

**DESIGN STANDARDS
AND
CONSTRUCTION SPECIFICATIONS
FOR**



February 2010

PREPARED BY:

**SANDY SUBURBAN IMPROVEMENT DISTRICT
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**DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS
FOR
SANDY SUBURBAN IMPROVEMENT DISTRICT**

1. GENERAL REQUIREMENTS:

1.1. INTRODUCTION: The following Sandy Suburban Improvement District "Design Standards and Construction Specifications" were developed to establish practical, uniform design and construction of sanitary sewers in the Sandy Suburban Improvement District. These criteria are not intended to cover extraordinary situations, and in such instances, deviations from the criteria may be allowed where justified, upon approval of the Sandy Suburban Improvement District.

1.2. DEFINITIONS:

AASHTO: American Association of State Highway and Transportation Officials

ACI: American Concrete Institute

ACPA: American Concrete Pipe Association

AI: Asphalt Institute

ANSI: American National Standards Institute

ASTM: American Society for Testing and Materials

AWWA: American Water Works Association

PPI: Plastic Pipe Institute

UDEQ - DWQ: Utah Department of Environmental Quality, Division of Water Quality

Approved Drawings: Final construction drawings approved by the District.

Contractor: The company or firm and its employees performing the construction work.

Developer: The owner, builder, or person sponsoring the construction.

District: The Sandy Suburban Improvement District (SSID).

District Engineer: The consulting engineer, including such assistants as are authorized to represent him, who represents the Sandy Suburban Improvement District.

Engineer: The company or firm and its employees providing the engineering services for the project through the developer.

Inspector: The authorized agent of the District or District Engineer assigned to make detailed inspections of any or all portions of the sewer system construction.

Lateral: The sewer line and appurtenances extending from 2 feet outside of the building to the public sewer line.

Public Sewer: The sewer line, 8" or larger, not designated as a lateral which collects and transports sewage; owned by the District.

"Shall"/"Should": Where the term "shall" is used, it is intended to mean a mandatory requirement. Other terms such as "should" and "recommend", indicate discretionary use.

"Record Drawings": Final recorded drawings on file.

- 1.3. REVISIONS OF STANDARDS AND SPECIFICATIONS: When reference is made to the Standard Specification (ASTM, Sandy City Standards, etc.), the specification to which referred shall be understood to mean the latest revision of said specification.

These specifications may be modified or deleted by appropriate notes on Approved Drawings.

- 1.4. CONTRACTORS: All contractors performing sewer construction within Sandy Suburban Improvement District shall possess a valid Utah Contractors License and shall be licensed to perform sewer construction.

2. DESIGN REQUIREMENTS:

2.1. DESIGN PROCESS:

- 2.1.1. DESCRIPTION: The "Design Process" shall consist of a "Sewer Extension Agreement", a Preliminary Design, a Final Design, and "Record Drawings". All sewerage projects within the Sandy Suburban

Improvement District shall follow the procedures for design and approval as outlined below.

- A. The Developer contacts the District and explains the proposed project. The District reviews the availability of sewer service and outlines the following procedures. Copies of the District's "Design Standards and Construction Specifications" are available free of charge at the District office.
- B. The Developer shall submit to the District three (3) copies of preliminary site plans with sufficient information, including the amount and type of flow expected, to allow the District to complete a preliminary engineering review. The plans shall be reviewed by the District Engineer at the Developer's expense.
- C. A sewer availability letter is written by the District for the development project submitted. The Developer is notified by the District of the required fees and is provided copies of the "Sewer Extension Agreement" for signature.
- D. The Developer submits the "Sewer Extension Agreement" along with a check payable to the District in the amount of the required administrative fees.
- E. The Developer shall submit three (3) prints of the final approved plat or site plan and electronic Auto Cad 14 of prints of the improvement drawings which shall show sufficient data for the final sewer design.
- F. The Developer then shall have his Engineer complete a final sewer design to submit for review and approval at the Developer's expense.
- G. The Developer provides, at Developer's expense, all public sewer easements required for the development, which easements shall be in a recordable form satisfactory to the District.
- H. The Developer shall stake the centerline control and all front lot comers in a subdivision and all building comers in a residential or commercial development prior to notifying the of the need for staking of the sanitary sewer main.
- I. The Engineer shall stake the sanitary sewer lines upon the

Developer's readiness and upon receipt of at least 72 hours notice to do so from the Developer. The Engineer will stake each manhole and each main at points 50 feet beyond the manhole. (An additional charge will be made to the Developer for any restaking that is done).

- J. A pre-construction meeting is held on site or in the District office to establish construction schedules and to resolve any questions regarding the requirements of the Drawings and Specifications. The installing Contractor, being the individual who will actually be performing the work, must be present. The Developer shall obtain any necessary construction permits, at Developer's expense, before starting any work.
- K. The Engineer shall provide the Developer's Contractor with a copy of the cut sheets for the sanitary sewer mains prior to construction.
- L. The Developer causes the sewer system to be constructed according to all applicable requirements. After construction the Developer shall cause satisfactory air tests, deflection tests and manhole vacuum tests to be performed on the sewer system pursuant to the District Design Standards and Construction Specifications.
- M. The District Inspector shall visit the construction site on an intermittent basis as the representative of the General Manager to observe the Contractor's work and endeavor to guard the District against deficiencies in the work.
- N. Upon completion of the construction, prior to paving, the District shall be notified of televising of the lines, at the Developers expense. If a request is made to have the District do the televising a charge of \$1.00 per foot will be charged.
- O. Upon completion of paving, a final "punch list" is prepared by the District Inspector and forwarded to the Developer, his Engineer and his Contractor.
- P. Upon completion of the final "punch list", receipt of test results, "as-constructed" and any revised easements, the District Inspector will recommend approval of the construction of the sanitary sewer to the District.

- Q. Final approval to be granted by Sandy Suburban Improvement District.
- R. Final acceptance of the sanitary sewer line into the District shall be subject to the Developer guaranteeing the sewer system for a period of one (1) year following the date of final approval by the District. The Developer shall be responsible for all repairs and related expenses during the one (1) year guarantee period.

2.1.2. PRELIMINARY DESIGN: Three (3) sets of preliminary design plans shall be submitted to the District. The requirements for the Preliminary Design Plans shall include:

- A. Site Location Map: The development shall be shown on a vicinity map of the Sandy City Area.
- B. Topographic Map: A topographic map on the area to be sewered shall be included. This may be shown upon the subdivision or development preliminary plat. Elevations shall be based on Salt Lake County's control system. The elevation and location of the benchmark used for control shall be shown.
- C. The Preliminary Design Information will include the estimated maximum number of units to be served, zoning, project acreage and estimated peak and average flows.
- D. All existing streets shall be labeled.
- E. Preliminary plans submitted to the District should be 24" x 36" in size.
- F. The Preliminary Design should be completed by the Developer's Engineer before the Final Design is begun. The required administrative, engineering and/or review fees are determined by the preliminary plan.
- G. The District shall use the submitted preliminary information to complete a preliminary sewer plan and a "sewer availability letter" only after all required information or plats are submitted to the District.

2.1.3. FINAL DESIGN: The Final Design plans shall be completed by either the District Engineer or the Developer's Engineer in accordance with these

District Standards and Specifications and the latest revision of the Utah Department of Environmental Quality, Division of Water Quality, R 317-3 Utah Administrative Code. If the Developer's Engineer completes the final design, one (1) set of final sewer plans shall be submitted to the District. The final design requirements shall include:

- A. The Final Design of the sewer system shall meet the "guidelines" of the Preliminary Design and shall be in accordance with these District Standards and Specifications and R 317-3 Utah Administrative Code.
- B. The Final Design shall include those items as noted on the submitted check list by the District Engineer and the Final Design must be approved by the District Engineer prior to construction.
- C. All executed sewer line easements shall be reviewed and approved with the Final Design Plans by the District Engineer as part of the review process.
- D. A blue line copy of the dedication plat, showing utility easements, shall be submitted with the Final Design Plans. The District requires a signature block on the original plat and must sign prior to recordation.
- E. Final Design Plans submitted to the District shall be 24" x 36" in size. Plans submitted on sized other than 24 II x 36" will not be accepted.
- F. Final design plans submitted to the District shall have the following note:

<p>SEWER CONSTRUCTION NOTES:</p> <ul style="list-style-type: none">1. SEWER IMPROVEMENTS SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH SANDY SUBURBAN IMPROVEMENT DISTRICT (SSID) DESIGN STANDARDS AND CONSTRUCTION SPECIFICATIONS. COPIES OF THE DISTRICT STANDARDS AND SPECIFICATIONS ARE AVAILABLE AT THE DISTRICT OFFICE, 8855 S. 700 W. SANDY, UTAH 84070.2. VIDEO INSPECTION, AIR TESTS, VACUUM TESTS OF MANHOLES AND DEFLECTION TESTS SHALL BE PERFORMED ON ALL INSTALLED SEWER IMPROVEMENTS PRIOR TO FINAL ACCEPTANCE. ADDITIONAL TESTS MAY BE REQUIRED BY THE DISTRICT ENGINEER OR INSPECTOR. DEFECTS DESIGNATED BY THE DISTRICT ENGINEER OR INSPECTOR SHALL BE REPAIRED AT NO COST TO THE DISTRICT PRIOR TO ACCEPTANCE OF THE SEWER IMPROVEMENTS.

Plans submitted without the above note will not be accepted.

2.1.4. RECORD DRAWINGS:

Note: Field data shall be submitted to the District by the Developer. The District Engineer will prepare the final As-Constructed drawing.

One (1) set of "Field" drawings shall be submitted to Sandy Suburban Improvement District. The requirements for "Record" drawings shall include:

- A. Lateral stationing or relation to lot lines shall be indicated.
- B. Invert elevations shall be verified. Changes in grade and alignment shall be indicated..
- C. Type of pipe installed shall be indicated.
- D. The location of "Record" sewer lines within easements or platted ROW's shall be reviewed and verified by the District Engineer. If revised easements are required, a signed copy of easements shall be submitted with the "Record Drawings".
- E. Location/Stationing information for manholes shall include NAD 1983 Utah Central Zone state plane coordinates.

2.2 DESIGN CRITERIA:

2.2.1 DESIGN REGULATIONS:

- A. All sanitary sewer systems shall be designed to exclude all storm water and water from under drain systems, roofs, streets and other paved areas.
- B. Downspout connections, foundation and basement drains, sumps and storm drain connections shall be prohibited from discharging into the sanitary sewer system.
- C. Each dwelling unit shall be served by an individual lateral. "Stacked" dwelling units may be served otherwise with approval of the Sewer District.

2.2.2 DESIGN PERIOD: The sewer system shall be designed to serve the

estimated ultimate tributary area and shall be based on the best information available, including the Sandy City Master Plan Study, current zoning regulations and approved planning and zoning reports when available.

- 2.2.3 DESIGN CAPACITY: Design average flow shall be estimated at not less than 100 gallons per capita per day, including infiltration at 500 gallons per diameter inch per mile per day. To accommodate peak flows, sewers shall be designed, flowing full, to carry not less than the following contributions:
- A. (1) 4-inch and 6-inch laterals: 400 gallons per capita per day.
(2) 8-inch thru 15-inch sewers: 400 gallons per capita per day.
(3) Larger than 15-inch sewers: 250 gallons per capita per day.
 - B. Flow from commercial, municipal and industrial connections.
 - C. Additional ground water infiltration, if applicable.
- 2.2.4 ALTERNATE METHODS OF DESIGN: If use is made of methods of sewer design other than those described above, a complete description of methods used shall be presented to the District for approval.
- 2.2.5 SEWER SIZES: All public sewers shall be 8 inches in diameter or larger .
- 2.2.6 SEWER DEPTH: Sewers shall be placed deep enough to serve all basements, assuming a 2% grade on house sewers. They shall be well below frost line at all points and also lower than any water lines placed in the same street. Minimum cover shall be 36 inches from the top of the pipe. Sewers at depths greater than 16 feet shall be given special design considerations.
- 2.2.7 SEWER SLOPES: All sewers shall be designed and constructed to mean flow velocities, when flowing full, of not less than 2.0 feet per second, based on Kutter's formula using an "n" value of 0.013. The following are the minimum slopes which shall be provided; however, slopes greater than these are desirable, especially in the upper reaches of sewer systems:

<u>Sewer Size</u>	<u>Minimum Slope in Feet Per 100 Feet</u>
8"	0.40
10"	0.28
12"	0.22
14"	0.17
15"	0.15
16"	0.14
18"	0.12
21"	0.10
24"	0.08

Sewers on slopes 3:1 (33.3%) or steeper shall be anchored immediately downstream from bells with concrete anchors or approved equal as follows:

- A. Not over 24 feet center to center on slopes 3: 1 to 2: 1 (33.3% to 50%).
- B. Not over 16 feet center to center on slopes steeper than 2:1 (50%).

2.2.8 SEWER ALIGNMENT:

- A. Sewers shall be designed on straight alignment between manholes.
- B. Sewer lines shall not be designed to run parallel to and within 5 feet either side of the curb and gutter, storm drain or other buried lines. Special cases and variances to the standard may be approved upon recommendation by the District Engineer.
- C. Sewer lines shall not connect at an angle greater than 90 degrees from upstream line.

2.2.9 PIPE TRANSITIONS: At manholes, where sewer diameters change, the flow energy gradient shall be continuous. The 0.8 depth point of the two sewers shall be placed at the same elevation, with proper allowance for any manhole headloss, or as required to provide proper flow.

2.2.10 MANHOLES:

2.2.10.1 LOCATION:

- A. Manholes shall be installed at the end of each line,

at all changes in pipe size, or changes in alignment or grade; and at intervals not to exceed 400 feet without District approval.

- B. Manholes shall be provided at street intersections.
- C. Watertight, seal-down covers shall be provided in areas subject to flooding.
- D. Manholes shall not be positioned in waterways, such as gutters.
- E. Manholes shall not be placed within 10 feet of storm drain, catch basins or in low points where catch basins are located.

2.2.10.2 INVERTS: Flow channels through manholes shall be shaped to conform to cross-sections and slopes of connecting sewers. Floors and channels shall be shaped such that television camera access will not be impeded. The minimum drop through manholes shall be 0.2 feet if an alignment change of more than 45 degrees is designed.

2.2.10.3 DROP CONNECTIONS shall be used whenever the elevation difference between the flow lines of the inflow pipe and the outflow pipe exceeds 18 inches. All drop connections shall conform to the Standard Detail Drawings for "Outside Drop Manholes".

2.2.10.4 DIAMETERS: Manhole diameters shall be at least 48 inches. Manholes on sewer lines 15 inches and greater, where more than two lines connect to a manhole, where the deflection is greater than 45*, or the manhole depth is greater than 16 feet shall be 60 inches in diameter or larger.

