Salem City

Construction and Development Standards

Date: December 13, 2023

Revision Date:	Revision Description:
Rev 1: 12/13/2023	Correction of grammar and formatting errors. Addition of Minor Subdivision Plat approval procedures (1.01 C.2.). Addition of roadway fencing requirements (3.03 A.7.). Addition of specific underground storm water storage types (3.05 I.12.i.). Clarity of culinary mainline bury depth (3.06 C.5.a.). Added concrete repair standard (4.05 G.5.a-j.).

Introduction

This manual, in conjunction with the **most current edition of the APWA Manual of Standard Specifications and Manual of Standard Plans, the Utah Pollutant Discharge Elimination System (UPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)** and the currently adopted City ordinances, establishes requirements for the preparation, processing, approval, and construction of developments and other improvement projects within Salem City. Preparation of plans and specifications that conform fully to these requirements will expedite the processing, reviewing, and approval of the submitted developments and improvement plans by Salem City.

Current Salem City Standards and Codes supersede all previous or other Salem City standards and codes. If items are not covered by Salem Standards and Codes, then applicable APWA drawings and specifications may be proposed. When APWA standard drawings and/or specifications are used, they must be reviewed by Salem City, which reserves the right to approve, modify, or reject the standard. If proposed improvements cannot be found in the current standards or the APWA Standards, then the design professional is required to propose a solution which will be reviewed for approval, modification, or rejection by Salem City.

All local, municipal, and State/Federal laws, rules, and regulations governing or relating to any portion of this work are to be incorporated into and made a part of all plans and specifications, and their provisions shall be carried out by the Developer and Contractors. It is the Developers' responsibility to study and apply for and receive permits and/or approval for developments including but not limited to wetlands, endangered plants and animals, cultural and archeological, environmental impact, earthquakes, debris flows, other hazards, UDOT roads, Utah County roads and facilities, Utah Division of Drinking Water, Utah Division of Water Quality, federal agencies, third party utility companies, easements, canal companies, and all other applicable impacted parties. Nothing contained in these specifications shall be construed to conflict with any of the ordinances and regulations of the City, County, State, Federal Agencies, and International Codes; however, when there is conflict the more stringent standard shall take precedence unless specifically approved by Salem City or another regulating agency.

It is the intent of Salem City to continually improve this manual. On a periodic basis, proposed supplements, revisions, and amendments will be reviewed and adopted.

This manual is available on Salem City's website, http://www.salemcity.org/standards.htm.

Important Note:

It is the responsibility of the Developer and/or Contractor to purchase the most current edition of the APWA Standards and all associated books and standards in order to comply with the City of Salem Development Procedures, Requirements, and Guidelines.

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List Of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
APWA	American Public Works Association
ASTM	American Society for Testing and Materials
CBR	California Bearing Ratio
CPSC	Consumer Product Safety Commission
DDW	Division of Drinking Water
DRC	Development Review Committee
DWQ	Department of Water Quality
FEMA	Federal Emergency Management Agency
IDF	Intensity, Duration, and Frequency
LID	Low Impact Development
MPZ	Master Planned Zone
MUTCD	Manual on Uniform Traffic Control Devices
MUZ	Mixed Use Zone
NAD83	North American Horizontal Datum of 1983
NAVD88	North American Vertical Datum of 1988
NEC	National Electrical Code
NESC	National Electrical Safety Code
OSHA	Occupational Safety and Health Administration
P&Z	Planning & Zoning
PUD	Planned Unit Development
PUE	Public Utility Easement
SWPPP	Storm Water Pollution Prevention Plan
UPDES	Utah Pollutant Discharge Elimination System
UDOT	Utah Department of Transportation

1. Approval Procedures

1.01 General Information

It is the responsibility of the developer and developer's design engineer to meet all current Salem City construction and development standards, as well as all current municipal codes. City review and approval does **NOT** relieve the developer or design engineer from meeting all current standards and codes and does not relieve the design engineer's responsibility or liability of certifying any submitted documents.

A. Submittals will be reviewed in the order received.
   1. Submittals that have been review one or more times may be given priority if possible.

B. All engineering or surveying documents turned in shall be appropriately stamped by a licensed professional.

C. Subdivision Approval Process is applicable to the following:
   1. Subdivisions
   2. Minor Subdivision Plats can proceed directly to the final plat approval process if:
      a. Has five (5) or fewer lots
      b. Conforms to applicable zoning standards
      c. All required infrastructure is adjacent to the subject property
      d. Refer to 13-2-150 of Salem City Code for further information
   3. Commercial/Industrial Subdivisions
   4. Mixed Use Zones

D. Commercial Site Plan Approval Process is applicable to the following:
   1. Existing commercial site remodels or change of use
   2. New development on a new or existing commercial site

E. Master Plan Zone
   1. Requires a Master Plan Development Agreement and a zone change, which is one application.

F. Industrial Site Plan Approval Process
   1. Existing industrial site remodels or change of use
   2. New development on a new or existing industrial site

G. Capital Improvement Projects
   1. Any parks, infrastructure or features dedicated to the City may require additional approvals per section 1.07 Capital Improvement Projects

H. Lot Line Adjustments
   1. Requires DRC approval

1.02 Approval Process Flowcharts

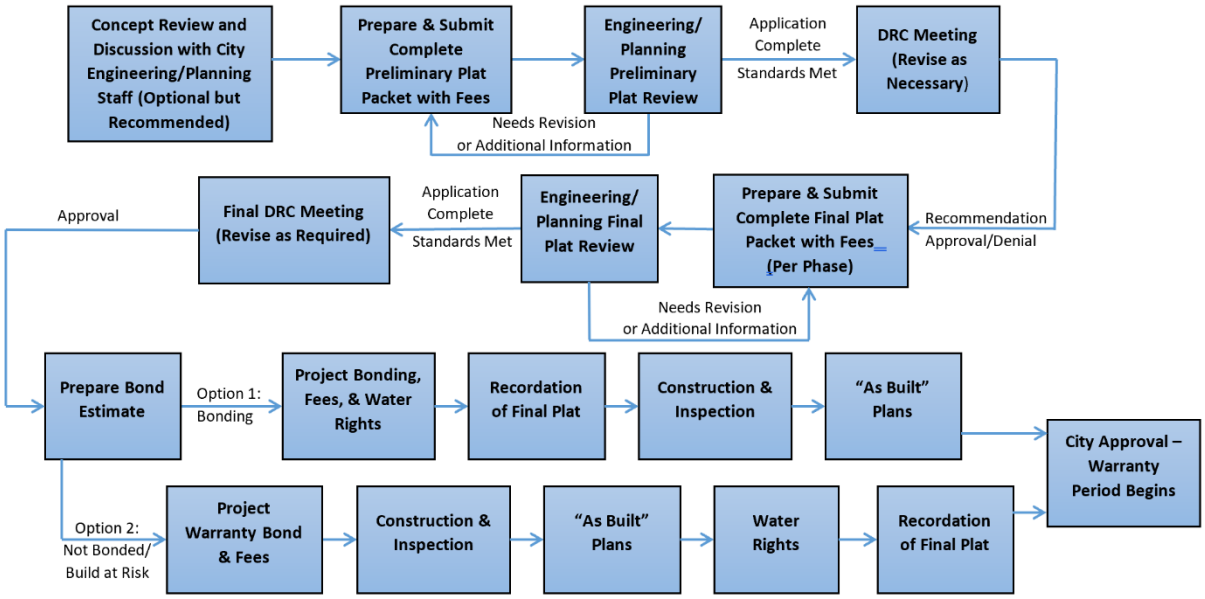

***Figure 1: Salem City Subdivision Approval Process (See Appendix A** – Salem City Subdivision Approval Process)*

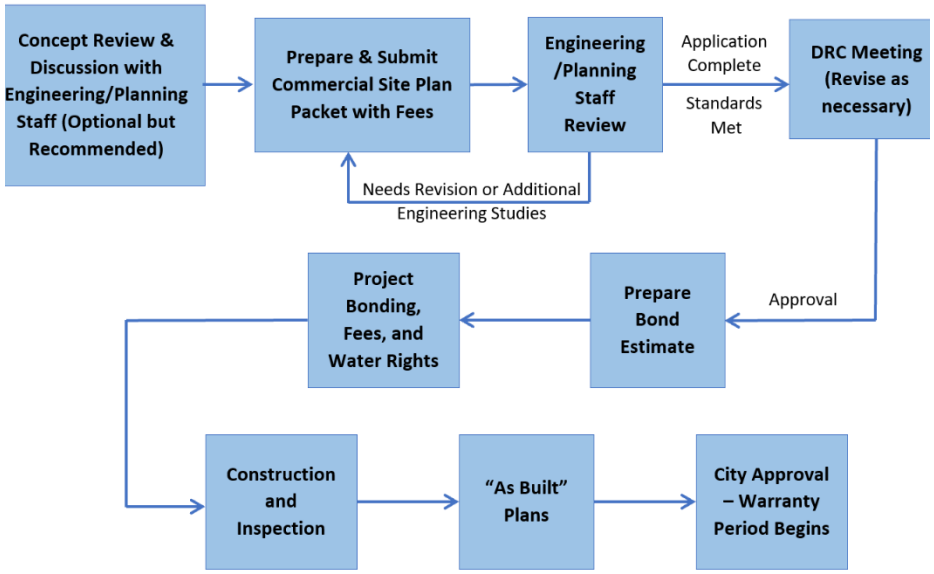

***Figure 2: Salem City Commercial Site Plan Approval Process (See Appendix B** – Salem City Commercial Site Plan Approval Process)*

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1.03 Subdivision Approval Procedures

A. Pre-application meeting
   1. A pre-application meeting is optional but recommended.
   2. This is an informal meeting to review the concept plan with City staff.
   3. Developers should bring draft drawing(s).
   4. There is no formal application, fees, or approval associated with this step.

B. Prepare and Submit Preliminary Plat Packet with Fees
   1. Developer shall prepare the Preliminary Plat in accordance with this manual.
   2. Developer shall then submit a Complete Preliminary Plat application and pay all applicable fees through Salem City's online portal (https://cityworks.salemcity.org/publicsite/template/login.aspx).
   3. City Staff will review the initial preliminary plat application for completeness.

C. Engineering/Planning Preliminary Plat Review
   1. Upon receipt of the complete preliminary plat application and supporting documentation, the initial review cycle of the application will be completed by the City Staff within 15-business days.
   2. Following the completion of first review of the application, and prior to the expiration of the 15-business day review cycle time frame, City Staff will provide the applicant with written and/or electronic notice of:
      a. Approval of application; or
      b. Application Deficiencies, which shall include a comprehensive list of the specific deficiencies in the application.
   3. Revisions must be completed and resubmitted with responses to all City Staff comments.
      a. In addition to revised plans and documents:
         i. An applicant shall provide a written explanation (letter format) in response to the municipality's review comments, identifying and explaining the applicant's revisions and reasons for declining to make revisions, if any.
         ii. The applicant's written explanation shall be comprehensive and specific, including citations to applicable standards and ordinances for the design and an index of requested revisions or additions for each required correction.
         iii. If an applicant fails to address a review comment in the response, the review cycle is not complete and the subsequent review cycle may not begin until all comments are addressed.
      b. A new 15-business day review timeframe is started from the date of each resubmission.
      c. If the applicant does not submit a revised plan within 15-business days after the City requires a modification or correction, the City shall have an additional 15-business days in the review cycle to respond to the submitted items.

4. If responses do not adequately address all comments, or the intent of the comments, the City Staff will notify the applicant in writing with a list of responses that need further updates or clarifications prior to closing out of the initial review cycle.
5. Any revisions to plans or reports, made to address City Staff comments or that are additional to those requested by City Staff, must be clouded on the plans and documented in letter format as part of any resubmittal.
    a. If an applicant makes a material change, that substantially alters the plans, supporting engineering reports or conditions of the project, the review process may restart for the affected portion.
        i. The determination of a material change is at the sole discretion of the City.
6. Additional Project Review(s) – Any additional project reviews will follow the same process outlined for the Initial Project Review Cycle in 1.03.C, but with the following conditions:
    a. Total complete preliminary subdivision plat review cycles are limited to (4) four.
        i. A review cycle does not start its next iteration until all comments from the previous review cycle have been addressed.
        ii. The review cycle restrictions and requirements of this section do not apply to the review of subdivision applications affecting property within identified geological hazard areas.
7. If, after four complete review cycles, all review comments are not addressed and the application is not accepted by the Land Use Authority, the applicant has the option to request an appeal panel.
8. Applicants that fail to address city comments or provide requested information after 6 months from the time the city has completed a review, must pay 10% of the initial application fee to restart the review process.
9. If an application remains dormant for 18 months or longer, the application expires. Once expired, the application cannot be extended, and any subsequent submittals to the City will require a new application and corresponding fees.
10. Only complete Preliminary Plat Applications will be scheduled for the Development Review Committee (DRC).
    a. A complete Preliminary Plat Applications includes:
        i. Complete application
        ii. Complete checklist (Appendix D – Preliminary Plat Checklist)
        iii. Fees paid
        iv. Meets all applicable standards
        v. Reviewed by City staff and determined to be complete.

D. Development Review Committee (DRC) Meeting
1. Revised/completed Preliminary Plats must be submitted 10 working days prior to the DRC meeting (Typically held weekly, on Wednesday afternoon).
2. A project representative must be present.
3. DRC may recommend approval or denial, or table with a request for more information.
4. DRC may require more than one meeting before making a recommendation.

a. Preliminary Plat approval is good for 18 months.
b. A new application, as well as payment of applicable fees, will be required if the approved Preliminary Plat is allowed to expire.

E. Prepare and Submit Final Plat Packet with Fees
1. Developer shall submit a Final Plat application through Salem City's online portal (https://cityworks.salemcity.org/publicsite/template/login.aspx) and pay all applicable fees.
2. Developer shall prepare the Final Plat in accordance with this manual.
3. See Section 2 Submittal Requirements and Section 3 Design Requirements.
4. The Final Plat submittal requires a formal review.
5. All subdivisions shall have one Final Plat for each phase.
6. One phase must be submitted every 12 months to maintain Preliminary Plat approval unless an extension is approved in writing by the City Engineer.

F. Engineering/Planning Final Plat Review
1. Upon receipt of the complete preliminary plat application and supporting documentation, the initial review cycle of the application will be completed by the City Staff within 20-business days.
2. Following the completion of first review of the application, and prior to the expiration of the 20-business day review cycle time frame, City Staff will provide the applicant with written and/or electronic notice of:
   a. Approval of application; or
   b. Application Deficiencies, which shall include a comprehensive list of the specific deficiencies in the application, with references to corresponding code.
3. Revisions must be completed and resubmitted with responses to all City Staff comments and how they have been addressed in letter format.
   a. A new 20-business day review timeframe is started from the date of each resubmission.
   b. If the applicant does not submit a revised plan within 20-business days after the City requires a modification or correction, the City shall have an additional 20-business days (in addition to the first 20) to respond to the submitted items.
4. If responses do not adequately address all comments, or the intent of the comments, the City Staff will notify the applicant in writing with a list of responses that need further updates or clarifications prior to closing out of the initial review cycle.
5. Any revisions to plans or reports, made to address City Staff comments or that are additional to those requested by City Staff, must be clouded on the plans and documented in letter format as part of any resubmittal.
   a. If an applicant makes a material change, that substantially alters the plans, supporting engineering reports or conditions to the project, the review process may restart for the affected portion.
6. Additional Project Review(s) – Any additional project reviews will follow the same process outlined for the Initial Project Review Cycle in 1.03.C, but with the following conditions:

a. Total complete preliminary subdivision plat review cycles are limited to (4) four.
    i. A review cycle does not start its next iteration until all comments from the previous review cycle have been addressed.
    ii. The review cycle restrictions and requirements of this section do not apply to the review of subdivision applications affecting property within identified geological hazard areas.

7. If, after four complete review cycles, all review comments are not addressed and the application is not accepted by the Land Use Authority, the applicant has the option to request an appeal panel.
8. Applicants that fail to address city comments or provide requested information after 6 months from the time the city has completed a review, must pay 10% of the initial application fee to restart the review process.
9. If an application remains dormant for 18 months or longer, it will expire. Once expired, the application cannot be extended, and any subsequent submittals to the City will require a new application and corresponding fees.
10. Only complete Final Plats will be scheduled for the Development Review Committee (DRC).
    a. A complete Final Plat includes:
        i. Complete application
        ii. Complete checklist (Appendix E – Final Plat Checklist)
        iii. Fees paid
        iv. Meets all applicable standards
        v. Reviewed by City staff and determined to be complete.

G. Final Plat - Development Review Committee Meeting
    1. Revised/completed Final Plats must be submitted 10 working days prior to the DRC meeting (Typically held weekly, on Wednesday afternoon).
    2. A project representative must be present.
    3. DRC may approve, deny, or table with a request for more information.
    4. DRC may require more than one meeting before making a recommendation.
        a. Plat approval is good for 18 months.
        b. A new application will be required if the approved Plat is allowed to expire.

H. Prepare Bond Estimate
    1. Using the City's MS Excel template, the applicant shall submit an engineer's cost estimate for 100% of the cost for all the infrastructure improvements for the project at the time of application. The cost estimate should include sub-totals for City maintained infrastructure improvements. The engineer's cost estimate shall comply with the requirements for establishing the amount of a financial assurance as provided in this section.
    2. The City Engineering/Planning Department will finalize the acceptable bond amounts for the development improvements, warranty bond, and other associated fees.

I. Bonding Options

J. The flowchart Salem City Subdivision Approval Process flowchart in Appendix A shows two options between Preparation of the Bond Estimate and City Approval and Warranty Period Beginning. Both are valid, but the developer shall make their choice of path known to the City.

K. Option 1, bonding, follows the next steps in Sections 1.03.J-N in order.

L. Project Bonding, Fees, and Water Rights
   1. Developer must bond, record, begin construction, or request extension within 18 months of final approval, or forfeit final approval.
      a. An additional 6-month extension may be granted at the sole discretion of the City Engineer, if requested.
   2. Prior to recording or beginning construction the following must be completed
      a. Complete, sign, and submit a Subdivision Bond Agreement for Improvements
      b. Submit bond for all required improvements (if bonding)
      c. Pay inspection/construction services fee
      d. Pay all connector's agreements in full
      e. Pay for City provided electrical materials
      f. Pay for future sealcoat to be performed by the City on all asphalt roads within the plat
      g. Submit 10% cash warranty bond at or before recording
      h. Submit Storm Water Pollution Prevention Plan (SWPPP)
      i. Obtain Land Disturbance Permit and pay associated fees
      j. Surrender and/or transfer sufficient indoor and outdoor water rights (prior to recording)
      k. Obtain any federal, state, county, etc. permits and written approvals as needed.
      l. (Optional) Submit permit for water usage during construction (Fire Hydrant Application). Water from fire hydrants WILL NOT be allowed without a permit. Fines will be accessed for any violations.
      m. Pre-construction meeting. See 1.03. N. Construction and Inspection.

M. Recordation of Final Plat
   1. Developer is responsible to obtain signatures on Mylar.
   2. Once requirements are met, the City Recorder will record the Mylar with the Utah County Recorder within 30 days after Utah County Approval.
   3. Utah County approval is required for all Plats. If the Plat included a dedication of property to Utah County, it must also be approved by the County Commission.

N. Construction and Inspection
   1. Pre-construction meeting
      a. Cash fees must be paid 2 business days prior to the pre-construction meeting being scheduled.
      b. Developer shall coordinate with the City Engineering Department Staff on timing of the pre-construction meeting and schedule the meeting.
      c. City Engineer will ensure the proper City personnel will be present.
      d. Developer shall ensure that all the contractors will be present.

   e. The City Engineer or representative shall conduct the meeting.
   f. Minutes shall be taken and provided upon request.
2. Regular construction progress meetings
   a. Meetings shall generally be held weekly.
   b. The purpose of these meetings is to
      i. Review progress
      ii. Discuss schedule
      iii. Current and Anticipated Traffic Control Requests
      iv. Schedule inspections
      v. Enable communication
      vi. Mitigate project impact on surroundings
      vii. Meet other needs to support and enable the project.
3. See Section 4 Construction Procedures.
4. Contractor is responsible for SWPPP and Land Disturbance Permit compliance.
   a. Failure to properly maintain compliance will result in penalties and/or project stoppage.
5. A public works inspector will perform inspections throughout the project ensuring compliance with standards and the approved plan set. See section 4.02 (Safety Procedures) and 4.03 (Inspection Procedures).
6. Developer is responsible to schedule inspections.
7. Work completed without inspections shall be required to be removed and reinstalled at the sole cost of the Developer.
8. If unexpected site and or underground conditions are encountered, the work should stop, and the design engineer and City Staff shall be notified. The developer's team shall work together to mitigate the unexpected conditions, with City approval.
9. If discrepancies with design are discovered, the work should stop, and the design engineer and City Staff shall be notified. The developer's team shall work together to mitigate the unexpected conditions, with City approval.
10. Work should be stopped if any damage to new or existing infrastructure occurs. The situation must be documented and reviewed by City Staff prior to continuing work. The City may require the damage to be fixed with all new materials at the contractor's expense. Outage fees may be incurred if active infrastructure is affected.
11. No deviations from the approved construction plans are allowed without prior written consent from the City Engineer and the Developer/Owner.
12. Subdivision improvements shall be completed and pass City inspection within 24 months of final approval, or an extension may be granted by City Engineer in accordance with Salem Municipal Code 13-2-100 B.2 including, but not limited to, the following:
    a. On and off-site improvements
    b. Trash removal
    c. Debris cleared
    d. Final grade completed in a clean and visually satisfactory manner.
    e. Final Inspection

i. Final Inspection can be scheduled once the following are satisfied: On and off-site improvements are completed per approved construction plans;
ii. Site is clean and clear of trash and debris.
iii. Developer is responsible to schedule the final inspection 10-business days in advance.
iv. Unacceptable improvements will be identified and provided to the Developer as a punch list to resolve prior to approval of improvements.
v. City requires the Developer to provide a final survey on detention/retention facilities to check that constructed capacities meet design capacities. Post construction, In-situ infiltration tests are also required prior to final approval.

O. "As Built" Plans
1. Developer is responsible to ensure that all improvements are GPS located by the City.
   a. Any and all backfill placed prior to GPS locating of underground utilities or improvements shall be removed at the Contractor's expense to allow for accurate GPS locating by City personnel.
   b. GPS located improvements will be available on Salem City's Interactive Map.
2. Developer shall submit "As Built" plans within 30 days of written approval of all improvements.
3. "As Built" plans shall be true to construction including additions, modifications, and alterations from approved Final Plat.
4. Improvements bond shall be released following submission of "As Built" plans; however, the 10% warranty bond shall be maintained throughout the warranty period.

P. City Approval – Warranty Period Begins
1. Project is eligible for occupancy once:
   a. Subdivision is be completed and accepted
   b. One year warranty has begun.
2. Written approval shall be issued after all improvements are inspected and approved.
   a. The date of written letter of approval shall begin the one-year warranty period.
3. Developer shall ensure that the improvements stay in good condition at no cost to the City during the warranty period.
4. Repairs required for deficiencies in the improvements shall be completed at no cost to the City during the warranty period.
5. A Final acceptance inspection shall be completed prior to the end of the warranty period.
   a. City will only release up to 90% of the improvement bond items until final inspection and acceptance.
   b. Once repairs and/or maintenance, identified in the final acceptance inspection, have been completed and accepted the rest of the bond shall be released.
6. See 4.04 City Approval and Warranty Period.

Q. Option 2, not bonding/build at risk, rearranges and amends steps in Sections 1.03.J-N) in the following ways:

1. Project Bonding, Fees, and Water Rights – See Section 1.03.J
    a. Excludes a bond for improvements
    b. 10% cash warranty bond is due prior to recording.
    c. Water Rights are not required until recording
2. Developer has the option to bond at any time during construction as long as other requirements are met.
3. Construction and Inspection – See Section 1.03.L
4. "As Built" Plans – See Section 1.03.M
5. Water Rights – See Section 1.03.J.2.j
6. Recordation of Final Plat – See Section 1.03.K
7. City Approval – Warranty Period Begins – See Section 1.03.N

1.04 Mixed Use Approval Procedures

A. Mixed Use Zones are special purpose Master Plan Zones, that allow for medium density residential mixed with commercial.

B. Follow the same procedures as Master Plan Zones.

1.05 Commercial Site Plan Approval Procedures

NOTE: Commercial Subdivisions must follow the Subdivision Approval Procedures.

A. Pre-application meeting
    1. A pre-application meeting is optional but recommended.
    2. This is an informal meeting to review the concept plan with City staff.
    3. Developers should bring draft drawing(s) or concepts.
    4. There is no formal application, fees, or approval associated with this step.

B. Prepare and Submit Commercial Site Plan Packet with Fees
    1. Developer shall submit a Commercial Site Plan application through Salem City's Cityworks portal and pay all applicable fees. (https://cityworks.salemcity.org/publicsite/template/login.aspx).
    2. Developer shall prepare the Site Plan in accordance with this manual.
    3. The Site Plan submittal requires a formal review.

C. Engineering/Planning Staff Review
    1. Upon receipt of the complete commercial site plan application and supporting documentation, the initial review cycle of the application will be completed by the City Staff within 20-business days.
    2. Following the completion of first review of the application, and prior to the expiration of the 20-business day review cycle time frame, City Staff will provide the applicant with written or electronic notice of:
        a. Approval of application; or
        b. Application Deficiencies, which shall include a comprehensive list of the specific deficiencies in the application.
    3. Revisions must be completed and resubmitted with responses to all City Staff comments and how they have been addressed in letter format.

   a. A new 20-business day review timeframe is started from the date of each resubmission.
   b. If the applicant does not submit a revised plan within 20-business days after the City requires a modification or correction, the City shall have an additional 20-business days in the review cycle to respond to the submitted items.
4. If responses do not adequately address all comments, or the intent of the comments, the City Staff will notify the applicant in writing with a list of responses that need further updates or clarifications prior to closing out of the initial review cycle.
5. Any revisions to plans or reports, made to address City Staff comments or that are additional to those requested by City Staff, must be clouded on the plans and documented in letter format as part of any resubmittal.
   a. If an applicant makes a material change, that substantially alters the plans, supporting engineering reports or conditions the project, the review process may restart for the affected portion.
      i. The determination of a material change is at the sole discretion of the City.
6. Additional Project Review(s) – Any additional project reviews will follow the same process outlined for the Initial Project Review Cycle in 1.04.C.,
7. Applicants that fail to address city comments or provide requested information after 6 months from the time the city has completed a review, must pay 10% of the initial application fee to restart the review process.
8. If an application remains dormant for 18 months or longer, it will expire. Once expired, the application cannot be extended, and any subsequent submittals to the City will require a new application and corresponding fees.
9. Complete Site Plans will be scheduled for the Development Review Committee (DRC).
   a. A complete Site Plan includes
      i. Complete application
      ii. Complete checklist (Appendix F – Site Plan Checklist)
      iii. Fees paid
      iv. Meets all applicable standards
      v. Reviewed by City staff and determined to be complete.

D. Development Review Committee (DRC) Meeting
   1. Revised/completed Site Plans must be submitted 10 working days prior to the DRC meeting.
   2. A project representative must be present.
   3. DRC may approve, deny, or table with a request for more information.
   4. DRC may require more than one meeting before making a recommendation.
      a. Site Plan approval is good for 18 months.
      b. A new application will be required if the approved Site Plan is allowed to expire.

E. Prepare Bond Estimate
   1. Using the City's MS Excel Bond Estimate Template, the Developer shall submit an engineer's cost estimate for 100% of the cost for all of the infrastructure improvements for the project at the time of application. The cost estimate should include sub-totals,

for example, City maintained, privately maintained, and on and offsite infrastructure improvements.

2. The City Engineering Staff will finalize the bond amounts for the development improvements, warranty bond and associated

F. Project Bonding, Fees, and Water Rights

1. Prior to recording, construction, or obtaining a building permit the following requirements shall be met:
    a. Submit a bond for all ROW improvements and other critical infrastructure as determined by the City Engineer Staff.
    b. Pay inspection fee
    c. Pay connector's agreements and power fees in full
    d. Pay for City provided electrical materials
    e. Pay for future sealcoat to be performed by the City for all asphalt roads
    f. Submit 10% cash warranty bond
    g. Submit SWPPP
    h. Obtain Land Disturbance Permit and pay associated fees
    i. Surrender and/or transfer sufficient indoor and outdoor water rights.
    j. Pay Fire Hydrant Construction Water Permit fee is needed.

G. Construction and Inspection

1. Pre-construction meeting
    a. Developer shall coordinate with the City Engineering Department Staff on timing of the pre-construction meeting and schedule the meeting.
    b. City Engineer will ensure the proper City personnel will be present.
    c. Developer shall ensure that all the contractors will be present.
    d. The City Engineer or representative shall conduct the meeting.
    e. Minutes shall be taken and provided upon request.
2. Regular construction meetings
    a. Meetings shall generally be held weekly.
    b. The purpose of these meetings is to
        i. Review progress
        ii. Discuss schedule
        iii. Current and Anticipated Traffic Control Requests
        iv. Schedule inspections
        v. Enable communication
        vi. Mitigate project impact on surroundings
        vii. Meet other needs to support and enable the project.
3. See Section 4 Construction Procedures.
4. Contractor is responsible for SWPPP and Land Disturbance Permit compliance.
    a. Failure to properly maintain compliance will result in penalties and/or project stoppage.

5. A public works inspector will perform inspections throughout the project ensuring compliance with standards and the approved plan set. See section 4.02 (Safety Procedures) and 4.03 (Inspection Procedures).
6. Developer is responsible to schedule inspections.
7. Work completed without inspections shall be required to be removed and reinstalled at the sole cost of the Developer.
8. If any new conditions or discrepancies with design are discovered, work should be stopped immediately, and the City Staff will verify and document prior to continuing work.
9. Work should be stopped if any damage to new or existing infrastructure occurs. The situation must be documented and reviewed by City Staff prior to continuing work. The City may require the damage to be fixed with all new materials at the contractor's expense. Outage fees may be incurred if active infrastructure is affected.
10. No deviations from the approved construction plans are allowed without prior written consent from the City Engineer and the Developer.
11. Site Plan improvements shall be completed and pass City inspection within 24 months of final approval, or an extension may be granted at the sole discretion of the City Engineer in accordance with Salem Municipal Code 13-2-100 B.2 including, but not limited to, the following:
    a. On and off-site improvements
    b. Trash removal
    c. Debris cleared
    d. Final grade completed in a clean and visually satisfactory manner.
    e. Final Inspection
        i. Final Inspection can be scheduled once the following are satisfied: On and off-site improvements are completed per approved construction plans;
        ii. Site is clean and clear of trash and debris.
        iii. Developer is responsible to schedule the final inspection 10-business days in advance.
        iv. Unacceptable improvements will be identified and provided to the Developer as a punch list to resolve prior to approval of improvements.
        v. City requires the Developer to provide a final survey on detention/retention facilities to check that constructed capacities meet design capacities. Post construction, In-situ percolation tests are also required prior to final approval.

H. "As Built" Plans
1. Developer is responsible to ensure that all improvements are GPS located by the City.
    a. Any and all backfill placed prior to GPS locating of underground utilities or improvements shall be removed at the Contractor's expense to allow for accurate GPS locating by City personnel.
    b. GPS located improvements will be available on Salem City's Interactive Map.
2. Developer shall submit "As Built" plans within 30 days of written approval of all improvements.

3. "As Built" plans shall be true to construction including additions, modifications, and alterations from approved Final Plat.
4. Improvements bond shall be released following submission of "As Built" plans; however, the 10% warranty bond shall be maintained throughout the warranty period.

I. City Approval – Warranty Period Begins

1. Project is eligible for occupancy once
   a. Subdivision is be completed and accepted
   b. One year warranty has begun.
2. Written approval shall be issued after all improvements are inspected and approved.
   a. The date of written letter of approval shall begin the one-year warranty period.
3. Developer shall ensure that the improvements stay in good condition at no cost to the City during the warranty period.
4. Repairs required for deficiencies in the improvements shall be completed at no cost to the City during the warranty period.
5. A Final acceptance inspection shall be completed prior to the end of the warranty period.
   a. City will only release up to 90% of bond items until final inspection and acceptance.
   b. Once repairs and/or maintenance, identified in the final acceptance inspection, have been completed and accepted the rest of the bond shall be released.
6. See 4.04 City Approval and Warranty Period.

1.06 Master Plan Approval Procedures

A. A Master Plan Development is a zone change that requires the following:

1. Simultaneous approval of a zone change and development agreement.
2. Master plan zones must meet the requirements in Salem City Municipal Code: Title Fourteen.

1.07 Capital Improvement Projects

A. Prepare and Submit Capital Improvement Packet with Fees

1. Developer shall submit a complete Capital Improvement application and pay all applicable fees through Salem City's online portal (https://cityworks.salemcity.org/publicsite/template/login.aspx).
2. Review fees for capital improvement projects will be calculated on a case by case basis depending on the level of oversight and review required by City Staff.
3. Developer will be required to pay any fees associated with 3rd party reviews or consultant services.

1.08 Lot Line Adjustments

A. Prepare and Submit Lot Line Adjustment Packet with Fees

1. Developer shall submit a complete Lot Line Adjustment application and pay all applicable fees through Salem City's online portal
2. Requires an amended plat

2. Submittal Requirements

2.01 Preliminary Plat

A. General Requirements

1. This submittal is required for the following:
   a. Residential Subdivisions
   b. Commercial Subdivisions
   c. Master Plan Zones
   d. Mixed Use Zones
2. Maximum plan scale shall be 1"=100' on 24x36.
3. Shall be stamped by a licensed Professional Engineer.
4. Plan match lines shall not be along streets.
   a. The City Engineer may approve larger paper size to fit larger subdivisions onto one sheet.
5. Submittal shall include the following uploaded to Salem City's Online program:
   a. Preliminary Plat and Improvements Plans
      i. 24" x 36" PDF
      ii. AutoCAD Format
      iii. See Section 2.04 for Electronic File Requirements and Coordinate Systems
   b. Project Studies and Reports
      i. Preliminary Storm drain Report
      ii. Geotechnical report
      iii. Preliminary Traffic impact study
      iv. Wetland study
      v. Earthquake hazard study
      vi. Debris flow study
      vii. Other geological hazard studies
      viii. Utah Department of Transportation requirements (as needed)
      ix. Utah County requirements (as needed)
      x. Floodplain evaluation (see ordinance)
      xi. Other site-specific studies (as needed)
   c. Preliminary Landscaping and Irrigation plan
   d. Preliminary Title Report
   e. Preliminary Amenities plans (as needed)
   f. Development agreement (as needed)

A. Additional Engineering Studies

1. During the review process, the city may require additional engineering studies, including but not limited to the following:
   a. Endangered plants and species study
   b. Cultural and archeological studies
   c. Environmental impact statements
   d. Division of Drinking Water review

e. Division of Water Quality review
f. Any other applicable studies.

2. The City may require additional studies during the application review. Applicant will submit requested studies as part of the review cycle process, or as agreed to by the City Staff, to submit the requested information.

B. Title Sheet
1. Include the subdivision name followed by "Preliminary Plat" as the title in the title block and top center of the sheet.
2. Include a location map that is clear and shows significant nearby streets.
3. Include the name, phone number, and address of the following:
   a. Developer/Owner
   b. Engineering Firm
   c. Surveying Firm
   d. Others (as needed).
4. Include stamp of licensed Professional Engineer.

C. Plat Sheet
1. Show the zoning on and adjacent to the project.
2. Show the names of all adjacent subdivisions and landowners.
3. Show the lot layout including:
   a. Size
      i. Square feet
      ii. Frontage
   b. Easements (existing and new Municipal Utility Easements)
   c. Setbacks
   d. Lot numbering.
4. Show the street layout with street names and street coordinates.
   a. Designate private or public ROW.
   b. Show proposed ROW dedications
5. Data Table
   a. List the number of lots/units.
   b. Zoning
   c. Total ROW area
   d. Total lot area
   e. Lot Density
   f. Additional information as needed
6. Include legal description of property.

D. Project Overview Sheet
1. Include the following
   a. Street improvements
   b. Storm drain (size & location)
   c. Culinary water (size & location)
   d. Pressurized irrigation (size & location)

e. Sanitary sewer (size & location)
f. Lot layout w/lot #'s and street names and coordinates
g. Additional easements (when required)
h. Lighting plan.
i. Offsite improvements
j. Additional information as needed

E. Phasing Plan Sheet
1. Show all improvements
2. Show the phasing plan.

F. Grading Sheet
1. Show existing and proposed contours
a. Minimum of 5' contour intervals
2. Show the following with lighter lines:
a. Lot layout w/lot #'s
b. Street improvements w/street names and coordinates.
c. Offsite improvements

G. Utilities Sheet
1. Show the following:
a. Street improvements w/street names and coordinates
b. Lot layout w/lot #'s
c. Storm drain (size & location)
d. Culinary water (size & location)
e. Pressurized irrigation (size & location)
f. Sanitary sewer (size & location)
g. Lighting plan.
h. Offsite improvements

H. Drainage and Storm Drain Sheet
1. Show the following:
a. Street improvements w/street names and coordinates
b. Lot layout w/lot #'s
c. Storm drain
d. Infrastructure labeled to correspond with Drainage Report
e. Street flow lines
f. Offsite improvements
g. Proposed emergency outfall location
h. Floodplain Evaluation (Salem City Code – Title Eleven – Public Utilities and Services – Chapter 9).

I. Details Sheet
1. Show street ROW cross-sections.
2. Show special plans and details as necessary.

2.02 Final Plat

A. General Requirements

1. This submittal is required for the following:
   a. Residential Subdivisions
   b. Commercial Subdivisions
   c. Master Plan Zones
   d. Mixed Use Zones
2. Maximum plan scale shall be 1"=100' on 24x36.
3. Shall be stamped by a licensed Professional Engineer.
4. Plan match lines shall not be along streets.
   a. The City Engineer may approve larger paper size to fit larger subdivisions onto one sheet.
5. Submittal shall include the following uploaded to Salem City's Online Program:
   a. Final Improvements Plans/Construction drawings
      i. 24" x 36" PDF
      ii. AutoCAD Format
      iii. See Section 2.04 for Electronic File Requirements and Coordinate Systems
   b. Final Landscaping and Irrigation plan by professional landscape architect/designer
      i. See city landscape standards
      ii. Show location and detail for electrical meter (if required)
   c. Project Studies and Reports
      i. Final Storm Drain Report
      ii. Final Culinary/PI Design Report
      iii. Final Sanitary Sewer Design Report
      iv. Final Geotechnical report
      v. Final Traffic impact study
      vi. Environmental impact statements (as needed)
      vii. Geological hazard report
      viii. Existing Well Abandonment Report
      ix. Additional studies (as needed)
   d. Project Permits and Approvals (As Needed)
      i. Wetlands Army Corps of Engineers permit (as needed)
      ii. Utah Department of Transportation (UDOT) permit
      iii. Utah County permit/approval
      iv. Discharge permit
      v. Stream alteration permit
      vi. Land disturbance permit
      vii. Utah State dam safety permit
      viii. Encroachment and excavation permit
      ix. Utility company approval
      x. Irrigation or canal company approval

xi. Other permits (as needed)

e. Final Title Report
f. Easements and agreements (when required)
g. Necessary permits
h. Final Amenities plans (when required)

B. Additional Engineering Studies
1. During the final review process the City may require additional engineering studies/approvals, including but not limited to the following.
a. Endangered plants and animals impact permit/approval
b. Cultural and archeological permit/approval
c. Division of Drinking Water permit/approval
d. Division of Water Quality permit/approval
e. Any other applicable permits and approvals.
2. The City may require additional studies during the application review. Applicant will submit requested studies as part of the review cycle process, or as agreed to by the City Staff, to submit the requested information.

C. Title Sheet
1. Include the subdivision name followed by "Final Plat" as the title in the title block and top center of the sheet.
2. Include a location map that is clear and shows significant nearby streets.
3. Include the name, phone number, and address of the following:
a. Developer/Owner
b. Engineering Firm
c. Surveying Firm
d. Others (as needed).
4. Include stamp of licensed Professional Engineer.

D. Plat Sheet
1. Show the zoning on and adjacent to the project.
2. Show the names of all adjacent subdivisions and landowners.
3. Show the lot layout.
a. Size
i. Square feet
ii. Frontage
b. Easements & Municipal Utility Easements
c. Setbacks
d. Lot numbering
4. Show lot addresses.
5. Show the street layout with street names and street coordinates.
a. Designate private or public ROW
b. Show ROW dedications
6. List the number of lots/units.
7. Include legal description of property.

