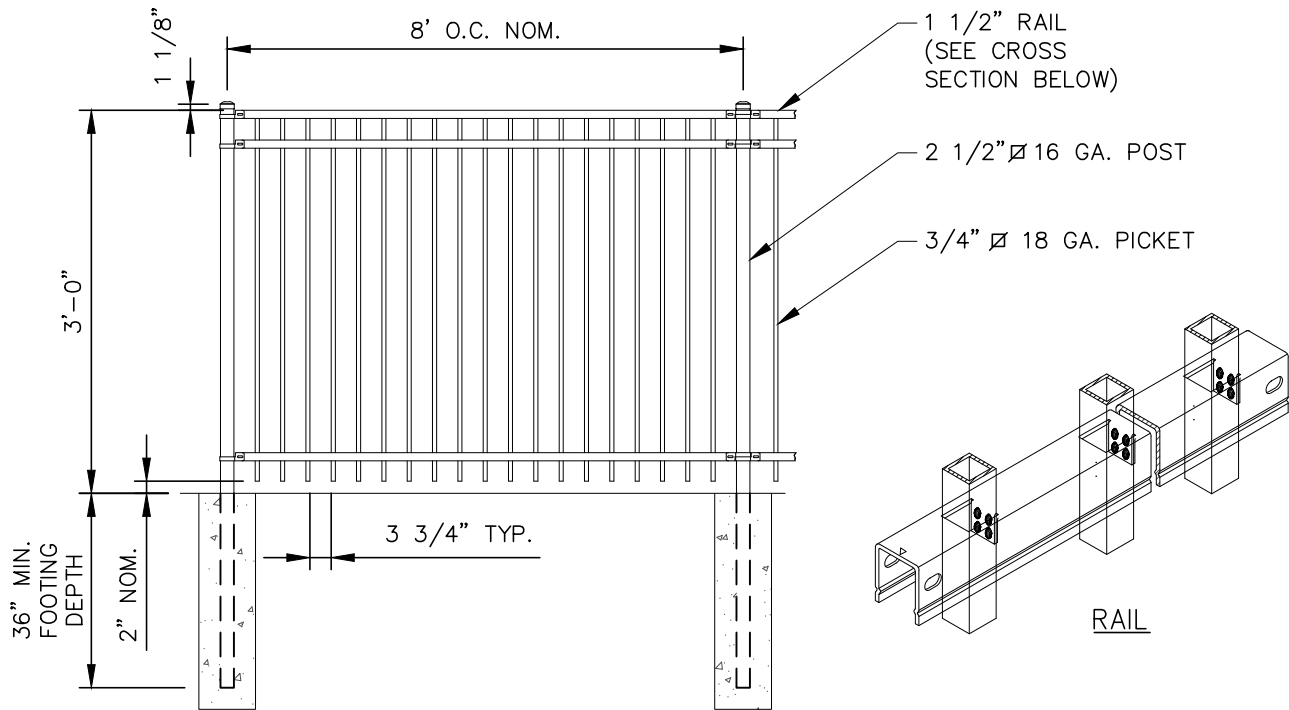
NOTE: CONTRACTION JOINTS SHALL BE INSTALLED 1/2" DEEP AT 10' INTERVALS  
 HOT & COLD WEATHER PROTECTION MUST BE PROVIDED PER GDOT SPEC.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>STANDARD CONSTRUCTION DETAILS - CURBING</b>	<b>36.1</b>



NOTE: ALL SIGNS MUST CONFORM TO ALL REQUIREMENTS OF THE CURRENT M.U.T.C.D

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>STREET SIGN LOCATION &amp; SPECIFICATION</b>	<b>36.2</b>

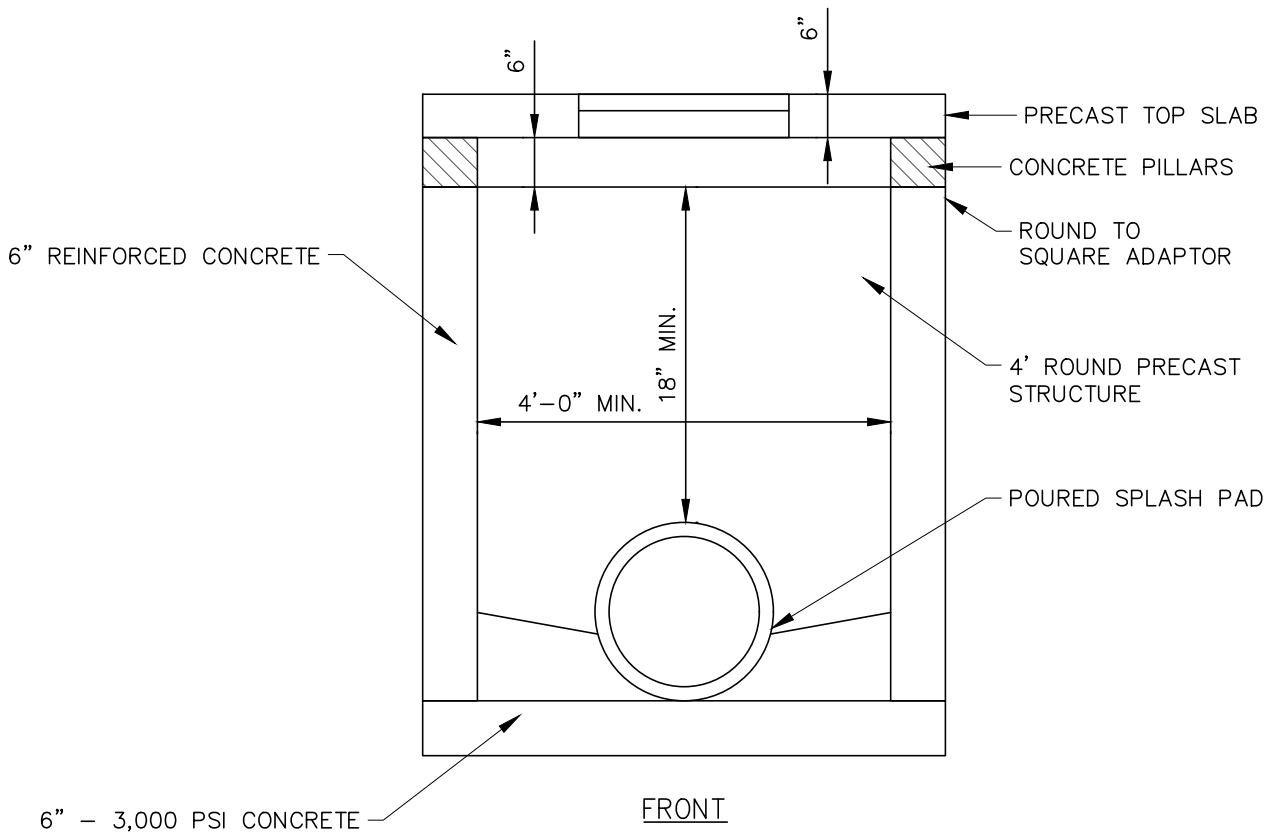
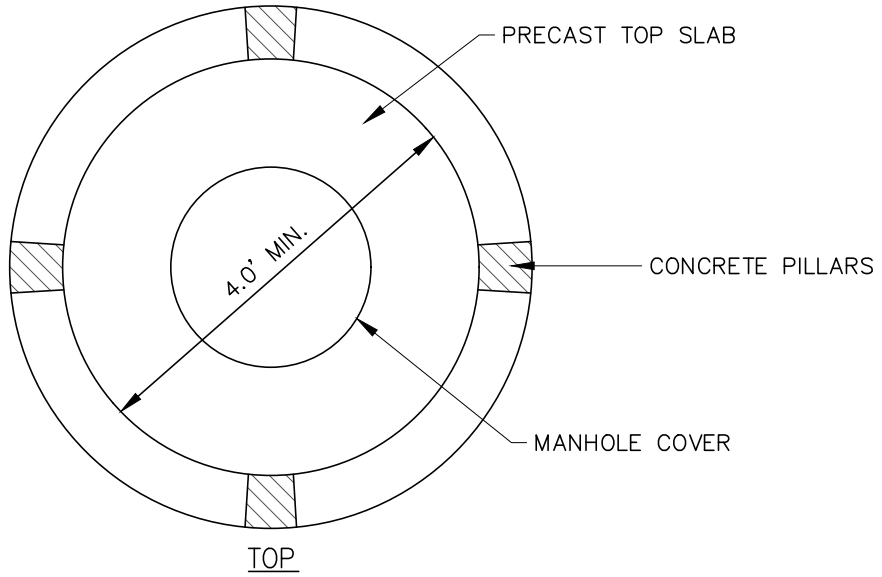


NOTES:

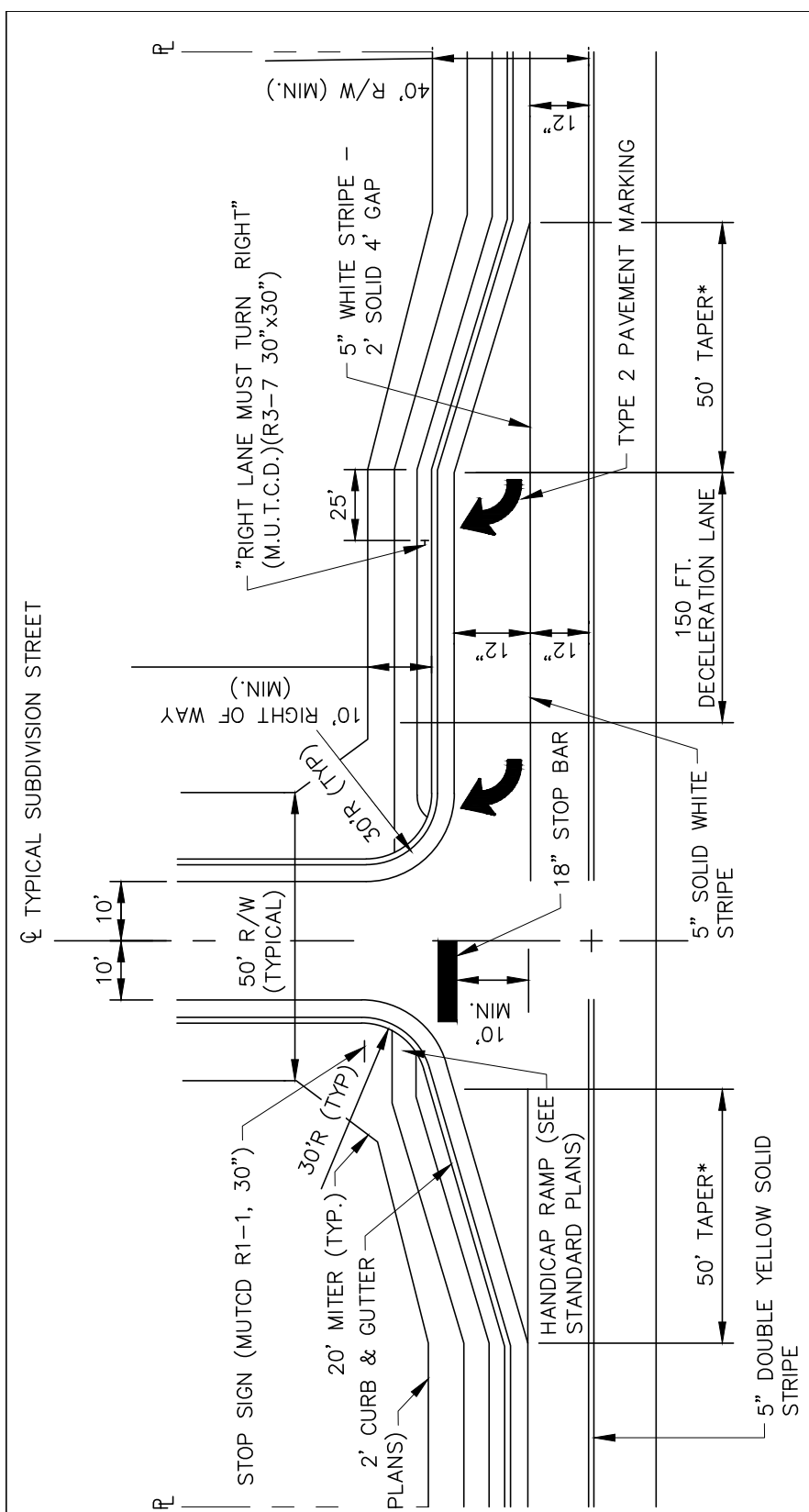
1. WELDED ORNAMENTAL STEEL FENCE SYSTEM SHALL BE MONTAGE PLUS, MAJESTIC STYLE 3-RAIL PANELS WITH 4" AIR GAP MANUFACTURED BY AMERISTAR.
2. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED PRIOR TO CONSTRUCTION.
3. UPON RECEIPT AT THE JOB SITE, ALL MATERIALS SHALL BE CHECKED TO ENSURE THAT NO DAMAGE OCCURRED DURING SHIPPING OR HANDLING. MATERIALS SHALL BE STORED IN SUCH A MANNER TO ENSURE PROPER VENTILATION AND DRAINAGE, AND TO PROTECT AGAINST DAMAGE, WEATHER AND VANDALISM.
4. ALL STRUCTURAL FENCE COMPONENTS (I.E. RAILS, PICKETS, AND POSTS) SHALL BE WARRANTED WITHIN SPECIFIED LIMITATIONS, BY THE MANUFACTURER AS STATED IN THE PRODUCT WARRANTY. WARRANTY SHALL COVER ANY DEFECTS IN MATERIAL FINISH, INCLUDING CRACKING, PEELING, CHIPPING, BLISTERING OR CORRODING.
5. REIMBURSEMENT FOR LABOR NECESSARY TO RESTORE OR REPLACE COMPONENTS THAT HAVE BEEN FOUND TO BE DEFECTIVE UNDER THE TERMS OF MANUFACTURES WARRANTY SHALL BE GUARANTEED FOR FIVE (5) YEARS FROM DATE OF ORIGINAL PURCHASE.
6. STEEL MATERIAL FOR FENCE PANELS AND POSTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A653/A653M, WITH A MINIMUM YIELD STRENGTH OF 45,000 PSI (310 MPA) AND A MINIMUM ZINC (HOT-DIP GALVANIZED) COATING WEIGHT OF 0.60 OZ/FT2 (184 G/M2), COATING DESIGNATION G-60.
7. MATERIAL FOR PICKETS SHALL BE 5/8" SQUARE X 18 GA. TUBING. THE RAILS SHALL BE STEEL CHANNEL, 1.25" X 0.92" X 14 GA. PICKET HOLES IN THE RAIL SHALL BE SPACED (SPECIFY 4.334" O.C. FOR STANDARD PICKET SPACE). FENCE POSTS SHALL BE A MINIMUM OF 2" SQUARE X 16 GA.
8. WHEN CUTTING/DRILLING RAILS OR POSTS ADHERE TO THE FOLLOWING STEPS TO SEAL THE EXPOSED STEEL SURFACES; 1) REMOVE ALL METAL SHAVINGS FROM CUT AREA. 2) APPLY ZINC-RICH PRIMER TO THOROUGHLY COVER CUT EDGE AND/OR DRILLED HOLE; LET DRY. 3) APPLY 2 COATS OF CUSTOM FINISH PAINT MATCHING FENCE COLOR. FAILURE TO SEAL EXPOSED SURFACES PER STEPS 1-3 ABOVE WILL NEGATE WARRANTY. AMERISTAR SPRAY CANS OR PAINT PENS SHALL BE USED TO PRIME AND FINISH EXPOSED SURFACES; IT IS RECOMMENDED THAT PAINT PENS BE USED TO PREVENT OVERSPRAY. USE OF NON-AMERISTAR PARTS OR COMPONENTS WILL NEGATE THE MANUFACTURES' WARRANTY.
9. THE COLOR SHALL BE BLACK.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>ORNAMENTAL STEEL HANDRAIL DETAIL</b>	<b>37.1</b>





<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>WEIR INLET DETAIL (PEDESTAL INLET)</b>	<b>38.1</b>

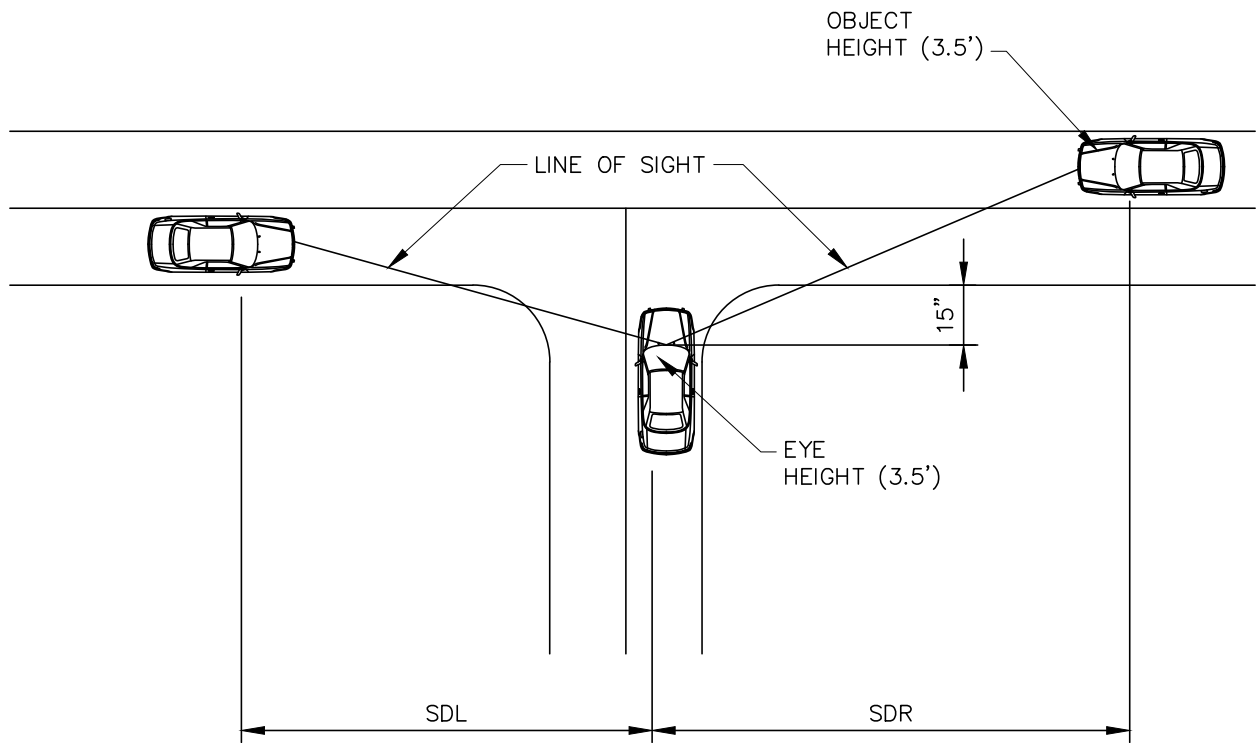


\*NOTE: TAPERS ARE NOT CURBED WHEN JOINING AN UNCURBED ROAD.

SHOW THE FOLLOWING NOTES ON THE APPROVED PLAN:

- A) SIGNING, STRIPING, MARKING, AND HIGH LEVEL WARNING DEVICES TO BE PLACED AS SHOWN AND/OR AS DIRECTED BY THE CITY OF DAWSONVILLE INSPECTOR. THIS TRAFFIC CONTROL PLAN IS SUBJECT TO CHANGE.
- B) WARNING DEVICES SHALL BE PLACED PRIOR TO THE COMMENCEMENT OF ANY ROAD IMPROVEMENT WORK ON EXISTING ROADS AND SHALL REMAIN IN PLACE UNTIL THE CONCLUSION OF ALL SIGNING AND STRIPING WORK.
- C) ALL WARNING DEVICES SHALL BE EITHER TYPE I BARRICADES OR DRUMS WITH WARNING LIGHTS ON EVERY OTHER DEVICE, AND SHALL CONFORM WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND CITY OF DAWSONVILLE FOR COLOR, SIZE REFLECTIVITY, HEIGHT, AND PLACEMENT
- D) MAXIMUM SPACING OF WARNING DEVICES SHALL BE EQUAL TO THE POSTED SPEED OF THE ROAD IN M.P.H (I.E. 30 FOOT SPACING FOR 30 M.P.H SPEED LIMIT)
- E) ALL SIGNS SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS FOR COLOR, SIZE, REFLECTIVITY, HEIGHT AND PLACEMENT.
- F) STRIPING (WHITE AND YELLOW) AND ARROW MARKING SHALL BE APPLIED USING GEORGIA D.O.T. STANDARD THERMOPLASTIC.
- G) CONFLICTING STRIPING SHALL BE REMOVED BY GRINDING, OR OVERLAY AS SPECIFIED BY THE CITY OF DAWSONVILLE.
- H) ALL SIGNS MUST BE INSTALLED CONCURRENTLY WITH THE PERFORMANCE OF THE STRIPING WORK.

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>DECELERATION LANE</b>	<b>39.1</b>



ARTERIAL SPEED, MPH	SIGHT DISTANCE, FT				
	2 LANE	3 AND 4 LANES		5 AND 6 LANES	
	SDL=SDR	SDL	SDR	SDL	SDR
30	335	350	375	400	420
35	390	410	440	465	490
40	445	470	500	530	560
45	500	530	560	595	630
50	555	590	625	660	700
55	610	650	685	730	770
60	665	705	750	795	840
65	720	765	810	860	910

<b>CITY OF DAWSONVILLE</b>	
SCALE: NOT TO SCALE	DATE: OCTOBER 15, 2021
DETAIL TITLE	DETAIL NO.
<b>INTERSECTION SIGHT DISTANCE REQUIREMENTS</b>	<b>40.1</b>



**DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 17**

---

**SUBJECT: STANDARD SPECIFICATIONS FOR ROADWAY AND DRAINAGE SYSTEMS**

**CITY COUNCIL MEETING DATE: 11/15/2021**

---

**BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_**

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

**PURPOSE FOR REQUEST:**

**TO REQUEST COUNCIL TO REVIEW AND RECOMMEND ANY CORRECTIONS OF THE  
UPDATED STANDARD SPECIFICATIONS FOR ROADWAY AND DRAINAGE SYSTEMS**

**CONSIDERATION OF APPROVAL AT THE DECEMBER 6, 2021 MEETING**

---

**HISTORY/ FACTS / ISSUES:**

- **SPECIFICATIONS LAST UPDATED IN 2018**
  - **TYPO CORRECTIONS**
  - **ADDED NEW STORMWATER INFRASTRUCTURE DEDICATION SECTION**
  - **UPDATED ROADWAY TYPICAL SECTION**
  - **UPDATED SIDEWALK SECTION**
- 

**OPTIONS:**

---

**RECOMMENDED SAMPLE MOTION:**

---

**REQUESTED BY: David Picklesimer, Planning Director**

415 Highway 53 E. Suite 100  
Dawsonville, Georgia 30534



(706) 265-3256  
Fax (706) 265-4214  
[www.dawsonville-ga.gov](http://www.dawsonville-ga.gov)

**Date:** 10/26/2021

**To:** Mayor and Council

**Reference:** Standard Specifications for Roadway and Drainage Systems

The Planning and Zoning Department has provided the following pertinent information to help you decide on this request:

1. Planning and Public Works Department request approval of the updated and additional specifications.
2. Specifications last updated in 2018.
3. Correct typos.
4. Added new stormwater infrastructure dedication section.
5. Updated roadway surfacing section.
6. Updated sidewalk section.

Kindest Regards,

A handwritten signature in blue ink, appearing to read "D. Picklesimer", is written over the typed name.

David Picklesimer  
Planning Director

**STANDARD SPECIFICATIONS**

for

**ROADWAY AND DRAINAGE SYSTEMS**



**CITY OF DAWSONVILLE, GEORGIA**

# **STANDARD SPECIFICATIONS**

for

# **ROADWAY AND DRAINAGE SYSTEMS**

---

**CITY OF DAWSONVILLE, GEORGIA**  
**415 Highway 53 East**  
**Dawsonville, Georgia 30534**  
**Office: (706) 265- 3256/ Fax: (706) 265- 4214**

---

*Prepared by:*



**Adopted:** \_\_\_\_\_

# ***TABLE OF CONTENTS***

---

## **DIVISION I GENERAL CONDITIONS**

### Section 1: General Conditions

- 1.01 Scope and Intent
- 1.02 Cleaning Up

### Section 2: Control of Materials

- 2.01 Structural Steel
- 2.02 Concrete Reinforcement Steel
- 2.03 Concrete Work

## **DIVISION II: CONSTRUCTION REQUIREMENTS**

### Section 1: Clearing

- 1.01 Description of Work
- 1.02 Protection of Existing Improvements
- 1.03 Protection of Existing Trees and Vegetation
- 1.04 Protection of Existing Utilities, Persons and Property
- 1.05 Disposal of Waste Material

### Section 2: Trenching and Backfilling

- 2.01 Description of Work
- 2.02 Use of Explosives
- 2.03 Stability of Excavation
- 2.04 Bracing and Shoring
- 2.05 Construction Along Highways, Streets and Roadways
- 2.06 Excavation for Trenches
- 2.07 Existing Underground Utilities and Obstructions
- 2.08 Backfilling
- 2.09 Surfacing of Trenches in Unpaved Streets and Driveways
- 2.10 Surfacing of Trenches in Paved Streets and Driveways
- 2.11 Excavation Along Roadway
- 2.12 Dewatering
- 2.13 Material Storage
- 2.14 Excavation Length
- 2.15 Removal of Unsatisfactory Soil Materials
- 2.16 Compaction
- 2.17 Grading

## **DIVISION III: CONSTRUCTION MATERIALS**

### Section 1: Storm Sewer Installation

- 1.01 Description of Work
- 1.02 Job Conditions
- 1.03 Quality Assurance
- 1.04 Approved Products
- 1.05 Pipe Foundation
- 1.06 Bedding



# ***TABLE OF CONTENTS***

---

- 1.07 Pipe Laying
- 1.08 Pipe Connections
- 1.09 Line Cleaning
- 1.10 Leakage and Infiltration
- 1.11 Storm Water Infrastructure Dedication

## Section 2: Grassing

- 2.01 General
- 2.02 Quality Assurance
- 2.03 Grass Seed
- 2.04 Soil Amendments
- 2.05 Execution

## Section 3: Graded Aggregated Base and Subbase

- 3.01 Sampling and Testing
- 3.02 Aggregate Properties
- 3.03 Execution

## Section 4: Pavement Removal and Repair

- 4.01 Scope
- 4.02 Traffic Control
- 4.03 Weather Limitations
- 4.04 Grade Control
- 4.05 Submittals
- 4.06 Materials
- 4.07 Execution
- 4.08 Removing Pavement
- 4.09 Replacement Pavement

## Section 5: Roadway and Walk Installation

- 5.01 Roadway Surfacing
- 5.02 Quality Assurance
- 5.03 Walks
- 5.04 Walks Crossing Driveways
- 5.05 Excavation
- 5.06 Existing Paved Surfaces
- 5.07 Curb and Gutter
- 5.08 Shoulders
- 5.09 Construction on Embankments

**SECTION 1: GENERAL CONDITIONS****1.01 Scope and Intent**

The work covered by this Section of the Specifications consists of all materials and work necessary for clearing, excavating, trenching, backfilling, grading and installing stormwater piping, roadways and sidewalks within the City of Dawsonville.

**1.02 Cleaning Up**

Before the work shall be considered complete, all material not used and rubbish of every character must be removed from the streets and placed at point designated by the City; all streets, sidewalks, curbs, fences and other private or public facilities and structures disturbed must be essentially in as good condition as existed before the work was done. Any subsequent settlement of backfill or pavement over trenches shall be replaced by the Contractor and the surfaces brought to grade.

**SECTION 2: CONTROL OF MATERIALS****2.01 Structural Steel**

The following inspections are required for structural steel:

- A. Any Quantity: Field inspection for rust, shape, and dimensions
- B. 25 to 200 Tons: Independent shop inspection and certified copies of mill tests
- C. For Structures and Buildings: See ASTM A-36

**2.02 Concrete Reinforcement Steel**

The following inspections are required for structural steel:

- A. Up to 50,000 Pounds: Field inspection for rust, shape and dimensions
- B. 50,000 Pounds and Up: Independent laboratory inspection as follows:
  - 1. Billet Steel - ASTM A-615
  - 2. Roll Steel - ASTM A-616
  - 3. Cold-Drawn Steel Wire - ASTM A-82
  - 4. Wire Fabric - ASTM A-185

**2.03 Concrete Work**

- A. Concrete of the respective classes for bedding, blocking, walks, roads, headwalls, piers and other miscellaneous structures shall be as called for in the work to which they pertain.
- B. Cement: Cement shall satisfy the requirements of ASTM C150, Type I or Type II, as amended to date.
- C. Aggregate: Aggregate shall satisfy the requirements of ASTM C33, as amended to date.
- D. Water: Water shall be fresh, clean and free from injurious amounts of oil, acid, alkali, and organic materials.
- E. Mixing: Mixing shall be accomplished at a central mix plant unless prior approval is given by the Engineer for mixing on the job site.
- F. Concrete from a Central Mix Plant: Concrete supplied from a central mix plant shall have 28-day compressive strengths not less than those listed below:
  - Class A: 3,000-psi
  - Class B: 2,200 psi
  - Class C: 1,500 psi

G. Concrete Mixed on Jobsite: Concrete mixed on the jobsite shall have 28-day compressive strengths as above and shall contain not less than the following quantities of cement per cubic yard.

- Class A: 564 pounds (6 bags)
- Class B: 470 pounds (5 bags)
- Class C: 376 pounds (4 bags)

H. Concrete Cylinders: Concrete cylinders for testing purposes shall be made in accordance with the procedure described in ASTM C31 as amended to date. Compression tests shall be made at the age of 7 days and 28 days by the testing laboratory as per ASTM C39 as amended to date. Testing shall be done by a laboratory approved by the Engineer. All costs of testing will be paid by the Contractor. Each test shall consist of at least 4 specimens: 2 for field control and 2 for laboratory control. One initial test will be required and then 1 test for each 100 yards thereafter.

I. Placing of Concrete: Concrete shall be placed in daylight. Concrete mixed at a central plant shall be transported to the jobsite as per ASTM C94 as amended to date. Concrete when placed shall be compacted with mechanical, internal-vibrating equipment and/or with hand spading with a slicing rod. No concrete shall be placed when the atmospheric temperature is below 35° F. If the temperature drops below 35° after concrete is placed, the Contractor shall enclose, heat and protect the concrete. Earth fill shall not be placed on concrete until concrete has been allowed to set for 24 hours.

J. Form Work: Form work, where required, shall be built to conform to the shape, lines and dimensions of the concrete work as shown.

Forms shall be set to line and grade and shall be braced, tied and secured in a manner which will withstand placing of the concrete, and which will maintain shape and position. Forms shall be tight and be substantially assembled to prevent bulging and the leaking of concrete. Joints shall be arranged vertically or horizontally. Temporary openings shall be arranged, where required, at the bottoms of wall forms and elsewhere to facilitate cleaning and inspecting. Lumber used once in forms may be reused once nails are removed and surfaces are thoroughly cleaned. Wall sleeves, inserts and openings required in concrete work shall be properly set in form work. Chamfer strips shall be placed in forms for all exterior corners.

K. Removing Forms: Under normal conditions, the time elapsing before the forms may be stripped shall not be less than the following:

- Slabs: 14 days

- Columns and Pedestal: 7 days
  - Walls and Vertical Faces Not Supporting Other Work: 2 days
- L. Finishing: All exposed concrete work shall be kept wetted with water and shall be rubbed with a carborundum stone of medium fineness or with other equally as good abrasive to bring the surface to a smooth texture and to remove all form and other marks. The paste formed by the rubbing may be rubbed down by floating with a canvas float, a carpet-faced float, cork float or dry burlap.

**SECTION 1: CLEARING****1.01 Description of Work**

The extent of route clearing is the minimum degree of clearing necessary to install utilities and appurtenances, and such additional clearing as may be shown on the drawings or required by other documents. Route Clearing operations include, ~~but~~ but are not limited to, the following:

- A. Protecting existing improvements, vegetation and persons
- B. Protecting above-grade and underground improvements
- C. Removing trees and other vegetation
- D. Removing above-grade improvements
- E. Removing underground improvements
- F. Restoring damaged improvements

**1.02 Protection of Existing Improvements**

Existing improvements shall be protected. Provide barricades, coverings, or other types of protection necessary to prevent unnecessary damage to existing improvements. Protect improvements on adjoining properties as well as those along the project route. Restore improvements damaged by this work to their original condition as acceptable to the owners or other parties or authorities having jurisdiction. Any property line monuments (such as iron pins) removed or disturbed by clearing operations shall be replaced by a Georgia registered land surveyor.

**1.03 Protection of Existing Trees and Vegetation**

Existing trees and other vegetation shall be protected against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction material within drip lines, excess foot or vehicular traffic, or parking of vehicles or equipment within drip line. Provide temporary fences, barricades or guards as required to protect trees and vegetation to be left standing.

**1.04 Protection of Existing Utilities, Persons and Property**

Prior to commencing other work, accurately locate above and below ground utilities and structures which may be affected by the Work, using whatever means be appropriate. Mark the location of existing utilities and structures, not otherwise readily visible, with flagging, stakes, barricades, or other suitable means. Barricade open excavations and post warning lights for safety of persons. Operate warning lights during hours from dusk to dawn each day. Protect structures, utilities, sidewalks, pavements, and other facilities immediately adjacent to excavations, from damage caused by settlement, lateral movement, undermining, washout and other hazards.

**1.05 Disposal of Waste Material**

All waste materials resulting from clearing operations shall be disposed of in accordance with applicable regulations of the Georgia Department of Natural Resources, Environmental Protection Division.

**SECTION 2: TRENCHING AND BACKFILLING****2.01 Description of Work**

Trenching consists of removal and disposal of material encountered to obtain required sub-grade elevations, usually, but not necessarily limited to that incidental to installation or modification of underground pipelines and appurtenances. Unauthorized trenching consists of removal of materials beyond indicated sub-grade elevations or dimensions without specific authorization of the City. Do not permit any hazardous condition to result from trenching and backfilling operations. Pavement removal and replacement is specified in Division III, Sections 4.08 and 4.09.

**2.02 Use of Explosives**

Explosives are not permitted on site or for use in work without prior written permission from the City. Use explosives only as legally permitted and when other work methods are impractical. Contractor assumes sole responsibility for handling, storage, and use of any explosive materials

**2.03 Stability of Excavation**

Slope sides of excavations to comply with Subpart P of Part 1926 of the Occupational Safety and Health Act as amended. Shore and brace or use a trench box where sloping is not possible either because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

**2.04 Bracing and Shoring**

Take precautions and provide necessary bracing and shoring to guard against movement or settlement of existing improvements or new construction. Contractor is entirely responsible for strength and adequacy of bracing and shoring, and for safety and support of construction from damage or injury caused by the lack thereof or by movement or settlement. Use work methods and provide temporary facilities as necessary to prevent washing, erosion, siltation or dust damage, or hazard to persons and property, within and outside the work area. Place excavated material compactly alongside the trench, and keep such material trimmed up so as to present the least practicable inconvenience to the public.

Provide portable trench boxes and materials for shoring and bracing, such as sheet piling, uprights, stringers and cross-braces, in good serviceable condition. Provide trench boxes and/or shoring and bracing to comply with Subpart P of Part 1926 of the Occupational Safety and Health Act as amended.

**2.05 Construction Along Highways, Streets and Roadways**

The Contractor shall install ~~pipe lines~~ pipelines and appurtenances along highways, streets and roadways in accordance with the applicable regulations of the Georgia Department of



Transportation and the City with reference to construction operations, safety traffic control, road maintenance and repair.

- A. Protection of Traffic: The Contractor shall provide suitable signs, barricades and lights for protection of traffic in locations where traffic may be endangered by construction operations. All highway signs removed due to construction shall be replaced as soon as the conditions permit. No highways, streets or roadways shall be closed without first obtaining permission from the proper authorities. Before any roadway is blocked, the Contractor shall notify the City/Engineer. The Contractor must obtain approval from the City before street signs are removed and reinstalled.
- B. Construction Operations: The Contractor shall construct all work along highways, streets and roadways using the following sequence of construction operations so as to least interfere with traffic:

1. Stripping: Where the ~~pipe line~~pipeline is laid along road shoulders, all sod, topsoil and other material suitable for shoulder restoration shall be stripped and stockpiled for replacement.
2. Trenching, Laying and Backfilling: The Contractor shall open trenches, install ~~pipe line~~pipeline and backfill. The trench shall not be opened any further ahead of pipe laying operations than necessary for proper laying operations, and trenches shall be progressively backfilled and consolidated. Excess material shall be removed immediately behind the laying operations.

The Contractor shall install ~~pipe lines~~pipelines across highways in accordance with the applicable regulations of the Georgia Department of Transportation and railway authorities.

3. Shaping: The Contractor, immediately after completing backfilling operations, shall reshape any damaged cut and fill slopes, side ditches and ditch lines, and shall replace topsoil, sod and any other materials removed from shoulders in accordance with the requirements of and to the full and complete satisfaction of the Georgia Department of Transportation and the City. The Contractor, when installing ~~pipe lines~~pipelines and appurtenances, will be required to provide sufficient personnel and equipment to simultaneously carry out all of the above operations.

If required to accommodate Contractor's operation, construction easements shall be obtained. The Contractor shall pay all costs of any construction easements.

- C. Excavated Material: Excavated material shall not be placed along highways, streets and roadways in such a manner as to obstruct traffic. No scattered

excavated material shall be allowed to remain on the pavement, and all such material shall be kept swept away.

- D. Drainage Structures: All side ditches, culverts, cross drains and other drainage structures shall be kept clear of excavated material and be free to drain at all times.
- E. Maintaining Highways, Streets, Roadways and Driveways: The Contractor shall furnish a road grader, which shall be available for use at all times, for maintaining highways, streets, and roadways upon which work is being performed. All such highways, streets, and roadways shall be maintained in suitable condition for movement of traffic until completion and final acceptance of the work.
- F. Encroachment Permits: All costs for obtaining required Georgia Department of Transportation permits shall be paid by the Contractor. The Contractor shall be responsible for fully understanding and knowing all Department of Transportation regulations and conditions relating to ~~pipe line~~ pipeline installation.

## **2.06 Excavation for Trenches**

Excavation of pipe trenches shall include all excavation of every description and whatever substance encountered and shall include disposal of all rock excavation and shall include disposal of excess earth excavation not required for backfilling of trenches. The area directly surrounding the excavation shall be graded to direct storm water runoff away from the trench.