2.2.10.5 SHALLOW MANHOLES: Shallow manholes may only be used for depths less than 6 feet. See Standard Detail Drawing.

2.2.11 CLEANOUTS: Cleanouts shall not be used as an alternative to manholes on sewer lines 8 inches in diameter and greater and shall only be used when approved, in writing, by the District .

2.2.12 PROTECTION OF WATER SUPPLIES: It is generally recognized that sewers and appurtenances must be kept remote from public water supply wells and other water supply sources and structures. The following specific requirements shall be observed at all times:

- A. There shall be no physical connection between a public or private potable water supply system and a sewer, or appurtenances thereto, which could permit the passage of any wastewater or polluted water into the potable supply.
- B. Sewers shall be laid at least 10 feet horizontally from any existing or proposed water main. The distance shall be measured from edge to edge of pipe.
- C. Where the 10 foot separation stated above is not achieved, the water line shall be located above the sewer either in a separate trench, or on a bench of undisturbed earth with at least 18 inches of vertical depth between the two lines and with a horizontal separation of 5 feet, except as specified in paragraph "D" below.
- D. Where sewer and water mains must cross and the vertical separation mentioned above is not possible, both mains should be constructed of mechanical-joint ductile iron pipe, or equivalent for a distance of at least 10 feet on either side of the point of crossing.
- E. The above requirements shall apply to building sewers and water service lines to buildings.

2.2.13 EASEMENTS:

- A. Easements shall be required on all public sewers not located in dedicated roadways.
- B. All easements shall be 20 feet wide minimum.
- C. Easements shall extend 10 feet beyond the last manhole on a line.
- D. When a sewer is located in an easement, not abutting a street right of way, access easements shall be provided.
- E. Signed easements shall be submitted to the District along with Final Design Plans.

- F. All easements shall be reviewed by District Engineer.
- G. Existing or proposed structures shall not encroach on the easement area.
- H. Easements shall be centered over the sewer pipe

2.2.14 WASTEWATER PUMPING STATIONS: Use of wastewater pumping stations shall be avoided whenever possible. Pumping stations are subject to approval and review by the Board of Trustees and the District Engineer.

2.2.15 BORINGS:

- A. Borings shall be designed and constructed in accordance with the applicable City, County, State, Federal, and Railroad Standards, permits, and/or as designated on Approved Plans.
- B. Steel casings for bored construction shall be steel pipe conforming to ASTM A-53 Grade B. Minimum wall thickness shall be in accordance with the following and have a minimum yield stress of 42,000 psi:

Diameter of Casing Inches	Nominal Wall Thickness (Inches)	
	Under Railroads	All Other Uses
Over 12"- 22"	0.375	0.375
Over 22"- 28"	0.438	0.375
Over 28"- 34"	0.500	0.375
Over 34"- 42"	0.562	0.500
Over 42"- 48"	0.625	0.562

- C. Casings under interstates shall extend from right of way to right of way and be designed for the height of fill material.
- D. Casing material, size, length, and invert elevations shall be shown on Final Design Plans.
- E. Sewer pipe material shall be shown on Final Design Plans.
- F. Use redwood skids throughout the length of the pipe, tied at every pipe diameter length, to brace pipe installed in casing to prevent shifting or flotation during backfilling of annular ring between the casing and carrier pipe.

- G. The annular space between the casing and sewer pipe shall be filled with sand, "pea" gravel, or Portland Cement grout.
- H. The ends of the casing shall be sealed and watertight as specified on Final Approved Design Plans.
- I. Install pipe barrels to rest upon support blocks with the pipe barrels clearing the casing invert by at least 1/2".
- J. The bored portion of the sewer should be completed before construction of the adjacent portions to allow for discrepancies in alignment and grade which may occur during the boring operation.

2.2.16 PREVENTION OF GROUNDWATER MIGRATION: The Engineer shall consider methods to prevent the continuous migration of groundwater along the trench lines.

3. MATERIAL REQUIREMENTS:

3.1 GENERAL: Unless specifically designated otherwise in each case, all materials and equipment furnished for permanent installation in the work shall conform to applicable standard specifications and shall be new, unused and undamaged when installed or otherwise incorporated in the work. No material shall be used by the Contractor for any purpose other than that intended or specified. All materials not conforming to these specifications shall be specifically approved in writing by the District Engineer prior to delivery to the job site.

Any material or equipment found by the Inspector not conforming to District Standards and Specifications is subject to rejection.

3.2 SEWER PIPE:

3.2.1 VITRIFIED CLAY SEWER PIPE:

3.2.1.1 FITTINGS: Pipe and fitting shall conform to ASTM C-700 Extra Strength for sizes 18 inch diameter and smaller. Pipe and fittings 21 inch diameter and larger shall conform to ASTM C-700, Extra Strength or Standard Strength.

3.2.1.2 JOINTS: All joints shall be of bell and spigot design. Flexible gasketed joints shall be polyurethane conforming to ASTM C-425.

3.2.2 CONCRETE SEWER PIPE:

3.2.2.1 MATERIALS: All concrete pipes shall be made of acid resistant material such as concrete including Xypex C-500. When considering Xypex, the admixture must be applied at 3% dosage during the casting of the pipe and not brushed or sprayed on after the pipe has been cured. All grouting material must be acid resistant. Other admixtures or acid resistant mix designs may only be used with approval of the District Engineer.

3.2.2.2 NON-REINFORCED CONCRETE PIPE:

- A. Shall be Class 3 non-reinforced concrete sewer pipe conforming to ASTM C-14.
- B. Joints shall be of the bell and spigot, compression type rubber gasket design conforming to ASTM C-443.

3.2.2.3 REINFORCED CONCRETE PIPE:

- A. Shall be used for sanitary sewers 18 inches in diameter and larger.
- B. Shall be Class II, minimum, reinforced concrete sewer pipe conforming to ASTM C-76. Reinforcement shall be circular.
- C. Joints shall be of the bell and spigot, compression type rubber gasket design conforming to ASTM C-443.

3.2.3 DUCTILE IRON SEWER PIPE:

3.2.3.1 DUCTILE IRON PIPE: Shall conform to AWWA Specifications C-151 Class 350, ASA Specifications A21.51 Ductile Iron Pipe. Cement-mortar or bituminous lining shall be specified on the Approved Plans.

3.2.3.2 FITTINGS: Shall be ductile iron and conform to AWWA C-110 (ANSI A21.10). Fittings shall be consistent with the specified pipe.

3.2.3.3 JOINTS: All joints shall be mechanical type conforming to the dimensions and weights specified in ASA A21.11 (AWWA C-111).

3.2.4 POLYVINYL CHLORIDE (PVC) PIPE:

3.2.4.1 MATERIALS: All PVC sewer pipe shall be made from PVC plastic conforming to ASTM D-1784, Class 12454-B or 12454-C.

3.2.4.2 POLYVINYL CHLORIDE (PVC) SEWER PIPE: PVC sewer pipe will be permitted for installation up to 27-inch diameter and shall conform to ASTM D-3034. Minimum wall thickness shall be SDR-35 for pipe sizes 4” through 15” and ASTM F-679 PS-46 for pipe sizes 18” through 27”. Pipe lengths shall not be greater than 12 feet. Joints shall be bell and spigot type with integral bell gasketed joints.

ASTM F679 PS-46	
Diameter (in)	Min. Thickness (in)
18	0.499
21	0.588
24	0.661
27	0.745

3.2.4.3 JOINTS: Joints shall be bell and spigot compression type with flexible elastometric seals conforming to the requirements of ASTM 3212.

3.2.4.4 FITTINGS: All fittings shall conform to ASTM D-2241. The strength class shall not be less than the strength class of any adjoining pipe.

3.2.4.5 LOW HEAD PRESSURE PVC SEWER PIPE: Shall conform to AWWA C-900. Minimum wall thickness shall be DR-18 or Pressure Class 150. Joints shall be bell and spigot type with integral bell gasketed joints.

3.2.4.6 INSTALLATION: The pipe shall be installed in accordance with the requirements of ASTM D-2321, as specified herein and as shown on the "Pipe Installation Detail" contained herein.

3.2.5 HIGH DENSITY POLYETHYLENE (HDPE) SEWER PIPE:

3.2.5.1 MATERIALS: Polyethylene code designation PE 3408 as rated in ASTM F 714 with minimum ASTM D 3350-02 cell classification of PE 345464E (Gray) and a minimum SDR of 17

3.2.5.2 HIGH DENSITY POLYETHYLENE PIPE: The minimum wall thickness is usually a function of the application.

Pipe bursting = DR 17

Direct burial = DR 17 to DR 11 depending upon application and depth

Directional drilling = Short pulls DR 17, long pulls DR 11 or DR 9

Sliplining = DR 17

3.2.5.3 FITTINGS: Fittings shall be made from HDPE resin that has a cell classification of 345464E (gray). Molded fittings shall conform to ASTM D 3261-97. Electrofusion fittings shall conform to ASTM F 1055

3.2.5.4 JOINTS: Fittings must have the same pressure rating as the pipe. All fittings must be butt fusion fittings.

A. Thermally welded butt fusion per ASTM D 3261 or plastic pipe institutes (ppi) TR-33.

B. Flanged per ASTM D 2657, only with prior approval of District.

3.2.5.5 INSTALLATION: All gravity pipelines will be installed in accordance with ASTM D 2321.

3.2.5.6 TRANSITIONS: Transitions between HDPE and other

materials shall only be made at manholes, with the exception of service laterals.

3.3 MANHOLES:

3.3.1 GENERAL: Manholes shall be water tight, precast reinforced concrete manholes or cast in place concrete bases with precast reinforced concrete sections. All manholes shall be made of acid resistant material such as concrete including Xypex C-500. When considering Xypex, the admixture must be applied at 3% dosage during the casting of the pipe and not brushed or sprayed on after the pipe has been cured. All grouting material must be acid resistant. Other admixtures or acid resistant mix designs may only be used with approval of the District Engineer. Monolithic concrete manholes may be allowed subject to the approval of the District.

3.3.2 PRECAST REINFORCED CONCRETE MANHOLE: Manholes shall conform to ASTM C-478 and the Standard Detail Drawing for "Precast Manholes". Precast base sections shall include a base riser section with integral floor and shall be supplied with a flexible pipe connector conforming to ASTM C-923. Precast reinforced concrete cone sections shall be of the ECCENTRIC type.

All manholes shall have precast reinforced concrete cone sections of the ECCENTRIC type.

All joints and lift holes shall be sealed with non-shrinking grout or a continuous bead of bituminastic material. In wet areas both sides of the joint shall be grouted.

3.3.3 CAST IN PLACE CONCRETE MANHOLES: Cast in place bases shall have a 28-day minimum compressive strength of 4000 psi and containing not less than 6-1/2 bags of Type V cement per cubic yard and shall conform with the Standard Specification for Portland Cement ASTM C-150.

Cast in place bases over live main lines shall have a 24-hour cure period before stacking sections on the poured base.

Wall, cone section and risers shall be precast reinforced concrete conforming to ASTM C- 478 and the Standard Detail Drawing for "Cast in Place Manholes". Precast reinforced concrete cone sections shall be of the ECCENTRIC type.

All joints and lift holes shall be sealed with non-shrinking grout or a continuous bead of bituminastic material. In wet areas both sides of the joint shall be grouted.

All manholes cast in place, shall have precast reinforced concrete cone sections of the ECCENTRIC type.

- 3.3.4 MANHOLE CASTINGS: All castings shall be cast iron rings and covers conforming to ASTM A-48 Class 30. Castings shall be cleaned and painted with an asphalt coating prior to delivery to the site. All castings shall have a combined minimum weight of 400 pounds with the cover approximately 150 pounds and the ring approximately 250 pounds. The foundry name and casting number shall appear on the casting.

Covers shall be in accordance with the following:

- A. USA Foundries ONLY.
- B. Covers shall be 24-7/8 inches in diameter.
- C. Covers shall be vented with a pick notch on the side.
- D. All covers shall be marked "SANDY SUBURBAN SEWER"
- E. Watertight seal down covers shall be of the gasket and bolt down type, with countersunk, hexagonal bolts.

- 3.3.5 MANHOLE STEPS: Required steps shall be reinforced fiberglass or plastic manhole steps.

4. CONSTRUCTION REQUIREMENTS:

4.1 GENERAL:

- 4.1.1 MATERIAL HANDLING: All sewer pipe, manhole sections, castings and appurtenances shall be transported, handled and stored in a manner which will insure proper installation in an undamaged condition. The Contractor shall replace all material found to be defective or which has been damaged. This includes the replacement of material found to be defective prior to expiration of the guarantee period.

- 4.1.2 INSPECTION: All work and materials, from the beginning of the

construction until the completion and acceptance of the proposed project shall be subject to inspection by Sandy Suburban Improvement District or its authorized representative, at their convenience. The Inspector shall have access to the work at all times. Any work found by the Inspection not conforming with Approved Plans and/or these District "Standards and Specifications" is subject to rejection.

The Contractor shall notify the District 48 hours prior to the start of construction.

4.2 TRENCH EXCAVATION:

4.2.1 GENERAL: The work included under "Trench Excavation" shall include: every operation necessary for excavation of all materials of whatever nature within the designated limits of the trenches, maintaining the excavation by shoring, bracing or other accepted methods, and its removal; providing for the uninterrupted flow of surface water or sewage during construction; and protecting all pipes, conduits, culverts, bridges and all other public and private property which may be endangered by the work.

4.2.2 TRENCHING:

4.2.2.1 ALIGNMENT: Trench excavation for pipe installation shall be performed to the alignment and grade as indicated on the plans or as required by the Engineer.

4.2.2.2 TUNNELING: Tunneling may be permitted by the Engineer for economy of construction or necessity or preserving existing improvements.

4.2.2.3 PAVEMENT REMOVAL: All pavement removal shall be in accordance with the applicable City, County or State Standards and permits.

4.2.2.4 TRENCH WIDTH: Trenches shall be excavated to a width which will provide adequate working space for proper pipe installation, jointing and embedment. Minimum sidewall clearance shall be 6 inches and the maximum sidewall clearance shall be 12 inches, measured from the outside wall of the installed pipe at a depth of 12 inches above the pipe.