8. Include Salem City's Typical Building Setback & Municipal Utility Easements detail.
9. Data Table
    a. List the number of lots/units.
    b. Zoning
    c. Total ROW area
    d. Total lot area
    e. Lot density
    f. Additional information as needed

E. Project Overview Sheet(s)
1. Include the following to show the overall intent of the improvements, this may require multiple sheets for clarity:
    a. Street improvements
    b. Storm drain (size & location)
    c. Culinary water (size & location)
    d. Pressurized irrigation (size & location)
    e. Sanitary sewer (size & location)
    f. Final landscaping (when required)
    g. Traffic signing and striping (lane layout and dimensioning)
    h. Lot layout w/lot #'s and street names & coordinates
    i. Additional easements (when required)
    j. Lighting plan
    k. Offsite improvements

F. Phasing Plan Sheet
1. Show all improvements
2. Show the phasing plan

G. Grading Sheet
1. Show existing and proposed contours
    a. Minimum of 5' contour intervals
2. Show the following with lighter lines:
    a. Lot layout w/lot #'s
    b. Street improvements w/street names and coordinates
    c. Offsite improvements

H. Utilities Sheet
1. Show the following:
    a. Street improvements w/street names and coordinates
    b. Lot layout w/lot #'s
    c. Storm drain (size & location) with plan and profile
    d. Culinary water (size & location)
    e. Pressurized irrigation (size & location)
    f. Sanitary sewer (size & location) with plan and profile
    g. Lighting plan.
    h. Offsite Improvements with plan and profile

I. Drainage and Storm Drain Sheet
   1. Show the following:
      a. Street improvements w/street names and coordinates
      b. Lot layout w/lot #'s
      c. Storm drain
      d. Infrastructure labeled to correspond with Drainage Report
      e. Street drainage flow lines
      f. Street grade contour intervals
      g. Offsite improvements
      h. Detention/retention basin contour intervals
      i. Emergency overflow location, elevation, and routing
      j. Floodplain Evaluation (see ordinance)

J. Street Profile Sheets
   1. Show the following:
      a. Street improvements
      b. New and existing elevations
      c. Sewer
      d. Flood irrigation
      e. Storm drain.
      f. Intersection details, as needed, to identify utility conflicts.

K. Details Sheet
   1. Include street ROW cross-sections
   2. Intersection details showing grading and drainage (Each non-standard intersection)
   3. Include detention/retention basin profiles (Both directions) and details as needed for construction
   4. Include ADA ramp details (standard and site specific)
   5. Include applicable standard details
   6. Include special plans and details

2.03 Commercial Site Plan

A. Applicability
   1. This submittal is required for all new commercial/industrial developments.
   2. This submittal is also required for existing commercial property when the type of use or occupancy changes.
   3. Commercial Subdivisions must follow the Subdivisions Approval Procedure.

B. Existing Uses/Remodels
   1. Include a "to scale" map showing the following:
      a. Property lines
      b. Locations of existing and proposed site improvements
      c. ROW improvements
      d. Utilities with plan and profiles as needed
      e. Buildings, structures, and fences
      f. Setbacks

g. Contemplated uses
h. Floodplain Evaluation (see ordinance)
i. Other information required by the zone.
j. Map should be submitted in PDF and AutoCAD formats by uploading to Salem City's Online Program.
k. See Section 2.04 for Electronic File Requirements and Coordinate Systems

C. New Commercial Site Plans
1. These are new commercial developments on existing lots, with no subdividing.
2. Include a "to scale" map showing the following:
a. Property lines
b. Existing and proposed site improvements
c. Utilities with plan and profiles as needed
d. Buildings, structures, and fences
e. Setbacks
f. Parking
g. Lighting
h. Solid waste disposal location
i. Landscaping plan
j. Drainage plan
k. ROW improvements with plan and profiles
l. Property accesses
m. Must be approved by the City, County, and/or UDOT Engineer as applicable
n. Signage
o. Contemplated uses
p. Floodplain Evaluation (see ordinance)
q. Other information required by the zone.
r. Map should be submitted in PDF and AutoCAD formats by uploading to Salem City's Online Program.
i. See Section 2.04 for Electronic File Requirements and Coordinate Systems
3. Provide engineering studies as required, including but not limited to the following
a. Traffic impact study
b. Wetland study
c. Endangered plants and animals study
d. Cultural and archeological studies
e. Environmental impact statements
f. Earthquake hazard study
g. Debris flow study
h. Other geological hazard studies
i. Utah Department of Transportation requirements
j. Utah County requirements
k. Division of Drinking Water review (as required by City or State)
l. Division of Water Quality review (as required by City or State)
m. Any other applicable studies.

2.04 Electronic File Requirements

A. Applicable Submittals
   1. Preliminary and Final Plat
   2. Master Plans
   3. Commercial/Industrial Site Plans
   4. "As Built" Plans
   5. Capital Improvements
   6. Annexation Plats

B. File Formats
   1. AutoCAD (DWG)
   2. PDF
      a. All PDF documents shall be in searchable format.

C. Coordinate Systems
   1. Horizontal: NAD83
   2. Elevations: NAVD88

D. Electronic File Geometry
   1. All lines shall be snapped together.
      a. No overlapping or under-length lines.
   2. Street centerlines shall be continuous polylines.
   3. Storm drain and sanitary sewer pipes shall meet the following requirements:
      a. Drawn in the direction of flow
      b. Continuous polylines from structure to structure
      c. Drawn at pipe centerline.
   4. Culinary and PI lines shall meet the following requirements:
      a. Continuous polyline between pipe intersections or size changes
      b. No curves
      c. Drawn at pipe centerline.
   5. All lines and shapes shall be to scale and in their proper location horizontally and vertically.

E. Layers

   Include the following list in individual layers:

   1. Culinary water line sizes
   2. Culinary water lines
   3. Culinary water meters
   4. Culinary water valves
   5. PI line sizes
   6. PI lines
   7. PI boxes
   8. PI valves
   9. Fire hydrants
   10. Storm drain line sizes

11. Storm drain manholes
12. Storm drain catch basins
13. Detention/retention ponds
14. Sanitary sewer line sizes
15. Sanitary sewer lines
16. Sanitary sewer manholes
17. Edge of pavement
18. Lot boundaries
19. Lot numbers
20. Sidewalks
21. Back of curb
22. Road centerlines
23. Dimensions
24. Contours
25. Sprinkler heads
26. Sprinkler line sizes
27. Sprinkler lines
28. Sprinkler valves
29. Sprinkler timers

3. Design Requirements

3.01 Engineer Discretion

- The City, at its sole discretion, reserves the right to modify these requirements for the safety, health, and welfare of the current and future citizens of Salem City.
- Current Salem City Standards and Codes supersede all previous or other Salem City standards and codes. If items are not covered by Salem Standards and Codes, then applicable APWA drawings and specifications may be used. When APWA standard drawings and/or specifications are used, they must be reviewed by Salem City, which reserves the right to approve, modify, or reject the standard drawing. When no standard exists, the design engineer will propose a design. Salem City will approve, modify, or reject the proposed design.
- All utilities are required to go to and through the developed property/frontage.

3.02 Subdivisions

A. Illegal Subdivisions
   1. Existing lots included in a development must have their frontage improved to meet current City standards.
   2. No “protection strips” or gaps between properties shall be created.
      a. All parcels created with a subdivision shall meet the requirements of the zone.
         i. Exceptions are allowed for city owned infrastructure e.g., retention basins, substations, etc.

B. Phases
   1. All phases shall be designed to minimize infrastructure inefficiencies.

2. Subdivision phases shall ensure access and utility connections meet all standards.
3. Minimum subdivision and phase size requirements can be modified if approved by city.
4. An approved portion of amenities shall be included in each phase of the subdivision.
5. Off-site improvements shall be bonded with the phase in which they are constructed.

C. Additional Requirements

1. Dumpster enclosures shall be sized appropriately to meet the needs of the dumpster and solid waste retrieval vehicles.
   a. Minimum 6’ masonry or concrete fence/block with vision barrier decorative gate
   b. Minimum width of 10’
   c. Minimum depth of 10’
   d. Minimum of one 6 cu yd dumpster per 10 units is required

3.03 Streets

A. Road Classification

1. Alleys (when specifically approved)
   a. Minimum asphalt width
      i. Commercial: 20’
      ii. Residential: 28’
   b. May be required behind businesses.
2. Single Sided Streets
   a. Minimum requirement for streets bordering developments with unfinished ROW.
      i. Road sections within ROW shall be constructed out to half the ROW section plus 12’ of asphalt beyond the centerline of the ROW
         1. The road section shall be a new street section constructed per City Standards (including the complete reconstruction of old city or county roads).

      ii. Full width roads with curb and gutter on both sides are required when the development is a church, school, large commercial, large industrial, or other development where traffic volumes require full width roads.
3. Secondary Access (Ribbon Roads)
   a. When a subdivision is required to have a secondary access over undeveloped land the following are required:
      i. Minimum 30’ of asphalt with 2’ compacted road base shoulders on each side.
      ii. Shall meet the local street structural requirements unless site conditions require more.
         1. Minimum 3” of asphalt
         2. Minimum 6” of road base
         3. Minimum 12” of structural fill

      iii. Secondary Access shall be installed prior to winter season or meet the minimum requirement under section 2.01K.4 for Temporary Roadways.
4. Local Streets

a. Minimum 66’ ROW
b. Maximum block length 700’
    i. The City Engineer may modify this distance
5. Collector Roads
    a. All accesses shall be approved in writing by the City Engineer
    b. Minor Collector Minimum 66’ ROW
    c. Major Collector - Minimum 86’ ROW
6. Arterial Roads
    a. All accesses shall be approved in writing by the City Engineer
    b. No residential driveways permitted.
    c. Major and Minor Arterial ROW - Minimum 106’ ROW
7. Roadway Fencing
    a. Precast concrete walls are required along:
        i. Woodland Hills Drive
        ii. Loafer Mountain Parkway (including Elk Ridge Drive)
        iii. Arrowhead Trail
        iv. 11200 South
        v. Other roads/locations may be required at the sole discretion of the City Engineer
    b. Commercial frontage along these roads may be exempt from this requirement, at the sole discretion of the City Engineer
    c. Refer to Standard Detail Section 7.1 (No vinyl, composite, or iron rod panels are allowed)

B. Access and Turnarounds
1. Secondary Access
    a. Developments with greater than 30 lots or 1500’ of centerline roadway, whichever comes first, shall be require a secondary access.
        i. Minimum of 30’ wide.
        ii. Shall be an asphalt surface.
    b. Developments with 50 or more lots or 3000’ of centerline roadway, whichever comes first, shall require a permanent roadway in a dedicated ROW or a perpetual easement that includes any additional area required for roadway construction.
        i. Minimum of 32’ of asphalt built to City standards based on road classification.
        ii. All required utilities are to be installed prior to roadway construction.
        iii. Curb gutter and sidewalk may be required at City Engineer’s discretion for storm drainage or for safety.
        iv. Ribbon roads through future phases are allowable with Salem City Engineer’s written approval.
2. Cul-de-sacs & Road Connectivity
    a. Connected streets are preferred to cul-de-sacs.
    b. City Engineer has full discretion to allow or not allow cul-de-sacs.

c. Stub roads to provide future connectivity to adjacent properties are required.
   i. City Engineer has absolute discretion to require connectivity.
   ii. Underground utilities to and through are required in all stub roads.

3. Dead-end Streets
   a. Temporary turnarounds are required on dead-ends longer than one lot or 150’ from centerline.
      i. Minimum diameter
         1. Residential: 80’
         2. Commercial: 100’
      ii. Minimum 3” of asphalt and 6” of compacted road base.
      iii. Additional structural fill may be required depending on soil conditions.
   b. Hammerheads are authorized only with Salem City Engineer’s written approval.
      i. Minimum 20’ drive width
      ii. Minimum 30’ deep in both directions (from centerline)
4. Temporary Roadways
   a. Roadways under construction that are critical to traffic flow or health/safety will require a minimum pavement section through winter season as directed by City
   b. Minimum roadway section through winter as follows:
      i. 2” Asphalt
      ii. 6” Subbase
      iii. Minimum 30’ wide asphalt surface.
   c. Temporary section may be used toward ultimate road section, if built to city standard or geotechnical report recommendations (whichever road section requirements are greater) with minimum of a 2” mill and overlay.
   d. Other
5. Pavement Transition
   a. Pavement transition lengths shall be designed as recommended by MUTCD and AASHTO design standards.
6. Driveways
   a. Minimum setback from intersection
      i. Refer to Table 2: Street Access
   b. Shared driveways are not permitted unless specifically approved in writing by City and guaranteed by a recorded access agreement/easement.
   c. For corner properties, access to public streets should be provided from the lowest functional classification street. Driveways shall be located as far as possible from intersections.
   d. Driveways in right-turn lane transition areas are discouraged.
   e. See Table 1: Concrete Driveway Approaches for driveway spacing.
   f. As determined by the City Engineer, engineering judgement shall override the recommended spacing provided in Table 1: Concrete Driveway Approaches, if warranted by specific traffic conditions.
      i. City may require a traffic impact study to identify additional concerns.

Table 1: Concrete Driveway Approaches

	Residential Driveways	**Commercial/ Industrial Driveways**
Minimum Width	12 feet	24 feet
Maximum Width	30% of Lot Frontage**	40 feet*
Minimum Concrete Thickness	6 inches	8 inches
Minimum Base Course Thickness	6 inches	8 inches
*Commercial and Industrial driveways larger than 40 feet will need written approval from City Engineer. **If greater than the 30%, written approval from the City Engineer or Building Department is required.		

7. Street Access
    a. When connecting to an existing road, or planning a future road connection, refer to Table 2: Street Access for minimum distance required between intersections and driveways along each functional street classification.
    b. More spacing between intersections and driveways may be required based on findings in a project specific, Traffic Impact Study or as determined by the City Engineer, engineering judgement shall override the requirements in Table 2: Street Access, if warranted by specific traffic conditions.
    c. Construction of new driveways on arterials and major collectors are not allowed without written approval from City Engineer.
        i. If approved driveways onto Collectors and Arterials shall be designed so cars do not back onto the street.
    d. Adjustments in usage of existing driveways on arterials and major collectors require approval by City Engineer.

Table 2: Street Access

Functional Classification	**Minimum Spacing (ft)**	
	Intersections[2]	**Driveways[3]**
Major Arterial	1320	NA*
Minor Arterial	660	NA*
Major Collector	660	NA*
Minor Collector	300	150
Local Commercial	200	125
Local Residential	200	-
Notes: 1. UDOT and County may impose more stringent requirements on their streets. 2. Spacing shall be measured centerline to centerline. 3. Spacing shall be measured edge to edge. *Salem City Engineer may approve alternate spacing for unique or unusual conditions.		

C. Road Alignment
   1. Horizontal Curves
      a. Provide adequate sight distance.
      b. Minimize the need for super elevation.
      c. Do not begin or end a curve in an intersection.
      d. Curve radii and super elevation based on design speed.
      e. Centerline minimum radii
         i. Local street: 100'
         ii. Collectors and Arterials: based on design speed
      f. Minimum distance between curves shall be twice the ROW width.
   2. Vertical curves are required where grade breaks exceed 1%,
   3. Vertical curve design(s) need to incorporate requirements for design speed, stopping sight distance and rate of vertical curvature per current ASSHTO requirements.
   4. Angle points (Including beginning and ending or vertical curves) are not allowed in intersections or sidewalks.
   5. Slopes and Elevations
      a. Curb and gutter slope: see standard drawing
      b. Maximum longitudinal slope along street centerlines
         i. Arterials: 8%
         ii. Lower Classifications: 10%
         iii. The City Engineer may adjust these requirements given extenuating circumstances.
         iv. A traffic engineer will be required to provide a design recommendation in order for an adjustment to be considered.
      c. Sidewalk and planter strip: see standard drawing

D. Intersections
   1. City reserves the right to require roundabouts or modify intersection design when deemed to be in the best interest of the public's safety.
      a. Roundabouts shall be designed by a qualified traffic engineering.
   2. Master Planned Roads
      a. All master planned roadways and intersections design shall be done by a qualified traffic engineering.
   3. No more than 4 legs at new intersections.
      a. If existing conditions dictate more than 4 legs, a roundabout with more than 4 legs may be approved in writing by the City Engineer.
   4. Streets shall intersect at a 90° angle or
      a. Up to 10° for Collector and Arterial streets
      b. Up to 15° for local residential street
      c. Or as approved in writing by City Engineer.
   5. Intersections may be aligned up to 5' off without written approval and up to 10' off with written approval from City Engineer.

6. A 50’ landing, measured from the crossing street’s back of curb and having a maximum vertical grade of +/-4% at the center line, shall be provided at each intersection.
7. Intersecting streets with horizontal curves shall have minimum intersecting tangent lengths from the intersection ROW as follows, unless otherwise approved in writing by City Engineer:
   a. Local Residential – 25’
   b. Local Collector – 50’
   c. Minor Collector – 75’
   d. Major Collector – 125
   e. Arterial – 150’
8. The use of Stormwater waterways shall be specifically approved in writing by City Engineer and have a maximum approach slope of 3%.
   a. See standard drawing.
9. Intersection Back of Curb Radii shall be as per Table 3: Back of Curb Radii (ft) or as approved specifically in writing by City Engineer.

Table 3: Back of Curb Radii (ft)

		Street A Right-of-way Width (ft)			
Street B Right-of-way Width (ft)		**60**	**66**	**80**	**106**
	60	25	25	30	30
	66	25	25	30	30
	80	30	30	40	40
	106	30	30	40	40

E. Street Arrangement
1. The arrangement of streets in new developments shall make provisions for the continuation of the existing streets in the adjoining area or their proper projection where the adjoining land is not subdivided.
2. The street arrangement shall not cause unnecessary hardship to owners of adjoining property when they plat their own land and seek to provide convenient access to it.
3. The City has the sole discretion and right to require connecting roads.

F. Street and Lot Naming/Numbering
1. Developer shall propose a street name and/or number according to the Salem City grid.
   a. City shall approve the proposed name and/or number.
2. City shall approve lot addresses.
3. The developer shall be assessed a sign fee which shall be used by Salem City to purchase and install street, regulatory, and warning signs for the development.

G. Road Structural Requirements
1. A geotechnical report shall be conducted by Developer that specifically checks the roadway structural requirements.
2. Roadway structural section shall meet the standards contained herein at a minimum, but may require more stringent requirements based on Developer’s geotechnical report.

3. Asphalt shall be PG 58-28. Salem City reserves to the right to require higher quality asphalt mixes and thickened asphalt on major collectors, arterials, and bus or truck routes.
4. Road base (Untreated Base Course) shall be APWA Grade 1-1/2.
5. Structural/Engineered Fill shall be AASHTO Classification A-1-a.
6. Follow compaction requirements in Section 4.05E
7. The minimum requirements for structural street cross-sections are shown in the figures and tables below.

Figure 3: Sample Roadway Cross-section

Table 4: Asphalt and Base Course Thickness

Application	Minimum Pavement (in)	Minimum Base Course (in)
Parking Lots and Driveways	3*	6*
Local Streets	3*†	6*
Commercial Local/Bus &Truck Routes	4*†	8*
Collector Streets	4*†	8*
Arterial Streets	5*†	8*
*City may require additional thickness. †Additionally, preservation coat and crack seal after 1 year.		

H. Traffic Impact Study Guidelines
   1. City reserves the right to require traffic impact studies on any or all residential and commercial developments or redevelopments.
   2. When required the Developer shall submit a traffic impact study.
      a. The study shall be reviewed and approved by the City Engineer.
   3. The study area shall include all streets that serve the proposed development as well as all offsite intersections impacted between the development and a State or County arterial.
   4. The project/developer is responsible for completing the recommendations for offsite improvements outlined in the TIS. The analysis of existing and future conditions shall include the following:
      a. Roadway and intersection geometrics
         i. Must identify all roads with an Annual Average Daily Traffic (AADT) higher than 1,000 within the study period.
      b. Traffic control devices
      c. Peak hour traffic volumes and flow.
      d. Level of Service (LOS) for aerials, collectors and corresponding intersections.

I. Other Street Requirements
   1. Bridges
      a. Shall be included in concept discussion.
      b. Will be approved in writing by the City Engineer on a case-by-case basis.
   2. Parking stalls
      a. Perpendicular stalls shall be an unobstructed 10’x20’ rectangle.
      b. Angled stalls shall fit an unobstructed 10’x20’ rectangle inside them.
      c. Parallel stalls shall be an unobstructed 10’x22’ rectangle.
      d. The City Engineer may modify these requirements for existing or unique conditions.
   3. Mailboxes
      a. Developer shall provide mailboxes and posts according to USPS standards.
      b. Developer shall contact local Post Office to receive approval of mailbox locations.
      c. Developer shall place mailboxes in planter strip according to USPS and City approval.
   4. Sidewalk ramps
      a. Shall be compliant to current ADA requirements
      b. Design engineer shall provide details showing ADA compliance for all non-standard (Different from City Standard Drawings) ADA ramp applications.

3.04 Grading

A. Maximum cut and fill slopes 3:1 unless justified by Geotechnical Engineering soil investigation.
B. Maximum street cross slope 3% unless approved by City Engineer.
C. Minimum 1% finished cross slope for asphalt.
D. Minimum 0.4% finished slope for concrete gutters.

3.05 Storm Water Design Standards

A. General Requirements
   1. All developments shall meet the UPDES MS4 permit, Salem City SWMP, Salem City Storm Drain Master Plan, and the requirements in this section.
   2. Storm drain systems shall be designed to reasonably protect water quality, human life, and property, and mirror as closely as possible predevelopment conditions.
   3. Existing storm drain systems not meeting the standard and causing excessive, dangerous, or damaging off-site discharge, as determined by the City Engineer, shall be retrofitted with any significant remodel or redevelopment of the serviced property at the owner's expense to meet the new development and redevelopment standard.
   4. Site design shall protect sensitive environmental features including but not limited to the following:
      a. Riparian areas
      b. Wetlands
      c. Steep slopes.
   5. Salem City reserves the right to require additional engineering studies and storm drainage infrastructure for special conditionals such as steep slopes, burn areas, debris flow hazards, etc.

B. Storm Water Design Report Outline
   1. Introduction
      a. Project Name/Location
      b. Type of Report (Master, Preliminary, or Final)
      c. Project Description/Size
      d. Summarize referenced existing drainage studies
      e. Required Coordinate Systems for all data:
         i. Horizontal: NAD83
         ii. Elevations: NAVD88
   2. On-Site Drainage Conditions
      a. Drainage network, watershed, and floodplain boundaries within the project site and corresponding topographic map
      b. Soil Type/Ground cover conditions
         i. Corresponding Cure Number
      c. Existing and proposed developments adjacent to the project
      d. Groundwater conditions
      e. Infiltration rates (at the basin site(s))
      f. Surface and tailwater conditions
   3. Off-Site Watershed Conditions
      a. Watershed conditions and the drainage network entering and existing the project site and corresponding topographic map
      b. Soil Type/Ground cover conditions
         i. Corresponding Curve Number
      c. Impacts relative to adjacent projects and improvements

4. Floodplain Designation
    a. Description of floodplain, flood zones, and FEMA Floodplain map
5. Proposed Drainage Plan
    a. General description of proposed drainage system and components; including drainage areas, conveyance of off-site and storm water master plan flows;
    b. Stormwater storage requirements: Volume required, volume provided, and basin locations.
    c. Proposed drainage structures or special drainage facilities (culverts, weirs, orifice plates, etc.): Include design criteria and probable effect on the existing upstream and downstream drainage system.
    d. Pre- and post- runoff characteristics at concentration points exiting the property, and downstream conveyance capacity studies
    e. Lowest Floor Elevations vs emergency outfall elevations.
    f. Project Phasing: Improvements to be constructed with each phase, impact of phased construction, and required interim improvements. Development requirements must be met independently for each phase.
    g. Low Impact Development plan
6. Special Conditions
    a. Project Stipulations, 401 and 404 Permits, and UPDES
    b. Minimum basin floor elevation (2ft. min above maximum ground water surface elevation)
    c. All crawl spaces elevations need to meet building code for separation from maximum ground water elevation.
7. Data Analysis Methods
    a. Hydrologic procedures, parameter selection and assumptions.
    b. Hydraulic procedures, methods, parameter selection and assumptions.
    c. Stormwater storage calculation methods and assumptions.
8. Conclusions
    a. Overall Project
    b. Project Phasing
9. References
    a. List all references cited in the report
10. Appendices (Preliminary)
    a. Data and Calculations (as applicable)
    b. Peak flow calculations (Rational Method, HEC-1 printouts, TR-55, etc.)
    c. Channel design calculations including toe-down protection and drop structure design.
    d. Culvert design calculations
    e. Floodplain calculations (Manning's HEC-RAS printouts)
    f. Storage volume calculations:
        i. Retention/detention basin inflow outflow analysis and design calculations
        ii. Release and infiltration rates shall be graphed verses the design hydrograph to determine minimum retention volumes.

g. Soils and or Geologic Analyses
h. Rainfall data shall be taken from NOAA Atlas 14.
i. Documentation of sources for computation methods and field test results

11. Appendices (Final Report)
    a. All appendices from the preliminary, in addition to the following:
    b. Street Capacity Calculations
    c. Curb Opening, Catch Basin Calculations
    d. Storm Drain Calculations, including a hydraulic grade line profile(s)
    e. Sediment and Scour Calculations
    f. Rip-Rap Sizing
    g. Erosion/Sediment Control Plan, including SWPPP
12. Basis for setting finished floor elevations:
    a. In relation to designated floodplains or adjacent washes
    b. In relation to natural or adjacent ground elevation if in a Special Flood Hazard Zone or not in floodplain
13. Pertinent excerpts from studies that are being referenced
14. Exhibits
    a. Vicinity Map
    b. Floodplain Map
    c. Hydrologic Soil Map
    d. Off-site Map: Topography, watershed boundaries, floodplains, and flows impacting the project
    e. On-Site Map with current 1-foot (minimum) contour mapping based on a current topographic survey: project location, topography, drainage ways with flows labeled (including natural and artificial channels), watershed boundaries, concentration points, floodplain for washes with a flow of 100 cfs or greater, flow entering the project, and flow existing the project
    f. Current aerial photo, 800 scale or larger, showing site in context.
    g. Proposed On-site Drainage Plan

C. New developments and redevelopments shall meet the following requirements:
    1. Detention may be approved in accordance with the "Salem City Allowable Discharge Map" if an acceptable downstream waterway for discharge exists or is developed with the project as follows:
        a. The City shall require a downstream conveyance capacity study to determine if an existing downstream waterway is acceptable.
        b. If downstream conveyance facilities are shown to contain the released flows, detention volumes shall be designed with the following storm event:
            i. 100-year 3hr event
        c. Provide for safe overtopping to prevent significant downstream property damage.
    2. If no place to discharge exists the retention volume required shall be designed with the following storm event:
        a. 100-year 24hr event
        b. Provide for safe overtopping to prevent significant downstream property damage.

3. Underground conveyance systems shall be designed with the Curve Number methodology, for the peak flows, using the Farmer Fletcher distribution and storm events as follows:
    a. Developments under 50 acres
        i. 25-year 1-hour event
    b. Developments at or over 50 acres
        i. 25-year 3-hour event
4. Storm water flows shall also be conveyed in the street, with no curb overtopping to the required storage basin(s), and shall be designed with the Curve Number methodology, for peak flows, using the Farmer Fletcher distribution and storm events as follows:
    a. Developments under 50 acres
        i. 100 year 1-hour event
    b. Developments at or over 50 acres
        i. 100-year 3-hour event
5. The City Engineer may require greater retention of design storms greater than the 100-year 24-hour event to protect onsite and/or downstream properties.
6. Inlets and piping from the street to retention/detention basins shall be designed to capture the peak flow rate with a 1.5 peaking factor. Open, gravity driven flow into the basin is required.
7. Bottom of retention/detention basins shall be designed and built to maintain a minimum of 2' clearance from bottom of basin to groundwater elevations, as measured and reported in site specific geotechnical report, within the area of the basins(s)

D. Low Impact Development
    1. Implementation of Low Impact Development (LID) is required by the City and the UPDES MS4 permit as the first choice in stormwater management.
        a. Developer should implement appropriate best management practices that infiltrate, evapo-transpire, or harvest and use storm water. (Refer to Salem City Storm Water Master Plan)
    2. The selection and design of post-construction controls should consider the following at a minimum:
        a. Site soil characteristics
        b. Clogging or obstruction issues
        c. Freeze-thaw problems
        d. Effect on slope and stability
        e. Groundwater
        f. The ability to effectively maintain the control.

E. Calculations
    1. Must show that proposed storm water management is in compliance with the Storm Drain Master Plan and has the capability to handle the design storms.

F. Soils/Geotechnical Information
    1. The following soils and geotechnical information must be provided in a site-specific geotechnical report.

a. Soil type
b. Groundwater level
    i. Elevations should be referenced to NAVD88 vertical datum
c. Infiltration/percolation rates
    i. Double Ring Infiltrometer Test (ASTM 3385) completed at the proposed bottom of retention/detention basin(s) elevation.
    ii. Minimum Safety Factor of 2
    iii. Without a test, values default to minimums shown in Table 5 below.

Table 5: NRCS Infiltration Rates

Infiltration Rates (in/hr) for Hydrologic Soil Groups			
A	B	C	D
0.4	0.25	0.1	0.05

d. Geotechnical hazards
    i. Slope instability
    ii. Expansive soils
    iii. Collapsible soils
    iv. Liquefaction
    v. Other hazards as identified by the City Engineer
e. All other applicable soils data

G. Stormwater Inlets
1. Inlet boxes shall be spaced to ensure that there will be no curb overtopping during the design storm event.
2. Maximum spacing along curb and gutter shall not exceed the distances in Table 6, or as required by City Engineer.

Table 6: Maximum Storm Drain Inlet Spacing

Slope of Street (%)	Maximum Inlet Spacing (ft)
0.0 - 3.0	350
3.1 - 5.0	300
5.1 - 8.0	250
8.1 - 10	200

3. Street slopes greater than 5% require greater grate capacity.
    a. Double inlets and upsized inlet grates are suggested methods.
    b. Increased grate capacity may be required by the City Engineer regardless of street slope.

4. Inlet grates shall be set 2” below grade, and the apron shall have a continuous slope between grade and the top of grate.
5. Must have snout type grease trap, or approved equal, over the outlet of the box.
6. Inlets shall be designed to:
    a. Intercept a minimum 85% of the peak flow in the design storm.
        i. Calculations shall assume 50% blockage of inlets.
        ii. The bypassed flow must be included in the calculations downstream.
    b. Inlet(s) directly upstream from a basin must convey 100% of the peak flow into the basin.
    c. No excess runoff from the design storm is allowed to flow out of the phase or subdivision.
7. Inlet boxes shall provide pretreatment of stormwater and allow access for maintenance.
8. Combination boxes may be required.
9. No inlet box shall be placed in pedestrian ramps.
10. See standard drawing.

H. Storm Drain Piping

1. Minimum transmission pipe size shall be 15” diameter.
    a. Pipe 24” or smaller may be ADS Dual Wall N-12 pipe or equivalent.
    b. Larger than 24” shall be RCP.
    c. Do not decrease pipe diameter in the downstream direction.
2. Storm drain shall not be designed as a pressurized system.
3. Storm drain manholes shall not be more than 400’ apart.
    a. Manholes shall be 5’ diameter minimum.
4. Circular manholes lids are required when in the asphalt.
5. Pipe slope shall not be less than the slope in Table 7, or as required by City Engineer.

Table 7: Minimum Storm Drainpipe Slope

Pipe Size (in)	Min Slope (ft/ft)
15	0.0015
18	0.0012
21	0.00095
24	0.00078
30	0.00058
36	0.00046

I. Detention/Retention Basins

1. Retention Basins are required. Detention Basins may be permitted with written approval of the City Engineer.
2. Basins shall be located:
    a. On a separate dedicated lot, or with approval of the City Engineer:
        i. Within the street ROW
        ii. In a dedicated easement

3. Basins are not allowed within a flag lot.
4. Must have adequate frontage for maintenance on an improved public road.
5. Basins shall be designed with an emergency overflow into an approved facility, such as the road, public ROW or designated receiving waters.
6. Bubble up basin design is not acceptable unless specifically approved by the City Engineer.
7. Basin inlet piping requires:
    a. An appropriately sized flared end section, riprap with fabric, and trash rack (or similar).
    b. Flowline of pipe set 0.2' above the bottom of basin.
8. City approved landscaping and irrigation plan is required for all basins.
    a. Xeriscape or other water conservation landscaping design is required.
    b. Generally, trees are required around the perimeter of the basin
        i. A landscaping and irrigation plan shall be submitted to the City for review, modification, and approval
        ii. Approved automatic sprinkler drip systems are required for trees and shrubs
        iii. Low lying shrubbery shall be added for aesthetics
9. Basins shall meet the following requirements:
    a. Maximum water depth of 3' or as approved in writing by City Engineer.
    b. Minimum 1' of free board
    c. Underground structure for nuisance water abatement.
        i. Provide approved access to nuisance water structure for general maintenance.
    d. All water for the design storm must be infiltrated within 48 hours.
    e. Berms shall have a minimum top width of 3'
    f. Fencing is required on case-by-case basis with approval from Salem City
    g. Maximum side slope
        i. Grass: 5:1
        ii. Stabilized slope 3:1
    h. Basin MUE requirements:
        i. +/-3% max slope through MUE's around basin
10. Basin Certification
    a. Post construction size and infiltration certification required, refer to section 4.06.A.4. A stamped written letter certifying, under penalty of law, that the basin is constructed as per plan and will perform as per design, is required from the design engineer.
    b. Infiltration rate verification shall be completed using the Double Ring Infiltrometer Test (ASTM 3385) completed at the bottom of finished retention/detention basin(s) elevation. If underground chambers are used, the test shall take place in the native material that connects to the rock envelope.
11. Retaining walls
    a. Max height: 30 inches for public area or as approved in writing by City Engineer.

b. Walls greater than or equal to 48" are required to have fencing and be permitted through the City's building department.
c. Retaining walls are not permitted within MUE's in basin sides adjacent to ROW's unless approved in writing by City Engineer.
d. A minimum of 6' shall be used between retaining walls greater that 24 inches. This shall be measured from face to face of wall.
e. Provide design details for all wall construction, including but not limited to:
    i. Wall material
    ii. Backfill
    iii. Drainage
    iv. Design Analysis
        a. Structural/Foundation Design
        b. Slope stability analysis
    v. Other details as required

12. Detention basins additionally shall meet the following requirements:
    a. Detention may be approved, in accordance with "Salem City Allowable Discharge Map" if an acceptable downstream waterway for discharge exists or is developed with the project.
    b. Salem City reserves the right to require retention
    c. If detention is approved a release structure shall be included in the design of the basin.
    d. Shall have a designated, permanent discharge location.
    e. All water for the design storm must be infiltrated within 48 hours.
    f. Bottom of basins or drainage structures are required to maintain a 2' minimum separation from the measured and recorded ground water table elevation (as shown in the geotechnical report).
    g. Underground retention basins shall not be placed in the roadway or under sidewalk unless specifically approved in writing by the City Engineer.
    h. Manufactured storm drain facilities shall be installed as per manufactures recommendations which may require these to be installed prior to concrete installation.
    i. The type of underground storage shall be StormTech, CULTECH, or approved equal and shall be approved by the City Engineer.

3.06 Culinary Water System

In addition to the requirements herein, the most current edition of the APWA Manual of Standard Specifications and Manual of Standard Plans, the currently adopted City ordinances, and the following State Codes also apply:

- R309-550-5 Water Main Design
- R309-550-6 Component Materials and Design
- R309-550-7 Separation of Water Mains and Transmission Lines from Sewers
- R309-550-8 Installation of Water Mains
- R309-550-9 Cross Connections and Interconnections

- R309-550-11 Service Connections and Plumbing
- R309-550-12 Transmission Lines
- R309-550-13 Operation and Maintenance.

When in conflict, the more stringent standard shall take precedence, but in no case shall the standard be less stringent than Utah Administrative Code R309-550 Facility Design and Operation: Transmission and Distribution Pipelines.

A. General Requirements

1. All new water lines shall be modeled by the City.
2. All new water lines must meet applicable federal, state, and local requirements and codes.
3. Minimum Static Water Pressure: 50 psi
4. Pipes 24" and smaller shall be PVC C900 or C905 DR 18 class 235.
    a. The City Engineer may approve, in writing, ductile iron pipe.
    b. City may require specialized pipe based on unique or corrosive site conditions
5. All fittings and valves 4" and larger shall be ductile iron.
6. Butterfly valves shall be used on all pipes larger than 12".
7. All component parts shall meet NSF/ANSI Standard 61 and R309-550-6(3).
8. No used materials shall be used unless they meet the mechanical property standards of R309-550-6(4) and must be thoroughly cleaned and restored to their original condition prior to installation.
9. Dropping pipe into the trench is prohibited.
10. No pipes shall be installed in mud or water.
11. Pipe ends must be sealed during construction, and other reasonable efforts must be made to keep contamination out of the pipes.
12. All thrust blocks shall conform to APWA standard drawing 561.
13. All mechanical thrust restraints shall conform to manufactures recommendations.
14. All new installation of culinary water main-line, service laterals, and hydrants must be disinfected in accordance with AWWA C651-14.
15. All new installation and reuse of culinary mainline, service laterals, and hydrants must be pressure tested according to AWWA C605-21 (PVC) or AWWA C600-17 (DIP).
16. All pipes shall be blue.
17. When installation requires an easement,
    a. The easement shall be shown on the plat
    b. The easement shall be minimum 20' wide
18. Cross connections must be specifically approved in writing by the City Engineer.
19. City Engineer will determine if a pressure reducing station will be required.
20. All concrete vaults shall be constructed as per APWA standards or standard City drawings.
21. Refer to standard drawings for location of water mains and laterals. Deviations from the standard drawings must be approved in writing by the City Engineer.
22. The standard drawings show laterals to be located at the center of the lot, any deviation from this must be approved in writing by the City Engineer.

23. No dead-end lines will be allowed if required fire flows are not met.

B. Fire Hydrants
   1. Shall be located at all intersections and shall not be spaced further apart than 500’.
      a. Fire Hydrant spacing in multi-family projects may require closer spacing.
      b. 1000’ Max spacing along roadways where structural protection is not required.
      c. Fire Code may also require additional fire hydrants.
   2. Fire hydrant laterals shall be minimum 6” in diameter.
   3. Shall be placed in the planter strip, or as directed.
   4. Shall provide minimum flows of 1500 gpm.
   5. Shall be placed at all permanent culinary water main dead-ends.
   6. See standard drawing.

C. Culinary Mainlines
   1. Dead-ends shall be a maximum of 1500’ and shall meet required fire flows.
   2. Pipes shall be minimum 8” diameter.
      a. Actual size shall be dictated by the water model, demand requirements, or the Salem City Water Master Plan, whichever is larger.
   3. Mainlines shall extend to and through development property lines.
   4. Mainline valves shall be located at all intersections in line with corner lot property lines.
   5. Minimum bury depth for culinary mainline is 4’-0”.
      a. Bury depth should be adjusted to minimize high points and vertical bends (looping or dips under/over other utilities).
   6. The minimum number of valves shall not be less than specified in Table 8.
   7. City Engineer may require more valves.
   8. Install Combination Air/Vac Valves at high points and as directed by City Engineer.
   9. Mechanical Restraints
      a. All mechanical restraints must be installed to manufacturer’s specifications.
      b. All mechanical restraints require a thrust block as an added safety measure.
      c. Meg-a-lug restraints are required in the following circumstances:
         i. Hot taps
         ii. Elbows
         iii. Tees
         iv. Crosses
         v. And as required by Salem City Engineer.

Table 8: Minimum Number of Valves

Condition	Number of Valves
90° elbow	1
Tee	3
Cross	4
Every 500' (commercial area)	1
Every 1 block or max 800' (residential area)	1

D. Culinary Service Laterals

1. All culinary water service laterals shall be metered.
2. Laterals shall be a minimum of 1" CTS HDPE.
3. Minimum bury depth for culinary service laterals is 30".
4. Larger lateral sizes
   a. Require prior approval in writing by City Engineer.
   b. Require additional water dedications to meet increased demand.
5. Abandoned laterals shall be terminated at the mainline connection.
6. Meter cans shall be placed in the planter strip.
   a. If a meter is placed in concrete, then the can and lid must be larger, and traffic rated.
7. Location shall be clearly marked on the top of the curb with a stamp or permanent marker embedded in the curb.
8. System pressures must meet Utah Division of Drinking Water minimum requirements at all locations. This requirement may be modified in writing at the sole discretion of the City Engineer.
9. Laterals are owned by the City from mainline through the water meter can. Home owner is responsible from back of meter can to house.