- A. Depth of Trenches: The minimum cover over the top of the pipe shall be 4' unless otherwise directed by the Engineer. Where obstructions are encountered, minimum depth may be changed to avoid interference.
- B. Width of Trenches: Trenches shall be excavated sufficiently wide to allow proper installation of pipe, fittings and other materials and to not less than 6" clear of the outside barrel of the pipe on any side at any point.
- C. Bell Holes: Bell holes of ample depth and width shall be excavated in pipe trenches at the location of each joint to permit the joint to be properly made.
- D. Crushed Stone Stabilization: Wherever the subgrade is by nature too soft or mucky in the opinion of the Engineer for the proper installation of the pipe, the Engineer may order the Contractor to undercut the trench and backfill with crushed stone or gravel,  $\frac{3}{4}$ " in size and less. The stone shall be placed and brought to the grade required for the particular location and compacted.

## **2.07 Existing Underground Utilities and Obstructions**

Where unforeseen underground utilities or obstructions are encountered, minimum depth of cover or the location and alignment may be changed upon written approval of the Engineer to avoid interference. The Contractor is responsible for determining the exact

location of all utilities before beginning construction. Damage to existing utility lines, services, poles and structures shall be repaired or replaced by the Contractor at his own expense.

The Contractor shall furnish and have available at all times an electronic pipe and cable locator in working order for the purpose of locating existing ~~pipe lines~~pipelines or other obstructions in the way or are along the route of the new work.

## **2.08 Backfilling**

Backfill excavations as promptly as work permits. Use acceptable trench excavated soil material, free of stumps, trees, roots, muck, trash and other objectionable matter. The Contractor shall furnish all equipment and labor, and when necessary the material, required for backfilling the pipe-line trenches as follows:

- A. Selected Backfilling: All trenches shall be backfilled immediately after pipes are laid therein, and joints have been inspected by the Engineer unless other protection of the ~~pipe line~~pipeline is directed. Selected backfill material shall consist of finely divided earthstone dust, sand, crushed stone or other approved material carefully placed about the pipe and up to a height of at least 12" above the top of the pipe barrel, and in uniform layers not exceeding 6" in thickness, each layer thoroughly compacted with proper hand tools in a manner which will not disturb and/or injure the pipe. Backfilling shall be carried on simultaneously on both sides of the pipe and in a manner which will prevent injurious side pressures. If suitable select materials are not available from the trench excavation, the Contractor will be required to obtain the select materials elsewhere.

When testing for leaks in open trenches, backfilling shall not be done until after all testing has been completed and all leaks eliminated.

- B. General Backfilling: After selected backfill material has been placed and tamped, the remainder of the trench may be backfilled with general excavated material provided such material does not contain more than 1/3 broken rock of which no single stone or boulder shall be larger than can easily be removed with a hand shovel. Backfill material shall be placed in uniform layers not exceeding 12" in thickness; each layer shall be thoroughly compacted with heavy-duty power tamping tools of the full satisfaction of the Engineer. The use of pneumatic power "Jumping Jack" tampers will not be permitted. Wherever the trenches have not been properly filled or if settlement occurs, they shall be refilled, smoothed off, and made to conform to the surface of the ground. Backfilling shall be carefully performed, and the original surface restored to the full satisfaction of the Engineer. Surplus material shall be disposed of by the Contractor.

- C. Outside Streets, Roads, etc.: At locations outside streets, roads, walks or other traveled ways open to vehicular or pedestrian travel, the backfill material shall be windrowed and maintained in a suitable manner to concentrate and pond rainfall runoff over the trench. After sufficient settlement has been obtained, the Contractor shall complete surface dressing, remove surplus material, and clean up in accordance with these Specifications. Wherever the trenches have not been properly filled or if settlement occurs, they shall be refilled, smoothed off, and made to conform to the surface of the ground. Backfilling shall be carefully performed, and the original surface restored to the full satisfaction of the Engineer. Surplus material shall be disposed of by the Contractor.
- D. Areas Requiring Pavement Replacement: Mechanical tamping will be required of all backfilling of excavated portions. After backfilling and tamping as described above is completed the top 6" of the ditch shall be backfilled with compacted crushed stone, ASTM C33 gradation #67 or #57 as amended to date, with sufficient fines for compaction. Further compaction shall be accomplished by leaving the backfilled trench open to traffic while maintaining the surface with stone. Settlement in trenches shall be refilled with stone and such maintenance shall continue until replacement of pavement is authorized by the Engineer.

### **2.09 Surfacing of Trenches in Unpaved Streets and Driveways**

Where ~~pipe lines~~pipelines are constructed on unpaved streets, roads or driveways, the surfacing material shall be stripped and windrowed separately from the general material excavated from trenches. After the line has been installed and the backfill completed within 6" of the original street grade, the salvaged surface shall be replaced. This work shall be considered as general cleanup along with the removal of surplus excavation materials from the street surface and the restoring of the topsoil surfacing outside trench limits to its original condition.

### **2.10 Surfacing of Trenches in Paved Streets and Driveways**

Where trenches are in paved streets and driveways, the remaining 6" of backfill up to the traveled surface shall be made with crushed stone, ASTM C33 Gradation #67 or #57 as amended to date, with sufficient fines for compaction. Trenches shall be compacted and maintained until pavement is replaced.

### **2.11 Excavation Along Roadway**

Where necessitated by traffic conditions, remove from the roadway the first material excavated from a working length of trench so that further excavation is immediately used for backfilling, and thereby avoid stockpiling of material upon the roadway. Afterward, return first excavated material if needed for final backfilling. Maintain all streets, alleys, sidewalks, pipe crossings, fire hydrants, water and gas valves, and other utilities accessible for their intended use except while the work is steadily advancing in the

immediate vicinity of each such facility. Keep every drain, gutter, culvert, sewer, and surface drainage route encountered, open for both temporary and permanent flow unless other effective provision for drainage is made.

**2.12 Dewatering**

Perform earthwork in a manner to prevent surface water and minimize subsurface or ground water from flowing into excavations, and to prevent water from flooding project work and surrounding area. Do not allow water to accumulate in excavations. Remove water using dewatering methods which will prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of sub-grades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other de-watering system components necessary to convey water away from excavations. Limit opening of additional trench length to that which can be de-watered with available equipment or methods.

**2.13 Material Storage**

Locate and retain materials away from edge of trench.

**2.14 Excavation Length**

Limit open trench excavation to a maximum of 300 feet ahead of completed backfill.

**2.15 Removal of Unsatisfactory Soil Materials**

To the extent necessary, over-excavate those soil materials which are unsatisfactory in the opinion of the City and backfill with approved materials.

**2.16 Compaction**

Control soil compaction during construction providing minimum percentage of density specified for each area classification. Percentage of Maximum Density Requirements: Achieve not less than the following percentages of maximum density of soil material compacted at optimum moisture content, for each layer of soil material-in-place as determined by ASTM D 698 (Standard Proctor) test procedures:

- A. Rights-of-Way: Conform with the more stringent requirements of the permit issuing authority and the requirements herein.
- B. Roadways: Under and within five feet horizontal distance of traffic using surfaces, compact each layer of backfill and fill material to 95 percent of maximum dry density.
- C. Walkways: Under and within two feet horizontal distance of paved walks, compact top six inches of subgrade and each layer of backfill and fill material to 95% of maximum dry density.

- D. Driveways and Parking Lots: Under and within two feet horizontal distance of traffic using surfaces, compact each layer of backfill and fill material to 95 percent of maximum dry density.
- E. Lawn or Unpaved Areas: Compact each layer of backfill or fill material to 85 percent of maximum dry density.
- F. Spoil Areas: Compact each layer of backfill or fill material to 85 percent of maximum dry density.

**2.17 Grading**

Uniformly grade areas within limits of earthwork, including adjacent transition areas. Smooth and compact finished surface within specified tolerances, with uniform levels or slopes between points where elevations are shown, or between such points and existing grades, or between existing grades.

- A. Grading Outside Structures: Grade finished areas adjacent to structures to drain away from structures (except drainage inlets), and to prevent ponding. Finish surfaces free from irregular surface changes, and as follows:
- B. Grassed or Landscaped Areas: Finish areas to within not more than 0.10 feet above or below the required elevations.
- C. Walks and Pavements: Shape surface of areas under walks and pavements to line, grade and cross-section, with finish surface not more than 1.5 inches above or below the required subgrade elevation.

**SECTION 1: STORM SEWER INSTALLATION****1.01 Description of Work**

- A. Foundation preparation
- B. Furnishing and laying gravity storm sewer pipe.
- C. Furnishing and/or constructing drainage structures and appurtenances.
- D. Cleaning constructed work
- E. Related Work Specified Elsewhere:
  - 1. Route Clearing
  - 2. Trenching and Backfilling
  - 3. Pavement Removal and Repair

**1.02 Job Conditions**

- A. Traffic Control: Schedule and conduct Work in a manner which will minimize inconvenience to vehicular and pedestrian traffic. Provide flaggers, barricades, warning signs, warning lights, and other warning means as appropriate. Flaggers, when utilized, must hold a valid Georgia D.O.T. flagging certificate. Maintain traffic on all roads and streets which must be crossed by sewer lines. All traffic controls during construction must conform to Part VI of the Manual on Uniform Traffic Control Devices, ANSI D6.1e.
- B. Weather Limitations: Conduct all operations during weather conditions appropriate to the work being performed.

**1.03 Quality Assurance**

- A. Manufacturer Experience: Furnish manufactured products produced by firms having regularly produced such items as specified herein which have proven satisfactory in actual service over at least a two year period, as determined by the City.
- B. Imperfections: Regardless of tolerances permitted by industry standards specified herein, the City may reject pipe or precast structures at the manufacturing plant or project site, which have cracks, chips, blisters, lack of smooth interior or exterior surface, evidence of structural weakness, porosity, joint defect, significant variation from theoretical shape, or other imperfection which might, in the opinion of the City, contribute to a reduced functional capability, accelerated deterioration, or reduced structural strength.
- C. Repairs: Do not use patched or repaired pipe or precast structures unless each individual length or element has been approved and marked for repair by the City



at the manufacturing plant. Repairs, other than at the manufacturing plant, are not permitted.

**1.04 Approved Products**

- A. Reinforced Concrete Drain Pipe: ~~Class III~~ Reinforced Concrete pipe shall be used for all storm drainage pipe where indicated on the drawings. Pipe may be either ball and spigot or tongue and groove.
1. Testing and Stamping: All pipe, joint materials, and made-up joints shall be tested by an independent laboratory approved by the Engineer. Pipe shall be stamped with laboratory's stamp. Such stamp shall be an indication that it was accepted in accordance with applicable ASTM Specifications, and that it was inspected and accepted in accordance with the requirements of this Section for special tests and for pipe quality. The results of required independent laboratory tests shall be promptly submitted to the Engineer.
  2. Pipe shall be as follows and shall conform to the following ASTM Specifications:
    - a. Size 18" and Larger: All pipe shall be reinforced and shall be 'B' wall. Pipe 18" and above shall be furnished in lengths of at least 8'.
    - b. Cement and Coarse Aggregate: Cement shall be Type II or approved equal. Coarse aggregate shall be crushed granite or limestone.
    - c. Wire Reinforcement: Wire reinforcement used in the pipe shall conform to the standard Specifications.
    - d. Steam Curing: Steam curing of concrete pipe shall conform to the standard Specifications except when temperatures fall below an average of 40° F. Curing shall be continuous for 24-hour period, except for the interval when forms and/or rings are removed.
    - e. Minimum Crushing Strength: All pipe, when tested by the 3-edge bearing method in accordance with ASTM C 497, shall be minimum strength (defined as the load to produce a 0.01" crack for reinforced pipe) of not less than the following values:



MINIMUM STRENGTHS, POUNDS PER LINEAR FEET

Reinforced Pipe

Pipe Size	Table 3		Table 4 or 5	
	Class III	Class IV	Class V	
15"		2,500	3,750	
18"	2,025	3,000	4,500	
21"	2,360	3,500	5,250	
24"	2,700	4,000	6,000	
30"	3,375	5,000	7,500	
36"	4,050	6,000	9,000	
42"	4,725	7,000	10,500	
48"	5,400	8,000	12,000	
54"	6,075	9,000	13,500	
60"	6,750	10,000	15,000	
66"	7,425	11,000	16,500	
72"	8,100	12,000	18,000	

- f. Absorption: Absorption shall not exceed 6% when determined in accordance with ASTM C 497.
- g. Joints: Pipe may have O-ring rubber gasket type joints conforming with the applicable provisions of ASTM C 443, or pipe may be tongue and groove with mastic or mortar joint.
- h. Repaired Pipe: Repaired and patched pipe will not be acceptable unless each individual pipe, so repaired or patched, shall have first been inspected and approved by the Engineer for repair and patching at the pipe plant.
- i. Shear Loading Test: Made-up gasketed joints shall be tested for shear loading at a total load of 100 pounds per inch of diameter including the weight of the pipe, water and test apparatus.

B. Corrugated Steel Drain Pipe: Corrugated steel drain pipe shall be furnished and constructed in accordance with the Department of Transportation, State of Georgia, Standard Specifications Constructions of Roads and Bridges, latest edition, and these Specifications. Pipe shall be galvanized and fully bituminous coated with a paved invert filling the corrugations for at least 25% of the circumference. The bituminous coating shall be a minimum thickness of 0.05", measured to the crest of corrugations. Pipe corrugations shall be 2-2/3" x 1/2". Band shall be in accordance with WW-P-405-B 3.3.4.2. The projections of the

bands shall conform substantially to the shape and depth of the pipe corrugations and shall be in circumferential rows with no less than seven projections per row. Required nuts and bolts shall be furnished with the band. Culvert pipe shall be 16-gauge through 24" diameter, 14 gauge for 30" and 36" diameter, 12 gauge for 42" through 54" diameter, 10 gauge for 50" through 72" diameter, and 8 gauge for 78" and 84" diameter.

The pipe shall have a duct tape (a type that will adhere and leave the heat number legible when removed) placed over one complete heat number before the bituminous coating is applied. This tape shall be located as close to the end of the pipe as the heat number will allow and from under the paved invert. All individual joints of pipe require this procedure.

Copies of certified mill test reports showing heat numbers, the chemical analysis and weight of spelter coated for each heat, lift of coil number, case, size and type of material used to fabricate this pipe will be mailed to the Engineer, City and Contractor within 5 calendar days of the delivery date of the pipe. Each copy will reference pipe size, number of sections, date of actual delivery to the job so that a positive identification can be made.

- C. Corrugated Plastic Pipe: Corrugated flexible conduit with slip-on joints made of polyethylene conforming with ASTM F 405 and F 449. Subject to compliance with requirements, firms offering products which may be incorporated in the work include, but are not limited to, the following: ADS Inc. Hancor Inc.

**1.05 Pipe Foundation**

- A. Foundation for Reinforced Concrete Pipe: Unless otherwise indicated, lay pipe in trenches and on foundations prepared as selected by the Contractor in conformance with the bedding class, trench width and depth, and pipe size tabulated below:

Pipe Size Inches	Maximum Trench Width Ft-in.	Maximum Trench Depth in Feet					
		Class C Bedding			Class B Bedding		
		Conc. Cl. 3	Conc. Cl. 4	Conc. Cl. 5	Conc. Cl. 3	Conc. Cl. 4	Conc. Cl. 5
18	3-3	9	15	30	12	24	30
21	3-6	9	16	30	13	26	30
24	4-0	10	16	30	13	23	30
27	4-0	11	19	30	15	29	30
30	4-6	11	18	30	14	25	30
36	5-6	11	17	29	14	23	30
42	6-0	12	16	26	15	21	30
48	7-0	12	18	28	15	23	30
54	7-6	13	18	29	16	24	30
60	8-6	13	19	28	16	23	30

- B. Foundation for Corrugated Plastic: Unless otherwise approved, lay corrugated plastic pipe in trenches, or fills using not less than Class C Modified Bedding and in conformance with the maximum fill depth and pipe size tabulated below:

Pipe Size Inches	Maximum Fill Depth for Corrugated Plastic Pipe in Feet
18	11
24	7

- C. Foundation for Bituminous Coated Corrugated Aluminum Pipe: Unless otherwise approved, lay corrugated plastic pipe in trenches, or fills using not less than Class C Modified Bedding and in conformance with the maximum fill depth and pipe size tabulated below:

Maximum Fill Depth In Feet For Bituminous Coated Corrugated Aluminum Pipe With Wall Thickness

Pipe Size Inches	0.06 In. (16 Ga.)	0.075 (14 Ga.)	0.105 (12 Ga.)	0.135 (10 Ga.)	0.164 (8 Ga.)
18	30	30	52	54	56
24	22	22	39	41	42
30	18	18	31	32	34
36	15	15	26	27	28
42		26	43	43	44
48			40	41	43

**1.06 Bedding**

- A. Coarse Granular Material For Pipe Bedding: Crushed stone, crushed gravel, natural gravel, or crushed shell meeting ASTM C 33, and having No. 67 gradation (3/4 inch to No.4 sieve).
- B. Fine Granular Material For Pipe Bedding: Uniformly graded natural or manufactured sand composed of hard, durable particles with 100 percent passing a No.4 sieve, not more than 25 percent passing a No. 100 sieve, and containing no more than 25 percent total of silt and clay.
- C. Class B Bedding: Class B Bedding may be achieved by either of the following two construction methods:
- Shaped Bottom with Tamped Backfill: Shape bottom of trench excavation to conform to a cylindrical surface with a radius at least 2 inches greater than the radius to the outside of the pipe and with a width sufficient to allow six-tenths of the width of the pipe barrel to be bedded in fine granular material fill placed in the shaped excavation. Carefully place and compact backfill at sides of pipe to a thickness of at least 12 inches above

top of pipe. Limit use of this bedding method to trenches with firm bottom and sides.

2. Compacted Coarse Granular Bedding With Tamped Backfill: Bed pipe in compacted coarse granular material placed on a flat trench bottom. Thickness of granular bedding must be at least one-fourth the outside pipe diameter, but not less than 4 inches thick under pipe barrel, and extend at least halfway up the pipe barrel at the sides. Carefully place compacted backfill above the granular material up a minimum depth of 12 inches over the top of pipe.

D. Class C Bedding: Class C Bedding may be achieved by either of the following two construction methods:

1. Shaped Bottom: Bed pipe with ordinary care in an earth foundation formed in the trench bottom by a shaped excavation which fits the pipe barrel with reasonable closeness for a width of at least 50 percent of the outside pipe diameter. Place compacted fill to a minimum depth of six inches above top of pipe.
2. Compacted Coarse Granular Bedding with a Tamped Backfill: Bed pipe in compacted granular material placed on a flat trench bottom. Thickness of granular material must be at least 4 inches under the barrel and must extend one-tenth to one-sixth of the outside diameter up the pipe barrel at the sides. Place compacted backfill above the granular material to a minimum depth of six inches over top of pipe.

E. Class C Modified Bedding: Class C Modified Bedding is defined as bedding pipe on a bedding blanket of sandy material roughly shaped to fit bottom of pipe. Thickness of bedding blanket must be not less than 0.1 of the nominal pipe diameter. Place compacted backfill above bedding blanket to a minimum depth of 12 inches over the top of pipe.

### **1.07 Pipe Laying**

When either bituminous coated corrugated aluminum or corrugated plastic pipe is used, pipe installation must be observed by a Georgia registered professional engineer engaged by the contractor or developer. Upon completion of the pipe installation and prior to acceptance by the City, the observing engineer is to furnish to the City a certification that the storm drainage pipe has been installed in accordance with the approved plans and these specifications. Acceptance by the City will not be considered without the engineer's certification. Clean interior of pipe and all joints before laying.

When pipe laying activity is not in actual progress, tightly cover open ends of sewer. Avoid permitting mud or other material from entering sewer at all times.

Avoid damage or shock in handling pipe and accessories. Inspect each length of pipe, and reject any defective piece. Carefully protect pipe in place from damage or displacement until backfilling operations are complete. Lay and joint pipe in strict conformance with manufacturer's written recommendations as submitted to and accepted by the City.

Where cement joints are used, provide wet burlap or earth protective cover for joints immediately after initial grout set. Maintain protective cover until joint is covered by backfilling.

Lay all pipe upgrade with spigots pointing downgrade. Control geometric position of pipe as necessary to ensure that pipe and fittings accurately conform with required grade and alignment after sewer is completed. Prevent water from accumulating or running in trench during pipe laying operations, and until the trench or excavation has been backfilled.

Remove and re-lay any length of pipe which does not accurately conform with required line or grade, is crushed, or is excessively deflected.

### **1.08 Pipe Connections**

Make all pipe connections with standard fittings, manholes, structures, or special construction detailed on Drawings.

At manholes and structures, neatly cut all connecting pipe flush with inside surface, and provide flexible pipe joint within 18 inches of outer surface. Make pipe connections to manholes and structures by laying pipe in mortar bed or concrete. Use supplemental materials and techniques as required to obtain watertightness. Do not connect any flow to new work until authorized by the City.

### **1.09 Line Cleaning**

Avoid permitting dirt, rubbish, surplus construction material, and other foreign matter to enter structures or pipe during construction. Use whatever means may be necessary to obtain a clean and internally smooth sewer system prior to final acceptance.

### **1.10 Leakage and Infiltration**

Entire storm sewerage system shall be made as watertight as practicable. All visible points of ground water infiltration leakage shall be eliminated.

### **1.11 Storm Water Infrastructure Dedication**

1. The developer and or owner shall provide video inspection and mandrel inspection prior to dedication to the City.
2. Video and mandrel inspection and necessary repairs shall be completed prior to installation of final asphalt pavement wear course.

**A. Scope**

This test method describes the equipment and procedures for video inspection of storm and side drainpipe. This test method is used in conjunction with the GDOT Specification 550 (Strom Drainpipe, Pipe Arch Culverts, and Side Drainpipe).

**B. Apparatus**

1. Camera Inspection Equipment: Provide a pipeline inspection camera having the following features:

- a. Configured properly in the pipe both vertically and horizontally and having the ability to pan and tilt to a 90 degree angle with the axis of the pipe and rotate 360 degrees.
- b. Low barrel distortion camera.
- c. Color image with a minimum standard resolution of 720 x 480 pixels.
- d. Equipped with sufficient lighting to provide a clear image of the full circumference of the pipe.
- e. Capable of recording the station, milepost, distance along the invert of the pipe, or other indicators of location superimposed on the video.
- f. Capable of moving through the entire length of the pipe.
- g. Capable of measuring cracks greater than 1/16" and joint separations greater than 0.5".
- h. Software capable of generating a report that included the following:
  - Actual recorded length and width measurement of all cracks within the pipe.
  - Actual recorded separation measurement of all pipe joints.
  - Pipe ovality report.
  - Deflection measurements and graphical diameter analysis report in terms of x and y axis. E. Flat analysis report.
  - Representative diameter of pipe.
  - Pipe deformation measurements, leaks, debris, or other damage or defects.
  - Deviation in pipeline and grade, joint gaps, and joint misalignment.

2. Laser Deflection Measuring Device: Provide a laser deflection measuring device, for use of flexible pipe up to 48 inch in diameter, capable of measuring deflection to an accuracy of 0.5% or better and a repeatability of

0.12% or better. Reference of the equipment calibration are ASTM E 691 and ASTM E 177.

3. **Mandrel:** Provide a mandrel device which are rigid, nonadjustable, odd numbered legged (9 minimum) having the following:
  - a. Length not less than 7/16 of its nominal diameter.
  - b. Diameter at any point shall not be less than the diameter specified in Section C.3 Mandrel.
  - c. Diameter, whether fixed or variable, shall be verified with a proving ring or other method per the manufacturer's' guidelines.
4. **Manual Inspection Measuring Devices:** Use contact or non-contact distance instruments.

### **C. Procedure**

Ensure pipe is clear of water, debris and/or obstructions. Complete the video inspection and any necessary measurement prior to placing the final surface over any pipe. Notify the engineer a minimum for 7 days in advance of inspection.

#### **1. Pipeline Video Inspection for Defects and Distresses:**

- a. Begin at the outlet end and proceed through to the inlet at a speed less than or equal to 30 ft/minute. The distance shall have an accuracy of 1 foot per 100 feet. Remove blockages that will prohibit a continuous operation.
- b. Document locations of all observed defects and distresses including cracking, exposed reinforcing, steel, sags, joint offsets, joint separations, deflections, improper joints/connections, blockages, leaks, rips, tears, buckling, deviation from line and grade, and other anomalies not consistent with a properly installed pipe.
- c. During the video inspection provide a continuous 360-degree pan of every pipe joint.
- d. Identify and measure all cracks greater than 1/16" and joint separations greater than 1/2". When cracks exceed 1/16" and extend more than 12" make repairs in accordance to manufacturer recommendation. Crack with displacement will require pipe replacement. Repair or replace pipe joint separation greater than 1".
- e. Video inspections are conducted from junction to junction which defines a pipe run. A junction is defined as a headwall, drop inlet, manhole, junction box, or other structure than disturbs the continuity of the pipe. Each pipe run must be on a separate video file and all locations are to be referenced from the nearest junction relative to that pipe run.

f. Record and submit all data as per Section D Reporting.

**2. Pipeline Laser Inspection for Deflection:**

- a. Calibrate the laser deflection measuring device according to the manufacturer's specifications. Provide all calibration data and applicable manufacture's recommendations for calibration and use to the Engineer.
- b. Measure the deflection occurring at the point the projected laser and at a minimum interval of -.1 feet along the pipe.
- c. All deflection measurements are to be based on the AASHTO Nominal Diameter. Refer to Section C.5.
- d. Inspect at a speed that will provide proper data acquisition to effectively measure the maximum deflection. The inspection speed shall be less than or equal to 30 ft/minute. The laser projection head shall be positioned so that the laser ring fills minimum 75% of the monitor screen height.
- e. Laser inspections are conducted in the same manner as Section C.1.e.
- f. Record and submit all data per Section D. Reporting.

**3. Mandrel Testing:**

- a. Mandrel Testing will be used for deflection testing if the video measurements are called into question or if limitations in the laser deflection measuring device are exceeded.
- b. Use proving ring or other method recommended by the mandrel manufacturer to verify mandrel diameter prior to inspections. Provide verification documentation for each size mandrel to the Engineer.
- c. All deflections measurements are to be based on the AASHTO Nominal Diameters. Refer to Section C.5.
- d. Begin by using a mandrel set 7.5% deflection limit. Place the mandrel in the inlet end of the pipe and pull through the outlet end. If resistance is met prior to completing the entire run, record the maximum distance achieved from the inlet side, then move the mandrel and continue the inspections from the outlet end of the pipe toward the inlet end. Record the maximum distance achieved from the outlet side. Replace pipe exceeding 7.5 % deflection.
- e. If no resistance is met at 7.5% then the inspection is complete.
- f. Record and submit all data as per Section D. reporting.

**4. Manual Inspection Measurements:**



- a. Alternate method of video inspection and deflection testing when there is available access, or the pipe is greater than 48 inches in diameter. For all pipe considered a confined space, provide entry for all project personnel according to OSHA requirements.
- b. Physical measurements may be taken after installation and compared to the AASHTO Nominal Diameter if the pipe is per Section C.5. When this method is used, determine the smallest interior diameter of the pipe as measured through the center point of the pipe (D2). Take the D2 measurement at the most deflected portion of the pipe in question and at intervals no greater than 10 feet through the run. Calculate the deflection as follows;

$$\%Deflection = [(AASHTO \text{ Nominal Diameter} - D2) / AASHTO \text{ Nominal Diameter}] * 100\%$$
- c. Video and lase inspect as per Sections C.1 and C.2.
- d. Record and submit all data as per Section D. reporting.

**5. AASHTO Nominal Diameters and Maximum Deflections Limits:**

These deflection limits are the maximum allowable deflection on any axis within the pipe and not just in the XY plane.

<u>Base Pipe Diameter</u>	<u>AASHTO Nominal Diameter</u>	<u>Maximum Deflection Limit (7.5%)</u>
<u>(inches)</u>	<u>(inches)</u>	<u>(inches)</u>
<u>15</u>	<u>14.76</u>	<u>13.65</u>
<u>18</u>	<u>17.72</u>	<u>16.39</u>
<u>24</u>	<u>23.62</u>	<u>21.85</u>
<u>30</u>	<u>29.53</u>	<u>27.32</u>
<u>36</u>	<u>35.43</u>	<u>32.77</u>
<u>48</u>	<u>47.24</u>	<u>43.70</u>
<u>54</u>	<u>53.15</u>	<u>49.16</u>
<u>60</u>	<u>59.06</u>	<u>54.63</u>

**D. Reporting**

Submit all recorded information to the Engineer on standard forms along with the complete video inspection on DVD in digital format. The forms included in this method shall be used for reporting the inspection information. Ensure

all video pipe runs on the DVD have the station, milepost, distance into the drain or other indicators of location superimposed on the video. Submit one copy of the paper inspection, DVD, and one electronic copy of report.

**1. Pipe Video Inspection Report:** The Pipeline video Inspection Report shall include the “Pipe Video Inspection Summary Report” form, the “Individual Pipe Video Inspection report” form(s), and the report(s) generated by the inspection software for each pipe run.

a. Individual Pipe Video Inspection Report Form: Complete Project Information, Inspector Information and Pipe Information. Under Inspection information record each defect/distress and joint along with its distance from the inspection entrance software and reference the page number associated with the still image of the joint, distress/defect along with any additional information.

b. Pipe Video Inspection Summary Report Form: This page is to be used as the cover sheet for the completed video inspection report. Complete Project Information, Inspector Information, and Pipe Information.

**2. Pipeline Deflection Inspection Report:** The Pipeline Deflection Inspection Report shall include the “Pipe Deflection Inspection Summary Report” form, the “Individual Pipe Deflection Inspection Report” form(s) and the report(s) generated by the inspection software for each pipe run.

a. Individual Pipe Deflection Inspection Report Form: Complete Project Information and Inspector Information. Under Inspector Information, record each joint location along with the beginning and ending locations where the deflection exceeds 7.5%. Attach a copy of any supportive information generated from the inspection software and reference the page number where more detailed deflection information may be conveyed.

b. Pipe Deflection Inspection Summary Report Form: This page is to be used as the cover sheet for the completed deflection inspection report. Complete Project Information, Inspector Information, and Pipe Information.

**PIPE VIDEO INSPECTION SUMMARY REPORT**

**INSPECTOR INFORMATION**

**Inspecting Contractor:** \_\_\_\_\_

**Operator Name:** \_\_\_\_\_ **Project Name:** \_\_\_\_\_

**Inspecting Contractor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**PIPE INFORMATION**

<b><u>Beginning Sta.</u></b>	<b><u>Ending Sta.</u></b>	<b><u>Dia.</u></b>	<b><u>Material</u></b>	<b><u>Length</u></b>	<b><u>Under Pavement</u></b>	<b><u>Cracks &gt; 1/8 "</u></b>	<b><u>Joint Separations &gt;1/2"</u></b>	<b><u>Pass / Fail</u></b>

**PIPE DEFLECTION INSPECTION SUMMARY REPORT**

**INSPECTOR INFORMATION**

**Inspecting Contractor:** \_\_\_\_\_

**Operator Name:** \_\_\_\_\_ **Project Name:** \_\_\_\_\_

**Inspecting Contractor Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**PIPE INFORMATION**

<u>Beginning Sta.</u>	<u>Ending Sta.</u>	<u>Dia.</u>	<u>Material</u>	<u>Length</u>	<u>Under Pavement</u>	<u>Greater than 7.5%</u>		<u>Pass / Fail</u>

**SECTION 2: GRASSING**

**2.01 General**

The extent of grassing consists of those areas which are disturbed by operations of the Contractor and are not covered over by improvements, except where specifically noted otherwise, together with any additional areas shown on the drawings or designated by the City. Grassing operations include, but are not limited to, the following: Ground preparation, Seeding, Liming, Fertilizing, Mulching, Watering, and Maintenance of Grassed Areas.

**2.02 Quality Assurance**

Use grassing materials with certificates of inspection as required by governmental authorities. Comply with regulations governing grassing materials.

**2.03 Grass Seed**

Provide fresh, clean, new-crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America. Provide seed of the grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified below:

Common Name:	Sowing Rate lbs per acre	Min % Germ.	Min % Purity	Max % Weed
Bermuda Grass, Common	8	70	90	2

**2.04 Soil Amendments**

- A. Lime: Natural limestone containing not less than 85 percent of total carbonates, ground so that not less than 90 percent passes a 10-mesh sieve and not less than 25 percent passes a 100-mesh sieve.
- B. Fertilizer: Standard commercial grade fertilizer conforming to the standards of the Association of Official Agricultural Chemists. Provide either grade 4-12-12, 6-12-12 or 5-10-15 at Contractor's option.
- C. Nitrogen: Standard commercial grade nitrogen conforming to state fertilizer laws. Provide in either granular or liquid form at Contractor's option.
- D. Water: Water used to produce grass is to be free of excess and harmful chemicals, acids, alkalies and all other substances which are harmful to plant growth.
- E. Wood Cellulose Fiber Mulch: Green colored wood cellulose fiber containing no germination or growth inhibiting ingredients, and suitable for uniform application by hydraulic mulching equipment. Mulch material to have the following packaged properties:

Property	Nominal Value
----------	---------------

Percent Moisture Content	9.0% ± 3.0%
Percent Organic Matter (Oven Dried Basis)	99.2%±8.8%
Percent Ash Content	08%±02%
pH	4.8% ±0.5%
Water Holding Capacity (g/1000g)	1,150 Minimum

- F. Natural Mulch: At Contractor's option, either threshed rye, oat or wheat straw or Bermuda grass hay free of noxious weed seeds.
- G. Asphalt: Homogeneous emulsified asphalt meeting ASTM D 977 which contains no agents harmful or toxic to plant growth.

**2.05 Execution**

These Specifications set forth minimum operations and material applications which are acceptable. However, a satisfactory stand of grass must be obtained by using supplemental methods and/or materials as may be required.

- A. Grassing By Private Property: Where grassing is required between curbs and sidewalks or behind sidewalks in areas adjacent to private residential or commercial property, the City may change the type of grassing required to match any type of grass which may be planted and growing on the adjacent lawn.
- B. Ground Preparation: Plow area to be grassed to a depth of not less than 4 inches. After plowing disk and harrow area until soil is well pulverized to a depth of at least 4 inches. Completed surface must be smooth, uniform, loose and free of large clods, boulders, stumps, large roots, debris and other similar undesirable matter.
- C. Lime and Fertilizer Application: Spread lime uniformly over the ground surface at the rate of 1,000 pounds per acre. Spread fertilizer uniformly over the ground surface at the rate of 1,000 pounds per acre. Once lime and fertilizer are placed, blend into top 4 inches of soil with suitable harrows, rotary tillers or other appropriate equipment. Restore surface areas to line and grade.
- D. Application of Nitrogen: Make two applications of nitrogen to all grassed areas using mechanical spreading equipment. Apply at a uniform rate of not less than 70 pounds per acre per application. Make both applications only when weather conditions will permit uniform and even distribution and when moisture conditions will not cause harm to grass. Place first application of nitrogen when young grass reaches a height of at least one inch. Make the second application of nitrogen between 30 and 45 days after the first application.
- E. Seeding: Sow seed within 24 hours following completion of placing lime and fertilizer using mechanical equipment that produces uniform application of seed.

Once seed is sown, roll seeded areas before placing mulch. Sow seed only when weather conditions permit uniform distribution of seed and ground is not frozen, wet or otherwise non-tillable.

- F. Mulching: Mulch all grassed areas using either wood cellulose fiber mulch or natural mulch with bituminous treatment at the following rates:
1. Wood Cellulose Fiber Mulch: 1,500 pounds per acre
  2. Natural Mulch-Bituminous Treated: 3/4 inch to 1 ½ inch deep over entire area with sufficient asphalt material to hold mulch in place

Apply mulch only when weather conditions will permit uniform distribution of mulch. Exercise care at all times to protect the public, adjacent property, bridges, pavements, curbs, sidewalks and all other structures.

- G. Water: Water grassed areas as required to obtain specified grass coverage.
- H. Required Coverage: Grassed areas will be considered acceptable when a viable stand of grass covers at least 98 percent of the total area with no bare spots exceeding one square foot and the ground surface is fully stabilized against erosion.
- I. Maintenance: Maintain grassed areas until the later of (1) final project acceptance, or (2) the required grass coverage is achieved. Maintain grassed areas by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable stand of grass free of eroded or bare areas. Mow areas as required to keep grass not more than 8 inches above ground surface until grassing work is accepted.
- J. Final Inspection and Acceptance: When the grassing work is completed, including maintenance, the City will, upon request, make an inspection to determine acceptability. Where inspected work does not comply with the requirements, replace rejected work and continue specified maintenance until re-inspected by the City and found to be acceptable.

**SECTION 3: GRADED AGGREGATED BASE AND SUBBASE****3.01 Sampling and Testing**

Provide quality control testing during construction as necessary to ensure the entire base or subbase including all courses meets contract requirements. Remove and reconstruct, or otherwise correct work which falls below specified density or is outside other specified limits. Provide quality control testing by an approved testing laboratory during construction as necessary to ensure the entire or subbase including all courses meets contract requirements. Remove and reconstruct, or otherwise correct work which falls below specified density or is outside other specified limits.

- A. Minimum quality control testing to be provided by the contractor consists of the following:
1. Moisture-density relationship curve for graded aggregate to be used on project.
  2. One-in-place density test (ASTM D 1556 or other method approved by the Engineer) per 1,200 square yards of base or subbase.
  3. One thickness measurement normal to base or subbase surface per 1,200 square yards of base or subbase.
  4. One surface tolerance measurement using a 15 foot straight edge per 250 square yards of base or subbase.

After completing street earthwork operations and before beginning street base construction, the developer shall file a copy of the quality control test results demonstrating compliance with these requirements with the City. At any time during the construction process, representative(s) of the City may request to review and the developer shall provide quality control test results.

**3.02 Aggregate Properties**

Graded aggregate shall meet standards set forth in the Georgia Department of Transportation Specifications for Coarse Aggregate, Section 800.

**3.03 Execution**

Clear and grub entire street right-of-way before commencing street earthwork construction. For specific technical requirements reference is made to Georgia DOT Specifications. Combustible material generated from clearing and grubbing operations may be burned only when authorized and permitted by the Dawson County Fire Marshall.

Complete utility and drainage earthwork before starting street subgrade construction. Ensure that subgrade and subbase conforms to specified compaction, line and grade and thickness requirements before commencing graded aggregate construction. Responsibility for placing the specified graded material lies with the Contractor. Approval by the



engineer of material, source of supply, etc. in no way relieves the Contractor of his responsibility of providing the specified graded aggregate material.