- 4.2.2.5 LIMITATION OF EXCAVATION: Except by expressed written permission of the District Inspector, the maximum length of open trench shall be the distance necessary to accommodate the amount of pipe installed in a single day (including open excavation, pipe laying and appurtenances, construction and backfill which has not been temporarily resurfaced).
- 4.2.2.6 TRENCHING BY MACHINE OR BY HAND: The use of mechanical equipment will be permitted except in places where machines may cause damage to existing structures above or below ground, in which case, hand methods shall be employed.
- 4.2.2.7 STRUCTURE PROTECTION: The Contractor shall provide temporary support, adequate protection, and maintenance of all underground and surface structures, pipes, drains, sewers and other obstructions affected by the construction work. Any structures that have been disturbed shall be restored or replaced.
- 4.2.3 DEWATERING: All excavation shall be dewatered before any construction is undertaken therein. Concrete shall be placed only upon dry, firm foundation material and pipe shall be laid only in dry trenches.
- 4.2.4 BLASTING: The Contractor's responsibility with respect to the use of explosives during blasting includes compliance with all laws, rules and regulations of the Federal, State, City and the insurer, governing the keeping, storage, use, manufacture, sale, handling, transportation or other distribution of explosives. All explosives shall be conducted with every precaution by trained, reliable workers under satisfactory supervision. Blasts shall not be fired until all persons in the vicinity have had ample notice and have reached positions out of danger therefrom. The Contractor shall advise the District, all utility companies, the Sandy City Public Works Department, Sandy City Police, the Salt Lake County Public Works Department and the Salt Lake County Sheriff's Department in advance as to when and where charges are to be set off.
- 4.2.5 SAFETY:
- A. Excavations shall be performed, protected and supported as required for safety and in the manner set in the Chapter, "Excavations, Trenching and Shoring" of the Utah Occupational

Safety and Health Standard for Construction. Additional precautions shall be implemented if deemed necessary by the District Safety Coordinator and shall be at the expense of the Contractor.

- B. The Contractor shall furnish and maintain all necessary safety equipment, such as barrier, signs, warning lights and guards to provide adequate protection for persons and property during all phases of construction.
- C. The Contractor shall give reasonable notice to the owners of public and private property and utilities when such property and utilities are within the construction area.
- D. The Contractor shall at all times observe and comply with all Federal, State and local laws, ordinances and regulations which will in any manner affect the work.

4.3 PIPE EMBEDMENT:

4.3.1 GENERAL: The pipe shall be carefully bedded as specified on Approved Plans and/or shall meet the requirements of these District "Standards and Specifications".

4.3.2 RIGID PIPE:

4.3.2.1 UNSUITABLE SUBGRADE: Whenever unsuitable subgrade material is encountered, bedding material, one fourth the diameter of pipe (6 inches minimum) in depth, shall be required. This material shall be 1/4" to 1" clean, angular rock. This same material shall be used for haunching. Haunching shall be placed to the spring line of the pipe. Selected backfill material consisting of earth or sand, free of stones, larger than 1 inch, hard clods, frozen material or other debris shall be placed in the trench simultaneously on each side of the pipe for the full width of the trench in such a manner as not to damage or disturb the pipe. The density of backfilled material shall be ninety-five percent (95%) of maximum density determined by the compaction control test specified in AASHTO T-180 and verified by AASHTO T-238 or AASHTO T-191.

4.3.3 FLEXIBLE PIPE: Bedding material, one-fourth the diameter of the pipe

(8 inches minimum) shall be required. This material shall be 1/4 " to 1" clean, angular rock. This same material shall be used for haunching and a minimum of (1) one foot above the pipe. Haunching shall be placed to the spring line of the pipe. Selected backfill material consisting of earth or sand, free of stones larger than 1 inch, hard clods, frozen material or other debris shall be placed in the trench simultaneously on each side of the pipe for the full width of the trench in such a manner as not to damage or disturb the pipe. The density of backfilled material shall be ninety-five percent (95%) of maximum density determined by the compaction control test specified in AASHTO T-180 and verified by AASHTO T-238 or AASHTO T-191.

Requirement for bedding and haunching material may be altered with the approval of the District Engineer.

4.4 PIPE INSTALLATION:

4.4.1 GENERAL: This section covers the installation of all sanitary sewer pipe, fittings, manholes and appurtenances. No connection to existing structures shall be made without approval of the District.

4.4.2 PIPE LAYING: All work shall be in accordance with the following related standards and these specifications.

4.4.2.1 VITRIFIED CLAY SEWER PIPE: ASTM C-12 "Standard Recommended Practice for Installing Vitrified Clay Sewer Pipe".

4.4.2.2 CONCRETE SEWER PIPE: As per manufacturer's recommendations for pipe installations.

4.4.2.3 DUCTILE IRON PIPE: AWWA C-600 "Installation of Gray and Ductile Cast-Iron Water Mains and Appurtenances".

4.4.2.4 PVC SEWER PIPE: ASTM D-2321 "Standard Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe". ASTM D-2855 "Standard Recommended Practice for Making Solvent-Cement Joints with PVC Pipe and Fittings".

4.4.2.5 GENERAL REQUIREMENTS:

- A. Piping shall be laid between manholes to the alignment and grades indicated on approved construction drawings within the following limits provided that such variation does not result in a level or reverse grade:

Alignment	Not greater than 0.25 feet
Grade	0.10 feet

- B. Install pipe of size, material, strength, class and joint type with embedment as shown on the Approved Construction Plans and/or conforming to the Sandy Suburban Improvement District "Standards and Specifications".
- C. Pipe shall be laid in a straight line to a uniform grade between manholes.
- D. Pipe laying shall begin at the lowest elevation and proceed upstream with the bell end of the bell and spigot pipe positioned upstream.
- E. The interior of all pipe and fittings shall be thoroughly cleaned before installation and shall be kept clean until the work has been accepted.
- F. Pipe shall not be laid in water nor under unsuitable weather or trench conditions.
- G. All field cuts shall be made at right angles to the axis of the pipe. All pipe shall be filed to remove roughness.
- H. All connections between two piping materials or between two field cuts of the same material shall be made with adapters designed and intended for that specific purpose.
- I. All joint preparation and jointing operations shall comply with the recommendation of the pipe manufacturer.

- J. Whenever pipe laying is stopped, the open end of the pipe shall be plugged with a watertight plug and the trench shall be properly backfilled to protect the pipe from floating.
- K. If adjustment of position of a pipe length is required after being laid, it shall be removed and rejoined.
- L. Any pipe that has floated shall be removed from the trench and the pipe shall be relaid as directed by the District Inspector.
- M. In addition to the above general requirements, all pipe installation shall comply with the specific requirements of the pipe manufacturer.

4.5 TRENCH BACKFILL:

- 4.5.1 GENERAL: The work included under "trench backfill" shall include every operation above the pipe embedment zone.
- 4.5.2 BACKFILLING: All backfilling shall be in accordance with the applicable City, County or State Standards, permits, and/or as designed on the Approved Plans.
- 4.5.3 PAVEMENT REPLACEMENT: All pavement replacement shall be in accordance with the applicable City, County or State Standards, permits and/or as designated on Approved Plans.

4.6 MANHOLES:

- 4.6.1 GENERAL: Manholes shall be constructed at the locations indicated and in accordance with details as shown on the Approved Plans and/or Standard Detail Drawings.
- 4.6.2 SUBGRADE: Manholes are to be constructed on a stable foundation capable of supporting the loads imposed.
- 4.6.3 MANHOLE BASE:

4.6.3.1 CAST IN PLACE BASES:

- A. The base shall be a continuous pour of concrete.

- B. Cast in place bases shall be at least 12 inches in thickness below the invert and shall extend at least 12 inches radially outside of the outside dimensions of the pre-cast manhole wall section. The base shall extend at least 12 inches above the bottom of the wall section on the outside of the wall section.
- C. The initial pre-cast wall section shall be supported on concrete blocks and adjusted to proper alignment and grade prior to pouring of the base.
- D. The pre-cast wall section shall not bear directly on any of the pipes.

4.6.3.2 PRE-CAST BASE SECTIONS: Pre-cast base sections shall be placed so as to be fully and uniformly supported in proper alignment.

4.6.4 INVERTS: All inverts, pre-cast bases, cast in place bases or connections to existing manholes shall meet the following requirements:

- A. Invert channels shall be smooth with a uniform grade, from inflow to outflow pipe flow lines.
- B. Minimum drop through manholes shall be 0.2 feet at alignment changes of 45 degrees or greater.
- C. Changes in flow direction shall be smooth, uniform and made with the longest radius possible.
- D. The cross sectional shape of the invert channels shall match the lower halves of the inflow and outflow pipes.
- E. All openings around pipes shall be grouted to form a permanent watertight seal such as with grout.
- F. The pipe shall protrude into the manhole a maximum of 4 inches.
- G. Floors and channels shall be shaped such that television camera access will not be impeded.
- H. The maximum allowable riser adjustment, by use of grade rings,

shall be 18 inches.

- 4.6.5 WALL SECTIONS: Pre-cast section shall be placed and aligned to provide vertical sides.
- 4.6.6 JOINTS: All joints between sections, grade rings and castings shall be sealed with a continuous bead of watertight bituminous material or non-shrinking grout. All manholes shall have joints and lit holes grouted on the outside of the manhole in addition to standard sealing procedures.
- 4.6.7 BACKFILLING: Backfill according to Section 4.5.2.
- 4.6.8 PLACING CASTINGS:
 - 4.6.8.1 IN ROADWAYS: Top of castings shall be set parallel to finished road surface. Castings shall be fully and uniformly supported. Wedges or shims used to elevate castings shall be metal with concrete placed for uniform concrete collar, 9 inches wide maximum, or an asphalt hot-mix to match existing paving.
 - 4.6.8.2 OFF ROADWAYS: All manholes shall be set to the grade shown on Approved Plans or as directed by the District Inspector.
- 4.6.9 STUBS: All stubs shall be plugged with watertight plugs at the end of pipes outside of the manhole.
- 4.6.10 OVER EXISTING SEWERS: Manholes to be built on an existing sewer shall be constructed in such a manner as will not to disrupt the service of the existing sewer. The manhole walls and invert shall be completed before the top half of the sewer pipe is cut or broken away. Any of rough edges of the pipe exposed shall be grouted in such a manner as to produce a smooth and acceptable finish. Any portion of the existing sewer damaged shall be repaired or replaced by the Contractor at no additional costs to the District. The manhole bases shall be cast in place construction from the provisions of section 3.3.3 only. The contractor shall give the District Engineer specific written notice of any and each variation proposed. Pre-cast bases over existing sewers shall only be authorized by written approval from the District in response to a specific written notice of variation.

4.6.11 PROTECTION DURING CONSTRUCTION: A plywood bottom or Brandt plugs shall be placed in manholes during construction to prevent debris from entering sewer lines.

4.6.12 DROP MANHOLES: Drop manhole connections, as indicated on Approved Plans or as required whenever the elevation differences between the flow lines of the inflow pipe and the outflow pipe exceed 18 inches, shall conform to the Standard Detail Drawings for "Drop Manhole" or Approved Plans. All drop manholes shall be constructed with an outside drop unless specifically authorized by the District Engineer. Drop manholes will only be allowed where determined necessary due to conflicts with other utilities.

4.7 ACCEPTANCE TESTS:

4.7.1 GENERAL: Visual inspection, air tests, vacuum test of manholes and deflection tests shall be performed on all installed sewer lines prior to acceptance. Additional tests may be required by the District Engineer or Inspector. Defects designated by the District Engineer or Inspector shall be repaired prior to acceptance of the sewer lines.

4.7.2 VISUAL INSPECTION: If a crack is found in a manhole cone or section which defect extends the entire height of the section, the Contractor shall expose the exterior of the section at no additional costs to the district. If the crack is detectable on the manhole exterior, and/or exceeds the ASTM standards for width and depth, the section shall be replaced by the Contractor at no additional costs to the District. If the crack is not detectable on the manhole exterior and does not exceed the ASTM width and depth standards, the crack shall be repaired prior to acceptance by the District or release of Bonds.

4.7.2.1 PUBLIC SEWER LINE: Each section of sewer line between manholes shall be straight and uniformly graded with no damaged pipe, misaligned or displaced joints, or other defects. All sections of pipe shall be free of dirt, debris and obstructions. The Contractor shall furnish suitable assistance to the District Engineer or Inspector.

4.7.2.2 LATERALS: All connections shall be examined by the District Inspector prior to backfilling. All sections of pipe shall be free of dirt, debris and obstructions.

4.7.2.3 LATERAL LOCATIONS: Lateral locations shall be marked with brass lateral markers installed in the curb, directly above each lateral as per the District Inspectors instructions. If curb and gutter is not available at a lateral connection, a brass lateral marker shall be installed in a concrete base located directly above the lateral in accordance with the District Inspectors instructions.

4.7.3 AIR TESTS:

4.7.3.1 REQUIREMENTS: An "Air Test" shall be performed on the full length of each public sewer line installed with the following requirements:

- A. The Contractor shall give the District 48 hours notice of any test to be performed on the system.
- B. All air tests shall be observed by the District Inspector.
- C. Each section tested shall be noted on an "Air Test" form to be submitted to the District. Acceptances, failures, reasons for failure and retests shall be shown on the form.
- D. All sewer pipe shall be tested after the completed backfill.
- E. All air tests are to include laterals when installed in conjunction with the sewer main.
- F. All stubs are to be air tested.
- G. All manholes shall be vacuum tested.
- H. All repairs indicated by any unsuccessful test shall be made and the tests repeated until the successful performance of all tests is achieved.

4.7.3.2 METHOD OF TESTING: The method of "Air Testing" gravity sewer lines and manholes shall be as follows:

- A. Clean test section.

- B. Plug all pipe outlets with suitable test plugs bracing each plug securely if needed.
- C. Raise the internal pressure in the test section 4.0 psig.
- D. After the pressure is reached, allow the pressure to stabilize. This usually takes 2 to 5 minutes, depending on the pipe size.
- E. Disconnect the air supply and allow the test pressure to decrease to no less than 3.5 psig. - Starting pressure may be greater than 3.5 psig.
- F. Determine the time that is required for the internal air pressure to drop from 3.5 psig to 2.5 psig.
- G. If the time period is less than the Minimum Test Time Required (see Table) locate and repair problem and retest.

