

LPID

LAKE POINT IMPROVEMENT DISTRICT

LAKE POINT IMPROVEMENT DISTRICT

Development Standards
Manual | November 2020



CONTENTS

DEVELOPMENT APPLICATION 1-5
 Application
 Development Fee Schedule
 Terms & Requirements of Customer Sewer Service

DEVELOPMENT REQUIREMENTS 1-15

STANDARD EASEMENT FORM 1-4

LAKE POINT IMPROVEMENT DISTRICT SEWER INSTALLATION REQ..... 1-5

SEWER IMPACT FEE WORKSHEET

DEVELOPMENT AGREEMENT

BOND AGREEMENT

STANDARD DRAWINGS

- 101 Sanitary Sewer Manhole
- 102 Manhole Frame and Cover
- 103 Manhole Grade Adjustment in Pavement
- 104 Manhole Adapter Ring Assembly
- 105 Sewer Cleanout Details
- 106 Grease Interceptor
- 107 Sampling Manhole Precast Base
- 108 Nose-On Sewer Lateral Connection SDR 35 Gasketed Bell Gravity Applications
- 109 Nose-On Sewer Lateral Connection Corrugated Bell for Gravity Applications
- 110 Sewer Trench Backfill Detail
- 111-A Grade and Alignment Test
- 111-B Pipe Slope Certification



LAKE POINT IMPROVEMENT DISTRICT

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

DEVELOPMENT APPLICATION

Project Name: _____ Location: _____

- Type of Development: [] Single Family - Residential Subdivision
[] Multi-Family - Residential Subdivision
[] Commercial or Site Development
[] Other: _____

Applicant Name: _____ Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Mobile Phone: _____

Email: _____ Projected Occupancy Date: _____

Property Owner: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Mobile Phone: _____

Email: _____

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

Engineer: _____ Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Mobile Phone: _____

Email: _____

--Checklist of required documents and information for a complete plan review submission--

- Signed Application
- Plan Review and Inspection Fee Deposit
- Architectural and mechanical plans (for commercial and site developments)
- Two (2) full years of water meter readings for developments of similar use (non-residential development only)
- Sewer Master Plan (developments with more than one phase)
- Phasing Plan (developments with more than one phase)
- Development Agreement
- Bond Agreement (due no later than proceeding issuance of Notice of Final Construction Approval).
- Easements for Proposed Public Utilities, in Favor of LPID (by separate, standard form)
- Copy of Subdivision Plat and/or any subdivision or vacation instruments such as lot line adjustments, street vacations, etc.
- Two (2) 24" x 36" construction plan sets, two (2) CDs containing both PDF and AutoCAD format drawings, as well as PDF formatted files of all other required documents.

--Terms--

1. Developer shall be responsible for all LPID fees whether incurred by the Developer, Developer's agents, tenants, consultants, employees, or others.
2. Impact Fees are calculated by LPID after a complete development application has been received. Impact fees are collected prior to building permit issuance. LPID shall not sign off on permit applications until all impact fees are paid.
3. Developer / Owner shall obtain a "Permit for Service Lateral" from LPID prior to any service connection to a building.
4. It is the responsibility of the Developer and/or Owner(s) of the property hereafter to notify the Utility Location Service Center, to locate all utility lines on the development property. The Developer / Owner(s) releases LPID of all legal liability for any marked or unmarked utility services as a result of connection or attempt to connect to LPID sewer system.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- 5. Developer or Contractor shall notify LPID when the sewer service facilities are ready for inspection. No part of the facilities shall be covered prior to inspection and approval by LPID. A request for inspection(s) shall be made no less than twenty-four (24) hours in advance.

In consideration of granting this application, the undersigned hereby agrees to the terms of this application, and all other requirements as stated in this Application, as well as LPID’s Standard Development Documents and Instructions, and to pay all fees and expenses incurred by LPID as a result of this application.

Applicant Signature _____

Date: _____

--Contact Information--

LPID General Manager	LPID Administration	LPID Engineer
Keith Fryer Office: 801.255.2099 Mobile: 435.840.2440 Email: kfryer@lpid.us	Terre Marshall Phone: 801.520.0053 Email: Tmarshall@lpid.us	Brendan Thorpe, P.E. Ward Engineering Group Office: 801.487.8040 bthorpe@wardeg.com

--District Use--

Application Approved

Authorized Signature

Date



LAKE POINT IMPROVEMENT DISTRICT

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

DEVELOPMENT FEE SCHEDULE

Plan and annexation review fees listed below are a deposit only. Actual fees and costs incurred by the District may exceed the deposit amount and will be the responsibility of the Developer. The fees represented are in no way a guarantee or an implication of the final and only fees needed to complete the plan review, inspection, and development process.

Plan Review: Single Family Residential Development	\$ 250.00 / lot
Plan Review: Commercial, Site Development.....	\$ 1,000 per building
Inspection Fees for Public Utilities.....	Included in Plan Review Fees
Operating Permit, and Project Closeout.....	Included in Plan Review Fees
Sewer Impact Fee.....	\$4,131.28 / ERU
Annexation Review.....	\$1,200.00



LAKE POINT IMPROVEMENT DISTRICT

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

TERMS & REQUIREMENTS OF CUSTOMER SEWER SERVICE

--Use of Public Sewer Required--

The Owner(s) of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, situated within the boundaries of the Lake Point Improvement District (LPID) and abutting on any street, alley or right-of-way in which there is now located or may in the future be located a public sanitary or combined sewer within 300 feet of the system, is hereby required, at the Owner's expense to install suitable sewer facilities therein, and to connect such facilities directly with the public sewer within 180 days after date of official notice to do so, provided that said sewer is within 300 feet of the Owner's property line. Approved subdivision and public facilities are excluded from the 300-foot requirement.

1. LPID bills its customers semi-annually (\$50 in March and \$50 in September) for sewer service. A ten (\$10) dollar late fee plus 1.0% per month (12% per annum) interest will be charged to accounts that have not been paid by the close of business on the due date (30 days from the printed billing date).
2. If an Owner or occupant makes available any portion of a house, building, or other properties for human habitation currently served by the LPID for the purpose of receiving payment or otherwise for compensation for occupancy, the Owner, tenant, or occupant shall be billed an additional sewer service fee for each unit sewer service is provided.
3. LPID reserves the right to lien the premises for all past due service fees, collection costs, interest, court costs, attorney's fees and damages.
4. In the event of nonpayment for sewer services by Owner or tenant within the due date therefore, or failure to conform to the rules, regulations, and resolutions of LPID, LPID shall have the right to discontinue and terminate sewer to the premises until all reconnection fees are paid in full or until any failure to conform to the rules, regulations, and resolutions of LPID are eliminated. In the event of nonpayment, Owner(s) agrees to pay interest on the unpaid balance at 12% per annum and pay all costs of collection including reasonable attorney's fees both before and after judgement.
5. Owner(s) shall be liable for all the maintenance and repair for all sewer lines on Owner's property from the point the sewer lateral leaves the main line to the home/structure.
6. The Owner(s) shall indemnify LPID from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.
7. Owner(s) shall be subject to all rules, regulations, and/or resolutions of LPID now in effect or hereafter enacted.
8. If Owner(s) should sell one or more building lots, such sale must be made with the express understanding that such lot(s) must be served from LPID's main line by direct connection. Owner(s) must give notice to the purchaser that a direct connection is required and owner must give notice to LPID of such sale. Upon connection, the purchaser must pay required fees.



LAKE POINT IMPROVEMENT DISTRICT

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

DEVELOPMENT REQUIREMENTS

PURPOSE

The purpose of the “Development Requirements” is to provide information to the applicant which is necessary for the submission of a complete development application to the Lake Point Improvement District (LPID), and to identify additional documents and information required throughout the construction and acceptance processes. When the required information is submitted, LPID is better able to process and review your project in a timely manner. If the required information is not provided at the time of each submission, LPID will return the documents and submissions to the applicant, which will unnecessarily delay progress, review, and acceptance.

This document is intended to assist the applicant in successfully completing each process. However, based on individual projects and circumstances, LPID may require additional information depending on the nature and complexity of the project.

LIMITS OF LPID’S AUTHORITY

LPID is a utility district within Tooele County, managing the operations of sewer service within the District’s service area. Tooele County is the entity which governs planning and zoning, and the engineering of all public infrastructure not associated with sewer facilities. Furthermore, The Oquirrh Mountain Water Company provides water service within and around the LPID sewer service area.

DEVELOPER RESPONSIBILITIES

It is the responsibility of the Developer to ensure that the Project Engineer has submitted a complete and compliant design. LPID is in no way responsible for omissions or errors on the construction plans. LPID’s primary role is to provide plan review(s) and construction inspections for compliance to LPID standards and requirements. For clarification on LPID’s acceptance of proposed public improvements, LPID reserves the right to include and/or require additional improvements or adjustments to the approved construction plans during inspections and construction, if omissions or errors are discovered and/or to add or furnish construction improvements pertinent to the functionality, reasonable use of, or longevity of the system. LPID will notify the Developer in writing of any such required additions, modifications, or changes if discovered. All construction and improvements remain the ownership and responsibility of the Developer until final written acceptance by LPID.

The Developer / Engineer are also responsible to design and construct all sewer facilities in accordance with all other binding laws, codes, and requirements, not limited to: OSHA, Utah Division of Water Quality, Tooele County, Manufacture’s Recommendations, etc.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

TRANSMISSION OF DOCUMENTS AND FEES

Applications and submissions shall be transmitted to LPID separately from Tooele County submissions.

--Checklist of required documents and information for a complete plan review submission--

- ✓ Application
- ✓ Development Fee Deposits
- ✓ Two (2) copies of engineer - stamped and signed civil construction plans (24"x36")
- ✓ Architectural and mechanical plans (for non-residential developments)
- ✓ Two (2) full years of water meter readings for developments of similar use (non-residential developments only).
- ✓ Sewer Master Plan (developments with more than one phase)
- ✓ Phasing Plan (developments with more than one phase)
- ✓ Development Agreement
- ✓ Bond Agreement (due no later than proceeding issuance of Notice of Final Construction Approval).
- ✓ Easements for proposed public infrastructure, in favor of LPID (by separate and standard form).
- ✓ Commence the annexation process (for developments outside of the District)
- ✓ Copy of the Subdivision Plat and/or any subdivision or vacation instruments such as lot line adjustments, street vacations, etc.
- ✓ Two (2) 24"x36" plan sets, two (2) CDs containing both PDF and AutoCAD format drawings, as well as PDF formatted files of all other required documents.
- ✓ After plans are approved, submit the following to LPID;
 - Two (2) 24"x36" LPID and County signed Construction Plans,
 - Two (2) 11"x17" LPID and County signed Construction Plans,
 - Two (2) CDs containing PDF of scanned LPID and County signed Construction Plans,
 - AutoCAD format Construction Plans.

If copies are not legible, they will be returned.

--Checklist of documents and information required prior to pre-construction meeting--

- ✓ Final Approved Development Agreement & Amendments (as required)
- ✓ To determine bond requirements, submit a construction estimate prepared by the project engineer, including contractor bid(s) for all public sewer system improvements, itemized in detail to LPID's satisfaction.
- ✓ AutoCAD files for approved construction plans
- ✓ Two (2) 11"x17" and two (2) 24"x36" executed construction plans (signed and stamped by engineer, and signed by LPID District Manager and District Engineer, and Tooele County).

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- ✓ Provide Certificate of Insurance meeting the following minimum standards,
 - \$2,000,000 single limit,
 - Lake Point Improvement District named as an “additional insured”.
- ✓ Schedule and attend an independent Preconstruction Meeting with LPID.
- ✓ Upon completion of the afore described requirements, LPID will issue a Notice to Proceed with Construction.

--Checklist of documents and information required prior to acceptance of development improvements and prior to signature release for Connection Approval Form for building permits--

- ✓ Two (2) 24”x36”, two (2) 11”x17”, and two (2) CDs containing asbuilt drawings in both AutoCAD and PDF format bearing the title “Asbuilt Drawings” and signed and stamped by the Engineer of Record.
- ✓ Two (2) 24”x36” copies of the recorded subdivision plat containing County entry number for all recorded easements in favor of LPID, together with a copy of recorded easements.
- ✓ Surveyor’s Certification of “Near Flat” Sewers (defined by LPID standard drawings and specifications). Any sewer line designed and constructed at LPID’s minimum allowed slopes (applicable to 10-inch diameter pipes and greater), shall be surveyed during construction (and prior to backfill) with either: a survey loop with a line-level instrument, or a conventional “total station” instrument (GPS not accepted). Flat sewer lines shall be surveyed and verified by establishing the grades at each manhole. Construction shall not proceed to the next manhole without survey and verification. A certification letter and exhibit shall be signed and stamped by the project surveyor identifying the method and survey instrument used; certifying that the designed slopes have been constructed within specified tolerances. Sewer lines with slopes not meeting specified tolerances shall be corrected, re-surveyed, certified, and televised.
- ✓ Final LPID Inspection and all “punch list” items completed.
- ✓ Any and all remaining development fees shall be paid.
- ✓ Impact fees shall be paid at or prior to LPID’s signature on the subdivision plat. For commercial developments or other developments (where no subdivision plat is required), impact fees shall be paid prior to Tooele County’s issuance of any building permits.
- ✓ Bond Agreement (due no later than proceeding issuance of Notice of Final Construction Approval).
- ✓ Annexation Process must be complete and the required local entity map must be filed with the Lieutenant Governor’s Office and Tooele County Recorder’s Office.

Project acceptance is granted upon completion of all prior checklist items. At such time, LPID issues a Notice of Final Construction Approval, upon which date the warranty period is in effect.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

--Checklist of documents and information required prior to release of bonds--

- ✓ After project acceptance, a 12-month warranty period begins. The applicant warrants all work and materials, as well as all representations provided on the asbuilt drawings.
- ✓ Developer corrects any deficient or defective work discovered during the warranty period.
- ✓ After the 12-month warranty period, a final inspection of the improvements will take place and any “warranty work” requiring replacement or action will be addressed and completed.
- ✓ Once warranty work requiring replacement or correction has been approved, LPID will issue a Notice of Release and Termination of Warranty.

DESCRIPTION OF CHECKLIST ITEMS

APPLICATION

A standard application form is provided by LPID and must be completed and submitted with the development plan submittal.

PLAN REVIEW AND INSPECTION FEE DEPOSIT

Development fees and deposits are stated on the Development Fee Schedule, which is included in the Development Application.