E. Crossing Culinary Lines
   1. There shall be no unnecessary crossing of culinary mainlines or laterals by other utilities.
   2. All utilities crossing the water main shall do so at as close to a right angle as possible.
   3. Perpendicular or skewed crossings with sewer systems (storm and sanitary) shall have a minimum clearance of 18" with the culinary line above the sewer.
      a. Unavoidable, smaller clearances require an HDPE or stronger casing or no mechanical joints of either utility within 10' horizontally of the crossing and approved in writing by the City Engineer and the Utah Division of Drinking Water.

3.07 Pressurized Irrigation System

A. Pressurized irrigation system design shall follow the same standards as the culinary water system design except for the following:
   1. All pipes shall be purple.
   2. Minimum pipe size of 8".
   3. Minimum 36" of cover.
   4. PI service laterals
      a. All laterals shall be metered.
      b. All Laterals shall me a minimum of 1"
      c. PI box in place of a water meter can.
      d. Minimum pressure 40 psi under peak day demands.
   5. Place drain valves at dead-ends and low points in mainlines.
   6. Install combination Air/Vac valves at high points and as determined by City Engineer.
   7. Install drain line to SD at low points in the PI line.
   8. No fire hydrant shall be connected to the PI system.
   9. Minimum clearance of mainline crossings shall be 12".
      a. Unavoidable, smaller clearances require the written approval of the City Engineer.

3.08 Sanitary Sewer System

A. General Requirements
   1. City sanitary sewer design standards are to be used in conjunction with
      a. Utah Administrative Code R317-3
      b. ASCE Manual and Reports on Engineering Practice No. 60
      c. Gravity Sanitary Sewer Design and Construction Utah state Department of Health Code of Waste Disposal Regulations
      d. Uniform Plumbing Code, current edition
      e. All types of pipe materials used in design shall have established ASTM, ANIS, or NSF standards of manufacture or seals of approval, and shall be designated for use as sewer pipe
   2. All sewer lines shall be designed to protect from freezing.
   3. Refer to standard drawings for the location of sewer mains and laterals.
   4. There shall be no unnecessary crossing of other utilities by sanitary sewer lines.
   5. Where sanitary sewer is not in the public ROW an additional easement is required.
      a. The easement shall be shown on the plat.
      b. Sewer lines 10 – 12’ deep require a 25’ easement.
      c. Sewer lines deeper than 12’ require a 35’ easement.
      d. City Engineer may require a larger easement for any depth of sewer line.

B. Sanitary Sewer Mainlines
   1. Shall be designed to maintain a 2 fps velocity during peak flows.
   2. Minimum 8” diameter.
   3. In areas of high water tables, Developer shall take measures to negate buoyancy.
   4. Sewer lines shall match crown within manholes unless otherwise approved in writing by the City Engineer.
   5. Manholes shall be placed at the ends of all dead end sewer lines.
   6. Sewer mainlines shall be extended to and through property lines.
   7. Curved sewer will not be allowed.
   8. No blue or purple pipe may be used.
   9. Pipe material shall not change between manholes.
   10. Sizes not listed in UAC R317-3-2.3(D)(4) Minimum Slopes should follow the general trend, and shall be approved in writing by the City Engineer.
   11. See standard drawings.

C. Sanitary Sewer Laterals
   1. Residential
      a. Single family homes shall have a separate 4” lateral.
      b. Multi-family homes shall have separate 4” laterals where practical. City Engineer may approve in writing shared laterals.
      c. Minimum slope: 0.02 ft/ft
   2. Commercial/Industrial
      a. Each building and/or unit of separate ownership shall require a separate lateral.
      b. Minimum 6” diameter service lateral.

c. Minimum slope: 0.01 ft/ft

3. Laterals connecting to existing mainlines shall be “inserta-tee-type”.
4. Laterals connecting to new mainlines shall use a wye connection.
5. Laterals shall not tie directly into manholes unless approved in writing by City Engineer.
6. Cleanouts shall be installed a maximum of 100’ apart.
7. Pretreatment shall be installed if excessive loads of other than restroom waste are present (e.g., car wash, kitchen, particulate susceptible floor drains, etc.).
8. A pretreatment permit is required for all commercial, industrial, and institutional users.
9. No more than two bends in excess of 45° shall be installed in a lateral without a cleanout.
10. Cleanout wyes shall be made of cast iron.
11. Sewer laterals are owned by the homeowner up to the mainline.
12. No storm drain or sump drain of any kind shall connect to the sanitary sewer.
13. See standard drawing.

D. Sanitary Sewer Manholes

1. Minimum diameter per standard drawings. Any need for larger than 8’ diameter may be approved in writing by the City Engineer on a case-by-case basis.
2. Minimum 5’ between edge of collar and edge of pavement. If minimum cannot be met, collar shall tie to curb.
3. Minimum 0.1’ step shall be provided in all manholes.
4. Any manhole surface grade adjustments 12” or greater shall require a 12” concrete manhole section.
5. Locations that require a manhole are as follows:
   a. Ends of sewer mainlines
   b. Changes in grade, size, or alignment
   c. All mainline intersections
   d. Where laterals of 6” connects to a mainline of 12” or smaller
   e. Within 10’ up and down stream of casing pipes
   f. Minimum every 400’.
6. Where incoming slopes at manholes are greater than or equal to 5%, the incoming slope shall be carried through the manhole.
7. See standard drawings.

E. Sanitary Sewer Lift Stations and Force Mains

1. Sanitary sewer lift stations and force mains will only be considered as a last resort. Lift Stations and force mains will only be permitted by special approval in writing from the City Engineer.
2. Must have sufficient capacity to serve the greater area as directed by City Engineer.
3. Must provide redundancy in pumping and piping and have back up power capabilities.
4. City must approve design and may dictate the design of public or private pumps.
5. May be publicly or privately owned as determined by the City.

3.09 Erosion Control

A. Developer shall obtain the following:

1. SWPPP approval from UPDES
2. Land disturbance permit from Salem City.

3.10 Easements

A. General Requirements

1. All public ROW shall have a 10’ Municipal Utility Easement (MUE) on each side.
   a. Maximum slope of this MUE is ±2%.
2. Easements shall be provided by the developer and designated on improvement plans and final plats.
3. Easements to be dedicated to Salem City which are not shown and described on a dedication plat shall be submitted to the City Engineer.
   a. Dedications shall include, by attachment, a drawing of the easement being dedicated and a complete legal description of the easement.
4. No permits shall be issued, nor construction allowed, without the proper easements in place.
5. Easements are required for any public improvement or utility and should include but are not limited to the following:
   a. Culinary water
   b. Pressurized irrigation
   c. Sanitary sewer
   d. Storm water drainage
   e. Wetlands
   f. Other utilities
   g. Other purposes.
6. Both legal and physical accesses are required to all public and private utilities and all associated appurtenances.
7. Where natural drainage channels, interceptor systems, flood hazards, or sensitive area overlay zones cross the development, the developer must obtain the necessary permits to modify, and provide necessary easements.
8. City may require additional easements if deemed necessary.
9. When easements are not connected to public ROW, minimum easement widths shall be as follows:
   a. Construction: 50’
   b. Sanitary sewer 10’ – 12’ deep: 25’
   c. Sanitary sewer deeper than 12’: 35’
   d. Other utilities: 20’
      i. Culinary water, PI, Storm drain, Power, etc.
10. MUE’s shall extend a minimum of half the width of the easement past a utility dead-end.

B. Locations of Utilities Relative to MUE

1. The following utilities shall be in public ROW:
   a. Culinary water
   b. Sanitary sewer

c. Pressurized irrigation
d. Storm water drainage.
e. These utilities may be located in the MUE only by written City Engineer approval.

2. Only third party utilities with an approved franchise agreement will be allowed in the MUE. Construction withing MUE's will only be allowed with an approved construction permit.

4. Construction Procedures

4.01 Construction Standards

- The Contractor shall adhere to APWA standards as they may apply to the following construction procedures, unless otherwise approved by the City Engineer. Note that the requirements in this section are supplemented by APWA standards. Should the requirements herein differ from APWA, the Contractor shall adhere to the more stringent standard.
- Current Salem City Standards and Codes supersede all previous or other Salem City standards and codes. If items are not covered by Salem Standards and Codes, then applicable APWA drawings and specifications may be used at the sole discretion of the City. When APWA standard drawings and/or specifications are used, they must be reviewed by Salem City, which reserves the right to approve, modify, or reject the standard.
- All habitable buildings, within Salem City Limits, are required to connect to Salem City utilities and services.

4.02 Safety Procedures

A. Safety Procedures

1. Developer/Contractor is responsible to maintain and enforce all Federal, State, and Local safety codes.
2. Street closures and traffic detours require a permit from the Salem City. See road closure permit for requirements.
3. The Contractor's operation shall always ensure the free flow of water in gutters, culverts, and natural watercourses.
4. At no time shall the Contractor allow more than 500 cumulative feet of trench to be open for the overall project, unless otherwise approved in writing by the City Engineer.

4.03 Inspection Procedures

A. Construction Inspection

1. Inspection made by the City to determine compliance with the Standards does not imply acceptance of the work. The City requires completion of all facilities before any are accepted.
2. Developers and Contractors are responsible to ensure all inspections take place as required.
3. Improvements placed without required inspections or testing will be required to be removed and reworked with proper testing and inspection at the Contractors expense.
4. No work shall begin until inspections have been scheduled.
   a. Request 4 days prior to need for continuous inspection.

   b. Request 48 hours prior to need for periodic inspection.
5. The following improvements require continuous inspection:
   a. Placement of any street surfacing
   b. Placing of concrete for curb, gutter, and sidewalk
   c. Laying of storm drainage pipe or underground system
   d. Laying of mainlines and laterals for pressurized irrigation, sanitary sewer, and culinary water
   e. Any connections to city utilities
   f. Placement of valves, fittings, and hydrants
   g. Installation of underground power, telephone, cable, or other wires and fiber optics
   h. Utility testing and backfilling
6. The following improvements require periodic inspections:
   a. Subgrade work
   b. Street grading and gravel base placement and compaction
   c. Excavation
   d. Forms for curb, gutter, and sidewalk
      i. A final inspection is required prior to placement of concrete.
   e. Trenching for pipe or conduit
   f. Temporary traffic control measures
   g. SWPPP
7. All construction improvements are required to be GPS located by the City.
   a. Any and all backfill placed prior to GPS locating shall be removed by Contractor to allow for accurate GPS locating by City personnel.
   b. Any concrete or asphalt surfacing place without compaction testing and inspection of gravel base and subgrade work shall be removed by Contractor to allow for compaction testing and inspection by City personnel.
   c. All manholes, valve lids, etc. shall have depth and location prior to asphalting, and shall be 1” – 3” below the top of roadbase for asphalting.
   d. Contractor shall request a Pre-paving Walkthrough Inspection two days prior to asphalt.
8. The public works inspector shall endeavor to notify the Contractor of any deficiencies and may issue a letter of non-compliance or stop work notice.
9. All deficiencies shall be resolved in a timely manner and reinspected to insure conformance to city standards.
10. A documentation system shall be maintained by the Contractor to record results from all moisture/density testing and gradation determinations. Records shall be submitted to the City. Records of these tests shall show the following information at a minimum:
    a. Date of test
    b. Type of test
    c. Name, contact information, and company of person performing test
    d. Location of test/sample taken
    e. Results of test and comparison with specified value required for compliance

B. Final Inspection

1. Final inspection shall be scheduled after all improvements are completed and when the site is clean and clear of trash, debris, snow, equipment, and anything else that obscures any improvements.
2. All improvements shall be free from defects or damage at the time of inspection.
3. Developer is required to schedule final inspection a minimum of four days in advance.
4. The Contractor and sufficient crew shall be present.
5. All lids shall be pulled prior to inspection.
6. Issues discovered and discussed during the final inspection will be delivered, to the developer, as punch list items.
    a. The punch list shall not be viewed as a final, all-inclusive list.
    b. Issues identified after the punch list is created will be added to the list.
7. All punch list items shall be resolved within 30 days of receipt.
8. If multiple inspections are required, the developer may incur additional inspection fees.

C. Quality Control

1. The Contractor shall ensure quality control of all work, and all work shall meet the requirements of the Salem City Standards.
2. All materials incorporated in the work shall be new and shall fully comply with these Standards. All workmanship, materials, and articles incorporated in the work are to be of the grade and quality required by these Standards. Substitution of equipment of materials may be allowed by the City, but only after the substitute materials have been reviewed and approved as an acceptable equal.
3. Where a specific brand or manufacturer's equipment, model, system, or etc. is specified in these Standards, no intention is made to be exclusive or limit competition, but rather to set forth the minimum standards for quality and performance. The city reserves the right to reject substitutions if in his opinion, the proposed substitutions will not achieve comparable equipment installation and performance standards. The City reserves the right to require the use of specific equipment or materials to maintain uniformity of equipment for maintenance efficiencies.
4. The contractor shall furnish submittals and/or samples of materials as are requested by the City, without charge. No material shall be incorporated into the work until is have been approved by the City.

D. Authority and Duties of Inspector

1. Inspectors representing the City shall be authorized to inspect all work performed and materials furnished. Such inspection may extend to all or any part of the work, and to the preparation, fabrication, or manufacture of the materials to be used.
2. The public works inspector shall endeavor to notify the Contractor of any deficiencies and may issue a letter of non-compliance or stop work notice.
3. The inspector will not act as foreman for the Contractor.
4. The Inspector shall have authority to reject defective material and any work that is improperly performed.
5. Any omission or failure on the part of the Inspector to identify or notify the Contractor of defective work at the time of construction, shall not be deemed an acceptance, and the Contractor will be required to correct any defective work prior to final acceptance.

6. The Inspector is under no obligation to identify errors or defective materials or workmanship prior to subsequent work being performed, and neither the City, nor the Inspector shall be held liable for errors or defective materials or workmanship performed by the Contractor and not discovered prior to subsequent work.
7. The City may delegate additional authority when determined necessary.

4.04 City Approval and Warranty Period

A. City Approval
   1. Once all punch list items have been completed from the final inspection the City will issue a written approval of the construction, and the 1-yr warranty period begins.

B. Warranty Period
   1. The Developer shall warrant and guarantee that the improvements will remain in good and serviceable condition for a period of one year from the date of the written letter of approval.
   2. Any repairs or maintenance required shall be made at no cost to the City.
   3. Dips or uneven surfaces caused by subsidence or post-construction settlement of fill or backfill in any trenches, excavations, fills, or embankments within the work, which become apparent within the warranty period, shall be repaired by the Contractor at no additional cost to the City.
   4. City Engineer has the authority to determine what repairs or maintenance are necessary.
   5. If repairs or maintenance are not completed within 30 days, the City Engineer may use the warranty bond to complete the repairs or maintenance. Allowances for winter will be made.

C. Final Acceptance
   1. A final acceptance inspection shall occur 30 days prior to the completion of the warranty period.
   2. It is the responsibility of the developer to schedule the final inspection minimum 4 days in advance.
   3. The site shall be clean and clear of trash, debris, snow, equipment, and anything else that obscures any improvements.
   4. All improvements shall be free from defects or damage at the time of inspection.
   5. The Contractor and sufficient crew shall be present.
   6. The City will issue a written acceptance of the improvements or a list of deficiencies.
   7. All deficiencies will be corrected within 30 days of notification. Allowance for winter will be made.
   8. Approval following this inspection is a final acceptance of improvements.

4.05 Street Construction Procedures

A. Asphalt Removal and Repair

B. Saw cuts shall be straight.

C. When the patch is within 5’ of another patch (new or existing) they shall be replaced as a single patch.

D. Patches within 5’ of the edge of pavement shall be replaced to the edge of pavement.

E. Compaction
   1. Compaction tests are required on all load bearing materials.
   2. Percent compaction minimum requirements:
      a. Landscape areas not supporting structural loads 90%
      b. Material less than 5’ under foundation, flatwork, and pavement 95%
      c. Material 5’ or more under foundations, flatwork, and pavement 98%
      d. Asphalt 92%
      e. Utility trenches and sidewalk roadbase 95%
   3. Minimum top 12” of native material shall be scarified and recompacted.
      a. More may be required based on geotechnical study.
   4. A proof roll test shall be conducted for testable structural material as follows:.
      i. Existing Subgrade after it is scarified and compacted.
      ii. Subbase lifts (1 ft lift height) after compaction with recommended moisture content.
      iii. Any road base after it is prepared at finished grade
   5. Road base and subbase shall be proof rolled after compaction tests.
      a. Road Base Lifts
         i. 6” max lift height
         ii. Moisture content of material shall be within ±2% of optimum
   6. In roadways, each lift of material (subbase, road base, and asphalt) shall be tested for compaction and moisture content per the following:
      a. Asphalt
         i. One test per 100’ of asphalt laydown mat.
         ii. One test for every 500 sqft of asphalt patch.
   7. Asphalt lifts
      a. 3” of asphalt – 1 lift.
      b. 4” of asphalt in 2 lifts of 2” each
      c. 5” of asphalt in 1 lift of 3” and 1 lift of 2”
      d. >5” of asphalt shall be in lifts minimum 2” and maximum 3”
   8. Developer shall ensure that the City Inspector is present for concrete testing.
      a. Air and Sump
         i. A minimum of one air test and one sump test for placement over 5 cu. yards.
         ii. An additional air and sump test for every 50 c. yards placed.
      b. Strength
         i. At least one strength test for placement over 5 cu. Yards.
         ii. An additional strength test for every 50 cu. Yards or more frequently at the City’s discretion.

F. Grading
   1. All street centerlines shall be marked with “red heads.”

2. Dust mitigation methods shall be employed.

G. Curb, Gutter and Sidewalk
   1. Sidewalk forms shall not be "shaded" such that the required concrete thickness is not met.
   2. If at any point, during or after construction until the end of the warranty period, the thickness of the concrete is called into question, the City reserves the right to require borings every 100 linear feet.
   3. The 4" or 6" compacted road base under all sidewalks shall extend a minimum of 6 inches greater than the width of the sidewalk on each side.
   4. Minimum Concert Class: 4000 per APWA 03 30 04
   5. When the City determines areas are defective and require repair, the following procedure shall be taken to make repairs:
      a. Remove defective concrete to sound concrete and make edges perpendicular to surface or slightly undercut. Feathered edges are not permitted.
      b. Dampen area to be patched and at least 6 inches surrounding it.
      c. Prepare bonding grout by mixing to consistency of thick cream and brush into surface.
      d. Tie holes shall be cleaned, thoroughly dampened, and filled solid with patching mortar.
      e. Make any patches in concrete to closely match color and texture of surrounding surfaces.
      f. Determine mix formula for patching mortar by trial to obtain a good color match with concrete when both patch and concrete are cured and dry.
      g. Mix white and gray Portland cement as required to match surrounding concrete to produce grout having consistency of thick paint. Use a minimum amount of mixing water.
      h. Mix patching mortar in advance and allow to stand, without addition of water, and without frequent manipulation, until it has reached a stiff consistency. After surface water has evaporated from patch area, brush bond coat into surface. When bond coat begins to lose water sheen, apply patching mortar. Thoroughly consolidate mortar into place and strike-off to leave patch slightly higher than surrounding surface. Leave undisturbed for at least 1 hour before final finish. Keep patched area damp for 72 hours or apply curing compound.
      i. Do not use metal tools in finishing an exposed patch.
      j. Whereas cast finishes are indicated, total patched area may not exceed 1 in 500 of as cast surface. This is in addition to form tie patches, if ties are permitted to fall within as cast areas.

4.06 Storm Drainage System Construction Procedures

A. Prior to final inspection and in the 11th month of the warranty period, the developer shall:
   1. Clean all inlet boxes
   2. Developer shall jet, vacuum, and camera all storm drain lines

3. Provide survey verifying retention/detention final grade volume capacities meet or exceed design requirements.
4. Provide certification from the design engineer that completed drainage basins meet or exceed the design infiltration or release rates used to size the basins during design.
    a. If tested rates do not meet the design rates, basins or drainage system will need to be modified by Owner/Contractor.
5. Camera and flush all sewer and storm drain pipes
6. Open the snout inspection port.

4.07 Culinary Water System Construction Procedures

A. Contractors installing culinary water systems need to meet requirements of standards listed in section 3.06 and the following also apply:
    1. Installation and pressure tests of Culinary Water Mains shall be as per AWWA C605-21 or AWWA C600-17 as appropriate.
    2. Disinfection of Culinary Water Mains shall be as per AWWA C651-14.
    3. Operation of Salem City valves shall only be done by Salem City personnel, unless otherwise approved in writing by the City.
    4. Culinary water sampling shall be collected and delivered by Salem City personnel, unless otherwise approved in writing by the City Engineer.

4.08 Pressurized Irrigation System Construction Procedures

A. Pressurized irrigation system construction procedures shall follow the same standards as the culinary water system construction procedures with the exception that there is no requirement for disinfection.

4.09 Sanitary Sewer System Construction Procedures

A. Laterals connecting to existing mainlines shall be “inserta-tee-type”.

B. Laterals connecting to new mainlines shall use a wye connection.

C. Laterals shall not tie directly into manholes unless approved in writing by City Engineer.

D. All sewer lines must be air tested and deflection tested before warranty period begins.

E. Developer shall jet, vacuum, and camera all sewer lines. Any deficiencies found during inspections must be documented and corrected prior to final acceptance.

4.10 Excavation

A. Newly Paved Roads
    1. Excavation on newly paved roads will not be allowed for 5 years without written approval from the City Engineer and the following conditions:
        a. Flowable backfill
        b. Pavement removal from curb to curb and a minimum of 50’ long.
    2. Boring under new streets may also be required as an alternative to excavating.

3. The City may require a complete repave or 1" hot mix overlay or mastic seal if excavation of a newly paved road is unavoidable.
4. Excavating under newly paved roads.
    a. Flowable fill is required in all trenches to a depth of 3' or from the top of the bedding zone to the bottom of the road base, whichever is smaller.
    b. Flowable fill may require testing to ensure proper strength is maintained.
5. The proper thickness of asphalt and road base shall be maintained.
    a. Match the surrounding area and not less than 3" asphalt and 6" road base.
    b. Thicknesses of road section materials required by City standards are minimum (APWA pay factors are not applicable) – see section 3.03.G.
    c. Road section materials not meeting minimum requirements need to be replaced or modified to meet standards.

B. Subsurface Investigation
1. The Contractor is required to obtain an excavation permit to excavate and expose pipelines, structural features, soil materials, and other underground features. Exposed underground utilities not previously GPS's should be surveyed with GPS equipment. The location and extent of exposure shall be approved by the City.
2. A qualified geotechnical engineer may be required to verify soil materials or to review trench safety.
3. Investigation shall include replacement of excavated materials sufficiently to restore the site to a safe condition as determined by the City.

C. Excavation in Rock
1. The contractor shall demonstrate an inability to remove rock by making three attempts to rip the rock using equipment, having not less than 235 flywheel horsepower and a "Kelly" or similar type ripper, before blasting will be considered.
2. When blasting is deemed necessary for rock removal, the Contractor shall comply with all applicable State and Local laws, ordinances, and provisions for blasting safety and obtain written approval from the City prior to starting of drilling and/or blasting operations.
3. In all cases, blasting shall be performed by certified blasters that are experienced and well qualified. The Contractor is responsible for any and all damage caused by blasting, and blasting will not be allowed within 15 feet of any existing structures.
4. Whenever rock is encountered in the trench bottom, it shall be over-excavated to a minimum depth of 6 inches below the O.D. of the pipe. This over-excavation shall be filled with approved bedding material and compacted at no expense to the City

D. Dewatering
1. Grading and other protective measures shall be performed as necessary to prevent surface or groundwater form flowing into trenches or other excavations.
2. Any water accumulated in trenches during construction shall be promptly removed by pumping or by other approved methods at the Contractor's expense.
3. The contractor shall dispose of all water from the work in a suitable manner without damage to adjacent property.

4. Discharge into cities storm drain system, sanitary sewer, and curb and gutter is not allowed.
5. Groundwater or surface water in piping trenches shall not be allowed to enter and flow through the piping while installation of pipe is in progress.

4.11 Surveying and Staking

A. General Surveying Requirements
   1. All surveys shall be completed and stamped by surveyors licensed in the State of Utah.
   2. All improvements shall be GPS located by City personnel. See Section 4.03.A.7 Construction Inspection.
   3. Developer shall acquire a permit from the County Surveyor's office to work around any County Monument.
   4. The horizontal coordinate system shall be NAD83 and the vertical coordinate system all be NAVD88.

B. Lot Corners
   1. Front lot alignment corners shall be marked with a curb marker in the back of curb. Berntsen's BP series copper markers are to be used.
   2. Back lot corners shall be marked using rebar and a plastic cap. The Professional Land Surveyors license # is to be engraved on the cap.
   3. City is not responsible to replace lot corner markers or curb markers.

4.12 Protection of Existing Property

A. Existing Property
   1. All property removed or damaged by the Contractor shall be reconstructed in its original or new location as soon as possible.
      a. All damages shall be repaired with like material and restored to its original condition, or better.
      b. Repairs and restorations shall be at the Contractor's expense.

B. Paved Surfaces
   1. To avoid unnecessary damage to paved surfaces, tracked equipment shall use rubber cleats or paving pads when operating on or crossing all existing paved surfaces not scheduled for demolition. Contractor is responsible for any damage to existing roads. City reserves the right to require a 2" overlay or require removal and replacement of damaged asphalt.

C. Rights-of-Way and Easements
   1. When work is being done in a Municipal Utility Easement (MUE) or construction easement, the Contractor shall take appropriate measures to minimize disturbances within the easement and not exceed the limits of the easement.
      a. The Contractor shall obtain a signed release from each property owner, approving restoration work in the easement on their property.
      b. If land owner refuses to sign release after reasonable effort the City may make the determination.

2. The Contractor shall limit operations to the areas within the dedicated rights-of-way, Municipal Utility Easements, or Construction Easements, unless separate special agreements are made in writing by the Contractor with the affected property owners in advance.
3. When work is to take place in an easement, he property owners shall be notified no less than 5 work days in advance.
4. No person shall be cut off from access to their property for longer than 8 hours in a 24-hour period, unless the Contractor has made special arrangements with the affected persons.

B. Existing Utilities

1. The Contractor is responsible to complete a Blue Stakes Locate Request and locate and expose all existing underground structures and utilities.
2. All utilities shall be maintained in continuous service throughout the entire construction period unless otherwise approved by the City Engineer and/or separate utility agency in writing.
    a. No interruption of utility services outside of working hours will be allowed.
3. The Contractor shall be responsible for any and all changes, interruptions, and/or re-connections to public facilities.
    a. The Contractor shall make all necessary notifications, scheduling, and coordination related to interferences in service.

Appendix A – Salem City Subdivision Approval Process

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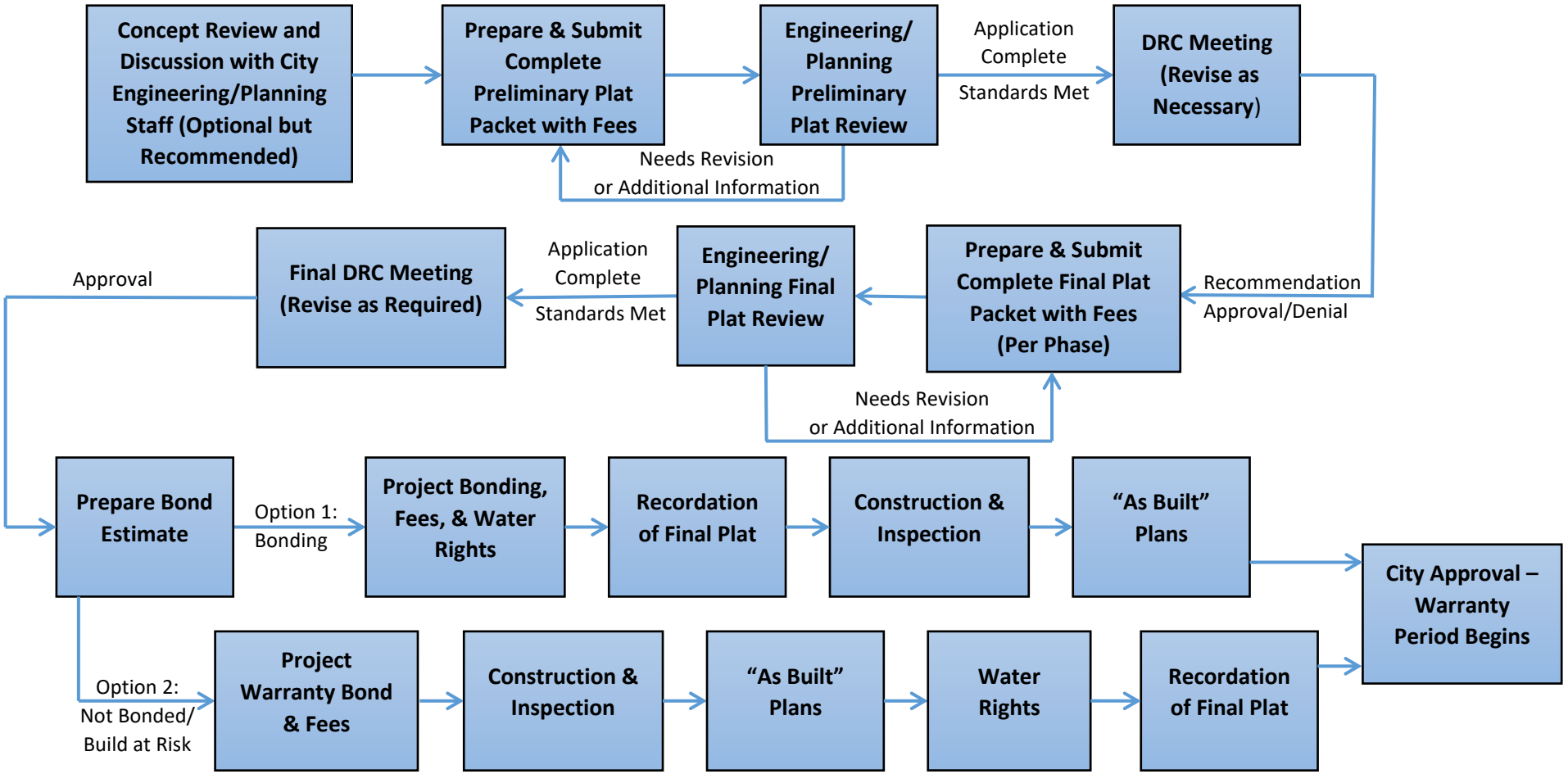
Appendix A – Salem City Subdivision Approval Process



1. **Zone changes must be completed prior to preliminary plat approval.**
2. **Preliminary Plats shall be completed and submitted as describe in section 2.01**
3. **Final Plats shall be completed and submitted as described in the section 2.02**
4. **For additional information on subdivision approval procedures see Salem City Construction and Development Standards available at salemcity.org.**
5. **Development Review Committee (DRC) meets on Wednesdays as needed.**
6. **Subdivisions can be scheduled for DRC (10) ten days after staff review finds the submittal complete. Only complete applications will be scheduled.**
7. **Meeting schedules are subject to change.**
8. **Developers should not assume that their subdivision is scheduled unless informed by City personnel.**

Appendix B – Salem City Commercial Site Plan Approval Process

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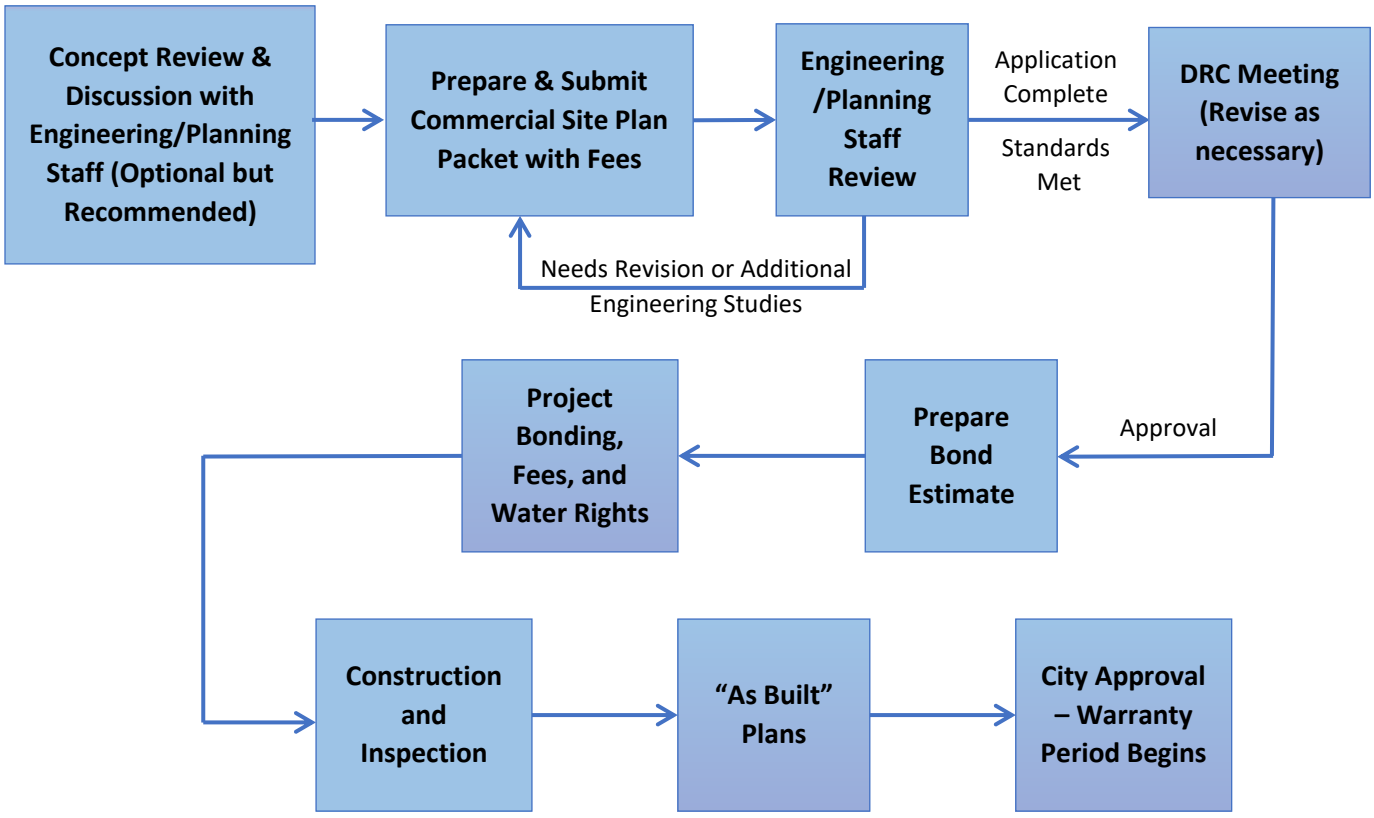
Appendix B – Salem City Commercial Site Plan Approval Process



1. **Zone changes must be completed prior to approval from the Development Review Committee.**
2. **Commercial Site Plan Packets shall be completed and submitted as described in section 2.03**
3. **For additional information on commercial site approval procedures see Salem City Construction and Development Standards available at salemcity.org.**
4. **Development Review Committee (DRC) meets on Wednesdays as needed.**
5. **Commercial Sites can be scheduled for DRC (10) ten days after staff review determines the submittal to be complete. Only complete applications will be scheduled.**
6. **Meeting schedules are subject to change.**
7. **Developers should not assume that their commercial site is scheduled unless informed by City personnel.**
8. **Commercial Subdivisions will follow the Salem City Subdivision Approval Procedure.**

Appendix C – Standard Detail Drawings

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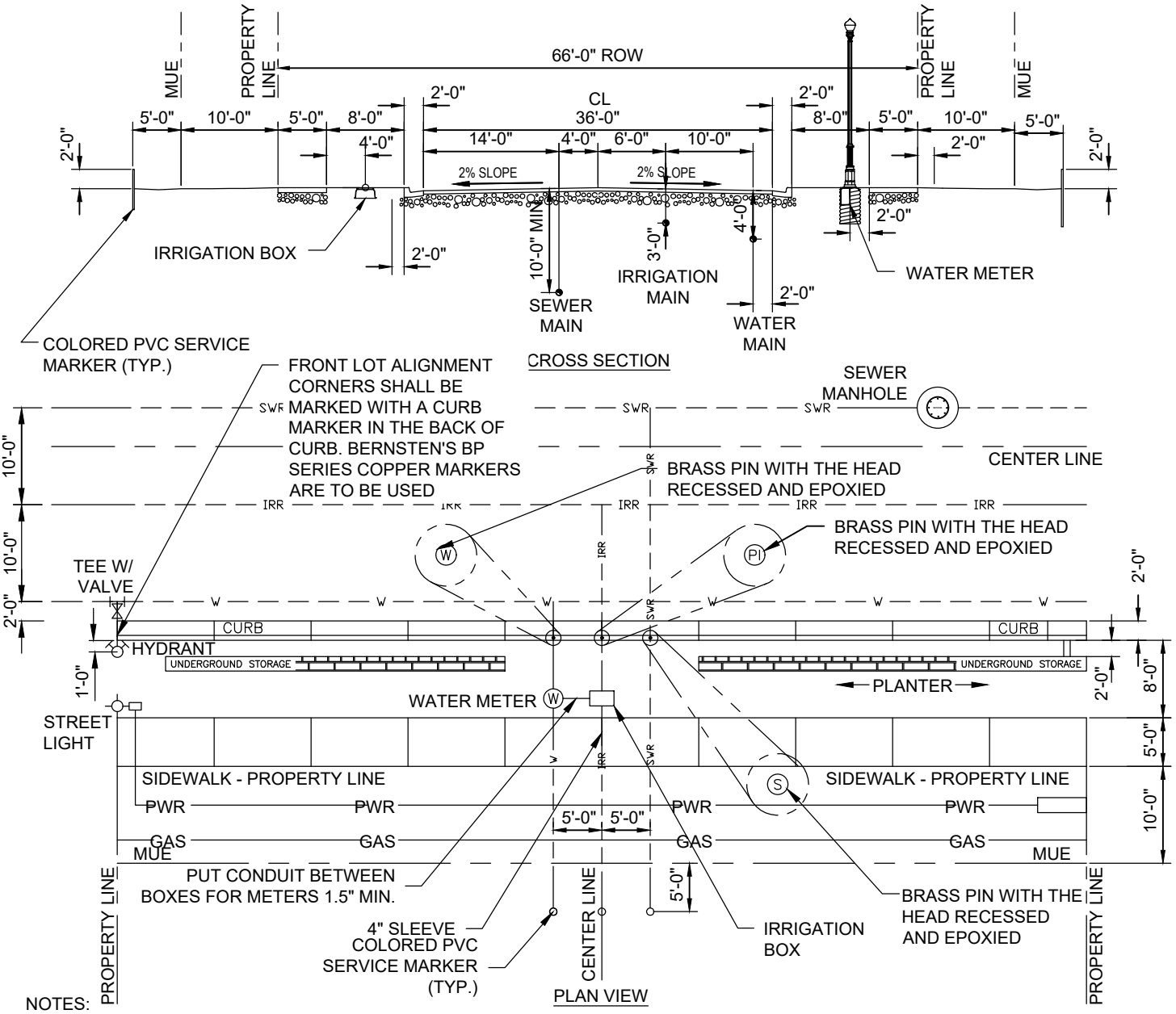
SALEM CITY
CONSTRUCTION STANDARDS DETAILS