TABLE I												
SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP												
FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015												
1 Pipe Dia. (in.)	2 Min. Time (min:sec)	3 Length for Min. Time (ft)	4 Time for Longer Length (sec)	Specification Time for Length (L) Shown (min:sec)								
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft	
4	3:46	597	.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24	
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48	
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38	
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04	
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41	
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31	
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33	
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48	
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15	
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53	
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46	

TABLE II												
SPECIFICATION TIME REQUIRED FOR A 0.5 PSIG PRESSURE DROP												
FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015												
1 Pipe Dia. (in.)	2 Min. Time (min:sec)	3 Length for Min. Time (ft)	4 Time for Longer Length (sec)	Specification Time for Length (L) Shown (min:sec)								
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft	
4	1:53	597	.190 L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53
6	2:50	398	.427 L	2:50	2:50	2:50	2:50	2:50	2:50	2:51	3:12	
8	3:47	298	.760 L	3:47	3:47	3:47	3:47	3:48	4:26	5:04	5:42	
10	4:43	239	1.187 L	4:43	4:43	4:43	4:57	5:56	6:55	7:54	8:54	
12	5:40	199	1.709 L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	12:50	
15	7:05	159	2.671 L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02	
18	8:30	133	3.846 L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51	
21	9:55	114	5.235 L	9:55	13:05	17:27	21:49	26:11	30:32	34:54	39:16	
24	11:20	99	6.837 L	11:24	17:57	22:48	28:30	34:11	39:53	45:35	51:17	
27	12:45	88	8.653 L	14:25	21:38	28:51	36:04	43:16	50:30	57:42	64:54	
30	14:10	80	10.683 L	17:48	26:43	35:37	44:31	53:25	62:19	71:13	80:07	
33	15:35	72	12.926 L	21:33	32:19	43:56	53:52	64:38	75:24	86:10	96:57	
36	17:00	66	15.384 L	25:39	38:28	51:17	64:06	76:55	89:44	102:34	115:23	

4.7.4 VACUUM TESTING MANHOLES BY THE NEGATIVE AIR PRESSURE TEST: The procedure for vacuum testing manholes by the negative air pressure test shall be as follows:

- A. All lift holes shall be plugged.
- B. All pipes entering the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manhole.
- C. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations.
- D. A vacuum of 10 inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed and the vacuum pump shut off. The time shall be measured for the vacuum to drop to 9 inches of mercury.
- E. The manhole shall pass if the time for the vacuum reading to drop from 10 inches of mercury to 9 inches of mercury meets or exceeds the values indicated in Table 1 on the following page.
- F. If the manhole fails the initial test, necessary repairs shall be made by an approved method. The manhole shall then be retested until a satisfactory test is obtained.

TABLE I
MINIMUM TEST TIMES FOR VARIOUS MANHOLE DIAMETERS

Depth (ft)	Diameter, inch								
	30	33	36	42	48	54	60	66	72
Time, s									
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	29	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	64	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	98	108	121

4.7.5 TELEVISION INSPECTION: The District, at time of acceptance, final inspection or any time during the warranty period, may photograph or televise the new facilities and notify the Developer of the condition thereof. The Developer shall thereupon immediately make any repairs or corrections required by the District.

4.8 CLEAN-UP: All surplus materials, tools and any temporary structures shall be removed from the construction site by the Contractor. All rubbish, dirt or excess earth from the excavation shall be removed by the Contractor at the earliest possible date and the construction site left clean and acceptable to the District Inspector.

4.9 LATERALS: The following section covers the requirements for lateral connections to the main lines of the Sandy Suburban Improvement District. Any alterations of these specifications shall be approved by the District prior to connection. The District does not own or maintain laterals. All laterals are

owned and maintained by the property owner.

- A. Laterals will be of PVC, ductile iron, concrete, vitrified clay or other material approved by the District.
- B. Laterals shall have a nominal inside diameter of not less than 4 inches nor greater than 6 inches.
- C. Each dwelling unit shall be served by an individual lateral. “Staked” dwelling units may be served otherwise when approved by the District.
- D. Laterals shall be laid at a minimum slope of 1/4 inch per foot (2%).
- E. Laterals should not be located under driveways.
- F. Cleanouts shall be installed at no more than 100 foot intervals for 4” laterals, 100 foot intervals for 6” laterals and at all changes in direction greater than 90 degrees.
- G. In all cases where a lateral is under pressure, the section of lateral from the street right-of-way or easement line to the main sewer line shall be gravity.
- H. Maintenance for the line from the home to the main line shall be the responsibility of the property owner.
- I. Laterals shall conform to these Sandy Suburban Improvement District “Design Standards and Specifications”.

4.9.1 TYPE OF CONNECTION:

- A. In all cases, a manhole shall be used to connect sewer lines 8 inches and larger to existing sewer mains.
- B. The connection of sewer laterals to sewer mains shall be made by installing a “wye” branch, a “saddle” fitting or INSTA TEE made specifically for lateral-sewer main connections. “Saddle” fittings shall be banded securely onto the pipe with stainless steel bands and encased in concrete. The hole cut into the sewer line wall shall be sized to avoid any flow restrictions between the fitting and pipe. “Wye” and “Tee” saddles shall be PVC; any other material must be approved by the District. A District representative must be present to approve the connection, material and installation of any

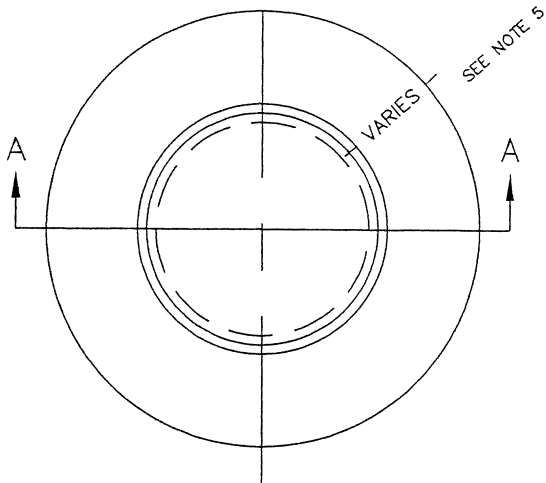
Nose-On.

4.9.2 INSTALLATION: All lateral connections shall be in accordance with these “Sandy Suburban Improvement District Standards and Specifications” and the Standard Detail Drawing for “Typical Service Connection”.

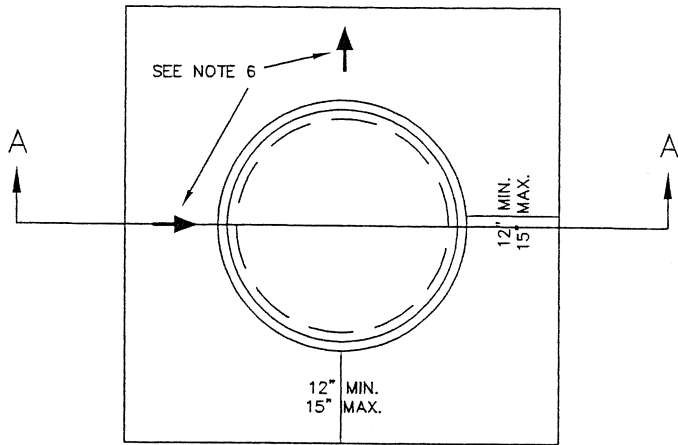
- A. The District shall be notified 24 hours prior to installation of the sewer lateral.
- B. A 4-inch and a 6-inch lateral shall be laid at a minimum slope of 2% and 1% respectively. Variations are to be reviewed by the District Inspector.
- C. All connections shall be left uncovered until inspected by the District Inspector.
- D. Service connections shall be bedded, backfilled and compacted as per pipe specification or as directed by the District Inspector.
- E. All sewer lines shall remain in service while connections are made.
- F. Any damage to existing sewer manholes or lines during connection shall be corrected by the Contractor as directed by the District.
- G. The invert of all sewer laterals at the point of connection shall be at or above the spring line of the sewer line.

4.9.3 CLEANOUTS: Cleanouts shall be installed at property lines, 100 foot intervals and at changes in direction greater than 90 degrees. Cleanout risers shall be the same size as the lateral and shall be connected to wyes in the lateral. Concrete support blocks shall be poured around wyes for cleanouts. Cleanouts shall be in accordance with the Standard Detail Drawings for “Typical Service Connection”.

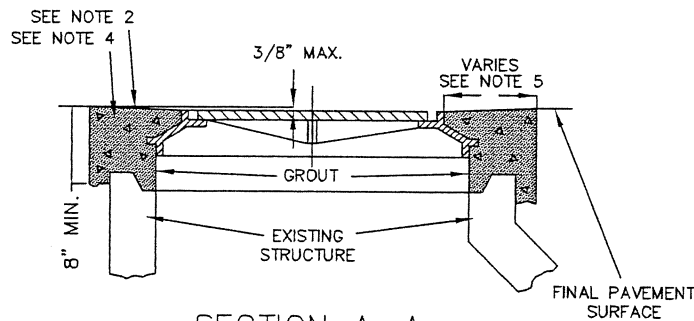
STANDARD
DETAIL
DRAWINGS



SANITARY SEWER MANHOLES
SURVEY MONUMENT BOXES
WATER VALVE BOXES



STORM DRAIN MANHOLES



SECTION A-A

GENERAL NOTES

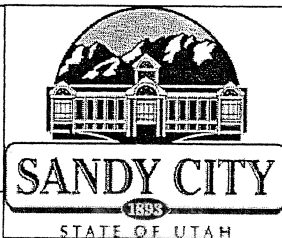
1. ALL MATERIALS REFER TO SANDY CITY SPECIFICATIONS SECTION 02438 - STRUCTURES TO FINISH GRADE.
2. FINISH GRADE OF FRAME AND LID TO BE A MAXIMUM OF 1/8" BELOW NEW STREET PAVING SURFACE AND SHALL MATCH THE NEW TRANSVERSE SLOPE. THE 1/8" MAXIMUM ELEVATION DIFFERENCE SHALL BE DISTRIBUTED GRADUALLY WITHIN THE WIDTH OF THE CONCRETE COLLAR.
3. ANY PART OF THE COLLAR OR STRUCTURE HIGHER THAN THE SURROUNDING SURFACE COURSE AS MEASURED WITH A STRAIGHT EDGE SPANNING THE STRUCTURE WILL BE CAUSE FOR REJECTION REQUIRING COMPLETE REMOVAL AND REPLACEMENT.
4. ALL CONCRETE SHALL BE CLASS AA (AE). SANDY CITY STANDARD SPECIFICATIONS SECTION 03000.
5. CONSTRUCT CONCRETE COLLARS AS FOLLOWS:
 STORM DRAIN MANHOLES - SQUARE - 12" WIDTH
 SANITARY SEWER MANHOLES - ROUND - 12" WIDTH
 WATER VALVE BOXES - ROUND - 8" WIDTH
 SURVEY MONUMENT BOXES - ROUND - 8" WIDTH
 OTHER UTILITY MANHOLES OR VAULTS - CONTACT CITY ENGINEER
6. ETCH OR SCORE AN ARROW IN THE SURFACE OF THE CONCRETE COLLAR INDICATING THE DIRECTION OF FLOW FOR ALL STORM DRAIN PIPES IN MANHOLE.

7. UPON WRITTEN AUTHORIZATION FROM THE CITY ENGINEER, ASPHALTIC CONCRETE MAY BE SUBSTITUTED FOR CLASS AA(AE) CONCRETE ON STREETS WITH A RIGHT OF WAY WIDTH OF 68' OR LESS

ASPHALT COLLAR

1. ASPHALT COLLAR SHALL BE RECYCLED ASPHALT MIX PREPARED ON SITE IN PORTABLE ASPHALT BATCH PLANT.
2. RECYCLED ASPHALT MIX SHALL BE APPLIED AT A TEMPERATURE NOT LESS THAN 200° F. AND COMPACTED TO 98% OF MAXIMUM DENSITY.
3. TACK COAT SHALL BE APPLIED TO ALL SURFACES PRIOR TO PLACING ASPHALT.

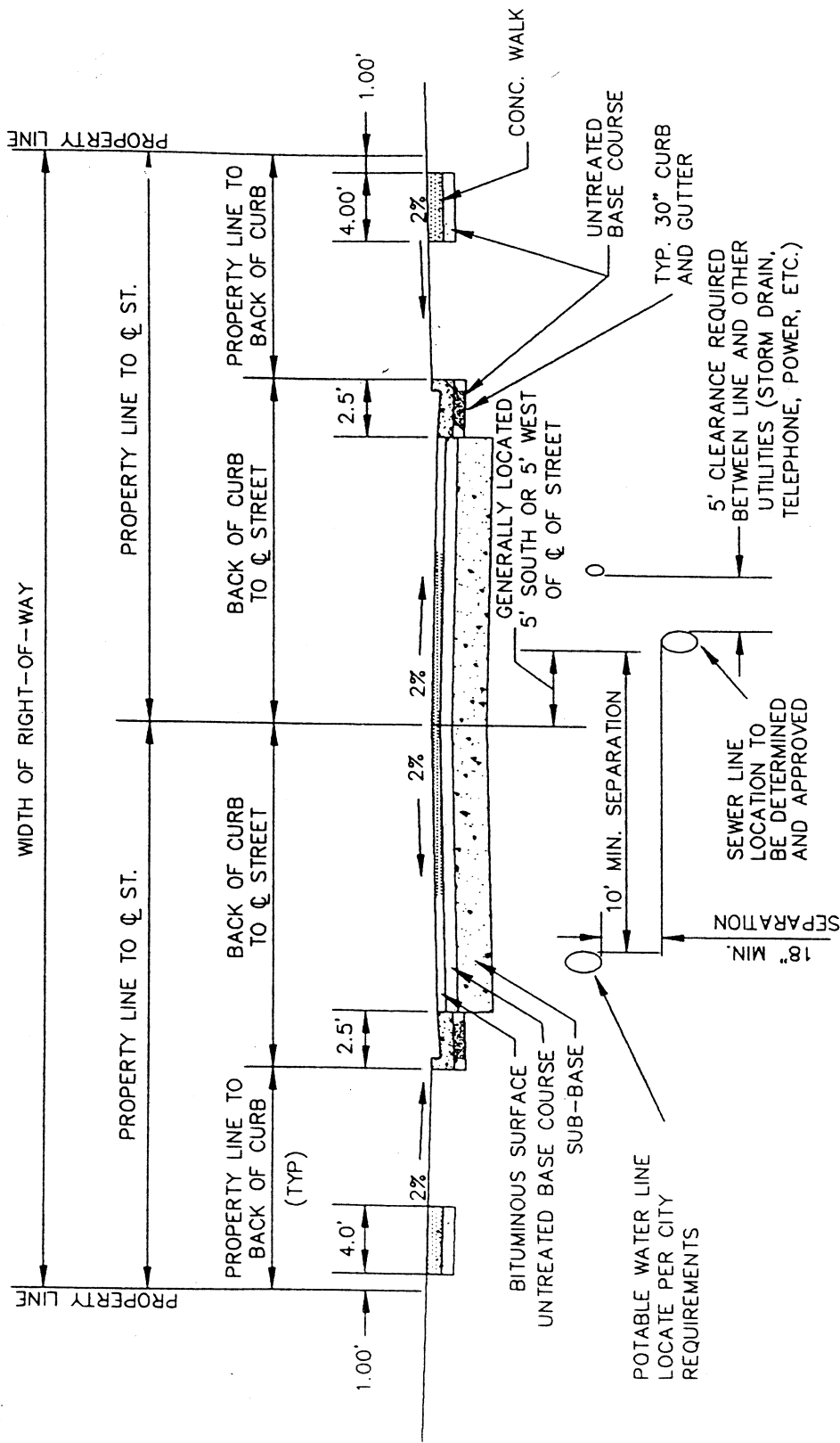
1	JON OLSEN	NOTE 7	6-18-02
2	M. GLADBACH	NOTE 5	3-23-04
3	M. GLADBACH	ASPHALT COLLAR	5-11-06
NO.	AUTHORIZED BY	REVISIONS	DATE