CONSTRUCTION PLANS

Construction plans shall contain and/or comply with the following minimum items, together with all of LPID’s standard construction notes, standard specifications and standard plans. Take note that this list includes specific items that have, over time, become the source of repeat review comments. This checklist is by no means a complete list of all requirements. All engineering design and construction shall conform to the latest publication of APWA Standard Specifications and Standard Plans, unless superseded by these requirements, LPID’s Standard Utility Installation Requirements, and LPID Standard Drawings.

- All engineering design for public sewer systems shall be tied horizontally and vertically to found section monuments. Engineer shall use Tooele County’s published section control sheets as available.
 - o Horizontally – plans shall be tied to at least two “found” section monuments with retraceable ties, basis of bearing, and northing / easting. Street monuments and calculated monuments are not sufficient.
 - o Vertically – plans shall include a survey control sheet showing the horizontal monuments, together with elevation benchmarks.
- Cover sheet with title block, name of development, contact information of engineer and developer.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- A survey of the existing site conditions shall be made by the Engineer/Surveyor containing topography, all buried and above ground utilities, and all other site features needed to correctly and accurately design the utility systems. Surveys used to design previous phases are unacceptable.
- Standard Construction Notes (Utility Installation Requirements with both the most current revision date and signature blocks for Contractor and Developer) furnished by LPID.
- Overall Site Plan
- Overall Grading Plan - depicting existing and proposed conditions within public rights-of-way, easements, and within lots and private development areas. Show existing and proposed elevation "tags" of all boundary conditions, and at lot line corners.
- Overall Utility Plan showing line sizes, points of connection, service laterals, locations of meters, hydrants, and other appurtenances for sewer systems, and all other utility systems for reference to sewer lines.
- Detailed Plan and Profile Sheets
 - o Provide a plan and profile for every main line sewer. This includes all "onsite" utility designs for site and commercial developments, and all main lines for subdivisions (even if they are located outside of public roads and rights-of-way). Plans will be returned without all plan and profile designs. Plan and profiles shall be scaled to a maximum of 1"=20' horizontal, and 1"=4' vertical when plotted to a 24"x36" sheet.
 - o Show and call out all vertical and horizontal bends in sewer laterals and provide cleanouts at each bend.
 - o All mainline sewers shall be terminated at a sewer manhole, together with temporary easements as warranted.
 - o Sewer lines shall predominantly be designed on the "down gradient" side of the waterline.
 - o Design sewer systems with the following minimum slopes.
 - 8" - 0.50%
 - 10" - 0.28%
 - 12" - 0.22%
 - 14" - 0.17%
 - 15" - 0.15%
 - 16" - 0.14%
 - 18" - 0.12%
 - 21" - 0.10%
 - 24" - 0.08%

A note shall be placed on the plan and profile sheets that any sewer line segment that has any portion of the line with a slope less than the allowed tolerances shall be reinstalled and certified. Refer to LPID Standard Drawings 111-A and 111-B. Maximum slopes in sewers shall not exceed 33% without special anchor design and pipe materials.

- o Sewer lines designed at minimum slopes, which terminate at cul-de-sacs, or areas of anticipated low flow, shall be accompanied by calculations showing that flows have sufficient scour velocity, defined as 2 feet per second under peak day conditions.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- Upsizing sewer lines for the sole purpose of decreasing the design slope is not an acceptable engineering practice.
- No gravity operated sewer line shall be designed less than eight (8) inches in diameter.
- Provide sewer manholes with a minimum inside diameter of 4 feet. Manholes with an inside diameter of 5 feet shall be provide when:
 - they are constructed with an inside drop structure (upon approval of LPID),
 - they are constructed to a depth greater than 15 feet,
 - when connecting lines are 18 inches or greater,
 - when more than two pipes connect to a manhole,
 - when angles of connecting pipes warrant (for which a mathematical evaluation is required indicating sufficient circumferential area on the outside of the manhole and adequate interior shelf in the base).
- All sewer manholes shall be designed with a minimum 0.2-foot drop from inflow invert(s) to outflow invert. Where connecting pipes have dissimilar diameters, the smaller diameter inflow pipe shall match the crown of the larger outflow pipe in elevation.
- Pipes connecting to manholes: downflow pipes shall be the same diameter or larger than the inflow pipes. No exceptions are permitted.
- Water and sewer lines shall maintain 10 feet horizontal separation (as measured from edge of pipe or manhole, not center of pipe to center of pipe). Sewer's shall be designed below all other utilities with a vertical separation of 18 inches minimum (edge to edge).
- Sewer lines shall be designed to allow 5 feet minimum separation from edge of pipe to lip of gutters or concrete sidewalks, driveways, etc.
- Design all sewer service laterals extending beyond any public utility easements.
- Sewer laterals shall follow the alignment of water laterals (i.e. both sewer laterals and water laterals shall be grouped together and not designed in separate alignments), spaced 10 feet apart as measured from edge of pipe to edge of pipe.
- Clearly label all streets.
- Provide a key map, or location map on each plan and profile sheet depicting where the design on the individual sheet is located in the project.
- Construction details
 - Provide the most current revision of all LPID Standard Drawings on all construction plans as furnished by LPID.
 - Provide engineer's construction details for construction of items not detailed by LPID's Standard Drawings, including, but not limited to;
 - Reconstruction of existing manholes (troughs, pipe penetrations,),
 - Cast-In-Place structures,
 - Borings and casings.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

ARCHITECTURAL AND MECHANICAL PLANS (FOR COMMERCIAL DEVELOPMENTS)

At a minimum, provide the following information;

- Fixture counts, or two years of water meter data,
- Building facilities and uses requiring grease interceptors, oil separators, sand interceptors and sampling manholes,
- Locations of floor drains,
- Finished gross floor space.

WATER METER USE (NON-RESIDENTIAL DEVELOPMENTS)

For all non-residential developments, submit a minimum of two (2) full years of water meter readings for facilities of similar use, which will assist LPID in calculating impact fees and verifying proposed sewer facility sizes.

Where water meter data or other reliable water use information is not available, LPID will calculate impact fees based on District-master planned projections.

SEWER MASTER PLAN (DEVELOPMENTS WITH MORE THAN ONE PHASE)

Provide the following minimum information.

- Sewer Master Plan (map and narrative) for the overall development,
- Provide site plan together with all proposed land uses, areas, number of lots and/or density calculations for residential development and finished floor space for nonresidential development.
- Projections of impacts (sewer generation)
 - o Provide sewer generation calculations in both gallons per day and Equivalent Residential Units (ERU). 1 ERU = 346 gallons

Multifamily Residential

- Average day generation = 346 gpd per unit
- Peak day generation = 1,384 gpd per unit

Single Family Residential

- Average day generation = 346 gpd per unit (all lot sizes)
- Peak day generation = 1,384 gpd per unit (all lot sizes)

Commercial / Institutional / Industrial / Other

- Average and peak day generation per s.f. determined by LPID based on Developer's similar facility water use (2-full years of meter readings).

- Sewer line sizes shall be master planned at a capacity based on minimum allowed pipe slopes, or designed slopes if available. Both conditions shall have a depth to diameter ratio (d/D) = 0.67 inch/inch.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- Show points of connection to LPID's system.
- Provide assumptions and calculations for line sizes and other applicable sewer facilities.
- Show upsizing of lines and facilities based on District programed capital facility projects identified in LPID's current adopted Municipal Sewer Master Plan.
- Show proposed public and private sewer lines and points of transitional ownership.
- Compile information with maps and drawings, narrative sections, and calculations.

PHASING PLAN (DEVELOPMENTS WITH MORE THAN ONE PHASE)

Provide an overall development phasing plan consistent with the development sewer master plan.

DEVELOPMENT AGREEMENT

A development agreement shall be executed concurrently with plan submittals. A final agreement shall be executed prior to final plan approval.

BOND AGREEMENT

- 1) A construction cost estimate for all public sewer improvements shall be prepared by the Project Engineer and approved by LPID, which shall be used to establish the bond amount(s). The contractor's bid or construction contract shall be used as the basis for establishing the project construction costs and shall accompany the cost estimate in sufficient itemized form. The cost estimate shall also be itemized in detail, clearly indicating individual material units, standard quantities, and unit prices.
- 2) Unit costs shall be consistent with, and representative of current local construction costs and shall be acceptable to LPID.

The bond agreement shall be executed before LPID issues a Notice of Final Construction Approval (proceeding the effective warranty period), based on the following conditions.

- If executed prior to construction, the bond shall be valued at 100% of the project engineer's approved estimate.
- If executed after construction, but prior to the effective warranty period, the bond shall be valued at 10% of the project engineer's calculated amount.

EASEMENTS FOR PROPOSED PUBLIC UTILITIES IN FAVOR OF LPID (BY SEPARATE, STANDARD FORM)

- Permanent easements for constructing, operating, maintaining and replacing the public sewer lines and appurtenances, including access within the easements, are required (at no cost to LPID) for all public facilities not located in dedicated public roadways.
- Unrecorded, permanent easements shall be submitted first on the standard LPID Grant of Easement Form, furnished by LPID, for review in conjunction with the construction plans and documents required for plan submittal, including a recordable, accompanying exhibit on an 8½" x 11" sheet, which is to be recorded with the standard easement.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- Easements shall be granted in favor of LPID, independent of other utilities or public utility easements.
- Permanent easements shall be approved, and then recorded prior to the recordation of the plat, and prior to acceptance of sewer infrastructure. The plat, prior to recordation, shall show such recorded easements together with the County Recorder's entry number, before the plat signed by LPID.
- A copy of the final title report for all properties where easements are being granted may be required with the Grant of Easement Form, to demonstrate that the grantor of the easement is the owner of the property, and there are no encumbrances on the property that would preclude LPID from exercising its rights as contained in the Grant of Easement Form.
- The location and width of any easement shall be as specified by LPID; except that if any easement is to be situated between two permanent structures, such easements shall be a minimum of thirty feet (30') in width; and LPID shall require; that the area within the easement be left open, without fencing or other encumbrances, and that no vegetation other than turf grass be allowed to be planted within the areas of the easement.
- LPID, at its discretion, may require that the area of any public utility easement, or a portion thereof, shall be surfaced with 3 inches of asphalt, 6 inches of untreated base course, and 12 inches granular borrow (as specified by APWA), or other approved surfacing material deemed capable of supporting heavy duty truck traffic by LPID. If surfacing is required, the area to be surfaced shall be finished to a minimum width of twelve (12') feet, and the utility beneath the surface shall be covered to such depth as shall be specified by LPID, but under no circumstance shall any utility be less the 48 inches from top of surface to top of pipe.

SUBDIVISION PLAT

The Developer shall submit plat(s) to LPID for review in accordance with Tooele County requirements during the plan review process, together with any other independent or supporting subdivision or vacation instruments or applications. If the Development of the sewer facilities requires a grant of easements in favor of LPID, such easement(s) shall be reviewed and approved by LPID, and recorded prior to the recordation of the plat; and the plat shall contain the "plotted" and annotated easement, together with a reference to the recorded easement, and the County Recorder's entry number.

ASBUILT DRAWINGS

- The Developer is responsible to ensure that all data for "Asbuilt Drawings" is collected.
- The Asbuilt Drawings shall consist of the approved construction drawings, including approved revisions, with all annotations and graphical representations modified to reflect the "as constructed" condition(s) of the public improvements, and the public and private sewer mains and laterals, as determined by a field survey conducted by the Project Surveyor. Notes and redlines from the contractor (used exclusively) are insufficient.
- All revisions, annotations, and graphical representations shall be drafted in AutoCAD.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- The Asbuilt Drawings shall include: title page (stamped and signed by Engineer and marked "ASBUILT DRAWINGS"), overall site plan, overall utility plan, plan and profile sheets, special detail sheets, and all other sheets pertaining to the sewer system. Sheets not included in the Asbuilt Drawing set shall be lined-out in the drawing sheet index.
- Project Controls
 - o All Asbuilt Drawings shall be submitted (both hard copy of AutoCAD formats) using the project's survey coordinate base and datum, including a survey control sheet. Plans submitted otherwise will be rejected.
 - o Provide on plans two (2) swing ties, or measured distances, to all private service lateral stub markers for each lot or building; as well as any sewer cleanouts on private lateral stubs installed as part of the project. These ties shall be from the two front property corners, a "nail-in-curb" projected from the property corner, or other surveyed points of reference that are permanent "controls" of the development and clearly labeled on the plans. Swing ties that cross over from sheet to sheet shall include a note and contain match lines on each sheet. Laterals shall not cross over from sheet to sheet.
- For review, provide on the Asbuilt Drawings, the location of the installed sewer improvements within recorded easements. If revised easements are required by LPID, a copy of revised and recorded easements shall be submitted together with the revised Asbuilt Drawings prior to approval.
- Provide a written certification on the Asbuilt Plans (by the Project Surveyor or Project Engineer) that a field survey of existing as-constructed sewer information has been performed and has been incorporated into the Asbuilt Drawings.
- A copy of the Asbuilt Drawings shall be submitted to LPID for review prior to scheduling a final inspection.
- Any incorrect or modified information shown on the Asbuilt Drawings found during the warranty period shall be corrected by the Developer and Project Engineer, and the corrected sheets shall be resubmitted.
- Submit two (2) plan sets sized 24"x36".
- Submit two (2) CDs containing both PDF and AutoCAD formatted drawings.

OTHER CONSIDERATIONS

IMPACT FEES

LPID will calculate development impact fees based on LPID's standard requirements and worksheets.

PUBLIC IMPROVEMENTS WITHIN EXISTING ADJACENT RIGHTS-OF-WAY

Where proposed developments join existing streets or public rights-of-way, the Developer shall improve such with sewer systems that are required by the LPID. Improvements shall be made (as determined by LPID) within all streets and rights-of-way along the full frontage of all property lines adjoining the development.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

In certain cases only (as defined specifically in LPID’s adopted Impact Fee Facilities Plans), reimbursement or participation in construction of the required improvements may be made by LPID.

PUMP STATIONS

Public sewer system design shall be done in such a manner as to avoid the need for public or private pumping stations or facilities. LPID does not accept pump stations in any form as part of the “Public Sewer System”, which are owned and maintained by LPID, except under the proceeding conditions.

- 1) Proposed sewer pump stations are programmed in LPID’s adopted Sewer Master Plan.
- 2) LPID may consider other sewer pumping facilities to be used within the service area upon the sole discretion and approval of LPID, provided that that LPID determines:
 - a. No physical means of conveyance is otherwise possible,
 - b. No financial means are reasonable for gravity operated service,
 - c. No gravity conveyance is legally achievable.