TYPICAL 66' STREET RIGHT OF WAY

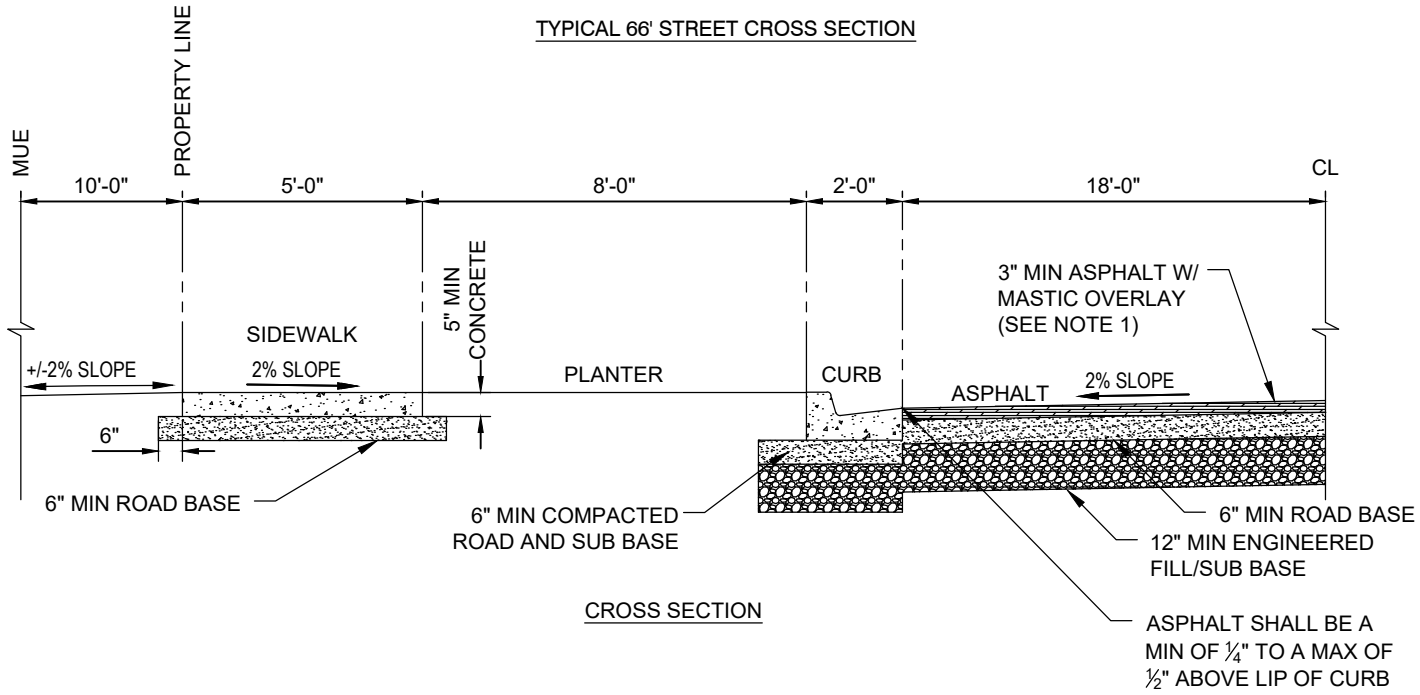


NOTES:

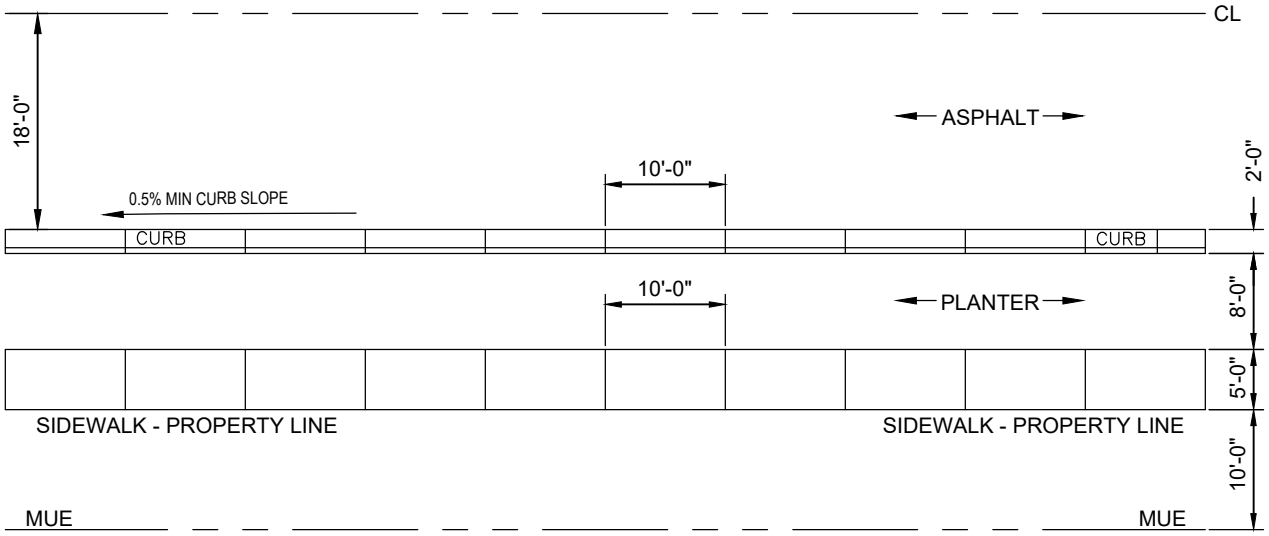
1. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL ROAD CONSTRUCTION, BARRICADES, CHANNELING DEVICES, AND CONSTRUCTION SIGNS IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR ROAD CONSTRUCTION ACTIVITIES.
2. TRAFFIC ACCESS SHALL BE MAINTAINED FOR LOCAL RESIDENTS TO PROPERTIES ALONG CONSTRUCTION BOUNDARIES.
3. WORK PERFORMED WITHIN THE STATE HIGHWAY RIGHTS-OF-WAY SHALL CONFORM TO THE STATE OF UTAH SPECIFICATIONS FOR EXCAVATION ON STATE HIGHWAY PREPARED BY THE DEPARTMENT OF TRANSPORTATION.
4. THE CONTRACTOR SHALL PROVIDE MAILBOXES AND POSTS ACCORDING TO U.S. POSTAL SERVICE STANDARDS AND SHALL PLACE THEM IN THE PLANTER STRIPS AT LOCATIONS DESIGNATED BY THE CITY.
5. PI BOX SHALL BE INSTALLED IN THE CENTER OF LOT. WATER METER SHALL BE INSTALLED 5 FEET TO THE HIGHER ELEVATION SIDE OF THE PI BOX. SEWER LATERAL SHALL BE INSTALLED 5 FEET TO THE LOWER ELEVATION SIDE OF LOT.
6. ALL SIDEWALKS, CURBS AND GUTTERS SHALL BE CONSTRUCTED USING 6.5 BAG MIX BASED ON APWA STANDARDS FOR CLASS 4000 CONCRETE. ANYTHING MORE THAN 5 CY NEEDS TO BE TESTED.
7. UNDERGROUND STORAGE IN PARK-STRIP NEEDS WRITTEN APPROVAL FROM CITY ENGINEER.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS TYP. 66' RIGHT OF WAY SCALE: NONE DATE: 1-9-18 SECTION: 1.1 REV DATE: 10-18-23

TYPICAL 66' STREET CROSS SECTION



CROSS SECTION



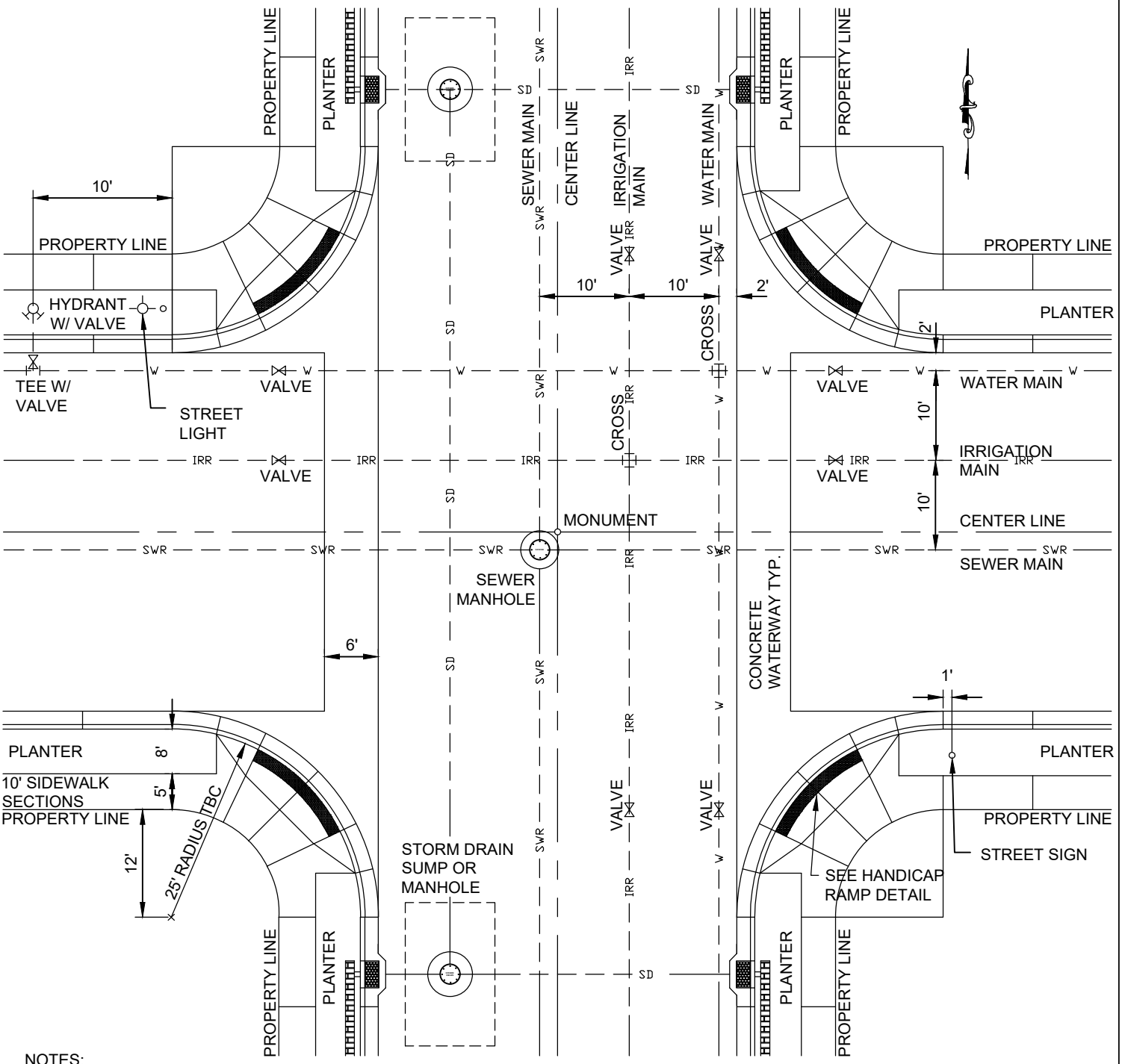
PLAN VIEW

NOTES:

1. THE DEVELOPER WILL PAY FOR A MASTIC SEAL OVERLAY TO BE INSTALLED 1 YEAR AFTER ASPHALT IS INSTALLED (BY CITY).
2. PAVEMENT SECTION IS A MINIMUM. THE CITY ENGINEER MAY REQUIRE CHANGES BASED ON AN APPROVED GEOTECHNICAL STUDY AND TRAFFIC CONDITIONS.
3. A 4" ASPHALT DEPTH OR GREATER MAY BE REQUIRED FOR ROADS THAT WILL CARRY SIGNIFICANT HEAVY TRUCK TRAFFIC, BUS ROUTES, ETC.
4. THE COMPACTED ROAD BASE UNDER ALL SIDEWALKS SHALL EXTEND A MINIMUM OF 6 INCHES GREATER THAN THE WIDTH OF THE SIDEWALK ON EACH SIDE. 95% COMPACTION IS REQUIRED ACROSS THE ENTIRE WIDTH OF THE PLACED ROAD BASE.
5. AN APWA APPROVED PROOF ROLL IS REQUIRED, IN ADDITION TO COMPACTION TESTING, FOR ALL SUBGRADE MATERIALS BENEATH ROADWAY AND CURB & GUTTER.
6. ALL SIDEWALK AND CURB & GUTTER SHALL HAVE JOINTS SPACED AT 10 FEET AND SHALL BE ALIGNED SO THAT THE JOINTS MATCH BETWEEN THE SIDEWALK AND THE CURB & GUTTER.
7. PROVIDE EXPANSION JOINTS AT EVERY 50', EVERY RADIUS, EVERY TIE-IN, OR COLD JOINT.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS TYP. 66' CROSS SECTION SCALE: NONE DATE: 1-9-18 SECTION: 1.2 REV DATE: 10-18-23

TYPICAL STREET INTERSECTION



NOTES:

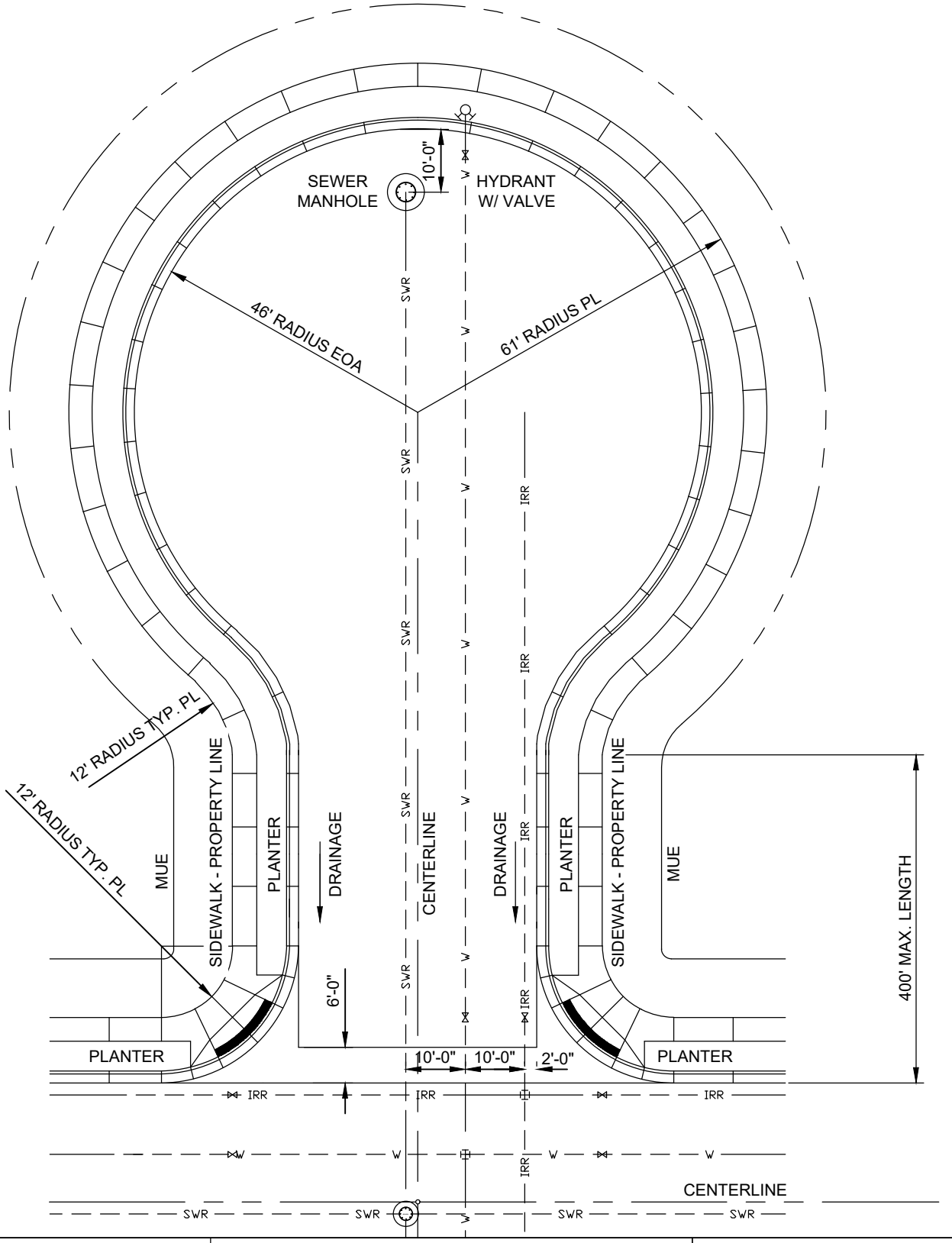
1. THREE WATER VALVES SHALL BE REQUIRED ON A FOUR-WAY STREET INTERSECTION. TWO WATER VALVES SHALL BE REQUIRED ON A THREE-WAY STREET INTERSECTION. ALL VALVES SHALL BE LOCATED ON LINE WITH THE PROPERTY LINE, NEVER IN CONCRETE CROSS CUTTER.
2. WATER MAINS SHALL BE LOCATED ON THE NORTH & EAST SIDES OF THE STREET. SEWER MAINS SHALL BE LOCATED ON THE SOUTH & WEST SIDES OF THE STREET.
3. ADA RAMPS SHALL BE PLACED ON ALL CORNERS.

SALEM
City of Peace

SALEM CITY CONSTRUCTION STANDARDS

STREET DETAILS
TYP. STREET INTERSECTION
SCALE: NONE
DATE: 1-9-18
SECTION: 1.3
REV DATE: 10-18-23

CUL-DE-SAC



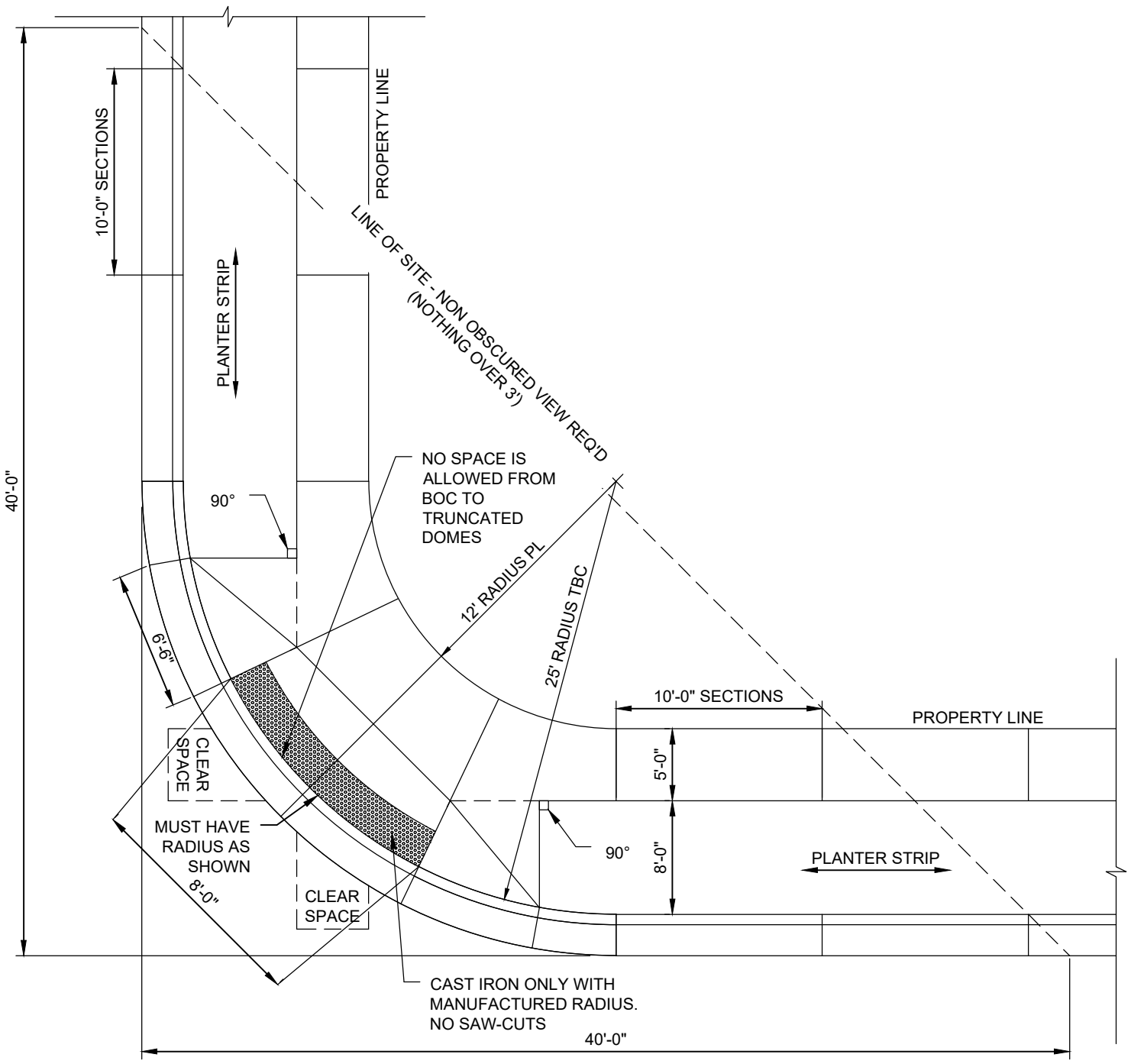
SALEM
City of Peace

SALEM CITY CONSTRUCTION STANDARDS

STREET DETAILS
CUL-DE-SAC
SCALE: NONE
DATE: 1-9-18
SECTION: 1.4
REV DATE: 10-18-23

HANDICAP RAMP W/ PLANTER

REFER TO APWA 235 UTAH CHAPTER



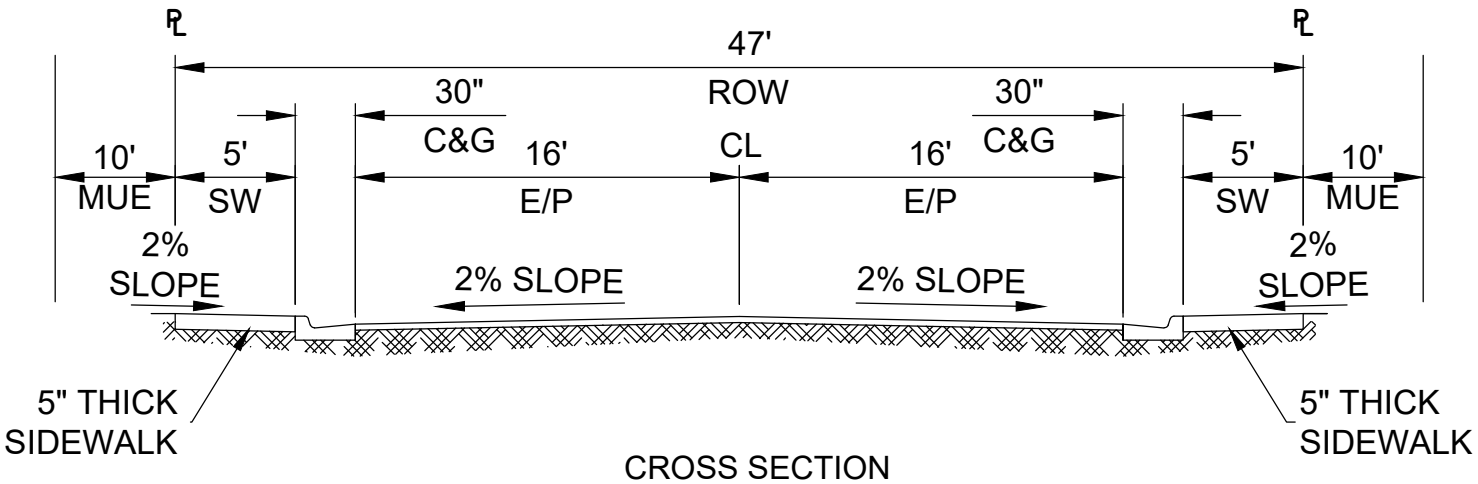
NOTES:

1. RAMP MUST MEET CURRENT CITY STANDARDS
2. ANY DEVIATION REQUIRES A SEPARATE SUBMITTAL

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS
		HANDICAP RAMP W/ PLANTER
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 1.5
		REV DATE: 10-18-23

TYPICAL 47' STREET RIGHT OF WAY

TOWNHOME ONLY



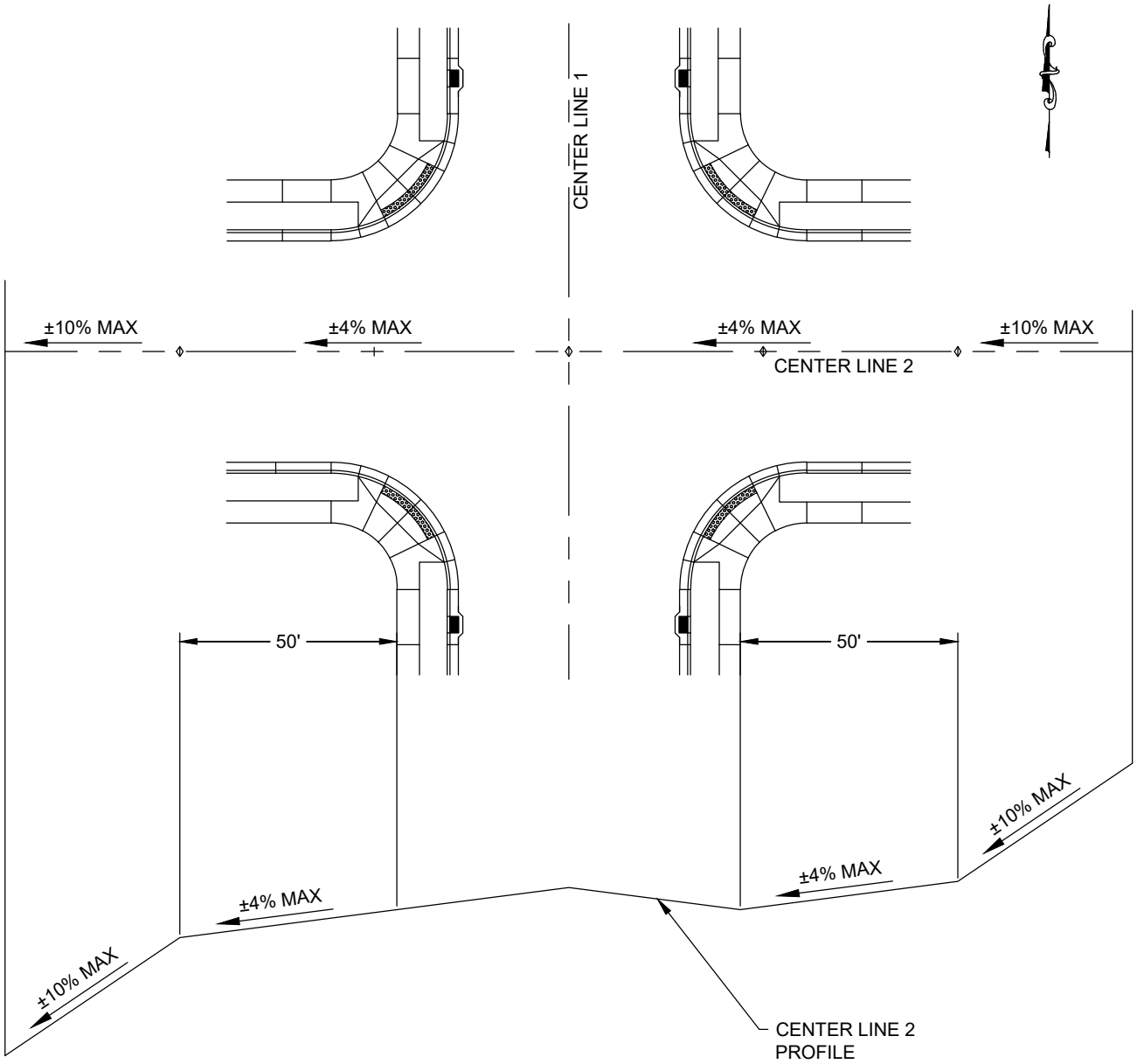
CROSS SECTION

NOTES:

1. THIS CROSS SECTION SHALL ONLY BE USED ON TOWNHOME STREETS PROJECTED TO HAVE AN AVERAGE TRAFFIC OF NO MORE THAN 1,000 TRIPS PER DAY, AS DEMONSTRATED BY A PROJECT SPECIFIC, TRAFFIC IMPACT STUDY.
2. IF THIS CROSS SECTION IS ALLOWED TO BE USED BY SALEM CITY, THEN THE REAR SETBACK SHALL BE INCREASED FROM 15 TO 23 FEET.
3. MAXIMUM 2% GRADE THROUGH MUE.

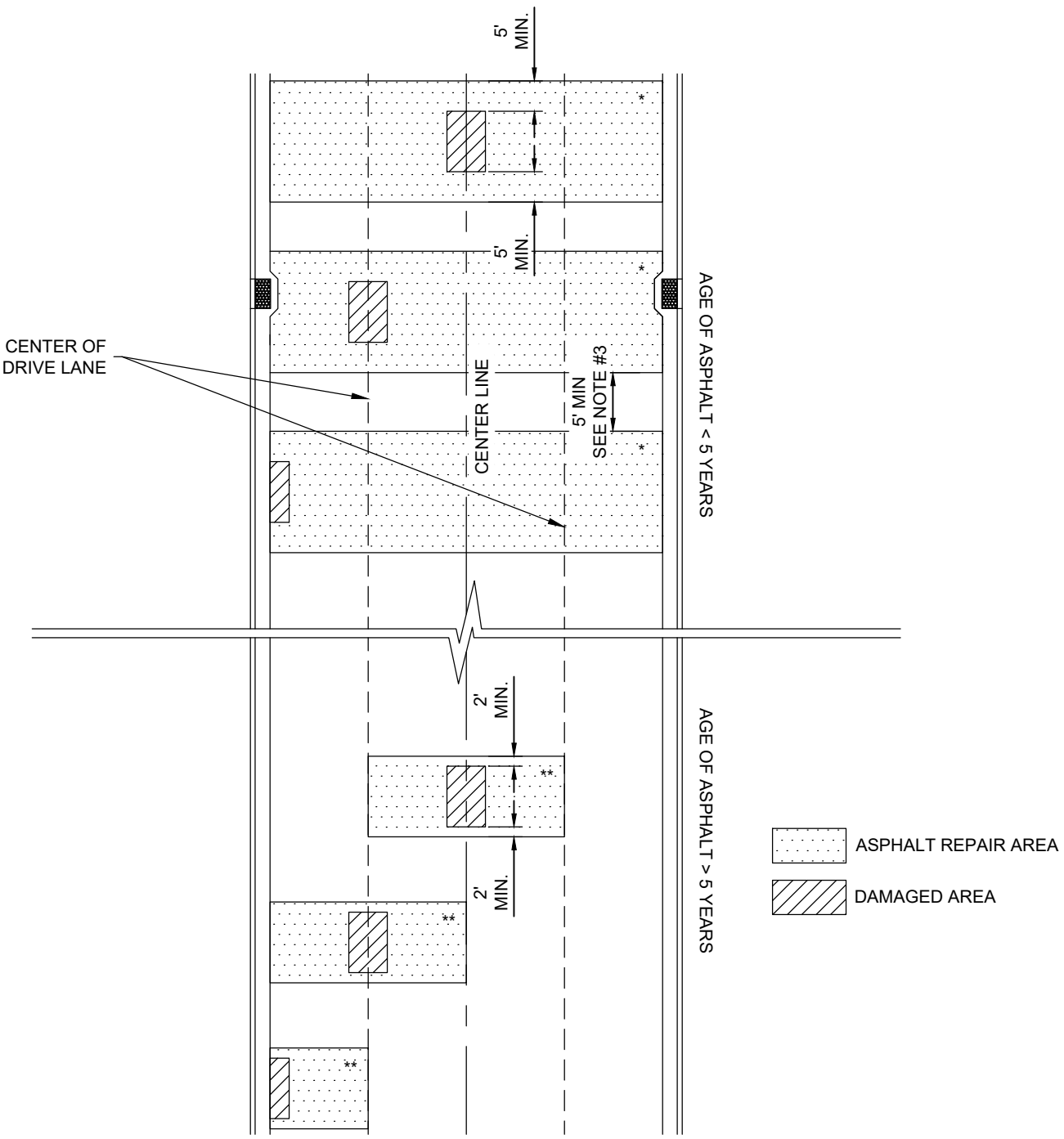
SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS
		TOWNHOME CROSS SECTION
		SCALE: NONE
		DATE: 01-19-22
		SECTION: 1.6
		REV DATE: 10-18-23

INTERSECTION LANDINGS



SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS
		INTERSECTION LANDINGS
		SCALE: NONE
		DATE: 7-20-23
		SECTION: 1.7
		REV DATE: 10-18-23

PAVEMENT REPAIR

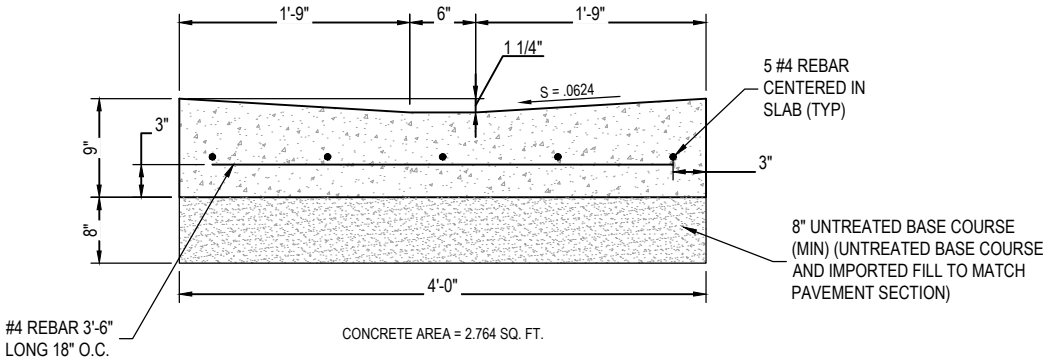


NOTES:

1. * REPAIR TO BE EDGE TO EDGE REPLACEMENT.
2. ** EXTEND REPAIR TO NEAREST EDGE, CENTER OF TRAVEL LANE, OR CENTER LINE OF ROAD.
3. IF REPAIR BOUNDARY IS WITHIN 5' OF A PREVIOUS REPAIR, REPLACE TO PREVIOUS REPAIR EDGE TO EDGE.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS PAVEMENT REPAIR SCALE: NONE DATE: 7-20-23 SECTION: 1.8 REV DATE: 10-18-23

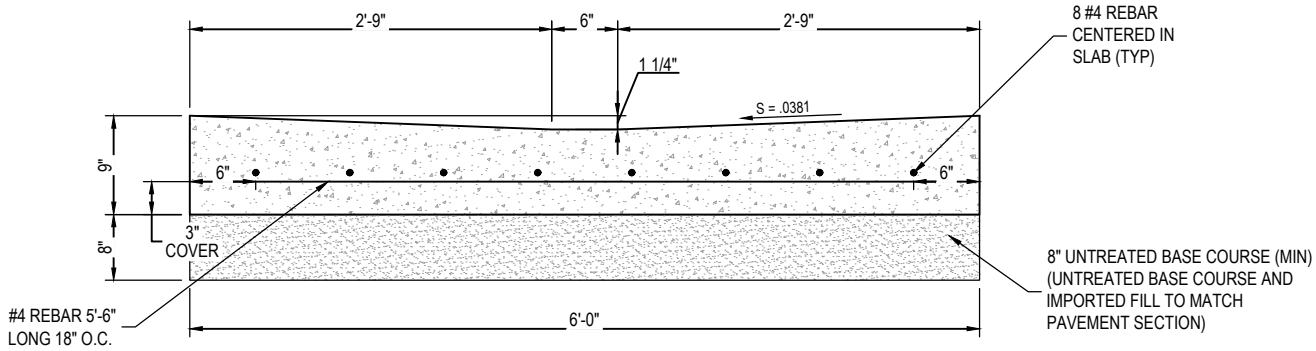
WATERWAY DETAIL



CONCRETE AREA = 2.764 SQ. FT.

4'-0" WATERWAY

N.T.S.



CONCRETE AREA = 4.16 SQ. FT.

6'-0" WATERWAY

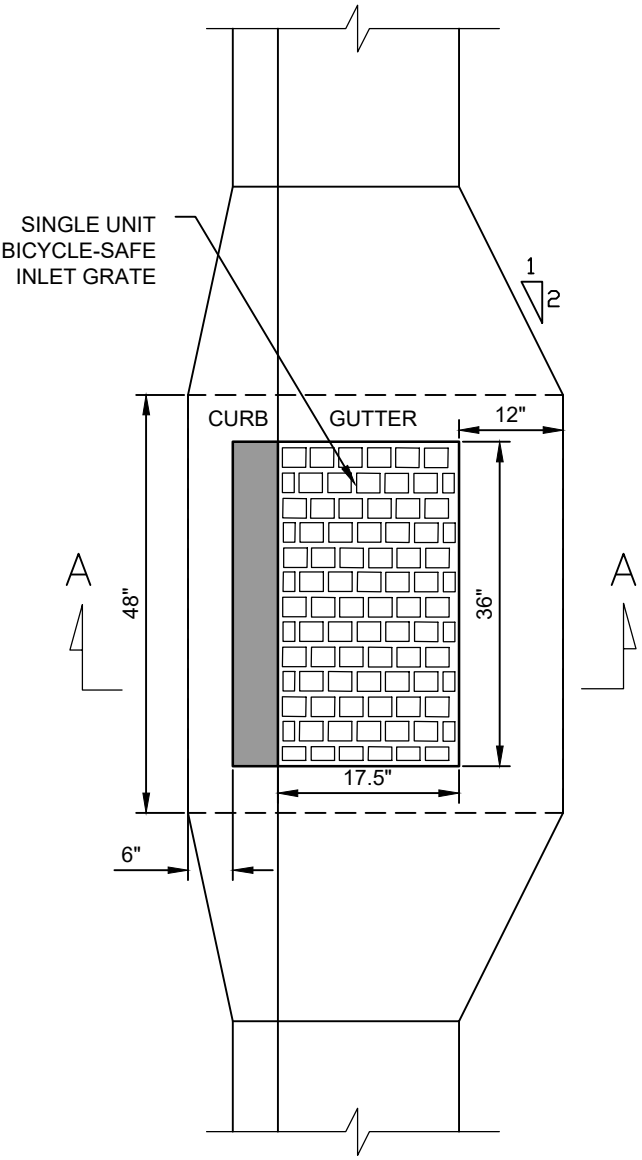
N.T.S.