STANDARD DETAIL

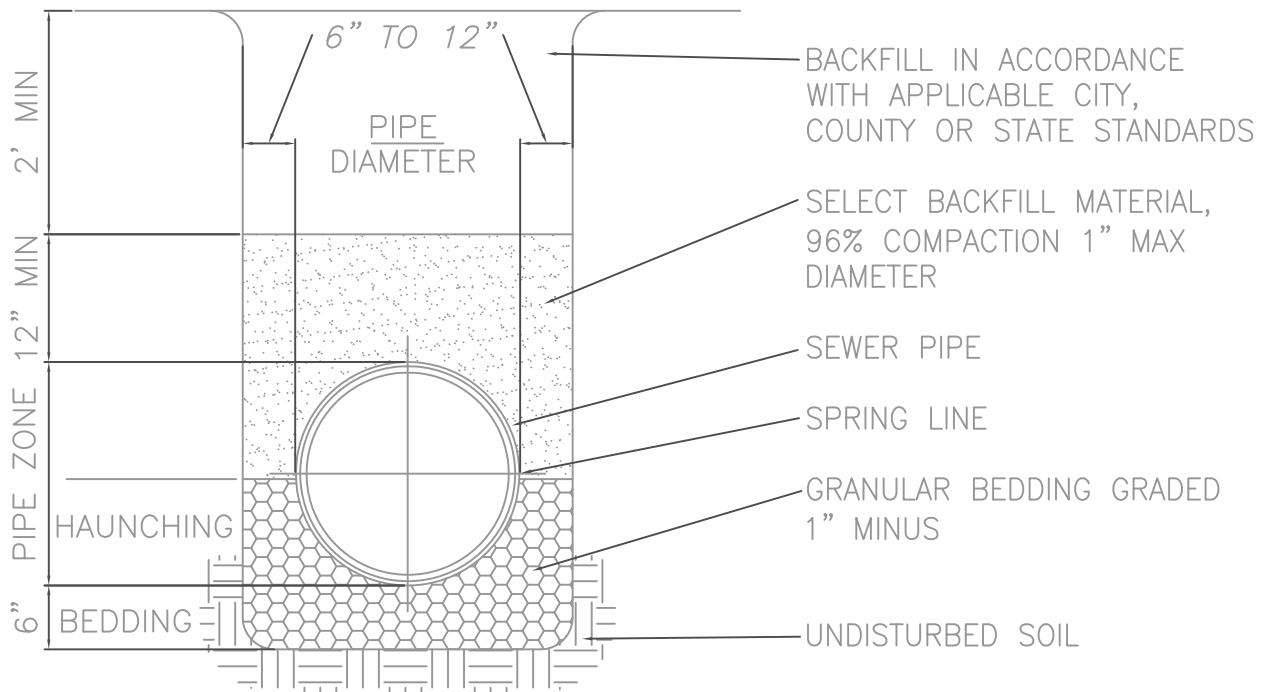
SD-01

STRUCTURES TO
FINISH GRADE



TYPICAL STREET CROSS SECTION

TYPICAL STREET CROSS SECTION FOR
RIGHT OF WAY WITH CURB & GUTTER



GENERAL NOTES

1. SELECT BACKFILL SHALL BE CLEAN PROCESSED MATERIAL FREE FROM ORGANIC MATERIAL, DEBRIS, CLODS OR FROZEN MATERIAL. THE MATERIAL SHALL BE 1" MINUS IN GRADATION.
2. GRANULAR BEDDING GRADED 1" MINUS SHALL BE 1/4" TO 1" CLEAN ANGULAR ROCK.
3. PIPE INSTALLATION DETAIL APPLIES TO FLEXIBLE AND RIGID PIPE
4. FABRIC WRAP (MIRIFI 140N OR EQUAL) SHALL BE USED AROUND BEDDING MATERIAL WHEN REQUIRED BY DISTRICT INSPECTOR.

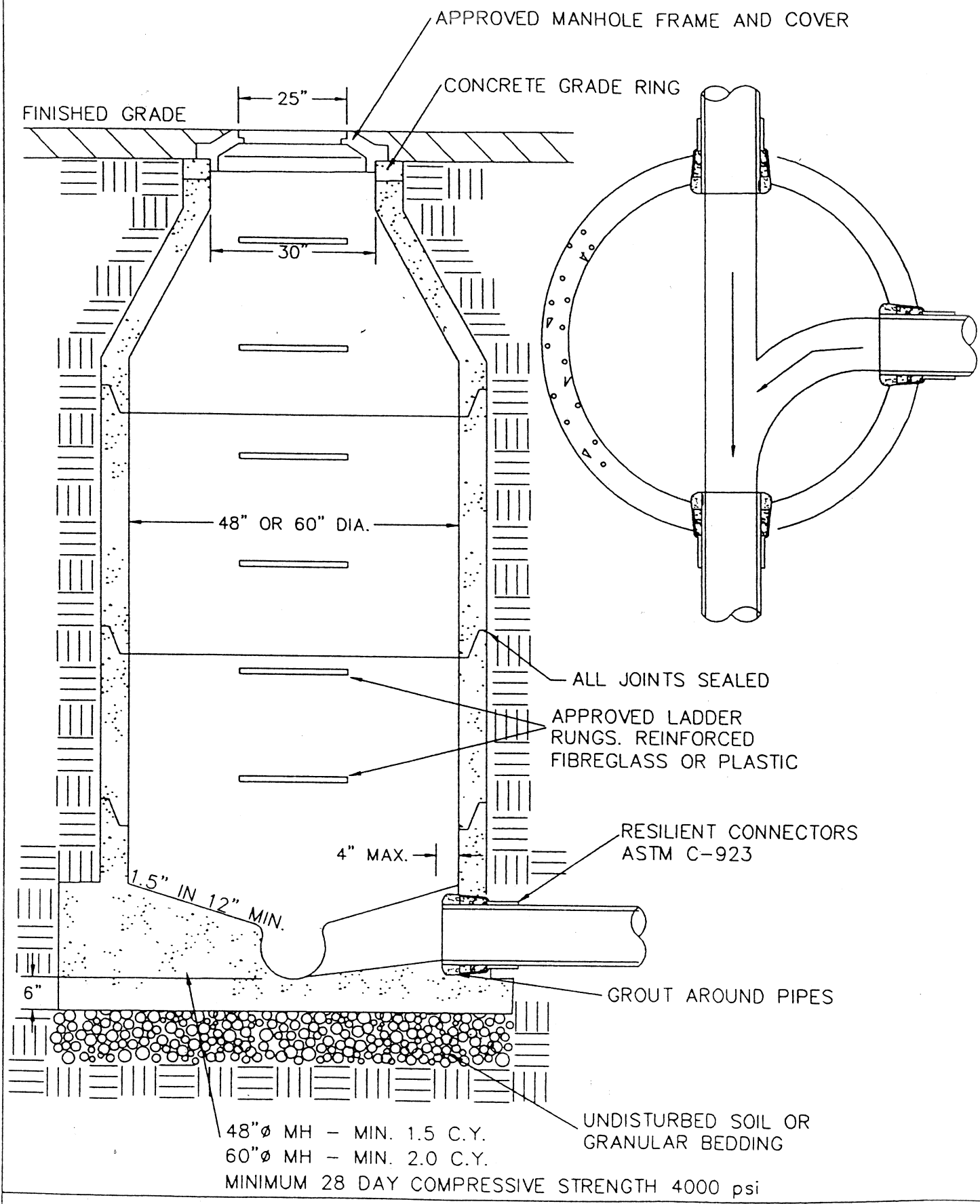
Not to Scale

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1					
NO	DATE	REVISION	BY	CK	APP

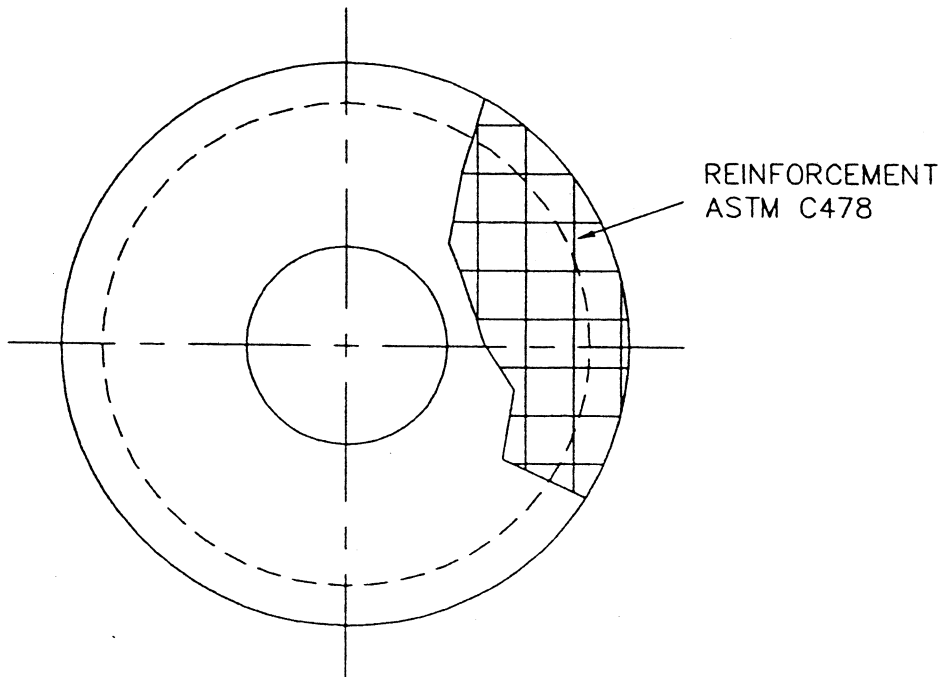
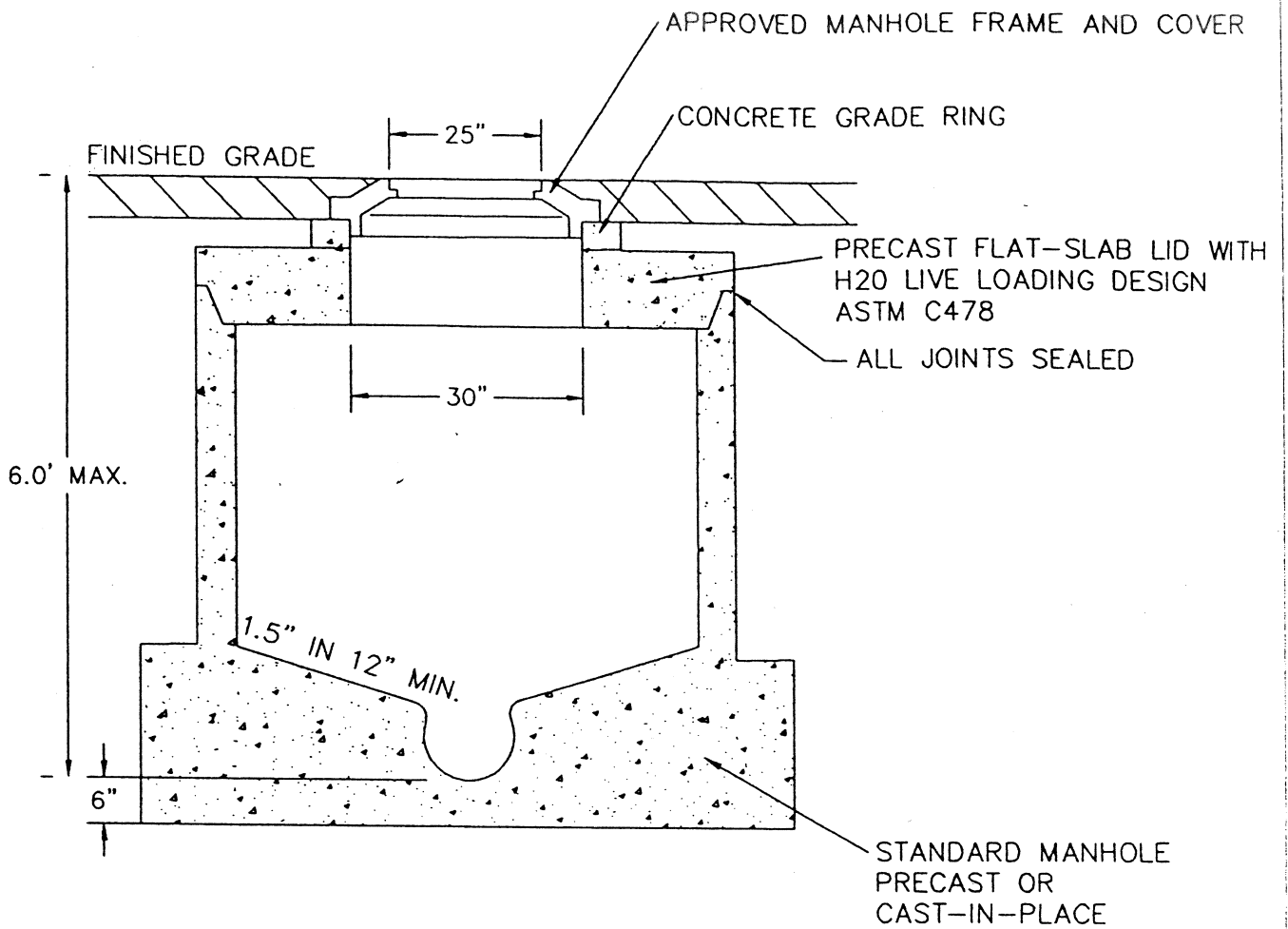
PIPE INSTALLATION DETAIL