Financially reasonable is defined as the construction cost of a gravity operated system, which is equal to, or less than, three (3) times the total cost (not present value) of a pump station, including the capital costs, and 20 years’ operating, maintenance, and replacement costs, and design costs, and any other costs associated with the design, construction and operation of a pump station. LPID will review an evaluation of the need for a pump station based on a study and submittal prepared to the satisfaction of LPID by the Developer. “Not legally achievable” means that the Developer has no property interest, and cannot acquire easements, rights-of-way, or other necessary interest(s) after an exhaustive effort has been made, as determined by LPID.

When it is deemed necessary for the Developer to construct a pump station, the Developer shall pay a sum equal to the 20-year operating cost, plus the 20-year repair and replacement costs of the pump station, plus all planning, engineering, and other professional fees and costs. Additionally, LPID may, at its sole determination, require the construction of “dry” sewer lines and manholes within the proposed development, for future “gravity operated” connections.

- 3) Pump stations serving areas outside of LPID’s service area are subject to the same requirements set forth in this section.
- 4) Under all circumstances, pump stations and pumping facilities are to be designed to LPID standards and are subject to review and approval by LPID.

PRIVATE OR COMMUNITY SEPTIC SYSTEMS

LPID strictly prohibits new septic systems within its service area(s).

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

LAND DRAINS

A land drain is defined as a system that collects any surface or subsurface water other than storm water runoff. Land drains, whether individual, or community-wide, are occasionally needed within Lake Point. LPID does not regulate, own, or maintain any land drain(s). All land drains will be owned and maintained by private entities established solely by the Developer. Land drains shall not be connected to any sewer facility. Means of conveyance, ejection, and disposal of all land drains are the sole responsibility of the Developer.

GREASE INTERCEPTORS, OIL SEPERATORS, SAND INTERCEPTORS AND SAMPLING MANHOLES

A grease interceptor, oil separator or sand interceptor, located outside the facility or building, shall be provided as part of the private lateral wastewater line of any commercial, industrial, and institutional facility or building that has the potential of introducing substances that would be detrimental to the Public Wastewater System, as determined by LPID. A separate sampling manhole shall be provided with grease interceptors serving restaurants and industrial facilities or as otherwise determined necessary by LPID. The Project Engineer shall submit floor plans and plumbing plans for applicable non-residential buildings for review.

- Sampling manholes are not required with sand/oil interceptors connected to parking structures or parking garage drains.
- Only grease or oil laden waste shall discharge to the interceptor (no bathroom facilities). Sanitary waste shall be excluded from the interceptor.
- Building sewers transporting sanitary waste shall connect to the private lateral wastewater line at or downstream of the sampling manhole.
- The capacity of the grease interceptor shall be according to the requirements of the International Plumbing Code or as directed by LPID. The minimum capacity of grease interceptors serving restaurants or similar buildings shall be 1,000 gallons. The minimum capacity for parking facilities shall be 500 gallons.
- If multiple restaurants or other food service establishments are located within the same building, each restaurant or food establishment shall have a separate grease interceptor and sampling manhole.
- Access to sampling manholes shall be provided. When access to such manholes are not in parking lots or other readily accessible locations, easement(s) shall be provided for access.
- Interceptors shall contain venting to the roof of the building or structure. Surface venting is prohibited.

CONSTRUCTION AND INSPECTION

- 1) An independent LPID preconstruction meeting shall be held after final plan approval but before construction begins. Requirements include:

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- Provide two (2) 24" x 36", and two (2) 11" x 17" plans signed by the LPID General Manager, LPID's engineer, and Tooele County, according to appropriate signature blocks provided on the construction plans.
 - Provide two (2) 24" x 36" copies of the plat if recorded prior to construction showing all LPID easements according to LPID requirements.
 - Provide insurance certificates for \$2,000,000, single limit, naming Lake Point Improvement District as an additional insured.
 - Confirm that an executed Development Agreement was completed prior to plan approval.
 - Provide Project Engineer's estimated cost of construction for all proposed public sewer facilities.
 - Provide all material submittals for review as identified in items 7 and 8 below.
- 2) LPID may, at its discretion, conduct full time inspections.
- 3) All work and materials shall be subject to inspection by LPID until the end of the warranty period.
- 4) Inspections conducted by LPID will be according to the approved Construction Drawings and LPID Standards.
- 5) The Contractor shall notify LPID a minimum of 24 hours prior to inspections.
- 6) No work on project systems requiring excavation shall be covered over unless, and until they have been inspected and approved by LPID or its representative(s), or other governmental entities having jurisdiction over any particular part of the system(s). If any system is backfilled prior to inspection, the Developer or Contractor (upon request by LPID) shall be obligated to reopen the excavation for inspection.
- 7) Contractor's material submittals shall include the following standard items as a minimum;
- Pipes, fittings, and appurtenances,
 - Pipe bedding materials, imported trench backfill, and flowable fill,
 - Casings and appurtenances,
 - Manholes, boxes, cabinets, vaults, control structures, junction structures, etc.,
 - Manhole interior and exterior coatings and water proofing,
 - Lids, frames, hardware, and appurtenances
 - Oil/water separators, grease traps, methods for venting, etc.,
 - Marking tape, tracer wire and connections.
- 8) Other required submittals;
- Proposed construction schedule,
 - Contractor's independent QC testing agency,
 - Dewatering and/or bypass pumping plans if needed,
 - Other submittals as required by LPID.

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

WARRANTY PERIOD

- 1) The warranty period shall extend one year from the date of project acceptance.
- 2) During the warranty period the Developer shall remain responsible for problems due to defects in materials and workmanship (this also includes elimination of infiltration and inflow) and correcting incomplete or incorrect information on the Asbuilt Drawings.
- 3) Prior to the end of the warranty period, LPID will schedule and perform a project warranty inspection, which will include a sewer cleaning and video inspection of the installed sewer system furnished by the Developer. A warranty inspection letter with a "punch list" of deficient items may be issued and sent to the Developer, the Project Engineer, and the Contractor.
- 4) Upon satisfactory completion of the warranty inspection "punch list" items (as verified by LPID), the Board of Trustees will release any remaining amounts in the Bond(s) to the Developer at the regularly scheduled monthly review and approval of financials and warrants, and a Notice of Release and Termination of Warranty will be issued to the Developer.

ANNEXATION OF PROPERTY OUTSIDE OF THE DISTRICT SERVICE AREA

If the property upon which the project is to be developed is situated outside the legal boundaries of the District, annexation of the property into the District shall be a condition precedent to LPID's acceptance of a development application.

- 1) Developer presents the project concept plan to the Board of Trustees at a regularly scheduled board meeting and obtains the Board's approval to proceed with the annexation application. Contact the General Manager to be placed on the agenda of the next available board meeting.
- 2) Developer pays LPID's annexation review deposit, which is not necessarily the complete amount required for LPID's review and compensation to legal council and professional services.
- 3) Developer submits a formal Annexation Application Package to LPID, which shall include the following;
 - a. A map of the boundaries of the proposed project area (whether or not they are contiguous, identifying all land uses, proposed densities and such other information as required by LPID,
 - b. The identification of the nearest LPID sanitary sewer, and the proposed points of connection,
 - c. A master plan of the proposed development sanitary sewer facilities,
 - d. The projected sanitary sewer generation,
 - e. An analysis of sanitary sewer operations, i.e. whether service can be provided by gravity flow or if pump station(s) are proposed (see requirements of "Pump Stations", Page 11).

LAKE POINT IMPROVEMENT DISTRICT

7856 North Mountain View Road

Lake Point, UT 84074

435.255.2099

- 4) Upon review of the Annexation Application, LPID will review its overall Municipal Sewer Master Plan and Impact Fee Analysis to determine;
 - a. Whether the Master Plan and/or Impact Fee Analysis needs to be updated by LPID to accommodate the project (and if so, all costs incurred by LPID in updating the District's Master Plan and/or Impact Fee Analysis, including, without limitation, engineering, public financial consulting, and attorney's fees, shall be reimbursed by the Developer as billed by LPID), and
 - b. What, if any other requirements, conditions or restrictions may need to be in effect as a condition of annexing the property.
- 5) Upon review and approval of the foregoing, the General Manager will make a recommendation to the Board of Trustees with respect to the annexation of the property.
- 6) Upon approval of all the foregoing by the Board of Trustees, the Developer is authorized to formally petition for annexation of the property.
- 7) The annexation of the property shall proceed in compliance with the statutory annexation procedures, including all required public notices, board resolutions and the preparation of a Final Local Entity Plat of the property to be annexed, all as set forth in Utah Code Ann. §17B-1-401 et seq. All costs and expenses incurred by LPID in connection with the annexation proceedings; including, without limitation, attorneys and engineering fees, other professional services, publication fees, filing fees and recording fees, shall be reimbursed by the Developer as billed by LPID.
- 8) Payment in full by the Developer of all costs and expenses incurred by LPID in connection with LPID's review of the Annexation Application, updating the Master Plan and/or Impact Fee Analysis, and all proceedings related to the annexation, as set forth herein, shall be a condition precedent to acceptance by LPID of a development application by the Developer.

Recording Requested By:

LAKE POINT IMPROVEMENT DISTRICT
7856 N Mountain View Road
Lake Point, UT 84074

Above Space for Recorder's Use Only

GRANT OF PERPETUAL UNDERGROUND SEWERLINE EASEMENT

_____, (*Grantor*) as owner of the subject property, hereby GRANTS AND CONVEYS to Lake Point Improvement District, a body politic of the State of Utah, and its successors-in-interest and assigns (*Grantee*), for the sum of Ten Dollars (\$10.00), and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, a non-exclusive perpetual easement and right-of-way, including the right of ingress and egress thereto (*Easement*), to be utilized by Grantee for the purpose of constructing, installing, renewing and enlarging, paralleling, owning, operating, inspecting, maintaining, repairing, altering, replacing, protecting and making and removing connections to the related equipment and facilities within said easement, to be situated under, across and through the following real property of Grantor located in Tooele County, State of Utah more particularly described below and hereinafter referred to as "Easement Property":

INSERT LEGAL DESCRIPTION:

A site plan depicting the location of the Easement Property is included with the materials attached hereto as Exhibit A

The Easement shall be for the construction, installation, use, maintenance, repair and replacement, as necessary, of lines and related improvements and facilities to be constructed and installed by Grantor on the Easement Property ("Sewer Facilities").

This Easement is granted subject to the following rights, covenants and restrictions:

1. During temporary periods, the Grantee shall have the right to utilize such portion of Grantor's property situated along and adjacent to the Easement Property as described herein as shall be reasonably necessary in connection with the initial construction and installation of the Sewer Facilities.
2. Grantee's construction and operational activities related to its use of the Easement Property as provided herein shall be performed in compliance with all applicable requirements of other governmental entities having jurisdiction.

3. It is understood and agreed that the Easement set forth herein gives, grants and conveys to Grantee the right of ingress and egress to and upon the Easement Property for the purposes set forth herein.

4. Grantor reserves the right to use and enjoy the Easement Property subject to this Easement and Grantee's rights hereunder and so long as Grantor shall not construct any permanent buildings, fences, or other structures or improvements, or plant any trees or shrubs whose roots would contact Grantee's pipeline equipment, facilities, access roads, or otherwise do anything or take any action which would unreasonably obstruct or interfere in any way with the Grantee's rights to the use of the Easement Property and Grantee's rights of ingress or egress as herein set forth. Grantor shall not change the contour of the ground within the Easement Property without the prior written consent of the Grantee.

5. Grantor expressly acknowledges and agrees that Grantee shall have the unilateral right, without notice or compensation to the Grantor, to physically remove any structure or other obstruction, and to cut and keep clear all trees, brush, native growth or foliage, which are now or may hereafter be situated within the Easement Property that may, in the Grantee's sole opinion, endanger, hinder or conflict with its rights hereunder. Grantee shall have no liability for any damage to any improvements made by Grantor to the extent such damage arises out of or in connection with Grantee's use of the Easement Property consistent with its rights hereunder.

6. The Easement and related rights granted hereunder create an equitable servitude on the Easement Property and constitute a covenant running with the land which shall be binding upon Grantor and the Grantee and their respective legal representatives, successors-in-interest and assigns.

7. This Easement, and all rights, covenants and restrictions set forth herein may not be terminated, extended, modified or amended without the consent of Grantor and Grantee, and any such termination, extension, modification or amendment shall be effective only upon recordation in the official records of Tooele County, Utah, of a written document effecting the same, duly executed and acknowledged by Grantor and Grantee.

8. By accepting delivery of and recordation of this Grant of Easement, Grantee acknowledges and agrees with the terms and provisions hereof.

WITNESS the hand of Grantor this ____ day of _____, 20____.

GRANTOR:

By: _____
Its: Trustee

EXHIBIT “A”

8” x 11” MAP(S) DEPICTING THE EASEMENT(S), THEIR VICINITY / LOCATION, AND
MEASUREMENTS ANNOTATED

The following specifications are to be included on all construction plans containing sewer facilities which are connected to, or will be conveyed to LPID.

LAKE POINT IMPROVEMENT DISTRICT SEWER INSTALLATION REQUIREMENTS

Lake Point Improvement District (LPID) is in no way responsible for omissions or errors on the construction plans. LPID reserves the right to include and/or require additional improvements or adjustments to the approved plans during inspections and construction, if omissions or errors are discovered and/or to add or furnish construction improvements pertinent to the functionality, reasonable use of, or longevity of the system. LPID will notify the Developer in writing within 24 hours (excluding weekends and holidays) of any such required additions, modifications, or changes discovered. All construction and improvements remain the ownership and responsibility of the Developer until final written acceptance by LPID.

The Contractor shall conform to the latest publication of APWA Standard Specifications and Standard Plans in its entirety, unless superseded by these Utility Installation Requirements, LPID Development Requirements (most current Revision), the Signed and Executed Construction Plans, and LPID Standard Drawings (most current Revision).