Place homogeneously and uniformly mixed graded aggregate on prepared subgrade or subbase. Spread material to a uniform depth not exceeding the thickness indicated on the Drawings nor 6 inches after compaction. Where graded aggregate base or subbase is indicated more than 6 inches in thickness, construct base or subbase in two or more courses of approximately equal thickness.

Control graded aggregate compaction during construction providing no less than minimum percentage of density specified. Achieve not less than 100 percent of maximum dry density as determined by ASTM D 698 (Standard Proctor) for each ~~course~~course of material-in-place.

After compaction, shape surface to required line, grade, and cross section. Compact loosened material until the surface is smooth, closely knit, free from cracks, conforming to required line, grade and cross section. Obtain a finished surface with no variation from design requirements in excess of 1/4 inch when measured with a 15 foot straightedge.

Maintain graded aggregate base or subbase in a smooth, true to grade, compacted condition until it is covered by other construction.

Achieve compacted thickness which is no more than ½ inch less than the required thickness at any point. Correct any area deficient by more than ½ inch by adding additional graded aggregate and rebuilding the base or subbase to the required thickness in accordance with this section.

**SECTION 4: PAVEMENT REMOVAL AND REPAIR****4.01 Scope**

Pavement referred to under this Section, refers to asphaltic, ~~ementious~~ementitious, brick, cobble or other large stone pavement materials together with underlying construction, irrespective of its composition. The extent of pavement work under this sections consists of the removal of pavement and repair of all pavement removed or damaged in the course of constructing the Project. Pavement patching includes repair of paved roads, streets, highways, walkways, driveways, patios, slabs on grade, and parking lots together with walls, curbing, gutters and headers, and other pavements and appurtenances. City of Dawsonville Standard Details associated with this specification are 28.1, 29.1, 38.1, 39.1 and 40.1.

**4.02 Traffic Control**

Schedule and conduct work in a manner which will minimize inconvenience to vehicular and pedestrian traffic. Provide flaggers, barricades, warning signs, warning lights, and other warning means as appropriate. Traffic Control: Immediately after new base construction, cover pavement cut with steel plates or similar devices of sufficient thickness to span the cut without noticeable deflection. Maintain plates in place for not less than 24 hours and not more than 7 days and until the concrete base has gained sufficient strength to withstand traffic loads. Traffic may resume after installation of metal plates. Traffic control devices in lieu of cover plates are permitted for pavement work longitudinal to the street centerline in excess of 20 feet. Use traffic barricades, warning signs and lights, flagmen, and other means as appropriate to continuously control traffic 24 hours per day. Use devices such that at least 12 feet wide, one-way through traffic access is provided at all times.

**4.03 Weather Limitations**

Conduct all operations during weather conditions appropriate to the Work being performed.

**4.04 Grade Control**

Establish and maintain lines and elevations which will ensure finished pavement having desirable appearance, function and strength.

**4.05 Submittals**

Submit detailed material descriptions when requested by the Engineer.

**4.06 Materials**

For products not described below, use materials and gradations which have locally exhibited a satisfactory record of previous usage, and which for finished visible surfaces

will permit obtaining appearance, color and texture reasonably matching remaining adjacent pavement of the same type.

- A. Asphalt Concrete: Bituminous plant mixture of asphalt cement and aggregates complying with Superpave mixtures specified in Section 828, Hot Mix Asphaltic Concrete Mixtures of the Georgia Department of Transportation, "Standard Specifications for Road and Bridge Constructions".
- B. Graded Aggregate Base: Uniform graded aggregate material complying with Section 815 of the Georgia Department of Transportation "Standard Specifications for Road and Bridge Construction".
- ~~C. Bituminous Prime: Cutback asphalt complying with Section 821 of the Georgia Department of Transportation "Standard Specifications for Road and Bridge Construction"~~
- ~~D.C.~~ Bituminous Tack Coat: Asphalt material complying with Section 413, topics 413.01 through 413.04 of the Georgia Department of Transportation "Standard Specifications for Road and Bridge Construction".
- ~~E.D.~~ Portland Cement Concrete: Concrete mix of Portland cement, aggregates, water, and air entraining admixture to produce the following properties: 3500 psi minimum compressive strength at 28 days per ASTM C39, 4 inches maximum slump per ASTM C143, and air content between 3% and 6%.
- ~~F.E.~~ Cold Mix: Cold Mix shall not be used for pavement patches.

#### **4.07 Execution**

- A. Pavement Cuts: Saw cut trench edges in paved areas to neat, straight lines before starting to break the pavement slab. City of Dawsonville Standard Details No. 28.1 and 29.1 shall be used.
- B. Backfill Placement: Place trench backfill materials in layers not more than six inches compacted thickness. Commence backfill immediately after utility is installed. Complete new replacement base construction immediately after trench backfill.
- C. Inspection: Examine areas and conditions under which pavement patching will be conducted, giving special attention to stability of subbase. Do not proceed with pavement patching work until unsatisfactory conditions have been corrected.
- D. Preparation: Saw cut any ragged edges of existing pavement, or in the case of concrete work, remove existing pavement to nearest joint. Remove all loose material from underlying and adjacent surfaces.
- E. Strength and Stability: Use materials and construction techniques as necessary to obtain strength, stability and durability of pavement patch at least equal to that of remaining adjacent pavement of the same type. As a minimum, conform with

pavement patch details, if any, required elsewhere by the Contract Documents; and where such details are not provided, accomplish pavement patching utilizing strengths, thickness, etc. not less than that of remaining adjacent pavement of the same type.

- F. Placing: Construct pavement using methods and equipment in general use for the type of work being performed. Monitor performance and repair or replace materials regularly to maintain smooth traffic surface until placement of permanent pavement surface materials. At Contractor's time selection prior to substantial completion, remove cold mix and bond breaker paper and provide new permanent pavement surface materials. If performance or maintenance of cold mix patch is unsatisfactory in the opinion of the City or Engineer, remove materials and provide new permanent pavement surface materials within 72 hours of notice by the City or Engineer. Upon removal of the metal plates or similar devices, provide new pavement surface in accordance with one of the following options:

- Immediately apply new permanent pavement surface materials indicated or immediately apply bituminous cold mixture over bond breaker paper over new base.
- Plates or other traffic control devices may be used before the permanent pavement surface is installed.

Contractor assumes all responsibility for maintaining repairing and or replacing concrete base that may be damaged during curing period.

For existing surface of Portland cement concrete, furnish new Portland cement concrete structure thickness, including base and pavement surface, of not less than eight inches; except for sidewalks which shall be not less than four inches thick.

Provide not less than eight inches thickness of new graded aggregate base for replacement of asphalt concrete pavement at driveways, sidewalks and parking lots.

For repair of asphalt concrete pavement, clean base and adjacent surfaces and apply bituminous tack coat or bituminous prime (as appropriate) to such surfaces before placing new asphalt concrete surface.

- G. Finish: Accomplish pavement repair using materials and techniques which result in visible, finished surfaces having appearance, color, and texture reasonably matching remaining adjacent pavement of the same type. Do not permit the finished surface to have dips, objectionable roughness or discontinuity or non-draining areas. Do not create any unsafe pavement condition.
- H. Repairs: If pavement patch or adjacent pavement settles or shows evidence of other distress resulting from the Work, cut pavement out, repair subgrade, and

reconstruct patch. Do not place additional pavement material on top of unsatisfactory previously repaired surfaces. At expense of Contractor, repair any pavement which he damages beyond that minimum amount necessary to construct the Work.

#### **4.08 Removing Pavement**

The Contractor shall remove pavement as necessary for installing the new pipe lines and appurtenances and for making connections to existing pipe lines.

- A. Marking: Before removing any pavement, the pavement shall be marked for cuts neatly paralleling pipe lines and existing street lines. Tunneling will be permitted under existing sidewalks, curbs and gutters, but not under pavement.

Power saws shall be used to cut all types of pavement along marked lines. The pavement shall be sawed to a depth of at least 2" or deeper if directed by the Engineer.

- B. Machine Pulling: No pavement shall be machine pulled until completely separated along the marked cuts.
- C. Damage to Adjacent Pavement: The pavement adjacent to pipe line trenches must not be disturbed or damaged. If the adjacent pavement is disturbed or damaged due to any cause, such as caving ditch banks, indiscriminate use of construction machinery, etc., the Contractor shall remove the damaged pavement and shall replace at his own expense.
- D. Stone or Precast Concrete Curb: The Contractor shall remove and replace or tunnel under any stone or precast concrete curb encountered.

#### **4.09 Replacement Pavement**

Upon completion of backfilling and consolidation of the backfill, the Contractor shall furnish all materials and labor and shall replace all pavement removed for construction of the pipe lines and appurtenances. The Contractor shall also remove and replace at his own expense any and all pavements adjacent to pipe trenches which may have been disturbed or damaged as the result of construction operations.

In the event weather conditions do not permit the permanent replacement of pavement immediately subsequent to the completion of pipe line construction, the Contractor will be required to maintain temporary surfacing until such time as the weather is suitable for paving operations. Any such delay will not be counted against the contract time for completion, provided that all other work to be performed under the Contract is completed within the specified time.

- A. The various types of pavement removed shall be replaced as follows:
1. Pavement Replacement: Street pavement shall be replaced in accordance with the applicable provisions of the Standard Specifications Construction

of Transportation Systems, Georgia Department of Transportation, latest revision, and with the City of Dawsonville Standard Details.

2. Base: The base for the asphaltic concrete pavement shall be 8" of concrete.
  3. Asphaltic Concrete: The concrete base shall be poured to the proper level after which it shall be primed and sealed in accordance with the appropriate standard specification. The wearing course shall consist of 2" of Superpave plant-mixed asphaltic concrete, conforming to the provisions of Section 400 of the Georgia Department of Transportation Specifications.
- B. Sub-Grade Preparations: Under trench paving the sub-grade shall be thoroughly compacted by approved mechanical compaction equipment to 95% as determined by Modified Proctor Test. At least 2 compaction tests shall be made between manhole reaches equal to or less than 200' long. At least 3 compaction tests shall be provided for manhole reaches greater than 200' long. These tests shall be conducted by an approved soils testing company and shall be performed by an experienced soils technician. The costs of all tests shall be paid by the City.
- C. Pavement Preparation: Before replacement of pavement, the pavement should be cut back at least 12" on each side of the trench or to visible overbreaks, whichever is greater, to a depth of 2" with a concrete saw. No cutback will be required on bituminous surface treatment pavement to insure a straight vertical edge for the patch. After making the saw cut, the pavement to be removed should be broken into small pieces and removed. The broken edge below the saw cut is left fairly rough and irregular but is approximately a vertical plane to provide an aggregate interlock between the patch and the existing pavement. The sub-base material should be carefully placed and shaped. Water should be added to provide a damp but not wet sub-base before the concrete base or soil cement base is placed. The new concrete base should then be poured or soil cement base placed before this surface dries out. The base should be placed with care, making sure it is worked back into all corners.
- D. Concrete Base: After the concrete base has cured, the concrete surface and vertical edges of the existing paving must be clean and dry before the tack coat is applied. The tack coat should be applied to the surface of the new concrete base and brushed into the corners and on to the vertical edges of the old pavement to provide a bond and seal out water. The asphalt surface material should be immediately placed after the surface of the tack coat has dried to the point it is sticky to the touch.
- E. Soil Cement Base: In lieu of the concrete base as described above, a soil cement base material consisting of approximately 12% Portland Cement by volume and a

friable local material must be used. The minimum depth for the soil cement should be 12". This material should be placed in at least 2 layers with no layers to exceed 6" in depth and compacted to 100% compaction. In lieu of the bituminous tack coat, a bituminous prime should be lightly sprayed or mopped onto the soil cement base as soon as it is completed.

- F. Asphalt Surface: The asphalt surface material should be immediately placed after the surface of the bituminous prime has cured. A short period of time is required for the prime to penetrate into the base material.
- G. Replacement of Concrete Curb and Gutter, Street, Driveway and Sidewalk: Concrete curb and gutter, street, driveway and sidewalk shall be replaced with Class 'A' 3,000 psi concrete of the same thickness and dimensions as was removed.

**SECTION 5: ROADWAY AND WALK INSTALLATION****5.01 Roadway Surfacing**

All paved access roads and parking areas, where shown on the Drawings, shall have a crushed stone base course, ~~asphalt binder course and asphalt wear course. prime coat and sand asphalt surface course.~~ The compacted depth of the base course shall be ~~68"~~, and widths shall be as shown. ~~Surface course shall be 1 ½" thick~~ Binder course shall be 2" 19 mm or 12.5 mm asphalt course and topping wear course shall be 1 ½ "9.5 mm. Materials and construction methods shall conform to *the Standard Specifications for Highway Construction of the Georgia Department of Transportation* as follows:

- Section 310: Graded Aggregate Construction
- Section 412: Bituminous Prime
- Section 400: Hot Mix Asphaltic Concrete Construction
- Section 828: Hot Mix Asphaltic Concrete Mixtures

**5.02 Quality Assurance**

- A. The developer shall provide quality control testing during base and pavement construction as necessary to ensure the entire pavement structure meets the minimum requirements of these Regulations. The minimum quality control testing to be provided consists of the following:
1. Moisture-density relationship curve for each base material used on project.
  2. For soil cement base, conduct mix design to determine Portland cement content (percent of dry weight of the soil) to achieve a minimum compressive strength of 300 psi at seven days when testing in accordance with ASTM D 1632 and D 1633.
  3. One in-place density test (ASTM D 1556 or other method acceptable to the City) per 1,200 square yards or fraction thereof of base. (4.9 (e) (2) and
  4. One thickness measurement normal to base surface per 1200 square yards or fraction thereof of base.
  5. For base course, one surface tolerance measurement using a 15 foot straight edge per 250 square yards or fraction thereof of base.
  6. One asphalt extraction (ASTM D 2172) and aggregate gradation analysis (ASTM C 136) per 2400 square yards or fraction thereof of surface course and per 2400 square yards or fraction thereof of binder course (if any). Obtain samples for extraction and gradation tests in accordance with ASTM D 979.



7. One density and compacted thickness measurement per 1200 square yards or fraction thereof of each course placed. Density determined to be made in accordance with ASTM D 1188. Remove not less than 3 inch diameter nor larger than 12 inch square test specimens. Repair test specimen holes with full depth application of fresh hot asphaltic plant mix.
  8. For asphalt extraction, one surface tolerance measurement using 15 foot straight edge per 250 square yards or fraction thereof of surface course.
- B. Base and/or paving construction which falls below specified minimum quality control limits shall be removed, reconstructed, and re-tested until compliance with specified requirements is achieved.
  - C. Report test results in writing to the Engineer promptly (normally same day tests are made). The Engineer and/or City may perform sampling, surveying, inspection or testing activity during construction for his use, but such activity does not relieve the Contractor from his responsibility to achieve specified results.
  - D. After completing base and paving construction, the developer shall file a copy of the quality control test results demonstrating compliance with these Regulations with the City. At any time during the construction process, representative(s) of the City may request to review and the developer shall provide quality control test results.
  - E. The City may perform compaction, surface tolerance and thickness check tests on graded aggregate work when the Contractor indicates such work meets contract requirements. If these tests demonstrate work fails to meet contract requirements, it is the Contractor's responsibility to determine the extent to which the deficiency is present, to correct the deficiency, and to demonstrate by tests made by an approved testing laboratory, compliance with contract provisions in the deficient area. Check testing activity by the City does not relieve the Contractor from his responsibility to achieve specified results. All costs of determining the extent to which a deficiency is present and of retesting to demonstrate compliance with specified results are to be assumed by the Contractor. The City will pay all other check testing costs.

### **5.03 Sidewalk Walks**

Per GDOT section 441, walks shall be constructed of Class 'BA' concrete (~~2,200~~ 3,000 psi), shall be 4" deep and 5 feet wide unless otherwise specified. Transverse contraction joints shall be formed with a tool designed for forming a groove  $\frac{1}{3}$  the depth of the sidewalk, and on not more than 10'6"-0" centers. All edges shall be rounded with a 1- $\frac{1}{4}$  edger. Expansion joints shall be located on not more than 60 feet center, each side of all driveways, and at abutting concrete structures. ~~20'-0" centers and at all intersections.~~

**5.04 Sidewalks Crossing Driveways**

Sidewalks crossing driveways shall be constructed of Class 'A' concrete (3,000 psi), shall be ~~8~~ 6" deep for residential and 8" for commercial and 5 feet wide unless otherwise specified. Transverse contraction joints shall be formed with a tool designed for forming a groove  $\frac{1}{3}$  the depth of the sidewalk, and on not more than ~~6'-0" 10ft"~~ centers. All edges shall be rounded with a 1- $\frac{1}{4}$  edger. Expansion joints shall be located every 60 feet, abutting concrete structures and at on not more than 20'-0" centers, and at all intersections, each side of driveway connections. Valley gutters shall be installed according to Georgia Department of Transportation details.

**5.05 Excavation**

Excavation for roadways and walks shall be made to the lines, grades and typical sections approved by the City. Proper allowances shall be made for specified thickness of roadbed and walkway below the finish grade shown. Should rock be encountered in the subgrade, the road shall be excavated to a depth of 6" below subgrade and the resulting space backfilled with suitable material.

**5.06 Existing Paved Surfaces**

All existing paved surfaces shall be protected and repaired if damaged.

**5.07 Curb and Gutter**

Concrete used for curb and gutter construction shall have a minimum 3,000 psi compressive strength at 28 days (ASTM C 39); a 2 inch to 4 inch slump (ASTM C 143) and, 3 to 6 percent air content (ASTM C 231 or C 173) and shall comply with ASTM C 94.

Construct curb and gutter true to line, grade and cross section on properly prepared subgrade. Apply Georgia DOT Type 2 membrane curing compound.

Protect completed curb and gutter work from damage until dedication to the City. As soon as the curb and gutter will not be damaged, backfill, compact, stabilize and grass adjacent ground to achieve design line and grade.

Acceptably repair or replace broken or defective curbs and gutters.

**5.08 Shoulders**

Shoulders shall be constructed of selected topsoil in accordance with typical sections approved by the City and shall be grassed as specified elsewhere.

**5.09 Construction on Embankments**

Where roadways are constructed on fill, the embankment shall be placed in layers not over 6" deep as measured before compaction and be thoroughly rolled to a density of 98% of the Standard Proctor Dry Density with sheepsfoot or pneumatic tired roller. The work shall be

executed in a manner which will ensure that no places too steep to roll are left in the embankment. Portions inaccessible to the roller shall be rammed by hand. All materials shall be visibly damp. Water shall be applied as directed to obtain close adhesion between layers and all parts of the material.

Sheepsfoot roller shall be of self-cleaning type, have feet projecting 7" from the shell and be of a weight so that the load of each tamper foot with the drum empty will be not less than 100 pounds per square inch of area in contact with a plane surface. Rolling shall be executed until the feet leave no appreciable imprint when the shell is filled to a maximum weight.

Pneumatic tired rollers shall be suitable for ballast loading which will give a compression, under working conditions, of not less than 325 pounds per inch width of tire tread. Forward and rear tires shall make separate tracks. Compaction shall be equivalent to that required for the sheepsfoot roller.

Within the limits of the roadbed, the fill shall be constructed of selected clay materials from excavation and borrow and be free from stones larger than 4" in diameter within the last 10' of vertical fill. Slopes of roadway outside the above limits may be constructed of alternate layers of rock and clay; in no case shall rock be allowed in nests. The stones shall be uniformly distributed over the preceding clay layers, and the voids shall be completely filled with clay so as to form a solid compaction embankment.



**DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 18**

---

SUBJECT: **STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION AND SANITARY SEWERAGE SYSTEMS**

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO REQUEST COUNCIL TO REVIEW AND RECOMMEND ANY CORRECTIONS OF THE  
UPDATED STANDARD SPECIFICATIONS FOR WATER AND SEWER SYSTEMS**

**CONSIDERATION OF APPROVAL AT THE DECEMBER 6, 2021 MEETING**

---

HISTORY/ FACTS / ISSUES:

- **SPECIFICATIONS LAST UPDATED IN 2018.**
  - **UPDATE FIRE FLOW REQUIREMENTS.**
  - **UPDATED SEWER LATERAL CONNECTIONS.**
  - **UPDATE SEWER FORCE MAIN MATERIAL TYPE.**
  - **UPDATE WATER APPURTENANCES MATERIAL WORKING PRESSURE RATINGS.**
  - **UPDATED WATER AND SEWER MAIN DETECTION MATERIAL TYPE.**
  - **ADDED ADDITIONAL SEWER MAIN TELEVISIONING REQUIREMENT PRIOR TO CITY ACCEPTANCE.**
  - **ADDED ADDITIONAL SEWER MANDREL TESTING PRIOR TO CITY ACCEPTANCE.**
- 

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: David Picklesimer, Planning Director

415 Highway 53 E. Suite 100  
Dawsonville, Georgia 30534



(706) 265-3256  
Fax (706) 265-4214  
[www.dawsonville-ga.gov](http://www.dawsonville-ga.gov)

**Date:** 10/26/2021

**To:** Mayor and Council

**Reference:** Standard Specifications for Water Distribution and Sanitary Sewerage Systems

The Planning and Zoning Department has provided the following pertinent information to help you decide on this request:

1. Planning and Water & Sewer Department request approval of the updated specifications.
2. Specifications last updated in 2018.
3. Updated the water distribution fire flow design requirements.
4. Updated allowable sewer lateral connections.
5. Updated sewer force main material to ductile iron pipe.
6. Updated corporation stops, curb stops, air release valves, fire hydrants to be rated for more working pressures.
7. Updated water and sewer main and service line detection material.
8. Added additional sewer main televising prior to city acceptance.
9. Added additional sewer mandrel test prior to city acceptance.

Kindest Regards,

  
David Picklesimer  
Planning Director

**STANDARD SPECIFICATIONS**  
for  
**WATER DISTRIBUTION SYSTEMS**  
and  
**SANITARY SEWERAGE SYSTEMS**



**CITY OF DAWSONVILLE, GEORGIA**

**STANDARD SPECIFICATIONS**  
for  
**WATER DISTRIBUTION SYSTEMS**  
and  
**SANITARY SEWERAGE SYSTEMS**

**CITY OF DAWSONVILLE, GEORGIA**  
**415 Highway 53 East**  
**Dawsonville, Georgia 30534**  
**Office: (706) 265- 3256/ ~~Fax: (706) 265-4214~~**

***prepared by:***

**Adopted:** \_\_\_\_\_

# ***TABLE OF CONTENTS***

---

## **DIVISION I: POLICIES AND PROCEDURES**

### Section 1: Policies and Procedures

#### 1.01 Scope and Intent

### Section 2: Definitions

### Section 3: Design Approval

- 3.01 General
- 3.02 Technical Review
- 3.03 Plan Processing
- 3.04 Approval by Regulatory Agencies
- 3.05 Period of Plan Approval

### Section 4: Easements and Deeded Property

- 4.01 General
- 4.02 On-Site Easement
- 4.03 Off-Site Easement
- 4.04 Easement Size
- 4.05 Deeded Property

### Section 5: Installation

- 5.01 General
- 5.02 Utility Contractor
- 5.03 City Installation
- 5.04 Insurance Requirements
- 5.05 Inspection
- 5.06 Testing

### Section 6: Connecting to City Systems

- 6.01 General
- 6.02 Connection to Existing Systems

### Section 7: System Acceptance

- 7.01 General
- 7.02 Final Inspection
- 7.03 Warranty
- 7.04 Final Acceptance

## **DIVISION II: DESIGN REQUIREMENTS**

### Section 1: Design Requirements

- 1.01 General
- 1.02 Licensed Professionals
- 1.03 Reference Documents and Standards
- 1.04 Plan Requirements
- 1.05 Modifications to Plans
- 1.06 As-Built Drawings

### Section 2: Water Distribution

- 2.01 General



# ***TABLE OF CONTENTS***

---

2.02	Design Usage Rates and Hydraulics
2.03	Water Line Material and Size
2.04	Water Line Location
2.05	Fire Hydrant Location and Spacing
2.06	Valve Size and Location
2.07	Water Line Depth
2.08	Thrust Restraint
2.09	Water Meters and Backflow Prevention
<b>Section 3: Gravity Flow Sewers</b>	
3.01	General
3.02	Design Flow Rates
3.03	Hydraulics
3.04	Sewer Material and Size
3.05	Sewer Location
3.06	Sewer Depth and Structural Integrity
3.07	Manhole Location and Spacing
<b>Section 4: Force Mains</b>	
4.01	General
4.02	Hydraulics
4.03	Force Main Material and Size
4.04	Force Main Location
4.05	Force Main Depth
4.06	Thrust Restraint
4.07	Combination Air Vacuum/Release Valves
<b>Section 5: Aerial Pipe</b>	
5.01	General
5.02	Aerial Pipe Material
5.03	Aerial Pipe Support
<b>Section 6: Lift Stations</b>	
6.01	General
6.02	Pump Station Package
6.03	Backup Power System
6.04	Telemetry
6.05	Wet Well
6.06	Equipment Pads
6.07	General Electrical Requirements
6.08	Property and Site Area
6.09	Fence and Landscaping
<b>Section 7: Soil Erosion, Sedimentation and Pollution Control Plan</b>	
7.01	General Requirements
7.02	Plan
7.03	Standards and Specifications
7.04	Site Conditions
7.05	Erosion Control Program

# **TABLE OF CONTENTS**

---

- 7.06 Temporary Erosion Control
- 7.07 Rip Rap
- 7.08 Grassing of Disturbed Areas
- 7.09 Seed, Fertilizer, Mulch
- 7.10 Slope Stabilization
- 7.11 Final Stabilization

## **DIVISION III: DUCTILE IRON PIPE AND FITTINGS**

### **Section 1: Ductile Iron Pipe and Fittings**

- 1.01 Pipe Classification
- 1.02 Fitting Classification
- 1.03 Gaskets and Bolted Connections
- 1.04 Coatings and Linings
- 1.05 Pipe Marking

### **Section 2: Steel Pipe and Fittings**

- 2.01 Pipe Classification
- 2.02 Transition Coupling
- 2.03 Coatings and Linings

### **Section 3: Polyethylene Pipe and Fittings**

- 3.01 Polyethylene Tubing

### **Section 4: PVC Pipe**

- 4.01 Casing for Polyethylene Pipe
- 4.02 Sewer Pipe Classification
- 4.03 Sewer Pipe Fitting Classification

### **Section 5: Gate Valve**

- 5.01 Gate Valve
- 5.02 Butterfly Valve
- 5.03 Double Check Valve (Backflow Preventers)
- 5.04 Corporation Valve
- 5.05 Curb Stop
- 5.06 Plug Valve
- 5.07 Combination Air/Vacuum Release Valve
- 5.08 Valve Box

### **Section 6: Tapping Sleeves**

- 6.01 Tapping Sleeve
- 6.02 Tapping Saddle

### **Section 7: Water Meters**

- 7.01 Residential, Irrigation and Light Commercial
- 7.02 Commercial and Industrial
- 7.03 Fire Service
- 7.04 Fire/Domestic Combination Service
- 7.05 Water Meter Boxes (Residential, Irrigation and Light Commercial)
- 7.06 Water Meter Vaults (Commercial and Industrial)

# **TABLE OF CONTENTS**

---

7.07 Vault Access Hatches

## Section 8: Hydrants

8.01 Fire Hydrant

8.02 Yard Hydrant

## Section 9: Manholes and Wet Wells

9.01 General

9.02 Pre-Cast

9.03 Pre-Cast "Dog House"

9.04 Brick and Mortar

9.05 Frames and Covers

## Section 10: Cast-In-Place Concrete

10.01 Concrete Design

10.02 Reinforcement

10.03 Formwork

10.04 Curing and Sealing Compounds

10.05 Epoxy Bonding Agent

10.06 Acrylic Latex Bonding Agent

## Section 11: Masonry and Grout

11.01 Mortar and Grout Materials

11.02 Mortar and Grout Proportions

11.03 Concrete Masonry Units

11.04 Joint Reinforcement

## Section 12: Environmental Coatings

12.01 Materials Requiring Coatings

12.02 Coating Schedule

12.03 Manhole and Wet Well Lining

## Section 13: Miscellaneous Materials

13.01 Stabilization Stone

13.02 Detectable Underground Utility Marking Tape

13.03 Other Materials

## **DIVISION IV: CONSTRUCTION STANDARDS**

### Section 1: General

1.01 Contractor

1.02 Utility Notification

1.03 Work Commencement

1.04 Miscellaneous Standards

### Section 2: Material Distribution

2.01 General

2.02 Delivery

2.03 Handling

2.04 Storage

# ***TABLE OF CONTENTS***

---

- 2.05 Maintenance and Protection
- Section 3: Site Preparation
  - 3.01 Clearing and Grubbing
  - 3.02 Topsoil Stockpiling
  - 3.03 Removing Pavement
- Section 4: Excavation
  - 4.01 Standards
  - 4.02 Definitions
  - 4.03 Soil Excavation
  - 4.04 Dewatering Trenches
  - 4.05 Crushed Stone Stabilization
  - 4.06 Rock Excavation
  - 4.07 Pipe Trench Excavation
- Section 5: Installation
  - 5.01 Pipe Bedding
  - 5.02 Pipe, Fitting, Valve and Fire Hydrant Installation
  - 5.03 Thrust Blocking
  - 5.04 Manhole and Wet Well Installation
  - 5.05 Meter Box and Vault Installation
  - 5.06 Borings and Casings
  - 5.07 Pipe and Valve Identification
- Section 6: Backfill and Compaction
  - 6.01 Backfill
  - 6.02 Compaction
  - 6.03 Compaction Testing
- Section 7: Site Completion
  - 7.01 Grading
  - 7.02 Replacing Pavement
- Section 8: Testing
  - 8.01 General
  - 8.02 Hydrostatic (Water Main and Force Main)
  - 8.03 Air Pressure (Gravity Flow)
  - 8.04 Televising (Gravity Flow)
  - 8.05 Mandrel (Gravity Flow)
  - 8.06 Static Water Level (Wet Well)
  - 8.07 Vacuum Test (Sewer Manhole)
- Section 9: Disinfection
  - 9.01 General
  - 9.02 Initial Flushing
  - 9.03 Chlorination and Flushing
  - 9.04 Disinfection Testing
- Section 10: Concrete
  - 10.01 Formwork

# ***TABLE OF CONTENTS***

---

- 10.02 Steel Reinforcement
- 10.03 Placement
- 10.04 Finishing
- 10.05 Curing

## Section 11: Environmental Coatings

- 11.01 Environmental Coatings

## **APPENDIX**

Appendix A: Water Distribution/Sanitary Sewer Addition Submittal

Appendix B: Technical Review Checklist

Appendix C: Inspection Report

Appendix D: Pressure Test Report

Appendix E: Visual Test Report

Appendix F: Final Lift Station Inspection Report

Appendix G: Final Sewer Inspection Report

Appendix H: Final Water Inspection Report

Appendix I: Water Construction Acceptance Letter

Appendix J: Sewer Construction Acceptance Letter

Appendix K: Final Water Acceptance Letter

Appendix L: Final Sewer Acceptance Letter

## DETAILS

**SECTION 1: POLICIES AND PROCEDURES****1.01 Scope and Intent**

- A. Purpose: The purpose of this document is to set forth the uniform policies, procedures, design requirements, material requirements and construction standards of the City of Dawsonville as to comply with all applicable state and federal laws for the installation of water distribution systems and sanitary sewerage systems.
- B. Use: The Developer shall design and install all water and sewerage systems to comply with this document. The City will use this document to check plans for new water and sewerage systems and improvements to existing water and sewerage systems.
- C. Variance: Under special conditions beyond the control of parties involved, the City of Dawsonville may vary from the specifications herein. The Superintendent or designee of the City shall authorize any variance in writing. The State of Georgia, Department of Natural Resources, Environmental Protection Division, shall be notified of any variance in writing.
- D. Amendments to the Specifications:
  - 1. The City shall amend the *Standard Specifications for Water Distribution Systems and Sanitary Sewerage Systems*, as determined necessary to improve the systems' performance and integrity. The Superintendent or designee of the City shall approve system performance and integrity amendments in writing.
  - 2. The City shall amend the *Standard Specifications for Water Distribution Systems and Sanitary Sewerage Systems*, as required due to changes in applicable regulations. The State of Georgia, Department of Natural Resources, Environmental Protection Division, shall approve regulatory amendments in writing.

**SECTION 2: DEFINITIONS**

The listed words or acronyms shall mean the following:

- **ACI:** American Concrete Institute.
- **ANSI:** American National Standards Institute.
- **ASTM:** American Society for Testing and Materials.
- **AWWA:** American Water Works Association.
- **CRSI:** Concrete Reinforcing Steel Institute.
- **Design Engineer:** The engineer or surveyor under whose direction the development plans submitted for review were prepared. Design Engineer shall be a Georgia Licensed Professional Engineer.
- **Developer:** Any person, firm, corporation, association or partnership or any agent thereof who undertakes or proposes to undertake the development of land so as to constitute a residential subdivision, apartment complex, condominium or commercial/industrial/ institutional establishment.
- **DFT:** Dry Film Thickness
- **Diameter:** Nominal inside diameter of pipe excluding bituminous or epoxy bonded coating thickness
- **DIP:** Ductile iron pipe
- **DOC:** United States of America Department of Commerce
- **Easement:** Non-profitable interest in land owned by another that entitles its holder to a specific limited use
- **EPD:** Environmental Protection Division
- **Force Main:** Piping, valves and other components of a single pressurized line used to convey raw water, potable water or sewage. A force main conveying potable water may have a limited number of service connections.
- **FMR:** Factory Mutual Research
- **GEFA:** Georgia Environmental Finance Authority
- **Georgia EPD:** State of Georgia, Department of Natural Resources, Environmental Protection Division.
- **GFI:** Ground fault interrupt
- **gpm:** Gallons per minute
- **Gravity Sewer:** Piping and other components used to convey sanitary sewage in a non-pressurized system
- **Lateral:** Pipe extending from a sewer main to a street right-of-way or easement for the purpose of servicing a property (lot). The lateral shall be six (6") inches in diameter, shall not contain a manhole and shall be less than 250 feet in length.
- **NEC:** National Electrical Code, latest edition

- **NEMA:** National Electrical Manufacturers' Association
- **No. 57 Stone:** Class I embedment or backfill material consisting of manufactured aggregates (crushed stone) in accordance with ASTM D 2321-89 (Reapproved 1995) and ASTM D 2487-00. Percent passing sieve sizes are as follows: 100% passes 1-1/2", < or 10% passes No. 4 and < 5% passes No. 200.
- **Pavement:** Any asphalt, concrete, gravel or dirt surface including curbs and sidewalks used by vehicles and/or pedestrians
- **pcf:** Pounds per cubic foot
- **psi:** Pounds per square inch
- **Pump Station:** All pumps, valves, wetwells, controls and other components used to pump sanitary sewage into a force main
- **PVC:** Polyvinyl chloride
- **Rock:** Solid material being greater than one (1) cubic yard in size which by actual demonstration cannot, in the opinion of the City Engineer, be reasonably excavated with a minimum 135 horsepower backhoe, in good condition and equipped with manufacturer's standard boom and rock points or similar approved equipment; and which must be systematically drilled and blasted or broken by power-operated hammer, hydraulic rock breaker or expansive compounds.
- **Rock Excavation:** Removal of solid material, as the above specifies, and does not necessarily correspond to "rock" as implied by the names of geologic formations.
- **Sanitary Sewerage System:** Multiple pipes, manholes and other components that convey sewage and to which storm water, surface water and ground water are not intentionally admitted.
- **SCADA:** Supervisory Control and Data Acquisition system
- **Service Connection:** Fitting(s) connecting a service line or lateral from a property (lot) to a water main or sewer main
- **Service Line:** Pressurized pipe extending from a water main to a water meter or pressurized pipe extending from a water main to a fire hydrant.
- **Sewage:** The combination of water-carried wastes from residential housing, institutional facilities, and commercial and industrial complexes together with such groundwater, surface water, and storm water as may inadvertently be present.
- **Sewer:** A pipe or conduit that conveys sewage
- **Sewer Main:** Sewer to which one or more laterals are connected
- **Sewer Outfall:** Sewer to which one or more sewer mains are connected
- **Sewer Trunk:** Sewer to which one or more sewer mains or sewer outfalls are connected and discharges into a wastewater facility.
- **Suitable Soil:** Soil that conforms to and as recommended by ASTM D 2321-89 (Reapproved 1995) and ASTM D 2487-00 and that is free of organic and/or deleterious material, expansive clay and rock fragments larger than three (3") inches.
- **Superintendent:** Superintendent of Water



- **UL:** Underwriters Laboratory
- **Utility Contractor:** Georgia Licensed Utility Contractor in accordance with the Official Code of Georgia, Chapter 43
- **USEPA:** United States Environmental Protection Agency
- **Water Distribution System:** Pressurized pipes, valves and other components that convey potable water
- **Water Main:** Pressurized pipe used to convey potable water from a force main to a service line
- **WPCP:** Water Pollution Control Plant
- **WTP:** Water Treatment Plant
- **WWTP:** Wastewater Treatment Plant

**SECTION 3: DESIGN APPROVAL****3.01 General**

- A. The design of water distribution systems and sanitary sewerage systems shall conform to the specifications herein.
- B. Concurrent with plan submittal, the Design Engineer shall provide a completed *City of Dawsonville Water Distribution/Sanitary Sewer Addition Submittal* form to the City. The *City of Dawsonville Water Distribution/Sanitary Sewer Addition Submittal* form is enclosed as Appendix A.
- C. After receiving approval of the plans from the City, the Developer will be required to submit any applicable forms and documentation to the Georgia Environmental Protection Division. Applicable forms may include but are not limited to, the EPD's *Drinking Water Project Submittal Form* and the EPD's *Sanitary Sewer Extension Submittal Form*, which can be found on the Georgia Environmental Protection Division's website. After receiving approval from the Georgia Environmental Protection Division the Developer shall submit three (3) printed sets of plans and one (1) electronic set of plans to the City with a letter detailing any changes required by the Georgia Environmental Protection Division.