SANDY SUBURBAN
IMPROVEMENT DISTRICT

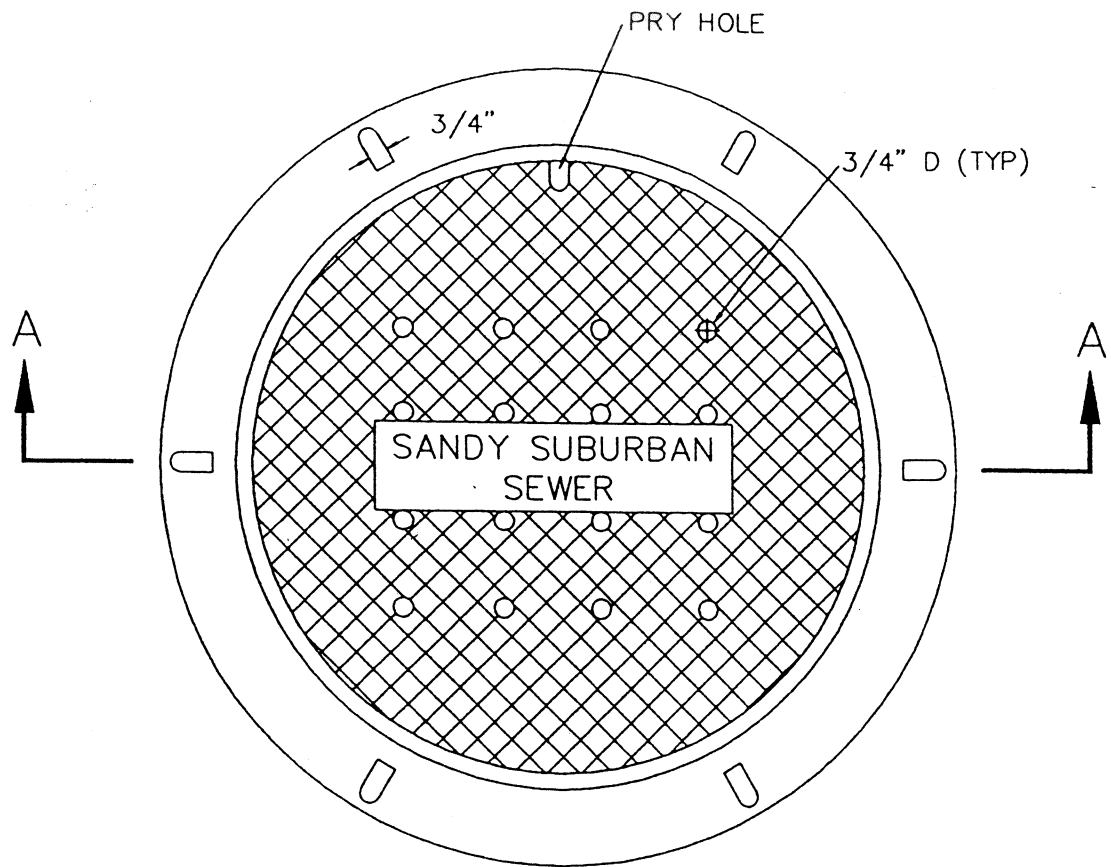
DATE		
FEB. 2010		



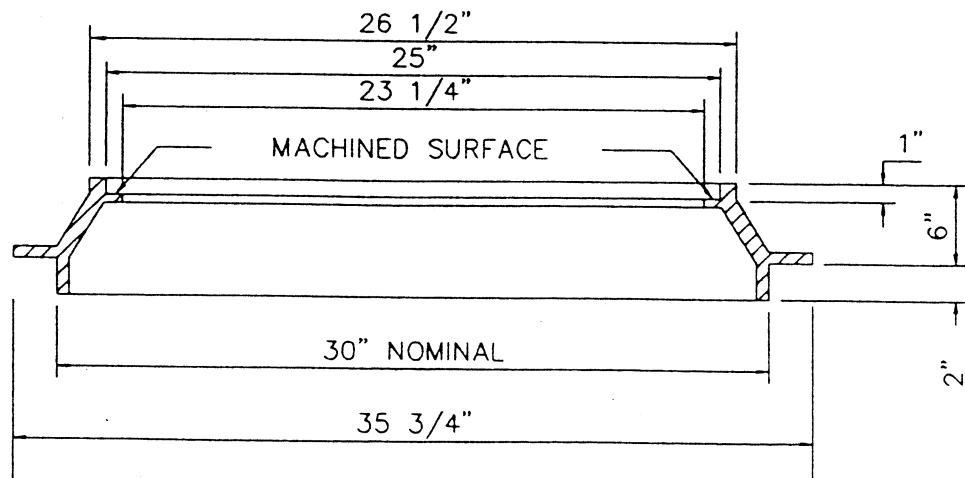
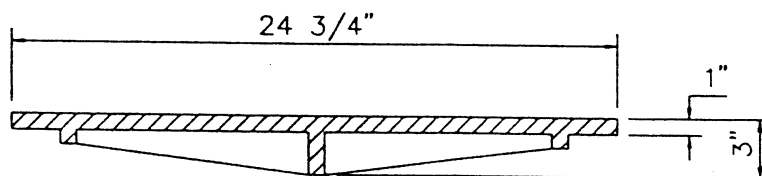
PRECAST MANHOLE



SHALLOW MANHOLE

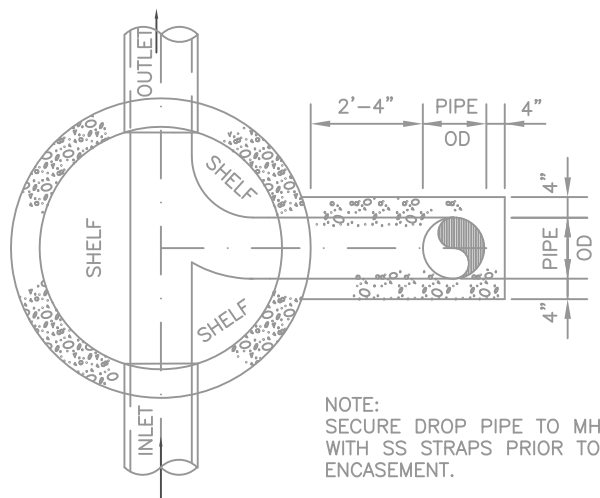
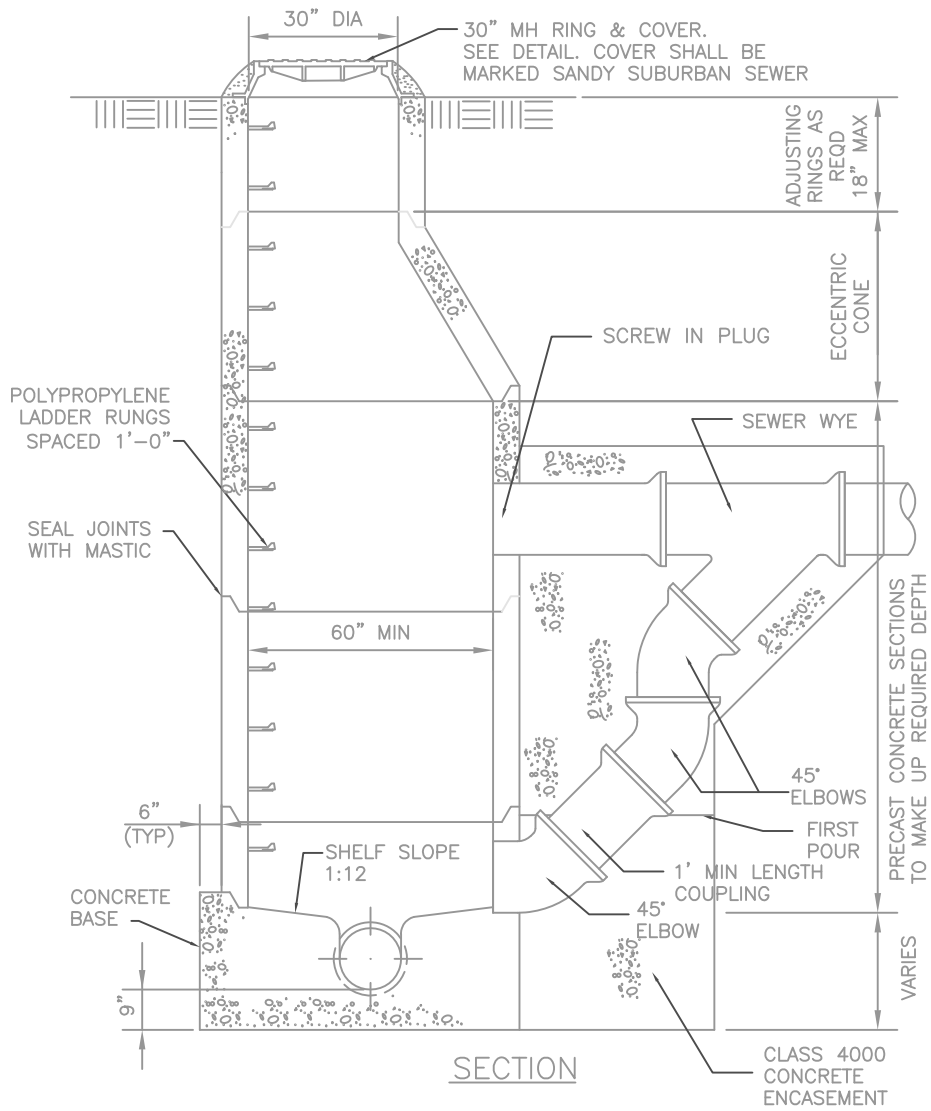


PLAN



SECTION A-A

30" FRAME COVER



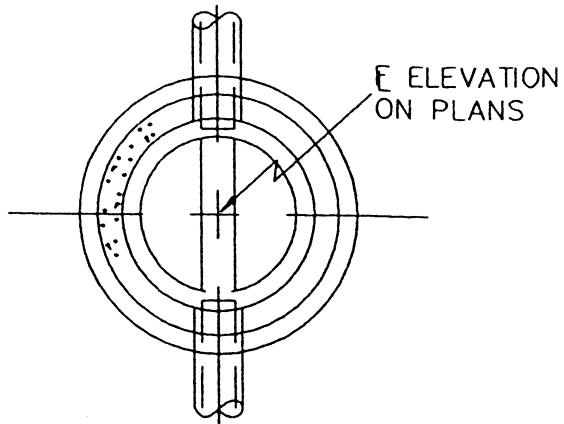
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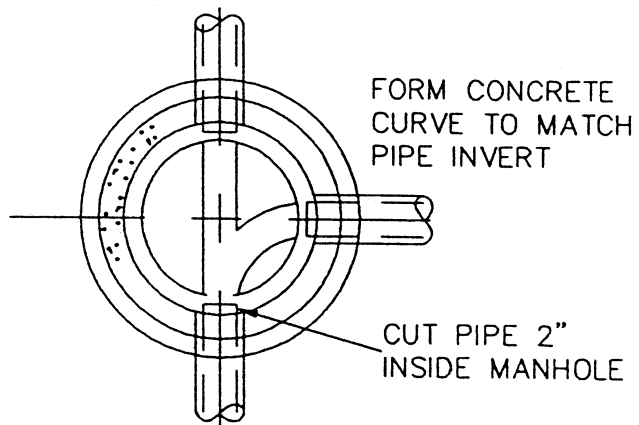
DROP MANHOLE DETAIL

SANDY SUBURBAN
IMPROVEMENT DISTRICT

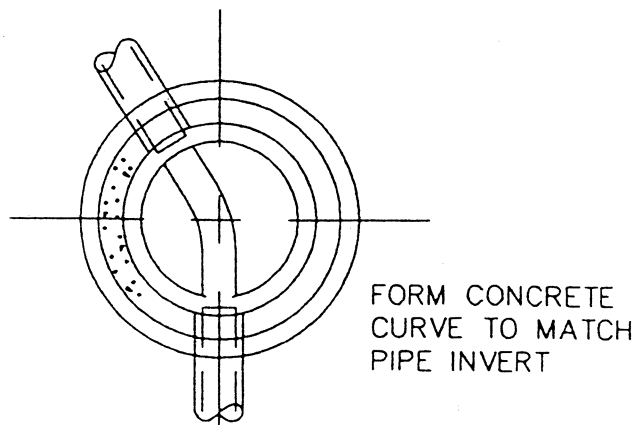
DATE		
FEB. 2010		



TYPICAL INVERT

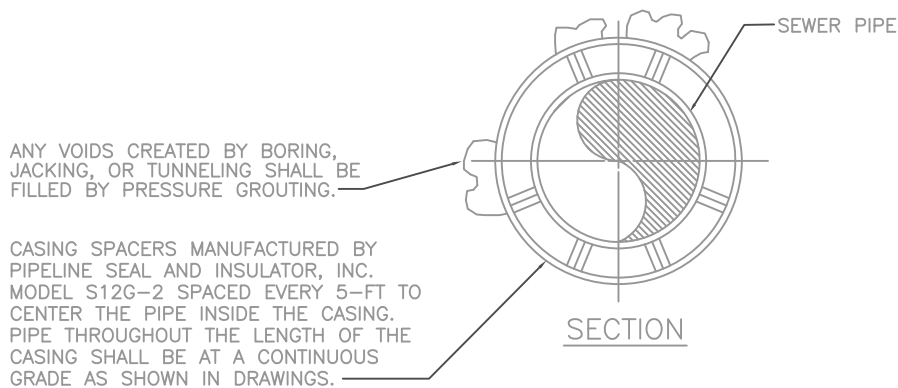
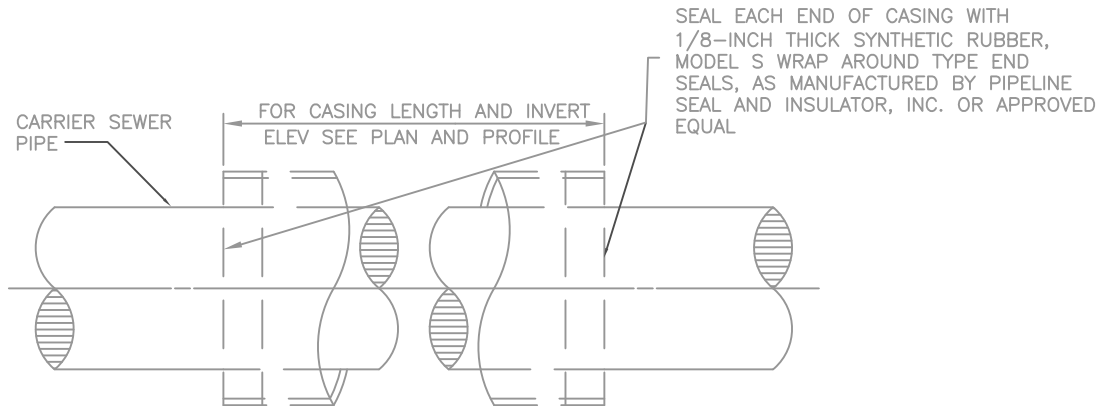


TYPICAL INVERT FOR
PIPE INTERSECTIONS



TYPICAL INVERT FOR
HORIZONTAL DEFLECTION

PIPE INTERSECTIONS



MINIMUM WALL THICKNESS OF CASINGS	
Diameter	Wall Thickness
12" and under	0.250"
14" - 26"	0.375"
28" - 32"	0.500"

LARGER CASINGS AS DIRECTED BY THE DISTRICT ENGINEER.

NOTES:

1. CASING PIPES SHALL BE REQUIRED AS INDICATED ON THE DRAWINGS AND/OR WHERE REQUIRED BY THE DISTRICT INSPECTOR OR ENGINEER.
2. THE CASING PIPE I.E. SHALL BE SIZED TEN INCHES (MIN) LARGER THAN THE CARRIER PIPE BELL O.E.
3. CARRIER PIPE SHALL BE TESTED BEFORE SEALING THE ENDS OF THE CASING.
4. SPACERS SHALL BE SECURELY ATTACHED TO CARRIER PIPE PER MANUFACTURER'S REQUIREMENTS.
5. CASING PIPE SHALL BE WELDED STEEL, ASTM A53, GRADE B OR APPROVED EQUAL.