1. If ground water is present, pumps with well points along the trench shall be required to minimize water intrusion at a level below the working area at all times. All permits and rights to discharge nuisance water are the responsibility of the Developer / Contractor. No ground water or nuisance water shall be discharged to any sewer system at any time.
2. If ground water is present, 1-1/2-inch rock will be required for pipe zone material. Otherwise 3/4-inch rock is required. Place rock a minimum of 6 inches below bottom of pipe and a minimum of 12 inches above top of pipe.
3. If ground water is present, all manhole section joints and boots shall be sealed on the outside with a flexible joint sealant that is recommended by the manufacturer and the entire structure poly-wrapped. The manhole exterior surface shall be cleaned and inspected prior to installation, and shall have an exterior asphalt-based coating (or LPID approved "water proofing" equivalent). This requirement may be determined by LPID onsite as observed conditions warrant, and shall be prior to any installation.
4. Grouting of pipe penetration is required to a professional finish on the inside of manhole inlet and outlet pipe. Inside stacked section joints do not require grouting. As lids are adjusted to finish grade, and the concrete collar is poured, contractor shall ensure nothing is protruding inside the manhole. If grouting is required as determined by LPID, it shall have a professional look with a "nice" smooth finish.
5. The flow of ground water is strictly prohibited to be discharged into an existing or newly constructed sewer line and/or storm drain line during construction. Contractor shall be required to install a plug when connecting

The following specifications are to be included on all construction plans containing sewer facilities which are connected to, or will be conveyed to LPID.

- to an existing live sewer line, and is only to be removed with approval, and in the presence of LPID.
6. Contractor shall check and tighten jam nut, which is used to seal concrete and rubber boot of manhole before inserting pipe.
 7. All sewer facilities shall be commissioned per APWA Standard Specification 33 08 00.
 8. Air and mandrel testing are to be submitted by Contractor and reviewed by LPID prior to asphalt paving. Three televising records shall be furnished by Contractor to LPID with manhole numbers matching the approved construction plans, also containing direction of flow and footages recorded for a total length of pipe between manhole sections, and including lateral location footages. The first video shall be submitted and reviewed prior to backfill above the pipe zone. The second video shall be submitted and reviewed prior to asphalt paving. The third video shall be submitted and reviewed prior to the end of the warranty period.
 9. When connecting laterals to existing sewer main lines, use a nose-on connection. Inverts of new laterals must be made at the 10:00 and 2:00 o'clock positions, or higher, whichever position is required to clear the high-water line of the existing main line.
 - a. For nose-on connections to an existing 10-inch sewer main or larger, the connection shall be made using an inserta-tee fitting. Connections shall be core-drilled. Rubber sleeves - ASTM F477, Bands – 301 SS, Screws – 305 SS, Housing 301 SS, and Gaskets – ASTM F477.
 - b. For nose-on connections to an existing 6-inch or 8-inch PVC main, the connection shall be made by splicing a factory tee into the main using slip/repair couplings. Fernco-type couplings are not permitted.
 - c. For nose-on connections to an existing 6 or 8-inch concrete or vitrified clay main, connection shall be made using an inserta tee fitting.
 - d. For nose-on connections to any other type of pipe shall be approved by LPID.
 10. No sewer lateral shall be directly connected to any sewer manhole.
 11. Any sewer manhole barrel, cone, chimney, or other component that is damaged upon delivery, storage, or installation shall be rejected and replaced before acceptance.
 12. Concrete collars are to be inspected and approved by LPID and Tooele County. Concrete collars around the ring at finish grade require an arrow to denote flow of direction. LPID must be present during the process.
 13. At the end of the one-year warranty period, the sewer line will require cleaning and televising prior to final acceptance.
 14. For sewer lines less than 15 inches in diameter, install 4-foot diameter manholes. For sewer lines 15 inches in diameter and greater, install 5-foot diameter manholes. Large diameter pipes (30 inches in diameter or greater) shall have appropriated manhole diameters as designed by the

The following specifications are to be included on all construction plans containing sewer facilities which are connected to, or will be conveyed to LPID.

- engineer and approved by LPID. All three-way and four-way manholes shall be 5-foot diameter or greater regardless of line size.
15. Manhole steps shall be installed on all manholes. Steps shall begin not more than 12 inches above the floor and terminate not more than 12 inches below the rim. Spacing shall not be more than 12 inches on center.
 16. Cleanout lids require a metal detectable lid including a concrete collar.
 17. Flat frame and cover manhole lids are not allowed on sewer manholes.
 18. All sanitary sewer construction shall comply with LPID sewer design standards, construction specifications, and standard drawings.
 19. Sewer pipelines shall be ASTM D 3034, SDR 35 with bell-and-spigot ends with gasketed joints.
 20. Extreme care shall be taken when placing upstream and downstream pipe into sewer manhole trough, assuring that both pipe and cement trough flow lines match elevation. If flow is restricted in either direction due to the placement of the pipe, a full length of pipe (minimum), shall be uncovered and raised or lowered to match flow lines.
 21. Grade risers shall not exceed a distance of more than 12-inches. If 13 inches or more are required to adjust lids to finished grade, an additional manhole section is required. Plastic riser forms shall be used as manufactured by "Whirlygig", or as approved by LPID. Brick, block, concrete, wood, metal shims, and all other materials are prohibited for adjustment of frame and cover to final grade.
 22. Pipe zone material is required for the entire length to the termination point of all sewer laterals.
 23. Survey staking by a qualified professional is required for installation of all sewer facilities.
 24. LPID requires 24-hour prior notice for all inspections.
 25. Contractor shall physically verify locations and inverts of existing sewer facilities to which new sewer facilities will be connected. This shall be done prior to beginning construction.
 26. Call before you dig. It's free and it's the law. 1-800-662-4111.
 27. Locations of existing underground utilities shown on this plan are diagrammatic only. Furthermore, all utilities may not be represented. The Contractor shall contact each utility company to confirm the location of all existing utilities before commencing work on any sewer facility. Any damage due to failure of the Contractor to verify the location of existing utilities prior to excavation shall be the responsibility of the Contractor.
 28. Contractor is responsible for obtaining the required encroachment permits from Tooele County when working within the County rights-of-way.
 29. Any area outside the defined limits of disturbance shall be avoided.
 30. It shall be the Contractor's responsibility to review all of the drawings and specifications before commencing construction.
 31. Contractor is to grout at connection of pipe to manhole with non-shrinking grout, including pipe voids left by the cutting process, to a smooth finish.
 32. Contractor shall cut pipe flush with the inside wall of the box or manhole.

The following specifications are to be included on all construction plans containing sewer facilities which are connected to, or will be conveyed to LPID.

33. Contractor shall remove nails, rebar, and other protrusions from the manhole or pipe, which is on the inside surface; including but not limited to all form work, plastic, wood, and cardboard.
34. All manhole covers shall be raised or lowered to meet 3/8 inches below finished grade.
35. The District must approve all pipe zone material prior to placement and shall meet pipe manufacture's recommendations. Maximum particle size shall be 3/4 inch. Pipe zone material shall be placed along the full length of all main lines and laterals.
36. Backfill all utility trenches above the pipe zone with Granular Fill material meeting AASHTO M145 Classification A-1-A, A-1-B, A-2-4, or A-3 per ASTM D3282. Place in 8-inch maximum lifts and compact to a minimum 95% relative density per ASTM D1557, Modified Proctor. Otherwise, comply with APWA Sections 33 05 20 and 31 23 26.
37. Stub all sewer laterals 10 feet minimum from the back of sidewalk, and/or to the far side of any public utility easement, and/or to the far side of any existing utilities. Install a 45-degree bend at the end of the lateral and extend the pipe a minimum of 4 feet above the finished design grade and cap. Permanently mark on the pipe the depth of cut from the surface to the invert of the lateral. The exposed pipe shall be painted green, signifying a buried sewer facility. Record drawings shall be maintained by Contractor and shall include additional measurements from end of buried laterals to the nearest manhole.
38. Sewer laterals shall follow the alignment of water laterals (i.e. both sewer and water shall be grouped together and not constructed in separate alignments), spaced 10 feet apart as measured from edge of pipe to edge of pipe.
39. Backfill material shall not be placed over pipe bedding material until LPID has inspected and given approval for the Contractor to do so. If bedding is covered prior to adequate inspection, LPID reserves the right to have any sewer line exposed for inspection at a location or multiple locations of the trench bedding, to verify that bedding has been placed in accordance with LPID standards and specifications.
40. Tolerances for utility line grades and alignments are specified in standard drawings 111-A and 111-B, which LPID strictly enforces. LPID maintains "zero" tolerance for flat bellies and flat zones / spots in sewer lines. Contractor shall correct non-conforming work, and re-televiser the corrected work until the work is reconstructed within tolerance and in compliance with LPID standards and specifications.

The following specifications are to be included on all construction plans containing sewer facilities which are connected to, or will be conveyed to LPID.

Requirements for Sewer Installation shall be signed after review at the LPID Pre-Construction Meeting

Acknowledgement of Revision 11-30-2020

CONTRACTOR SIGNATURE _____

DATE _____

DEVELOPER SIGNATURE _____

DATE _____



LAKE POINT IMPROVEMENT DISTRICT

Sewer Impact Fee Worksheet

Name of Development:

Date:

Contact Information:
Name:
Address:
Email:

Accompanying Documents:

- Site Plan or Plat
- Landscape Plan *(if applicable)*
- Floor plan w/ fixture count for Commercial/Industrial or Institutional Developments

1) Designate category of development (All Remodel and Renovation type projects will be analyzed on a case by case basis).

- 1a. Residential (Complete Calculations for step 4a)
- 1b. Commercial/Industrial/Institutional (Complete Calculations for step 4b)

2) Sewer Impact Fee Per Equivalent Residential Connection
 (Impact fees based on Domestic Wastewater Generation as by UAC R317. Impact fees for industrial strength wastewater treatment will be case by case.)

Sewer Impact Fee Unit Cost (\$/ERU)

3) If Commercial/Industrial/Institutional development, provide engineer's calculation of average day water demand. Otherwise proceed with step 4

Average Day Indoor Water Demand = gpd

4) Impact Fee Calculations

a. Residential

$$\frac{\$ \quad 4,131.28}{\text{Unit Cost}(\$/\text{ERU}) \text{ from step 2,}} \quad \times \quad \text{Number of units in development} \quad = \quad \$ \quad \text{Impact Fee}$$

Sewer Impact Fee Worksheet (cont.)

b. Commercial/Industrial/Institutional

Is average day water demand provided in step 3?

- Yes If yes, continue with step 4c.
 No

<div style="background-color: #f8d7da; padding: 2px;"> </div>	x	0.16	=	-	gpd
Building Square Footage					Indoor Demand
-	÷	346	=	-	
Indoor Demand					ERUs
-	x	\$ 4,131.28	=	\$ -	
ERUs		Unit Cost (\$/ERU) from step 2			Impact Fee

c. Commercial/Industrial/Institutional

<div style="background-color: #f8d7da; padding: 2px;">-</div>	x	1	=	-	gpd
Total Average Day Water Demand from step3					Indoor Demand
-	÷	346	=	-	
Indoor Demand					ERUs
-	x	\$ 4,131.28	=	\$ -	
ERUs		Unit Cost (\$/ERU) from step 2			Impact Fee

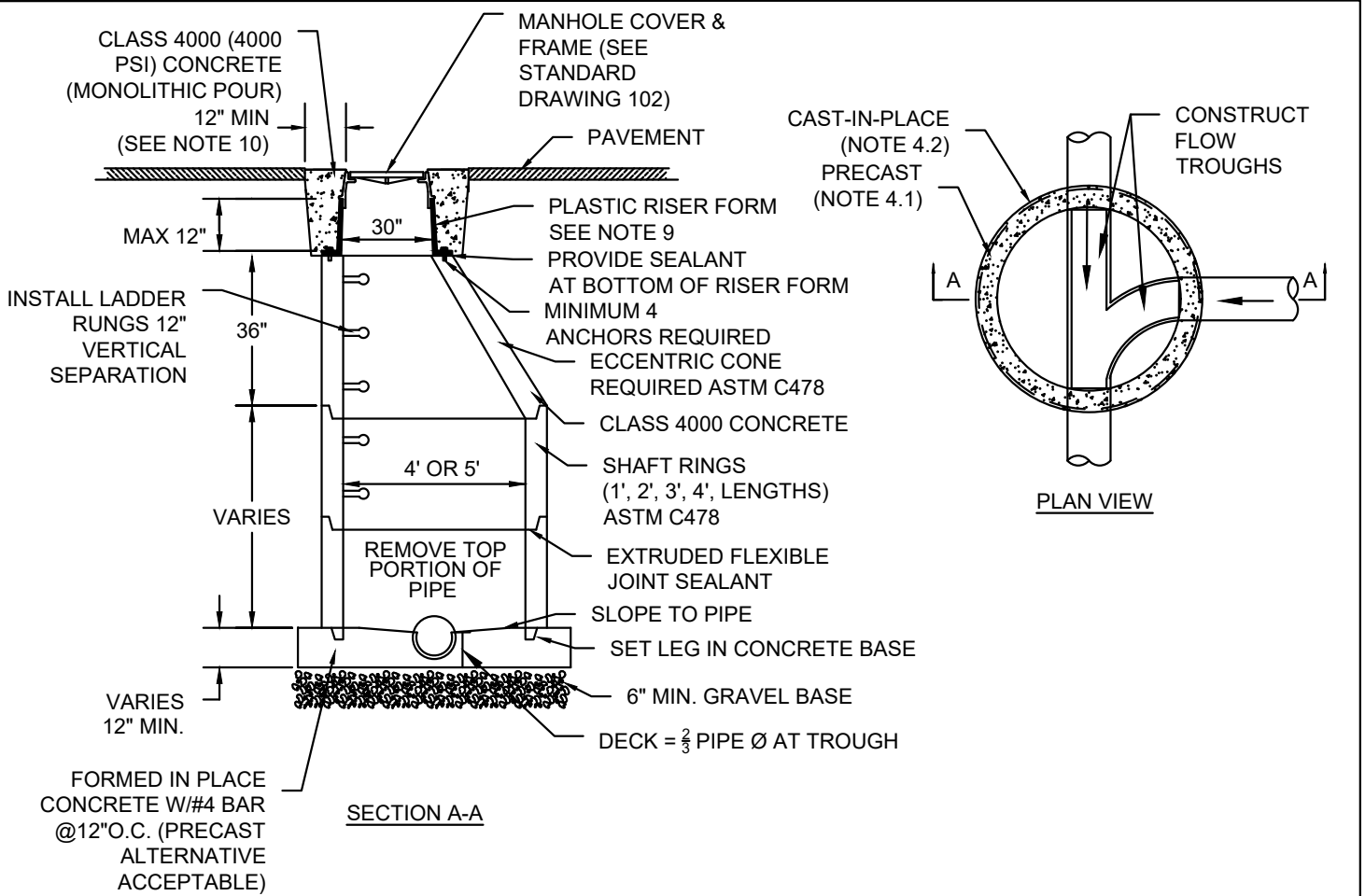
5) Total Number of ERUs (Sum of ERUs from step 4) Total* = -