**3.02 Technical Review**

- A. Proposed water distribution system and sanitary sewerage system plans shall be reviewed by the City under the supervision of a Georgia Licensed Professional Engineer for technical adequacy and conformance to applicable requirements.
- B. Upon receipt of a proposed development, the City shall perform a feasibility study to verify the project complies with the Service Delivery Strategy for Dawson County and determine whether the existing City water distribution system and/or sanitary sewerage system has sufficient capacity. The City will bill the Developer for all costs associated with review of the proposed development. The following review shall be completed.
  1. Water Distribution System
    - a. The latest 12 months of reported production from the system shall be examined to determine an average monthly production rate. A proposed development, whose supply requirement would cause the system to exceed the Georgia Environmental Protection Division permitted rate, shall not be connected to the City system.
    - b. Pressure and flow from the contributing water distribution system shall be examined to determine whether the additional supply requirement will adversely affect the surrounding system. A proposed development, whose supply requirement would adversely

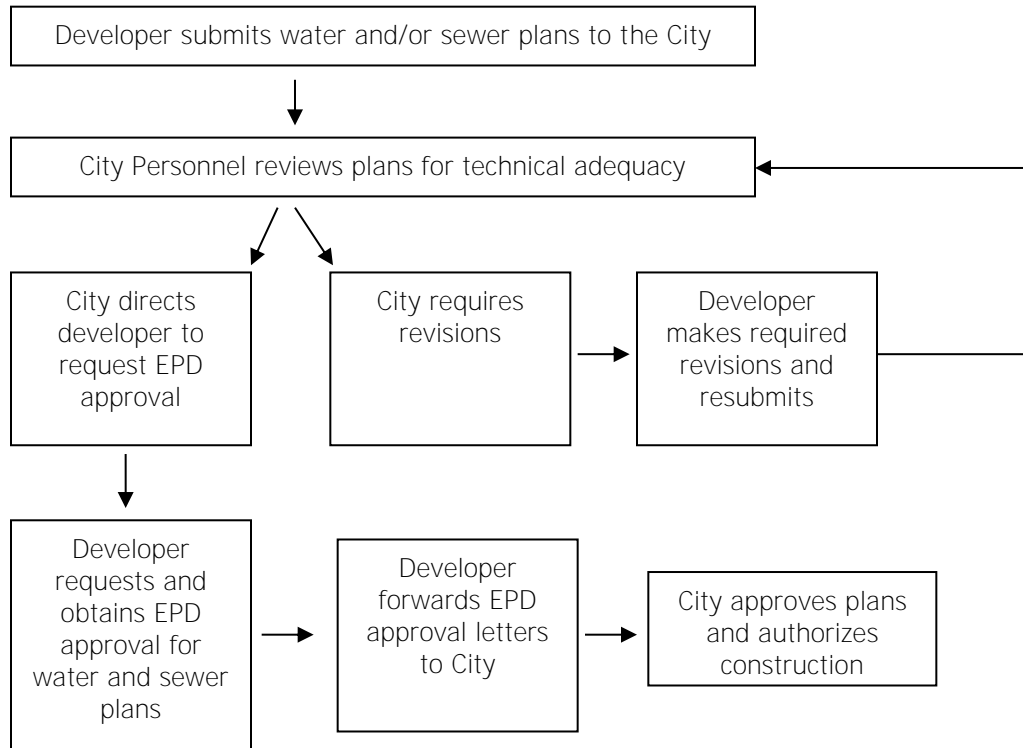
affect the surrounding system, shall not be connected to the City system.

2. Sanitary Sewerage system

- a. The wastewater treatment facility must be in compliance with its *NPDES* permit. If the facility is not in compliance with the *NPDES* permit then the sewerage system connection will not be approved.
  - b. The latest 12 months of reported discharge from the receiving WPCP shall be examined to determine an average monthly flow rate. A proposed development, whose discharge would cause the receiving WPCP to exceed the Georgia EPD permitted flow rate, shall not be connected to the City system.
  - c. A capacity study shall be performed to determine whether the discharge from the development would exceed the capacity of the existing receiving sewers. A proposed development, whose discharge would exceed the capacity of the receiving sewers, shall not be connected to the City system.
- C. City review comments shall be marked on Technical Review Checklists and noted on development plans in the color red (Red Line Comments). Technical Review Checklists used during the City review are included in Appendix B.

### **3.03 Plan Processing**

- A. Water distribution system and/or sanitary sewerage system plans shall be submitted to the City. If the development will be constructed in phases, the Developer shall submit an overall development plan and detailed plans for each phase. Three (3) printed sets and one (1) electronic set of water distribution system and/or sanitary sewerage system plans are required for each submittal during the City review process. A letter addressing previous comments will be required with all resubmittals.
- B. The Design Engineer shall address City review comments. Plans containing the original Red Line Comments shall accompany each re-submittal to the City.
- C. Soil Erosion and Sedimentation Control Plans pertaining to the overall Development shall be reviewed and approved by the local issuing authority. Construction of any kind shall not begin on a project prior to the issuance of a Land Disturbance Activity permit.
- D. The City of Dawsonville's plan processing sequence is shown on the following chart.



**3.04 Approval by Regulatory Agencies**

- A. The Developer’s Engineer shall address all deficiencies and resubmit plans in accordance with Division I, Sections 3.02 and 3.03. Plans shall not be approved until all deficiencies have been addressed to the satisfaction of the City Engineer.
- B. Note that plan approval by the City Engineer shall not be construed, in any manner, to relieve the Developer of his responsibility for strict compliance with the specifications herein and any applicable laws and regulations.
- C. Installation of water distribution systems and/or sanitary sewerage systems shall not commence on any development until the City has granted final approval of water distribution system and/or sanitary sewer plans and the local issuing authority has issued a Land Disturbance Activity permit, and the Georgia Environmental Protection Division has written an approval letter.
- D. Note that other agencies may have regulatory authority and the Developer is responsible for obtaining other agency approval. Other agencies could be, but are not limited to, State of Georgia Department of Natural Resources, State of Georgia Department of Transportation, United States Army Corps of Engineers, United States Environmental Protection Agency, electrical, phone, cable, and natural gas providers.

**3.05 Period of Plan Approval**

Approved water distribution system and/or sanitary sewerage system plans shall be valid for six (6) months. Approved plans that are not initiated or are inactive for a six (6) month period shall become invalid. Should an approved plan be invalidated, the City Engineer shall determine whether the plan must be resubmitted for approval.

**SECTION 4: EASEMENTS AND DEEDED PROPERTY****4.01 General**

- A. Components of water distribution systems and sanitary sewerage systems, to be owned by the City, should be situated within streets' rights-of-way.
- B. The following water distribution system and sanitary sewerage system components, to be owned by the City, shall be situated within an easement that is granted to the City, when a street right-of-way is not available.
  - 1. Force main
  - 2. Water main
  - 3. Water meter/check valve assembly
  - 4. Fire hydrant
  - 5. Sewer main
  - 6. Sewer outfall
  - 7. Manhole
  - 8. Other components required by the City
- C. An easement shall not encroach into a structure's foundation and shall be clear of all obstructions not associated with the water and/or sanitary sewerage system including but not limited to construction debris, fencing and trees.
- D. Property developed and occupied by a pump station and/or an access road, to be owned by the City, shall be platted and deeded to the City.
- E. All property and easements shall meet requirements for final plats detailed in the City's *Land Development Regulations*.

**4.02 On-Site Easement**

- A. "On-site" easements are those easements falling within the boundaries of the current phase of the development. "On-site" easements shall be shown on the plat and recorded through the process of recording the final plat.
- B. Developer shall grant to the City, the exclusive right to construct, reconstruct, operate, maintain, repair, replace, improve, alter, remove, relocate and inspect water distribution systems and/or sanitary sewerage systems that are situated over, across and under the land wherein the water distribution systems and/or sanitary sewerage systems lie on the Developer's property.

**4.03 Off-Site Easement**

- A. "Off-site" easements are those easements falling outside the boundaries of the current phase of the development. Easements through property owned by the

developer, including water and sewer lines that will be included in later phases of the same project, must be treated as off-site easements.

- B. Off-site easements shall be negotiated and acquired by the Developer with the property owner.
- C. Construction of the off-site water distribution systems and/or sanitary sewerage systems shall not begin until all off-site easements for system completion have been acquired by the Developer and recorded by the City.

**4.04 Easement Size**

- A. The minimum width of a permanent on-site/off-site easement associated with water distribution system and sanitary sewerage system components shall be 20 feet.
- B. The minimum size of an easement associated with a water meter/check valve assembly shall be 20' by 30'.
- C. Easement width or size may be increased or decreased at the discretion of the City Engineer.

**4.05 Deeded Property**

- A. The minimum size of deeded property associated with a pump station shall be 60' by 60'.
- B. The minimum width of deeded property associated with an access road shall be 30'.
- C. The size or width of deeded property may be increased or decreased at the discretion of the City Engineer.

**SECTION 5: INSTALLATION****General**

- A. The installation of water distribution systems and sanitary sewerage systems shall be in accordance with the approved plans and specifications herein.
- B. A set of plans stamped approved by the City shall be present on the job site whenever work is being performed on the water distribution system and/or sanitary sewerage system.
- C. A representative of the Developer, the installation contractor, the County Fire Marshall and the City shall attend a pre-construction conference at the City at least ten (10) working days prior to the start of any construction. The Developer is responsible for scheduling the conference when all representatives can attend. The purpose of this conference will be to define roles and responsibilities for the correct execution of the proposed water and/or sewer line installations.

**Utility Contractor**

- A. A licensed Utility Contractor shall install water distribution systems and sanitary sewerage systems.
- B. Prior to commencing construction activities on a proposed water distribution system and/or sanitary sewerage system, the City Engineer shall receive a copy of the Utility Contractor's License.

**City Installation**

- A. The City shall perform the following system components installation at a cost to the Developer/Owner:
  - 1. Supply materials and labor to install water meter and check valve assemblies from 5/8-inch in diameter through 2-inches in diameter;
  - 2. Supply labor to tap water main;
  - 3. Supply materials and labor to install a sewer main tap for a private individual.
- B. The installation of residential water service lines will be performed by the Developer's Utility Contractor with approval by the City.

**Insurance Requirements**

- A. Utility Contractors performing work on City funded or partially funded projects shall comply with current City insurance and bonding requirements.
- B. Companies such as railroads, electric power suppliers, natural gas suppliers, etc. may require Utility Contractors to furnish insurance, in addition to City



requirements when crossing their respective easements. The Utility Contractor shall provide such insurance as required.

**5.05 Inspection**

- A. A City Inspector, under the supervision of a Georgia Licensed Professional Engineer, shall inspect water distribution systems and sanitary sewerage systems during all phases of construction to ensure the systems are being constructed in accordance with the plans approved by the City and specifications herein.
- B. The Developer shall provide the City Engineer a 48-hour notice prior to commencing construction on a water distribution system and/or sanitary sewerage system.
- C. The Developer/Utility Contractor shall, at all times, permit and facilitate inspection of work by the City. The presence of a City Inspector or City Engineer on the site of work shall not be construed to, in any manner, relieve the Developer/Utility Contractor of their responsibility for strict compliance with the approved plans and specifications herein.
- D. The City Inspector shall not change or modify the approved water distribution and/or sanitary sewerage system plans or specifications herein without written approval from the City Engineer.
- E. The City Inspector shall inform the Developer/Utility Contractor when construction is deficient from the approved plans and specifications herein. Deficiencies shall be addressed in a timely manner as determined by the City Inspector. Construction activities and other pertinent information shall be recorded on an Inspection Report included in Appendix C.
- F. The City or County Building Department shall perform inspections relating to electric power supply.
- G. Deficiencies not addressed in a timely manner shall be justification for the City to stop work on a project. The City Engineer shall issue a Stop Work Order to the Developer/Utility Contractor in writing. Continued work on a project after being issued a Stop Work Order shall be justification for necessary enforcement actions.

**5.06 Testing**

- A. Details on testing procedures are included in Division IV. Testing shall be performed at the expense of the contractor.
- B. Water distribution systems shall be subjected to bacteriological and hydrostatic tests.
- C. Sanitary sewerage systems shall be subjected to pressure testing, televising and mandrel testing.

- D. The City shall be given a 48-hour notice prior to any testing. A City Inspector shall witness all testing.
- E. Testing for the compressive strength of concrete and density of compacted soil shall be performed at the expense of the Developer by City approved geotechnical and material testing companies. Materials not meeting required specification shall be removed, replaced and retested for compliance at the expense of the Developer.
- F. Results of tests performed by testing companies shall be provided to the City Engineer. Testing forms used by the City are included in Appendices D and E.

**SECTION 6: CONNECTING TO CITY SYSTEMS****6.01 General**

- A. Provided the Developer has complied with the terms of these Policies and Procedures and the installed water distribution system and/or sanitary sewerage system is in accordance with the approved plans and specifications herein, the City shall allow the Developer/Owner to connect the new system(s) into the City system(s). Copies of the City letters approving construction of the Developer's water distribution system and/or sanitary sewerage system are included in Appendices I and J.
- B. City cannot authorize a wastewater conveyance plan which involves hauling of wastewater.
- C. The conveyance of wastewater onto the ground or into a receiving stream is prohibited.

**6.02 Connection to Existing Systems**

- A. The City Inspector shall be notified at least 48-hours in advance of connecting to the City systems.
- B. A City Inspector shall be present during connection of the Developer's systems to the City systems. Prior to installation, a City Inspector shall approve all materials supplied by the Developer to be used in making the connection.
- C. Upon completing a water distribution and/or sanitary sewer connection, the Developer's systems shall be valved-off and/or immediately plugged, respectively, until Final Acceptance.
- D. Should an unauthorized connection or connection without the presence of the City Inspector be made to the City systems, the Developer shall be subject to a fine and/or refusal of service. Under any circumstance, the Developer shall expose and thoroughly clean all piping and components of the connection for inspection by the City. Noncompliant connections and/or damage to the City system shall be repaired or replaced in conformance with the approved plans and specifications herein at the expense of the Developer.

**SECTION 7: SYSTEM ACCEPTANCE****7.01 General**

Acceptance of the Developer's water distribution system and/or sanitary sewerage system shall be considered by the City at such time as the Developer has met all terms and conditions of the specifications herein.

**7.02 Final Inspection**

Prior to final acceptance, a City Inspector shall perform a final inspection of the water distribution system and/or sanitary sewerage system after all pavement is installed. The final inspection shall determine the proper installation of valve and meter boxes, the integrity of manholes, and the absence of debris in sewers and presence of proper curb markings. Results of the inspection shall be recorded on a Final Inspection Report and is included in Appendices G and H. Deficiencies encountered shall be immediately addressed and an additional final inspection shall be required.

All GEFA, SRF, ARRA, USEPA, DOC and Georgia Board of Regent funded projects will require State inspection of the construction.

**7.03 Warranty**

The Developer shall warrant the development's water distribution system and/or sanitary sewerage system and hold the City harmless against all costs, expenses and losses, including, without limitation, incidental and consequential damages, resulting from any defects in the Developer's water distribution system and/or sanitary sewerage system, including without limitation, defects in material and workmanship, which are discovered or arise within a minimum period of one (1) year beginning on the date of final acceptance by the City. A longer warranty period may be required on certain material requirements and/or construction standards as indicated in the specifications.

**7.04 Final Acceptance**

- A. Final acceptance of the Developer's water distribution system and/or sanitary sewerage system by the City shall be when written, signed and dated by the City Engineer. A copy of the City Final Acceptance Letter is included in Appendix L.
- B. Upon issuance of Final Acceptance Letter, the Developer's new system(s) may be opened to the City system(s).

**SECTION 1: DESIGN REQUIREMENTS****1.01 General**

The design and plan preparation of water distribution systems and sanitary sewerage systems shall conform to the specifications herein.

**1.02 Licensed Professionals**

- A. Water distribution system and/or gravity flow sanitary sewerage system design and plan preparation for a residential subdivision or parts thereof on a Developer's property shall be performed by a Georgia Licensed Professional Engineer who has sufficient knowledge to properly perform the design.
- B. Water distribution system and/or gravity flow sanitary sewerage system design and plan preparation for property off-site of a Developer's property shall be performed by a Georgia Licensed Professional Engineer who has sufficient knowledge to properly perform the design.
- C. Water distribution system and/or gravity flow sanitary sewerage system design and plan preparation for commercial/industrial property shall be performed by a Georgia Licensed Professional Engineer who has sufficient knowledge to properly perform the design.
- D. Force main and sanitary sewer pump station design and plan preparation shall be performed by a Georgia Licensed Professional Engineer who has sufficient knowledge to properly perform the design.
- E. The professional performing the design and preparing the plans shall seal each plan sheet with their stamp and sign their name across the stamp.

**1.03 Reference Documents and Standards**

General methods of design and construction shall conform to the specifications herein and the following. When standards conflict with one another, the City Engineer shall determine the applicable standard.

- A. Georgia Environmental Protection Division, Minimum Standards for Public Water Systems, May 2000.
- B. Georgia Environmental Protection Division, Rules and Regulations for Water Quality Control, Chapter 391-3-6, latest effective date.
- C. Water Environment Federation, Regulation of Sewer Use, WEF Manual of Practice No. 3, latest edition.
- D. Mississippi River Board of State Public Health and Environmental Managers, generally referred to as the "Ten (10) States Standards for Sewage Works".

- E. Gravity Sanitary Sewer Design and Construction, American Society of Civil Engineers Manuals and Reports on Engineering Practice No. 60, Water Environment Federal Manual of Practice No. FD-5, revised April 1982
- F. Georgia Department of Transportation specifications and regulations, latest editions.
- G. Utility Accommodations Policy and Standards, Georgia Department of Transportation, Office of Utilities, latest edition.
- H. Manual on Uniform Traffic Control Devices (MUTCD)- FHWA
- I. American Water Works Association Standards, latest editions
- J. Soil Surveys of Dawson County, Georgia, by the United States Department of Agriculture, Natural Resource Conservation Service
- K. American National Standards Institute Standards, latest editions
- L. American Society for Testing and Materials Standards, latest editions.
- M. Occupational Safety and Health Administration regulations, latest editions
- N. American Society of Mechanical Engineers standards, latest editions
- O. National Electrical Manufacturer's Association standards, latest editions
- P. American Concrete Institute standards, latest editions
- Q. City of Dawsonville, Standards
- R. Dawson County, Standards

**1.04 Plan Requirements**

- A. Water distribution system and/or sanitary sewerage system plans shall be comprised of the following sheets as required. Each sheet should be 24" by 36" in size. The detail sheets shall contain City of Dawsonville Standard Details.
  - 1. Cover Sheet
  - 2. Site Plan Sheet
  - 3. Grading Plan
  - 4. Overall Utilities Plan Sheet
  - 5. Storm Water System Plan Sheet
  - 6. Water Distribution System Plan Sheet
  - 7. Water Distribution System Details and Construction Notes Sheet
  - 8. Gravity Sewerage System Plan Sheet
  - 9. Gravity Sewerage System Profile Sheet
  - 10. Gravity Sewerage System Details and Construction Notes Sheet

11. Sanitary Sewer Pump Station Site Plan and Cross-Section Sheet
  12. Sanitary Sewer Pump Station Electrical Plan Sheet
  13. Sanitary Sewer Pump Station Details and Construction Notes Sheet
  14. Force Main Plan Sheet
  15. Force Main Profile Sheet
  16. Force Main Details and Construction Notes Sheet
  17. Soil Erosion, Sedimentation and Pollution Control Plan Sheet
  18. Soil Erosion, Sedimentation and Pollution Control Details and Construction Notes Sheet
- B. The drawings shall bear the following notes:
1. The City of Dawsonville shall be notified 48 hours prior to any water or sewer line construction or repair. Call City Hall at (706) 265 – 3256.
  2. All water and sanitary sewer materials and workmanship shall be in accordance with the *City of Dawsonville Standard Specifications for Water and Sewerage Systems*.
  3. The Contractor shall be responsible for maintaining a marked-up set of design drawings showing “as-built” conditions. These “as-built” drawings shall be updated daily and made available to the City Engineer and/or the City Inspector upon request. The mark-ups shall be at the site at all times and shall be used to develop final record drawings.
- C. Water distribution and/or sanitary sewerage system plan sheets shall be prepared and include as a minimum the information detailed on the Technical Review Checklist included in Appendix B.
- D. Concurrent with the initial submittal of water distribution system and/or sanitary sewerage system plans to the City, a completed City of Dawsonville *Water Distribution/Sanitary Sewer Addition Submittal* form shall be submitted. The City plan review process shall not commence until the City of Dawsonville *Water Distribution/Sanitary Sewer Addition Submittal* form is received. The City of Dawsonville *Water Distribution/Sanitary Sewer Addition Submittal* form is included in Appendix A.

### **1.05 Modifications to Plans**

Water Distribution system and/or sanitary sewerage system plans approved by the City of Dawsonville shall not be modified or deviated from during construction unless the City’s Superintendent approves modifications or deviations in writing.

**1.06 As-Built Drawings**

- A. As-Built Drawings of the installed water distribution system and/or sanitary sewerage system shall be prepared and sealed in accordance with Division II, Section 1.02.
- B. As-Built Drawings shall be completed upon connecting the development's water distribution system and/or sanitary sewerage system to the City system.
- C. As-Built Drawings shall show all street names, right-of-way widths, related easements, lot number, location, size and material of all water distribution system and/or sanitary sewerage system components.
- D. As-Built Drawings shall be prepared using a survey that ties the development's water distribution system and/or sanitary sewerage systems horizontally and vertically to the local USGS benchmarks or temporary benchmarks established by the City Engineer.
- E. The following certification shall be included on the As-Built Drawings and signed by the Design Engineer:  
  
*"I certify that the water distribution system and/or sanitary sewerage system depicted by this As-Built Drawing was constructed in accordance with the plans approved by the City. The information submitted on this As-Built Drawing is to the best of my knowledge and belief, true, accurate and complete."*
- F. The Developer's water distribution system and/or sanitary sewerage system shall not be considered complete until the As-Built Drawings have been reviewed and approved by the City Engineer. Note that three (3) reproducible sets of the approved As-Built Drawings shall be submitted to the City Engineer.



**SECTION 2: WATER DISTRIBUTION**

**2.01 General**

- A. The following section shall be used as a guideline for the design of water mains and service lines that will supply residential, apartment, commercial and industrial complexes.
- B. The City may require the above referenced complexes to have multiple connection points to existing force mains or water mains.
- C. The City will require a rain sensor shutoff on all irrigation systems that connect to City water lines.
- D. The following certification shall be made by the Design Engineer and included with Water Distribution System construction notes:

*“I certify that the proposed water distribution system has been designed in accordance with the City of Dawsonville Specification document titled “Standard Specifications for Water Distribution Systems and Sanitary Sewerage systems”, Latest Edition including all amendments.”*

**2.02 Design Usage Rates and Hydraulics**

- A. Design shall be based on the following average daily domestic usage rates. Daily usage rates may be increased at the discretion of the City Engineer.
  - Residential House 300 gallons per day per connection
  - Apartment and Mobile Home 233 gallons per day per unit
  - Hotel and Motel 126 gallon per day per room
  - Commercial and Industrial Indicate as required
- B. Design shall also provide for the following instantaneous demands:

<u>Total Units Served</u>	<u>GPM Per Unit</u>
0-5	6
6-10	4
11-20	3
21-100	2.5
101-200	2.0
201+	1.5

- C. Indicate on plans whether structures require fire suppression systems. If so, then indicate the required fire suppression system usage rate (gallons per minute).
- D. The designed system shall provide for the following fire flow demands in the development per IFC section B105.
  - ~~Residential Area~~One and two family dwellings                      ~~750~~Minimum 1,000 gallons per minute  
See table B105.1(1)
  - ~~Commercial/Industrial Area~~Buildings other than one and two Family                      ~~1,000 gallons per minute~~See IFC Table B105.1 (2)
- E. The following range of supply pressures shall be assumed when sizing system components:
  - Pressure 20 psi to 150 psi
  - Flow duration shall be per IFC Table B105.1 (1) and Table B105.1 (2)
  - One and two family dwellings fire flow may be reduced by 50% if approved fire sprinkler system is installed.
  - Building other than one and two family fire flow may be reduced up to 25% but the resulting fire flow cannot be reduced below 1,000 gpm with NFPA 13 sprinkler system or reduced below 1,500 gpm with NFPA 13R sprinkler system per IFC Table B105.2.

**2.03 Water Line Material and Size**

- A. Water mains and associated fittings shall be ductile iron, in accordance with Division III of these specification, with a minimum diameter of eight (8") inches.
- B. Water main pipe assembly shall be push-on joint unless indicated otherwise.
- C. Water main pipe assembly in a bore casing shall be restrained joint unless indicated otherwise.
- D. Service line supplying a single fire hydrant within the right-of way shall be ductile iron with a minimum diameter of six (6") inches.
- E. Service line serving one (1) residential lot shall be CTSPE-340:SDR 9; pressure class 200 polyethylene with a minimum diameter of ¾-inch.
- F. Service line serving two (2) residential lots shall be CTSPE-340:SDR 9; pressure class 200 polyethylene with a minimum diameter of one (1") inch. The service line

shall be fitted with a tee. The tee and service lines, coming from the tee, shall have a minimum diameter of  $\frac{3}{4}$ -inch.

- G. Service line serving commercial/industrial buildings shall be polyethylene with a minimum diameter of  $\frac{3}{4}$ -inch and a maximum diameter of three (3") inches or ductile iron sized as necessary for the demand.
- H. All service lines crossing streets shall be installed inside ~~Class 160 PVC schedule~~ 40 PVC casing . Casing shall extend to a minimum of 5 feet on each side of the curb/pavement.

#### **2.04 Water Line Location**

- A. Situate water mains outside of pavement, within street right-of-way when possible, at five (5') feet beyond the back of curb or edge of pavement or at location approved by the City Engineer.
- B. Situate water mains on the north and east sides of streets when possible.
- C. Water mains shall have a minimum ten (10') foot horizontal separation from any sewer.
- D. When water mains cross sewer lines, they shall cross perpendicular with the water line at least eighteen (18") inches above the sewer line. The pipes used in the crossing shall be laid so that the joints on the water line pipe are equidistant from the sewer line and the joints on the sewer line pipe are equidistance from the water line.
- E. Water mains constructed parallel to streams shall be located such that the nearest area of disturbed soil is greater than fifty (50') feet from the stream bank.
- F. Water mains crossing streams of widths greater than fifteen (15") feet shall have restrained joint piping.
- G. A service line supplying a single lot shall be located as near a respective property boundary as practical.
- H. A service line serving two (2) lots, from the water main to the meter, shall be located in-line with the lots' common property boundary.
- I. No water main or service line shall be constructed on solid waste landfills.
- J. No water main or service line shall be constructed to serve a structure that is constructed on or to be constructed on a solid waste landfill.
- K. Each water main and service line shall be locatable.

- L. A ¾-inch service tap and corporation stop for chlorination shall be shown on the plans and installed on the proposed water main within 3 to 5 feet of each connection to the City's water main.
- M. Use Detail Nos. 1.1, 3.1, 5.1 and 10.1 when applicable.

**2.05 Fire Hydrant Location and Spacing**

- A. Hydrants shall be situated within the street's right-of-way adjacent to the right-of-way boundary.
- B. A hydrant shall be situated at the end of each cul-de-sac or dead-end street.
- C. Fire hydrants servicing residential areas shall be spaced a maximum of 500 feet as measured along the edge of pavement. No lot shall be greater than 250 feet from a fire hydrant.
- D. Fire hydrants servicing commercial and industrial areas shall be spaced a maximum of 300 feet as measured along the edge of pavement.
- E. Fire hydrants on County ROW shall be a maximum of 1,000 feet spaced as measured along the edge of pavement.
- F. Each fire hydrant shall have a 6-inch gate valve bolted directly to a hydrant tee.
- G. Fire hydrants shall not be placed on water mains which are smaller than 8-inches in diameter unless the line is looped, and the Developer can show that the furthest hydrant can maintain a flow of ~~750~~1,000 gpm at 20 psi.
- H. Acceptable Manufacturers:
  - a. Mueller
  - b. M&H Valve
  - c. American Darling
- I. Use Detail Nos. 4.1 and 5.1 when applicable.

**2.06 Valve Size and Location**

- A. Valves shall be of the same size as the pipe in which the valve is situated, unless noted otherwise.
- B. A corporation valve shall be situated at the tap location into a water main of a ¾-inch or 1 -inch service line.
- ~~C. A ball gate valve shall be situated downstream of tapping saddle or tapping sleeve when tapping into a water main or force main with a 1½ inch or 2 inch service line. The ball valve shall be situated within a meter vault.~~
- D.C. Gate valves shall be situated in-line with water mains as follows, unless noted otherwise. The placement of gate valves under pavement shall not be allowed, unless

noted otherwise. Valve location markers shall be installed for all valves (except hydrant lead valves). The markers shall be four feet high concrete posts with brass discs cast into one side. The marker shall extend 24 inches above finish grade.

~~1. Attach tapping gate valve immediately downstream of tapping saddle or tapping sleeve when tapping into water main or force main with a smaller water main or service line.~~

2.1. Situate gate valve immediately downstream of a tee when connecting into a water main.

3.2. Situate gate valve on each immediate side of a three (3)-way connection or four (4)-way connection.

4.3. Situate gate valve on the hydrant lead immediately upstream of a fire hydrant when hydrant is situated within street right-of-way.

5.4. All tees shall have two (2) valves away from the source, and every cross shall have three valves away from the source.

6.5. Tapping sleeves and tapping valves should not be used to connect a new line to an existing water line unless approved by the City Engineer. Instead, a tee with two valves shall be installed.

7.6. Situate gate valve on the hydrant lead within street right-of-way when fire service extends beyond right-of-way.

8.7. A gate valve shall be installed on the water main at every other hydrant.

9.8. Situate gate valve in water mains at a maximum spacing of 800 feet.

10.9. Gate valve shall be situated outside of vault immediately upstream and downstream of three (3") inch and larger water meter/check valve assemblies.

11.10. A slip type valve box shall be situated over a gate valve.

12.11. All stub-out valves and dead-end valves shall have a mechanical joint cap.

E. A curb stop shall be situated inside of meter box immediately upstream of 5/8-inch through two (2") inch water meter/check valve assemblies.

F. Use Detail Nos. 6.1, 6.2 and 6.3 when applicable.

**2.07 Water Line Depth**

A. Water mains and service lines to fire hydrants shall have a minimum suitable soil cover of four (4') feet. The depth of four (4') feet from finish grade to top of pipe shall be determined as follows.

1. As measured from edge of pavement (top back-of-curb) when the finish grade elevation of the pipe route is equal to or greater than adjacent pavement elevation.

2. As measured from finish grade elevation of the pipe route when the pipe route elevation is less than the adjacent pavement elevation.
  3. Other depth approved by the City Engineer.
- B. Water mains crossing under a creek or ditch shall have a minimum suitable soil cover of two (2') feet.
  - C. Water mains shall have a minimum 18-inch vertical separation from any sewer.
  - D. Service lines under pavement shall have a minimum suitable soil cover of 2.5 feet as measured from top of curb or top of pavement.
  - E. Service lines outside of pavement shall have a minimum suitable soil cover of 1.5 feet as measured from the meter.
  - F. Water mains 18-inches in diameter and larger shall be checked for buoyancy when submerged in groundwater or situated within the 100-year flood zone.
  - G. Use Detail Nos. 1.1, 2.1 and 3.1 when applicable.

**2.08 Thrust Restraint**

- A. Thrust restraint shall be installed at all fittings, hydrants, valves and other locations deemed necessary by the City Engineer.
- B. Thrust restraints at hydrants and valves shall be accomplished by installing a minimum of two (2) eyebolts on the hydrant or valve and tying to an adjacent fitting or concrete tie-back using three-quarter (3/4") inch stainless steel threaded rod.
- C. Thrust restraint at fittings shall be accomplished by using one of the following methods.
  1. Cast-in-place concrete blocking installed to dimensions as shown on thrust block detail.
  2. Restrained joint pipe and fittings installed upon approval by City Engineer.
- D. Use Detail Nos. 4.1, 7.1, 7.2 and 9.1 when applicable.

**2.09 Water Meters and Backflow Prevention**

- A. All water usage including fire and irrigation shall be metered and have testable backflow prevention devices.
- B. Fire sprinkler mains shall have testable double detector check valves backflow preventor. ~~A double check backflow preventer and a detector check valve may be installed in lieu of the double detector check valve.~~
- C. Establishments determined by the City or City Engineer to have a high backflow hazard shall have reduced pressure zone (RPZ) backflow preventers. RPZ backflow prevents shall be installed in an insulated enclosure above ground.

- D. All water usage shall be metered using a single meter when possible.
- E. Meters shall be sized according to the anticipated demand and Division III, Section 7 of this document.
- F. Each meter shall have a backflow device consisting of double check valve assembly.
- G. Water meters and backflow devices shall be housed in boxes or vaults.
- H. Water meters and backflow devices shall be situated within the street right-of-way or in an easement area.
- I. Use Detail Nos. 11.1, 12.1, 13.1, 14.1, 15.1 and 16.1 when applicable.

**SECTION 3: GRAVITY FLOW SEWERS****3.01 General**

- A. The following section shall be used as a guideline for the design of gravity flow sanitary sewerage systems.
- B. Sanitary sewerage system design shall incorporate the following City Sewer Use Ordinances:
1. Ordinance – Grease Management Program.
  2. Ordinance – Oil/Water and Sand/Grit Interceptors.
- C. The following certification shall be made by the Design Engineer and included with Sanitary Sewerage system construction notes:

*“I certify that the proposed sanitary sewerage system has been designed in accordance with the City of Dawsonville Specification document titled “Standard Specifications for Water Distribution Systems and Sanitary Sewerage systems”, Latest Edition including all amendments.”*

**3.02 Design Flow Rates:**

- A. Design shall be based in the following average daily flow rates for single-family and multi-family residences. Daily flow rates may be increased at the discretion of the City Engineer.
- Residential House 300 gallons per day per connection
  - Apartment and Mobile Home 233 gallons per day per unit
  - Hotel and Motel 126 gallons per day per room
- B. Design of industrial and commercial sanitary sewer flow rates shall be a minimum of 1.5 times that of the design average daily water usage or as approved by the City Engineer
- C. A peaking factor of 3.0 shall be used when determining a “Peak Design Flow”. The peaking factor may be changed at the discretion of the City Engineer.

**3.03 Hydraulics**

- A. Gravity sewer pipe should be designed to carry “Peak Design Flow” at half full.
- B. Gravity sewer pipe shall have straight alignment and consistent grade change between manholes.
- C. Sewers shall yield mean velocities of not less than 2.0 feet per second based on the Manning Formula using an "n" value of 0.013.



- D. Recommended and absolute minimum pipe slopes for gravity sewer based on the size of pipe to be installed are summarized in the following table.

<b><u>Slope Requirements</u></b>		
<b><u>Diameter</u></b>	<b><u>Absolute Minimum</u></b>	<b><u>Recommended Minimum</u></b>
8-inch	0.40%	0.70%
10-inch	0.29%	0.50%
12-inch	0.22%	0.40%
14-inch	0.22%	0.40%
15-inch	0.15%	0.30%
16-inch	0.15%	0.30%
18-inch	0.12%	0.24%
20-inch	0.12%	0.24%
21-inch	0.10%	0.20%
24-inch	0.08%	0.16%
27-inch	0.07%	0.14%
30-inch	0.06%	0.12%
36-inch	0.05%	0.10%

- E. Sewers with slopes less than the recommended minimum may be accepted on a site by site basis.
- F. The over sizing of pipe to meet minimum grade requirements shall be prohibited.
- G. Outlet pipes connected to a terminal manhole shall have a minimum slope of 1.00%.
- H. The maximum slope of a gravity sewer shall be 15.0%. When approved by the City Engineer, slopes between 15.0% and 20.0% may be used with the addition of concrete anchors (dead man). The Developer's Engineer shall determine the size and spacing of anchors. The City Engineer shall approve all anchor designs.
- I. When increasing the size of gravity sewer pipe, pipe crowns shall be matched at manholes.
- J. Angle formed by alignment of influent and effluent sewer pipe at manhole shall be greater than or equal ( $\geq$ ) to 90° and less than or equal ( $\leq$ ) to 270°.
- K. The surcharging of manholes shall be prohibited.

**3.04 Sewer Material and Size**

- A. Sewer outfall, sewer main and lateral pipe and associated fittings shall be ductile iron or PVC in accordance with Division III of these specifications.
- B. Sewer pipe assembly shall be push-on joint unless indicated otherwise.
- C. Transition coupling used to connect pipes of differing material shall be rigid and made of steel and/or ductile iron or other material approved by the City Engineer.
- D. Sewer outfalls and sewer mains shall have a minimum diameter of eight (8") inches.
- E. Laterals shall have a minimum diameter of six (6") inches.
- F. Sewers of PVC shall not exceed eighteen (18") inches in diameter.
- G. Sewers eighteen (18") inches in diameter and larger shall be checked for buoyancy when submerged in groundwater or situated within the 100-year flood zone.

**3.05 Sewer Location**

- A. Situate sewer outfalls and mains at the centerline of a right-of-way when possible or at the centerline of an easement.
- B. If the sewer main and outfall line cannot be situated in the right of way, a twenty (20') foot easement shall be provided. No permanent structures shall be built within the sewer easement. Easements shall have suitable soil compaction, bearing capacity, and slopes to allow a 25-ton sewer vacuum/jet truck to traverse the entire length.
- C. Sewer outfalls and mains shall have a minimum ten (10') foot horizontal and eighteen (18") inch minimum vertical separation from any water main.
- D. Lateral from the sewer main to the structure being served shall be located nearest the center of the property as practical. A separate lateral shall service each property.
- E. A 6" cleanout ~~with brass cap~~ shall be installed inside a ~~turf box~~ cast iron box on each service at the property line.
- ~~F. All laterals shall connect to sewer main rather than direct connection into a manhole.~~
- G.F. Sewer outfalls, mains and laterals constructed parallel to streams shall be located such that the nearest area of disturbed soil is greater than fifty (50') feet from the stream bank.
- H.G. Sewers shall not be installed under or over any lake, reservoir or detention pond.
- I.H. No sewerage system component shall be constructed on solid waste landfills.
- J.I. No sewerage system component shall be constructed to serve a structure that is constructed on or to be constructed on a solid waste landfill.
- K.J. Each PVC sewer outfall, PVC sewer main and PVC lateral shall be locatable by means of ~~mylar tape, 10AWG~~ wire or other method approved by the City Engineer.

~~L.K.~~ Use Detail No. 1.1, 2.2 and 2.3 when applicable.

**3.06 Sewer Depth and Structural Integrity**

- A. Sewer outfalls and mains shall have a minimum suitable soil cover of four (4') feet or other depth approved by the City Engineer.
- B. Sewer main shall be situated at a depth as to allow lateral to be constructed at a minimum two (2%) percent slope from sewer main to probable structure location on each lot to be served assuming lateral is three (3') feet in depth at probable structure location.

~~C. Vertical connection of a lateral into a sewer main shall be prohibited.~~

~~D.C.~~ Top of pipe shall be two (2') feet below any stream or ditch when crossed or paralleled.