NOTE:

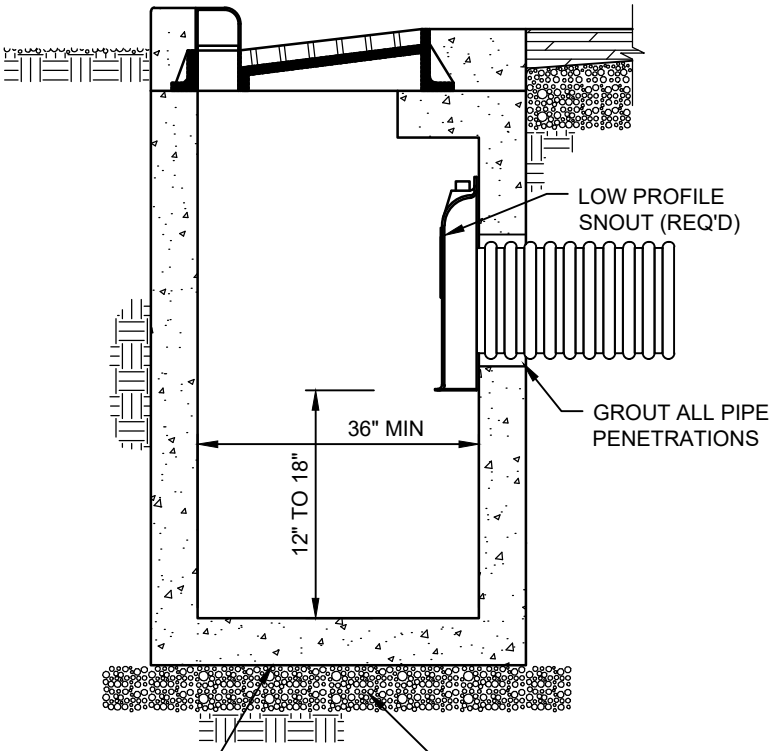
1. CONTRACTION JOINTS EVERY 5' MAXIMUM.
2. REINFORCING REQUIRED IN RETURN APRONS SHOWN.
3. 5' CROSS GUTTER ALLOWED ONLY WITH APPROVAL OF THE CITY ENGINEER.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS
		WATERWAY DETAIL
		SCALE: NONE
		DATE: TBD
		SECTION: 1.9
		REV DATE: 10-18-23

CURB INLET BOX ASSEMBLY



PLAN VIEW



SECTION A-A

3' X 3' X 4' (MIN. SIZE - INTERIOR DIMENSION) PRECAST BOX THAT MEETS H-20 LOADING AND ASTM SPECIFICATION C-858 FOR UNDERGROUND UTILITY STRUCTURES

NOTES:
1. INLET GRATES SHALL BE SET 2" BELOW GRADE, AND THE APRON SHALL HAVE A CONTINUOUS SLOPE BETWEEN THE GRADE AND THE TOP OF GRATE.P

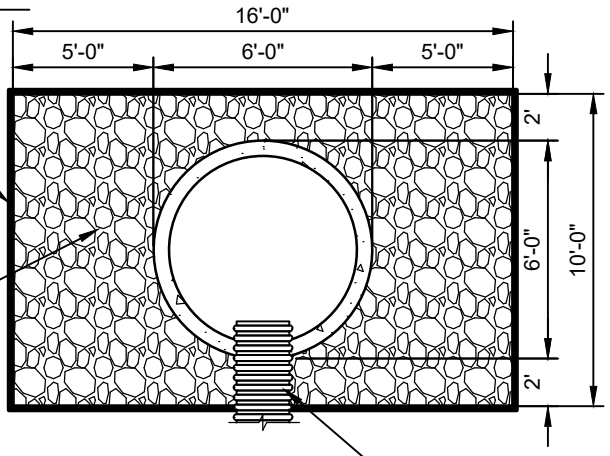
SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STORM DRAIN COLLECTION CURB INLET BOX ASSEMBLY SCALE: NONE DATE: 1-9-18 SECTION: 2.1 REV DATE: 10-18-23

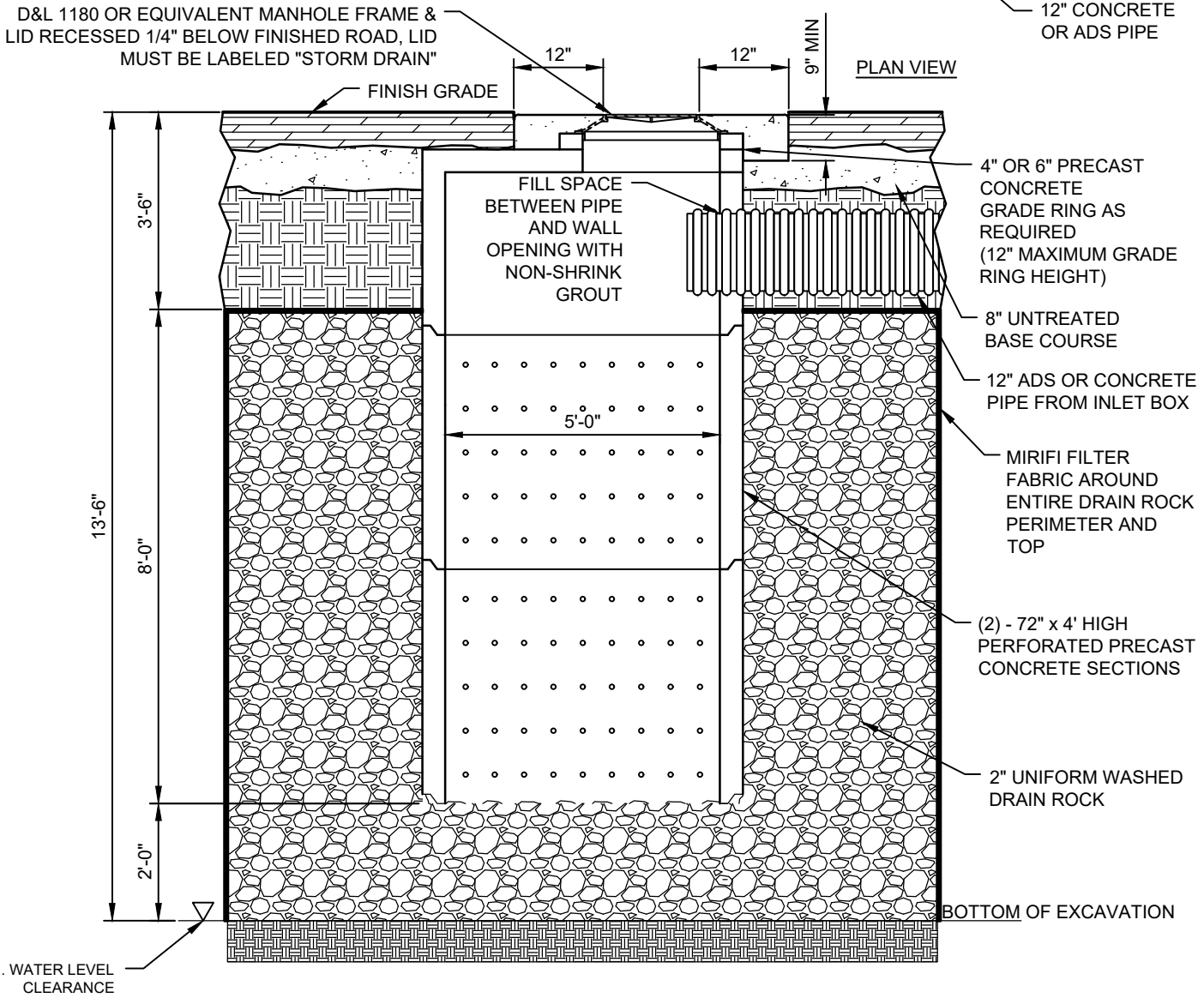
MANHOLE SUMP

(REQUIRES SPECIAL PERMIT WITH PRIOR APPROVAL)

NOTES:
1. ALL SUMPS SHALL BE PRE-CAST CONCRETE MEETING HS20 LOADING REQUIREMENTS.
2. PERFORATED SECTIONS SHALL HAVE 1" HOLES @ 12" O.C.
3. NO FLUSH MOUNT RING & COVERS WILL BE ALLOWED.
4. GROUND WATER LEVEL MUST BE INVESTIGATED AND SHOWN, 2' MINIMUM CLEARANCE ABOVE GROUND WATER.

NOTE:
MINIMUM DIMENSIONS MAY BE MODIFIED

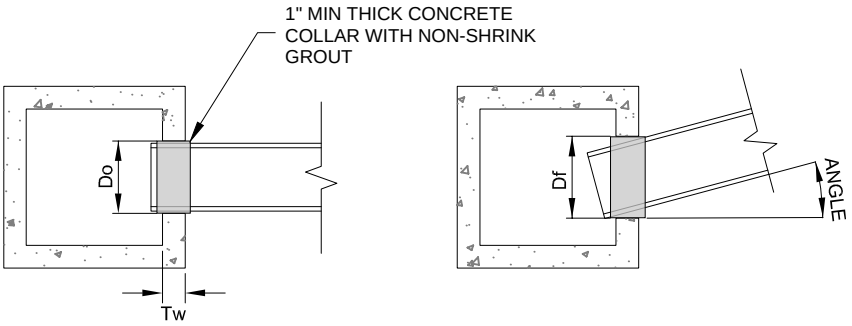




SALEM CITY CONSTRUCTION STANDARDS

STORM DRAIN COLLECTION
MANHOLE SUMP
SCALE: NONE
DATE: 1-9-18
SECTION: 2.2
REV DATE: 10-18-23

STORM BOX SIZING GUIDELINES



D_o : THE ORIGINAL DIAMETER OF THE INLET OR THE OUTER DIAMETER (OD) OF THE PIPE IF THE PIPE IS PURPENDICULAR TO THE INLET BOX.

D_f : THE FINAL ADJUSTED SIZE OF THE INLET WHEN THE PIPE IS SKEWED.

T_w : THE THICKNESS OF THE WALL (6" FOR THE TABLE BELOW).

ANGLE: THE ANGLE AT WHICH THE PIPE IS SKEWED.

FORMULA:

$D_f = (OD \times 1/COS(ANGLE)) + (TAN(ANGLE) \times T_w)$

CONCRETE PIPE OUTER DIAMETERS BASED ON 6" CLEANOUT WALL THICKNESS AND PIPE ANGLE AT CLEANOUT							
ANGLE OF PIPE ENTERING BOX	0°	5°	10°	15°	20°	30°	45°
INSIDE DIAMETER (ID)	OUTSIDE BARREL DIAMETER (OD)	Df	Df	Df	Df	Df	Df
12.0"	16.5"	17.1"	17.8"	18.7"	19.7"	22.5"	29.3"
15.0"	19.8"	20.4"	21.1"	22.1"	23.2"	26.3"	33.9"
18.0"	23.0"	23.6"	24.4"	25.4"	26.7"	30.0"	38.5"
21.0"	27.0"	27.6"	28.5"	29.6"	30.9"	34.6"	44.2"
24.0"	30.0"	30.6"	31.5"	32.7"	34.1"	38.1"	48.4"
27.0"	35.0"	35.7"	36.6"	37.8"	39.4"	43.9"	55.5"
30.0"	38.3"	38.9"	39.9"	41.2"	42.9"	47.6"	60.1"
36.0"	45.9"	46.6"	47.6"	49.1"	51.0"	56.4"	
42.0"	52.2"	53.0"	54.1"	55.7"	57.8"	63.8"	
48.0"	59.4"	60.2"	61.4"	63.1"			
54.0"							
60.0"							
66.0"							
72.0"							
84.0"							
90.0"							
96.0"							

NOTES:

1. TABLE IS BASED ON A 6" WALL THICKNESS AND PIPE ANGLE AT CLEANOUT.
2. SHADED AREAS BELOW THE DARK LINE INDICATE PIPE SIZES AND ANGLES THAT WILL NOT FIT WITHIN A STANDARD 6' WALL BOX. SPECIAL BOX SIZES ARE NECESSARY FOR THESE CONDITIONS.
3. USE OF THIS TABLE (INCLUDING DESIGN & DIMENSIONS) SHOULD BE ANALYZED AND CHECKED BY THE USER'S ENGINEER TO ENSURE ADEQUACY FOR THE INTENDED USE.
4. ALL BOXES SHALL HAVE A MINIMUM OF 6" OF SURROUNDING CONCRETE BOX COVERAGE.

SALEM CITY CONSTRUCTION STANDARDS

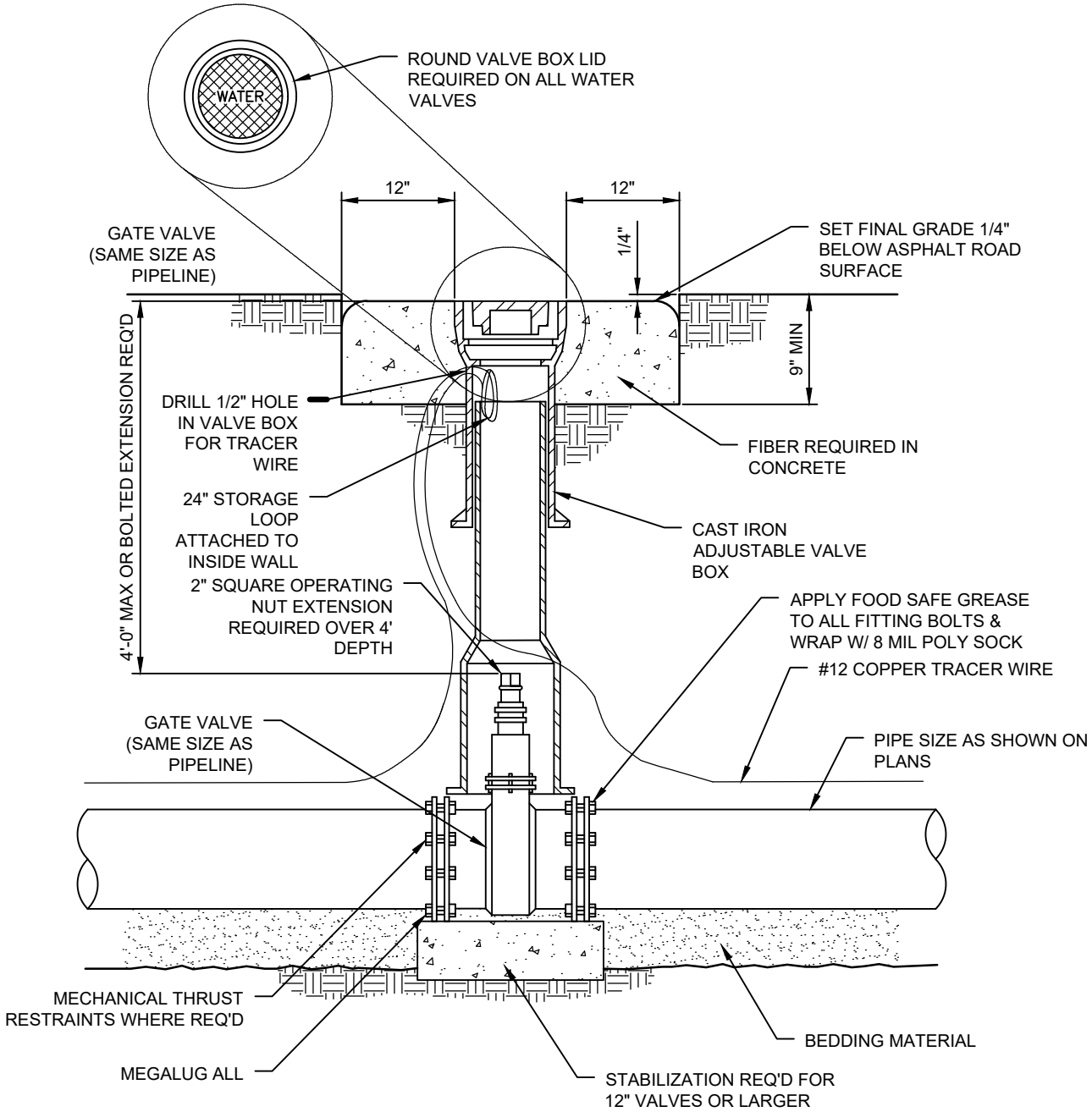
STORM DRAIN COLLECTION
STORM BOX SIZING
SCALE: NONE
DATE: 1-20-21
SECTION: 2.6
REV DATE:10-18-23

GATE VALVE - CULINARY WATER

REPLACES APWA PLAN NO. 574

APPROVED MATERIALS / SUPPLIERS:

WATEROUS OR MUELLER PER AWWA C509



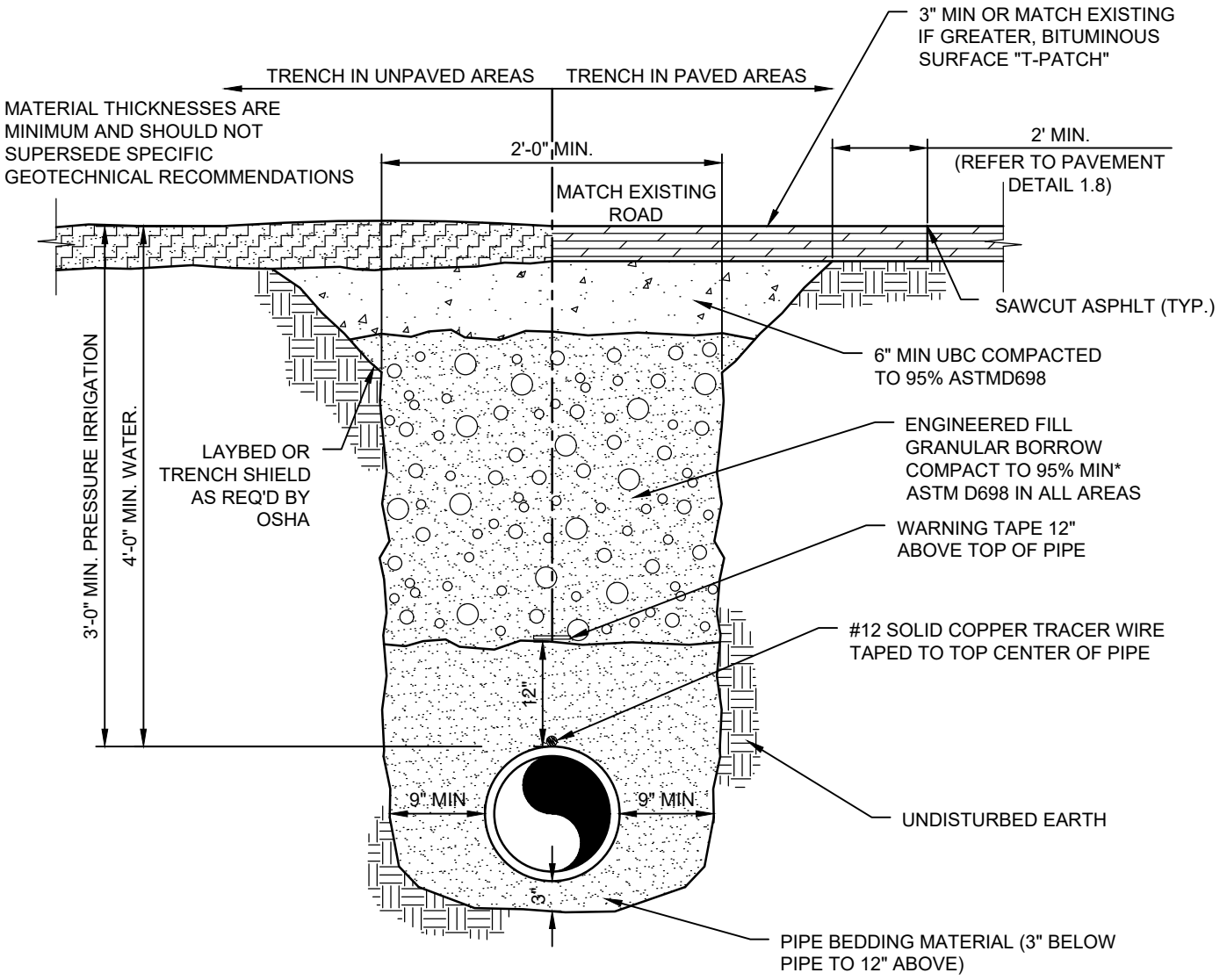
NOTES:

1. ONLY CITY PERSONNEL SHALL OPEN AND CLOSE WATER VALVES, UNLESS APPROVED OTHERWISE IN WRITING BY THE CITY.
2. ALL CONCRETE COLLARS SHOWN WITH VALVE BOXES SHALL BE INSTALLED AFTER ASPHALT HAS BEEN INSTALLED.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	CULINARY WATER
		GATE VALVE - CUL. WATER
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 3.1
		REV DATE: 10-18-23

TYPICAL TRENCH - CULINARY WATER / PRESSURE IRRIGATION

REPLACES APWA PLAN NO. 381 - 382



NOTES:

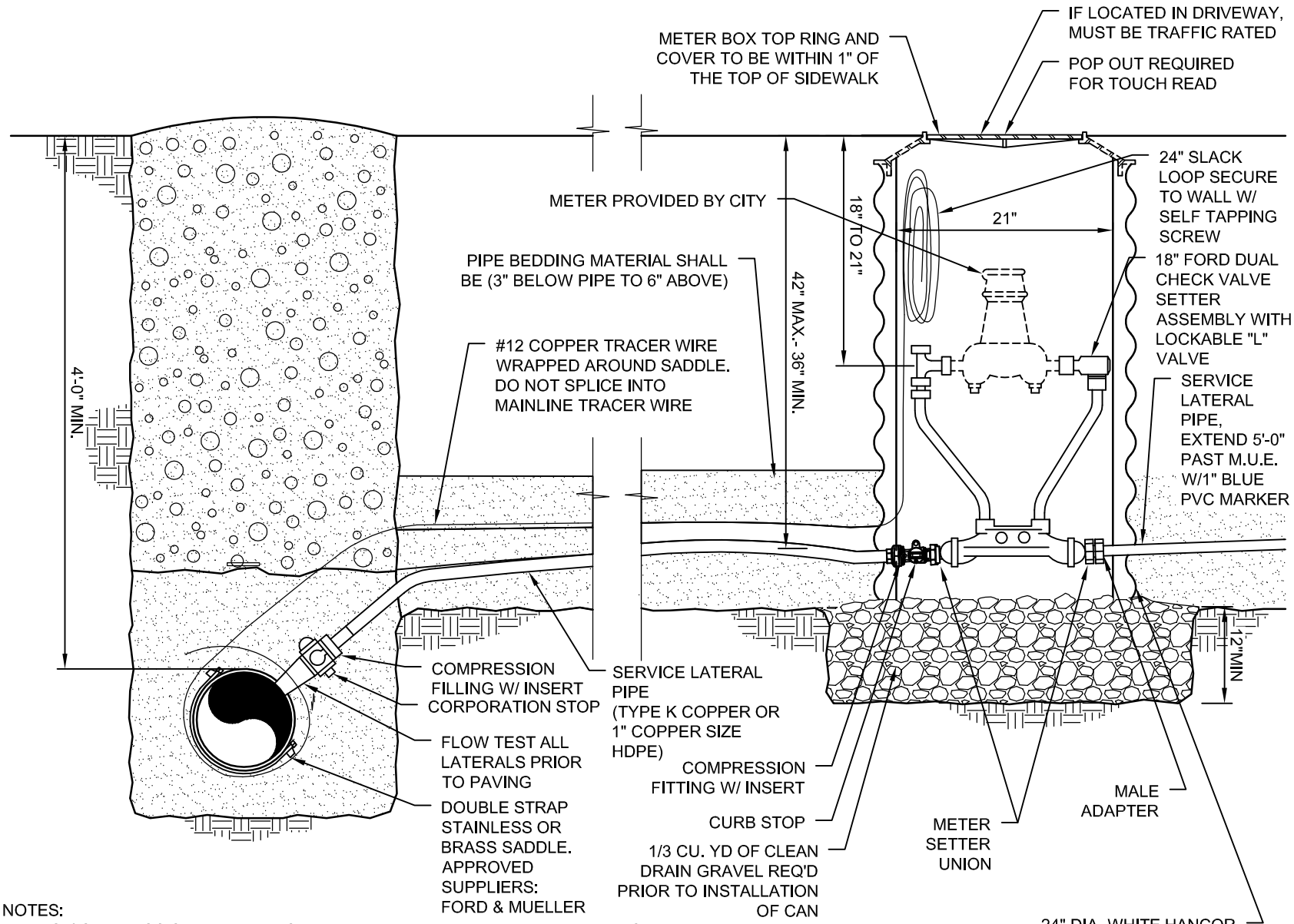
1. *REFER TO SITE-SPECIFIC GEOTECH REPORT OR SECTION 4.05 (E) OF THE SALEM CITY STANDARDS FOR FILL REQUIREMENTS (USE THE MORE CONSERVATIVE RECOMMENDATION).

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	CULINARY WATER / PI
		TYP. TRENCH
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 3.2
		REV DATE: 10-18-23

SALEM CITY
CONSTRUCTION
STANDARDS

1" WATER SERVICE CONNECTION

REPLACES APWA PLAN NO. 521



NOTES:

1. NO COUPLINGS SHALL BE ALLOWED BETWEEN THE MAIN AND METER BASE.
2. WATER SERVICE CONNECTIONS LARGER THAN 1" REQUIRE PRIOR SUBMITTALS AND APPROVAL BY THE CITY.
3. WHEN USING H.D.P.E. INSERTS SHALL BE INSTALLED WHERE FITTINGS ARE PLACED.
4. ALL SHUTOFF CONTROLS MUST BE FACING UPWARD TO BE USEABLE WHEN ACCESSED.
5. IF METER IS TO BE LOCATED IN A DRIVEWAY, A 30" CONCRETE OR PVC BARREL WILL BE REQUIRED. ALSO, A B-5343 FLANGE OR EQUIVALENT AND AN A-1180 TRAFFIC RATED LID OR EQUIVALENT WILL BE REQUIRED.
6. ADD 1.5" CONDUIT BETWEEN METER AND P.I. BOX AT 10" DEPTH BELOW FINISHED GRADE.

CULINARY WATER
1" SERVICE CONNECTION
SCALE: NONE
DATE: 1-9-18
SECTION: 3.3
REV DATE:10-18-23

SALEM CITY
CONSTRUCTION
STANDARDS

CULINARY WATER

FIRE HYDRANT

SCALE: NONE

DATE: 1-9-18

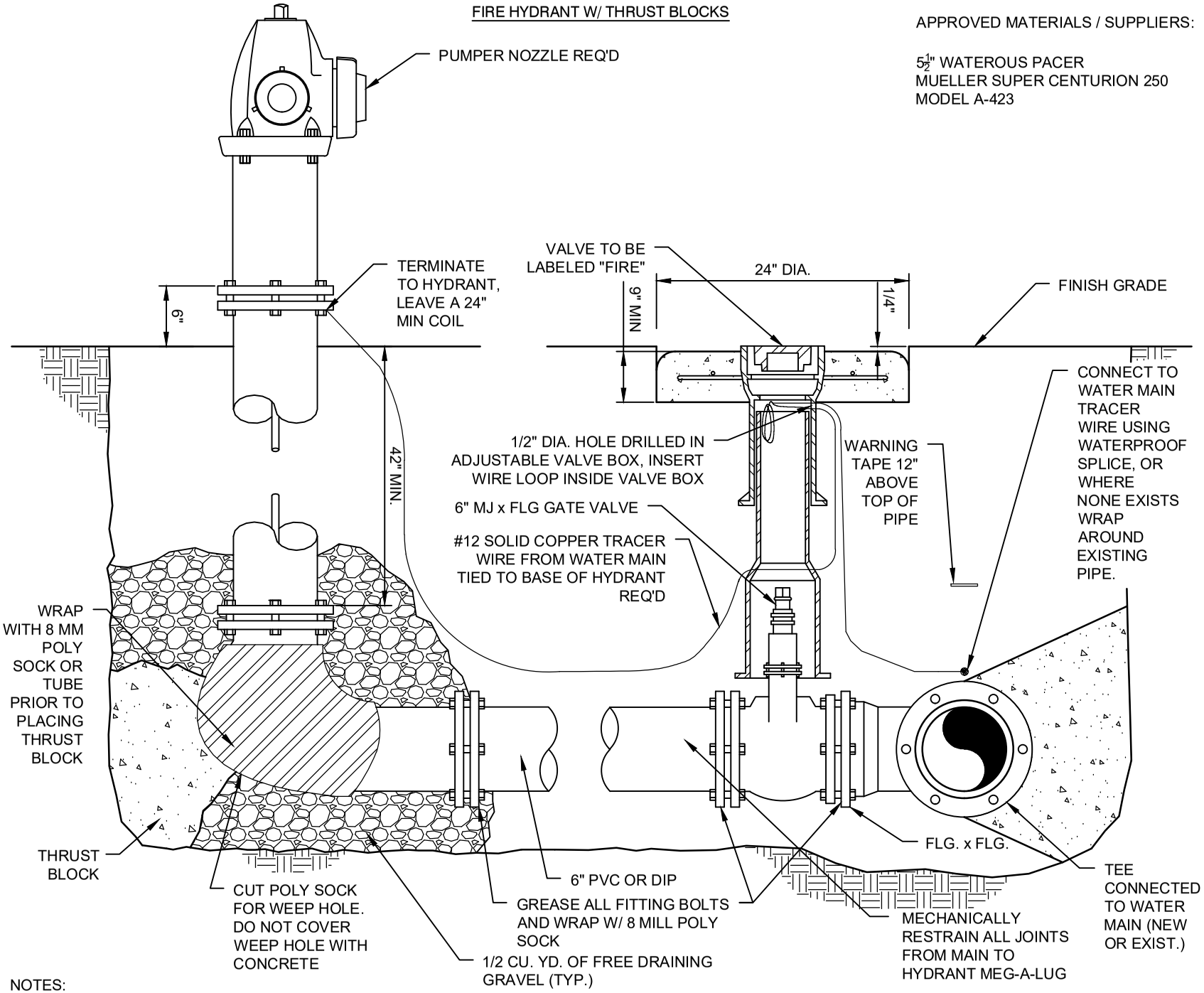
SECTION: 3.4

REV DATE:10-18-23

FIRE HYDRANT W/ THRUST BLOCKS

APPROVED MATERIALS / SUPPLIERS:

5½" WATEROUS PACER
MUELLER SUPER CENTURION 250
MODEL A-423



NOTES:

1. HYDRANT SHALL BE NEW AND PAINTED RED. ALL BOLTS SHALL BE FREE FROM CONCRETE AND SHALL BE FULLY ACCESSIBLE.
2. MAINTAIN A 3' CLEAR ZONE AROUND HYDRANT.
3. HYDRANT EXTENSIONS SHALL BE INSTALLED AS REQUIRED TO PROVIDE THE HYDRANT HEIGHT AS SHOWN.

SALEM CITY
CONSTRUCTION
STANDARDS

CULINARY WATER

PRV - PLAN VIEW

SCALE: NONE

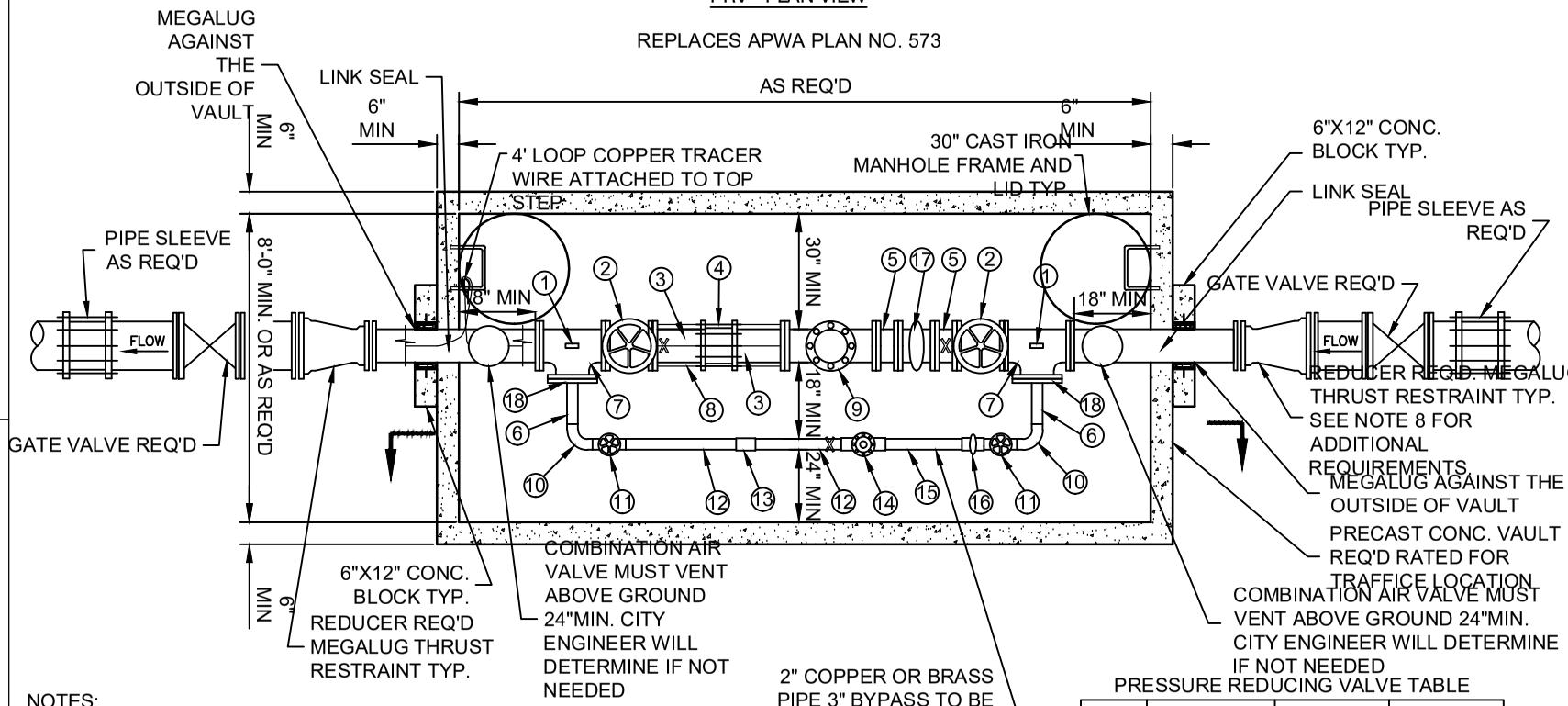
DATE: 1-9-18

SECTION: 3.5

REV DATE: 10-18-23

PRV - PLAN VIEW

REPLACES APWA PLAN NO. 573



PLAN VIEW

NOTES:

1. *ANTI-CAVITATION INSERT HYTROL VALVE (100-01KO) SHALL BE INSTALLED ONLY WHEN REQ'D BY CITY ENGINEER.
2. PRECAST VAULT TO HAVE SOLID FLOOR W/ SUMP. VAULT SHALL BE WATER TIGHT.
3. PRV PILOT SYSTEM SHALL BE STAINLESS STEEL TUBING, VALVES, & FITTINGS. ALL PRV'S SHALL HAVE STAINLESS STEEL TRIM. VALVES SHALL BE DESIGNED FOR HIGH TRAFFIC AREAS.
4. ALL BOLTS TO BE STAINLESS STEEL W/ NON-STAINLESS STEEL NUTS. BYPASS LINES SHALL HAVE GATE VALES W/ RESILIENT SEATS, OR BALL VALVES.
5. HYDEC PRE-ASSEMBLED PACKAGES ARE AN APPROVED EQUAL. SUBMITTALS ON ALL PRV ASSEMBLES ARE REQ'D. ALL PRESSURE SETTINGS TO BE APPROVED BY CITY.
6. MANUAL AIR-VENT AND COMBINATION AIR VALVE ARE TO BE VENTED OUTSIDE WHERE PRACTICAL. VARIATIONS ARE TO BE APPROVED BY CITY ENGINEER.
7. DUCTILE IRON PIPE WITH FLANGED CONNECTIONS REQUIRED IN VAULT (NO C900)
8. MEGALUG OR BELL THRUST RESTRAINTS ARE REQUIRED (PROVIDE THRUST RESTRAINT CALCULATIONS SHOWING THE MINIMUM RESTRAINED DISTANCE FROM REDUCER AND SHOW IN DRAWINGS).

PRESSURE REDUCING VALVE TABLE

MAIN SIZE	MAIN PRV FLOW SIZE**	BYPASS FLOW SIZE**	MANUAL AIR VENT SIZE**
8"	6"	2"	1"
10"	8"	2"	1 1/2"
12"	8"	3"	2"

**UNLESS OTHERWISE DIRECTED BY CITY ENGINEER

PIPE FITTING & VALVE SIZES WILL VARY BASED ON MAINLINE PIPE SIZE

EQUIPMENT SCHEDULE			EQUIPMENT SCHEDULE		
NO.	DESCRIPTION	REMARKS	NO.	DESCRIPTION	REMARKS
1	PRESSURE GAUGE ASSEMBLY	2 REQ'D, OIL FILLED, (0-200 PSI)	11	BALL VALVE	2 REQ'D
2	GATE VALVE	2 REQ'D	12	THREADED SPOOL	1 REQ'D (CUT INTO 2 PIECES)
3	FLANGED SPOOL	1 REQ'D (CUT INTO 2 PIECES)	13	THREADED UNION/FLEX COUPLING	1 REQ'D
4	FLEX COUPLING	1 REQ'D	14	PRESSURE REDUCING VALVE	CLA-VAL MODEL 92-01 SKCKO 150# THREADED
5	FLANGED SPOOL	2 REQ'D	15	THREADED SPOOL	1 REQ'D
6	THREADED SPOOL	2 REQ'D	16	STRAINER	NEPTUNE 53120-000 ENVIROBRASS II
7	FLANGED TEE	2 REQ'D	17	STRAINER	NEPTUNE 52000-402 ENVIROBRASS II
8	ALL-THREAD	4 REQ'D	18	BLIND FLANGE W/2" THREADED TAP	2 REQ'D
9	PRESSURE REDUCING VALVE	PLAIN CLA-VALVES WITH OPTION TO REQUIRE ADDITIONAL CONTROL BASED ON HYDRAULIC MODEL	X	LOCATION OF PIPE SUPPORT	
10	THREADED 90° ELL.	2 REQ'D			

SALEM CITY
CONSTRUCTION
STANDARDS

CULINARY WATER

PRV SECTION VIEW

SCALE: NONE

DATE: 1-9-18

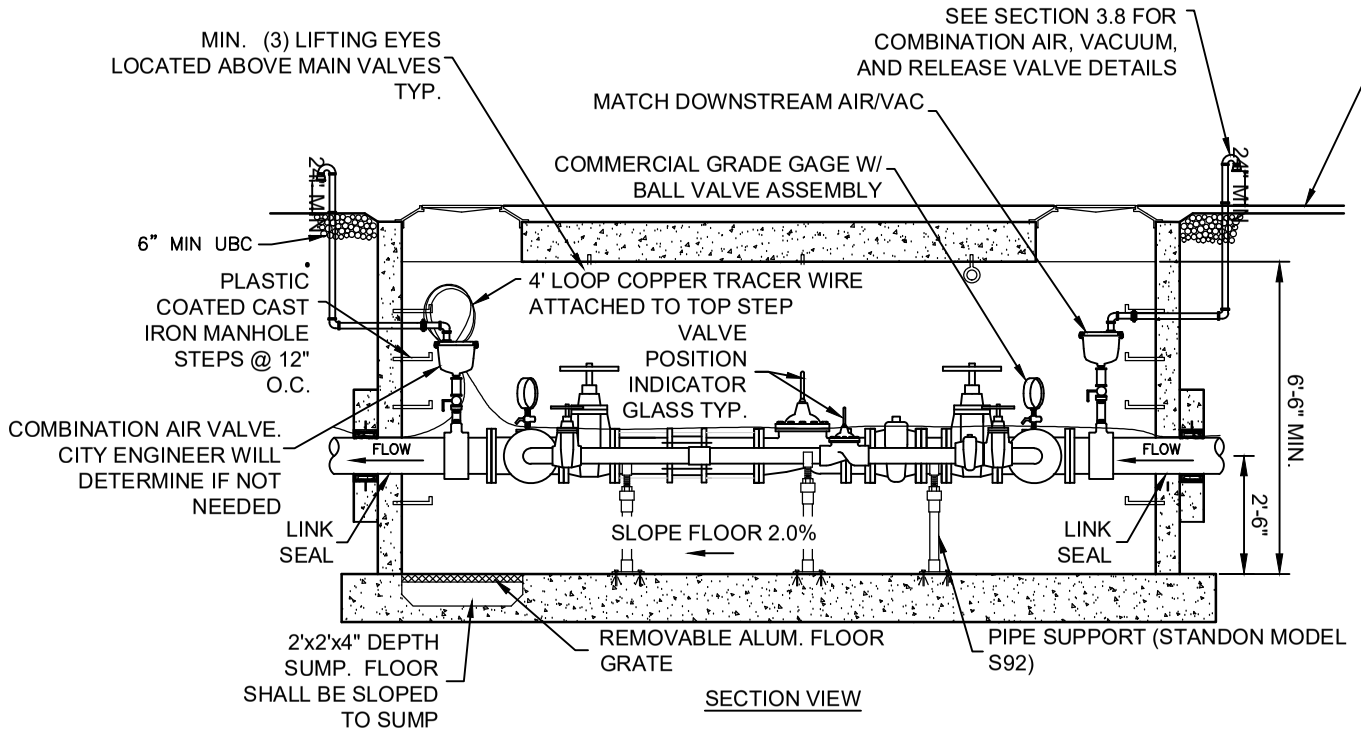
SECTION: 3.6

REV DATE: 10-18-23

PRV - SECTION VIEW

REPLACES APWA PLAN NO. 573

NOTE:
MEGALUG OR BELL RESTRAIN ALL JOINTS WITHIN 20 FEET OF REDUCER.



SECTION VIEW

NOTES:

1. *ANTI-CAVITATION INSERT HYTROL VALVE (100-01KO) SHALL BE INSTALLED ONLY WHEN REQ'D BY CITY ENGINEER.
2. PRECAST VAULT TO HAVE SOLID FLOOR W/ SUMP. VAULT SHALL BE WATER TIGHT.
3. PRV PILOT SYSTEM SHALL BE STAINLESS STEEL TUBING, VALVES, & FITTINGS. ALL PRV'S SHALL HAVE STAINLESS STEEL TRIM. VALVES SHALL BE DESIGNED FOR HIGH TRAFFIC AREAS.
4. ALL BOLTS TO BE STAINLESS STEEL W/ NON-STAINLESS STEEL NUTS. BYPASS LINES SHALL HAVE GATE VALES W/ RESILIENT SEATS, OR BALL VALVES.
5. HYDEC PRE-ASSEMBLED PACKAGES ARE AN APPROVED EQUAL. SUBMITTALS ON ALL PRV ASSEMBLES ARE REQ'D. ALL PRESSURE SETTINGS TO BE APPROVED BY CITY.
6. MANUAL AIR-VENT AND COMBINATION AIR VALVE ARE TO BE VENTED OUTSIDE WHERE PRACTICAL. VARIATIONS ARE TO BE APPROVED BY CITY ENGINEER.