*If total is less than one ERU then one ERU will be assessed

6) Total Impact Fee (Sum of Impact Fees from step 4) Total = \$ -

7) District Approval

Approved By: _____
 Lake Point Improvement District Manager



NOTES:

1. SEWERS UNDER 15" BUILD A 4' MANHOLE. SEWERS 15" \varnothing AND LARGER, BUILD 5' \varnothing MANHOLE. THREE WAY MANHOLES REGARDLESS OF SEWER SIZE SHALL BE 5' \varnothing .
2. GROUT ALL PIPE OPENINGS WITH 2:1 SAND TO CEMENT MORTAR.
3. PLACE FLEXIBLE GASKET-TYPE SEALANT IN ALL MANHOLE JOINTS.
4. ALTERNATES FOR UPPER SECTION OF MANHOLE:
 - 4.1. PRECAST REINFORCED CONCRETE WALLS 4- $\frac{3}{4}$ " THICK MINIMUM.
 - 4.2. CAST-IN-PLACE CONCRETE, 8" MIN. WALL THICKNESS.
5. INVERT COVERS SHALL BE PLACED OVER THE TOP OF PIPE IN ALL MANHOLES DURING CONSTRUCTION. 5/8" EXTERIOR PLYWOOD SHALL BE USED.
6. INSTALL RUBBER WATERSTOP ON ALL PLASTIC PIPE WHEN CONNECTING TO MANHOLES. WATERSTOP SHALL BE HELD IN PLACE WITH A STAINLESS STEEL BAND.
7. WHERE GROUNDWATER EXISTS, OR IS KNOWN TO EXIST, ALL EXTERIOR SURFACES, INCLUDING BARREL, CONE, AND CHIMNEY SECTIONS SHALL HAVE AN ASPHALT-BASED COATING (OR DISTRICT APPROVED "WATER PROOFING" EQUIVALENT), AND PERFORMED FLEXIBLE JOINT SEALANT (MASTIC) MEETING REQUIREMENTS OF ASTM C990, AND SHALL BE POLY-WRAPPED AND COMPOSITE BENTONITE CLAY OR EXPANDABLE RUBBER BASED WATERSTOP DESIGNED TO CREATE WATER TIGHT JOINTS.
8. PIPE TO MANHOLE CONNECTIONS - USE A FLEXIBLE PIPE CONNECTOR(BOOT) CONFORMING TO ASTM C923, MANUFACTURED AND SIZED SPECIFICALLY FOR THE TYPE AND SIZE OF PIPE CONNECTING TO THE MANHOLE.
9. INSTALL WHIRLYGIG MANHOLE RISER COLLAR SYSTEM PER STANDARD DRAWING 103.
10. CONCRETE COLLARS ARE REQUIRED FOR ALL PAVED AND NON-PAVED SURFACES.
11. ANY BARREL, CONE, CHIMNEY, OR OTHER COMPONENT THAT IS DAMAGED UPON DELIVERY, STORAGE OR INSTALLATION SHALL BE REJECTED AND REPLACED. PROVIDE SMOOTH AND NEAT FINISHES ON INTERIOR OF CONES, SHAFTS AND RINGS. IMPERFECT MOLDINGS OR HONEYCOMBS ARE NOT ACCEPTED.
12. REINFORCEMENT: DEFORMED 60 KSI YIELD GRADE STEEL, ASTM A615.
13. DROP MANHOLES NOT PERMITTED. SPECIAL EXCEPTIONS REQUIRE APPROVED SHOP DRAWINGS.

STANDARD DRAWING

101

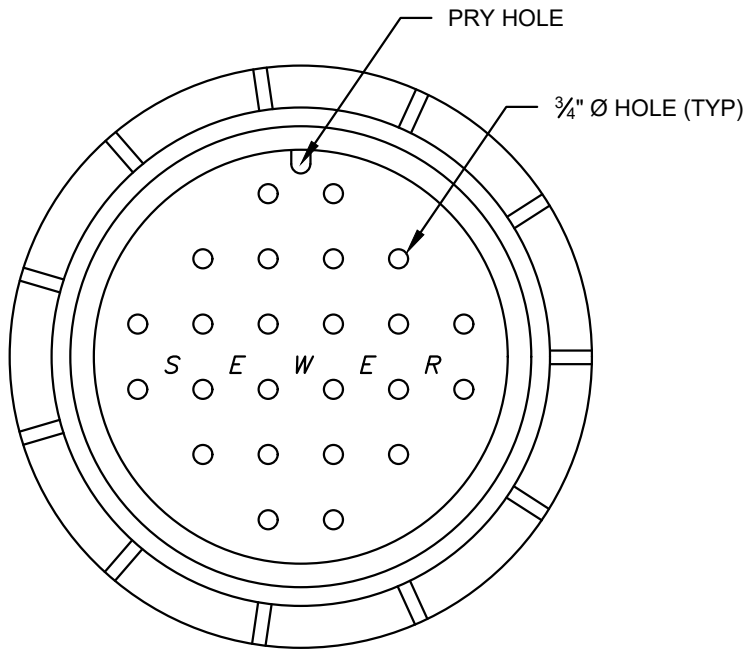
REV.: 11-30-2020

SANITARY SEWER MANHOLE

NOT TO SCALE

LAKE POINT IMPROVEMENT DISTRICT

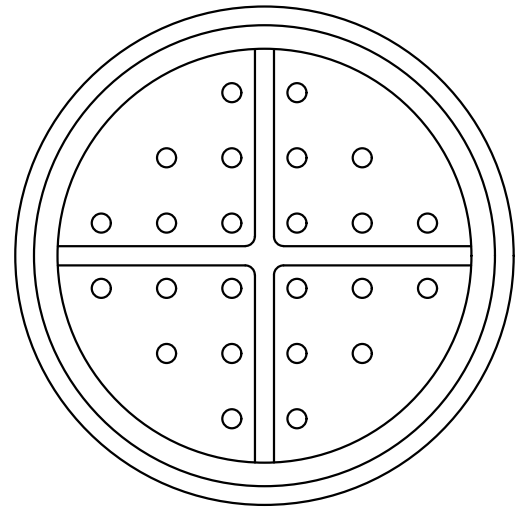




PLAN OF COVER & FRAME

NO SCALE

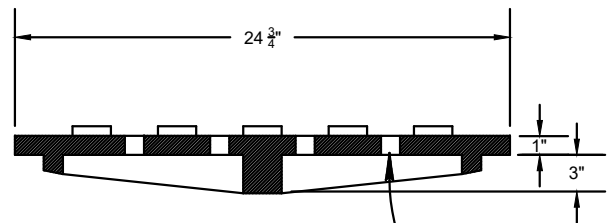
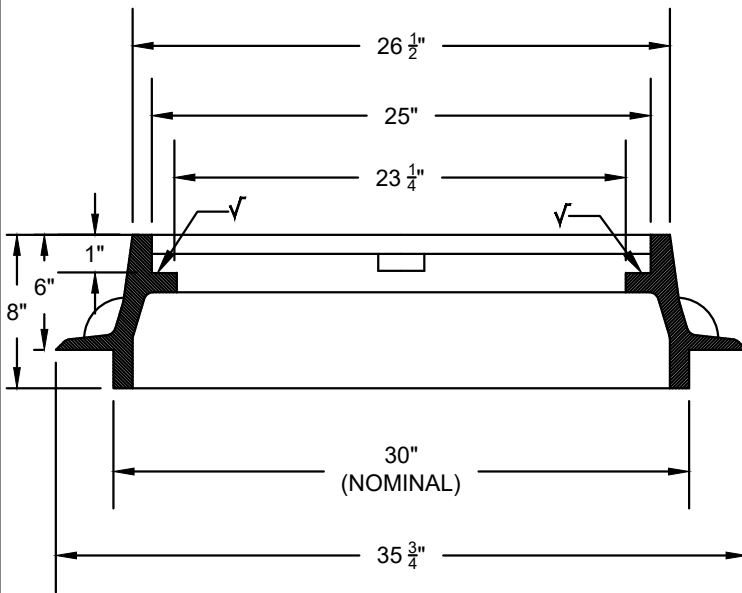
(SEE NOTE 6)



BOTTOM VIEW OF COVER

NO SCALE

(SEE NOTE 7)



3/4" VENTS
(12 PLACES)
(SEE NOTE 7)

NOTES:

1. CASTING: GRAY IRON CLASS 35 MINIMUM, ASTM A48, COATED WITH ASPHALT BASED PAINT OR BETTER (EXCEPT ON MACHINED SURFACES).
2. CAST THE HEAT NUMBER ON THE FRAME AND COVER.
3. GIVE THE FRAME AND COVER A MACHINE FINISH SO THE COVER WILL NOT ROCK.
4. ✓ DESIGNATES MACHINED SURFACES.
5. CAST THE WORD "SEWER" ON THE COVER IN UPPER CASE FLUSH WITH THE SURFACE FINISH.
6. FLAT OR CLEATED LID ACCEPTABLE.
7. MEET TRAFFIC HB-20 RATING MIN.