~~E.D.~~ DIP shall be used for the following conditions:

- A. Where depth of soil cover is less than four (4') feet before or after sewer installation.
- B. Where depth of soil cover is greater than fifteen (15') feet before or after sewer installation.
- C. Where sewer crosses over or under a storm drain pipe.
- D. Where sewer crosses over or under a water main.
- E. Where sewer crosses over or under a stream or ditch.
- F. Other locations deemed necessary by the City Engineer or Engineer.
- G. When a sewer crosses under a stream, a minimum of two (2) cast-in-place concrete collars shall be installed on the pipe, down gradient from the stream.
- H. Sewers shall have a minimum 18-inch vertical separation from any water main.
- I. Use Detail Nos. 18.1, 18.2, 19.1 and 20.1 when applicable.

**3.07 Manhole Location and Spacing**

- A. Provide a manhole at each change in grade, pipe size, alignment, intersection and at terminal point of sewer.
- B. Space manholes a maximum of 400 feet of continuous run for pipes 15 inches in diameter and smaller.
- C. Space manholes a maximum of 500 feet of continuous run for pipes 18 inches in diameter and larger.

- D. Manholes situated within the 100-year flood elevation zone shall have top of cover elevations above the 100-year flood elevation or cover shall be with gasket and bolted down.
- E. Manholes situated within the 100-year flood elevation zone and/or the groundwater table shall be checked for buoyancy.
- F. Manhole inverts shall be constructed to provide a smooth transition between influent and effluent piping.
- G. Influent pipes with inverts greater than 2' above the outlet pipe invert shall be connected to the manhole by an outside drop.
- H. Manholes situated in pavement shall have top of covers level with finished grade.
- I. Manholes situated in non-paved areas shall have top of covers a minimum of twelve (12") inches above finished grade.
- J. Elevation drop between the inlet and outlet should be a minimum of 0.2 feet.
- K. Use Detail No. 21.1 when applicable.

**SECTION 4: FORCE MAINS****4.01 General**

The following section shall be used as a guideline for the design of sanitary sewer force mains.

**4.02 Hydraulics**

- A. Force mains shall be sized to allow for a minimum velocity of 2 ft/s and a maximum velocity of 5 ft/s.
- B. Sanitary sewer force mains shall not flow down grade into a receiving manhole.
- C. Combination air release/vacuum valves shall be installed in force mains at all high points of elevation and spaced along apparent flat routes as determined by the City Engineer.

**4.03 Force Main Material and Size**

- A. Force mains and associated fittings shall be ductile iron with a minimum diameter of four (4") inches.
- B. Force main pipe assembly shall be push-on joint unless indicated otherwise.
- ~~C.~~ Force main pipe assembly in a bore casing shall be restrained joint unless indicated otherwise.

~~C.~~ D. Force main shall be ductile iron pipe.

**4.04 Force Main Location**

- A. Force mains shall be situated outside of pavement within a street right-of-way near the boundary of the right-of-way or centered within an easement.
- B. Gravity sewer lines and sewer force mains shall be located on the opposite side of pavement from water distribution and raw water force mains when possible and/or shall have a minimum ten (10') foot horizontal separation.
- C. Force mains constructed parallel to streams shall be located such that the nearest area of disturbed soil is greater than fifty (50') feet from the stream bank.
- D. Force mains crossing streams of width greater than 15' shall have restrained joint piping.
- E. No force main shall be constructed on solid waste landfills.
- F. No force main shall be constructed to serve a component that is constructed on or to be constructed on a solid waste landfill.
- G. Each force main shall be locatable by means of detection tape or wire as approved by the City Engineer.

**4.05 Force Main Depth**

- A. Force mains shall have a minimum suitable soil cover of four (4') feet. Depth from finish grade to top of pipe shall be determined as follows.
  - 1. As measured from edge of pavement when pipe route existing/finish grade elevation is equal to or greater than adjacent pavement elevation.
  - 2. As measured from pipe route existing/finish grade elevation when the route elevation is less than the adjacent pavement.
  - 3. Other depth approved by the City Engineer
- B. Force main crossing under a creek or ditch shall have a minimum suitable soil cover of two (2') feet.
- C. Water distribution force mains shall have a minimum eighteen (18") inch vertical separation from any sewer.
- D. Force mains eighteen (18") inches in diameter and larger shall be checked for buoyancy when submerged in groundwater or situated within the 100-year flood zone.
- E. Use Detail Nos. 2.1 and 3.1 when applicable.

**4.06 Thrust Restraint**

- A. Thrust restraint shall be installed at all fittings and other locations deemed necessary by the City Engineer.
- B. Thrust restraint at fittings shall be accomplished by using one of the following methods.
  - 1. Cast-in-place concrete blocking installed to dimensions as shown on thrust block detail.
  - 2. Restrained Joint pipe and fittings installed upon approval by City Engineer.
- C. Use Detail No. 9.1 when applicable.

**4.07 Combination Air Vacuum/Release Valves**

- A. Combination air vacuum/release valves shall be sized according to the manufacturer's recommendations.
- B. Valves designated for use with water or sewage shall be used on the respective system.
- C. Valve shall be housed in a "dog house" style manhole.
- D. Use Detail No. 22.1 when applicable.

**SECTION 5: AERIAL PIPE****5.01 General**

- A. This section shall be used as a guideline for the design of aerial pipe that pertains to water distribution piping and sanitary sewers.
- B. Requirements of Division II, Sections 2, 3 and 4, where applicable, shall apply to the design of aerial piping.
- C. A pipe that crosses over a perennial or intermittent stream must not cause an impedance to navigation or cause water to pool upstream of the pipe.

**5.02 Aerial Pipe Material**

- A. Aerial pipe shall be ductile iron or steel.
- B. Aerial pipe assembly shall comply with manufacturers' recommendations.
- C. Aerial pipe fittings shall comply with manufacturers' recommendations and specifications herein.

**5.03 Aerial Pipe Support**

- A. Aerial pipe supports shall be situated on suitable soils. Prior to support design, soils beneath proposed aerial pipe route shall be examined by a soils testing company for bearing capacity and suitability for construction. A soils report shall accompany the proposed aerial route.
- B. Aerial pipe support spacing shall not exceed 40 feet. Aerial pipe support spacing shall be based on results of the soil's bearing capacity and spacing recommendations of the pipe and fitting manufacturers.
- C. Aerial pipe supports shall be comprised of concrete piers set atop concrete spread footings. Spread footing size shall be based on results of the soil's bearing capacity and reactive forces within the aerial pipe.
- D. Minimum pier diameters and footing sizes shall be as summarized in Detail No. 24.1.
- E. Pipe shall be secured to piers as indicated on Detail No. 24.1.
- F. Use Detail No. 24.1 when applicable.

**SECTION 6: PUMP STATIONS****6.01 General**

- A. This section shall be used as a guideline for the design of pump stations.
- B. The preferred conveyance method for sewage is gravity. Pump stations will not be permitted unless the Developer can demonstrate that the development cannot be served solely by gravity sewer.
- C. Pumps, motors and associated components that produce a complete pump station shall be furnished as a package by a single manufacturer.
- D. A backup power system shall be provided for each pump station.
- E. An emergency bypass connection shall be provided at all pump stations. Use Detail No. 17.1.
- F. Pump stations shall be equipped with a remote terminal unit (RTU) compatible with the City's existing SCADA supplier. A single supplier shall furnish all components of the SCADA system.
- G. Material requirements specific to pump stations, stand-by power and SCADA are included in this section.
- H. A minimum of two (2) sets of operation and maintenance manuals for each component of the pump station, backup power system and SCADA system shall be provided prior to final acceptance.
- I. The following information shall be submitted and approved prior to plan approval.
  - 1. 100-year flood elevation contour; electrical and mechanical components shall be situated above the 100-year flood elevation.
  - 2. Total Dynamic Head (friction loss through force main, static head, friction loss through pumps and suction piping)
  - 3. Pump Net Positive Suction Head; available and required
  - 4. Pump operating system curve plotted onto manufacturer's pump curve
  - 5. Pump cycle time
  - 6. Wet well buoyancy calculation
  - 7. Radio communication path survey
- J. A 2-inch SDR 21, Class 200 water line with RPZ backflow preventer and ¾" yard hydrant shall be installed at all pump stations. The backflow preventer shall be installed in an above ground insulated closure. Use Detail No. 12.2.
- K. All gravity sewer and force main piping onsite shall be ductile iron pipe.



**6.02 Pump Station Package****A. Pumps**

1. A minimum of two (2) pumps shall be provided with capability to pump peak flows with one pump out of service.
2. Pumps shall be generally as follows:
  - a. Pumps shall be submersible.
  - b. Where acceptable to the City, the pumps shall be above ground self-priming.
3. Pumps shall be sized so that the operational system curve intersects the middle one-third portion of the pump operational curve. Each pump shall have the discharge capacity to overcome the development's peak discharge. Components shall be sized to provide two (2) to five (5) pump cycles per hour at average daily flow conditions.
4. Each pump shall be equipped with discharge pressure gauges mounted on a resilient panel. Pressure gauges shall be as follows.
  - a. Four (4") inches in diameter.
  - b. Glycerin filled for "no shock".
  - c. Graduated from a 0-inch to 70-inch water column.
  - d. Equipped with brass shut off valves and fittings.
5. City will determine list of spare pump parts that shall be provided for each pump station upon submitting.
6. Acceptable Manufacturers
  - Submersible Pump: Flygt
  - Above Ground: Smith & Loveless or Gorman-Rupp

**B. Electrical**

1. Each pump shall be equipped with a motor sized so that the pump operational system curve intersects the middle one-third portion of the pump operational curve. Motor shall not be overloaded at the design condition or at any head in the operational system curve.
2. Electrical control components shall be housed in a NEMA 3R stainless steel panel enclosure.
  - a. Control components shall be mounted to a removable back panel that is secured to the enclosure.

- b. Enclosure door shall be hinged, equipped with captive closing hardware and a neoprene gasket applied.
3. A circuit breaker shall be provided for each pump motor.
4. A padlocking operating mechanism shall be installed on each motor circuit breaker.
5. Operator handles for the mechanism shall be located on the exterior of the control compartment door with interlocks which permit the door to be opened only when circuit breakers are in the “Off” position.
6. A NEMA rated magnetic motor starter shall be provided for each pump motor.
  - a. Power contacts shall be double-break and made of cadmium oxide silver.
  - b. Motor starters shall be equipped to provide under voltage release and overload protection on all three phases.
  - c. Motor starter contacts shall be easily replaceable without removing the motor starter from its mounted position.
  - d. Motors having a 20-horse power rating or larger shall be equipped with soft start.
7. Motor overload relays shall be provided and have visual trip indication with trip-free operation. Reset buttons shall permit resetting of each motor without opening control panel door.
8. Control circuits shall be protected by a circuit breaker which shall be connected in such a manner as to allow control power to be disconnected from all control circuits.
9. A Hand-Off-Auto switch shall be provided for each pump to permit manual start and stop of each pump individually and to select automatic operation of each pump under control of the level control system.
10. A three-position sequence selector shall be provided to select the automatic alternation of the pumps or to select pump number 1 to be the lead pump for each pumping cycle or to select pump number 2 to be the lead pump for each pumping cycle.
11. A run indication light for each pump shall be mounted on the panel enclosure. Light shall indicate that the motor is or should be running.
12. A thermostat shall be mounted on each pump to detect high temperature. Should excessive temperature exist, protection circuitry shall override level control system and turn off pump motors to protect against excessive

temperatures. An indicator light shall be located on front of control panel. Pump shall remain locked out until pump motor is manually reset.

13. Elapsed time indicator shall be mounted on each motor to indicate total run time in hours and tenths of hours.

#### C. Liquid Level Control

1. Liquid Level in wet well shall be monitored via “Electronic Pressure Switch 2000” (EPS-2000 controller) and shall include integral components to sense pressure conditions. The controller shall be equipped as follows.
  - a. Level control electrical enclosure: NEMA 1 stainless steel
  - b. EMI and RFI suppression
  - c. DC-current power supply and 108 – 132/60/1 AC-current
  - d. Function in temperature range of 0° F through 131° F
  - e. Control range from zero (0) to twelve (12) feet with a repeat capacity of +/- 0.1 feet
  - f. Equipped with pump start delays preset at a fixed time delay of five (5) seconds to prevent simultaneous motor starts
2. Provide high water alarm visible indicator on control panel. Maintain alarm signal until manual reset.
3. Provide high water alarm audio indicator. Maintain alarm signal until manual reset of silence circuit.
4. Discrete output signal wiring shall be installed on pre-wired terminal blocks for SCADA monitoring. The signal output shall be for wet well high level, pump motor temperature and pump operation status.
5. Provide the following liquid level elevations on design drawings: Lead Pump “On”, Lead Pump “Off”, Lag Pump “On”, Lag Pump “Off”, High Water Alarm.

#### D. Discharge Piping

1. Piping shall be minimum 4-inch diameter, flanged, ductile iron.
2. Discharge pipe shall include flow meter capable of reading gallons per minute and capable 4-20mamp output.

E. Equipment Bids: See Details

### 6.03 Backup Power System

- A. Each pump station shall be equipped with one (1) preassembled (factory built), skid-mounted, weatherproof, backup power system.

1. The backup power system shall monitor the incoming electrical utility and, should power from the utility be interrupted, supply the power required to operate all pump station pump motors and required controllers.
  2. Backup power system shall perform using a maximum 85% of its rated capacity to operate two (2) motors in series or four (4) motors in staged series based on the pump motor's calculated load. System shall provide for a 10 to 15 second delay for start-up of the second motor(s); a 20 kw generator is a minimum.
  3. Backup power system within 100 feet of an occupied structure shall be equipped with a sound attenuation device to reduce noise levels to less than 80 decibels.
  4. A five (5) year warranty shall be provided for the backup power system
- B. The backup power system shall supply three-phase power and be generally equipped as follows.
1. Enclosure; enclosure shall house all components of the backup power system and shall include as a minimum the following:
    - a. Seamless fiberglass cowling as follows:
      - 1) Fiberglass shall have a gel coating of suitable thickness and density to provide durability, abrasion resistance, color fastness, gloss retention and shall be impervious to sewage, grease, oil, diesel or other common chemicals.
      - 2) Walls and ceiling shall be solid fiberglass having minimum 3/16 inch thickness and constructed in accordance with ASTM D-579.
      - 3) Enclosure shall be capable of withstanding a wind load of 85 miles per hour. The roof shall be capable of withstanding a minimum loading of 30 psf. All beams and trusses shall be fiberglass.
      - 4) Exterior color of enclosure shall be approved by City.
      - 5) Tip-up design equipped with mounted gas cylinders such that operator shall not exert more than 25 pounds of lifting force to tip the enclosure to the full open position.
      - 6) Enclosure shall be hinged securely at one end to a steel base. Hinges shall be for heavy duty use, cadmium plated and epoxy coated.

- b. Steel base as follows:
  - 1) Base shall of size to accommodate fiberglass cowling.
  - 2) Base shall be constructed of steel channel with transverse mid beams supporting a ¼ inch thick steel deck.
  - 3) All steel surfaces shall be prepared to a SSPC –SP6 condition and finished with an epoxy coating system.
  - 4) Steel base shall be fitted with an integral doubled wall fuel tank having such capacity as to supply engine/generator set for a 24-hour continuous operation period. Diesel fuel tank shall be furnished with a bacteria inhibitor to prevent bacteria buildup and shall be fitted with a water separator.

- c. Louvers as follows:
  - 1) Engine intake and exhaust louvers sized to provide sufficient air for both cooling and combustion.
  - 2) Louvers shall be 2-inch multi-blade, minimum 12-gauge anodized aluminum, 6063-T5 alloy with removable 5/8 inch aluminum mesh.
  - 3) A duct assembly shall be provided between the engine radiator and the exhaust louver.
  - 4) Louvers and duct assemblies shall be factory installed.

2. Engine/Generator: Engine/generator set shall be manufactured by Onan/Cummings or Caterpillar and include as a minimum the following:

- a. Electric starter
- b. Positive displacement full pressure, lubrication oil pump with full flow lubrication oil filters
- c. Engine speed governor
- d. Battery and battery charging alternator with solid state regulator
- e. Fuel system as follows:
  - 1) No.2 diesel fuel.
  - 2) Replaceable dry element air cleaner, air supply, return and vent lines.
  - 3) Fuel filter with replacement element.
  - 4) Engine driven displacement fuel pump.

- 5) Fuel system piping. Piping shall be black iron.
- a. Engine mounted thermostatically controlled water jacket heaters.
- b. Engine cooling system as follows:
  - 1) Engine mounted radiator system
  - 2) Belt driven pusher fan
  - 3) Coolant liquid and pump
  - 4) Thermostat temperature control
  - 5) Radiator with duct adapter flange
- c. Exhaust system as follows:
  - 1) Spiral type exhaust muffler. Muffler weight shall not be supported by the engine.
  - 2) Exhaust piping shall be routed through the side wall of the backup power system's base and terminated outside enclosure.
  - 3) Piping outside enclosure shall be insulated with a minimum 2-inch thick calcium silicate thermal insulation with aluminum shroud.
  - 4) Provide sound attenuation as required.
- d. Engine protective devices to indicate alarm and engine shutdown as follows.
  - 1) Provide as discreet outputs for SCADA monitoring.
  - 2) Low coolant temperature alarm
  - 3) Low coolant level shutdown
  - 4) Low lubrication oil pressure alarm and shutdown
  - 5) High coolant temperature alarm and shutdown
  - 6) Over speed shutdown
  - 7) Over crank lockout
  - 8) Transfer switch off
  - 9) External warning light. (outside cowling)
- e. Alternator shall be as follows
  - 1) 3-phase, broad range, able to be reconnected with 12 leads

- 2) Single bearing and directly coupled to the drive engine through a flexible coupling for self-alignment
  - 3) 4-pole, revolving field type with static exciter and magnetic amplifier voltage regulator. Voltage regulation shall be within +/- 5% of the rated voltage. Sustained voltage dip shall be less than 12% of rated voltage when full load and rated power factor is applied. Recovery to stable operation shall occur within two (2) seconds
  - 4) Alternator, exciter and voltage regulator shall be manufactured by the same manufacturer as the engine/generator
- f. The following set controls shall be included on a lighted unit mounted control module:
- 1) Oil pressure gauge
  - 2) Coolant temperature gauge
  - 3) Running time meter
  - 4) Charge rate ammeter
  - 5) Manual reset field circuit breaker
  - 6) Manual selector switch (Run-Stop-Remote)
  - 7) Remote two (2) wire start control
  - 8) Automatic engine shutdown
- g. The following set control lamps shall be on a mounted control module:
- 1) Run
  - 2) Fault
  - 3) Overcrank
  - 4) Overspeed
  - 5) Switch Off
  - 6) Low Engine Temperature
  - 7) Low Oil Pressure
2. Automatic transfer switch shall be manufactured by the same engine/generator set manufacturer and include as a minimum the following:
- a. Switch shall be rated for:

- 1) Continuous operation over an ambient temperature range of -25° to 125 ° Fahrenheit.
  - 2) All classes of load, both inductive and noninductive at 600 volts and tungsten lamp loads at 250 volts.
  - 3) To close on an inrush current up to and including 20 times the continuous rating of the switch without welding or excessive burning of the contacts.
  - 4) To switch loads up to and including its interrupting current capacity.
  - 5) To endure 6,000 cycles of operation at rated current at a rate of 6 cycles per minute without failure; one cycle shall consist of one complete opening and closing of both sets of contacts on an inrush current 10 times the continuous rating of the switch
- b. Switch shall have the following mechanical characteristics:
- 1) Terminal lugs for either copper or aluminum wire with cadmium oxide contacts
  - 2) Mechanical and electrical interlocks to prevent simultaneous energizing of both normal and emergency services
  - 3) Mechanically held on both normal and emergency sides
  - 4) 3-pole with solid neutral
  - 5) 25-amp rated auxiliary contacts: two (2) on the line side, three (3) on the emergency side
- c. Switch shall have the following control logic:
- 1) Signals engine/generator set to start in the event of a power interruption. A solid-state time delay start shall be provided adjustable from 0 to 6 seconds.
  - 2) Monitors each ungrounded line with an adjustable voltage, solid state under voltage sensor to sense a decrease of voltage below a set point or a loss of voltage on any phase of the normal power source.
  - 3) Retransfers the load to the line after normal power restoration
  - 4) Signals engine/generator set to stop after load retransfer to normal source



- 5) Provides a battery float charger to maintain fully charged cranking batteries
  - 6) Provides test switch to simulate an interruption of power from the normal source
  - 7) Provides an exerciser clock and selector switch (Load/Without Load) to automatically start the engine/generator set at regular intervals and allows it to run for a preset time period with load or without load
- d. Indicating lamps and meters shall be mounted for easy reading without opening doors.
- 1) Indicating lamps shall include Green lamp (normal) and Red lamp (emergency) to indicate which source is supplying power to the load.
  - 2) Meter shall include Charge Meter to monitor battery charger output current.
- e. The complete automatic transfer switch shall be mounted in a NEMA 1 rated enclosure, installed within the backup power system enclosure and wired to the engine/generator set at the manufacturer's facility.
- f. Acceptable Manufacturer: Acceptable manufacturer shall be as follows.
- Cummins Onan
  - Caterpillar

#### **6.04 Telemetry**

- A. The pump station shall be equipped with a functioning radio-based telemetry system that is compatible with the existing City SCADA system.
- B. The central computer system (CS) for the City SCADA system is located at City Hall.
- C. The pump station SCADA system design shall be completed in two (2) phases.
  1. Phase One. A radio survey shall be performed to determine the feasibility and scope of the radio communication path from the CS to the Pump station site. The radio survey shall be submitted to and approved by the City prior to City approval of the development's proposed sewerage system design.
  2. Acceptable Supplier: J. K. Duren & Company
  3. Phase Two. A single process instrumentation and control system supplier shall provide a complete SCADA system including but not limited to a remote

terminal unit (RTU), radio communication equipment, and necessary accessories. The system supplier shall provide all necessary hardware modifications and software programming of all computers and RTUs associated with SCADA system including necessary program modifications at the CS.

D. Radio Survey – Phase One

1. Complete a radio survey to determine communication path from central SCADA system to pump station site. Coordinate site activities with the City.
2. Record coordinates at each site and identifies their specific location on topography mapping software.
3. Generate terrain and radio path analysis profiles. Profiles shall be used to calculate the line-of-site radio path between the desired locations including projected tower height. Profiles shall then be used to identify potential interference and/or the feasibility of each potential radio path.
4. Transmit controlled radio signals between potential sites of interest and measure the quality and strength of the received signal. Use the specific radio to be used in the actual application using the same power level that will be used under normal operating conditions.
5. Provide results of radio survey and recommendations in the form of a report to the City for review. Include the following items (as a minimum) in the report.
  - a. Topographic map showing central City SCADA system site, proposed pump station site and radio path including repeaters (if necessary).
  - b. Test Methods
  - c. Site Coordinates
  - d. Test Equipment and Recommendations
  - e. Radio Paths Measured
  - f. Antenna Height Recommendations
  - g. System Recommendation
6. The City shall approve the radio survey's results and recommendations prior to proceeding with the design of the pump station SCADA system.

E. Remote Terminal Unit – Phase Two

1. Remote Terminal Unit (RTU) shall provide the interface between field signals and the CS. –The RTU shall distribute communication, acquire data and

control functions for the SCADA system. The following is a minimal list of functions required to be monitored; more functions may be required (i.e. for series staged station) or at the discretion of the City.

- a. Generator Fail: Alarm if the generator is in a failed condition
- b. Pumps 1 and 2 Run Status: Display the pump ON or OFF status. Calculate the pump elapsed runtime. Allow the runtime to be manually reset at the operator workstation.
- c. Pumps 1 and 2 Remote Run/Stop: Provide for the pump to be remotely started and stopped. The remote start and stop function shall operate only if the pump local selector switch is in the AUTO position.
- d. Pumps 1 and 2 High Temperature: Alarm on pump high temperature.
- e. Pumps 1 and 2 Pressure: Display continuous and discharge pressures.
- f. Pump station Level: Display continuous pump station wet well liquid level. Alarm on Low Level in wet well (Less than 4.25mA dc signal).
- g. High Water Level Alarm: Display if the High Water Level switch is activated.
- h. RTU Power Monitoring: Alarm on AC power failure or Low Battery Power.
- i. Discharge Meter Monitoring: Display gallon per minute output.

2. Performance

- a. RTU shall operate as a subordinate to the CS. RTU shall have all data acquisition, communication and control functions necessary to interface with CS.
- b. RTU shall support full or partial scan by the CS.
- c. Data acquisition functions shall include but are not limited to the following:
  - 1) RTU shall scan all input points at least every second for current value.
  - 2) Store in buffer memory: currents values of all I/O, pulse input accumulations and filtered values of analog inputs.
  - 3) RTU response to interrogations shall use the buffer memory contents.
- d. All analog inputs have first order exponential digital filtering with programmable filter constants downloaded from the CS.

- 1) Default values for filter constants stored in ROM.
  - 2) Filter constants expressed as time constants, range from 10 to 100 seconds with corresponding sample intervals ranging from 1 to 10 seconds.
  - 3) As a minimum, filter constants individually adjustable by RTU.
  - 4) Individual filter constants not required per analog input point.
- e. RTU shall utilize real-time, multitasking firmware to implement system communication protocol, local data acquisition and control functions.
- 1) Shutdown due to loss of power shall not result in the loss of programs.
  - 2) Startup after restoration of power shall not require manual or CS intervention.
  - 3) Upon startup, RTU shall configure itself for its connected inputs and outputs and use default values for all initializations. RTU shall indicate its power reset condition to the CS in its reply to the first scan after reset. The CS shall then download all revised initialization constants. Firmware design utilizes a watchdog timer to monitor proper operation.
- f. All integrated circuits are second sourced.
3. Interfaces
- a. Types
    - 1) With communication circuits to the CS
    - 2) With pump station input and output signals
    - 3) With power source
  - b. RTU shall use a radio communication link utilizing a modem suitable for interface with the radio. Radio shall operate at a 4800 or 9,600 baud with characteristics to match limitations of the radio channel. The RTU communicates with the CS at 9,600 baud in a asynchronous or synchronous format in a half-duplex mode over a party line channel.
  - c. Input/Output

- 1) All Input/Output (I/O) points shall be in accordance with ANSI C37.90.
  - 2) Discrete Inputs (DI) shall be external with normally open or normally closed contacts. RTU impresses a dc voltage on the contact to read their status. Internal RTU logic optically isolated from external contacts. Provide means to limit read current to 100 mA maximum. Noise filters or other techniques shall be utilized to reject short time constant noise, contact bounce and 60-Hz pickup.
  - 3) Analog Inputs (AI) shall be 4 to 20 mA dc signals in accordance with ISA S50.1 and be fully isolated with a maximum impedance of 250 ohms. Accuracy shall be +/- 0.25% of full scale under all operating temperature conditions. Common mode rejection is at a 100 dB minimum. Normal mode noise rejection is at a 40 dB minimum for frequencies of 60Hz and above.
  - 4) Discrete Outputs (DO) shall have interposing relays with SPDT contact. Relays shall have a 5-amp rating and suited for 100,000 operations at 25° C. DO shall be Latch Type or Momentary Type. Latch Type Output shall not change state on loss of power by RTU. Momentary Type Output shall be single pulse with an adjustable duration ranging from 0.2 to 2 seconds.
  - 5) Analog Outputs (AO) shall be 4 to 20 mA dc signals in accordance with ISA S50.1, Type 2, Class L and be fully isolated. Accuracy shall be +/- 0.25% of full scale under all operating temperature conditions. Resolution shall be 0.1% of full scale or better.
- d. Power
- 1) RTU shall operate on 117-volt rms. The RTU shall have internal power On/Off switch and an On status LED.
  - 2) Power supply shall have an ac/dc converter, a battery charger and dc/dc converters. Power supply shall trickle charge battery when ac power is On and fail over to battery when ac power is Off.
  - 3) Provide batteries sufficient to power RTU for a minimum of four (4) hours after loss of 117-volt ac power. Battery shall be

of the sealed lead acid/calcium gelled electrolyte maintenance free type with rated trickle charge life in excess of two (2) years.

- 4) RTU shall have an ac power fail detection circuit relay. A Discrete Input shall be created upon detection of an ac power failure.
- 5) Acceptable Manufacturer: J. K. Duren & Company.

F. Panel Fabrication – Phase Two

1. Panel including all components (i.e. instruments, wiring and enclosure) shall be fabricated at the Process Instrumentation and Control System Supplier's factory.
2. Provide temperature control as follows.
  - a. Panel shall be sized to adequately dissipate heat from components mounted inside panel or in panel face.
  - b. Panel shall have thermostatically controlled space heater to maintain internal panel temperature above dew point.
3. Provide electrical as follows:
  - a. Feeder Circuits
    - 1) One or more 120V ac, 60Hz.
    - 2) Provide for feeder circuit conduit entry.
    - 3) Provide terminal board for termination of wires
  - b. Panel Power
    - 1) Provide main circuit breaker and a circuit breaker on each individual branch circuit distributed from panel.
    - 2) Branch circuit shall blow only branch breaker and not trip main breaker.
    - 3) Breakers shall be located to provide clear view and accessibility when panel door is opened.
  - c. Circuit Wiring
    - 1) A maximum of 20 devices shall be on a single circuit.
    - 2) Multiple units shall perform parallel operations.
    - 3) Provide for panel lighting and service duplex outlet on separate 15-amp 120V ac branch circuit.

- d. Signal Distribution
- 1) 4 to 20 mA dc signals may be distributed as 1 to 5V dc within panel.
  - 2) 4 to 20 mA dc signals shall be isolated outside panel.
  - 3) Signal wiring shall be twisted, shielded pairs.
- e. Signal Switching
- 1) Use dry circuit type relays or switches.
  - 2) 4 to 20 mA loops shall not be interrupted during switching
- f. Relays
- 1) General: Plug-in type socket to rail mounting.
  - 2) Provide dust cover and hold-down clips with relay enclosure.
  - 3) Signal switch relay with gold or silver contact material having an expected mechanical life of 10,000,000 operations and expected electrical life at rated load of 100,000 operations with an LED or neon indicator lamp.
  - 4) Control circuit switch relay (non-latching) with silver cadmium oxide alloy contact having an expected mechanical life of 10,000,000 operations and expected electrical life at rated load of 100,000 operations with an LED or neon indicator lamp and push-to-test button.
  - 5) Control circuit switch relay (latching) with silver cadmium oxide alloy contact having an expected mechanical life of 500,000 operations and expected electrical life at rated load of 50,000 operations with an LED or neon indicator lamp.
  - 6) Control circuit switch relay (time delay) with silver cadmium oxide alloy contact having time delay set point and mode of operation with an integral potentiometer adjustment with knob external to dust cover
  - 7) Acceptable Manufacturers:
    - Potter and Brumfield
    - Allen Bradley
    - Omron

- g. Power Supply
  - 1) Provide as required to power instruments requiring external dc power including two-wire transmitters and dc relays.
  - 2) Convert 120V ac, 60Hz power to dc power of appropriate voltage so that instruments will operate within required tolerances.
  - 3) Provide output over voltage and over current protection devices.
  - 4) Enclosure shall be NEMA 1 rated.
  - 5) dc supply line to each individual two-wire transmitted shall be fitted with an indicating type fuse mounted for easy replacement
- h. Internal Light and Service Outlet
  - 1) Provide 100-watt incandescent light operated by switch.
  - 2) Mount inside and in the top of back of panel.
  - 3) Provide protective metal shield for light.
  - 4) Provide three-wire, 120V, 15 amp duplex receptacle.
- i. Use following table for standard pushbutton colors and inscriptions. Use black colored lettering on white and yellow buttons. Use white colored lettering on black, red and green buttons.

<b>TABLE II-6.04.D-1 PUSHBUTTON STANDARD COLORS AND INSCRIPTIONS</b>		
<i>Tag Function</i>	<i>Inscription</i>	<i>Color</i>
O/O	On / Off	Red / Green
O/C	Open / Close	Red / Green
O/C/A	Open / Close / Auto	Red / Green / White
O/O/A	On / off / Auto	Red / Green / White
M/A	Manual / Auto	Yellow / White
S/S	Start / Stop	Red / Green
Reset	Reset	Red



<b>TABLE II-6.04.D-1 PUSHBUTTON STANDARD COLORS AND INSCRIPTIONS</b>		
<i>Tag Function</i>	<i>Inscription</i>	<i>Color</i>
Emergency Stop	Emergency Stop	Red

- j. Use following table for standard light colors and inscriptions. Use black colored lettering on white and amber lenses. Use white colored lettering on red and green lenses.

<b>TABLE II-6.04.D-2 LIGHT STANDARD COLORS AND INSCRIPTIONS</b>		
<i>Tag Function</i>	<i>Inscription</i>	<i>Color</i>
On	On	Red
Off	Off	Green
Open	Open	Red
Closed	Closed	Green
Low	Low	Green
Fail	Fail	Amber
High	High	Red
Auto	Auto	White
Manual	Manual	Amber
Local	Local	White
Remote	Remote	Amber

4. Panel enclosure shall be as follows:
- a. NEMA 4X rated and constructed of fiberglass. Size shall be 28"H x 20"W x 10"D.
  - b. Enclosure shall have a rubber-gasket door with a continuous hinge. Door shall be secured to enclosure with stainless steel lockable quick-release clamps.
  - c. Acceptable Manufacturers:
    - Hoffman Engineering Co.

- Vynckier

G. Radio Communication Equipment – Phase Two

1. Transceiver

- a. Transceiver shall contain FM transmitter and FM receiver suitable for operation in the 451.3625 MHz UHF.
- b. Transceiver shall operate from power provided by the RTU; provide solid-state circuitry throughout.
- c. Designate transmitter emission in accordance with FCC Rules and Regulations.
- d. Acceptable Manufacturer is Dexter Fortson.

2. Transmission Cable

- a. Cable shall have performance characteristics suited for overall system functional requirements.
- b. Cable shall have a minimum bend radius of ten (10”) inches.
- c. Cable shall have a dielectric jacket and be suited for direct burial and other outdoor design environments.
- d. Acceptable Manufacturer is Beldon RG8.

3. Antenna

- a. Antenna shall be suited for outdoor environments.
- b. Antenna shall provide a low resistance dc path to ground for lightning protection.
- c. Acceptable Manufacturers:
  - Omni (Antennex) – Model FG4503, 3dB Omnidirectional Antenna
  - Yagi (Astron) – Model 460-6, 9dB Yagi Antenna

4. Tower and Mast

- a. Tower and mast shall support antenna at an elevation to achieve functional requirements.
- b. Tower shall be self-supporting (without guide wires).
- c. Lightning arrestors shall be provided and connected to ground rods by cable.
- d. Acceptable Manufacturers:

- Trylon Tital
- Rohn Industries

**6.05 Wet Well**

- A. A wet well shall be provided with each pump station. Wet well shall have a minimum 6-foot inside diameter (or equivalent rectangular area).
- B. Wet well shall be sized in conjunction with pump level control to provide 2 to 5 pump cycles per hour at average daily flow conditions.
  1. Wet well shall resist floatation during and after construction.
  2. Access to the wet well shall be provided via a 2-foot diameter manhole ring and light weight cover situated two (2') feet centered from inside edge of wet well or by a three (3') foot by three (3') foot H-20 aluminum hatch.

**6.06 Equipment Pads**

Backup power system shall be secured by expansion or cast-in anchors to a monolithically poured steel reinforced concrete slab. The slab shall have a minimum depth of eight (8") inches. The slab shall extend a minimum of six (6") inches beyond all sides of enclosure.

**6.07 General Electrical Requirements:**

- A. Electrical service to pump station site area shall be 3-phase, AC current.
- B. Service Entrance, main disconnect, mini-power center and SCADA panel shall be secured to a fabricated steel (galvanized) stand.
- C. Service entrance shall meet the requirements of the local electric utility.
- D. Main Disconnect and mini-power center shall be sized to meet NEC code.
- E. Service wire to all components shall be stranded copper cable sized to meet NEC code and placed in conduit. Service wire within fenced site area shall be underground except where entering equipment.
  1. Below grade conduit shall be rigid, schedule 40, PVC meeting requirements of NEMA TC-3 and UL 651. Joints shall be slip-on and glued in accordance with manufacturer's instructions.
  2. At-grade, above-grade and/or concrete encased conduit shall be rigid galvanized steel meeting the requirements of ANSI C80.1 and UL 6. Joints shall be threaded with galvanized fittings meeting the requirements of UL 514B. Set screw and thread less compression fittings shall not be permitted.
  3. At-grade or above-grade conduit shall not have horizontal runs greater than 12 inches. Horizontal runs of conduit shall be supported by a minimum of two concrete anchored uni-struts (galvanized).

- F. Area security light shall consist of a photocell having a minimum 150 watt metal halide fixture. The light shall be installed at a minimum height of 15 feet above finished grade. The light pole shall be tubular steel and factory finished with a dark bronze color coating. The light pole shall be anchored in accordance with the manufacturer's recommendations.
- G. All components shall be grounded to copper grounding rods in accordance with NEC code.
  - 1. Ground rods shall be copper-clad having minimum diameter of 5/8-inch with a length of 10 feet.
  - 2. Ground conductors shall be stranded copper.
  - 3. Ground connections shall be of the exothermic weld type suitable for exposure to elements or direct burial.
- H. Provide electrical site plan with design submittal.

**6.08 Property and Site Area**

- A. A minimum 60-foot by 60-foot area of property, to be donated to the City, shall be provided for each pump station. The pump station and associated components shall be situated within 40-foot by 40-foot site area; a larger property/site area may be required.
- B. A twelve (12') foot wide access drive situated within a thirty (30') foot wide strip of property, to be donated to the City, shall be provided for each pump station. The access drive shall intersect a public right-of-way. Road material may be changed as approved by the City Engineer.
- C. The property boundary shall be situated no closer than fifty (50') feet from the nearest structure.
- D. Corners of pump station site area shall be at same elevation.
- E. Pump station site area shall be sloped away from slab covering the wet well at a minimum 1.0% slope.
- F. Potable water and a non-freeze yard hydrant with RPZ Backflow Preventer shall be provided at each pump station.
- G. Provide plug valve in force main at a maximum distance of 20 feet from pump station.
- H. Site area (minimum 40-foot by 40-foot) shall be fenced with black vinyl coated chain link fence.
- I. That portion of the pump station site area not in concrete shall be covered with crushed stone at a minimum depth of six (6") inches.

- J. Property area outside fenced area shall be landscaped.