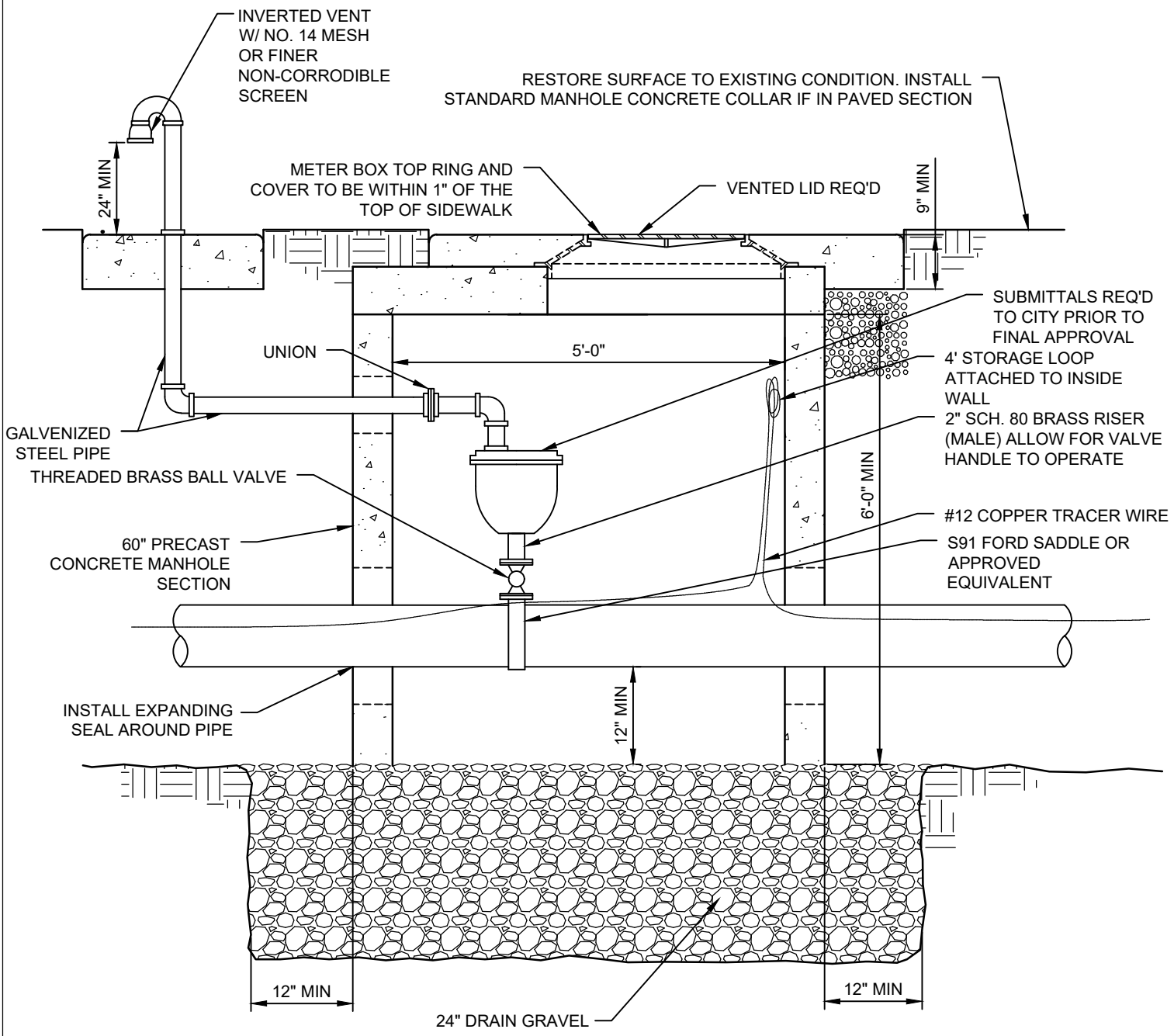
PRESSURE REDUCING VALVE TABLE

MAIN SIZE	MAIN PRV FLOW SIZE**	BYPASS FLOW SIZE**	MANUAL AIR VENT SIZE**
8"	6"	2"	1"
10"	8"	2"	1 1/2"
12"	8"	3"	2"

**UNLESS OTHERWISE DIRECTED BY CITY ENGINEER

COMBINATION AIR, VACUUM & RELEASE VALVE - CULINARY WATER

REPLACES APWA PLAN NO. 575

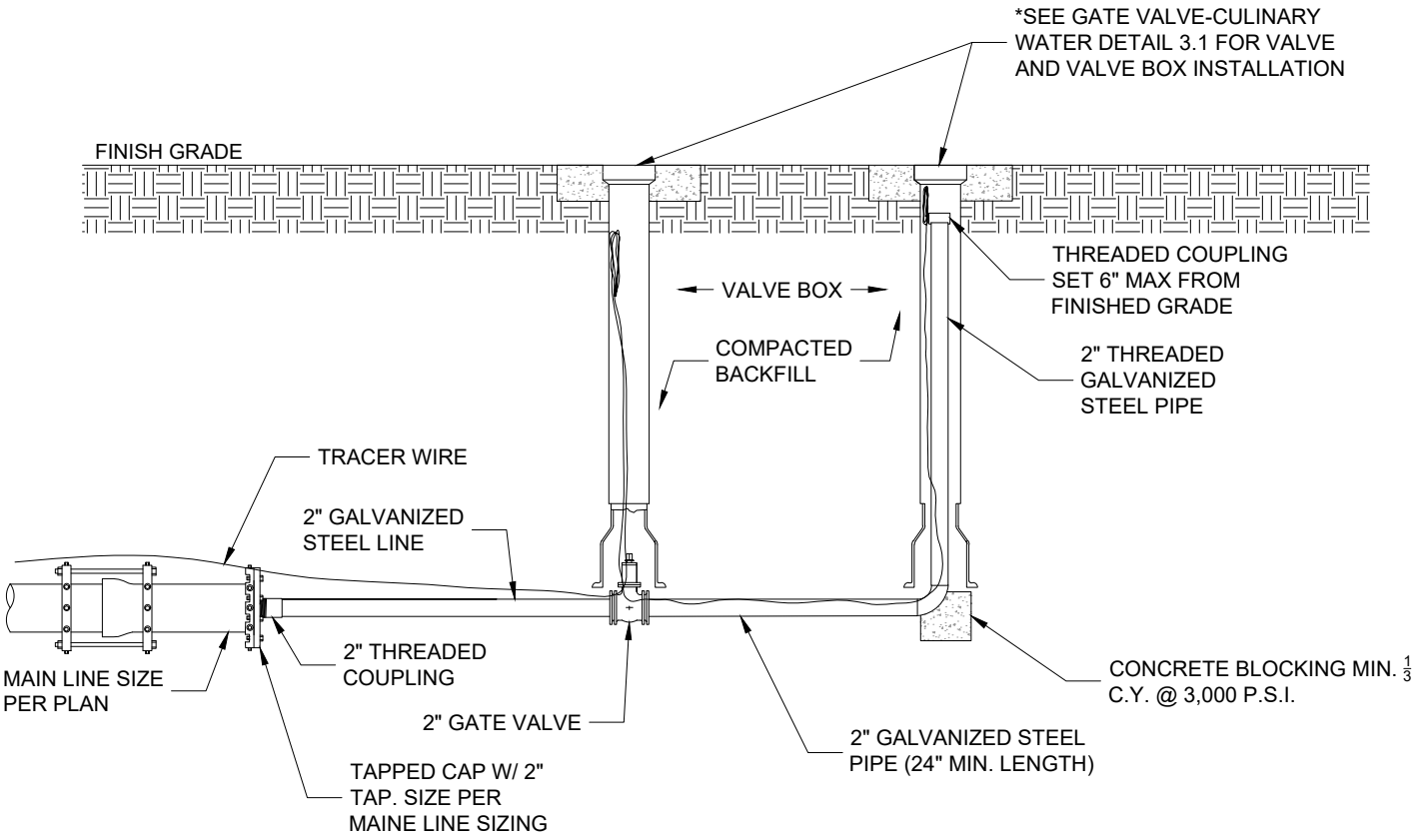


NOTE:

1. FLAT LIDS ONLY. MANHOLE CONE SECTIONS ARE NOT ACCEPTABLE.
2. COMBINATION AIR VALVES SHALL BE 1/4 MIN. THE SIZE OF THE MAIN LINE ON WHICH IT IS LOCATED UNLESS SHOWN OTHERWISE ON THE DRAWING.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	CULINARY WATER
		AIR VAC & RELEASE VALVE
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 3.7
		REV DATE: 10-18-23

STANDARD 2" BLOW-OFF ASSEMBLY

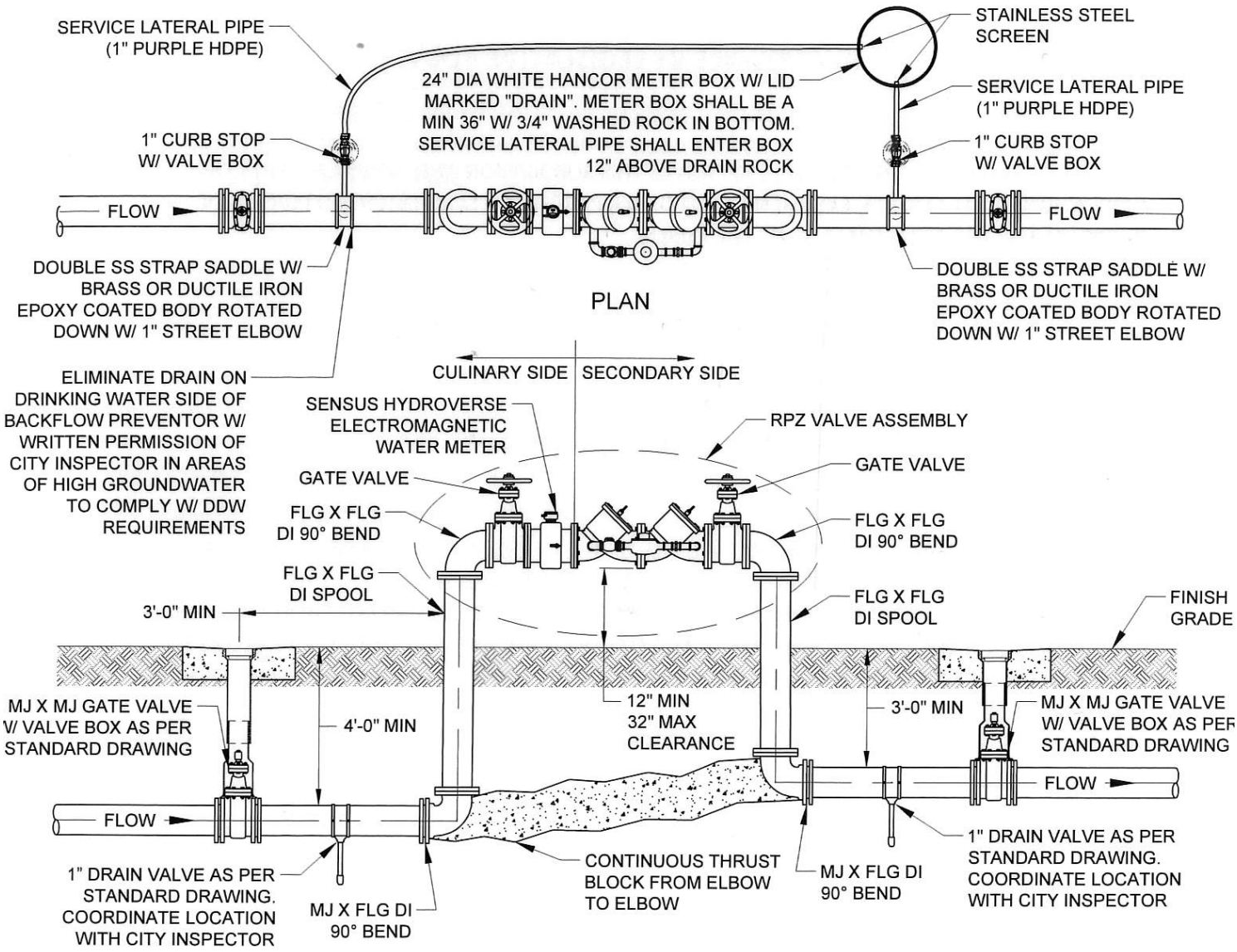


NOTES:

1. FOR DEAD-END INSTALLATIONS USE A MECHANICAL JOINT TAPPED CAP, TAPPED FOR 2" NIPPLE, IN LIEU OF TAPPING MAIN. CAP SHALL BE PROPERLY INSTALLED WITH THRUST COLLAR.
2. FOR 6" MAIN LINES AND LARGER, FIRE HYDRANT ASSEMBLY MAY BE USED AS A BLOW-OFF IF REQUIRED AND APPROVED BY THE CITY.
3. *IF OUTSIDE OF ROAD, USE WATER CAN VS. VALVE BOX.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	CULINARY WATER
		2" BLOW-OFF ASSEMBLY
		SCALE: NONE
		DATE: TBD
		SECTION: 3.8
		REV DATE: 10-18-23

CULINARY WATER PI CROSS CONNECT/BACKFLOW PREVENTER

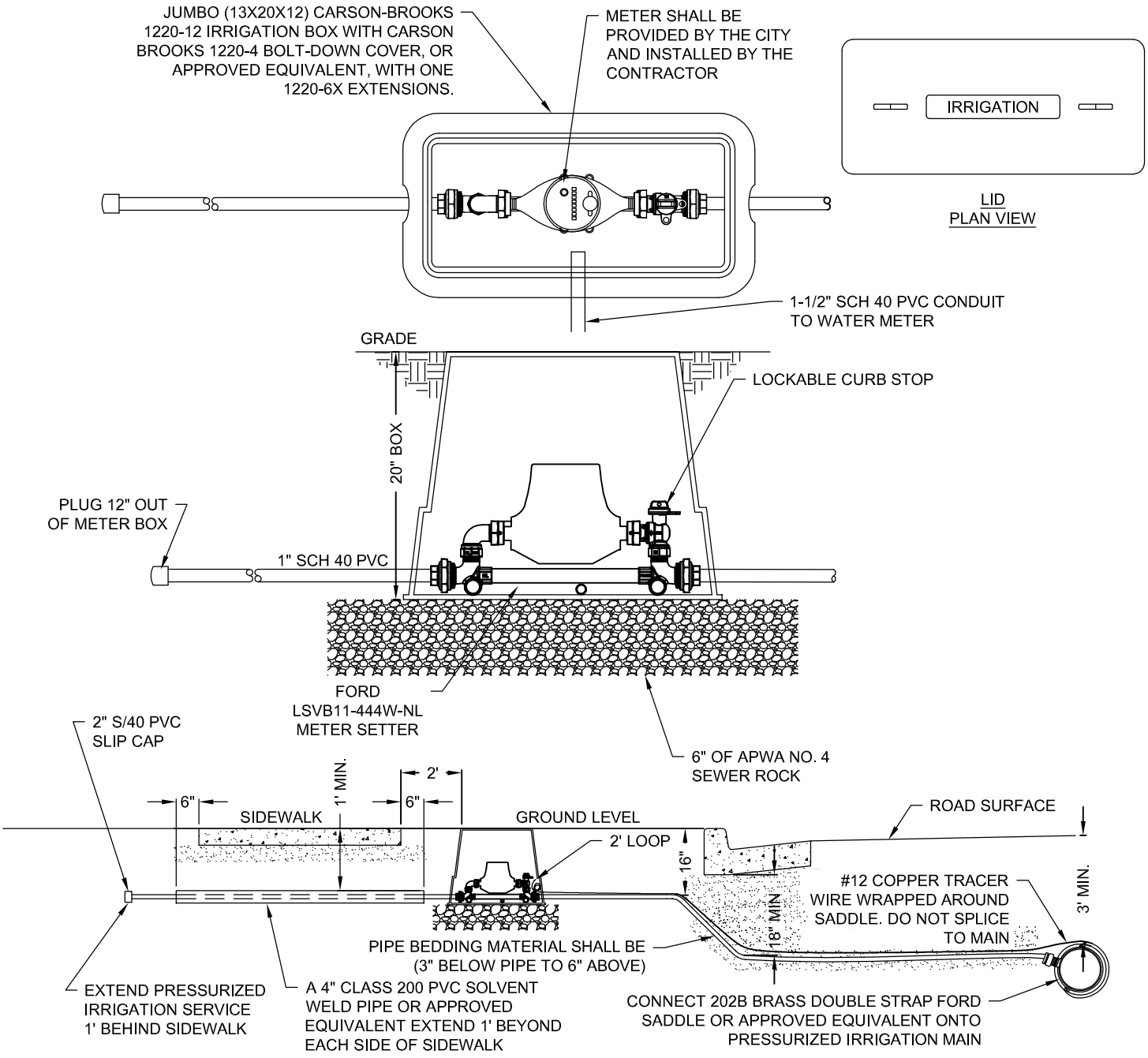


NOTES:

1. TO BE USED WHEN CHARGING THE SECONDARY SYSTEM WITH CULINARY WATER.
2. RPZ VALVE ASSEMBLY & PIPES TO MATCH SECONDARY MAIN SIZE.
3. ABOVE GROUND FITTINGS TO BE EPOXY PAINTED. BLUE ON CULINARY SIDE, PURPLE ON SECONDARY SIDE.
4. SHOP DRAWINGS TO BE SUBMITTED TO SALEM CITY ENGINEER FOR APPROVAL PRIOR TO SHIPMENT
5. SUPPLIER/CONTRACTOR SHALL CONFIRM THE RPZ ASSEMBLY IS SUITABLE FOR APPLICATION.
6. PROVIDE BOLLARDS OR OTHER PROTECTION IF AND AS DIRECTED BY CITY INSPECTOR
7. PIPELINE SHALL BE FLUSHED BEFORE UNIT IS INSTALLED.
8. MOUNT UNIT IN UPRIGHT POSITION IN A HORIZONTAL PIPE RUN.
9. ALLOW MINIMUM 12-INCH CLEARANCE AROUND UNIT TO CONDUCT TESTS AND REPAIRS.
10. NEW INSTALLATION SHALL BE INSPECTED AND TESTED BY LICENSED BACKFLOW ASSEMBLY TESTER.
11. TEST TO BE PERFORMED BY OWNER OF ASSEMBLY WITHIN 10 DAYS OF INITIAL USE.
12. ENSURE TEST COCK PLUGS ARE INSTALLED SECURELY AND ARE LEAK PROOF.
13. FOR INSTALLATIONS LARGER THAN 8-INCHES FLOW METER REQUIRES MINIMUM UPSTREAM AND DOWNSTREAM PIPE LENGTHS TO FUNCTION PROPERLY. COORDINATE WITH CITY PERSONNEL FOR SIZES LARGER THAN 8-INCH.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	CULINARY WATER
		PI CROSS CONNECT/BACKFLOW PREVENTER
		SCALE: NONE
		DATE: TBD
		SECTION: 3.9
		REV DATE: 10-18-23

1" SERVICE BOX AND LATERAL



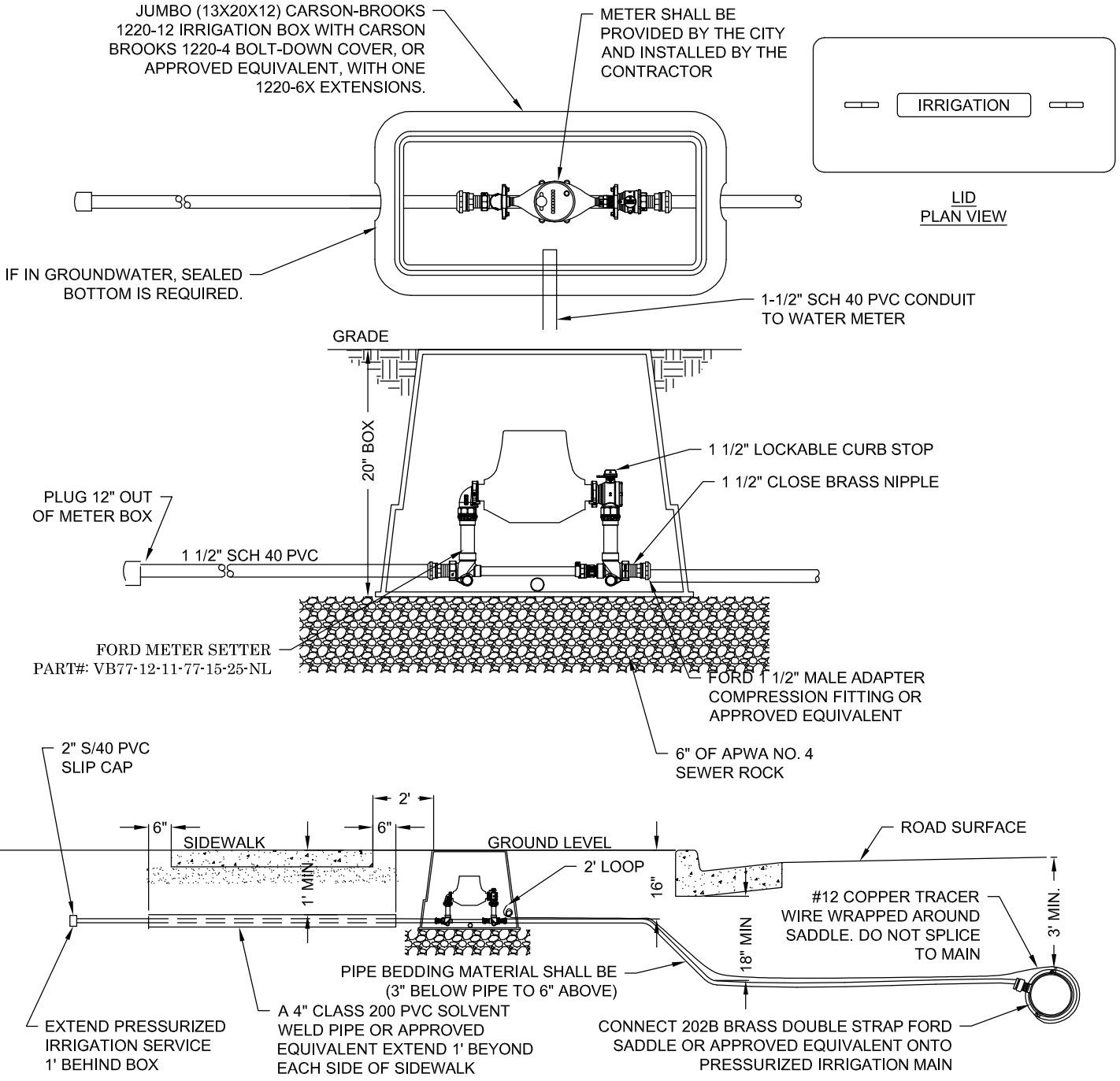
NOTES:

1. STANDARD SERVICE SIZE SHALL BE 1" CONTINUOUS SDR-9 CTS 200 PSI PURPLE POLYPROPYLENE PIPE.
2. STAINLESS STEEL LINER INSERTS WILL BE REQUIRED INSIDE OF TUBING AT COMPRESSION FITTINGS.
3. ALL FITTINGS SHALL BE COMPATIBLE WITH SERVICE SIZE.
4. SERVICE LATERAL SHALL SLOPE TOWARDS PRESSURIZED IRRIGATION MAIN.
5. SPRINKLER SLEEVE SHALL NOT BE IN LINE WITH ANY UTILITY BOXES.
6. 1-1/2" POLY CONDUIT SHALL BE BURIED 12" BELOW GRADE.
7. FOR TRAFFIC AREAS, USE A CDR SYSTEMS CORP 16X21X18 FIBERGLASS REINFORCED POLYMER CONCRETE BOX WITH "IRRIGATION" MARKED ON THE LID.
8. IF LOCATED IN DRIVEWAY, USE CULINARY METER WITH TRAFFIC RATED LID, BUT IRRIGATION LABEL.

SALEM CITY CONSTRUCTION STANDARDS

PRESSURE IRRIGATION
1" BOX AND LATERAL
SCALE: NONE
DATE: 1-9-18
SECTION: 5.1
REV DATE: 10-18-23

1 1/2" SERVICE BOX AND LATERAL



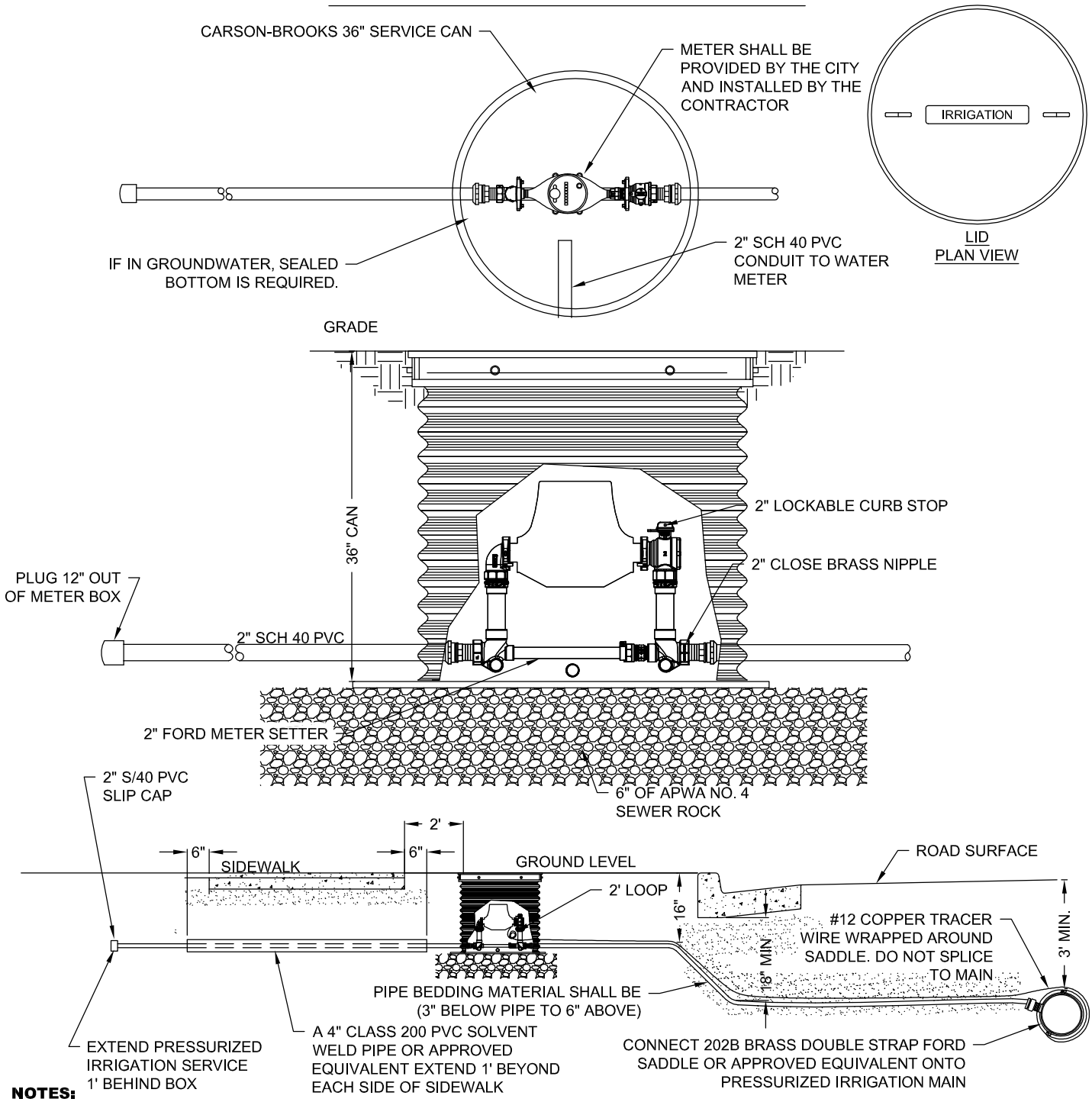
NOTES:

1. STANDARD SERVICE SIZE SHALL BE 1 1/2" CONTINUOUS SDR-9 CTS 200 PSI PURPLE POLYPROPYLENE PIPE.
2. STAINLESS STEEL LINER INSERTS WILL BE REQUIRED INSIDE OF TUBING AT COMPRESSION FITTINGS.
3. ALL FITTINGS SHALL BE COMPATIBLE WITH SERVICE SIZE.
4. SERVICE LATERAL SHALL SLOPE TOWARDS PRESSURIZED IRRIGATION MAIN.
5. SPRINKLER SLEEVE SHALL NOT BE IN LINE WITH ANY UTILITY BOXES.
6. 1-1/2" POLY CONDUIT SHALL BE BURIED 12" BELOW GRADE.
7. FOR TRAFFIC AREAS, USE A CDR SYSTEMS CORP 16X21X18 FIBERGLASS REINFORCED POLYMER CONCRETE BOX WITH "IRRIGATION" MARKED ON THE LID.
8. IF LOCATED IN DRIVEWAY, USE CULINARY METER CAN WITH TRAFFIC RATED LID, BUT IRRIGATION LABEL.

SALEM CITY CONSTRUCTION STANDARDS

PRESSURE IRRIGATION
1 1/2" BOX AND LATERAL
SCALE: NONE
DATE: 1-9-18
SECTION: 5.2
REV DATE: 10-18-23

2" SERVICE BOX AND LATERAL



NOTES:

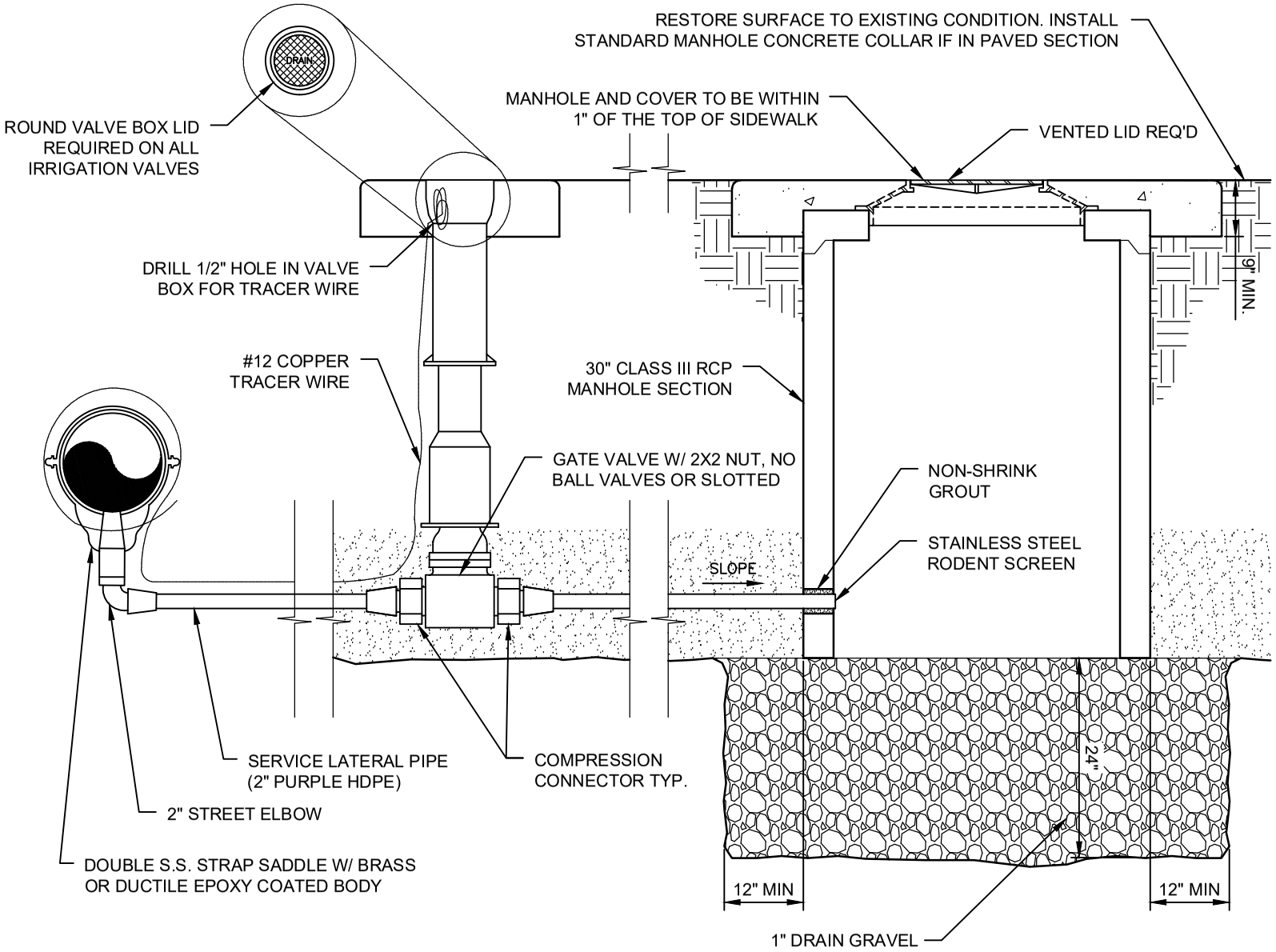
1. STANDARD SERVICE SIZE SHALL BE 2" CONTINUOUS SDR-9 CTS 200 PSI PURPLE POLYPROPYLENE PIPE.
2. STAINLESS STEEL LINER INSERTS WILL BE REQUIRED INSIDE OF TUBING AT COMPRESSION FITTINGS.
3. ALL FITTINGS SHALL BE COMPATIBLE WITH SERVICE SIZE.
4. SERVICE LATERAL SHALL SLOPE TOWARDS PRESSURIZED IRRIGATION MAIN.
5. SPRINKLER SLEEVE SHALL NOT BE IN LINE WITH ANY UTILITY BOXES.
6. 2" POLY CONDUIT SHALL BE BURIED 12" BELOW GRADE.
7. FOR TRAFFIC AREAS, USE A CDR SYSTEMS CORP 16X21X18 FIBERGLASS REINFORCED POLYMER CONCRETE BOX WITH "IRRIGATION" MARKED ON THE LID.

SALEM
City of Peace

SALEM CITY CONSTRUCTION STANDARDS

PRESSURE IRRIGATION
2" BOX AND LATERAL
SCALE: NONE
DATE: 1-9-18
SECTION: 5.3
REV DATE: 10-18-23

2" DRAIN VALVE

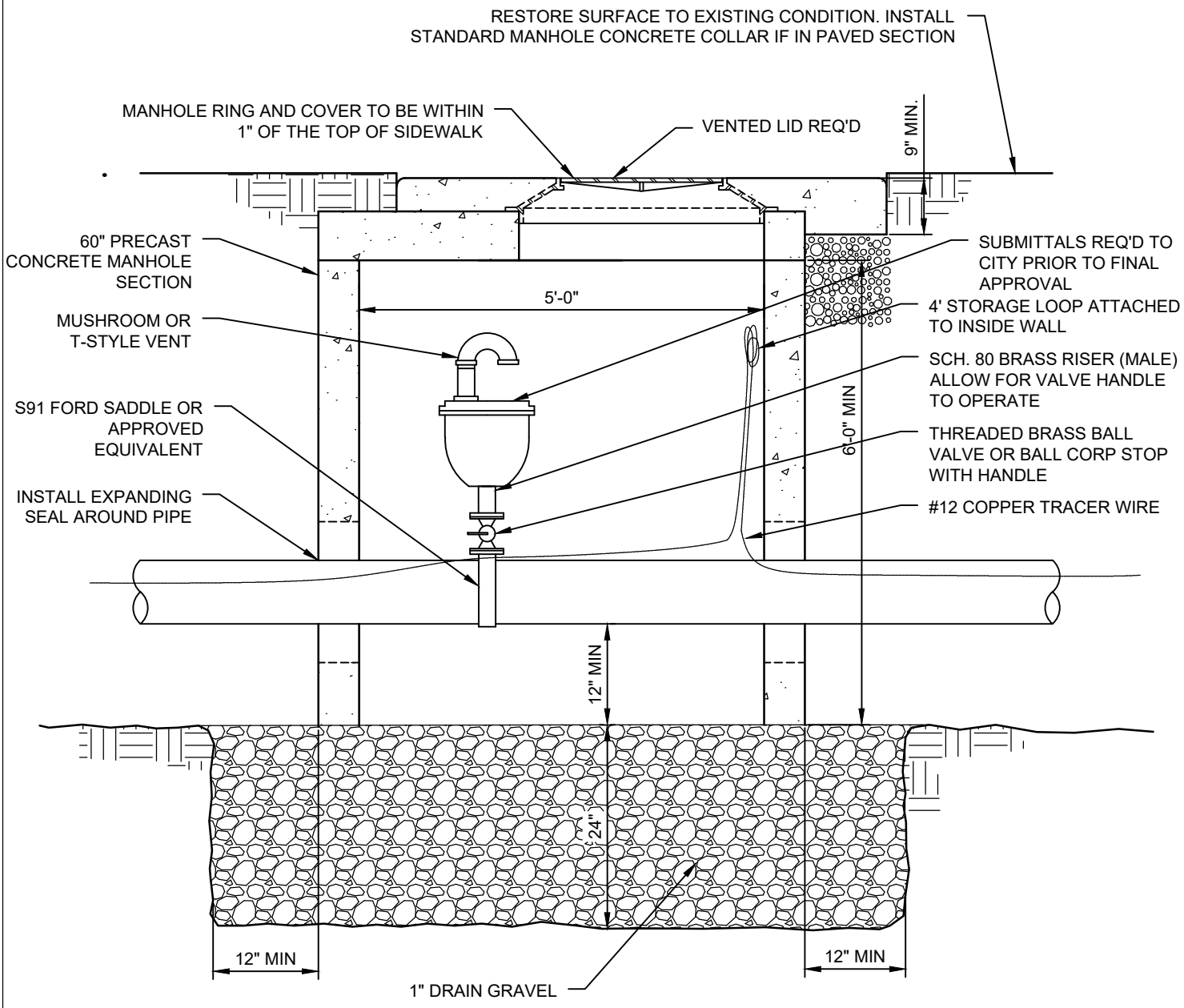


NOTES:
1. FLAT LIDS ONLY MANHOLE CONE SECTIONS ARE NOT ALLOWED.
2. INSERT SHALL BE USED WHERE FITTING IS PLACED WHEN USING HDPE.
3. DRAIN SHALL BE PIPED TO DAYLIGHT IF POSSIBLE. DRAINAGE AREA SHALL BE APPROVED BY CITY ENGINEER.
4. MANHOLE SUMP IS NOT REQUIRED IF DRAIN IS TO DAYLIGHT.