Not to Scale

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4					
3					
2					
1					
NO	DATE	REVISION	BY	CK	APP

***BORING AND STEEL CASING
DETAIL***

SANDY SUBURBAN
IMPROVEMENT DISTRICT

DATE	
FEB. 2010	

APPENDICES

APPENDIX I

SANDY SUBURBAN IMPROVEMENT DISTRICT DEVELOPMENT APPROVAL POLICIES AND PROCEDURES

1. SCOPE. This policy applies to all development and improvement of property (projects) within the Sandy Suburban Improvement District (District) requiring sewer services.

2. NOTICE REQUIRED. An individual desiring to improve or develop property within the District must first notify the District, in writing, of proposed developments or improvements. Notifications must be accompanied by all maps, drawings, easements, or other information necessary for the District's project team to determine whether there is sufficient capacity or proper placement of sewer lines in order for the District to provide sewer services to the project.

A. After receiving notification of a proposed project, and following a determination as described above, the District's project team will advise the Developer, in writing, of the requirements for connecting to and/or extending sewer lines of the District within and from the project, including all fees which the Developer will be required to pay to the District prior to proceeding with the proposed project.

3. NON-SYSTEM PROJECTS. Projects that do not add to the District's existing sewer lines must be reviewed by the District Inspector prior to construction of the project.

A. Following the aforementioned review and approval, the District's project team, at its discretion, may create a service account, and the Developer may begin construction of the project.

4. SYSTEM EXTENSION PROJECTS. In addition to the requirements set forth in sections two and three above, projects which require system improvements by extending existing District sewer lines must be reviewed by the District's engineer. The Developer is responsible for all engineering review costs. Such costs must be paid to the District by the Developer prior to the release to the Developer of the engineer-reviewed plans.

A. Prior to the time construction begins, the Developer must submit to the District a Sewer Extension Agreement with either a cash bond, surety bond, letter of credit, or escrow bond. The form of the agreement will be provided by the District, and the Developer must provide security in a form set forth in the agreement. Any proposed changes to the agreement by either the District or the Developer must be reviewed and approved by the District's legal counsel.

1. The amount of the bond or letter of credit described above shall be 100% of the estimated cost of the sewer improvement (the Base Amount) as calculated by the District's

engineer, plus an additional 20% of such Base Amount for warranty and contingency purposes related to workmanship and materials (the Warranty Amount). Following inspections and approval by the District Inspector, all record drawings, maps, plats and unrecorded easements that were approved by the District's engineer shall be delivered to the District, after which the Base Amount of the bond will be released. The Warranty Amount will be held as a warranty for workmanship and materials for one year.

B. Prior to the commencement of construction of the project, a pre-construction meeting must be held with the District project team. All aspects of the project must be discussed in accordance with the District's project checklist at the pre-construction meeting.

C. Prior to completion of the warranty period, the District Inspector will do a final inspection, including all necessary testing and televising of the project. When the warranty period has expired, and the installed sewer line has been assumed by the District, the remainder of the bond will be released by the District to the Developer.

D. The requirements set forth in section 4 A through C above may be waived for State and local governments upon approval by the Board of Trustees of The Sandy Suburban Improvement District.

APPENDIX II

**SEWER EXTENSION AGREEMENT
SANDY SUBURBAN IMPROVEMENT DISTRICT
(Cash Form)**

AGREEMENT entered into between _____ (hereinafter "Developer"), whose address is _____, and Sandy Suburban Improvement District, (hereinafter "District"), whose address is 8855 South 700 West, Sandy, Utah 84070.

RECITALS

WHEREAS, the Developer proposes to install sanitary sewer pipe lines, manholes and related structures and facilities (hereinafter "Sewer Improvements"), on land located within the boundaries of, and in an area to be served by, the District, and to connect the Sewer Improvements to the District's sewer system in order to provide for collection, transmission, treatment, and disposal of sewage from the land on which the Sewer Improvements are to be installed; and

WHEREAS, said proposed Sewer Improvements are to be located at approximately _____; and

WHEREAS, the District, in accordance with its rules and regulations, cannot/ will not connect the Sewer Improvements to the District's sewer system or otherwise approve or accept any work by the Developer unless an agreement with related security is made to assure completion of the Sewer Improvements according to the District's Standard Construction Documents For Sewer Extensions, and the plans and profile drawings approved by the District's engineer.

NOW, THEREFORE, in consideration of the mutual promises of the parties, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

AGREEMENT

1. INSTALLATION OF IMPROVEMENTS.

a. Plans and Specifications. The Developer shall provide three (3) sets of plans and profile drawings of the Sewer Improvements and sewer system design for review and acceptance by the District. This design shall also provide for additional capacity for tributary areas if the District so directs. The District's engineer shall thereafter make its recommendations

to the District, and the District shall approve or reject the Developer's plans and drawings, and may provide to Developer recommendations for changes.

b. Installation. Developer shall have acquired, at no expense to the District, all easements and other rights or interests reasonably required by the District for installing and maintaining that portion of the Sewer Improvements to be dedicated to and owned by the District, which easements shall be conveyed to the District in both substance and form acceptable to the District. After receipt of written approval from the District for construction, a preconstruction conference shall be held with the Developer and the District's engineer and/or inspectors. All review costs shall be paid in full to the District prior to commencement of actual construction. Upon satisfactory compliance with all of the foregoing requirements and those contained in Paragraph 2 below, the Developer shall proceed to install at Developer's sole cost and expense the Sewer Improvements as shown on the plans and profile drawings approved by the District, and in accordance with the Standard Construction Documents of the District in a workman-like manner on or before the date one (1) year from date of this Agreement. During installation, no work shall be covered in any manner until the work has been fully inspected by the District Inspector. If the line is covered before said inspection, the District shall require the line to be uncovered for inspection. The actual interconnection of Developer's sewer system with the District's main line or lines shall be done at a time and in a manner approved by the District at the Developer's expense. The developer, at the time of the initial installation, shall install appropriate wyes in the sewer main line for each connection to be serviced, and extend lateral sewer lines to a point inside of any curb, gutter and sidewalk within the property line of each connection or lot. Such lateral extension shall not end under a driveway. This work shall be subject to District inspection before the same is covered or interconnected with the main lines owned by the District. If the work is covered before such inspection, the District shall require the line to be uncovered for inspection and may disconnect the Developer's system from the District's sewer system.

c. Connection to District Lines. Developer's sewer system shall not be connected to the District's lines until all of the following have occurred:

(i) Completion of all elements of the approved sewer design according to the approved plans and drawings and the District's Standard Construction Documents for Sewer Extensions.

(ii) All manholes shall be brought to grade and the complete sewer system shall be flushed and cleaned and documentation provided for such work.

(iii) All impact fees shall be paid in accordance with District rules and regulations.

(iv) Developer shall furnish "field-marked drawings" to the District showing the physical location of all sewer mains, laterals, wye stations, manholes and other facilities as they are actually installed. Upon full performance by Developer of all of the obligations set forth in this Agreement and compliance with the District's rules and regulations, the Developer shall be permitted to connect the Sewer Improvements to the District's sewer

system and to utilize the same.

d. Assumption of Ownership by the District. After the Warranty Period described in paragraph 19, the District shall assume ownership of the Developer's Sewer Improvements. The Sewer Improvements shall be free and clear of all liens and encumbrances. The District shall thereafter be the sole owner and shall operate and maintain such Sewer Improvements; however, the District shall not own or have any duty to maintain any service laterals extending from the sewer mains to any individual lots or connections.

2. CASH DEPOSIT. The Developer has executed and delivered to the District a check in the amount of \$ _____ , (the "Cash Deposit") which contains an amount which is equal to the District Engineer's estimate of the cost of the Sewer Improvements (the "Base Amount") plus an additional 20% of such Base Amount for warranty and contingency purposes (the "Warranty Amount"). If (1) the Sewer Improvements are not completed as required by this Agreement on or before the date one (1) year after the date of this Agreement or if, (2) the Sewer Improvements are not installed strictly in accordance with paragraph 1 above, a written notice of the deficiency has been given to the Developer, and the developer fails to acknowledge the deficiency within ten (10) days after the notice is sent, the District may utilize all or a portion of the Cash Deposit to either complete the Sewer Improvements as required herein or alter or repair the Sewer Improvements to conform to the requirements hereof, and to pay for any administrative, engineering, legal, procurement, and other services incident to completion or repair of the Sewer Improvements.

3. REFUND. In the event the District determines it is necessary to withdraw funds from the Cash Deposit to satisfactorily complete construction of the Sewer Improvements or to make repairs during the warranty period, the District may withdraw all or any portion of the Cash Deposit together with any accrued interest and may cause the Sewer Improvements (or any part of them) to be constructed or completed or repaired using the funds received from the Cash Deposit. Any withdrawn funds not expended in connection with the completion or repair of the Sewer Improvements by the District shall be refunded to Developer upon completion of the Sewer Improvements, less sums retained by the District to cover its administrative and other expenses incurred by the District in completing or repairing the Sewer Improvements.

4. FINAL RELEASE. Upon full performance of all of the Developer's obligations pursuant to paragraph 1 above and paragraph 19 below, the District shall release any remaining balance in the Cash Deposit, including any accrued interest, to the Developer.

5. NON-RELEASE OF DEVELOPER'S OBLIGATIONS. It is understood and agreed between the parties that the establishment and availability to the District of the Cash Deposit as herein provided and any withdrawals from the Cash Deposit by the District shall not constitute a waiver by or estoppel against the District and shall not release or relieve the Developer from Developer's obligations to install and fully pay for the Sewer Improvements as required in paragraph 1 above, and the right of the District to withdraw from the Cash Deposit shall not affect any rights and remedies of the District against the Developer for breach of any

covenant herein, including the covenants of paragraphs 1 and 19 of this Agreement. Further, the Developer agrees that if the District withdraws from the Cash Deposit and performs or causes to be performed all or any portion of the work required to be performed by the Developer hereunder, that any and all costs incurred by the District in so doing which are not collected by the District by withdrawing from the Cash Deposit shall be paid by the Developer, including construction, administrative engineering, legal, and procurement fees and costs.

7. RULES AND REGULATIONS. The Developer hereby agrees at all times to abide by the established rules and regulations of the District, including but not limited to, the payment of fees and charges as the same shall become due and construction of the Sewer Improvements in accordance with the District's Standard Construction Documents For Sewer Extensions.

8. DEVELOPER'S REPRESENTATIONS. Developer hereby acknowledges and represents to the District that:

a. Developer is the owner of the property described above and for which this Agreement is made;

b. Any streets and/or easements related to the property for which this Agreement is made, and in which the District will be required to install or maintain its facilities as a result of this Agreement have been dedicated as public streets or recorded as sanitary sewer easements in the Office of the Salt Lake County Recorder, State of Utah.

9. IMPACT FEES. The Developer hereby agrees to bear the total costs of constructing all sewer lines and related facilities required for the servicing of Developer's development (including extensions from existing District sewer mains to the development, the sewer collection system within the development, and laterals to each lot or connection within the development). No lot or parcel of real property shall be connected to any portion of the District's existing sewer system until the applicable impact fee shall be paid to the District for that lot or parcel. The applicable impact fees shall be those established by the District's Board of Trustees which are in effect on the date when the impact fees are actually paid to the District.

10. BINDING EFFECT. The agreements herein contained shall inure to the benefit of, and be binding upon, the parties hereto and their respective heirs, representatives, agents, officers, employees, successors and assigns.

11. DEFAULT. In the event either party hereto defaults on any of the covenants and agreements contained herein, the defaulting party shall pay all costs and expenses, including a reasonable attorney's fee, incurred by the other party in enforcing its rights hereunder whether incurred through litigation or otherwise.

12. TREATMENT CAPACITY. The District's obligation to provide sewer service hereunder is subject to and conditioned upon the availability of adequate treatment capacity at the sewer treatment facilities serving the District and shall be subject to any limitations,

requirements and regulations which may be established and enacted from time to time by the governing body of the sewer treatment facility, or by any other governmental entity having jurisdiction over the parties hereto.

13. COUNTERPARTS. The fact that the parties hereto execute multiple but identical counterparts of this Agreement shall not affect the validity or efficacy of their execution, and such counterparts, taken together, shall constitute one and the same instrument, and each such counterpart shall be deemed an original.

14. SEVERABILITY. Should any portion of this Agreement for any reason be declared invalid or unenforceable, the invalidity or unenforceability of such portion shall not affect the remaining portions of the Agreement which shall be deemed in full force and effect as if this Agreement had been executed with the invalid portions eliminated.

15. WAIVER. No waiver of any of the provisions of this Agreement shall operate as a waiver of any other provision, regardless of any similarity that may exist between such provisions, nor shall a waiver in one instance operate as a waiver in any future event. No waiver shall be binding unless executed in writing by the waiving party.

16. OTHER BONDS. This Agreement and the Cash Deposit do not alter the obligation of Developer to provide other bonds under applicable ordinances of any city or county having jurisdiction over Developer's development. The furnishing of security in compliance with the requirements of other jurisdictions shall not adversely affect the ability of the District to draw on the Cash Deposit as provided herein.

17. TIME OF ESSENCE. The parties agree that time is of the essence in the performance of all duties herein.

18. EXHIBITS. Any exhibit(s) to the Agreement are incorporated herein by this reference, and failure to attach any such exhibit shall not affect the validity of this Agreement or of such exhibit. An unattached exhibit is available from the records of the parties.

19. WARRANTY. The Developer hereby warrants and guarantees that the Sewer Improvements installed, and every part thereof, shall remain in good condition and free from all defects due to faulty materials or workmanship for a warranty period of one (1) year from the date of final inspection of the same by the District, and the Developer shall promptly make all repairs, corrections, and/or replacements for all defects in workmanship, materials, and equipment during the warranty period, without additional charges or cost to the District. As security for Developer's performance under this warranty, the District shall be entitled to withhold release of the 20% Warranty Amount until the warranty period has been completed. The District shall have the right to withdraw from the Cash Deposit to make corrections and repairs on the Sewer Improvements during the warranty period as provided in paragraphs 2 and 4 hereof.

20. CAPTIONS. The captions preceding the paragraphs of this Agreement are for convenience only and shall not affect the interpretation of any provision herein.

21. GOVERNING LAW. This Agreement and the performance hereunder shall be governed by the laws of the State of Utah.

22. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties with respect to the subject matter hereof, and no prior or contemporaneous promises, representations, warranties or understandings between the parties regarding the subject matter hereof, which are not contained herein shall be of any force or effect. Any amendment to this Agreement shall be made in writing and signed by the parties hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective duly authorized representatives this _____ day of _____, 20____.