**6.09 Fence and Landscaping**

- A. A minimum 5-foot clearance shall be provided from fence to major components (i.e. pump station, emergency bypass generator, SCADA tower, electrical stand).
- B. Fence shall have height of six (6') feet with three (3) strands of galvanized barbed wire atop posts.
1. Fence mesh shall be 9-gauge wire (galvanized) and black vinyl coated.
  2. Top rail shall be 1-<sup>5</sup>/<sub>8</sub> inch diameter schedule SS40.
  3. Intermediate post shall be 2-inch diameter schedule SS40.
  4. Corner and gate posts shall be 3-inch minimum diameter schedule SS40.
  5. Gate shall have a width of fourteen (14') feet, two 7-foot swing gates positioned in location approved by the City.
  6. Gate shall be secured by the City with a keyed lock conforming to the City standard; sergeant lock.
  7. "No Trespassing" signs to include pump station name, address and emergency phone numbers shall be installed on all fenced sides by the City conforming to the City standard.
- C. Property outside of the fenced area shall be landscaped.
1. Install weed barrier fabric over all areas to receive landscaping.
  2. Install evergreen shrubbery spaced not greater than five (5') feet apart around the fenced area. Shrubby shall have a minimum height of three (3') feet at the time of planting and shall have a mature height of at least six (6') feet. Prepare soil in accordance with shrubby planting instructions.
  3. Install wood mulch, clean of dirt, around shrubby and to the edge of the easement area. Mulch shall have a depth of three (3") inches.
- D. Use Detail Nos. 28.1 and 29.1 when applicable for paving access roads and affected streets.

**SECTION 7 – SOIL EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN****7.01 General Requirements**

Siltation and soil erosion shall be prevented by the installation of erosion control measures and practices prior to or concurrent with land-disturbing activities. The Contractor shall utilize silt fence, hay bales, mulch, grass, slope drains, and other erosion control devices or machines as necessary. All soil erosion and sedimentation control measures must be installed prior to initiation of construction activity. Siltation and erosion control shall be in compliance with the “Georgia Erosion and Sedimentation Act of 1975” as amended to date and these specifications. Any violations of the Act shall be subject to those penalties and fines as defined by the Act.

**7.02 Plan**

Provide an erosion and sedimentation control plan including Best Management Practices (BMP), details, legend, drawings and locations shown on the plans.

**7.03 Standards and Specifications**

All designs will conform to and all work will be performed in accordance with the standards and Specifications of the publication entitled “Manual For Erosion and Sediment Control in Georgia” and in compliance with the “Georgia Erosion and Sedimentation Act of 1975” as amended to date. All materials shall be first-class quality to withstand a 25-year storm event.

**7.04 Site Conditions**

- A. Protect all adjacent public and private property from erosion and other pollutants due to construction activities.
- B. Erosion control plan must comply with all local and state regulations.
- C. Erosion control details and symbols may be taken directly from the “Manual for Erosion and Sediment Control in Georgia,” latest edition.
- D. Land disturbing activity shall not commence until the land disturbing permit has been issued.
- E. If disturbance is an acre or more of land for the entire project, the owner must file a Notice of Intent (NOI) to be covered under one of the NPDES general construction permits (GAR 100001, GAR 100002 or GAR 100003). Information about filing requirements and copies of the general permits can be found at [http://www.gaepd.org/Documents.techguide\\_wpd.html#sw](http://www.gaepd.org/Documents.techguide_wpd.html#sw). If you have any questions regarding this subject, please call the EPD district office listed in the general permit.

**7.05 Erosion Control Program**

Vegetation and mulch shall be applied to applicable areas **immediately** after grading is completed. Best Management Practices, BMP(s), shall be employed to prevent erosion in areas of bare soils and concentrated water flows. Diversions and dikes shall be installed to divert sediment-laden runoff into the sediment barriers and to protect cut and fill slopes from erosive water flows.

**7.06 Temporary Erosion Control**

Temporary erosion control shall consist of planting temporary grass of a quick growing species such as millet, rye grass, or cereal grasses suitable to the area. The Contractor shall use all means necessary to control dust on and near the work site and barrow areas when dust is caused by construction operations. The Contractor should thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors and concurrent performance of work on the site. Water for irrigation and dust control shall be provided by the owner.

**7.07 Rip Rap**

Rip Rap shall consist of stone ~~or bagged sand cement~~ to a thickness of approximately twelve inches (12"). Stone shall be hard quarry or fieldstone of such quality that it will not disintegrate on exposure to water or weathering. Stone shall range in weight from a minimum of 25-pounds to a maximum of 150-pounds with at least 75-percent of the pieces weighing more than 50-pounds. ~~Bagged sand cement Rip Rap shall consist of one part cement and five parts of sand in clean cloth bags, approximately one cubic foot in size.~~

**7.08 Grassing of Disturbed Areas**

- A. Preparation: The Contractor shall grass all areas that were disturbed by clearing or construction operations. Grassing shall be by conventional seeding or hydroseeding. Before seeding commences, the Contractor shall spread the stored stock piled top soil over the entire area, working the better top soil into the more rocky areas. The entire area shall be smoothed with a drag and all clods broken up. All deleterious material, large stones, roots, limbs, and other debris shall be removed to leave a smooth area that would be suitable for mowing. Grassing (by seeding) shall be completed as soon as practical after finish grading is completed in order to minimize erosion from rainfall and run-off. Any erosion occurring in grassed areas shall be immediately repaired.
- B. Grass Seed: Grass seed selection shall be in accordance with the "Manual for Erosion and Sediment Control in Georgia", as amended to date. Otherwise, the type of grass seed applied shall be determined by site and soil compatibility and City discretion.
- C. Temporary and Permanent Seeding: Temporary seeding is required on any areas exposed longer than 14 days. Permanent seeding shall be done only if it can be completed between March 1 and April 15 or August 15 and November 15. Use temporary seeding during remaining periods. The work of spreading and compacting

topsoil shall be performed by the Contractor, as specified, prior to planting Rye grass. Replacing or repairing of eroded topsoil shall be done as necessary at time of later grassing.

- D. Hydro-seeding: Mix the seed (inoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water and apply in slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.
- E. Grassing Along Highway Right-of-Way: Grassing along highway right-of-way shall be in accordance with Department of Transportation, State of Georgia, Standard Specifications, Construction of Roads and Bridges, Latest Edition, Section 700.
- F. Grassing through Established Pastures and Lawns: Grassing through established pastures and lawns shall be by seeding with the same type of grass as was disturbed or, if acceptable to the Owner, seeding may be as recommended by the local Soil Conservation Agent.
- G. Grassing of Other Areas: Grassing of other areas shall be by planting grass of a quick growing species that will also give a permanent cover. Permanent seeding shall be a mixture of Bermuda and centipede.
- H. Planting: Preparation of soil along highway right-of-way shall be as set out in highway specifications. The contractor shall use recognized equipment and materials in preparation of the soils. Before planting, a fertilizer of 6-12-12 composition or approved equal shall be evenly applied at the rate of 1,500 pounds per acre and disced or harrowed into the dampened soil.
- I. Maintenance: Temporary grass may be intermixed with permanent grass. However, the contractor shall cut and maintain the temporary grass such that the permanent grass will become established and not be choked out. The contractor will be required to maintain the grass on the site until the job is accepted.

### **7.09 Seed, Fertilizer, Mulch**

Seed, fertilizer, mulch and periodic watering shall be applied in adequate quantities to assure a satisfactory ground cover over the entire disturbed area of construction operations. Water thoroughly as soon as completed and at least twice daily, or more often if necessary to provide continuous growth without setback until all growth from seed is thoroughly established.

The mulching material will consist of dry straw or hay of good quality free of seeds of competing plants, and at the rate of two or two and a half tons per acre, respectively. Straw or hay mulch will be applied uniformly over the disturbed areas, to achieve 75-percent coverage. It must be spread within 24-hours after seeding is done. The spreading must be done by blower-type or other mulch- spreading equipment or by hand and anchored by pressing the mulch into the soil. Anchoring must be done immediately after the mulch is spread. A disk harrow with the disk set straight or a special “packer disk” may be used. The



disk may be smooth or aerated and should be 20-inches or more in diameter and 8- to 12-inches apart. The edges of the disk should be dull enough not to cut the mulch but sharp enough to press into the soil leaving much of it in an erect position.

**7.10 Slope Stabilization**

Sedimentation shall be controlled by the use of hay mulch on slopes 3:1 or less. On slopes greater than 3:1, the Contractor shall install blankets. Prior to placing the blanket, the grassing shall have been completed and the area left in a smooth, uniform condition, free from stones, lumps, roots, other material, which would prevent from making snug contact with the underlying soil.

A. Fiberglass Blanket: The fiberglass blanket shall be machine produced consisting of uniform layer of continuous, randomly-oriented glass fiber strands. The blanket shall be at least 48-inches wide and weighing a minimum of 0.2-pounds per square yard when used on slopes and 0.4 pounds per square yard when in waterways.

1. Securing and Stapling: All staples shall be driven flush with the ground. Staples for securing the blanket shall be made from cold drawn wire not less than 6-inch lengths of 14-gauge, to form a “U” of 1-inch in width. Longer staples may be required for loose soil.

Each strip of the blanket shall be held firmly in place by means of three rows of staples; one row along each edge and one row along the middle. The staples shall be spaced no more than 3-feet apart in each row with the staples in the middle row spaced alternately with those at the edges. The edge staples shall be placed in the 2-inch overlap. At the end of each blanket, staples shall be placed in a row with spacing of approximately 12-inches.

An anchor slot or trench, 9-inches in depth, shall be dug across the upgrade end of the site. The first 12-inches of the blanket shall be placed in the trench and the backfill tamped solidly in place. Adjacent strip ends shall overlap 2-inches and adjoining ends shall overlap 6-inches with the upstream section on top.

B. Organic Fiber Blanket:

1. Straw Blanket: A machine-produced blanket of clean, weed-free straw from agricultural crops with consistent thickness and the straw evenly distributed over the entire area of the blanket.

a. Slopes: The top of each blanket shall be covered with a photodegradable plastic mesh having a maximum mesh size of 5/16 × 5/16-inch, which is sewn to the straw using biodegradable thread. The blanket shall be at least 48-inches wide with a minimum thickness of 3/8-inch and a minimum dry weight of 0.5-pounds per square yard.

- b. Waterways: The blanket shall be the same as for slopes except having the photodegradable plastic mesh on the top and bottom.
  2. Excelsior Blanket: A machine produced mat of curled wood excelsior of which 80-percent has 6-inch or longer fiber length, with consistent thickness and the fiber evenly distributed over the entire area of the blanket. The blanket shall be smolder resistant. The top of the blanket shall be clearly labeled.
    - a. Slopes: The top of each blanket shall be covered with a photodegradable plastic mesh having a maximum mesh size of 1½ × 3-inch. The blanket shall be at least 48-inches wide with a minimum thickness of ¼-inch and a minimum dry weight of 0.8-pounds per square yard.
    - b. Waterways: The blanket shall be the same as for slopes except having the photodegradable plastic mesh on the top and bottom.
  3. Securing and Stapling: Staples shall be driven vertically into the ground to anchor the plastic mesh. Staples shall be spaced approximately 2-yards apart on each side of the blanket and one row in the center alternately spaced between each side staple. Where blankets are laid side to side, the staples shall be placed with ½ of the staple anchoring mesh from each blanket. At the beginning of a blanket, staples shall be placed in a row with spacing of approximately 12-inches.

In waterways, there shall be no longitudinal seams unless overlapped at least 6-inches with the upgrade section on top. The first 12-inches of the first row of blankets shall be placed in a 6-inch deep anchor slot stapled in the bottom, the slot shall be backfilled and solidly tamped

### **7.11 Final Stabilization**

When monitoring is required, stabilized means at least 70% of the soil surface is uniformly covered in permanent vegetation unlike the NPDES Storm Water Discharges Associated with Construction Activities, General Permit (GAR 100001, 100002, 100003), which includes installation of equivalent permanent stabilization measures (such as the use of rip-rap, gabions, permanent mulches, or geotextiles). Permanent vegetation consists of planted trees, shrubs, perennial vines; a crop of perennial vegetation appropriate for the season and region; or a crop of annual vegetation and a seeding of target crop perennials appropriate for the region such that within the growing season a 70% coverage by the perennial crop is

achieved. For linear construction projects on agricultural or silvicultural lands, stabilized means stabilizing it for its agricultural or silvicultural use.

Final acceptance of grassing is defined as a full cover, over the seeded area of live and growing grass, when at least 98% of the total areas has no bare spots exceeding one square foot and the ground surface is fully stabilized against erosion.

**SECTION 1: DUCTILE IRON PIPE AND FITTINGS****1.01 Pipe Classification**

- A. Ductile iron (push-on) pipe shall be Pressure Class 350 or thickness class 50 thru 52 in accordance with ANSI/AWWA C151/A21.51, latest revisions.
- B. Ductile iron flanged pipe shall have a minimum pressure rating of 250 psi in accordance with ANSI/AWWA C110/A21.10 and C115/A21.15, latest revisions.
- C. Ductile iron restrained-joint pipe shall be of the flex-ring type having a welded bead lock ring having a minimum pressure rating of 250 psi in accordance with ANSI/AWWA C110/A21.10 and C151/A21.51, latest revisions.

**1.02 Fitting Classification**

- A. Ductile iron fittings for use with push-on joint pipe shall be standard mechanical, compact series, with a minimum pressure rating of 250 psi in accordance with ANSI/AWWA C110/A21.10 and C153/A21.53, latest revisions.
- B. Ductile iron flanged fittings shall be in accordance with ANSI/AWWA C110/A21.10, latest revision. Flanged fittings up to twelve (12") inches in size shall have a minimum pressure rating of 350 psi. Flanged fittings over twelve (12") inches in size shall have a minimum pressure rating of 250 psi.
- C. Ductile iron restrained-joint fittings shall be of the flex-ring type having a minimum pressure rating of 250 psi in accordance with ANSI/AWWA C110/A21.10 and C153/A21.53, latest revisions.

**1.03 Gaskets and Bolted Connections**

- A. Gaskets shall be as follows:
  - 1. Gaskets for push-on and standard mechanical joints shall be plain rubber (Styrene Butadiene Copolymer) in accordance with ANSI/AWWA C111/A21.11, latest revisions.
  - 2. Gaskets (FIELD LOK<sup>®</sup>) and (MJ FIELD LOK<sup>®</sup>) used to restrain push-on joint pipe and/or standard mechanical joint fittings, respectively, shall be plain rubber (Styrene Butadiene Copolymer) modified with stainless steel teeth in accordance with ANSI/AWWA C111/A21.11, latest revisions.
  - 3. Gaskets for restrained joint pipe of the flex-ring type and restrained joint fittings of the flex-ring type shall be plain rubber (Styrene Butadiene Copolymer) modified with ductile iron segments in accordance with ANSI/AWWA C111/A21.11, latest revisions.
  - 4. Gaskets for flanged joints shall be 1/8-inch thick, full-faced, clothed reinforced rubber in accordance with ANSI/AWWA C110/A21.10 and C115/A21.15, latest revisions.

- B. Retaining glands and adapter coupling shall be as follows:
1. Retaining gland for use with standard mechanical joint fitting where joint restraint is not required shall be in accordance with ANSI/AWWA C110/A21.10 through C153/A21.53, latest revisions.
  2. Retaining gland (MEGALUG<sup>®</sup>) for use with standard mechanical joint fitting, where the gland acts as the restraining mechanism, shall include gripping wedges with torque limiting twist-off nuts and shall be in accordance with ANSI/AWWA C110/A21.10 through C153/A21.53, latest revisions.
  3. Retaining gland (MJ FIELD LOK<sup>®</sup>) for use with standard mechanical joint fitting, where the gasket acts as the restraining mechanism, shall be in accordance with ANSI/AWWA C110/A21.10 through C153/A21.53, latest revisions.
  4. Adapter coupling (Foster Adapter<sup>®</sup>) shall be a bolt-through positive restraining connector between two standard mechanical joints. Adapter coupling shall be in accordance with ANSI/AWWA C153/A21.53, latest revisions.
- C. Bolts shall be as follows:
1. Bolts and nuts used for standard mechanical connections shall be tee head type with heavy hex nut conforming to ASTM A563 in accordance with AWWA C111.
  2. Bolts and nuts used for flanged connections shall be hex type of low carbon steel; cadmium plated or zinc plated conforming to ASTM A307 in accordance with AWWA C110 and C115.

#### **1.04 Coatings and Linings**

- A. Ductile iron pipe and fittings placed on or beneath the ground surface shall have an exterior coating of asphalt (one mil) in accordance with ANSI/AWWA C151/A21.10, latest revisions.
- B. Ductile iron pipe and fittings placed above the ground surface shall have an exterior manufacturer applied universal phenolic primer (one mil) capable of accepting an epoxy coating. Finish coat shall be in accordance with Division III, Section 12.
- C. Ductile iron pipe that crosses or runs parallel to a gas transmission main, which is or may be cathodically protected, shall be encased in polyethylene tubing, eight (8) mil minimum thickness, and taped in accordance with ANSI/AWWA C105/A21.5.
- D. Ductile iron pipe and fittings used in the distribution of potable water shall be cement lined in accordance with ANSI/AWWA C104/A21.4, latest revisions.

- E. Ductile iron pipe and fittings used in sanitary sewer systems shall be cement lined in accordance with ANSI/AWWA C104/A21.4, latest revision and cement lining sealed with asphalt in accordance with ANSI 21.10, latest revision and AWWA C110, C115, C151 or C153, latest revisions.
- F. For sewer pipe applications, ductile iron pipe and fittings in lieu of an asphalt coating and cement lining may be lined with Protecto 401 Ceramic Epoxy. Lining shall be applied according to the manufacturer's recommendations. Protecto 401 lining cannot be used as a potable water lining.
- G. Ductile iron fittings in lieu of an asphalt coating and cement lining may be coated and lined with five (5) to eight (8) mils of fusion bonded epoxy in accordance with AWWA/ANSI C550 and C121/A21.16. Fittings shall be listed by a certifying agency that the coating complies with ANSI/NSF 61.

**1.05 Pipe Marking:**

The following information shall be cast in or stamped on each pipe:

- A. Weight, class or nominal thickness
- B. Casting period
- C. Manufacturer's identifying mark
- D. Year the pipe was manufactured
- E. The letters "DI" or "DUCTILE"
- F. Acceptable Manufacturers: Ductile iron pipe and fittings shall be domestically manufactured. The following manufacturers are acceptable.
  - American Cast Iron Pipe Company – pipe and fittings.
  - U.S. Pipe Company – pipe and fittings.
  - S&B Technical Products - FIELD LOK<sup>®</sup> and MJ FIELD LOK<sup>®</sup> gasket.
  - EBAA Iron Sales, Inc. - MEGALUG<sup>®</sup> gland.
  - U.S. Pipe Company, Tyler/Union - MJ FIELD LOK<sup>®</sup> gland.
  - Infact Corporation - Foster Adapter<sup>®</sup>.
  - Other Approved.

**SECTION 2: STEEL PIPE AND FITTINGS****2.01 Pipe Classification**

- A. Steel pipe shall have a minimum wall thickness of 0.25 inches and be in accordance with ASI standards.
- B. Wall thickness shall be increased as necessary to minimize deflection and deformation.

**2.02 Transition Coupling**

- A. Coupling used to connect pipes of differing material shall be as follows:
  - Middle ring shall be carbon steel in accordance with ASTM A513, ASTM A635 or ASME SA675 GR60.
- B. Followers shall be ductile iron.
- C. Bolts and nuts shall be carbon steel in accordance with ANSI/AWWA C111/A21.11.
- D. Gaskets shall be Buna (S blend).

**2.03 Coatings and Linings**

- A. Steel pipe used for water distribution and sewer shall be coated and lined in accordance with Division III, Section 12.
- B. Steel pipe used as casing shall not require a coating or lining unless otherwise indicated.
- C. Acceptable Manufacturers: Steel pipe and fittings shall be domestically manufactured. Acceptable manufacturers are as follows:
  - As approved – pipe.
  - Dresser – Transition Coupling.
  - Smith Blair – Transition Coupling.
  - Other Approved.

**SECTION 3: POLYETHYLENE PIPE AND FITTINGS****3.01 Polyethylene Tubing**

- A. Polyethylene tubing shall be AWWA C901, Copper Tubing Size (CTS), DR 9 with PE material PE 3408, 200 PSI pressure rated, NSF certified:
- B. Fittings: AWWA C901 molded. No fittings allowed under roadway.
- C. Joints: Compression type utilizing a totally confined grip seal and coupling nut. Stainless steel tube stiffener insert shall also be used for tubing services. No joints in pipe under roadway.
- D. Markings: Tubing shall be fully labeled at intervals of not more than five (5') feet with brand name and manufacturer, the nominal size, PE 3408, the work TUBING and SDR9, PC200, AWWA C901-88, and the seal or mark of the testing agency.
- E. Color: Black.



**SECTION 4: PVC PIPE****4.01 Casing for Polyethylene Pipe**

- A. PVC pipe shall be used as a casing for polyethylene water service lines that are to be installed under pavement.
- B. PVC pipe used as a casing shall be a minimum of Schedule 40, Class 200.
- C. PVC casing pipe shall have a minimum diameter of two (2") inches.

**4.02 Sewer Pipe Classification**

- A. PVC pipe used as sewer shall be SDR 26 push-on joint type with O-rings in accordance with ASTM 3034.
- B. Gaskets shall be plain rubber.

**4.03 Sewer Pipe Fitting Classification**

- A. PVC fittings shall be in accordance with ASTM 3034.
- B. Acceptable Manufacturers: PVC pipe shall be domestically manufactured by approved acceptable manufacturers.

**SECTION 5: VALVES****5.01 Gate Valve**

- A. Gate valves smaller than three (3") inches in diameter shall be as follows.
  - 1. Valves shall be all brass or bronze construction.
  - 2. Valves shall have solid wedge gate, rising stem, and threaded bonnet.
  - 3. Valve end connections shall be compatible with pipe material in which valve is installed.
- B. Gate valves three (3") inches in diameter and larger shall be as follows.
  - 1. Water supply service shall be in accordance with AWWA 509 for resilient seated valves.
  - 2. Water supply service shall be in accordance with AWWA 515 for reduced wall thickness resilient seated valves.
  - 3. Valve body shall be ductile iron with all exterior surfaces coated with a fusion-bonded epoxy coating.
  - 4. Valves shall be bronze mounted, beveled geared, with a non-rising stem and O-ring stem seals.
  - 5. All exposed fasteners, nuts and bolts shall be stainless steel.
  - 6. Valves shall open in a counter-clockwise direction.
  - 7. Valve end connections shall be flanged or standard mechanical.
  - 8. Buried valves shall be nut operated; non-buried valves shall have hand-wheel operators.
- C. Gate valves used in conjunction with a tapping saddle shall be as follows:
  - 1. Offset type that allows the tapping device to mount to the pipe and pass through the opened valve.
  - 2. End connection to the tapping sleeve shall be flanged. End connection to accept pipe shall be mechanical joint.
- D. Gate valves three (3") inches and larger shall be coated with six (6) to eight (8) mils of fusion bonded epoxy in accordance with AWWA/ANSI C550 and C121/A21.16. Fittings shall be listed by a certifying agency that the coating complies with ANSI/NSF 61.
- E. All gate valves shall be rated for a minimum working pressure of ~~200~~250 psi. Valves shall remain water tight at working pressure after installation.

- F. All gate valve shall be installed in a valve box within a 18” square by 4” thick protective concrete pad. Provide extension stem where required to bring operating nut to within 12 inches of ground surface.
- G. The following information shall be cast in or stamped on each gate valve:
1. Manufacturer’s identifying mark
  2. Pressure Class
  3. The letters “DI” or DUCTILE
  4. Place of Manufacturing
- H. Acceptable Manufacturers: Valves shall be by a domestic manufacturer that produces only ductile iron bodied valves. Acceptable Manufacturers are as follows:
- American Darling
  - U.S. Pipe Company
  - Mueller Company - Ductile Iron Valves only
  - M&H Valve Company - Ductile Iron Valves only.

**5.02 Butterfly Valve**

- A. Valves shall be in accordance with AWWA C504.
- B. Materials used in the fabrication of the valve shall meet all related requirements of ASTM.
- C. Valve bodies shall be ductile iron with integrally cast flanged ends or standard mechanical ends. Flange drilling shall be in accordance with ANSI B16.1. Two (2) trunnions for shaft bearings shall be integrally cast with valve body.
- D. Valves shall be bubble tight at 250 psi with flow in either direction and shall be capable of throttling service.
- E. Valve disc shall rotate 90° from full open position to tight shut position.
- F. Valves shall be tight closing, rubber seated with seats applied to the body or disc. Valve seats on 30 inch and larger diameter valves shall be field adjustable and replaceable without dismounting operator, disc or shaft and without removing valve from pipe. Mating seat shall be stainless steel or Monel.
- G. Valves shall be fitted with sleeve type bearings contained in hubs of valve body. Bearings shall be corrosion resistant and self-lubricating.
- H. Valve operators shall hold valve in any intermediate position between full open and full close without creeping or fluttering.

1. Manual operators shall be worm gear or traveling nut type and shall be fully enclosed.
  2. Valves for buried service shall be furnished with a ground level valve position indicator unless otherwise approved by the City Engineer.
  3. Valves for above ground service shall be furnished with a valve position indicator arrow to give valve position at any point from full open to full close.
  4. Valves shall open when turning operator in a counter-clockwise direction.
- I. Valves shall be coated as follows.
1. Valve placed on or beneath the ground surface shall have an exterior coating of asphalt (one mil) in accordance with ANSI/AWWA C151/A21.10, latest revisions.
  2. Valve in lieu of an asphalt coating may be coated with six (6) to eight (8) mils of fusion bonded epoxy in accordance with AWWA/ANSI C550 and C121/A21.16.
  3. Valve placed above the ground surface shall have an exterior manufacturer applied universal phenolic primer (one mil) capable of accepting an epoxy coating. Finish coat shall be in accordance with Division III, Section 12.
  4. Acceptable Manufacturers: Acceptable manufacturers are as follows:
    - M&H
    - Pratt
    - Mueller
    - Clow
    - Dezurik

**5.03 Double Check Valve (Backflow Preventers)**

- A. Double check valves shall be in accordance with AWWA 506, ASSE 1013 and USC-FCCC. Check valves shall be UL listed and approved by FMR.
- B. Double check valves  $\frac{3}{4}$  inch in diameter through two (2") inches in diameter shall be bronze bodied having corrosion resistant moving parts with bronze threaded unions on both sides of the device.
- C. Double check valves 2-1/2 inch in diameter and larger shall be bronze, cast iron or ductile iron bodied having corrosion resistant moving parts with flanged end connections.
- D. Double check valves with reduced pressure zone assemblies shall have a sufficient air gap at the relief port and discharge shall drain away from the assembly.
- E. Double check valve assemblies shall be equipped as standard with four (4) test cocks and two (2) resilient seated shut off valves.

- F. Valve may be coated with six (6) to eight (8) mils of fusion bonded epoxy in accordance with AWWA/ANSI C550 and C121/A21.16.
- G. Valve may have an exterior manufacturer applied universal phenolic primer (one mil) capable of accepting an epoxy coating. Finish coat shall be in accordance with Division III, Section 12.
- H. Acceptable Manufacturers are as follows:
- Watts - Double Check (3/4" to 2"): U007QT.
  - Watts - Double Check (3" to 10"): 709 or 757 w/OSY Valves.
  - Wilkins - Double Check (3" to 10"): 350A or 950 w/OSY Valves.
  - Conbraco/Apollo – Double Check (3/4" to 2"): 40-100 T Series.
  - Conbraco/Apollo – Double Check (3" to 10"): 4S DC Series w/OSY Valves.
  - Conbraco/Apollo – Double Check (3" to 10"): 4D-100 Defender w/OSY Valves.
  - Watts - Reduced Pressure Zone Check Valve (3/4" to 2"): 909S-QT.
  - Watts - Reduced Pressure Zone Check Valve (3" to 6"): 909 w/OSY Valves.
  - Febco – Double Check (3/4" to 2"): 850 BV
  - Wilkins - Reduced Pressure Zone Check Valve (3" to 6"): 375 or 975 w/OSY Valves.
  - Conbraco/Apollo – Reduced Pressure Zone (3/4" to 2"): 40-200 T Series.
  - Conbraco/Apollo – Reduced Pressure Zone (3" to 4"): 40-200 w/OSY Valves.
  - Conbraco/Apollo – Reduced Pressure Zone (6" to 10"): 4S-RP w/OSY Valves.
  - Other Approved.

#### **5.04 Corporation Valve**

- A. Corporation valves shall be of the ball valve type and manufactured of bronze in conformance with ASTM B61, ASTM B62 and NSF 61.
- B. Corporation valves shall withstand a working pressure of ~~150~~300 psi.
- C. Corporation valves shall have crosscut threading, for direct tap into pipe, and a compression copper outlet. If a tapping saddle is used, the valve shall be saddle thread by compression copper outlet.
- D. Corporation valves shall be 3/4 inch or one (1) inch in size as required by the service.

- E. Acceptable Manufacturers: Corporation valves shall be domestically manufactured. Acceptable manufacturers are as follows:
- Ford Meter Box Co.
  - Mueller Brass
  - A.Y. McDonald Mfg.
  - Other Approved

**5.05 Curb Stop**

- A. Curb stops shall be of the ball valve type and manufactured of bronze in conformance with ASTM B61, ASTM B62 and NSF 61.
- B. Curb stops shall withstand a working pressure of ~~150~~300 psi.
- C. The internal ball shall be manufactured of low carbon steel coated with brass.
- D. Internal O-rings and seats shall be of Buna-N.
- E. Curb stops shall be fitted with iron pipe threads on the influent side and appropriate meter nut on the discharge side.
- F. Curb stops shall be fitted with wing locks suitable to accept a keyed padlock.
- G. Curb stops shall be ¾ inch, one (1”) inch or two (2”) inches in size as required by the service.
- H. Acceptable Manufacturers: Curb stops shall be domestically manufactured. Acceptable manufacturers are as follows:
- Ford Meter Box Co. for ¾ inch and 1 inch sizes.
  - Mueller Brass.
  - A.Y. McDonald Mfg.
  - Other Approved.

**5.06 Plug Valve**

- A. Plug shall be as follows.
1. Eccentric plug (non-lubricated) having a standard port design.
  2. Plug shall be cast iron in accordance with ASTM A126.
  3. Plug shall have a resilient facing of carboxylic acrylonitrile butadiene or chloroprene.
- B. Valve shall be generally comprised as follows:
1. Body shall be cast iron, Class B, in accordance with ASTM A126.

2. Seat shall be nickel, raised and welded to the body.
  3. Bearings shall be oil impregnated permanently lubricated stainless steel Type 316 in accordance with ASTM A743 Grade CF-8M.
  4. Packing shall be acrylonitrile butadiene V-type.
- C. End connections shall be as follows:
1. Non-buried service shall have flanged ends having an ANSI 125/150 pound rating standard face and drilled.
  2. Buried service shall have standard mechanical joint ends in accordance with AWWA C111-64 with retaining gland that acts as a restraining mechanism.
- D. Actuator type shall be as follows:
1. Non-buried service shall have G-series worm gear with 8-inch diameter hand wheel actuator input, clockwise to close.
  2. Buried service shall have G-series worm gear for buried service, with 2-inch square nut actuator input, clockwise to close.
- E. Valve interior and exterior surfaces shall have one (1) coat, 4 to 5 mils of TNEMEC 140 Pota-Pox Plus epoxy paint, surface preparation of SSPC-SP10.
- F. Acceptable Manufacturers: Acceptable manufacturers shall be as follows:
- Dezurik
  - Other Approved

**5.07 Combination Air/Vacuum Release Valve**

- A. Air/Vacuum release valves shall be installed at the following locations:
- i. All high points along force mains
  - ii. At abrupt increases in down slope or abrupt decreases in up slope
  - iii. At intervals of a quarter mile to a half mile along long ascending or long descending sections of pipe lines
- B. Valve shall automatically release large quantities of air during pipeline filling and automatically allow air to reenter the pipeline when internal pressure of the pipeline approaches a negative value (vacuum). Valve shall automatically release small quantities of air from the pipeline while under normal pressure conditions.
- C. Valve shall be suitable for the respective service (water or sanitary sewer) having a working pressure of ~~150~~ 250 psi and a test pressure of 225 psi.
- D. Valve inlet and outlet shall be sized as required. Where the option permits, ANSI 125 pound flanged connections shall be utilized.

- E. Valve body, cover and baffle shall be cast iron, Class B in accordance with ASTM A126.
- F. Seat and orifice button shall be Buna-N.
- G. All internal components shall be stainless steel T304 in accordance with ASTM A240, A269, A276 and PH 15-7 MO.
- H. Acceptable Manufacturers: Combination Air/Vacuum Release Valve shall be domestically manufactured. Acceptable manufacturers are as follows:
  - Crispin
  - Other approved

**5.08 Valve Box**

- A. Valve boxes shall be of the two-piece type and manufactured of ABS resin.
- B. Valve boxes shall have an internal diameter of 5.25 inches.
- C. Valve boxes shall be fitted with a cover with the word “WATER” or “SEWER” integrally cast in the cover depending on the service and compatible with the City’s radio read meter equipment.
- D. Acceptable Manufacturers: Acceptable manufacturers shall be as follows:
  - Bingham-Taylor
  - East Jordan
  - Other approved.



**SECTION 6: TAPPING SLEEVES****6.01 Tapping Sleeve**

- A. Tapping sleeves shall be of the split type and manufactured of ductile iron or stainless steel (preferred). Stainless steel sleeve shall be used when tapping cast iron pipe. Ductile iron shall conform to ANSI/AWWA standards. Stainless Steel shall be type 304 (18-8).
- B. Gaskets shall be virgin nitrile (Buna-N, NBR).
- C. Sleeve outlet shall be flanged or mechanical joint in accordance with ANSI/AWWA C110/A21.1.
- D. Acceptable Manufacturers: Acceptable manufacturers shall be as follows:
- U.S. Pipe – T28 on ductile iron main only.
  - Power Seal– Part No. 3490 (stainless steel) on cast iron and ductile iron mains
  - Smith Blair – Part No. 663 or 665 (stainless steel) on cast iron and ductile iron mains
  - Ford Meter Box– FTSS (stainless steel)
  - Romac for 1-1/2 inch and 2 inch taps
  - Other Approved.

**6.02 Tapping Saddle**

- A. Tapping saddles shall be stainless steel. Ductile iron shall conform to ANSI/AWWA standards. Stainless Steel shall be type 304 (18-8).
- B. Stainless steel saddles shall be used when tapping for 1-1/2 inch or 2 inch service lines.
- C. Tapping saddles shall seal with pipe by an O-ring gasket virgin nitrile (Buna-N, NBR).
- D. Saddle outlet to pipe shall be flanged or tapped with pipe threads.
- E. Acceptable Manufacturers: Acceptable manufacturers are as follows:
- Smith Blair - 313 with 015 stainless steel bales (4" to 16") for 2" iron pipe threads
  - Smith Blair - 366 with 015 stainless steel straps (18" to 40") for 2" iron pipe threads
  - Smith Blair – 372 for pipe diameters 4 inches through 12 inches
  - Powerseal – 3412AS for pipe diameters 3 inches through 12 inches

- Powerseal – 3416AS for pipe diameters 14 inches through 36 inches
- Ford Meter Box– FS 303
- Romac - 306 for pipe diameters 3 inches through 12 inches
- Romac - 305 for pipe diameters 14 inches through 24 inches
- Other Approved

**SECTION 7: WATER METERS**

**7.01 Residential, Irrigation and Light Commercial**

- A. Water meters shall be positive displacement type with oscillating piston or rotating disk having a magnetic drive conforming to AWWA C-700 and a sealed register conforming to AWWA C-707.
- B. Meters shall be capable of operating up to a working pressure of 150 psi and have an operating flow range shown on the following table.

<b>TABLE 7-1 METER REQUIREMENTS</b>		
<i>Size</i>	<i>Operating Flow Range</i>	<i>Low Flow Registration</i>
5/8"	0.25 to 25 gpm	98.5% at 1/4 gpm
3/4"	0.75 to 35 gpm	97% at 3/8 gpm
1"	1.25 to 70 gpm	95% at 3/4 gpm
1-1/2"	2.5 to 120 gpm	95% at 1-1/4 gpm
2"	2.5 to 170 gpm	95% at 2 1/2 gpm

- C. Meter outer case shall be constructed of Water Works bronze (minimum 75% copper content) and shall be split case. External fasteners shall be corrosion resistant.
- D. The size of the meter and a flow direction arrow shall be cast in raised figures on the outer casing. The manufacturer’s serial number shall be permanently affixed to the outer case and shall be visible from the topside.
- E. The sealed register shall be of the straight reading type and have a full test dial on the face. The register shall be fitted with an external or internal locking device so that the register can only be removed with specialized tools.
- F. Meters shall have a corrosion resistant strainer that is easily removed without the meter itself being disconnected from the service line.
- G. The register shall measure flow in gallons and shall be read by visual inspection and remote data relay. The electronic register shall be provided to function with reading devices as manufactured by Itron.
- H. Meter connections to 5/8 inch and one (1”) inch service lines shall be with a meter spud. Meter connections to 1-1/2 inch and two (2”) inch service lines shall be with a two (2) bolt flange.
- I. Acceptable Manufacturers: Acceptable manufacturers should be integrated and are acceptable as follows:

- Hersey

**7.02 Commercial and Industrial**

- A. Water meters shall be Class I or II turbine type with magnetic drive, reduction gearing and straightening vanes conforming to AWWA C-700 and the register shall be permanently hermetically sealed conforming to AWWA C-707.
- B. Meters shall be capable of operating up to a working pressure of 150 psi and have an operating flow range shown on the following table.

<b>TABLE 7-2</b>		
<b>METER OPERATION</b>		
<i>Size</i>	<i>Operating Flow Range (gpm)</i>	<i>Low Flow Registration</i>
* 1-½"	4 to 200	98.5% at 2.5 gpm
* 2"	4 to 310	95% at 2.5 gpm
3"	5 to 550	95% at 4 gpm
4"	4 to 1,250	95% at 2.5 gpm
6"	4 to 2,500	95% at 2.5 gpm
8"	4 to 4,500	95% at 2.5 gpm
10"	4 to 7,000	95% at 2.5 gpm

\* For fire service in building and irrigation service only.