SALEM CITY CONSTRUCTION STANDARDS

PRESSURE IRRIGATION	
2" DRAIN VALVE	
SCALE: NONE	
DATE: 1-9-18	
SECTION: 5.4	
REV DATE: 10-18-23	

COMBINATION AIR, VACUUM & RELEASE VALVE - PRESSURIZED IRRIGATION



NOTES:
1. FLAT LIDS ONLY MANHOLE CONE SECTIONS ARE NOT ACCEPTABLE.
2. COMBINATION AIR VALVE, SHALL BE 1/4" MIN. THE SIZE OF MAINLINE ON WHICH IT IS LOCATED UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

SALEM CITY CONSTRUCTION STANDARDS

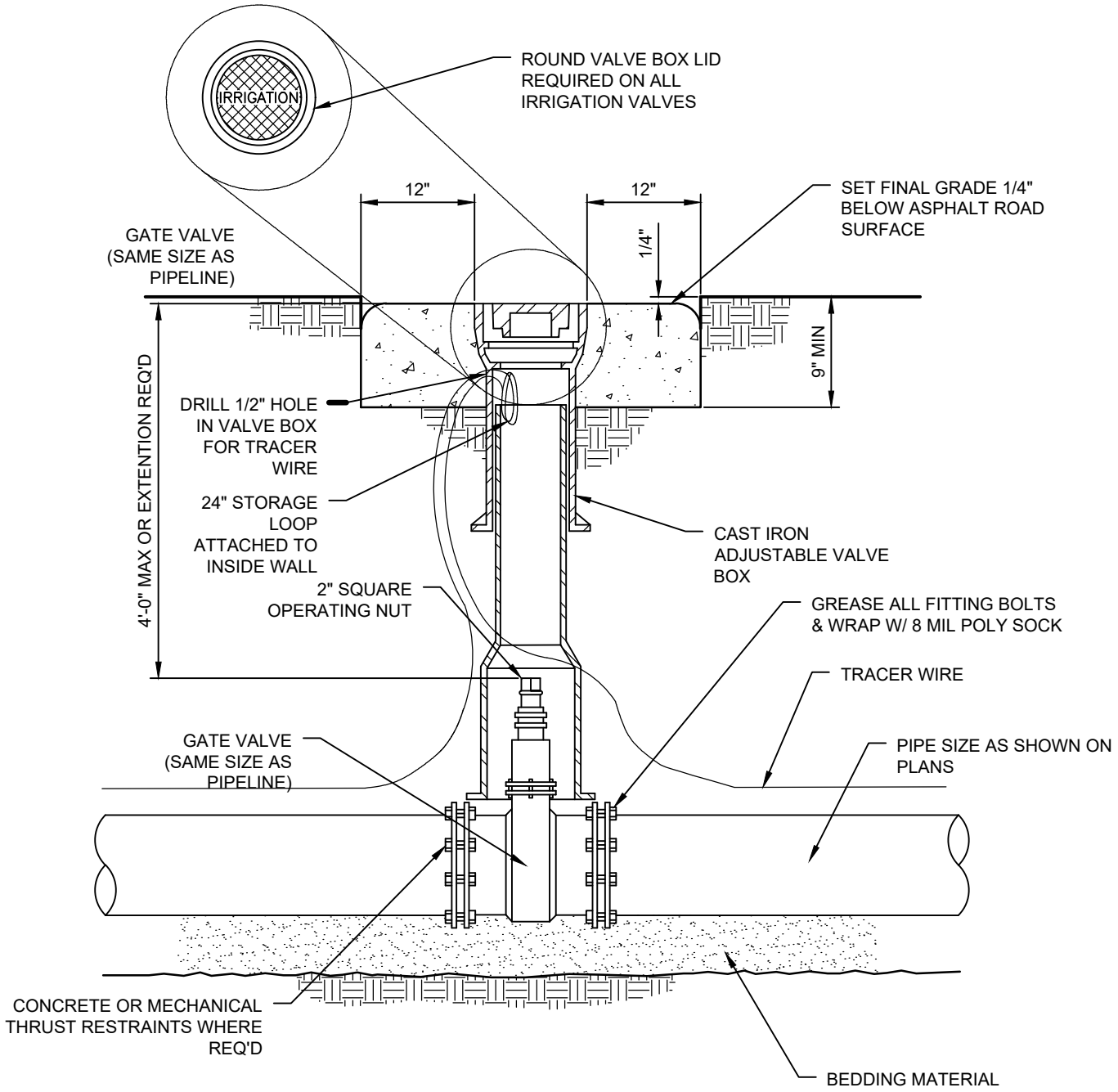
PRESSURE IRRIGATION
AIR VAC & RELEASE VALVE
SCALE: NONE
DATE: 1-9-18
SECTION: 5.5
REV DATE: 10-18-23

GATE VALVE - PI

REPLACES APWA PLAN NO. 574 PAGE 249

APPROVED MATERIALS / SUPPLIERS:

WATEROUS OR MUELLER PER AWWA C509



NOTES:

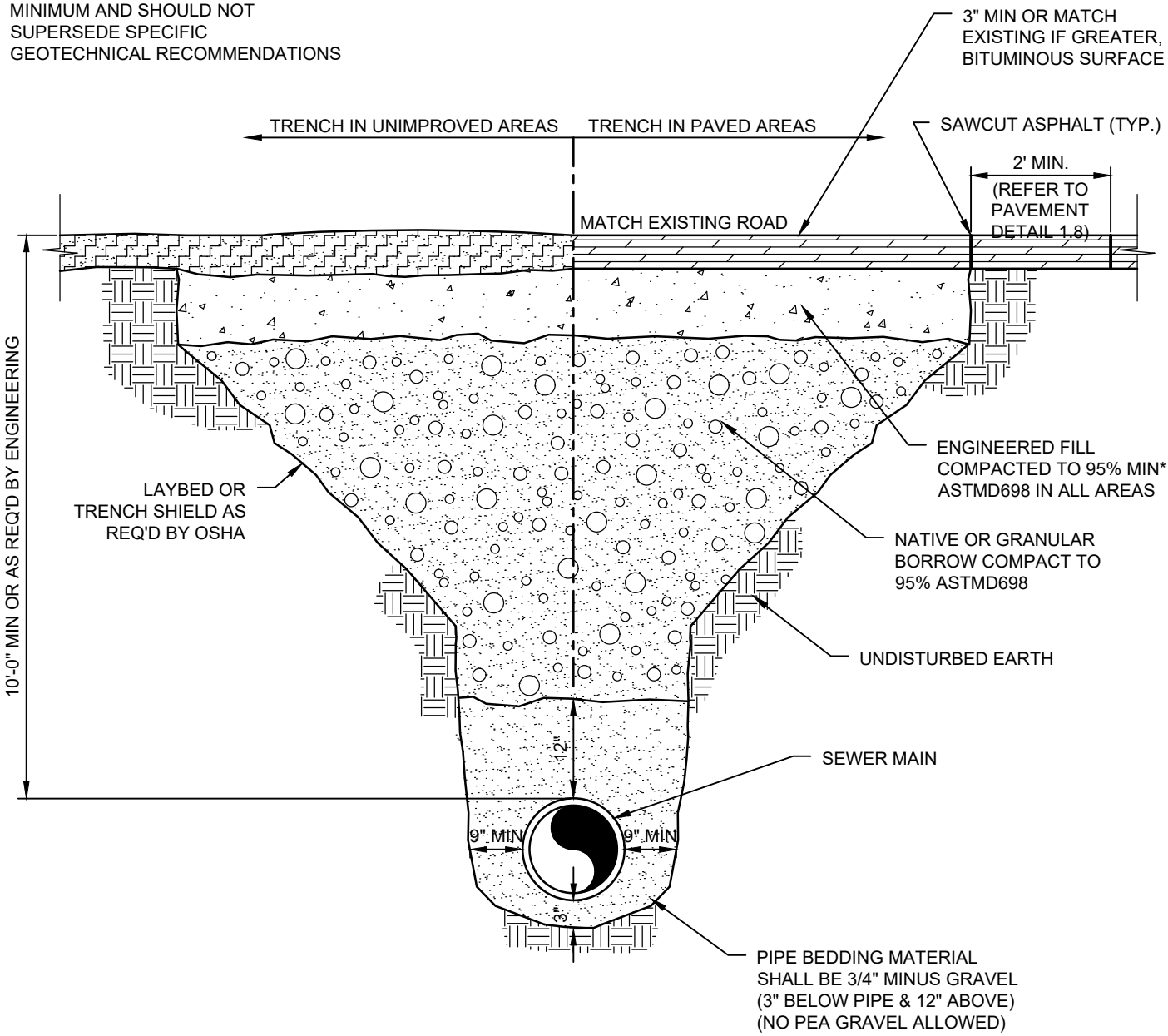
1. ONLY CITY PERSONNEL SHALL OPEN AND CLOSE WATER VALVES, UNLESS APPROVED OTHERWISE IN WRITING BY THE CITY.
2. ALL CONCRETE COLLARS SHOWN WITH VALVE BOXES SHALL BE INSTALLED AFTER 1 YEAR, 1" ASPHALT OVERLAY HAS BEEN PLACED.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	STREET DETAILS GATE VALVE SCALE: NONE DATE: 8.29.07 SECTION: 5.6 REV DATE: 10-18-23

TYPICAL SEWER TRENCH

REPLACES APWA PLAN NO. 381 & 382

MATERIAL THICKNESSES ARE MINIMUM AND SHOULD NOT SUPERSEDE SPECIFIC GEOTECHNICAL RECOMMENDATIONS



NOTES:

1. ALL MAINLINE SEWER PIPING SIZES 8" TO 24" SHALL BE PVC. MAINLINE PIPE SIZES 30" AND LARGER SHALL BE REINFORCED CONCRETE PIPE.
2. WHEN STATIC GROUNDWATER LEVEL IS EQUAL TO OR ABOVE THE SEWER INVERT ELEVATION THE PIPE SHALL BE BEDDED WITH 1" ± 1/2" DRAIN GRAVEL. THE DRAIN GRAVEL SHALL BE OVER EXCAVATED TO 12" OR AS REQ'D BY CITY, AND INSTALLED TO 3" ABOVE STATIC GROUNDWATER LEVEL.
3. *REFER TO SITE-SPECIFIC GEOTECH REPORT OR SECTION 4.05 (E) OF THE SALEM CITY STANDARDS FOR FILL REQUIREMENTS (USE THE MORE CONSERVATIVE RECOMMENDATION).

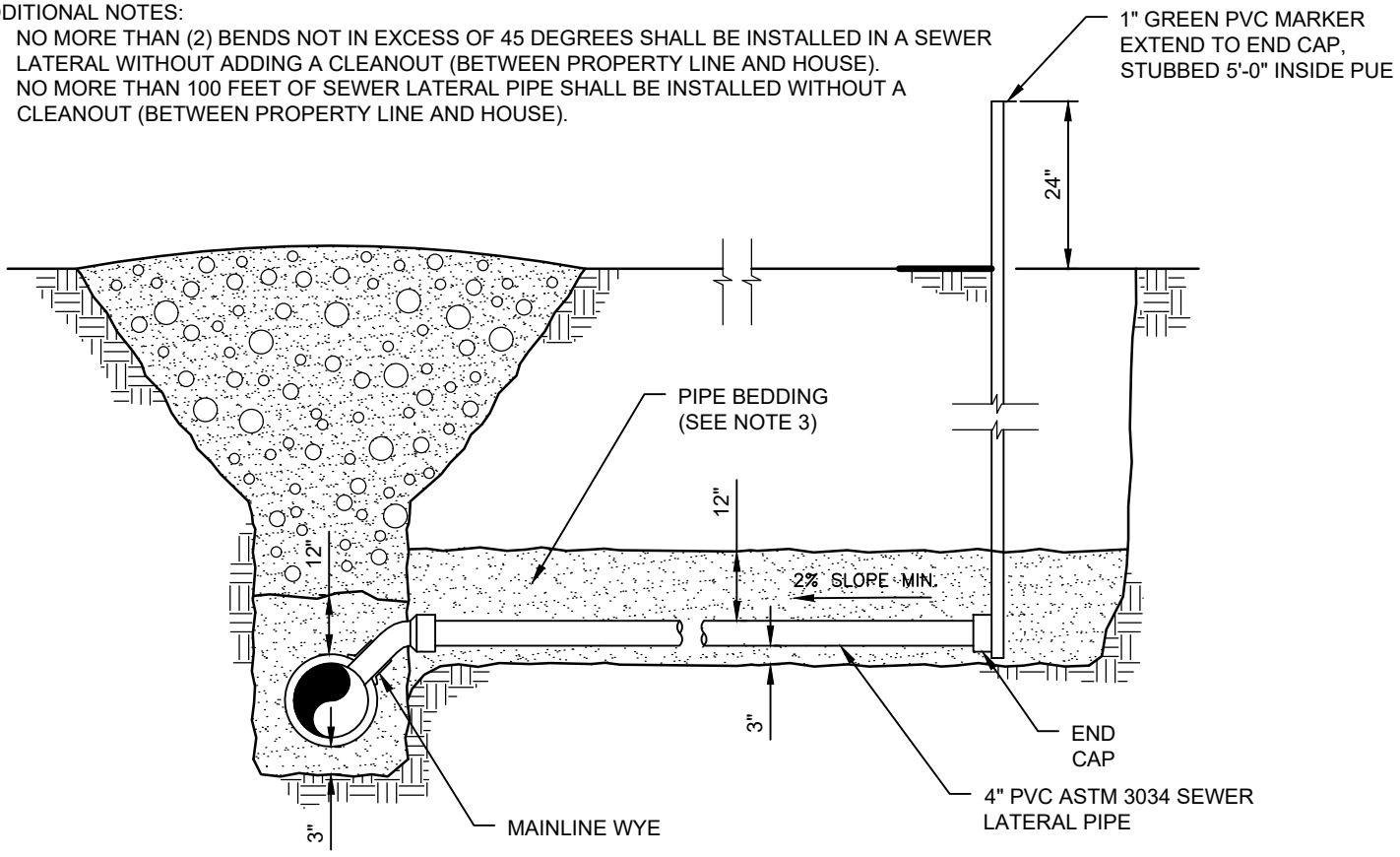
SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	SEWER
		TYP TRENCH
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 6.1
		REV DATE: 10-18-23

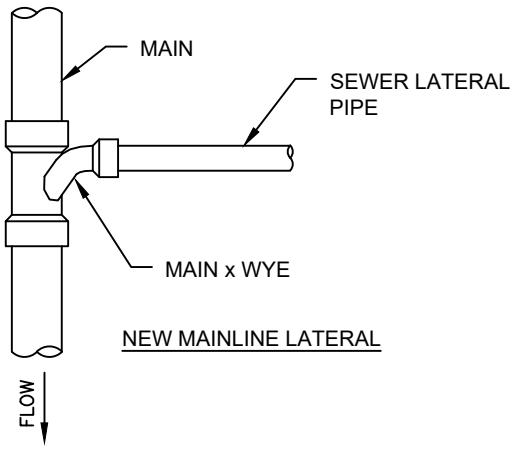
SEWER LATERAL

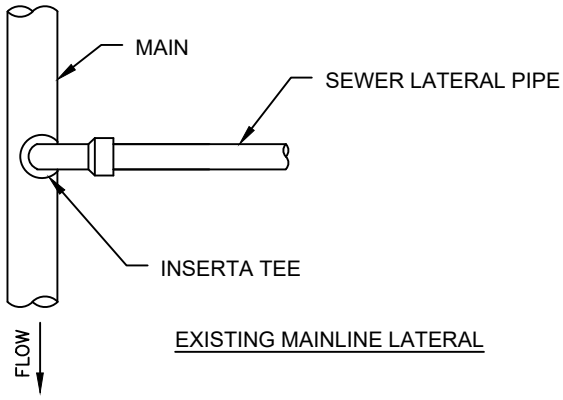
REPLACES APWA PLAN NO. 431

ADDITIONAL NOTES:

1. NO MORE THAN (2) BENDS NOT IN EXCESS OF 45 DEGREES SHALL BE INSTALLED IN A SEWER LATERAL WITHOUT ADDING A CLEANOUT (BETWEEN PROPERTY LINE AND HOUSE).
2. NO MORE THAN 100 FEET OF SEWER LATERAL PIPE SHALL BE INSTALLED WITHOUT A CLEANOUT (BETWEEN PROPERTY LINE AND HOUSE).







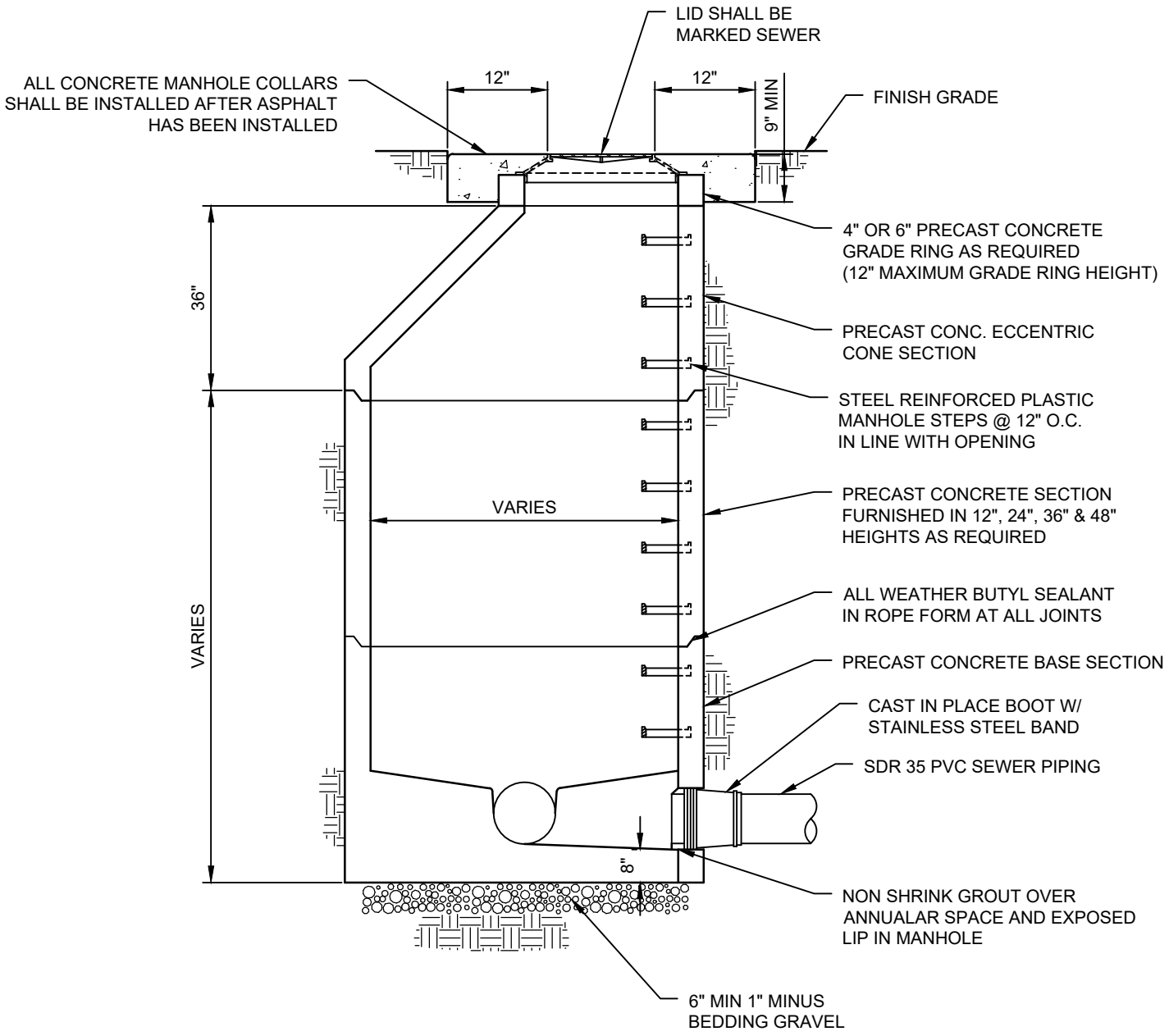
NOTES:

1. MINIMUM SLOPE FOR A 4" LATERAL IS 2%.
2. MINIMUM SLOPE FOR A 6" LATERAL IS 1%.
3. SEWER LATERALS SHALL BE BEDDED IN 1" MINUS GRANULAR FRACTURED MATERIAL, NO PEA GRAVEL ALLOWED.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	SEWER
		SEWER LATERAL
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 6.2
		REV DATE: 10-18-23

TYPICAL SEWER MANHOLE

REPLACES APWA PLAN NO. 411



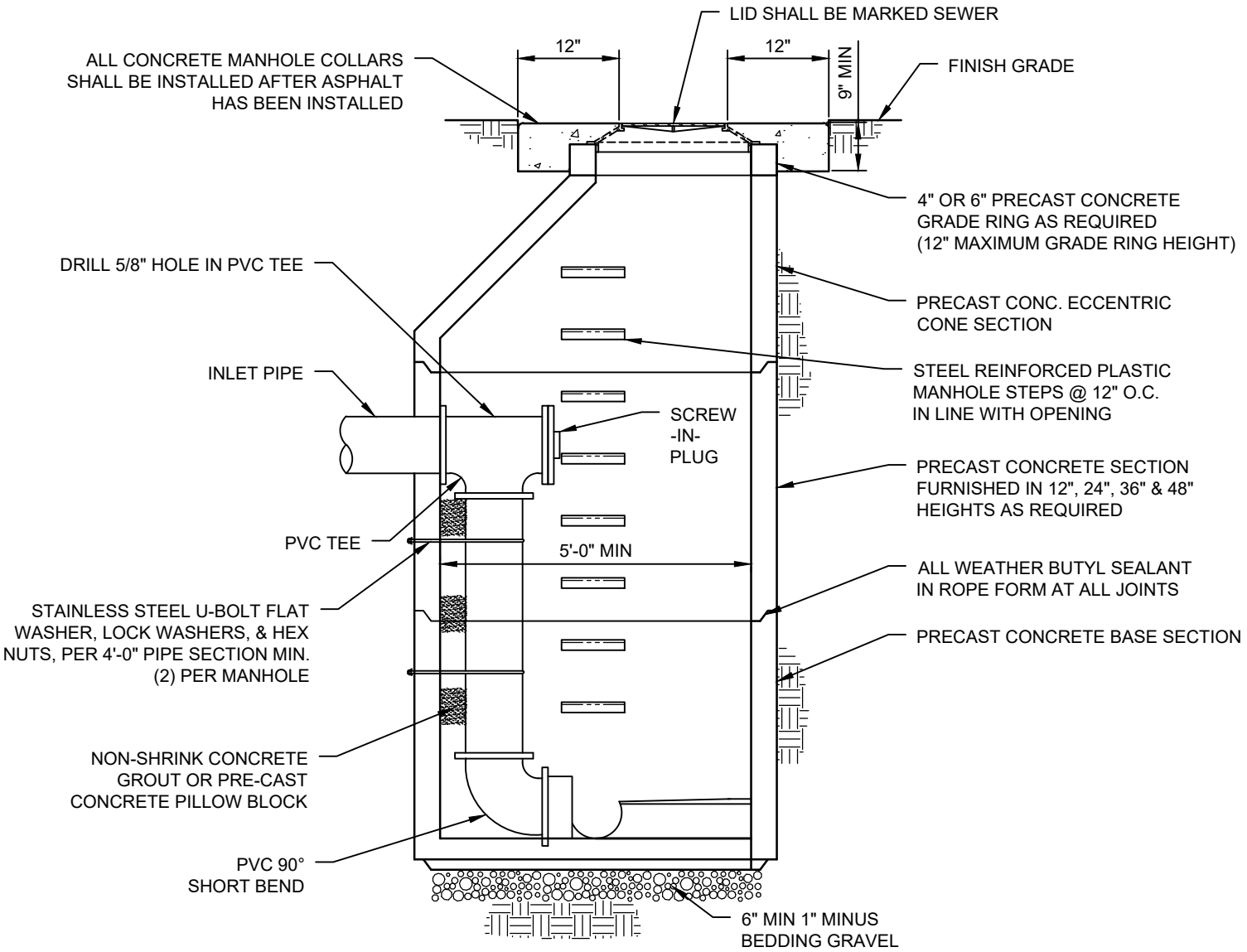
NOTES:

1. SECTIONS SHALL CONFORM TO ASTM 76-57 CLASS 2 PIPE FOR THE DIA. SHOWN.
2. FLAT FULL DIAMETER CONC. LIDS MAY BE USED IN LIEU OF ECCENTRIC CONES WHERE NECESSARY, AND UPON APPROVAL OF THE CITY ENGINEER. FLAT LIDS SHALL BE OF ECCENTRIC DESIGN AND MEET HS20 LIVE LOADING.
3. MANHOLES PLACED IN UNIMPROVED AREAS OR OUTSIDE OF ROW SHALL HAVE SOLID LIDS, AND BE INSTALLED 12" ABOVE GRADE.
4. PROVIDE A 0.10 FOOT INVERT ELEVATION DROP ACROSS THE MANHOLE (MINIMUM)
5. FLUSH MOUNT RING & COVERS WILL NOT BE ACCEPTED.
6. MANHOLE MUST BE WATERTIGHT AFTER INSTALLATION TO PREVENT GROUNDWATER INFILTRATION.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	SEWER
		SEWER MANHOLE
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 6.3
		REV DATE: 10-18-23

DROP MANHOLE

REPLACES APWA PLAN NO. 433

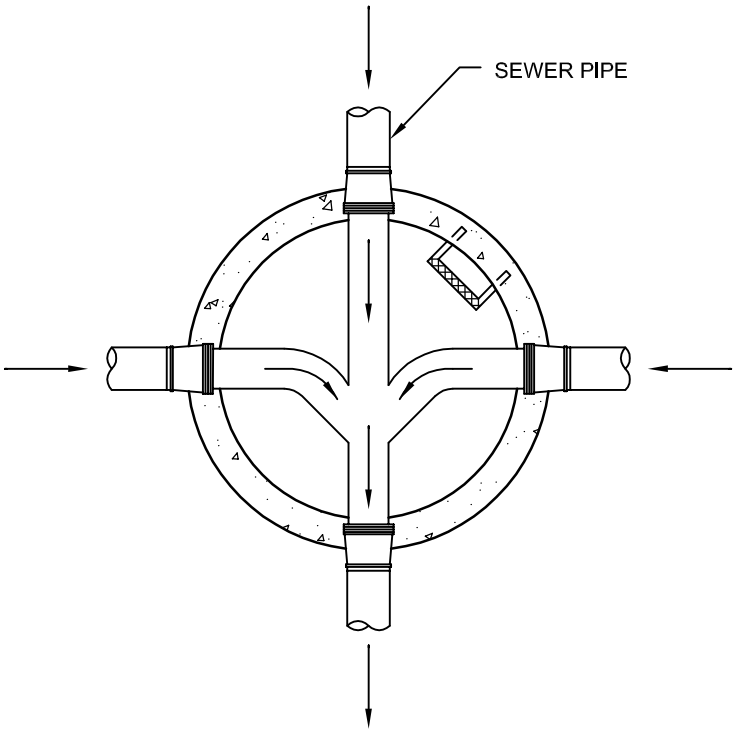


NOTES:

1. FOR DROP DISTANCES LESS THAN 18" NO DROP MANHOLE SHALL BE USED. THE CONTRACTOR SHALL SLOPE THE TROUGHS IN THE BASE SECTION OF THE MANHOLE TO ACCOMMODATE THE DROP DISTANCES
2. SECTIONS SHALL CONFORM TO ASTM 76-57 CLASS 2 PIPE FOR THE DIA. SHOWN.
3. FLAT FULL DIAMETER CONC. LIDS MAY BE USED IN LIEU OF ECCENTRIC CONES WHERE NECESSARY, AND UPON APPROVAL OF THE CITY ENGINEER. FLAT LIDS SHALL BE OF ECCENTRIC DESIGN AND MEET HS20 LIVE LOADING.
4. MANHOLES PLACED IN UNIMPROVED AREAS OR OUTSIDE OF ROW SHALL HAVE SOLID LIDS, AND BE INSTALLED 12" ABOVE GRADE.
5. PROVIDE A 0.10 FOOT INVERT ELEVATION DROP ACROSS THE MANHOLE (MINIMUM)
6. FLUSH MOUNT RING & COVERS WILL NOT BE ACCEPTED.
7. DROP MANHOLE WILL ONLY BE USED WITH CITY ENGINEER'S APPROVAL.
8. MANHOLE MUST BE WATERTIGHT AFTER INSTALLATION TO PREVENT ANY GROUNDWATER INFILTRATION.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	SEWER
		DROP MANHOLE
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 6.4
		REV DATE: 10-18-23

SEWER MANHOLE INVERT



SEWER MANHOLE SIZE TABLE

NUMBER OF PENETRATIONS	MANHOLE DIAMETER**	MANHOLE DEPTH**
1-2	48"	LESS THAN 14'
3 PLUS	60"	GREATER THAN 14'
SEWER PIPE GREATER THAN 18" REQUIRE 72" DIA MAHOLE		

**UNLESS OTHERWISE DIRECTED BY CITY ENGINEER

NOTES:

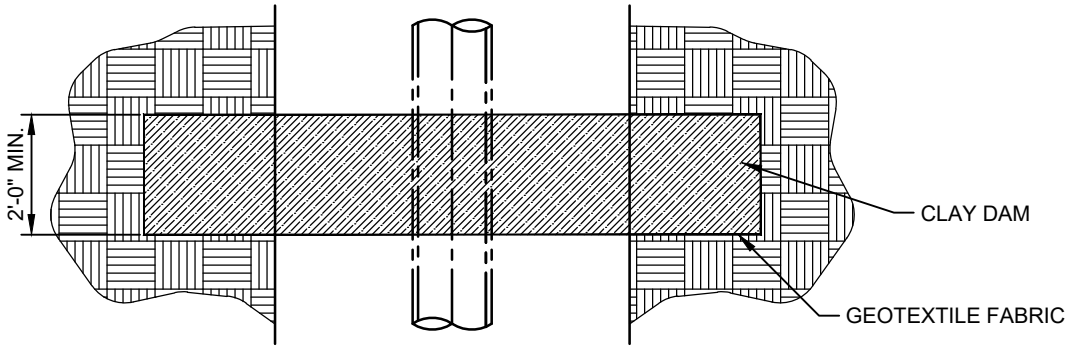
1. VENTED LIDS SHALL BE REQ'D. IN ALL PAVED STREETS.
2. NON-VENTED LIDS SHALL BE REQ'D IN ALL OTHER AREAS.
3. WHERE FIELD CONDITIONS PROHIBIT COMBINATION OF PRECAST CONC. SECTIONS SHOWN, OTHER COMBINATIONS OF PRECAST CONC. SECTIONS MAY BE USED AS PER ENGINEER'S APPROVAL.
4. CONCRETE COLLARS ARE REQ'D ON ALL MANHOLES ALONG STREETS AND ROADWAYS. THEY ARE NOT REQ'D IN AREAS WHERE THE NEW SEWER LINE TRAVERSES NATIVE FARMLAND OR WHERE OTHERWISE APPROVED BY THE ENGINEER.
5. CONTRACTOR SHALL RESTORE TRENCH SURFACE AS REQ'D PRIOR TO CONSTRUCTING CONCRETE MANHOLE COLLARS.
6. CONTRACTOR SHALL PROTECT FROM TRAFFIC FOR A MINIMUM OF 24 HOURS AFTER PLACEMENT OF CONCRETE COLLARS.
7. SEWER MANHOLE BASES SHALL PROVIDE A 0.10 FOOT INVERT ELEVATION DROP ACROSS THE MANHOLE (MINIMUM).

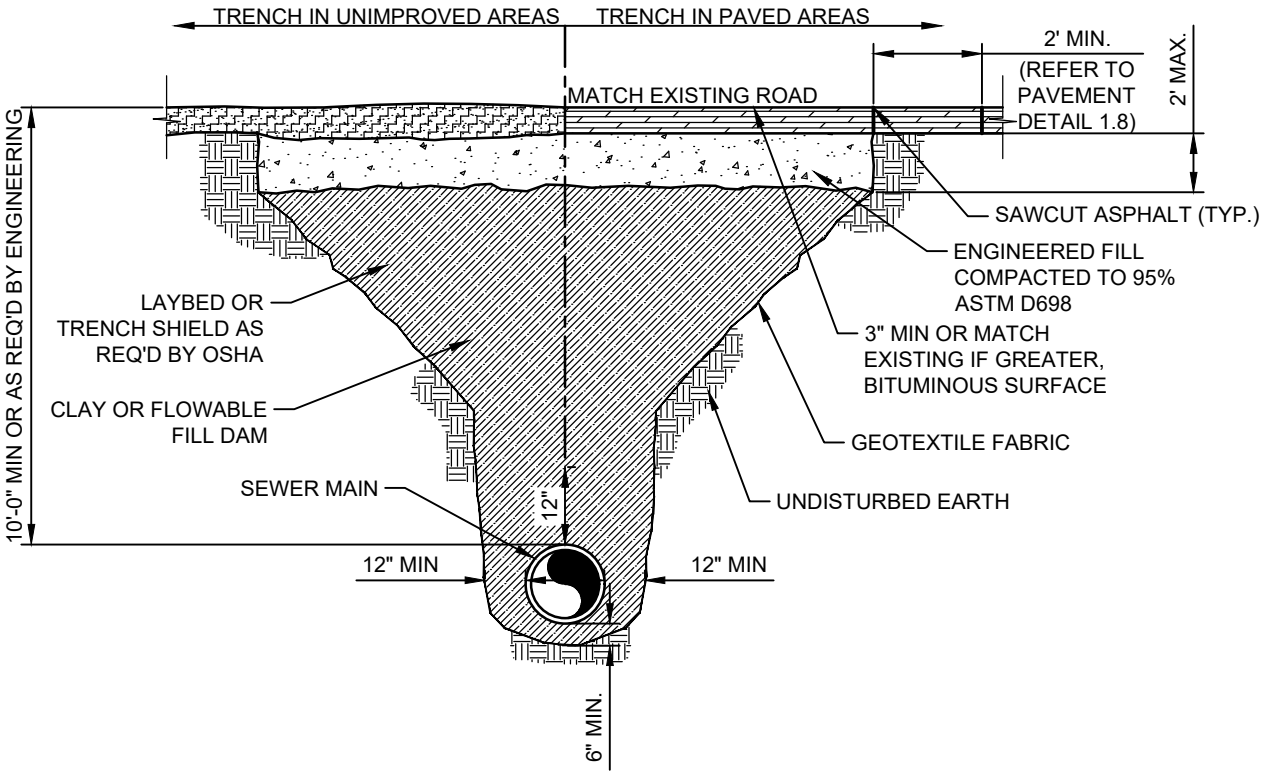
SALEM CITY CONSTRUCTION STANDARDS

SEWER
SEWER MANHOLE INVERT
SCALE: NONE
DATE: 1-9-18
SECTION: 6.5
REV DATE: 10-18-23

CLAY DAM DETAIL

MATERIAL THICKNESSES ARE
MINIMUM AND SHOULD NOT
SUPERSEDE SPECIFIC
GEOTECHNICAL RECOMMENDATIONS

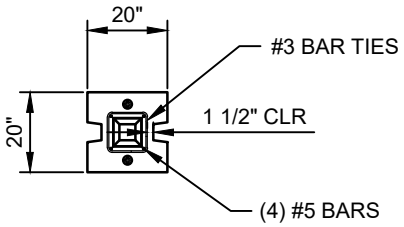




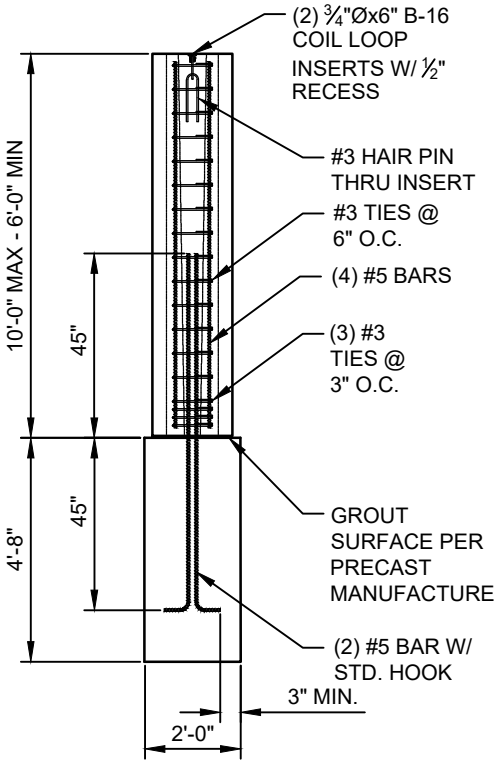
NOTES:
1. ALL MAINLINE SEWER PIPING SIZES 8" TO 24" SHALL BE PVC. MAINLINE PIPE SIZES 30" AND LARGER SHALL BE REINFORCED CONCRETE PIPE.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	SEWER
		TYP TRENCH
		SCALE: NONE
		DATE: 4-14-23
		SECTION: 6.6
		REV DATE: 10-18-23

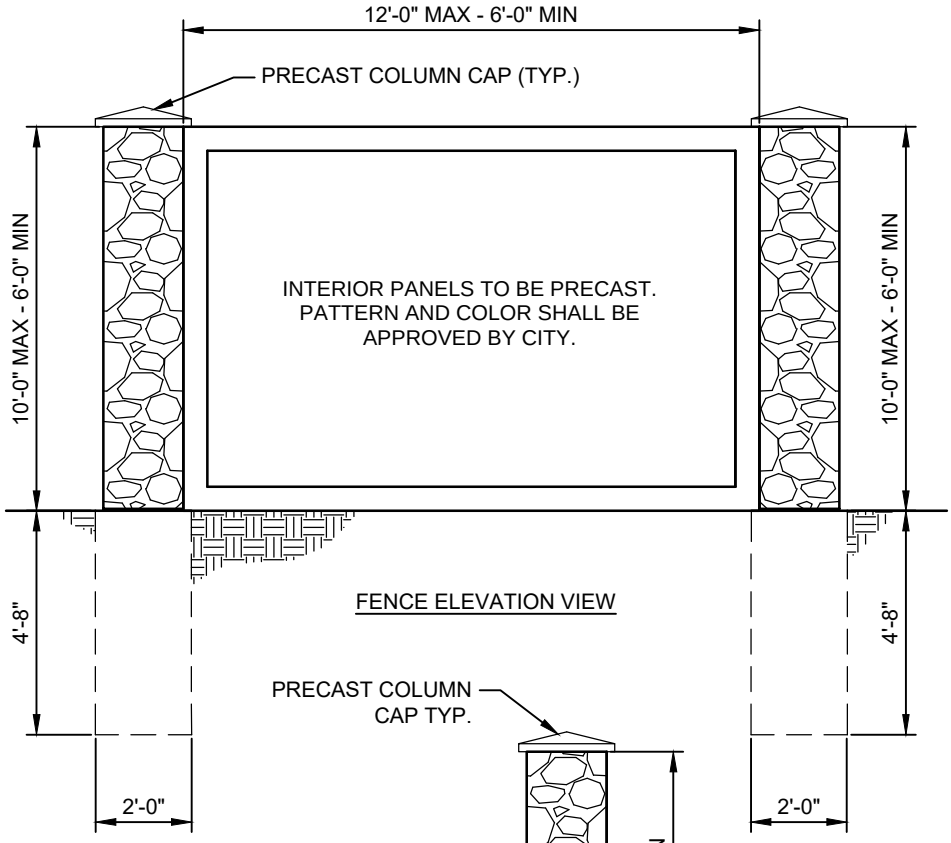
TYPICAL PRECAST FENCE



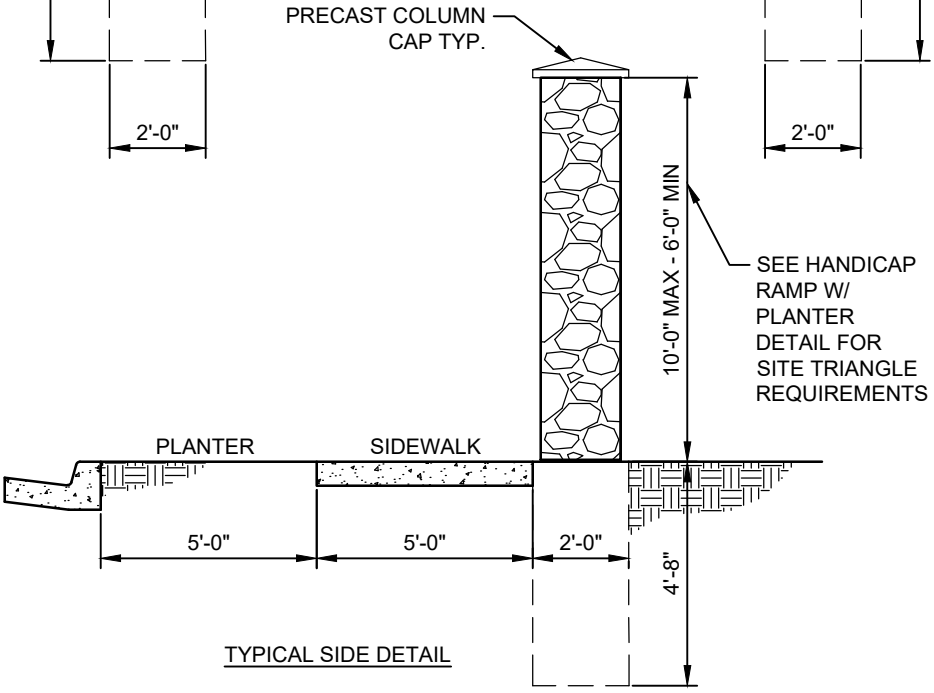
COLUMN PLAN SECTION



COLUMN FRONT SECTION



FENCE ELEVATION VIEW

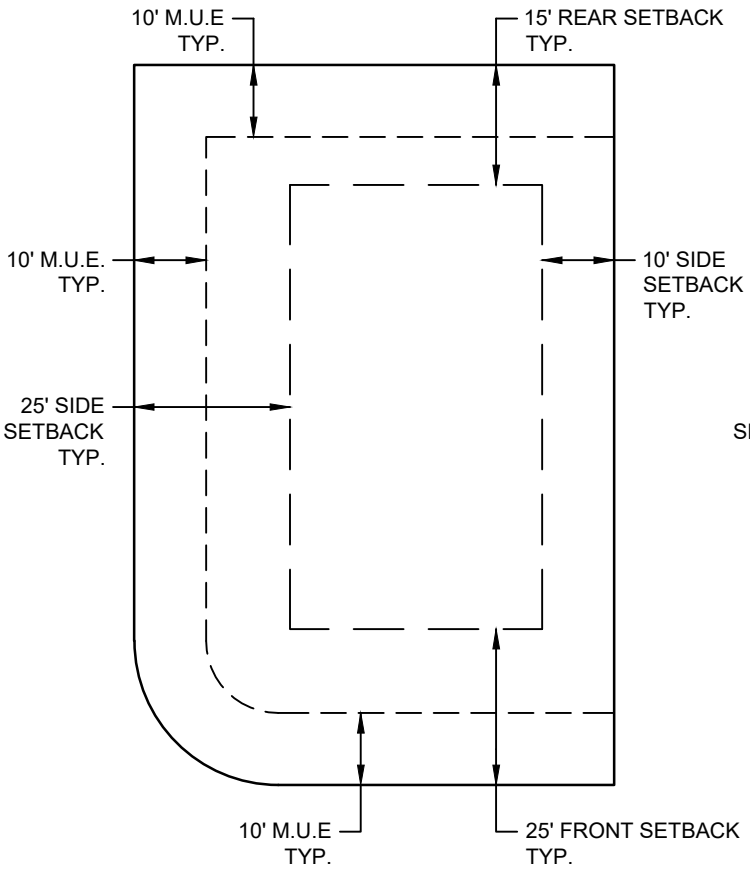


TYPICAL SIDE DETAIL

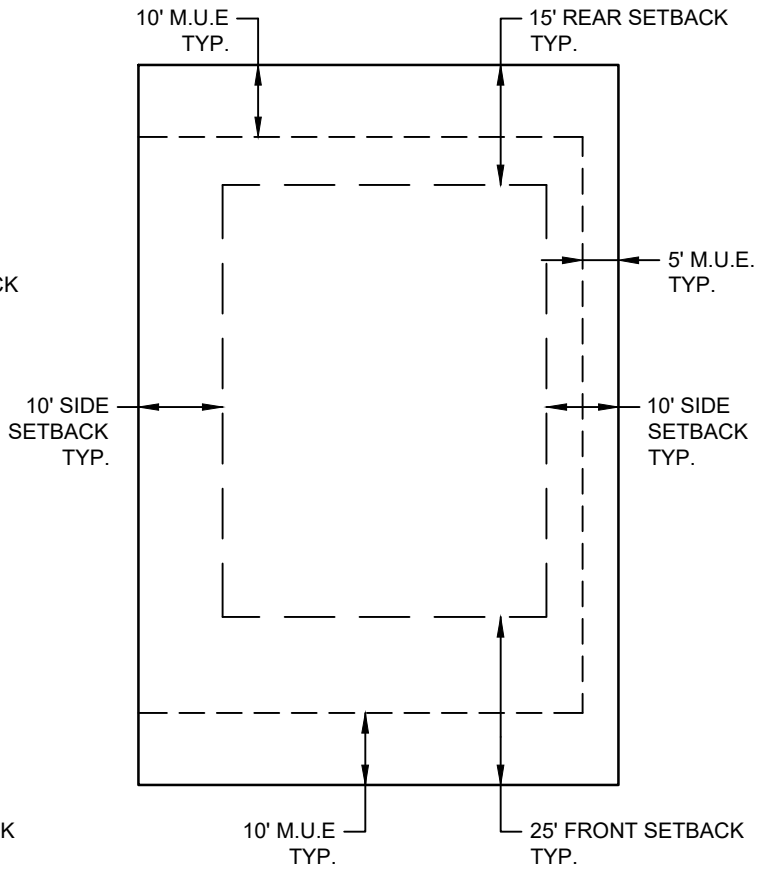
NOTES:
1. POST AND PANEL CONCRETE TO BE 4000 PSI.
2. FOOTING CONCRETE TO BE 3000 PSI.
3. MINIMUM SOIL LATERAL BEARING ALLOWABLE: 150 PSF/FT. OF DEPTH BELOW GRADE
4. MINIMUM SOIL BEARING PRESSURE ALLOWABLE: 1500 PSF.
5. DIMENSIONS MAY BE MODIFIED TO FIT PROJECT REQUIREMENTS, UPON APPROVAL.
6. DESIGN WIND SPEED 90 MPH, ASCE 7-02 EXPOSURE B.
7. REFER TO STANDARD DETAIL 1.5 HANDICAP RAMP W/ PLANTER FOR SITE TRIANGLE REQUIREMENTS.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	FENCE
		TYP PRECAST FENCE
		SCALE: NONE
		DATE: 1-9-18
		SECTION: 7.1
		REV DATE: 10-18-23