STANDARD DRAWING

102

REV.: 11-30-2020

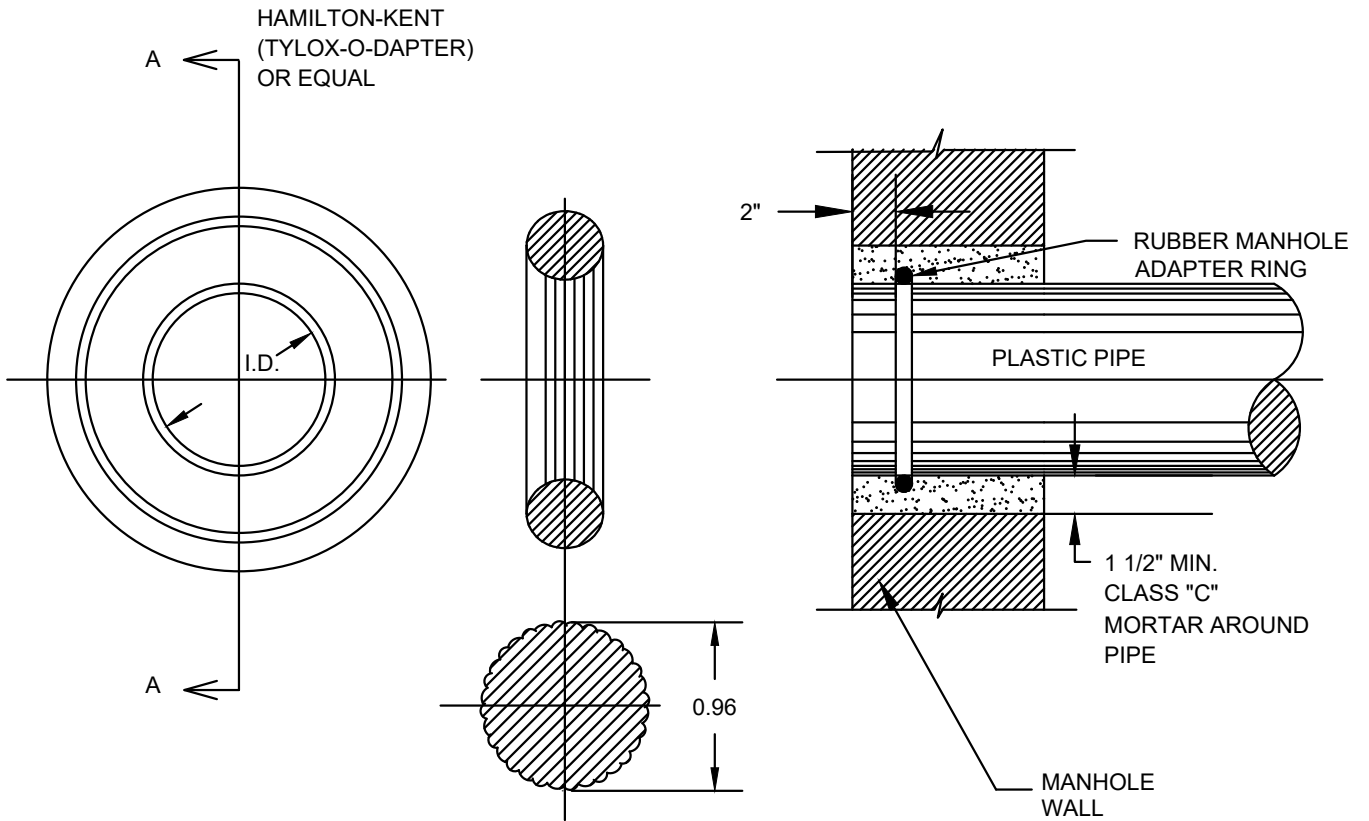
MANHOLE FRAME AND COVER

NOT TO SCALE

LAKE POINT IMPROVEMENT DISTRICT

LPID

LAKE POINT IMPROVEMENT DISTRICT



PIPE SIZE	INSIDE DIAMETER	
	MAX.	MIN.
4"	3.80	3.58
6"	5.65	5.33
8"	7.56	7.14
10"	9.45	8.93
12"	11.25	10.63

SHALL BE INSTALLED WITH SMOOTH WALL PIPE FOR PIPE PENETRATIONS TO "CAST-IN-PLACE" AND "PRECAST" STRUCTURES

STANDARD DRAWING

104

REV.: 11-30-2020

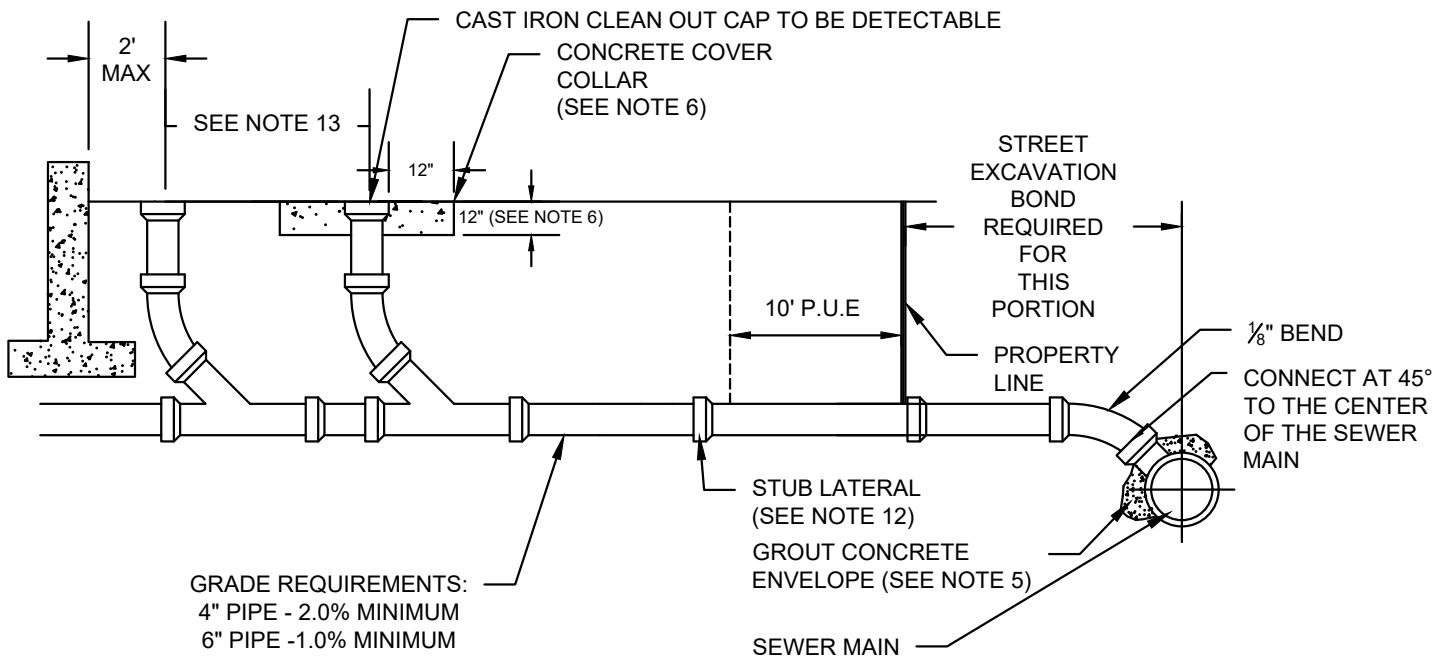
MANHOLE ADAPTER RING ASSEMBLY

NOT TO SCALE

LAKE POINT IMPROVEMENT DISTRICT


LPID

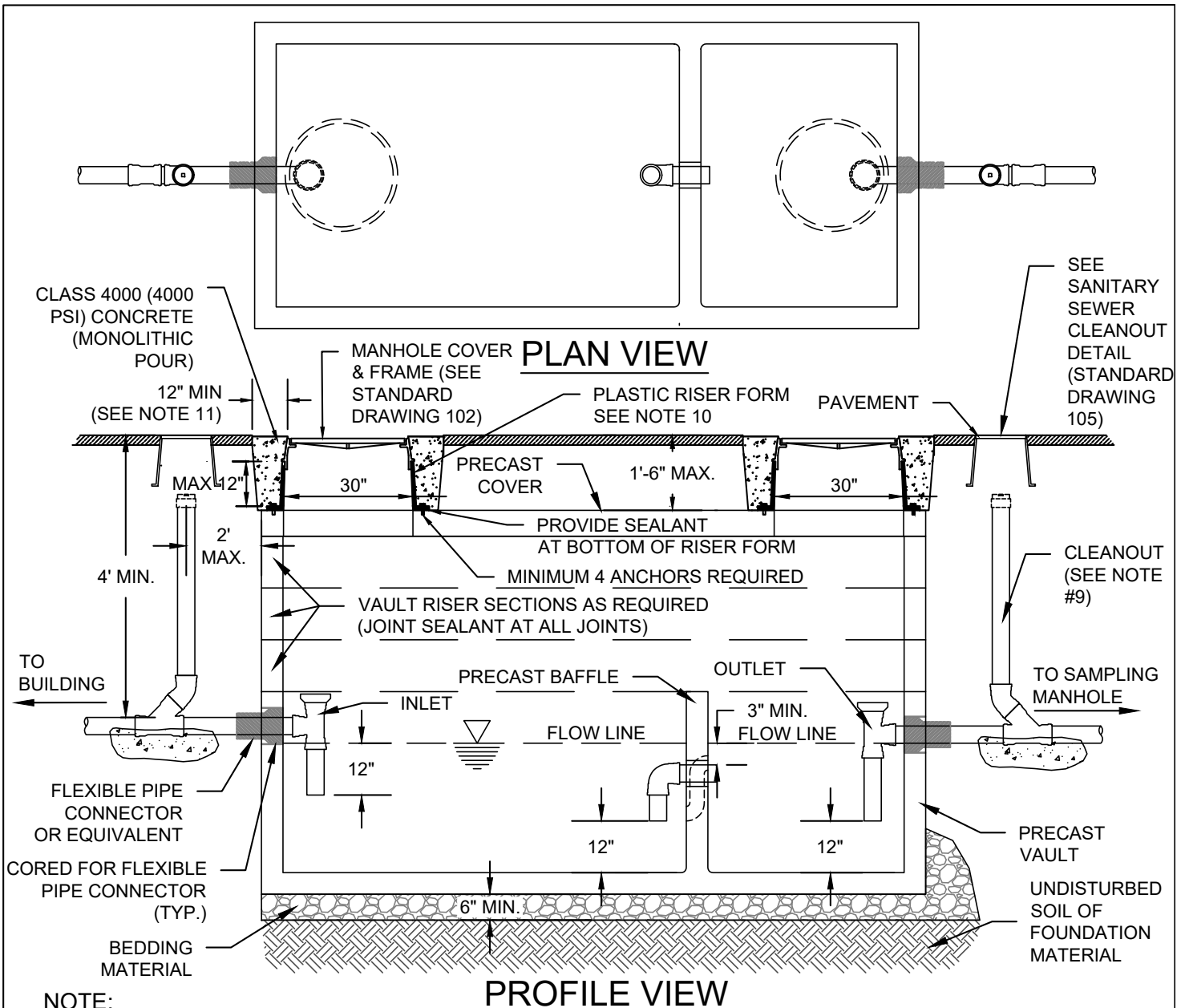
LAKE POINT IMPROVEMENT DISTRICT



NOTES:


1. CLEANOUT REQUIRED AT OUTSIDE OF HOUSE
2. CLEANOUT REQUIRED AT 100' MAX. SPACING AND AT CHANGE IN DIRECTION, WHERE TOTAL AGGREGATE CHANGE EXCEEDS 135°.
3. ALL LATERALS CUT INTO EXISTING MAINS SHALL BE ADAPTED WITH SADDLES. (INSERTA-TEE OR EQUAL). INSTALL ACCORDING TO MANUFACTURERS RECOMMENDATIONS. GREASE SHALL BE APPLIED TO STAINLESS STEEL BAND. WHERE SADDLES ARE NOT WATER TIGHT, A CONCRETE ENVELOPE SHALL BE REQUIRED.
4. LATERALS SHALL NOT PROTRUDE INTO SEWER MAINS.
5. WHERE CLAY PIPE CONNECTS TO PVC, A CONCRETE ENVELOPE SHALL BE REQUIRED.
6. CONCRETE COLLARS ARE REQUIRED FOR ALL PAVED AND NON-PAVED SURFACES, EXCEPT AT THE BUILDING.
7. BEFORE BACKFILLING, SEWER INSPECTION OF INSTALLATION BY LPID. PROVIDE AT LEAST 24 HOURS NOTICE. ALL PIPE, FITTING, AND COUPLING SHALL BE APPROVED PRIOR INSTALLATION.
8. TAPE WRAP ANY METAL PIPE AND METAL FITTINGS.
9. DO NOT INSTALL COUPLINGS BELOW ANY OBSTRUCTIONS.
10. UNDER ANY OBSTRUCTION, LOOSELY COMPONENT GRANULAR MATERIAL OR SAND. FLOWABLE FILL NOT ALLOWED.
11. PIPE ZONE MATERIAL IS REQUIRED ALONG THE FULL LENGTH OF SEWER LATERALS ACCORDING TO LPID STANDARD CONSTRUCTION NOTES:
 - 11.1. LAKE POINT IMPROVEMENT DISTRICT INSTALLATION REQUIREMENTS
12. STUB ALL SEWER LATERALS 10 FEET MINIMUM FROM THE BACK OF SIDEWALK, AND/OR TO THE FAR SIDE OF ANY PUBLIC UTILITY EASEMENT, AND/OR TO THE FAR SIDE OF ANY EXISTING UTILITIES. INSTALL A 45-DEGREE BEND AT THE END OF THE LATERAL AND EXTEND THE PIPE A MINIMUM OF 4 FEET ABOVE THE FINISHED DESIGN GRADE AND CAP. PERMANENTLY MARK ON THE PIPE THE DEPTH OF CUT FROM THE SURFACE TO THE INVERT OF THE LATERAL. THE EXPOSED PIPE SHALL BE PAINTED GREEN, SIGNIFYING A BURIED SEWER FACILITY. RECORD DRAWINGS SHALL BE MAINTAINED BY CONTRACTOR AND SHALL INCLUDE ADDITIONAL MEASUREMENTS FROM END OF BURIED LATERALS TO THE NEAREST MANHOLE.
13. INSTALL INTERMEDIATE CLEANOUTS AS REQUIRED. SPACING NOT TO EXCEED 100'.

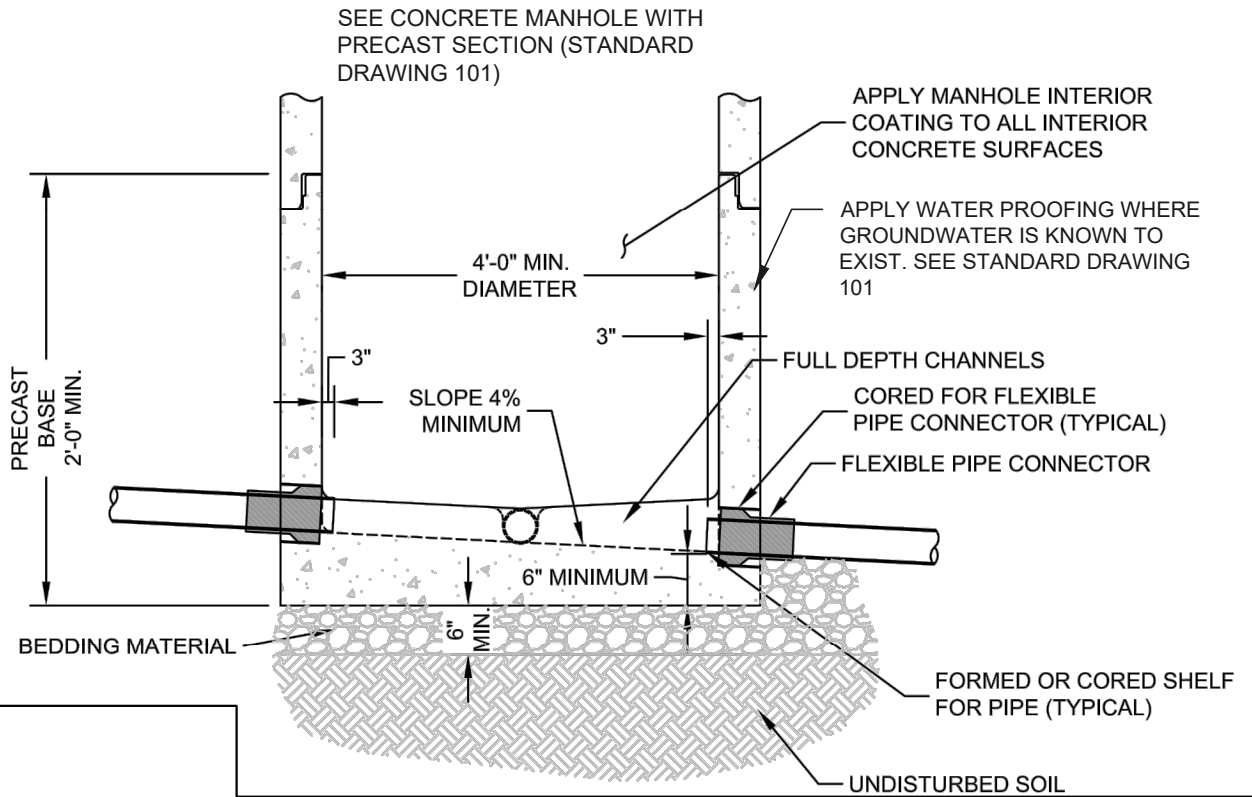
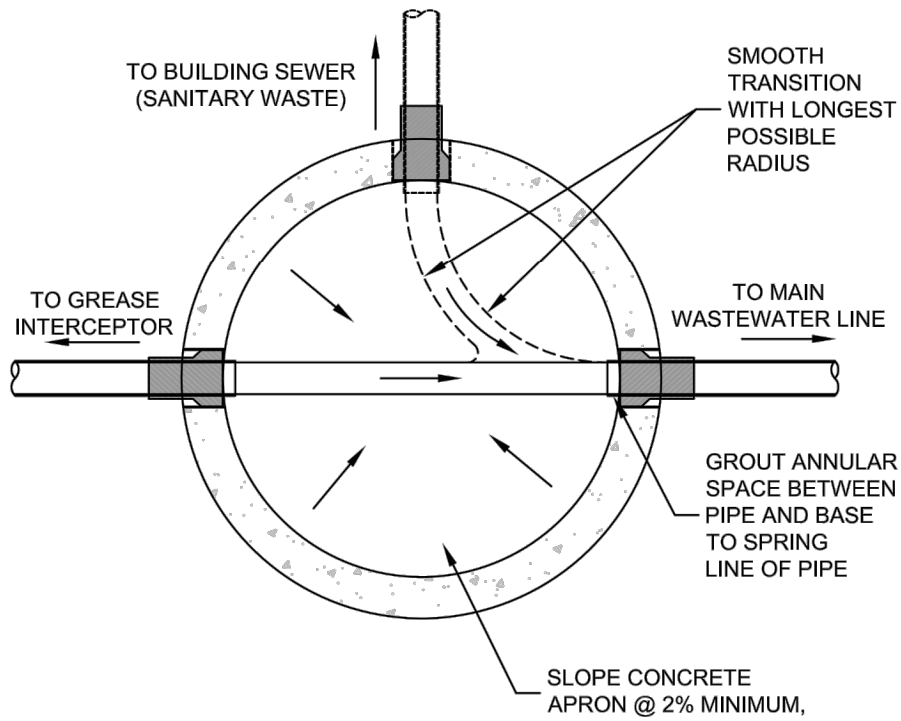
STANDARD DRAWING	SEWER CLEANOUTS DETAILS		
105	NOT TO SCALE		
REV.: 11-30-2020	LAKE POINT IMPROVEMENT DISTRICT		LAKE POINT IMPROVEMENT DISTRICT