- C. Meter outer case shall be constructed of Water Works bronze (minimum 75% copper content) and shall be split case. External fasteners shall be corrosion resistant.
- D. The size and model of the meter and a flow direction arrow shall be cast in raised figures on both sides of the outer casing. The manufacturer’s serial number shall be permanently affixed to the outer case and shall be visible from the topside.
- E. Meters shall have a separate measuring chamber that shall be easily removable from the outer case. The measuring chamber shall be constructed of Water Works bronze (minimum 85% copper content).
- F. The register shall be of the straight reading type and have a full test dial on the face. The register shall be fitted with an external or internal locking device so that the register can only be removed with specialized tools.
- G. The register shall measure flow in gallons and shall be read by visual inspection and remote data relay. The electronic register shall be provided to function with reading devices as manufactured by Itron.
- H. The meter shall have internal straightening vanes installed on the meters inlet. The straightening vanes shall be easily removable. The straightening vanes shall not be cast as part of the main case or molded as part of the measuring chamber.

- I. The meter shall be equipped with either an internal or external strainer as shown in the following table and detailed in items “K” and “L”.

<b>TABLE 7-3</b>	
<b>METER STRAINERS</b>	
<i>Meter Strainer Size</i>	<i>Strainer Configuration</i>
1-½" to 4"	Internal with Test Port
1-½" to 4"	External Bronze
6" to 10"	External Ductile Iron/Cast Iron

- J. Where meters are equipped with an internal strainer, the strainer shall be cast as part of the meter’s main case. The internal strainer screen and cover plate shall be located at the meter’s inlet between the inlet flange and measuring chamber. The internal strainer screen shall be of the V-shape design and externally accessible without disturbing the meter’s pipeline setting or measuring chamber assembly. A test port of adequate capacity shall be located on the meter’s main case adjacent to the outlet flange. The strainer shall be listed by UL and approved by FM.
- K. Where meters are equipped with an external strainer, the strainer and cover plate shall be located at the meter’s inlet between the inlet flange and measuring chamber. The strainer screen shall be of the V-shape design and accessible without disturbing the meter’s pipeline setting or measuring chamber assembly. The strainer shall be listed by UL and approved by FM.
- L. Meter connection to the service line shall be flanged, Class 125# and conform to ANSI 16.1 for diameter, drilling pattern and thickness. Where companion flanges are required, flanges shall be cast iron and tapped with American Standard internal taper pipe threads. Bolts, nuts and gaskets associated with companion flanges shall be provided for connection to the meter only.

1. Acceptable Manufacturer: Hersey

**7.03 Fire Service**

- A. Water meters shall be Class II turbine type with magnetic drive, reduction gearing and straightening vanes conforming to AWWA C-703 and the register shall be permanently hermetically sealed conforming to AWWA C-707.
- B. Meters shall be capable of operating up to a working pressure of 150 psi and have an operating flow range shown on the following table.

<b>TABLE 7-4</b>		
<b>METER FLOW RANGE</b>		
<i>Size</i>	<i>Operating Flow Range (gpm)</i>	<i>Low Flow Registration</i>

4"	10 to 1,250	95% at 6 gpm
6"	20 to 2,500	95% at 15 gpm
8"	30 to 4,500	95% at 20 gpm
10"	50 to 7,000	95% at 30 gpm

- C. Meter outer case shall be constructed of Water Works bronze (minimum 75% copper content) and shall be split case. External fasteners shall be corrosion resistant.
- D. The size and model of the meter and a flow direction arrow shall be cast in raised figures on both sides of the outer casing. The manufacturers' serial number shall be permanently affixed to the outer case and shall be visible from the topside.
- E. Meters shall have a separate measuring chamber that shall be easily removable from the outer case. The measuring chamber shall be constructed of Water Works bronze (minimum 85% copper content).
- F. The register shall be of the straight reading type and have a full test dial on the face. The register shall be secured by means of a locking device located in the interior of the outer case so that the register can only be removed with specialized tools.
- G. The register shall measure flow in gallons and shall be read by visual inspection and remote data relay. The electronic register shall be provided to function with reading devices as manufactured by Itron.
- H. The meter shall have internal straightening vanes installed on the meters inlet. The straightening vanes shall be easily removable. The straightening vanes shall not be cast as part of the main case or molded as part of the measuring chamber.
- I. The meter shall be equipped with an external strainer as listed by UL and approved by FM. The strainer assembly shall be ductile iron and located upstream of the meter's inlet flange. The strainer screen shall be stainless steel and V-shape design. The strainer screen shall have a net open area at least four (4) times that of the pipe opening. The strainer screen shall be accessible without disturbing the meter's pipeline setting or measuring chamber assembly.
- J. Meter connection to the service line shall be flanged, Class 125# and conform to ANSI 16.1 for diameter, drilling pattern and thickness. Where companion flanges are required, flanges shall be cast iron and tapped with American Standard internal taper pipe threads. Bolts, nuts and gaskets associated with companion flanges shall be provided for connection to the meter only.
- K. Acceptable Manufacturer: Hersey

**7.04 Fire/Domestic Combination Service**

- A. The fire portion of the combination service shall comply with Division III, Section 7.03.
- B. The domestic portion of the combination service shall comply with Division III, Section 7.01 and be accomplished via by-pass piping. By-pass piping shall be brass with threaded connections. Domestic service piping shall be 1-1/2 inches in diameter for a four (4) inch fire service. Domestic service piping shall be two (2) inches in diameter for a six (6) inch and larger fire service.
- C. The by-pass assembly shall be fitted with a bronze bodied check valve situated immediately downstream of the meter. The check valve shall be UL listed and approved by FM. The use of electronic switching devices or spring loaded check valves shall be prohibited.
- D. The by-pass assembly shall be fitted with two (2) lockable bronze bodied ball valves; one (1) situated upstream of the meter and one (1) situated downstream of the check valve.

**7.05 Water Meter Boxes (Residential and Light Commercial)**

- A. Meter assemblies ranging in size from 5/8 inch to two (2) inches shall be housed in meter boxes manufactured from high-density polyethylene or fiber reinforced plastic.
- B. Meter box lids shall be fiber reinforced plastic. Minimum outside dimensions of the lid shall be 16-5/8 inches by 11-7/16 inches. Down legs on each corner shall be a minimum of 1-1/2 inches long.
- C. Acceptable Manufacturers:
  - D/FW Plastics.
  - CDR – 24 inches by 60 inches for 1-1/2 inch and 2 inch meter assemblies.
  - Other Approved.

**7.06 Water Meter Vaults (Commercial and Industrial)**

- A. Vaults shall be constructed of precast concrete.
- B. Vaults shall be designed to withstand a minimum H-10 Live Load. Additional design strength may be required.
- C. Vaults for 3-inch and larger meter/back flow assemblies shall have a minimum 18” clearance between any flanges, piping, valves, meters and all walls. The minimum depth shall be 6 feet.
- D. Meter vaults shall have a minimum six (6”) inch thick concrete reinforced base slab. A 12 in x 12 in drain opening shall be cast in the slab. The drain shall be serviced by

a 12 inch bed No. 57 stone wrapped with geofabric. The bed of No. 57 stone shall extend to the edges of the excavation.

- E. Vaults constructed of concrete block are prohibited.
- F. Vaults shall be constructed of polymer concrete, precast concrete or cast-in-place concrete.
- G. Where vaults are constructed of pre-cast or cast-in-place concrete, the walls shall be a minimum of six (6) inches thick and steel reinforced. Wall reinforcing shall be tied to the slab reinforcing.  
  
Vaults shall be covered with a removable pre-cast concrete cover. The cover shall be a minimum of six (6") inches thick and steel reinforced. Cover shall be sealed to top of walls using neoprene gasket material.
- H. Where two (2) pre-cast vaults are situated together to form one (1) larger vault, each of the two (2) vaults shall have a separate cover.
- I. An aluminum access hatch, minimum 36 inches by 36 inches in size shall be cast in the cover slab. The access hatch shall be situated as shown on details.
- J. Bottom side of the meter assembly shall have a minimum twelve (18") inch clearance from the top of the floor slab.
- K. Meter assembly shall be supported at a minimum of two (2) points by galvanized pipe saddles. Backflow assembly shall be supported at a minimum of one (1) point by galvanized pipe saddles. Pipe saddles shall be capable of carrying the weight of the assembly. Pipe saddle height shall be adjustable via screw jack. Pipe saddle shall have a minimum four (4") inch square base, one-quarter (1/4") inch thick.
- L. Pipe penetrations (annulus between concrete and outside face of pipe) shall be sealed with a mechanical type rubber modular seal or seal approved by the City Engineer such as LinkSeal.
- M. Vault cover shall extend three (3") inches above finished grade.

#### **7.07 Vault Access Hatches**

- A. Vault access shall be via aluminum double hatch having a minimum clear opening of 36 inches by 36 inches. Clear opening dimensions may be increased.
- B. Access shall be rated to withstand a minimum H-10 Live Load. Design strength of access hatch may be increased.
- C. Access hatch shall have a manual locking arm device to prevent hatch lids from closing.
- D. Access hatch shall be capable of being secured using a keyed lock.



**SECTION 8: HYDRANTS****8.01 Fire Hydrant**

- A. Fire hydrants shall be of the compression type, closing with line pressure, complying with AWWA C502 for ~~150~~250 psi working pressure and NFPA, latest applicable revision.
- B. Hydrants shall have a 5-¼ inch main valve and a non-freeze design with an automatic drain that closes fully when main valve is opened.
- C. Hydrants shall be furnished having factory burying depths of 4'-6" or 5'-0". Deeper burying depths shall be accomplished using extension kits provided by same manufacturer. Break-away device shall be situated ± three (3") inches from finished grade.
- D. Hydrant standpipe, fittings and upper barrel shall be ductile iron. Parts designed to break away may be cast iron.
- E. Hydrant bolts below ground level shall be stainless steel.
- F. Hydrant lead to main line connection shall be mechanical joint with thrust blocking or restrained joint.
- G. The means of attaching the barrel to the standpipe shall permit 360° rotation of the barrel.
- H. Hydrant barrel shall break away from the standpipe at an elevation above ground level without causing damage to the standpipe and stem. When barrel is broken away, internal valve shall function and repairs shall be permitted without excavating or turning off water supply.
- I. Hydrants shall be bronze mounted and all internal working parts shall be bronze. Valve seat shall screw into retainer. However, stainless steel is preferred.
- J. Internal working parts shall be removable without disturbing the barrel.
- K. The operating nut situated atop the hydrant shall be hexagonal and constructed of ductile iron or cast iron and open in a counter clockwise direction. The threads shall be enclosed in an operating chamber separated from the hydrant barrel by a rubber O-ring stem seal lubricated by a grease or oil reservoir.
- L. Hydrant shall be equipped with two 2-1/2 inch threaded (7.5 threads per inch) hose connections and one 4-1/2 inch threaded (4 threads per inch) hose connection. Hose and pump connections shall be threaded and pinned to seal the connection to the barrel. Threads shall comply with National Standard Threads. Each connection shall be equipped with a cap and chain.
- M. Hydrants shall have all stainless steel stems.

- N. Acceptable Manufacturers: Approved manufacturers must produce only ductile iron fire hydrants. Acceptable manufacturers are as follows:
- American - Darling
  - Mueller Company
  - M&H

**8.02 Yard Hydrant**

- A. Yard hydrant shall be self-draining, non-freeze and operated by lever handle. Lever handle shall be capable of being secured with a keyed lock.
- B. Yard hydrant shall be fitted for a standard three-quarter ( $\frac{3}{4}$ " ) inch hose connection.
- C. Exterior casing shall be schedule 40 galvanized steel and internal operating parts shall be of bronze and the plunger shall be neoprene.
- D. Acceptable Manufacturers: Acceptable manufacturers are as follows:
- Josam Series 71450
  - Murdock
  - Approved equal

**SECTION 9: MANHOLES AND WET WELLS****9.01 General**

- A. Manholes and wet wells shall be cylindrical and constructed of steel reinforced pre-cast concrete or other concrete structure approved by the City Engineer.
- B. Manholes shall have a minimum inside diameter of four (4') feet and be fitted at grade with a cast iron ring and cover.
- C. Wet wells shall have a minimum inside diameter of six (6') feet and be accessed via an aluminum hatch that shall be lockable, and a minimum opening of 60" x 60".
- D. An existing or newly installed manhole intersected by a sanitary sewer force main and the next downstream manhole shall be lined in accordance with Division III, Section 12 "Environmental Coatings".
- E. A newly installed lift station wet well and underside of slab over wet well shall be lined in accordance with Division III, Section 12 "Environmental Coatings".

**9.02 Pre-cast**

- A. Pre-cast sections shall be manufactured, tested and marked in accordance with ASTM C478.
- B. Minimum compressive 28-day strength of concrete in all sections shall be 4,000 psi.
- C. Maximum allowable absorption of moisture by concrete shall not exceed 8% of dry weight.
- D. Pre-cast sections shall consist of a base section, riser section and eccentric cone top or flat slab top section, as conditions require. Top cone section of manhole housing for an air release valve shall be concentric. The sections shall form a continuous uniform assembly.
- E. Joints between each section shall be tongue and groove type sealed with a preformed gasket meeting requirements of Federal Specification SS-S-00210, "Sealing Compound, Preformed Plastic for Pipe.
- F. Each section shall have no more than two (2) holes for purposes of handling. The holes used for handling shall be tapered and shall be plugged with rubber stoppers or grout after installation.
- G. Pipe openings in sections shall be fitted with an integrally cast flexible rubber boot or other approved flexible joint connector. A manufacturer supplied stainless steel band shall be used to seal boot to pipe.
- H. Manhole sections shall be fitted with solid cast iron steps of standard pattern conforming to ASTM A-48 or polypropylene plastic coated steel steps conforming

to ASTM A615 and ASTM D-4101 and shall be integrally cast into manhole sections. Steps shall be twelve (12") inches wide and spaced at 1'0" on center.

- I. Wetwell sections shall not be fitted with steps.
- J. Manhole base section's invert shall be constructed of cast-in-place concrete or brick and mortar. Invert shall have a "U" shaped channel that matches inverts of the influent and effluent pipes. Invert shelf above "U" shaped channel shall have a minimum 12:1 slope.

### **9.03 Precast "Dog House"**

- A. Precast and cast-in-place "Dog House" Manholes shall comply with this section.
- B. Dog house opening shall be precast by the manufacturer. Field cutting-in dog house opening shall be prohibited.
- C. Size of dog house opening shall be as recommended by the manhole manufacturer.
- D. Annulus between pipe and opening shall be grouted water tight with non-shrink grout.
- E. Dog house manholes used in gravity sewer shall have a reinforced concrete bottom slab. Dog house manholes used for air and vacuum release valves shall have gravel bottom.

### **9.04 Brick and Mortar**

- A. Brick used as part of manhole construction shall be either solid or cored, medium hard or better, Grade MA conforming to ASTM C-32 for sewer and manhole brick.
- B. Mortar used as part of manhole construction shall be comprised of one (1) part Portland cement to two (2) parts clean sand. The sand shall conform to ASTM C-144.
- C. Water shall be clean, potable and free from deleterious amounts of alkalis, acids and organic matter.

### **9.05 Frames and Covers**

- A. Manhole rims, toe pockets, frames and covers shall be cast iron conforming to ASTM A-48 for Class 35B Gray Iron Castings.
- B. Manhole frames and covers shall be a nominal twenty-four (24") inches in diameter and weigh not less than 370 pounds.
- C. Manhole covers shall have the word "SEWER", cast on top in letters two (2") inches high.
- D. Manhole frames and covers shall be thoroughly cleaned and painted or coated with a bituminous paint. Defective castings that have been plugged or otherwise treated shall not be used.

- E. Manhole covers required to be bolt-down shall be secured with not less than four (4) stainless steel bolts as provided by the manufacturer.
- F. Covers situated in paved areas shall be raised to finished grade using ~~no more than five (5) courses of brick and mortar.~~ concrete risers with flexible EPDM Rubber Seal
- G. Covers situated in non-paved areas shall be integrally cast in the top cone section.
- H. Acceptable Manufacturers:
- Us Foundry, Model: 223 BN
  - Neenah, Model: R-1423-BN
  - East Jordan, Model: V1349

**SECTION 10: CAST-IN-PLACE CONCRETE****10.01 Concrete Design**

- A. Concrete mix design shall be in accordance with ACI 318-89.
  - 1. 28-Day Strength: 4,000 psi, unless otherwise noted.
  - 2. Type: Normal Weight
  - 3. Slump Range: 3 inch to 5 inch
  - 4. Weight: 135 pcf to 160 pcf
  - 5. Air Content: 5% to 7%
  - 6. Water-Cement Ratio: 0.45 Maximum
  - 7. Fly Ash: If Type I cement is used
  - 8. Chlorides: Do Not Use
  - 9. The use of admixtures shall require the approval of the City Engineer
- B. Concrete materials shall be in accordance with applicable ASTM standards.
  - 1. Portland Cement: Meeting ASTM C150, Type I/II natural color, domestic manufacturer. Use only one brand of cement throughout project.
  - 2. Fine Aggregates: Meeting ASTM C33-86.
  - 3. Coarse Aggregates: Meeting ASTM C33-86, No. 57 Stone.
  - 4. Water: Clean, potable and free from deleterious amounts of alkalis, acids and organic matter.

**10.02 Reinforcement**

- A. Reinforcement bars shall be in accordance with ASTM A615, Grade 60, deformed.
- B. Welded wire fabric shall be in accordance with ASTM A185. Use size as indicated on drawings.
- C. Bar supports, chairs and spacers shall comply with the CRSI Manual for Placing Reinforcing Bars.
- D. Reinforcement shall be secured in proper position using No. 16-1/2 or No. 16 gauge black soft-annealed wire.

**10.03 Formwork**

- A. Forms shall be as follows.
  - 1. Pre-engineered steel
  - 2. Pre-engineered reinforced fiberglass

3. Lumber: No. 2 Southern Yellow Pine
  4. Plywood for exposed finish: HDO-EXT-APA overlay plywood or B-B Plyform-EXT-APA
  5. Plywood for unexposed finish: C-C Ext-APA
  6. Earth, provided earth is dry, level and stable.
- B. Form ties shall be break-back type with 5/8 inch removable vinyl sleeve or one (1") inch diameter break-back cone type.

**10.04 Curing and Sealing Compounds**

- A. Moisture retaining cover shall meet ASTM C171-69 (1980): Waterproof paper, polyethylene film or burlap.
- B. Curing and sealing compound shall meet ASTM C309-81, Type 1, Class B: Clear acrylic base.

**10.05 Epoxy Bonding Agent**

- A. The use of an epoxy, bonding agent shall require the approval of the City Engineer.
- B. A bonding agent shall be used during the placement of reinforcing steel into existing concrete and shall be of a two (2) component, 100% epoxy resin adhesive system.

**10.06 Acrylic Latex Bonding Agent**

- A. The use of an acrylic, latex, bonding agent shall require the approval of the City Engineer.
- B. A bonding agent shall be used as an aid in applying a concrete surface patch or finish to existing concrete and shall be an acrylic polymer emulsion base chemical bonding system.

**SECTION 11: MASONRY AND GROUT****11.01 Mortar and Grout Materials**

- A. Portland Cement shall meet ASTM C150, Type I, natural color, domestic manufacturer. Use only one brand of cement throughout project.
- B. Masonry cement shall meet ASTM C91-89, non-staining, 22% maximum air content by volume.
- C. Hydrated lime shall meet ASTM C207-79 (1988), Type S.
- D. Aggregates for mortar shall meet ASTM C144-87 and ASTM C404-87, size 2 natural and shall be clean, hard and washed sand.
- E. Aggregates for cement grout shall meet ASTM C404-87, fine aggregate, size 1.
- F. Water reducing and plasticizing admixtures are acceptable.
- G. Admixtures containing calcium chloride shall be prohibited.
- H. Water shall be clean, potable and free from deleterious amounts of alkalis, acids and organic matter.
- I. Non-shrink Grout: Submit products for approval by City Engineer.

**11.02 Mortar and Grout Proportions**

- A. Proportion materials by volume in accordance with ASTM C270-88a or as follows:
  - 1. Mortar: One (1) part Masonry cement to ½ part Portland cement to aggregate proportioned at not less than 2-1/4 nor more than three (3) times the volume of ~~ementious~~ementitious material used.
  - 2. Grout: One (1) part Portland cement and ¼ to ½ parts hydrated lime to aggregate proportioned at not less than three (3) times the combined volume cement and lime used.

**11.03 Concrete Masonry Units**

- A. Concrete masonry units shall be in accordance with ASTM C90-85, light-weight, Grade N, Type 1.
- B. Concrete masonry units shall have a nominal face dimension of 8" x 8" x16" or 8" x 12" x16".
- C. Concrete masonry units shall have a minimum compressive strength of 2,500 psi, based on net area.
- D. Concrete masonry units damaged in any manner shall not be used.

**11.04 Joint Reinforcement**

- A. Horizontal joints between concrete masonry units shall be reinforced as follows:



1. Use cold drawn wire meeting ASTM A82-88.
2. Longitudinal rods shall be nine (9) gauge galvanized deformed wires with nine (9) gauge galvanized cross wires welded to form triangular style pattern.
3. Width of reinforcement shall be two (2") inches less than the total wall thickness.
4. Provide reinforcement in ten (10') foot lengths with prefabricated corners and tees at intersecting walls of same design and finish.

**SECTION 12: ENVIRONMENTAL COATINGS**

**12.01 Materials Requiring Coatings**

- A. Materials for buried surface shall be coated as indicated in their respective section.
- B. The following materials shall have exterior coatings manufacturer applied or field applied.
  - 1. Piping and appurtenances
  - 2. Supports
  - 3. Pumps
  - 4. Valves
  - 5. Equipment and appurtenances
- C. The following materials shall be lined by the manufacturer or field applied:
  - 1. Manhole intersected by a sanitary sewer force main and next downstream manhole.
  - 2. Lift station wet well and slab area above wet well.

**12.02 Coating Schedule**

A. Non-Submerged Ferrous Metal

Minimum Surface Preparation: SSPC – SP6

Generic System Type: Aliphatic Polyurethane

Coat No.	Induron		Tnemec	
	DFT	Product	DFT	Product
1	3.0	P-14	2.0	#69
2	3.0	Armorgaurd	2.0	#69
3	2.0	5500	2.0	#74

B. Submerged Ferrous Metal

Minimum Surface Preparation: SSPC – SP10

Generic System Type: Polyamide Epoxy

Coat No.	Induron		Tnemec	
	DFT	Product	DFT	Product
1	5.0	PE-54	5.0	#20 P-Pox

2	5.0	PE-54	5.0	#20 P-Pox
---	-----	-------	-----	-----------

C. Non-Submerged Non-Ferrous and Galvanized Metal

Minimum Surface Preparation: SSPC – SP6 (non-ferrous); SP1 (galvanized)

Generic System Type: Aliphatic Polyurethane

Coat No.	Induron		Tnemec	
	DFT	Product	DFT	Product
1	0.5	VW Prime	5.0	#69
2	2.0	5500	2.0	#74

D. Submerged Non-Ferrous and Galvanized Metal

Minimum Surface Preparation: SSPC – SP10 (non-ferrous); galvanized per coating manufacturer.

Generic System Type: Polyamide Epoxy

Coat No.	Induron		Tnemec	
	DFT	Product	DFT	Product
1	0.5	VW Prime	5.0	#69-1211
2	5.0	PE-54	5.0	#69

E. Acceptable Manufacturers: Acceptable manufacturers are as follows:

- Induron
- Tnemec
- Carboline
- Sherwin Williams

**12.03 Manhole and Wet Well Lining**

- C. Line existing concrete manhole with a modified aliphatic amine epoxy mortar or aggregate filled epoxy coating system or other coating system approved by the City Engineer.
- D. Materials required for concrete surface preparation/restoration, lining and finishing shall be supplied by the same manufacturer.
- E. Line new manhole, wet well and underside of slab over wet well with an integrally cast polyvinyl chloride or high density polyethylene liner.

- F. Acceptable Manufacturers: Acceptable manufacturers are as follows:
- Madewell Mainstay ML-72 Microsilica and DS-5 Epoxy
  - Raven 705 CA Calcium Aluminate and 405 Epoxy
  - Sewpercoat
  - A-LOK Products, Inc. - Duraplate 100 (new manhole, wet well, slab integrally cast liner)
  - Agru America - AGRU Sure Grip (new manhole, wet well, slab integrally cast liner) as approved.

**SECTION 13: MISCELLANEOUS MATERIALS****13.01 Stabilization Stone**

- A. Stabilization stone shall be No. 57 size and conform to ASTM C33-78 unless noted otherwise.
- B. Maximum stone size shall be 1-½ inches unless noted otherwise.
- C. Stone shall be clean, tough, uniform quality, durable fragments of crushed rock, free from flat, elongated, soft or disintegrated pieces, or other objectionable matter occurring either free or as coating on stone.

**13.01 Detectable Underground Utility Marking Tape**

- A. Wire shall have a minimum overall gage of 10 gauge mils.
- B. Tape shall be color coded in accordance with the American Public Works Association as follows:
  - 1. “Blue” for potable water and associated lines.
  - 2. “Green” for sanitary sewer and associated lines.
  - 3. Acceptable Manufacturers: Acceptable manufacturers as approved.

**13.02 Other Materials**

Materials not covered in Division III, Material Requirements shall be in accordance with the approved plans.

**SECTION 1: GENERAL****1.01 Contractor**

- A. A licensed Utility Contractor shall install any underground utility or component thereof.
- B. Prior to commencing construction activities on a City approved project, the City Clerk or System Superintendent shall receive a copy of the Utility Contractor's License.

**1.02 Utility Notification**

- A. The Official Code of Georgia, Title 25, Chapter 9 requires that existing utilities be located in the proposed work area prior to commencing any clearing, grading or excavation activity.
- B. The Utilities Protection Center can be reached at 811.
- C. The Utilities Protection Center shall be notified at least three (3) business days prior to commencing work.

**1.03 Work Commencement**

- A. Clearing and grubbing activities shall not commence on any project until local issuing authority has issued a Land Disturbance Activity Permit.
- B. Work on a water distribution system and/or sanitary sewerage system shall not begin until the City approves the development plans.
- C. The City Engineer shall receive a 48-hour notice prior to commencing construction activities on a water distribution system and/or sanitary sewerage system.
- D. A set of plans stamped approved by the City shall be present on the job site during all phases of construction of the water distribution system and/or the sanitary sewerage system.
- E. The installation of water distribution piping shall not begin until curb and gutter has been installed, if applicable.

**1.04 Miscellaneous Standards:**

Construction standards not covered in Division IV, Construction Standards, shall be in accordance with the approved plans. Construction should comply with the Department of Labor, Occupational Safety and Health Administration, 29 Code of Federal Regulations Part 1926, Subpart P, and revised July 1, 1995.

**SECTION 2: MATERIAL DISTRIBUTION****2.01 General**

- A. Work covered by this section shall include all labor, equipment and accessories required to distribute material.
- B. All materials installed as part of an extension to the existing water distribution system and sanitary sewerage system shall be new.

**2.02 Delivery:**

Equipment and facilities shall be furnished for unloading and distributing pipe, equipment and materials.

**2.03 Handling**

- A. Pipe shall be handled by use of forklift or excavator using choker straps or cable.
- B. Any pipe, equipment or material dropped or dumped during handling procedures shall be subject to rejection by the City without further justification.

**2.04 Storage**

- A. Pipe shall not be strung more than 1,000 feet beyond the point where pipe is being laid.
- B. Drainage ditches shall not be obstructed.
- C. Necessary arrangements shall be made to store pipe, fittings, valves and accessories that cannot be distributed along the route.

**2.05 Maintenance and Protection**

- A. The contractor shall be responsible for maintenance and protection of all pipe, equipment and material.
- B. All equipment shall be boxed, crated or otherwise completely enclosed and protected during transportation, handling and storage.
- C. Equipment shall be stored above ground level and adequately supported on wood blocking or other approved support material.
- D. All equipment shall be protected from exposure to elements and shall be kept dry at all times.
- E. Pumps, motors, valves, control panels, instrumentation, electrical equipment and other equipment having anti-friction or sleeve bearings shall be stored in a weather-tight enclosure which is maintained at a minimum air temperature of 60°F.
- F. Any pipe, equipment or material damaged by impact, vibration, abrasion, discoloration or other damage shall be repaired in accordance to manufacturer instructions or replaced at the discretion of the City.

**SECTION 3: SITE PREPARATION****3.02 Clearing and Grubbing**

- A. Prior to commencing clearing activities, areas designated by the plans to be cleared shall be demarcated using survey ribbon, stakes or other suitable means.
- B. In areas to be cleared, all trees, stumps, buried logs, brush, grass and other unsatisfactory materials shall be removed.
- C. Trees to remain in or near work area shall be protected from clearing activities.
- D. All damaged trees over three (3") inches in diameter shall be repaired by an experienced nursery expert.
- E. Tap roots and other projections exceeding 1-inch in diameter shall be grubbed out to a depth of at least 18 inches.
- F. All holes remaining after grubbing activities shall be filled with suitable material and properly compacted in layers to density required for in-place backfill.
- G. All materials cleared and grubbed shall be disposed of off-site in accordance with applicable local, state and federal regulations.
- H. Burning of any material or debris shall not be permitted on City property.
- I. Prior to and upon completion of clearing and grubbing activities, install erosion control and sedimentation measures as identified on the Erosion Control and Sedimentation Plan prepared by the Design Engineer.
- J. Prior to commencing any other job site activity, installed erosion control and sedimentation measures shall be inspected and approved by the local issuing authority.

**3.03 Topsoil Stockpiling**

- A. Remove topsoil to full depth encountered in areas to be graded and stockpile soil and install erosion control devices as indicated on drawings.
- B. Soil shall be placed such that the integrity of an excavation or proposed excavation is not jeopardized.
- C. Soil shall not be stockpiled against tree trunks.
- D. Stockpile shall be shaped to drain.

**3.04 Removing Pavement**

- A. Removal of pavement shall be performed so as not to endanger roadway activity. Work shall be coordinated and be in compliance with the appropriate road and highway agencies.
- B. Pavement shall be marked squarely and neatly to size of excavation.



- C. Pavement shall be scored and broke along the marked lines using a rotary saw and jackhammer. Pavement shall not be machine pulled for initial brake.
- D. Upon removal, pavement shall be loaded and disposed of off-site.
- E. Adjacent pavement damaged during construction shall be removed as described above.
- F. Driveways and sidewalks shall be removed to their full width from the edge of curb or road pavement to the nearest construction/control joint.
- G. Curbs shall be removed for the entire length from control joint to control joint.

**SECTION 4: EXCAVATION****4.01 Standards**

The following publications, referred to hereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

- ASTM D448 “Standard Classification for Sizes of Aggregate for Road and Bridge Construction.”
- ASTM D698 Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))
- ASTM D1556 Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
- ASTM D2487 Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- ASTM D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
- ASTM D3017 Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
- ASTM D4253 Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
- ASTM D4254 Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density

Any other testing required by these specifications and not specifically referenced to a standard shall be performed under ASTM or other appropriate standards as designated by the Engineer.

Reference herein or on the drawings to soil classifications shall be understood to be according to ASTM D2487, Classification of Soils for Engineering Purposes (Unified Soil Classification System).

**4.02 Definitions**

- A. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.
- B. Optimum Moisture: Percentage of water in a specific material at maximum density.
- C. Muck: Materials unsuitable for foundation because of organic content, saturation to the extent that it is somewhat fluid and must be moved by dragline, dredge or other special equipment are designated as muck.
- D. Unsuitable Material: Earth material unsatisfactory for its intended use and as classified by the soils technicians. In addition to organic matter, sod, muck, roots

and rubbish, highly plastic clay soils of the CH and MH descriptions and organic soils of the OL and OH descriptions, as defined in the United Soil Classification System shall be considered as unsuitable material.

- E. Suitable Material: Earth or materials designated as being suitable for their intended use by soils technicians or the soils engineer. Suitable material shall be designated as meeting the requirements of the Unified Soil Classification System types SW, GW, GC, SC, SM, ML, CI or as designated in these specifications.
- F. Select Material: Granular material to be used where indicated on the drawings or where specified herein consisting of soils conforming to the Unified Soil Classification types SW, SM, GW or GM or as otherwise approved by the Engineer as select fill. Select material shall contain no stones or rubble larger than 1 ½ inch in diameter.
- G. Crushed Stone (Gravel): No. 57 aggregate or equal conforming to ASTM C-33.
- H. Excavation: Excavation of every description regardless of materials encountered.

#### **4.03 Soil Excavation**

- A. Excavation shall include those measures necessary to establish grades indicated on drawings for utilities, structures and appurtenances.
- B. Excavated soil shall be placed in a location such that the integrity of the excavation is not jeopardized.
- C. Excavation walls shall be sloped or stepped in accordance with recognized industry standards.
- D. The Contractor shall assume the responsibility for design and construction of excavation shoring and bracing capable of supporting excavations and construction loads.
- E. The excavation shall provide space for foundation work and inspection.
- F. Excavations shall be covered in accordance with applicable regulations and/or barricaded and roped-off with identifying tape during work progress.

#### **4.04 Dewatering Trenches**

- A. Where groundwater is encountered, the Contractor shall make the effort necessary to secure a dry trench bottom before laying pipe.
- B. In sandy and in other suitable type soils, dewatering shall be done by well pointing.
- C. If, in the opinion of the Engineer, the Contractor has failed to obtain an absolutely dry trench bottom by insufficient use of all known methods of trench dewatering, the Engineer may order the Contractor to excavate below grade and place not less than 6

inches of graded crushed stone fill material over the trench bottom to form trench drains to suitable located sumps and the water removed by bailing or pumping.

- D. The graded crushed stone fill material shall be of such depth that there shall be no water in bell holes at the time of coupling pipe.
- E. All unsuitable excavated material must be properly disposed of in a manner acceptable to the Engineer and in a manner that will not adversely impact the environment.

#### **4.05 Crushed Stone Stabilization**

- A. Wherever the subgrade is by nature too soft or mucky, in the opinion of the Engineer, for the proper installation of the pipe, he may order the Contractor to undercut the trench and backfill with crusher run stone or crushed stone  $\frac{3}{4}$ -inch in size and less. The stone shall be brought to the subgrade required by the class of bedding for the particular location and compacted.
- B. All unsuitable excavated material must be properly disposed of in a manner acceptable to the Owner public works department in a manner that will not adversely impact the environment.

#### **4.06 Rock Excavation**

- A. Excavation shall include those measures necessary to establish grades indicated on drawings for utilities, structures and appurtenances.
- B. Rock shall be excavated to a minimum depth of six (6") inches below grades indicated on drawings.
- C. The Contractor shall be responsible for determining methods required for removal of rock or hard materials.
- D. Perform blasting only after receiving written approval from the City Engineer and regulatory agencies.
- E. A licensed explosive contractor shall perform blasting operations.
- F. Blasting operations shall be conducted in accordance with all local, state and federal regulations.
- G. Excavated rock shall not be used as backfill in the pipe trench.

#### **4.07 Pipe Trench Excavation**

- A. Pipe trenching shall comply with excavation and rock excavation specifications.
- B. Trench should be excavated to natural undisturbed soil.
- C. Where unsuitable material is encountered, over excavate through unsuitable material and backfill to required grade with No. 57 stone. The City Inspector shall determine depth of over excavation.

- D. Where encountered, remove rock to a minimum of six (6") inches below required bottom of trench elevation and backfill to required grade with No. 57 stone.
- E. Bottom of trenches shall be prepared so that the entire length of the pipe barrel is supported.
- F. Maintain trenches dry at all times using pumps, well points or other dewatering means.
- G. Limit trenching to not greater than 300 feet ahead of completely backfilled work.
- H. In populated areas, cover or barricade open trenches until completely backfilled.
- I. Open trenches shall be made safe at all times.

**SECTION 5: INSTALLATION****5.01 Pipe Bedding**

- A. PVC sewer shall be laid atop a minimum of four (4") inches of No. 57 stone. No. 57 stone shall be extended to the top of pipe. Stone shall be shovel sliced from beneath the pipe up to one-half (½) the pipe diameter. Bedding of PVC pipe shall be in accordance with ASTM D2321 as amended to date.
- B. DIP shall be bedded according to details No. 8.1 for water and No. 8.2 for sewer.
- C. Valves shall be laid atop a minimum of eight (8") inches of No. 57 stone. No. 57 stone shall be extended up to one-third (1/3) the valve diameter. Stone shall extend twelve (12") inches in all directions of valve. Stone shall be shovel sliced.
- D. Fire hydrants shall be set atop a minimum of eighteen (18") inches of No. 57 stone. Stone shall extend up six (6") inches above drain holes. Stone shall extend eighteen (18") inches to the sides of the hydrant.
- E. Yard hydrants shall be set atop a minimum of six (6") inches of No. 57 stone. Stone shall extend up six (6") inches above drain hole. Stone shall extend twelve (12") inches to the sides of the hydrant.
- F. Class D Bedding is not allowed for use with gravity sewers.
- G. Class I materials shall be used for bedding and haunching in all conditions. Class II, III, IV and V materials will not be permitted for bedding and haunching under any condition.
- H. Bedding material shall be used to provide uniform longitudinal support for the pipe. Trench shall be undercut to allow for a minimum of six inches (6") of bedding material. Bell holes shall be excavated in the bedding material to allow for unobstructed assembly of the joint, but care shall be taken to ensure that bell hole is no larger than necessary to accomplish proper joint assembly. After joint assembly, material shall be placed underground around the entire length of pipe and compacted. Compaction to the springline of the pipe shall be of the same material used in the bedding. Backfill with Class I, II, III or IV material shall then be carried to a point six inches (6") above the top of pipe, using hand tools for tamping, Class IV material will not be allowed in a wet ditch. If the remaining backfill material contains large particles, which could damage the pipe from impact during placement, the initial backfill shall be increased to twelve inches (12") above the top of the pipe. Puddling will not be allowed as a method of compaction. The remaining backfill shall be as specified in "General Backfill" paragraph of these specifications. Pipe shall have at least thirty inches (30") of cover before wheel loading and at least forty-eight inches (48") of cover before using heavy-duty tamping equipment such as a hydrohammer.