TYPICAL BUILDING SETBACK & MUNICIPAL UTILITY EASEMENTS



CORNER LOT

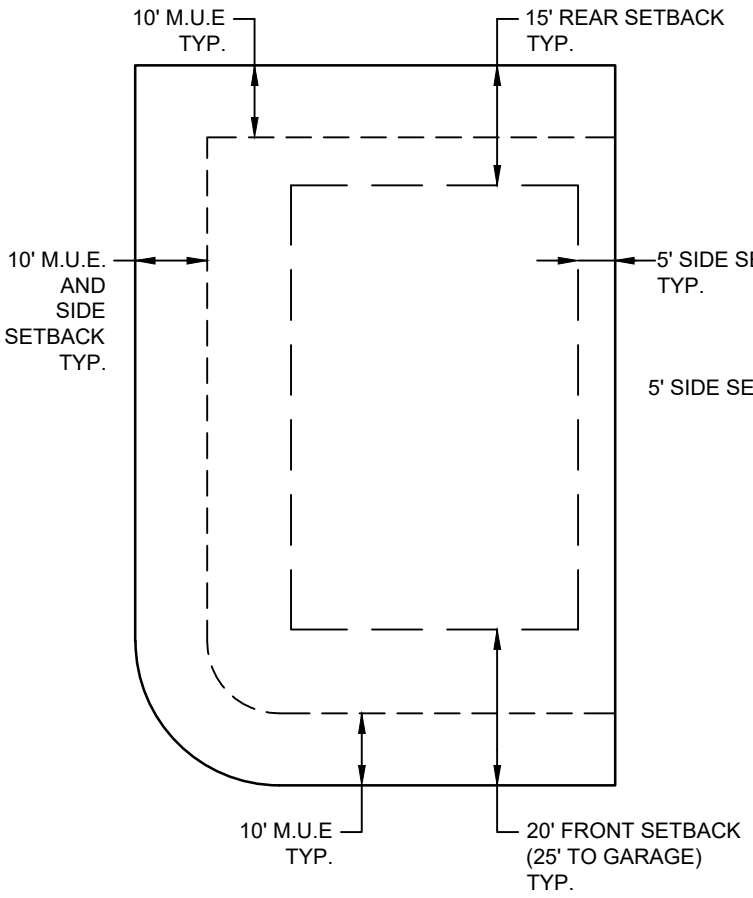


INTERIOR LOT

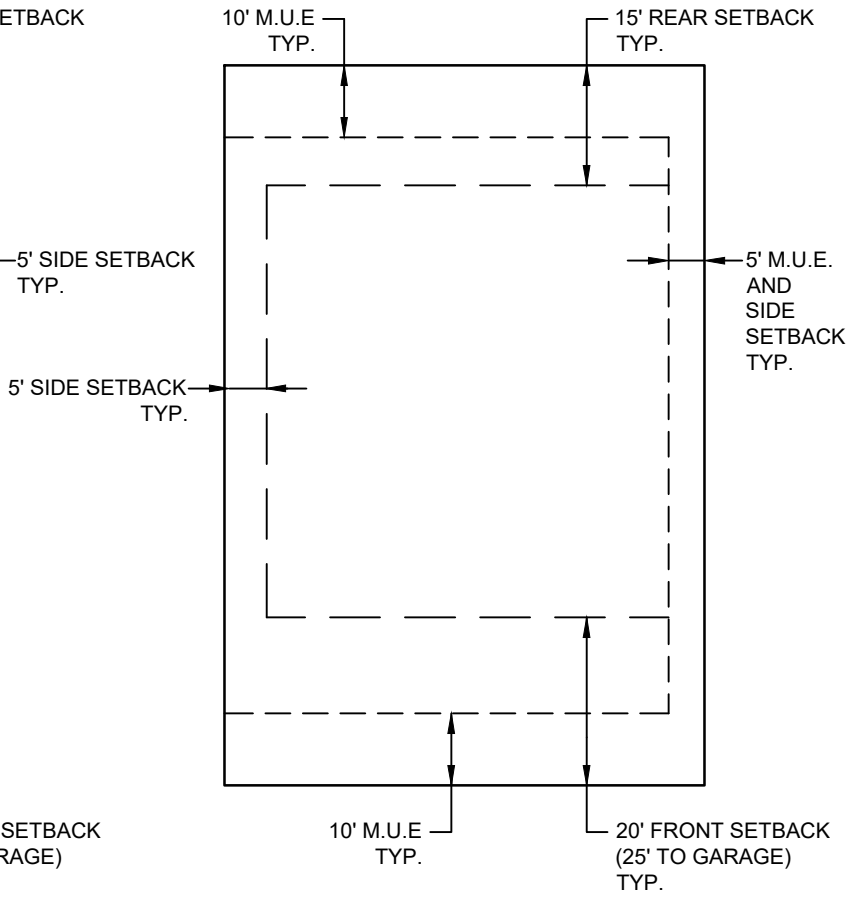
NOTES:
1. ALL M.U.E. (MUNICIPAL UTILITY EASEMENTS) DEDICATED TO SALEM CITY.
2. A SHARED 10' M.U.E. (5' EACH LOT) IS REQUIRED ON ONE SIDE OF EVERY OTHER LOT.
3. SETBACK DETAILS ARE REQUIRED ON PLATS

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	LOT LAYOUT TYP SETBACK & MUE SCALE: NONE DATE: 1-9-18 SECTION: 8.1 REV DATE: 10-18-23

TYPICAL BUILDING SETBACK & MUNICIPAL UTILITY EASEMENTS (R-5 ZONE)



CORNER LOT

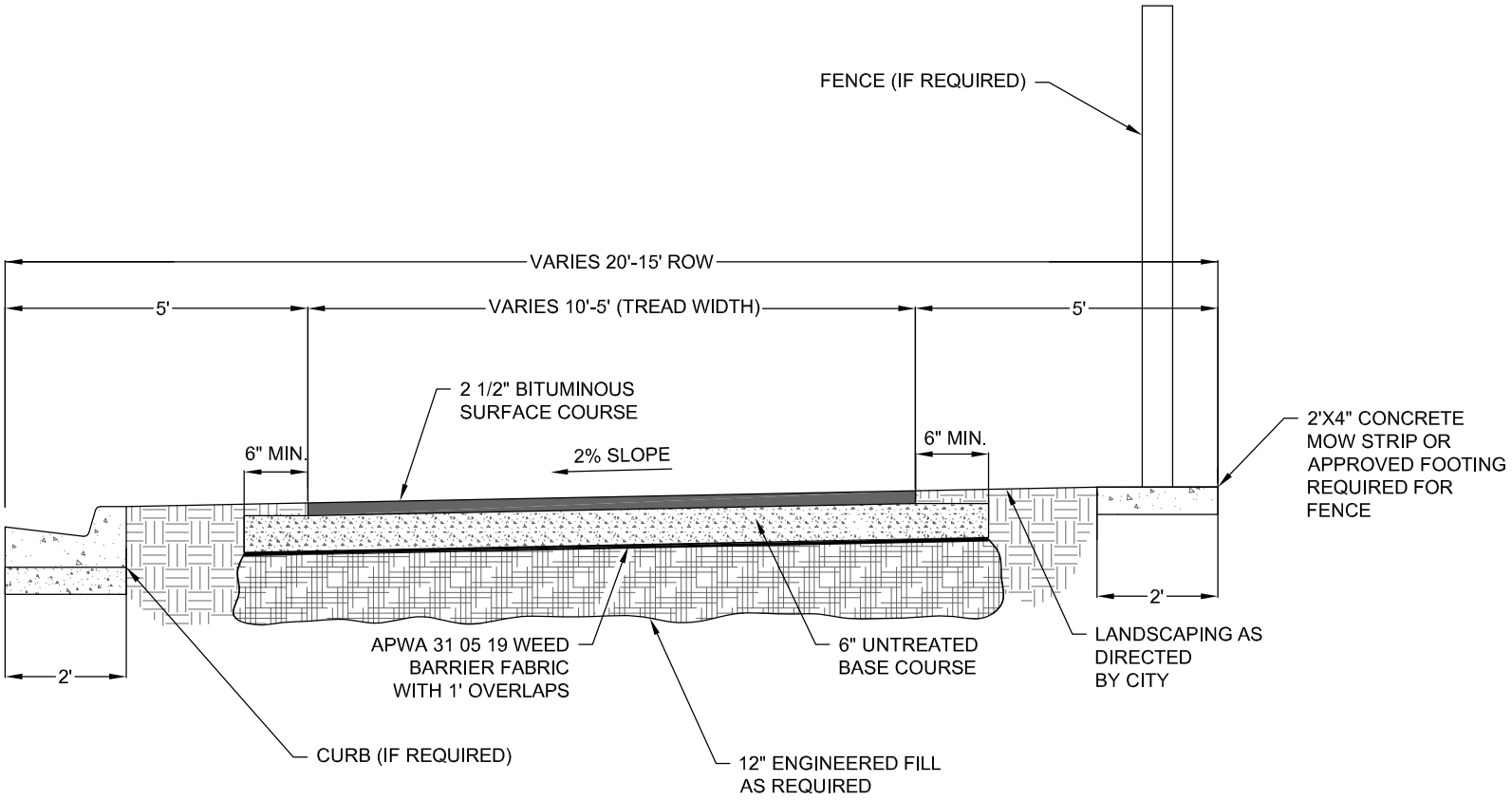


INTERIOR LOT

NOTES:
1. ALL M.U.E. (MUNICIPAL UTILITY EASEMENTS) DEDICATED TO SALEM CITY.
2. IF THIS DETAIL IS MODIFIED BY DA, THE MODIFIED SHARED 10' M.U.E. (5' EACH LOT) IS REQUIRED ON ONE SIDE OF EVERY OTHER LOT.
3. IF THIS IS NEGOTIATED IN THE DA, A MODIFIED VERSION NEEDS TO BE SHOWN ON THE PLAT.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	LOT LAYOUT TYP SETBACK & MUE SCALE: NONE DATE: 1-9-18 SECTION: 8.2 REV DATE: 10-18-23

TYPICAL TRAIL



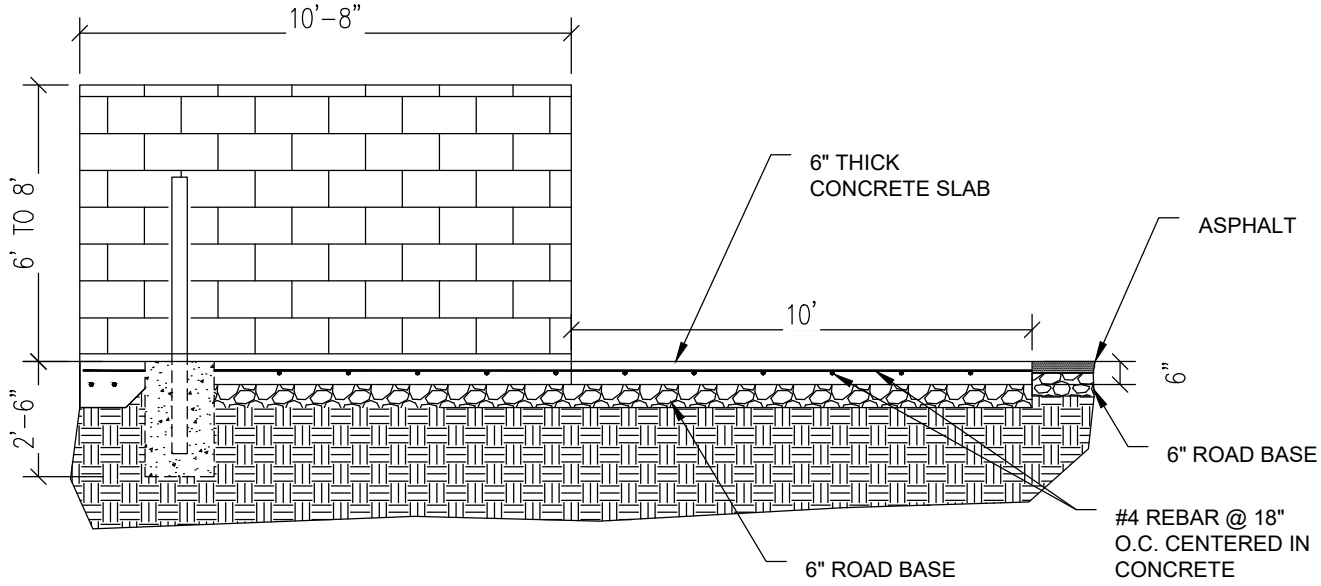
NOTES:

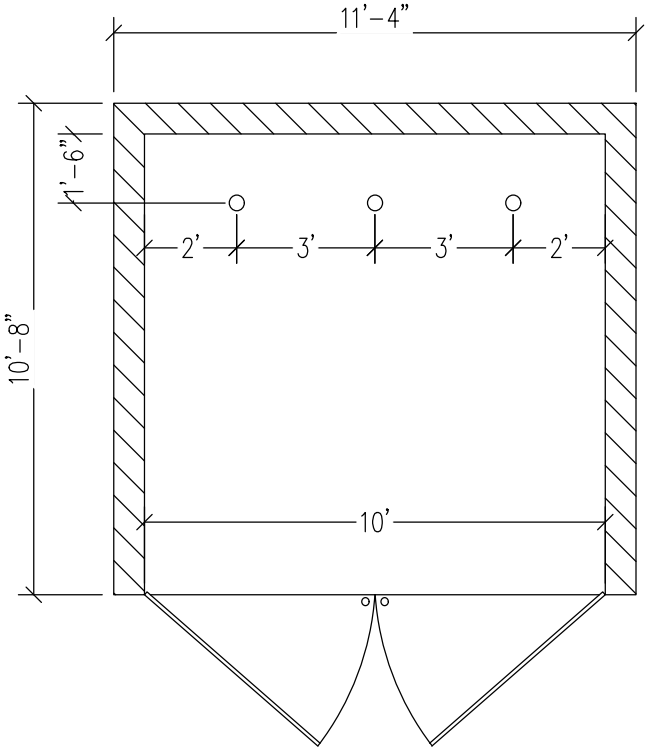
1. ALL TRAILS SHALL BE 10' WIDTH UNLESS OTHERWISE APPROVED BY SALEM CITY.
2. ALL TREES, SHRUBS AND OTHER VEGETATION SHALL BE REMOVED FROM THE CLEAR ZONE.
3. CITY SHALL INSPECT EACH BASE COURSE OR FABRIC LAYER BEFORE COVERING.
4. ALL WEEDS SHALL BE SPRAYED AND KILLED WITH ROUNDUP OR AN APPROVED EQUIVALENT ONE WEEK BEFORE ANY WORK MAY BE PERFORMED, AND WITHIN 3 WEEKS OF THE PLACEMENT OF UNTREATED BASE COURSE.
5. TRAIL LANES SHALL BE DELINEATED BY A CENTER, SINGLE, DASHED, YELLOW LINE.
6. 2 1/2" ASPHALT OR 4" CONCRETE AS REQUIRED BY SALEM CITY.

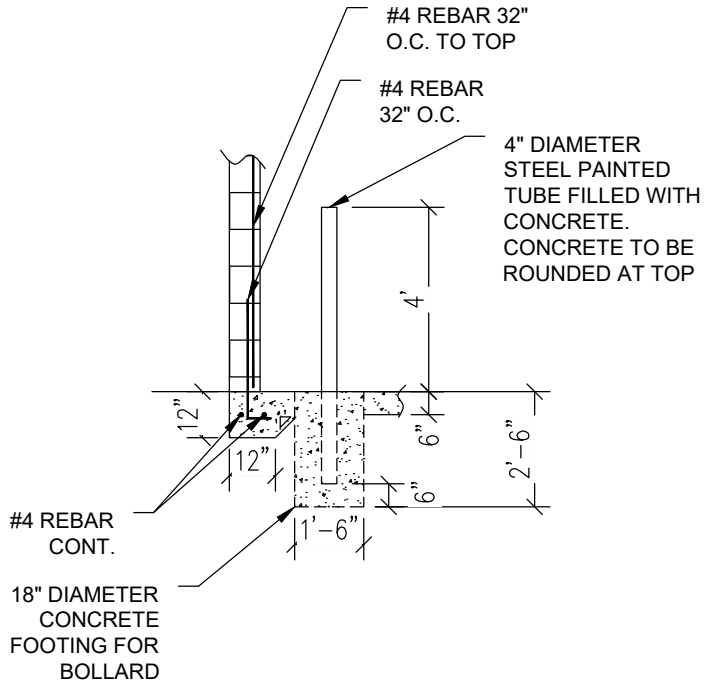
SALEM CITY
CONSTRUCTION
STANDARDS

TRAILS	
TYPICAL TRAIL	
SCALE: NONE	
DATE: 1/9/18	
SECTION: 9.1	
DATE: TBE10-18-23	

DUMPSTER ENCLOSURE







TRASH ENCLOSURES SHALL BE PROVIDED FOR ALL DEVELOPMENTS IN NON-RESIDENTIAL AND MULTI-FAMILY ZONING DISTRICTS IN ACCORDANCE WITH THE FOLLOWING:

1. TRASH ENCLOSURES SHALL BE SIX FEET (6') HIGH (PLUS OR MINUS 8 INCHES), CONSTRUCTED OF MASONRY, CEMENT OR CONCRETE BLOCK AND SHALL HAVE A SOLID METAL OPAQUE GATE FOR SCREENING. THE FLOOR OF THE TRASH ENCLOSURE SHALL BE A CONCRETE PAD.
2. CLEAR VISIBILITY FOR ALL INTERIOR DRIVE AISLES SHALL BE MAINTAINED.
3. TRASH ENCLOSURES SHALL BE LOCATED SO AS TO MINIMIZE DISTURBANCE TO SINGLE FAMILY RESIDENTIAL FEET (50') AWAY FROM ANY SINGLE FAMILY RESIDENTIAL ZONING DISTRICT, UNLESS THE ADJACENT PROPERTY IS UNDEVELOPED AND THE LAND USE AUTHORITY DETERMINES THAT THE SETBACK WILL NOT FULFILL ITS INTENDED PURPOSE AT THE PRESENT TIME.
4. EXTERIOR FINISH OF THE TRASH ENCLOSURE MUST MATCH THE FINISH OF THE BUILDINGS WITHIN THE DEVELOPMENT.

SALEM City of Peace	SALEM CITY CONSTRUCTION STANDARDS	DUMPSTER DETAILS DUMPSTER ENCLOSURE SCALE: NONE DATE: 5-25-23 SECTION: 10.1 REV DATE: 10-18-23

Final Plat (HOA) Dedication - Acceptance

COMMON AREA
OWNERS DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL THE PROPERTY DESCRIBED IN THE SURVEYOR'S CERTIFICATE HEREON AND SHOWN ON THIS MAP, HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, STREETS, EASEMENTS AND COMMON AREA AND DO HEREBY DEDICATE THE STREETS, EASEMENTS AND OTHER PUBLIC AREAS AS INDICATED HEREON TO SALEM CITY FOR PERPETUAL USE OF THE PUBLIC. PURSUANT TO THE UTAH CODE 10-9A-604(1)(D), THE OWNER HEREBY CONVEYS THE COMMON AREA, AS INDICATED HERON, TO THE _____ HOME OWNER'S ASSOCIATION, A UTAH NON-PROFIT CORPORATION, WITH A REGISTERED ADDRESS OF _____.

ACCEPTANCE BY LEGISLATIVE BODY

THE CITY OF SALEM, COUNTY OF UTAH, APPROVES THIS SUBDIVISION AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS AND OTHER PARCELS OF LAND INTENDED FOR PUBLIC PURPOSES FOR THE PERPETUAL USE OF THE PUBLIC.

Final Plat Dedication - Acceptance

OWNERS DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL THE PROPERTY DESCRIBED IN THE SURVEYOR'S CERTIFICATE HEREON AND SHOWN ON THIS MAP, HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, STREETS, AND EASEMENTS AND DO HEREBY DEDICATE THE STREETS, EASEMENTS AND OTHER PUBLIC AREAS AS INDICATED HEREON TO SALEM CITY FOR PERPETUAL USE OF THE PUBLIC.

ACCEPTANCE BY LEGISLATIVE BODY

THE CITY OF SALEM, COUNTY OF UTAH, APPROVES THIS SUBDIVISION AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS AND OTHER PARCELS OF LAND INTENDED FOR PUBLIC PURPOSES FOR THE PERPETUAL USE OF THE PUBLIC.

Appendix D – Preliminary Plat Checklist

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Subdivision Name:_____
Developer / Owner:_____
City Project No:_____

PRELIMINARY PLAT CHEKLIST

A. General Requirements				
1	**This submittal is required for the following: Residential & Commercial Subdivisions, Master Plan & Mixed Use Zones.**			
2	**List Existing and Proposed Zoning**	**Ex.**	**Prop.**	
	a) R - 8			
	b) R - 10			
	c) R - 12			
	d) R - 15			
	e) R - 30			
	f) A - 1			
	g) A - 2			
	h) R - 5			
	i) Master Planned Zone			
	j) Mixed Used Zone			
3	**Submittal shall include the following uploaded to City Works (All Plans and Reports shall be stamped by a professional engineer and plat by a professional land surveyor):**			
	a) Preliminary Improvements Plans	***Yes***	***N/A****	***Note***
	i. 24" x 36" PDF (Max Scale 1"=100')			
	ii. 11" x 17" PDF			
	iii. AutoCAD Format			
	iv. See Section 2.04 Electronic File Requirements			
	b) Preliminary drainage report and storm drain calculations - See 3.05.B			
	c) Preliminary geotechnical report			
	d) Preliminary Title Report			
	e) Preliminary Amenities plans			
	f) Preliminary Water/PI System Modeling			
	g) Preliminary Sanitary Sewer Modeling			
	h) Development agreement			
	i) Preliminary Landscaping plan by professional landscape architect/designer			
B. Engineering Studies		***Yes***	***N/A****	***Note***
	Additional Studies Needed, including but not limited to the following, city to determine need.			
4	**a) Traffic impact study**			
	b) Wetland study			
	c) Endangered plants and animals study			
	d) Cultural and archeological studies			
	e) Environmental impact statements			
	f) Earthquake hazard study			
	g) Debris flow study			
	h) Other geological hazard studies			
	i) Utah Department of Transportation requirements			
	j) Utah County requirements			
	k) Division of Drinking Water review			
	l) Division of Water Quality review			
	m) Floodplain evaluation (see ordinance)			
	n) Any other applicable studies			
***IF N/A PLEASE EXPLAIN IN THE NOTE SECTION**				

C. Title Page		*Yes*	*N/A**	*Note*
5	**Include the subdivision name follow "Preliminary Plat "as the title in the title block and top center of the sheet.**			
6	**Include a location map that is clear and shows significant nearby streets.**			
7	**Include the name, phone number, and address of the following:**			
	a) Developer/Owner			
	b) Engineering Firm			
	c) Surveying Firm			
	d) Others (as needed)			
8	**Include stamp of licensed Professional Engineer.**			
D. Preliminary Plat Sheet		*Yes*	*N/A**	*Note*
9	**Show the zoning on and adjacent to the project.**			
10	**Show the names of all adjacent subdivisions and land owners.**			
11	**Show the lot layout including:**			
	a) Size			
	i. Square feet			
	ii. Frontage			
	b) Easements MUE'S			
	c) Setbacks			
	d) Lot numbering			
12	**Show the street layout with street names and street coordinates. (Designate private or public ROW)**			
13	**Show Standard City Utility & Easement Detail - Lot Detail**			
14	**Include legal description of property.**			
15	**Include Salem City's Typical Building Setback & Municipal Utility Easements detail.**			
16	**Density Table**			
	a) Zoning			
	b) Area Breakout (acres)			
	i. Lots			
	ii. ROW			
	ii. Open Space			
	c) Number of Lots/Units			
	d) Lots per acre			
E. Project Overview Sheet		*Yes*	*N/A**	*Note*
17	**Include the following preliminary items:**			
	a) Key map			
	b) Street improvements			
	c) Storm drain (size & location)			
	d) Culinary water (size & location)			
	e) Pressurized irrigation (size & location)			
	f) Sanitary sewer (size & location)			
	g) Preliminary landscaping (when required)			
	h) Traffic signing, striping and control plan (when required)			
	i) Lot layout w/lot #'s and street names and coordinates			
	j) Additional easements (when required)			
	k) Lighting plan.			
	l) Trails			
	m) Fencing			
	n) Amenities			
	o) Private irrigation			
	p) Offsite improvements			
***IF N/A PLEASE EXPLAIN IN THE NOTE SECTION**				

	F. Phasing Plan Sheet	*Yes*	*N/A**	*Note*
18	**Shown all phase**			
19	**Show previous, proposed and future**			
	G. Grading Sheet	***Yes***	***N/A****	***Note***
20	**Show a minimum of 5' contour intervals with labels.**			
21	**Show the following with lighter lines:**			
	a) Lot layout w/ lot #			
	b) Street improvements w/ street names and coordinates			
	H. Utilities Sheet (As needed for clarity)	***Yes***	***N/A****	***Note***
22	**Show the following**			
	a) Street improvements w/ street names and coordinates			
	b) Lot layout w/ lots #'s			
	c) Storm drain (size & location)			
	d) Pressurized irrigation (size & location)			
	e) Culinary water (size & location, 10' separation from sanitary sewer lines and structures)			
	i) Fire hydrant (at all intersections, 500' max spacing within subdivisions, 1000' Max spacing along roadways where structural protection is not required)			
	ii) Valves (refer to 3.08C.6.)			
	f) Private irrigation company infrastructure			
	g) Sanitary sewer (size & location)			
	h) Lighting plan (200' or 400' alternating)			
	I. Drainage and Storm Drain Sheet	***Yes***	***N/A****	***Note***
23	**Show the following:**			
	a) Street improvements w/street names and coordinates			
	b) Lot layout w/lot #'s			
	c) Storm drain			
	d) Street flow lines			
	e) Floodplain Evaluation (see ordinance).			
	J. Details Sheet	***Yes***	***N/A****	***Note***
24	**Show street ROW cross-sections**			
	a) Street Section - Including Half Street Plus 12' as required			
	b) Existing & proposed clearly identify			
25	**Show special plans and details as necessary**			
	***IF N/A PLEASE EXPLAIN IN THE NOTE SECTION**			

Appendix E – Final Plat Checklist

Return to Table of Contents

Subdivision Name:_____
Developer / Owner:_____
City Project No:_____

FINAL PLAT CHEKLIST

A. General Requirements				
1	**This submittal is required for the following: Residential & Commercial Subdivisions, Master Plan & Mixed Use Zones.**			
2	**List Existing and Proposed Zoning**	**Ex.**	**Prop.**	
	a) R - 8			
	b) R - 10			
	c) R - 12			
	d) R - 15			
	e) R - 30			
	f) A - 1			
	g) A - 2			
	h) R - 5			
	i) Master Planned Zone			
	j) Mixed Used Zone			
3	**Submittal shall include the following uploaded to City Works (All Plans and Reports shall be stamped by a professional engineer and plat by a professional land surveyor):**			
	a) Final Plat and Improvement Plans/Construction drawings	***Yes***	***N/A****	***Note***
	i. 24" x 36" PDF (Max scale 1"=100')			
	ii. 11" x 17" PDF			
	iii. AutoCAD Format			
	iv. See Section 2.04 Electronic File Requirements			
	b) Final Landscaping plan by professional landscape architect/designer (with irrigation plan)			
	c) Final Geotechnical report			
	d) Final Drainage report with detailed storm drain calculations - See 3.05.B			
	e) Recorded easements and signed agreements			
	f) Necessary permits			
	g) Final Amenities plans			
	h) Final Water/PI System Modeling/Report			
	i) Final Sanitary Sewer Modeling/Report			
	j) Signed development agreement			
B. Engineering Studies		***Yes***	***N/A****	***Note***
4	**Permits, reports and approvals that may be required, including but not limited to the following:**			
	a) Wetlands Army Corps of Engineers permit			
	b) Endangered plants and animals impact permit/approval			
	c) Cultural and archeological permit/approval			
	d) Environmental impact statements			
	e) Earthquake hazard approval			
	f) Debris flow hazard approval			
	g) Other geological hazard permit/approval			
	h) Utah Department of Transportation (UDOT) permit			
	i) Utah County permit/approval			
	j) Division of Drinking Water permit/approval			
	k) Division of Water Quality permit/approval			
	l) Discharge permit			
	m) Stream alteration permit			
	n) Land disturbance permit			
	o) Utah State dam safety permit			
	p) Encroachment and excavation permit			
	q) Utility company approval			
	r) Irrigation or canal company approval			
	s) Any other applicable permits and approvals			

***IF N/A PLEASE EXPLAIN IN THE NOTE SECTION**

C. Title Page		*Yes*	*N/A**	*Note*
5	Include the subdivision name followed by "Final Plat" as the title in the title block and top center of the sheet.			
6	Include a location map that is clear and shows significant nearby streets.			
7	Include the name, phone number, and address of the following:			
	a) Developer/Owner			
	b) Engineering Firm			
	c) Surveying Firm			
	d) Others (as needed)			
8	Include stamp of licensed Professional Engineer.			
D. Plat Sheet		Yes	N/A*	*Note*
9	Show the zoning on and adjacent to the project.			
10	Show the names of all adjacent subdivisions and land owners.			
11	Show the lot layout including:			
	a) Size			
	i. Square feet			
	ii. Frontage			
	b) Easements MUE'S			
	c) Setbacks			
	d) Lot numbering			
12	Show lot addresses.			
13	Show the street layout with street names and street coordinates. (Designate private or public ROW)			
14	Include legal description of property.			
15	Include Salem City's Typical Building Setback & Municipal Utility Easements detail.			
16	Density Table			
	a) Zoning			
	b) Area Breakout (acres)			
	i. Lots			
	ii. ROW			
	ii. Open Space			
	c) Number of Lots/Units			
	d) Lots per acre			
E. Project Overview Sheet		Yes	N/A*	*Note*
17	Include the following final items:			
	a) Street improvements			
	b) Storm drain (size & location)			
	c) Culinary water (size & location)			
	d) Pressurized irrigation (size & location)			
	e) Sanitary sewer (size & location)			
	f) Final landscaping			
	g) Traffic signing, striping and control plan			
	h) Lot layout w/lot #'s and street names & coordinates			
	i) Proposed easements			
	j) Lighting plan.			
	k) Private Irrigation Infrastructure			
F. Phasing Plat Sheet		*Yes*	*N/A**	*Note*
18	Show the phasing plan.			
19	Show all improvements.			
G. Grading Sheet		*Yes*	*N/A**	*Note*
20	Show a minimum of 5' contour intervals.			
21	Show the following with lighter lines:			
	a) Lot layout w/lot #'s			
	b) Street improvements w/street names and coordinates.			
***IF N/A PLEASE EXPLAIN IN THE NOTE SECTION**				

H. Utilities Sheet (As needed for clarity)		Yes	N/A*	*Note*
22	Show the following:			
	a) Street improvements w/street names and coordinates			
	b) Lot layout w/lot #'s			
	c) Storm drain (size & location)			
	d) Culinary water (size & location, 10' separation from sanitary sewer lines and structures)			
	e) Pressurized irrigation (size & location)			
	f) Sanitary sewer (size & location)			
	g) Lighting plan.			
I. Drainage and Storm Drain Sheet(s)		*Yes*	*N/A**	*Note*
23	Show the following:			
	a) Street improvements w/street names and coordinates			
	b) Lot layout w/lot #'s			
	c) Storm drain lines, inlets and structures (Label for reference to Drainage Report)			
	d) Street flow lines			
	e) Street grade contour intervals			
	f) Detention/retention basin contour intervals, profiles with basin slopes, and measured ground water levels.			
	g) Floodplain Evaluation (see ordinance).			
J. Street Plan and Profile Sheet(s)		*Yes*	*N/A**	*Note*
24	Show the following:			
	a) Street improvements			
	b) Existing and Proposed Profiles			
	c) Sewer Plan and Profile			
	d) Flood irrigation Plan and Profile			
	e) Storm drain Plan and Profile			
	f) Detailed intersection design (TBC, Centerline control elevations, cross slopes, etc.)			
K. Details Sheet(s)		*Yes*	*N/A**	*Note*
25	Include street ROW cross-sections.			
	a) Street Section - Including Half Street Plus 12' as required			
	b) Existing and proposed clearly identified			
	c) Meet City ROW standards - See 3.03.A.5			
	d) Meet City road section minimum standards or geotechnical engineers recommendations (stricter recommendation shall be used)			
26	Reference standard details.			
27	Show special plans and details as necessary			
***IF N/A PLEASE EXPLAIN IN THE NOTE SECTION**				

Appendix F – Site Plan Checklist

Return to Table of Contents

Subdivision Name:_____
Developer / Owner:_____
City Project No:_____

COMMERCIAL SITE PLAN CHECKLIST

	A. General Requirements	*Yes*	*No*	*N/A**	*Note*
1	This submittal is required for existing and new commercial/industrial developments.				
	a) Existing comercial ☐				
	b) New commercial ☐				
	c) Existing Industrial ☐				
	d) New Industrial ☐				
	B. Existing Uses / Remodels	**Yes**	**N/A***	**Note**	
3	Include a "to scale" map showing the following				
	a) Property lines				
	b) Locations of existing and proposed site improvements				
	c) ROW improvements				
	d) Utilities				
	e) Buildings, structures, and fences				
	f) Setbacks				
	g) Contemplated uses				
	h) Floodplain Evaluation (see ordinance)				
	i) Other information required by the zone.				
4	Density Table				
	a) Zoning				
	b) Area Breakout (acres)				
	i. Lots				
	ii. ROW				
	ii. Open Space				
	c) Number of Lots/Units				
	d) Lots per acre				
5	Map should be submitted in PDF and AutoCAD formats by uploading to Salem City's Online Program				
	C. New Commercial Site Plan	*Yes*	*N/A**	**Note**	
6	These are new commercial developments on existing lots, with no subdividing.				
7	Submittal shall include the following uploaded to City Works (All Plans and Reports shall be stamped by a professional engineer):				
	a) Final Plat and Improvement Plans/Construction drawings	*Yes*	*N/A**	**Note**	
	i. 24" x 36" PDF (Max scale 1"=100')				
	ii. 11" x 17" PDF				
	iii. AutoCAD Format				
	iv. See Section 2.04 Electronic File Requirements				
	b) Site Plan				
	i. Buildings, structures, and fences				
	ii. Setbacks				
	iii. Parking (Include Parking Table with Required and Provided Stall Count with ADA Stalls Required)				
	iv.) Setbacks and Easements				
	v.) Lighting Plan				
	vi.) Solid waste disposal location(s)				
	c) Grading and Drainage Plan				
	i. Grade Elevations (TBC, Rims, Etc.				
	ii. Show a minimum of 5' contour intervals.				
	iii. Detention/retention basin contour intervals, profiles with slopes, measured ground water levels and basin slopes shown.				

***IF N/A PLEASE EXPLAIN IN THE NOTE SECTION**

7	d) Utility Plan			
	i. Storm drain (size & location)			
	ii. Culinary water (size & location, 10' separation from sanitary sewer lines and structures)			
	iii. Pressurized irrigation (size & location)			
	iv. Sanitary sewer (size & location)			
	v. Lighting plan.			
	e) Storm drain Plan and Profile			
	f) Detailed intersection design (TBC, Centerline control elevations, cross slopes, etc.)			
	g) Landscaping plan			
	h) Drainage report and storm drain calculations - See 3.05.B			
	i) ROW improvements			
	j) Property accesses			
	k) Must be approved by the City, County, or UDOT Engineer as applicable			
	l) Signage			
	m) Contemplated uses			
	n) Floodplain Evaluation (see ordinance)			
	o) Other information required by the zone.			
8	Map should be submitted in PDF and AutoCAD formats by uploading to Salem City's Online Program.			
9	Additional engineering studies may be required, including but not limited to the following			
	a) Traffic impact study			
	b) Wetland study			
	c) Endangered plants and animals study			
	d) Cultural and archeological studies			
	e) Environmental impact statements			
	f) Earthquake hazard study			
	g) Debris flow study			
	h) Other geological hazard studies			
	i) Utah Department of Transportation requirements			
	j) Utah County requirements			
	k) Division of Drinking Water review			
	l) Division of Water Quality review			
	m) Any other applicable studies.			
*IF N/A PLEASE EXPLAIN IN THE NOTE SECTION				