NOTE:

1. THE GREASE INTERCEPTOR CAPACITY IS DEFINED AS THE STORAGE VOLUME OF THE VAULT BELOW THE OUTLET PIPE ELEVATION.
2. THE GREASE INTERCEPTOR SHALL HAVE A MINIMUM CAPACITY OF 1,000 GALLONS IF SERVING A COMMERCIAL KITCHEN OR 500 GALLONS IF SERVING A COVERED PARKING STRUCTURE.
3. THE INLET PIPE SHALL BE ONE INCH HIGHER THAN THE OUTLET PIPE.
4. ALL INTERIOR PIPING SHALL BE SOLVENT WELD PVC.
5. VENTING OF GREASE INTERCEPTOR SHALL NOT BE ALLOWED AT THE SURFACE. PROVIDE VENTING AT THE ROOF OF THE BUILDING OR STRUCTURE.
6. SANITARY WASTES SHALL NOT BE PLUMBED TO GREASE INTERCEPTOR.
7. THE DIMENSIONS AND CONFIGURATION OF THE VAULT AND BAFFLE SHALL BE ACCORDING TO THE MANUFACTURER'S REQUIREMENTS FOR THE SIZE OF INTERCEPTOR INSTALLED.
8. THE CLEANOUT UPSTREAM OF THE GREASE INTERCEPTOR MAY BE DELETED IF THE CLEANOUT AT THE BUILDING IS WITHIN 15 FT OF THE GREASE INTERCEPTOR AND THE LINE BETWEEN THE GREASE INTERCEPTOR AND THE CLEANOUT IS A STRAIGHT SEGMENT.
9. THE CLEANOUT DOWNSTREAM OF THE GREASE INTERCEPTOR MAY BE DELETED IF THE SAMPLING MANHOLE IS WITHIN 15 FT OF THE GREASE INTERCEPTOR AND THE LINE BETWEEN THE GREASE INTERCEPTOR AND THE SAMPLING MANHOLE IS A STRAIGHT SEGMENT.
10. INSTALL WHIRLYGIG MANHOLE RISER COLLAR SYSTEM PER STANDARD DRAWING 103.
11. CONCRETE COLLARS ARE REQUIRED FOR ALL PAVED AND NON-PAVED SURFACES.

STANDARD DRAWING	GREASE INTERCEPTOR		
106	NOT TO SCALE		
REV.: 11-30-2020	LAKE POINT IMPROVEMENT DISTRICT		



STANDARD DRAWING

107

REV.: 11-30-2020

SAMPLING MANHOLE PRECAST BASE

NOT TO SCALE

LAKE POINT IMPROVEMENT DISTRICT

LPID

LAKE POINT IMPROVEMENT DISTRICT



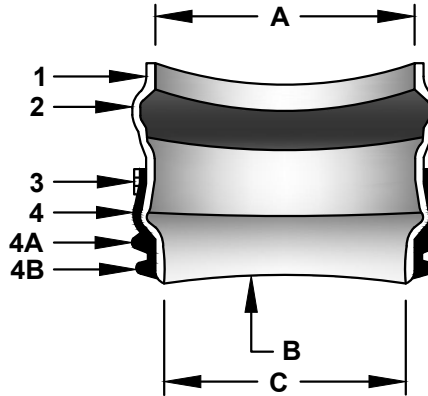
INSERTA TEE | PO BOX 714
 CORNELIUS, OR 97113
 PH:(503) 357-2110 FAX:(503) 359-5417
 SALES@INSERTATEE.COM

THIS STANDARD DETAIL
 DISCLOSES SUBJECT MATTER IN
 WHICH INSERTA-TEE HAS
 PROPIETARY RIGHTS. MATCHES
 MANUFACTRE'S DRAWING DATE:
 09/12/2013.
 OWNERSHIP, PATENTS AND DESIGN
 BY ADS.

NOSE-ON SEWER LATERAL CONNECTION SDR 35 GASKETED BELL GRAVITY APPLICATIONS

- A. EQUIVALENT O.BELL END ACCEPTS PIPE WITH SDR 35, ASTM D3034 OR EQUIVALENT O.D. SPECIFICATION IN 8", 10", 12", 15", 18", 21", 24", 27", AND 30" SIZES. (FOR 4" AND 6" SIZES REFER TO FATBOY SPECIFICATIONS).
- B. CURVATURE VARIES WITH MAINLINE DIAMETERS.
- C. SPIGOT END PVC SDR 35, ASTM D3034 DIAMETERS: 8", 10", 12", 15", 18", 21", 24", 27" AND 30"

INSERTA TEE SIZE	HOLE DIAMETER
8" (200 mm)	8 3/4" (222mm)
10" (250 mm)	10 7/8" (276mm)
12" (300 mm)	12 7/8" (327mm)
15" (375 mm)	15 13/16" (402mm)
18" (450 mm)	19 3/16" (503mm)
21" (525 mm)	22 9/16" (573mm)
24" (600 mm)	25 5/16" (643mm)
27" (675 mm)	28 1/2" (724mm)
30" (750 mm)	32 17/32" (826mm)



PART	PART NAME	MATERIALS
1	HUB ADAPTOR	PVC SDR 35 ASTM D3034
2	RUBBER GASKET	ASTM F477
3	SECURING CLAMP*	BAND SS #301 SCREW SS #305 HOUSING SS #301
4	RUBBER SLEEVE (AVAILABLE IN NITRILE AND EPDM BY SPECIAL ORDER)	ASTM F477
4A	UPPER SEGMENT**	
4B	LOWER SEGMENT***	

* OPTIONAL: #316 STAINLESS STEEL BAND, SCREW AND HOUSING
 ** DISTANCE BETWEEN 4A AND 4B WILL VARY BY PRODUCT TYPE
 *** WILL NOT APPEAR ON RUBBER SLEEVES FOR CONCRETE OR CLAY PIPE

NOTE:

1. WHEN CONNECTING LATERALS TO EXISTING SEWER MAIN LINES, USE A NOSE-ON CONNECTION. INVERTS OF NEW LATERALS MUST BE MADE A 10:00 AND 2:00 POSITIONS OR HIGHER, WHICH EVER POSITION IS REQUIRED TO CLEAR THE HIGH-WATER LINE OF THE EXISTING MAIN LINE.
 - a. FOR NOSE-ON CONNECTIONS TO AN EXISTING 10-INCH MAIN OR LARGER, THE CONNECTION SHALL BE MADE USING AN INSERTA-TEE FITTING. CONNECTIONS SHALL BE CORE-DRILLED. RUBBER SLEEVES - ASTM F477, BANDS - 301 SS, SCREWS - 305 SS, HOUSING 301 SS, AND GASKETS - ASTM F477.
 - b. FOR NOSE-ON CONNECTIONS TO AN EXISTING 6-INCH OR 8-INCH PVC MAIN, THE CONNECTION SHALL BE MADE BY SPLICING A FACTORY TEE INTO THE MAIN USING SLIP/REPAIR COUPLINGS. FERNCO-TYPE COUPLINGS ARE NOT PERMITTED.
 - c. FOR NOSE-ON CONNECTIONS TO AN EXISTING 6 OR 8-INCH CONCRETE OR VITRIFIED CLAY MAIN, CONNECTION SHALL BE MADE USING AN INSERTA TEE FITTING.
 - d. FOR NOSE-ON CONNECTIONS TO ANY OTHER TYPE OF PIPE SHALL BE APPROVED BY THE SPID.

NOTE: RECOMMENDED METHOD OF CUTTING HOLE IS WITH HOLE SAW FOR PVC AND OTHER PLASTICS, AND DIAMOND BIT FOR CONCRETES, CLAY, FRP AND D.I. (SEE MANUFACTURE'S INSTALLATION INSTRUCTIONS.)

STANDARD DRAWING 108 REV.: 11-30-2020	NOSE-ON SEWER LATERAL CONNECTION SDR 35 GASKETED BELL GRAVITY APPLICATIONS NOT TO SCALE	 LAKE POINT IMPROVEMENT DISTRICT
	LAKE POINT IMPROVEMENT DISTRICT	



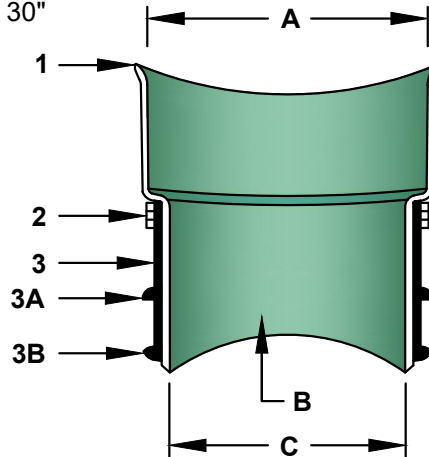
INSERTA TEE | PO BOX 714
 CORNELIUS, OR 97113
 PH:(503) 357-2110 FAX:(503) 359-5417
 SALES@INSERTATEE.COM

NOSE-ON SEWER LATERAL CONNECTION CORRUGATED BELL FOR GRAVITY APPLICATIONS

THIS STANDARD DETAIL
 DISCLOSES SUBJECT MATTER IN
 WHICH INSERTA-TEE HAS
 PROPRIETARY RIGHTS. MATCHES
 MANUFACTURE'S DRAWING DATE:
 09/12/2013.
 OWNERSHIP, PATENTS AND DESIGN
 BY ADS.

- A. BELL END ACCEPTS CORRUGATED POLYETHYLENE; AND PVC, CORRUGATED PIPE OR EQUIVALENT O.D. SPECIFICATIONS IN 4", 6", 8", 10", 12", 15", 18", 21", 24", 27" AND 30" SIZES.
- B. CURVATURE VARIES WITH MAINLINE DIAMETERS.
- C. SPIGOT END PVC SDR 35, ASTM D3034 DIAMETERS: 4", 6", 8", 10", 12", 15", 18", 21", 24", 27" AND 30"

INSERTA TEE SIZE	HOLE DIAMETER
4" (100 mm)	4 1/2" (114 mm)
6" (150 mm)	6 1/2" (165 mm)
8" (200 mm)	8 3/4" (222 mm)
10" (250 mm)	10 7/8" (276 mm)
12" (300 mm)	12 7/8" (327 mm)
15" (375 mm)	15 13/16" (402 mm)
18" (450 mm)	19 3/16" (503 mm)
21" (525 mm)	22 9/16" (573 mm)
24" (600 mm)	25 3/16" (643 mm)
27" (675 mm)	28 1/2" (724 mm)
30" (750 mm)	32 17/32" (826 mm)



PART	PART NAME
1	HUB ADAPTOR
2	SECURING CLAMP*
3	RUBBER SLEEVE (AVAILABLE IN NITRILE AND EPDM BY SPECIAL ORDER)
3A	UPPER SEGMENT**
3B	LOWER SEGMENT***
4	(NOT SHOWN) PIPE MANUFACTURER TO SUPPLY VALLEY GASKET

MATERIALS
 PVC SDR 26 ASTM D3034
 BAND SS #301
 SCREW SS #305
 HOUSING SS #301
 ASTM F477

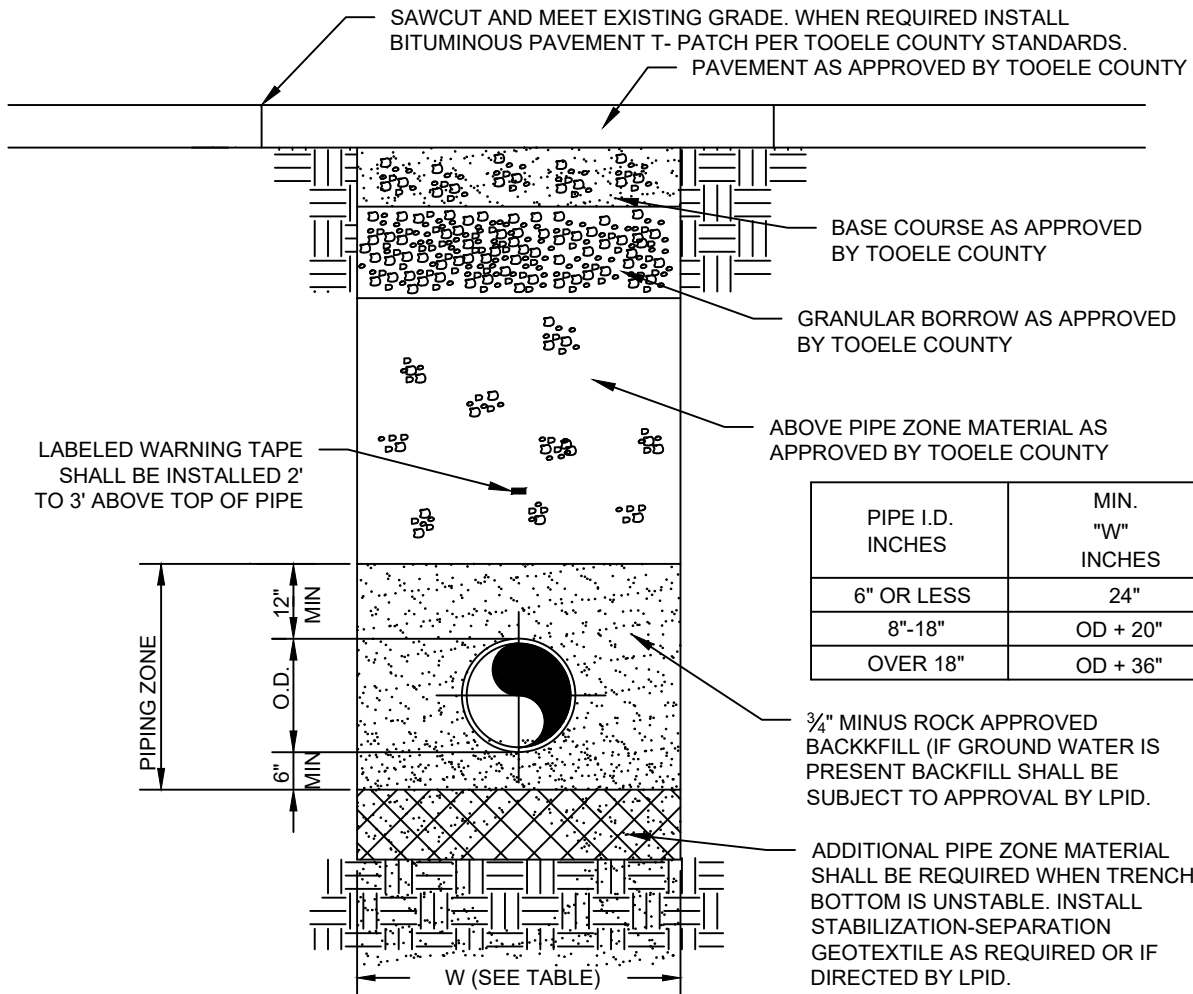
- * OPTIONAL: #316 STAINLESS STEEL BAND, SCREW AND HOUSING
- ** DISTANCE BETWEEN 4A AND 4B WILL VARY BY PRODUCT TYPE
- *** WILL NOT APPEAR ON RUBBER SLEEVES FOR CONCRETE OR CLAY PIPE