- I. Class I, II, III, IV and V materials are defined as follows:
- |           |   |
|-----------|---|
| Class I   | Angular ¼ to ¾-inches graded stone. Latest revision of ASTM C 33 - Gradation #67 (ASTM #67) or #57 (ASTM #57) are acceptable.   |
| Class II  | Coarse sands and gravels with maximum particle size of ¾-inches including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. |
| Class III | Fine sand and clayey (clay filled) gravels, including fine sands, sand-clay mixtures and gravel-clay mixtures.  |
| Class IV  | Silt, silty clays and clays, including inorganic clays and silts of medium to high plasticity and liquid limits.  |
| Class V   | This class includes organic soils as well as soils containing frozen earth, debris, rocks larger than 1½-inches in diameter, and other foreign materials.   |
- J. Ductile iron pipe for gravity sewers and force mains shall be laid as specified using the following type of bedding required for the depth of cover for the various sizes of pipe to be installed. Type 4 and 5 Bedding as shown and described in Ductile/Cast Iron Handbook - Fourth Addition Page 182-208 may be used for additional depths if approved by the Engineer.
1. Type 1 - Flat Bottom Trench: Flat bottom trench on undisturbed earth with excavation for Bells. Loose backfill shall be as specified in the “Selected Backfilling” and “General Backfilling” paragraphs.
  2. Type 2 - Flat Bottom Trench: Flat Bottom Trench on undisturbed earth with excavation for Bells. Lightly consolidated backfill to centerline of pipe, additional backfill shall be as specified in the “Select Backfilling” and “General Backfilling” Paragraphs.
  3. Type 3 - Loose Soil Bedding: Pipe bedded in 4-inch minimum Loose Soil. Backfill lightly consolidated to top of pipe. Additional Backfill shall be as specified in the “Select Backfill” and “General Backfill” Paragraphs.
  4. Cover: Maximum depth of cover for ductile iron pipe of the various classes and sizes to be installed are as shown on the following page.

Laying Condition - Maximum Depth of Cover (Feet)

Pipe Size	Pressure Class (PSI)	Nominal Thickness (Inch)	Type1	Type2	Type3
4"	350	0.25	53	61	69
6"	350	0.25	26	31	37
8"	350	0.25	16	20	25
10"	350	0.26	11	15	19
12"	350	0.28	10	15	19

K. Bedding Classes A, B, C or crush stone as described in ASTM C12 shall be used and carefully compacted for all rigid pipe provided the proper strength pipe is used with the specified bedding to support the anticipated load based on the type soil encountered and potential groundwater conditions. Class D bedding is not allowed for use with gravity sewer.

1. Class A Bedding: This bedding shall consist of a continuous concrete cradle conforming to the plan details.
2. Class B Bedding: Material shall be excavated to a depth of 12-inches below the bottom of the pipe grade and to a width equal to the external diameter of the pipe plus 1-foot. The excavated area shall be backfilled with select fill material to form a bed that is at least 15 percent of the pipe height above the lower face (invert) of the pipe. The material shall be thoroughly compacted to provide a firm uniform foundation. The foundation shall then be shaped (cradled) to fit the lower part of the pipe, and the pipe shall be laid on a 3-inch thick layer of suitable granular material. The Contractor shall ensure that the cradle is constructed at an elevation such that after placing the 3-inches of granular material in the cradle, the flow line elevation of the pipe is correct. Select fill material shall then be placed in 6-inch layers and compacted with mechanical tampers to at least 30 percent of the overall pipe height.

When the pipe foundation is entirely in new embankment constructed with select fill material, the 12-inch undercut will be waived.

3. Class C Bedding: This bedding shall consist of an earth or granular cradle of uniform density shaped to fit the lower part of the pipe for at least 10 percent of its overall height.



**5.02 Pipe, Fitting, Valve and Fire Hydrant Installation**

- A. Prior to placement, the interior of pipes, fittings and valves shall be cleaned free of dirt and debris.
- B. Pipe, fittings, valves and accessories shall not be laid or jointed while water is in the trench.
- C. Pipe, fittings, valves and accessories shall be lowered into their respective positions using an excavator with choker straps or cables. A slight hole shall be dug where pipes are to be jointed to relieve pipe bell of any load. Pipe barrel shall be supported for its entire length.
- D. Gravity flow pipe shall be laid to the consistent grade change as indicated on drawings and aligned straight using pipe laser or transit.
- E. Pressure flow pipe shall be aligned to follow route. Pipe alignment shall not be deflected greater than 75% of the manufacturer's recommended maximum deflection.
- F. Install compression type gaskets in accordance with manufacturer's instructions to ensure proper joint sealing.
- G. Pipe shall be jointed in accordance with manufacturer's instructions. The mating ends (bell and spigot) shall be thoroughly cleaned and soaped before jointing. The mating ends shall be aligned and shoved together using a steady force.
- H. Connections of fittings, valves and fire hydrants shall be with bolts and nuts as supplied with the component. Upon tightening, a minimum of two (2) bolt threads shall be exposed to ensure proper thread engagement.
- I. Retaining gland of mechanical joint shall be evenly spaced from the fitting or valve for its entire circumference upon installation.
- J. After jointing pipe, repair any damage to pipe's protective coating in accordance with manufacturer's instructions or replace pipe.
- K. Prior to jointing consecutive pipe, backfill previously jointed pipe with sufficient material to prevent movement.
- L. Place a plug in the open end of uncompleted laid piping at the end of each day.
- M. Any component of a piping system disturbed after installation may be required to be taken up and reinstalled.

**5.03 Thrust Blocking**

- A. Thrust blocking shall be installed at all bends, tees, valves, fire hydrants and points where thrust may develop in pressurized piping.

- B. Thrust blocking shall consist of cast-in-place concrete, tie rods, combinations thereof or other method approved by the City Engineer.
- C. Cast-in-place concrete blocking shall be formed to the required dimensions and installed against undisturbed earth. Blocking size may be increased based on soil bearing capacity.
- D. Concrete shall have a minimum 3,000 psi compressive strength at 28 days.
- E. Bolts and nuts shall be protected from concrete coverage.

**5.04 Manhole and Wet Well Installation**

- A. Manholes and Wet Wells shall be set atop a twelve (12) inch bed of No. 57 stone that extends a minimum of twelve (12) inches beyond all exterior sides.
- B. The bedding of No. 57 stone may be replaced with a six (6) inch layer of steel reinforced cast-in-place concrete.
- C. The bed shall be prepared so that the manhole is set level.
- D. Manhole sections shall be handled with lifting straps or hooked cables using a minimum of two (2) of the manufactured manhole lifting holes.
- E. Manhole sections shall be positioned such that influent and effluent piping enter the center of their respective opening not pinching the rubber boot seal. Pipe shall not rest on invert of opening.
- F. Stainless steel boot clamps shall be tightened in accordance with the manufacturer's instructions.
- G. Annulus between pipe and rubber boot shall be grouted with non-shrink grout prior to commencing backfill operations.
- H. An invert shall be built in each manhole to transition flow from the influent pipe to the effluent pipe.
- I. The built invert shall be shaped as a "U" channel and match the inverts of the influent and effluent pipes.
- J. Inverts shall be built of cast-in-place concrete or brick and mortar. Note that brick and mortar inverts shall be finished on top with a ½-inch layer of mortar.
- K. Prior to jointing consecutive sections, tongue-and-grooved ends shall be cleaned free of dirt and debris.
- L. Tongue-and-grooved ends shall be fitted with preformed gasket sealing compound.
- M. Manhole sections shall be stacked level and plumb at all times.
- N. Manhole sections shall be stacked such that interior steps are vertically aligned.

- O. Manhole lifting holes shall be sealed using non-shrink grout throughout the entire depth of hole.
- P. Upon bringing manhole to finished grade with brick and mortar (if applicable), set ring and cover with non-shrink grout.
- Q. Manholes shall be kept free of dirt and debris.
- R. Drop manholes will be used where there is greater than two (2') foot drop between influent and effluent pipe. See Detail Nos. 21.2 and 25.2.
- S. Doghouse manholes shall be placed in accordance to Detail No. 21.3.

**5.05 Meter Box and Vault Installation**

- A. Meter boxes shall be installed as follows.
  - 1. Meter box shall be set atop undisturbed or compacted soil and 12" of 57 stone . Backfill around box shall be compacted using a hand tamp.
  - 2. Top of meter box shall be set flush with finished grade. Meter box shall not be set in a depression.
  - 3. Soil level within meter box shall be even with the bottom of the meter assembly and free of debris.
- B. Meter vaults shall be installed as follows:
  - 1. Meter vault shall be bedded atop undisturbed or compacted soil. Backfill around vault shall be compacted in accordance with Division IV, Section 6.
  - 2. Vaults shall be set atop a minimum (12") inch layer of No. 57 stone that extends a minimum of twelve (12") inches beyond the outside face of all walls.
  - 3. The bedding of No. 57 stone may be replaced with a six (6") inch layer of steel reinforced cast-in-place concrete.
  - 4. The stone filled sump beneath vault drain shall be fully encased in a geofabric membrane.
  - 5. The bed shall be prepared so that vault is set level.
  - 6. Annulus between pipe and wall openings shall have a flexible water tight seal installed prior to commencing backfill operations.
  - 7. Prior to installing vault cover, abutting ends shall be cleaned free of dirt and debris.
  - 8. Abutting ends of vault and cover shall be fitted with preformed gasket sealing compound.

9. Vault lid lifting holes shall be sealed using non-shrink grout throughout the entire depth of hole.
10. Vault shall be kept free of dirt and debris.
11. Top of vault lid shall be set three (3") inches above finished grade. Vault shall not be set in a depression.

**5.06 Borings and Casings**

- A. Construction shall be performed so as not to interfere with, interrupt or endanger roadway and railway surface and activity thereon, and minimize movement of the surface, structures and utilities above and in the vicinity of the casing.
- B. Work shall be coordinated and be in compliance with the appropriate highway and railroad agencies and their policies.
- C. Contractor shall monitor ground movement during construction. Contractor shall be responsible for all settlement or up heave resulting from casing operations and shall repair and restore moved or damaged property to its original condition.
- D. Work shall not interfere with storm water drainage devices. Storm water and/or groundwater shall be controlled and shall not enter any excavation or boring.
- E. Boring and jacking operations shall be performed from an excavation located at one end of the section to be bored. The excavation shall be kept dry at all times.
- F. Boring and jacking of casings shall be completed by dry auger boring without jetting, sluicing or wet boring. Free boring (boring without casing) shall be prohibited. The boring diameter shall be essentially the same as the outside diameter of the casing.
- G. Boring may be advanced slightly ahead of jacked casing in a manner that will prevent voids forming in the earth around the perimeter of the casing. Horizontal and vertical alignment of the casing shall be frequently checked.
- H. When rock is encountered, the Utility Contractor at his option may continue to install the casing by removing the rock through the casing. Should the City or other governing agencies determine the rock cannot be removed through the casing then an alternate means of crossing shall be determined.
- I. Casings damaged during installation shall be repaired. Should the damaged casing prevent the installation of the pipe, then that boring and casing shall be abandoned.
- J. Casing lengths shall be as long as practical. Jointing shall be accomplished by single grooved butt welding for the entire circumference of the pipe.
- K. Casing shall be cleaned free of dirt and debris prior to installing pipe.
- L. After casing installation is complete, the proposed pipe can be installed. The pipe shall be installed to proper grade and alignment according to the contract documents.

- M. Pipe shall be supported within casing to limit radial movement to a maximum of one (1") inch.
- N. A minimum of ~~two~~ **(12)** spacer shall be provided for each nominal section of pipe. Casing spacers shall be attached to the pipe at a maximum of ~~18' to 20'~~ **10'** intervals.
- O. The annulus between the pipe and casing, at each end, shall be sealed using brick and mortar.

**5.07 Pipe and Valve Identification**

- A. The marking of utilities immediately after installation is required as detailed in the Official Code of Georgia, Code 25-9 "Georgia Utility Facility Protection Act".
- B. Install ~~mylar detection tape and/or other~~ detectable wire, during backfill operations, above nonferrous pipe or any pipe having more than six (6) feet of cover. ~~Detection tape or w~~ **10 AWG Wire** shall be installed centered, approximately 12 to 18 inches above the pipe.
- C. Service lines and valves shall be locatable via marked curbing or other City approved method. Adjacent street curb to service line and valves shall be marked via saw-cut as follows. Curb markings shall be a minimum of four (4") inches in height.
  - 1. "W" for water service location
  - 2. "V" for water valve location
  - 3. "S" for sewer service location

**SECTION 6: BACKFILL AND COMPACTION****6.01 Backfill**

- A. Excavations shall be backfilled using suitable material meeting the requirements of Class I, II or III backfill material as defined by ASTM D2487.
- B. Place no backfill until any poured concrete has developed design compressive strength.
- C. Place backfill against below grade walls in uniform level lifts to prevent wedging action.
- D. Backfill shall not be placed on surfaces that are saturated, frozen or containing frost or ice.
- E. Place backfill in excavations as follows.
  - 1. Backfill in loose lifts not exceeding six (6") inches when compacting using manual tamping devices (jumping jack).
  - 2. Backfill in loose lifts not exceeding twelve (12") inches when compacting using vibrating/ramming devices (sheep-foot vibratory roller).
- F. Any settlement shall be filled and compacted to conform with adjacent surfaces.
- G. Material remaining after completion of backfill operations shall be disposed off-site.

**6.02 Compaction**

- A. Backfill shall be compacted using manual tamping devices or vibrating/ramming devices.
- B. Use manual tamping devices as follows.
  - 1. When area is inaccessible to vibrating devices and within five (5') feet of below grade walls (includes manholes).
  - 2. From bottom of pipe trench to twelve (12") inches above the top of pipe.
- C. Compaction requirements are as follows.
  - 1. Backfill, beneath and within ten (10') feet of the building line of any structure, proposed structure or other area determined by the City, shall be compacted for the entire depth to a minimum of 100% of the maximum dry density as determined by a Standard Proctor Analysis.
  - 2. Backfill, beneath any road, walk, proposed improvement or area determined by the City shall be compacted for the entire depth to a minimum of 100% of the maximum dry density as determined by a Standard Proctor Analysis.

3. Backfill in road right-of-way and not described above shall be compacted the entire depth to a minimum of 95% of the maximum dry density as determined by a Standard Proctor Analysis.
4. Backfill not described above shall be compacted for the entire depth to a minimum of 90% of the maximum dry density as determined by a Standard Proctor Analysis.

**6.03 Compaction Testing**

- A. Soil samples from the proposed construction area shall be analyzed for maximum dry density in accordance with ASTM 698 – Method C.
- B. The extent of testing required shall be dependent upon soil conditions, Contractor's methods of construction and regulatory requirements.
- C. Minimum compaction testing shall be as follows.
  1. Backfill in excavations shall be tested at 2-foot lift intervals per 1,000 square feet of fill or as deemed necessary by the City Inspector.
  2. Backfill in trench excavations shall be tested at 2-foot intervals per 400 linear feet of fill or as deemed necessary by the City Inspector.

**SECTION 7: SITE COMPLETION****7.01 Grading**

- A. Grade areas to lines and elevations indicated on drawings or to surrounding surface grades.
- B. Graded areas shall be within 0.10 foot of required subgrade elevation and shall not permit the ponding of water.
- C. In areas to receive grassing, redistribute stockpiled topsoil over graded areas to a minimum depth of four (4") inches. Provide additional topsoil to achieve required depth.
- D. Where finish grade meets or abuts curbs, walks or pavement, uphill grades shall be slightly higher than curb or pavement to permit drainage.
- E. Excess soil and debris shall be removed from the jobsite.
- F. Stabilize site in accordance with the approved soil erosion and sedimentation control plan.

**7.02 Replacing Pavement**

- A. Existing pavement shall be replaced in accordance to the standards required by Dawson County Department of Transportation and/or the Georgia Department of Transportation.
- B. Construction shall be performed so as not to endanger roadway activity. Work shall be coordinated and be in compliance with the appropriate road and highway agencies.
- C. Pavement shall be reinstalled immediately after completing backfill operations and compaction requirements.
- D. Driveways and sidewalks shall be replaced to their full width from the edge of curb or road pavement to the nearest construction/control joint.
- E. Curbs shall be replaced for the entire length from control joint to control joint.
- F. Removed pavement shall be disposed offsite.
- G. Use Detail Nos. 28.1 and 29.1 when applicable.



**SECTION 8: TESTING****8.01 General**

- A. The following tests shall be performed as indicated at the expense of the Developer/Utility Contractor.
- B. Water distribution systems and/or sanitary sewer systems failing the required tests shall be repaired at the expense of the Developer/Utility Contractor.

**8.02 Hydrostatic (Water Main and Force Main)**

- A. Water distribution piping and force mains shall be subjected to a hydrostatic pressure test in accordance with AWWA Standard C600, latest revision.
- B. Combination air/vacuum release valves, corporations and curb stops and fire hydrant shall be installed at the high point of elevation in the pipe line system to release air.
- C. Pipe shall be filled with potable water to a pressure of ~~250~~200 psi and pipe pressure allowed to stabilize.
- D. Pressure shall be maintained, without the addition of water, for a minimum period of two (2) hours.
- E. Test shall be considered acceptable when a water pressure of ~~250~~200 psi is maintained for a period of two (2) hours.

**8.03 Air Pressure (Gravity Flow)**

- A. All gravity sewer pipe shall be subjected to a low air pressure test in accordance with Unibell UNI-B-6-90.
- B. Pipe shall be free of dirt and debris.
- C. During testing, personnel shall not be permitted in manholes connected to pipe being testing.
- D. The internal air pressure of the pipe shall be raised to approximately ~~10-15~~5-9 psi.
- E. The test shall begin when the stabilized pressure is at a minimum of ~~105~~ psi.
- F. Test shall be considered acceptable when an air pressure equivalent to the stabilized pressure is maintained for a period of 10 minutes.

**8.04 Televising (Gravity Flow)**

- A. Sanitary sewers shall be televised with dye to ensure integrity prior to final plat approved and prior to maintenance bond release.
- B. Pipe shall be free of dirt and debris.
- C. Televising cable attached to a video monitor shall be directed through pipe to view for the following deficiencies.

1. Cracks in pipe and liner material
  2. Rolled gaskets
  3. Leaking joints
  4. Deviations from line and grade – Sewer pipe shall be viewed from one manhole to the next adjacent illuminated manhole. Pipeline shall show more than three-quarters (3/4) of the opening at the opposite end of the pipeline.
  5. Pipe deformations
  6. Other deficiencies.
- D. Test shall be considered acceptable when the televised pipe does not reveal the deficiencies indicated in Item C.

**8.05 Mandrel (Gravity Flow)**

- A. Sanitary sewers shall be tested for deformation using a mandrel in accordance with ASTM D 3034 prior to final plat approval and prior to maintenance bond release.-
- B. Pipe shall be tested when backfill and compaction are complete. Pipe shall be free of dirt and debris.
- C. Chords shall be attached to each end of the mandrel. One chord shall be passed through the section of pipe being tested. One chord shall be used to retrieve the mandrel should the pipe not allow passage.
- D. The mandrel shall be sized such that its outside dimension is 5% less than the actual inside diameter of the pipe.
- E. Test shall be considered acceptable when mandrel passes freely through pipe.

**8.06 Static Water Level (Wet Well)**

- A. Test wet well for infiltration/exfiltration after receiving field approval of wet well lining installation.
- B. Visually inspected wet well for infiltration.
- C. Fill wet well with potable water to a level equal to the high water alarm elevation and mark that elevation.
- D. Test shall be considered acceptable when a water level drop of less than one-quarter (1/4”) inch is measured after a 24 hour period.
- E. Wet well sections exhibiting infiltration/exfiltration shall be replaced.

**8.07 Vacuum Test (Sewer Manhole)**

A. All manholes shall be vacuum tested in accordance with ASTM C 1244, “Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test” as amended to date. All pipes entering the manhole should be plugged, taking care to securely place the plug from being drawn into the manhole. The test head shall be placed near the top of the manhole frame and cover and the seal inflated in accordance with the manufacturer's recommendations. A vacuum pump of ten-inches (10") of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time shall be measured for the vacuum to drop to nine-inches (9"). Following are minimum allowable test times for manhole acceptance at the specified vacuum drop:

Depth (Feet)	Time (Seconds)		
	48-inch Diameter	60-inch Diameter	72-inch Diameter
4	10	13	16
8	20	26	33
12	30	39	49
16	40	52	67
20	50	65	81
24	59	78	97
Add 2-ft. more depth	5	6.66	8

Note: These numbers have been taken from ASTM C 1244-93 (reapproved 2000).

1. If the manhole fails the initial test, repairs and adjustments necessary due to extenuating circumstances (i.e. pipe joint, plug sealing) should be made. Retesting shall proceed until a satisfactory test is obtained.
2. A final visual inspection shall be made by the Inspector and contractor. Any deficiencies noticed shall be repaired accordingly.
3. The cost for testing each manhole shall be included in the cost per vertical foot to install the pre-cast concrete manhole. Retest cost required due to defects in the Contractor’s work, shall be paid by the Contract.
4. Testing shall be performed on all new or refurbished manholes.

**SECTION 9: DISINFECTION****9.01 General**

- A. All newly installed water distribution piping and piping affected during construction shall be disinfected in accordance with AWWA C651.
- B. All disinfection procedures shall be coordinated with the City inspector.
- C. City personnel shall operate existing valves during disinfection procedures.
- D. The City shall be involved in disinfecting the following in-place piping.
  - 1. Water mains.
  - 2. Service connections up to and including water meters and back flow prevention devices.
- E. The ~~City~~-contractor shall supply an appropriate chlorine solution and complete disinfection procedures.
- F. Water for disinfection shall be provided by the City at no expense to the contractor. Excessive use of water during disinfection procedures, as determined by the City, may be reason for charges to be levied against the contractor.
- G. Collection and testing of water samples shall be performed by the City.
- H. No water piping system shall be placed in service until written approval is received from the City Engineer.
- I. The Contractor shall be responsible for preventing soil erosion associated with disinfecting procedures.

**9.02 Initial Flushing**

- A. Prior to disinfection, the Contractor shall flush piping system with sufficient water to create a minimum velocity in the pipe of 2.5 feet per second (fps).
- B. Flushing shall be performed by pushing water through a laid section of pipe with one end of section open to the atmosphere above existing grade.
- C. Piping shall be flushed until water sampled from the piping yields a turbidity measurement of 0.5 NTUs or less.
- D. All piping and components associated with service connections shall be thoroughly flushed with fresh potable water prior to installation.
- E. Upon completion of flushing, laid pipe with one end open to atmosphere shall be re-laid to depth indicated in Construction Drawings.

**9.03 Chlorination and Flushing**

- A. The ~~City~~-contractor shall introduce a chlorine solution having a concentration of 50 to 100 milligrams per liter (mg/l) into the water main.
- B. Upon introducing the chlorine solution, all valves associated with the water main shall be fully operated to ensure complete disinfection.
- C. All piping and components associated with service connections shall be thoroughly flushed with a 200 mg/l chlorine solution.
- D. Water main shall have a minimum 25 mg/l chlorine residual after a 24-hour retention period.
- E. After the 24-hour retention period, flush heavy chlorinated water from system through fire hydrants. When necessary, the Contractor shall provide sodium thiosulfate to neutralize the chlorine residual. Contractor shall apply sodium thiosulfate in accordance with manufacturer's recommendations.
- F. Flushing shall continue until water in main has a residual chlorine concentration of 1 mg/l.
- G. Water usage for filling and flushing will be billed at \$6.78 per thousand (1,000) gallons based upon a minimum of four (4) times the volume of the pipe. (Example: 5,000 LF 8" pipe x 2.89 gallons/feet x \$6.78/thousand gallons x 4 = \$391.88)

**9.04 Disinfection Testing**

- A. After chlorination and flushing is complete, the City shall collect water samples from the system and perform 24-hour analyses in accordance with the Georgia Rules for Safe Drinking Water.
- B. After the initial 24-hour analysis is complete and acceptable, a volume of water determined by the City Inspector shall be flushed from the water system and water samples shall be collected for a second 24-hour analysis.
- C. After the second 24-hour analysis is complete and acceptable, the water main may be put into service.
- D. Disinfection of the water main shall be repeated until testing is acceptable.
- E. Laboratory analyses shall be performed and certified by a laboratory selected by the City.

**SECTION 10: CONCRETE****10.01 Formwork**

- A. Formwork shall comply with ACI 347R-94.
- B. Contractor shall be responsible for design and construction of concrete formwork capable of supporting construction loads. Forms shall be as follows.
  - 1. Pre-engineered steel
  - 2. Pre-engineered reinforced fiberglass
  - 3. Wood
  - 4. Earth
- C. Construct formwork to lines and elevations as shown on drawings.
- D. Construct forms to be removed without hammering or prying against concrete.
- E. Plug holes in existing forms to prevent leakage of cement.
- F. Clean forms of dirt and debris prior to each use.
- G. Form ties shall be as follows:
  - 1. Break-back type with  $\frac{5}{8}$ -inch removable sleeve or 1-inch cone type
  - 2. For retaining walls and walls below liquid level, provide ties with positive water stop projection at center of wall.
- H. Prior to placement of reinforcing steel, apply form release agent to formwork. Release agent shall be evenly applied and compatible with type form being used.
- I. Construct bulkheads with shear keys at separation of pours.
- J. Shear key width shall be  $\frac{1}{3}$  of the wall or slab thickness.
- K. Removal of formwork shall take place only after concrete has developed sufficient strength to support itself and resist damage during removal.
- L. Forms used below grade shall be removed prior to backfill.

**10.02 Steel Reinforcement**

- A. Shop fabricate reinforcement to shape and dimensions as indicated on drawings.
- B. Use no bars or wire mesh with kinks or bends not shown on the drawings.
- C. Secure reinforcement in forms in accordance with the drawings, ACI 315, ACI 318 and CRSI "Recommended Practice for Placing Reinforcing Bars".
- D. Steel reinforcement shall set atop concrete bricks and/or be spaced using steel highchairs. When highchairs are used as a form spacer, the highchair feet shall be plastic dipped.

- E. Concrete coverage over reinforcing shall be as follows:
  - 1. Concrete cast against earth.....3 inches
  - 2. Formed concrete exposed to earth or weather.....2 inches
  - 3. Slabs and walls exposed to wet conditions.....2 inches
  - 4. Interior slabs and walls..... $\frac{3}{4}$  inch
- F. Splice reinforcement a minimum of 48 times (x) bar diameter. Mechanical splices shall be prohibited.
- G. Steel reinforcement, at the time cement is placed, shall be free of dirt, rust and debris. Reinforcement with flaking rust shall not be used.
- H. Conduits and pipes shall have same concrete coverage as reinforcing steel.
- I. Tie wire shall be used to secure reinforcing.
- J. Joints in wire mesh shall be lapped one wire spacing plus two (2") inches. Wire mesh shall have one (1") inch of concrete cover at forms.

**10.03 Placement**

- A. Place concrete in accordance with ACI 301-89, Chapter 8.
- B. Place no concrete until all embedded items and reinforcement have been placed in accordance with the plans.
- C. A City Inspector shall approve formwork layout and placement of steel reinforcement prior to placing concrete. Provide 24-hour notice prior to placing concrete.
- D. Concrete shall not be placed on loose, saturated or frozen soil.
- E. Concrete shall not be placed in water unless approved by the City Engineer.
- F. Concrete shall be placed only when ambient temperature is at 40° F and rising or place concrete in accordance with ACI 306-R88.
- G. During hot weather (>80°F), place concrete in accordance with ACI 305-R89.
- H. Saw control joints as soon as concrete can be traveled by foot without leaving impressions. Saw joint depth shall be  $\frac{1}{4}$  of the slab depth.
- I. Consolidate all placed concrete with vibrator of suitable vibrations per minute.
- J. Do not pull or push concrete with vibrator.
- K. Do not drop concrete more than four (4') vertical feet.

**10.04 Finishing**

- A. Screed floor slabs or tops of walls by use of straight edge or screed board.
- B. Concrete shall be finished as follows:

1. Interior slab to receive setting bed.....float finish
2. Interior slab exposed.....trowel finish
3. Exterior slab exposed.....broom finish
4. Exterior wall/column exposed.....rubbed finish
5. Unexposed concrete.....form finish

**10.05 Curing**

- A. Prevent freshly placed concrete from premature drying and protect from excessive hot or cold temperatures.
- B. Maintain freshly placed concrete, without drying, at a relatively constant temperature.
- C. Begin curing after placement and finishing of concrete as soon as free water has disappeared from concrete surface.
- D. Curing methods shall be by the continuous application of water or by applying a liquid membrane forming curing-sealing compound to the fresh concrete surface.
  1. Curing by the continuous application of water shall occur for a period of not less than 72 hours.
  2. After application of liquid membrane forming curing-sealing compound, maintain continuity of coating and recoat areas damaged during curing period. Curing period shall be not less than 72 hours.
- E. Do not apply liquid curing sealing compound to concrete that is to be finished with a coating material such as paint, flooring material, etc.



**SECTION 11: ENVIRONMENTAL COATINGS****11.01 Environmental Coatings**

- A. Priming, painting and special coating of all surfaces shall include but are not limited to the following.
  - 1. Piping and appurtenances
  - 2. Supports
  - 3. Pumps
  - 4. Valves
  - 5. Equipment and appurtenances
  - 6. Concrete and masonry
  - 7. Structural and miscellaneous metals
- B. Priming, painting and special coating of all surfaces shall be in accordance with the coating manufacturer's recommendations.
- C. A manufacturer's representative of the approved coating system shall field approve all surface preparation and coating application when lining manholes and wet wells.



DAWSONVILLE CITY COUNCIL  
EXECUTIVE SUMMARY FOR  
AGENDA ITEM # 19

---

SUBJECT: \_\_\_\_\_ **STAFF REPORT: CITY MANAGER** \_\_\_\_\_

CITY COUNCIL MEETING DATE: 11/15/2021

---

BUDGET INFORMATION: GL ACCOUNT # \_\_\_\_\_ NA \_\_\_\_\_

Funds Available from: \_\_\_\_\_ Annual Budget \_\_\_\_\_ Capital Budget Other \_\_\_\_\_

Budget Amendment Request from Reserve: \_\_\_\_\_ Enterprise Fund \_\_\_\_\_ General Fund

---

PURPOSE FOR REQUEST:

**TO PROVIDE PROJECT UPDATES**

---

HISTORY/ FACTS / ISSUES:

**SEE ATTACHED OUTLINE**

---

OPTIONS:

---

RECOMMENDED SAMPLE MOTION:

---

REQUESTED BY: Bob Bolz, City Manager

## CITY MANAGER REPORT

### NOVEMBER 10 FOR NOVEMBER 15, 2021, MEETING

**Dawsonville History Museum:** October 28-31, Thursday – Sunday, the Dawsonville History Museum hosted their inaugural Ghost Tour, which was a rousing success. The renovation of the Pirkle Room is almost complete as is the creation of the warming kitchen Both should be completed in the next few weeks. Plans are in place for an April 23, 2022, Greater Atlanta Classic Car Auction.

**Tractor Show:** On Saturday, October 30<sup>th</sup>, the FFA Alumni hosted their annual Tractor Show as part of the Amicalola Regional Farmer's Market. Despite terrible weather, the event was still successful.

**Paving Projects:** The joint city-county paving project of Howser Mil Road continues (SPLOST VII). The city project of paving SPLOST VI) Main Street, Memory Lane, and Jack Heard is well underway and should be completed in two weeks.

**City Council Elections:** Congratulations to Councilmen Mark French and Will Illg on their reelection. Thank you, gentlemen, for your service.

**Deputy Program:** Both deputies have completed their training and are starting their coverage of the city. Our officers are Vic Gazaway and Kyle Bailey. I hope both will at the meeting on November 15<sup>th</sup> for introductions.

**Highway Flags:** City personnel put up the highway flags for Veteran's Day. We also put up the flags at City Hall.

**Thermo-striping of Pedestrian Crosswalks:** The project is complete and was paid for out of a GDOT grant with a 30% match from the city.

**Allen Street Sidewalk Extension Project:** This project is ending with only one remaining item to be done. It was paid out of SPLOST VI.

**Veterans Day:** Thursday, November 11<sup>th</sup> will be the day to honor our outstanding Veterans. City Hall will be closed. The Veterans Day Parade will be at 3 PM on that date.

**Veterans Day Car Show:** GRHOF will be hosting a large car show on November 13<sup>th</sup>.

**EV Car Show:** On November 13<sup>th</sup>, the city will be sponsoring an EV Car Show at the Farmer's Market from 11 AM – 2PM.

**Food Donation Barrel:** As I have shared in the past, we have been struggling to keep up with the demand for food from our donation barrel in front of City Hall. Staff purchase food but some of the residents who had been supporting have stopped. We reached out to Robinson Elementary School who are sponsoring the barrel for November. We think that DCHS will sponsor it in December, and we are hoping DCJHS will sponsor it in January. If you would like to offer some donations, they would be appreciated.

**Christmas Special Event:** Plans are being finalized for what promises to be an outstanding event scheduled for December 4<sup>th</sup> with the annual parade (City is sponsoring a float this year) bigger and better than years past, Santa arriving for pictures, food trucks, carolers, dancers, Jingle Market, concert by the Tiger Marching Band and Community Chorale, local schools participating in art contests, additional lights, and maybe a nativity scene. Mark your calendars.

**ARPA SLFRF Grants:** No word on whether or not we made the cut on any of our projects, including the airport, wastewater treatment plant, and well #112.

**Wastewater Treatment Plant:** Turnipseed Engineering is developing the final design as well as the USDA funding package for this priority project.

**Water System Upgrades:** EPD has approved our well location and Turnipseed Engineering has begun preparing the design and bid package for what will become well #112. With the approval of the City Council/Mayor, we have requested EPD and GDOT approval for a project that will involve looping the waterline main from Farmington Woods to the high school, almost doubling fire flow rates. Fire flow model development is underway for other parts of the city as well.

**Main Street Park:** Progress continues as we work to increase the amenities and operation of this wonderful addition to the city, including:

- The dog park project continues as we work with our Eagle Scout candidate. Trees have been planted, benches installed and some of the signage erected.
- The trail IGA with the county has been approved and this project will be included in the Public Works winter work plan.
- The Eagle Scout candidate continues his work designing and constructing a lending library that will be installed in the vicinity of the Main Street Park Playground. We anticipate installation later this month.
- The shelters are complete except for installation of power. We are awaiting GA Power for installation. We have started renting the two new shelters, the pavilion at the Main Street Park Rest Room, and the Farmer's Market. Rentals have been very popular.

**Administrative Offices for Utility and Public Works:** A simple floor plan including two offices, a large map/blueprint/file room, a rest room, small kitchen, and small multipurpose meeting room for meetings and training has been drawn and a bid package is being prepared to obtain costs.

**COVID:** Numbers continue to improve and currently we have no personnel out due to the virus.

**Leak Adjustments:** There were no leak adjustments this month.

Water	\$0	Sewer	\$0	Total	\$0
-------	-----	-------	-----	-------	-----

Calendar YTD	\$4,025.97
--------------	------------



CITY OF DAWSONVILLE, GEORGIA  
GENERAL FUND  
July 1, 2021 - October 31, 2021

34%

	<u>Budget</u>	<u>Actual</u>	<u>Percentage</u>
<b>REVENUES</b>			
Taxes	\$ 1,744,550	\$ 785,082	45.00%
Licenses and permits	102,525	29,468	28.74%
Intergovernmental revenues	35,000	42,207	120.59%
Fees	249,000	50,455	20.26%
Other	<u>70,057</u>	<u>37,896</u>	<u>54.09%</u>
Total revenues	<u>2,201,132</u>	<u>945,108</u>	<u>42.94%</u>
<b>EXPENDITURES</b>			
Department:			
Council	99,215	34,032	34.30%
Mayor	21,480	7,060	32.87%
Elections	8,000	-	0.00%
Administration	947,570	314,292	33.17%
City Hall building	131,135	29,027	22.14%
Animal control	1,523	-	0.00%
Roads	520,996	202,797	38.92%
Parks	53,913	111,682	207.15%
Planning and zoning	380,300	129,612	34.08%
Economic development	<u>37,000</u>	<u>4,000</u>	<u>10.81%</u>
Total expenditures	<u>2,201,132</u>	<u>832,502</u>	<u>37.82%</u>
<b>TOTAL REVENUES OVER EXPENDITURES</b>		112,606	
Transfer in From Reserves		<u>(112,606)</u>	
<b>NET CHANGE IN FUND BALANCE</b>		<u><u>(0)</u></u>	

CITY OF DAWSONVILLE, GEORGIA  
WATER, SEWER, AND GARBAGE FUND  
July 1, 2021 - October 31, 2021

	<u>Budget</u>	<u>Actual</u>	<u>Percentage</u>
<b>REVENUES</b>			
Water fees	\$ 710,000	\$ 290,594	40.93%
Sewer fees	810,000	338,731	41.82%
Garbage fees	203,500	82,188	40.39%
Miscellaneous	<u>371,525</u>	<u>61,610</u>	<u>16.58%</u>
Total revenues	<u>2,095,025</u>	<u>773,123</u>	<u>36.90%</u>
<b>EXPENDITURES</b>			
Depreciation	574,000	170,302	29.67%
Garbage service	175,000	68,502	39.14%
Group insurance	124,000	42,093	33.95%
Insurance		-	#DIV/0!
Interest	87,450	27,192	31.09%
Payroll taxes	27,778	8,272	29.78%
Professional	115,891	33,002	28.48%
Miscellaneous	248,865	27,241	10.95%
Repairs/supplies	145,423	81,863	56.29%
Retirement	22,000	11,590	52.68%
Salaries	347,402	109,492	31.52%
Technical services	72,037	23,535	32.67%
Utilities	<u>155,179</u>	<u>38,088</u>	<u>24.54%</u>
Total expenditures	<u>2,095,025</u>	<u>641,172</u>	<u>30.60%</u>
<b>INCOME (LOSS)</b>		<u><u>131,950</u></u>	

## CITY OF DAWSONVILLE, GEORGIA

## SPLOST

July 1, 2021 - October 31, 2021

## SPLOST VI

	<u>Budget</u>	<u>Actual</u>	<u>Percentage</u>
REVENUES			
Taxes	-	-	#DIV/0!
Interest	300	274	91.29%
Other	<u>555,700</u>	<u>-</u>	<u>0.00%</u>
Total revenues	<u>556,000</u>	<u>274</u>	<u>0.05%</u>
EXPENDITURES (Capital Outlays)			
City hall acquisition	-	-	#DIV/0!
Roads and sidewalks	494,000	2,582	0.52%
Public works equipment - roads	-	-	0.00%
Sewer projects	-	-	0.00%
Public works equipment - sewer	-	-	0.00%
Water projects	-	-	0.00%
Public works equipment - water	-	-	0.00%
Farmers market	62,000	3,000	4.84%
Parks and recreation	<u>-</u>	<u>-</u>	<u>0.00%</u>
Total expenditures	<u>556,000</u>	<u>5,582</u>	<u>1.00%</u>
TOTAL REVENUES OVER EXPENDITURES		(5,308)	
Transfer in From Reserves		<u>5,308</u>	
NET CHANGE IN FUND BALANCE		<u><u>(0)</u></u>	