NOTE:

1. WHEN CONNECTING LATERALS TO EXISTING SEWER MAIN LINES, USE A NOSE-ON CONNECTION. INVERTS OF NEW LATERALS MUST BE MADE A 10:00 AND 2:00 POSITIONS OR HIGHER, WHICH EVER POSITION IS REQUIRED TO CLEAR THE HIGH-WATER LINE OF THE EXISTING MAIN LINE.
 - a. FOR NOSE-ON CONNECTIONS TO AN EXISTING 10-INCH MAIN OR LARGER, THE CONNECTION SHALL BE MADE USING AN INSERTA-TEE FITTING. CONNECTIONS SHALL BE CORE-DRILLED. RUBBER SLEEVES - ASTM F477, BANDS - 301 SS, SCREWS - 305 SS, HOUSING 301 SS, AND GASKETS - ASTM F477.
 - b. FOR NOSE-ON CONNECTIONS TO AN EXISTING 6-INCH OR 8-INCH PVC MAIN, THE CONNECTION SHALL BE MADE BY SPLICING A FACTORY TEE INTO THE MAIN USING SLIP/REPAIR COUPLINGS. FERNCO-TYPE COUPLINGS ARE NOT PERMITTED.
 - c. FOR NOSE-ON CONNECTIONS TO AN EXISTING 6 OR 8-INCH CONCRETE OR VITRIFIED CLAY MAIN, CONNECTION SHALL BE MADE USING AN INSERTA TEE FITTING.
 - d. FOR NOSE-ON CONNECTIONS TO ANY OTHER TYPE OF PIPE SHALL BE APPROVED BY THE SPID.

NOTE: RECOMMENDED METHOD OF CUTTING HOLE IS WITH HOLE SAW FOR PVC AND OTHER PLASTICS, AND DIAMOND BIT FOR CONCRETES, CLAY, FRP AND D.I. (SEE MANUFACTURE'S INSTALLATION INSTRUCTIONS.)

STANDARD DRAWING 109 REV.: 11-30-2020	NOSE-ON SEWER LATERAL CONNECTION CORRUGATED BELL FOR GRAVITY APPLICATIONS NOT TO SCALE	
	LAKE POINT IMPROVEMENT DISTRICT	




PIPE I.D. INCHES	MIN. "W" INCHES
6" OR LESS	24"
8"-18"	OD + 20"
OVER 18"	OD + 36"

3/4" MINUS ROCK APPROVED BACKFILL (IF GROUND WATER IS PRESENT BACKFILL SHALL BE SUBJECT TO APPROVAL BY LPID.

ADDITIONAL PIPE ZONE MATERIAL SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE. INSTALL STABILIZATION-SEPARATION GEOTEXTILE AS REQUIRED OR IF DIRECTED BY LPID.

NOTES:

1. CONTRACTOR TO FLUSH AND CLEAR PIPES PRIOR TO NOTIFYING DISTRICT THAT SEWER LINES ARE READY FOR TESTING. THE CONTRACTOR WILL RUN A MANDREL TEST, AIR TEST, AND FURNISH A VIDEO AFTER INSTALLATION AND PRIOR TO PAVING. ALL TESTING TO BE DONE PER LPID SPECIFICATIONS AND STANDARDS. THE DEVELOPER WILL FURNISH ADDITIONAL VIDEO OF SEWER MAINS AFTER PAVING, BUT BEFORE INSTALLING CONCRETE COLLARS, AND ALSO AT THE END OF THE WARRANTY PERIOD.
2. INSTALL PERMANENT, BRIGHT COLORED, CONTINUOUS PRINTED MAGNETIC PLASTIC TAPE, INTENDED FOR DIRECT BURIAL SERVICE; NOT LESS THAN SIX (6) INCHES WIDE BY FOUR (4) MILS THICK. TAPE SHALL READ "CAUTION BURIED INSTALLATION BELOW". COLOR SHALL BE GREEN, INDICATING BURIED SEWER LINE.
3. BEDDING MATERIAL:
 - 3.1. SUBMIT AGGREGATE BATCH DELIVERY TICKETS SHOWING NAME OF MATERIAL SOURCE, SERIAL NUMBER OF TICKET, DATE AND TRUCK NUMBER, NAME OF SUPPLIER, JOB NAME AND LOCATION, VOLUME OR WEIGHT, AND AGGREGATE CLASSIFICATION.
 - 3.2. LPID SHALL APPROVE SUBMITTAL AND SOURCE SAMPLE PRIOR TO INSTALLATION.
 - 3.3. MAINTAIN UNIFORM FOUNDATION ALONG BARREL OF PIPE WITH SUFFICIENT RELIEF FOR JOINT CONNECTIONS. MAKE BELL HOLES BEFORE LAYING BELL AND SPIGOT PIPE IN PIPE ZONE MATERIAL.
 - 3.4. DO NOT PERMIT FREE FALL BACKFILL MATERIAL THAT MAY DAMAGE PIPE, PIPE FINISH, OR PIPE ALIGNMENT.
4. INSTANTIATION: FOLLOW ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE" FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS.
5. ABOVE PIPE ZONE:
 - 5.1. ALL MATERIALS, WORKMANSHIP, COMPACTION, TESTING, AND QUALITY CONTROL SHALL BE IN ACCORDANCE WITH TOOELE COUNTY STANDARD PLANS AND SPECIFICATIONS. SUPPLEMENTARY AND / OR SUPPORTING DOCUMENTS ARE:
 - 5.1.1. APWA SECTION 33 05 20: BACKFILLING TRENCHES,
 - 5.1.2. APWA SECTION 01 45 00: QUALITY CONTROL,
 - 5.1.3. APWA SECTION 31 25 23: COMPACTION.
6. NOTIFY TOOLE COUNTY ROADS DEPARTMENT FOR ALL "ABOVE PIPE ZONE" INSPECTION AND ACCEPTANCE, ACCORDING TO TOOELE COUNTY REQUIREMENTS.

STANDARD DRAWING 110 REV.: 11-30-2020	SEWER TRENCH BACKFILL DETAIL	
	NOT TO SCALE	
	LAKE POINT IMPROVEMENT DISTRICT	

SPECIAL PROVISION TO APWA SECTION 33 08 00, PART 3.3 "GRADE AND ALIGNMENT TESTING"

LAKE POINT IMPROVEMENT DISTRICT ADOPTS THE APWA STANDARD SPECIFICATION 33 08 00 FOR COMMISSIONING OF SEWER AND STORM DRAIN LINES, WITH THE FOLLOWING AMENDMENTS:

TOLERANCES FOR PIPE PLACEMENT ARE AS FOLLOWS:

GRADE AND ALIGNMENT			
DESIGN GRADE	TOLERANCES		SLOPE CERTIFICATION REQUIRED (PER SPID STD DWG 208-B)
	GRADE	ALIGNMENT	
GREATER THAN 1%	$\frac{1}{2}$ INCH IN 10 FT	1" FROM TRUE LINE	NO
0.5 TO 1%	$\frac{1}{4}$ INCH IN 10 FEET	1" FROM TRUE LINE	NO
LESS THAN 0.5%, BUT GRATER THAN MINIMUM DESIGN SLOPE	$\frac{1}{4}$ INCH IN 100 FEET	1" FROM TRUE LINE	NO
AT MINIMUM ALLOWED DESIGN SLOPE	$\frac{1}{8}$ INCH IN 100 FEET	1" FROM TRUE LINE	YES

NOTES:

- A. GRADE DOES NOT RESULT IN A LEVEL OR REVERSE SLOPING INVERT. STANDING WATER IS EVIDENCE OF NON-COMPLIANCE.
- B. LPID STRICTLY ENFORCES STANDARD APWA NOTES A AND B AND MAINTAINS A "ZERO" TOLERANCE AND NON-ACCEPTANCE POLICY FOR FLAT BELLIES AND FLAT ZONES/SPOTS IN PIPELINES. CONTRACTOR SHALL CORRECT NON-CONFORMING WORK, AND RETELEVISION AND RECERTIFY THE CORRECTED WORK UNTIL WORK IS IN COMPLIANCE.

DISTRICT'S MINIMUM ALLOWED DESIGN SLOPE	
PIPE SIZE	MINIMUM DESIGN SLOPE
8"	0.50%
10"	0.28%
12"	0.22%
14"	0.17%
15"	0.15%

DISTRICT'S MINIMUM ALLOWED DESIGN SLOPE (CON'T)	
PIPE SIZE	MINIMUM DESIGN SLOPE
16"	0.14%
18"	0.12%
21"	0.10%
24"	0.08%

STANDARD DRAWING	GRADE AND ALIGNMENT TEST	 <small>LAKE POINT IMPROVEMENT DISTRICT</small>
111-A	NOT TO SCALE	
REV.: 11-30-2020	LAKE POINT IMPROVEMENT DISTRICT	

**SECTION 01 45 50 S
(SPECIAL PROVISIONS)
SLOPE CERTIFICATION (SURVEY)**


PART 1 GENERAL

- 1.1 SECTION INCLUDES**
A. CONTRACTOR RESPONSIBILITIES FOR QUALITY AND QUALITY ASSURANCE RELATING TO CONSTRUCTED SEWER PIPE SLOPES.
- 1.2. QUALITY ASSURANCE**
A. EMPLOY AN INDEPENDENT LICENSED SURVEYOR TO ASSURE "ASBUILT" PIPE SLOPES CONFORM TO PLANS AND SPECIFICATIONS.
B. USE STANDARD INDUSTRY PRACTICES AND TOLERANCES FOR SPECIFIED SURVEYING METHODS.
C. DO ADDITIONAL SURVEYING, IF, IN ENGINEER'S OPINION, WORK IS NOT BEING ADEQUATELY CONTROLLED.
- 1.3. SURVEYING PROFESSIONAL**
A. PROVIDE SUFFICIENT PERSONNEL AND COOPERATE WITH ENGINEER AND CONTRACTOR IN PERFORMING DAILY SURVEYS.
B. CORRELATE CERTIFICATIONS WITH OWNER'S SURVEYS AND INSPECTIONS.
C. WHEN AN OUT-OF-TOLERANCE CONDITION EXISTS, PERFORM ADDITIONAL SURVEYS UNTIL TOLERANCE IS ATTAINED.
D. REPORT ANY NON-COMPLIANCE PIPELINE SLOPES TO CONTRACTOR AND ENGINEER IMMEDIATELY.
- 1.4. EQUIPMENT**
A. USE ONLY A TOTAL STATION OR LINE LEVEL LOOP WITH A "BEST SURVEY STANDARDS" MARGIN OF ERROR EQUAL TO +/- 0.02 FEET.
B. GPS SYSTEM NOT ALLOWED.
- 1.5. PROCEDURES**
A. PRIOR TO ANY BACKFILL, SURVEY ELEVATION OF CONSTRUCTED PIPE AT EACH MANHOLE, INCLUDING ALL EXTERIOR LEGS OF PIPE.
B. WHEN MANHOLES ARE SPACED MORE THAN 200 FEET APART, SURVEY THE MIDPOINT, OR NEAR THE MIDPOINT OF ALL SEWER LINES BETWEEN MANHOLES.
C. CALCULATE PIPE SLOPES BETWEEN EACH ELEVATION MEASUREMENT.
D. COORDINATE WITH CONTRACTOR AND CORRECT ANY WORK PRIOR BACKFILL.
- 1.6. SUBMITTALS - SURVEY PROFESSIONAL**
A. SEWER CERTIFICATION SHEET SHALL BE SUBMITTED TO LPID:
 - 1. NAME, ADDRESS AND TELEPHONE NUMBER OF SURVEY PROFESSIONAL
 - 2. DATE OF SURVEY
 - 3. CERTIFICATION NUMBER
 - 4. LOCATION OF SURVEY
 - 5. SURVEY DATUM AND CONTROL
 - 6. SURVEY INFORMATION IN THE FOLLOWING TABULAR FORM.

MANHOLE #	INVERT DIRECTION	ASBUILT ELEVATION	DESIGN ELEVATION	Δ

PIPE RUN	PIPE LENGTH	ASBUILT %	DESIGN %	Δ
MHxx-MHxx				

- 7. CERTIFICATION NARRATIVE BY SURVEYOR.
- 8. PROFESSIONAL'S STAMP AND SIGNATURE.
- B. SUBMITTAL SCHEDULE
SUBMIT REPORTS BY THE END OF EACH DAY THAT SEWER LINES ARE CONSTRUCTED.
- 1.7 CONTRACTOR'S RESPONSIBILITY**
A. SEWER LINES CONSTRUCTED THAT DO NOT MEET THE GRADE AND ALIGNMENT TOLERANCES IDENTIFIED IN STANDARD DRAWING 111-A SHALL BE CORRECTED AND RESURVEYED AND CERTIFIED.
- 1.8 DEVELOPER'S RESPONSIBILITY**
A. THE DEVELOPER WILL PROVIDE STAKING OF "CRITICAL SLOPE" SEWERS (AT OR NEAR MINIMUM DESIGN SLOPES).

STANDARD DRAWING 111-B REV.: 11-30-2020	GRADE AND ALIGNMENT TEST NOT TO SCALE LAKE POINT IMPROVEMENT DISTRICT	 LAKE POINT IMPROVEMENT DISTRICT
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