SANDY SUBURBAN IMPROVEMENT DISTRICT

BY: _____
GENERAL MANAGER

DEVELOPER: _____

BY: _____

TITLE: _____

DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is an Individual)

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he executed the foregoing document.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

**DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is a Corporation)**

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he is the _____ of _____, a _____ corporation, and that said instrument was signed in behalf of said corporation by authority of its bylaws (or by a resolution of its Board of Directors) and said acknowledged to me that said corporation executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

**DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is a Partnership)**

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____
, personally appeared before me _____, who
being by me duly sworn, did say that he is the _____
of _____, a partnership, and that the
foregoing instrument was duly authorized by the partnership at a lawful meeting held by
authority of its by-laws and signed in behalf of said partnership.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____ ,
personally appeared before me _____, who
being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban
Improvement District, a governmental entity, and that said instrument was signed in behalf of
said District by authority of its Board of Trustees and said acknowledged to me that said District
executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

APPENDIX III

**SEWER EXTENSION AGREEMENT
SANDY SUBURBAN IMPROVEMENT DISTRICT
(Surety Form)**

AGREEMENT entered into between _____ (hereinafter "Developer"), whose address is _____, and Sandy Suburban Improvement District, (hereinafter "District"), whose address is 8855 South 700 West, Sandy, Utah 84070.

RECITALS

WHEREAS, the Developer proposes to install sanitary sewer pipe lines, manholes and related structures and facilities (hereinafter "Sewer Improvements"), on land located within the boundaries of, and in an area to be served by, the District, and to connect the Sewer Improvements to the District's sewer system in order to provide for collection, transmission, treatment, and disposal of sewage from the land on which the Sewer Improvements are to be installed; and

WHEREAS, said proposed Sewer Improvements are to be located at approximately _____; and

WHEREAS, the District, in accordance with its rules and regulations, cannot/will not connect the Sewer Improvements to the District's sewer system or otherwise approve or accept any work by the Developer unless an agreement with related security is made to assure completion of the Sewer Improvements according to the District's Standard Construction Documents For Sewer Extensions, and the plans and profile drawings approved by the District's engineer.

NOW, THEREFORE, in consideration of the mutual promises of the parties, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

AGREEMENT

1. INSTALLATION OF IMPROVEMENTS.

a. Plans and Specifications. The Developer shall provide three (3) sets of plans and profile drawings of the Sewer Improvements and sewer system design for review and acceptance by the District. This design shall also provide for additional capacity for tributary areas if the District so directs. The District engineer shall thereafter make its recommendations to the District, and the District shall approve or reject the Developer's plans and drawings, and may

provide to Developer recommendations for changes.

b. Installation. Developer shall have acquired, at no expense to the District, all easements and other rights or interests reasonably required by the District for installing and maintaining that portion of the Sewer Improvements to be dedicated to and owned by the District, which easements shall be conveyed to the District in both substance and form acceptable to the District. After receipt of written approval from the District for construction, a preconstruction conference shall be held with the Developer and the District's engineer and/or inspectors. All review costs shall be paid in full to the District prior to commencement of actual construction. Upon satisfactory compliance with all of the foregoing requirements and those contained in Paragraph 2 below, the Developer shall proceed to install at Developer's sole cost and expense the Sewer Improvements as shown on the plans and profile drawings approved by the District, and in accordance with the Standard Construction Documents of the District in a workman-like manner on or before the date one (1) year from date of this Agreement. During installation, no work shall be covered in any manner until the work has been fully inspected by the District Inspector. If the line is covered before said inspection, the District shall require the line to be uncovered for inspection. The actual interconnection of Developer's sewer system with the District's main line or lines shall be done at a time and in a manner approved by the District at the Developer's expense. The Developer, at the time of the initial installation, shall install appropriate wyes in the sewer main line for each connection to be serviced, and extend lateral sewer lines to a point inside of any curb, gutter and sidewalk within the property line of each connection or lot. Such lateral extension shall not end under a driveway. This work shall be subject to District inspection before the same is covered or interconnected with the main lines owned by the District. If the work is covered before such inspection, the District shall require the line to be uncovered for inspection and may disconnect the Developer's system from the District's sewer system.

c. Connection to District Lines. Developer's sewer system shall not be connected to the District lines until all of the following have occurred:

(i) Completion of all elements of the approved sewer design according to the approved plans and drawings and the District's Standard Construction Documents For Sewer Extensions.

(ii) All manholes shall be brought to grade and the complete sewer system shall be flushed and cleaned and documentation provided for such work.

(iii) All impact fees shall be paid in accordance with District rules and regulations.

(iv) Developer shall furnish "field-marked drawings" to the District showing the physical location of all sewer mains, laterals, wye stations, manholes and other facilities as they are actually installed. Upon full performance by Developer of all of the obligations set forth in this Agreement and compliance with the District's rules and regulations, the Developer shall be permitted to connect the Sewer Improvements to the District's sewer system and to utilize the same.

d. Assumption of Ownership by the District. After the Warranty Period described in paragraph 19, the District shall assume ownership of the Developer's Sewer Improvements. The Sewer Improvements shall be free and clear of all liens and encumbrances. The District shall thereafter be the sole owner and shall operate and maintain such Sewer Improvements; however, the District shall not own or have any duty to maintain any service laterals extending from the sewer mains to any individual lots or connections.

2. SURETY BOND. The Developer has delivered to the District a surety bond in the amount of \$ _____ , (the "Bond") on a form acceptable to District, in an amount which is equal to the District Engineer's estimate of the cost of the Sewer Improvements (the "Base Amount") plus an additional 20% of such Base Amount for warranty and contingency purposes (the "Warranty Amount"). If (1) the Sewer Improvements are not completed as required by this Agreement on or before the date one (1) year after the date of this Agreement or if, (2) the Sewer Improvements are not installed strictly in accordance with paragraph 1 above, and a written notice of the deficiency has been given to the Developer, and the Developer fails to acknowledge the deficiency within ten (10) days after the notice is sent, the District may demand from the Surety and, upon release of the funds from Surety, utilize all or a portion of the Bond to either complete the Sewer Improvements as required herein or alter or repair the Sewer Improvements to conform to the requirements hereof, and to pay for any administrative, engineering, legal, procurement, and other services incident to completion or repair of the Sewer Improvements.

A. It is expressly understood and agreed upon among the parties that this Agreement shall not relieve Developer, independent of Surety, from the obligation to complete and fully pay for the Improvements and/or fully pay the Fees. Should Developer fail to perform its responsibilities under this Agreement in any degree, Developer agrees to compensate District for all costs, including Incidental Costs, related to Developer's Failure to Perform its obligation to complete and warrant the Improvements or pay the Fees to the extent that such costs are not adequately covered by the Proceeds.

3. REFUND. In the event the District determines it is necessary to demand funds secured by the Bond to satisfactorily complete construction of the Sewer Improvements or to make repairs during the warranty period, the District may demand, and Surety shall release, all or any portion of the Bond funds, and the District may cause the Sewer Improvements (or any part of them) to be constructed or completed or repaired using the funds received from the Surety. Any funds not expended in connection with the completion or repair of the Sewer Improvements by the District shall be refunded to the Surety upon completion of the Sewer Improvements, less sums retained by the District to cover its administrative and other expenses incurred by the District in completing or repairing the Sewer Improvements.

4. FINAL RELEASE. Upon full performance of all of the Developer's obligations pursuant to paragraph 1 above and paragraph 19 below, the District shall authorize release of any

remaining Surety Bond amounts.

5. NON-RELEASE OF DEVELOPER'S OBLIGATIONS. It is understood and agreed between the parties that the Bond and any demands made upon the Bond by the District shall not constitute a waiver by or estoppel against the District and shall not release or relieve the Developer from Developer's obligations to install and fully pay for the Sewer Improvements as required in paragraph 1 above, and the right of the District to demand bond funds shall not affect any rights and remedies of the District against the Developer for breach of any covenant herein, including the covenants of paragraphs 1 and 19 of this Agreement. Further, the Developer agrees that if the District demands funds from the surety and performs or causes to be performed all or any portion of the work required to be performed by the Developer hereunder, then any and all costs incurred by the District in so doing which are not collected by the District by making demand upon the bond shall be paid by the Developer, including construction, administrative engineering, legal, and procurement fees and costs.

6. RULES AND REGULATIONS. The Developer hereby agrees at all times to abide by the established rules and regulations of the District, including but not limited to, the payment of fees and charges as the same shall become due and construction of the Sewer Improvements in accordance with the District's standard construction documents.

7. DEVELOPER'S REPRESENTATIONS. Developer hereby acknowledges and represents to the District that:

a. Developer is the owner of the property described above and for which this Agreement is made;

b. Any streets and/or easements related to the property for which this agreement is made, and in which the District will be required to install or maintain its facilities as a result of this agreement have been dedicated as public streets or recorded as sanitary sewer easements in the Office of the Salt Lake County Recorder, State of Utah;

8. IMPACT FEES. The Developer hereby agrees to bear the total costs of constructing all sewer lines and related facilities required for the servicing of Developer's development (including extensions from existing District sewer mains to the development, the sewer collection system within the development, and laterals to each lot or connection within the development). No lot or parcel of real property shall be connected to any portion of the District's existing sewer system until the applicable impact fee shall be paid to the District for that lot or parcel. The impact fees shall be those established by the District's Board of Trustees which are in effect on the date when the fees are actually paid to the District.

9. BINDING EFFECT. The agreements herein contained shall inure to the benefit of, and be binding upon, the parties hereto and their respective heirs, representatives, agents, officers, employees, successors and assigns.

10. DEFAULT. In the event either party hereto defaults on any of the covenants and agreements contained herein, the defaulting party shall pay all costs and expenses, including a reasonable attorney's fee, incurred by the other party in enforcing its rights hereunder whether incurred through litigation or otherwise.

11. TREATMENT CAPACITY. The District's obligation to provide sewer service hereunder is subject to and conditioned upon the availability of adequate treatment capacity at the sewer treatment facilities serving the District and shall be subject to any limitations, requirements and regulations which may be established and enacted from time to time by the governing body of the sewer treatment facility, or by any other governmental entity having jurisdiction over the parties hereto.

12. COUNTERPARTS. The fact that the parties hereto execute multiple but identical counterparts of this Agreement shall not affect the validity or efficacy of their execution, and such counterparts, taken together, shall constitute one and the same instrument, and each such counterpart shall be deemed an original.

13. SEVERABILITY. Should any portion of this Agreement for any reason be declared invalid or unenforceable, the invalidity or unenforceability of such portion shall not affect the remaining portions of the Agreement which shall be deemed in full force and effect as if this Agreement had been executed with the invalid portions eliminated.

14. WAIVER. No waiver of any of the provisions of this Agreement shall operate as a waiver of any other provision, regardless of any similarity that may exist between such provisions, nor shall a waiver in one instance operate as a waiver in any future event. No waiver shall be binding unless executed in writing by the waiving party.

15. OTHER BONDS. This Agreement and the surety bond do not alter the obligation of Developer to provide other bonds under applicable ordinances of any city or county having jurisdiction over Developer's development. The furnishing of security in compliance with the requirements of other jurisdictions shall not adversely affect the ability of the District to draw on the Cash Deposit as provided herein.

16. TIME OF ESSENCE. The parties agree that time is of the essence in the performance of all duties herein.

17. EXHIBITS. Any exhibit(s) to the Agreement are incorporated herein by this reference, and failure to attach any such exhibit shall not affect the validity of this Agreement or of such exhibit. An unattached exhibit is available from the records of the parties.

18. WARRANTY. The Developer hereby warrants and guarantees that the Sewer Improvements installed, and every part thereof, shall remain in good condition and free from all defects due to faulty materials or workmanship for a warranty period of one year from the date of

final inspection and acceptance of the same by the District, and the Developer shall promptly make all repairs, corrections, and/or replacements for all defects in workmanship, materials, and equipment during the warranty period, without additional charges or cost to the District. As security for Developer's performance under this warranty, the District shall be entitled to retain release of the 20% Warranty Amount until the warranty period has been completed. The District shall have the right to demand from the Surety sufficient funds to make corrections and repairs on the Sewer Improvements during the warranty period as provided in paragraphs 2 and 4 hereof.

19. CAPTIONS. The captions preceding the paragraphs of this Agreement are for convenience only and shall not affect the interpretation of any provision herein.

20. GOVERNING LAW. This Agreement and the performance hereunder shall be governed by the laws of the State of Utah.

21. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties with respect to the subject matter hereof, and no prior or contemporaneous promises, representations, warranties or understandings between the parties regarding the subject matter hereof, which are not contained herein shall be of any force or effect. Any amendment to this Agreement shall be made in writing and signed by the parties hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective duly authorized representatives this _____ day of _____, 20____.

SANDY SUBURBAN IMPROVEMENT DISTRICT

BY: _____
GENERAL MANAGER

DEVELOPER: _____

BY: _____

TITLE: _____

DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is an Individual)

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he executed the foregoing document.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

**DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is a Corporation)**

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he is the _____ of _____, a _____ corporation, and that said instrument was signed in behalf of said corporation by authority of its bylaws (or by a resolution of its Board of Directors) and said acknowledged to me that said corporation executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

APPENDIX IV

**SEWER EXTENSION AGREEMENT
SANDY SUBURBAN IMPROVEMENT DISTRICT**
(Letter of Credit)

AGREEMENT entered into between _____ (hereinafter "Developer"), whose address is _____ , and Sandy Suburban Improvement District, (hereinafter "District"), whose address is 8855 South 700 West, Sandy, Utah 84070.

RECITALS

WHEREAS, the Developer proposes to install sanitary sewer pipe lines, manholes and related structures and facilities (hereinafter "Sewer Improvements"), on land located within the boundaries of, and in an area to be served by, the District, and to connect the Sewer Improvements to the District's sewer system in order to provide for collection, transmission, treatment, and disposal of sewage from the land on which the Sewer Improvements are to be installed; and

WHEREAS, said proposed Sewer Improvements are to be located at approximately _____; and

WHEREAS, the District, in accordance with its rules and regulations, cannot/will not connect the Sewer Improvements to the District's sewer system or otherwise approve or accept any work by the Developer unless an agreement with related security is made to assure completion of the Sewer Improvements according to the District's Standard Construction Documents For Sewer Extensions, and the plans and profile drawings approved by the District's engineer.

NOW, THEREFORE, in consideration of the mutual promises of the parties, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

AGREEMENT

1. INSTALLATION OF IMPROVEMENTS.

a. Plans and Specifications. The Developer shall provide three (3) sets of plans and profile drawings of the Sewer Improvements and sewer system design for review and acceptance by the District. This design shall also provide for additional capacity for tributary areas if the District so directs. The District's engineer shall thereafter make its recommendations to the District, and the District shall approve or reject the Developer's plans and drawings, and

may provide to Developer recommendations for changes.

b. Installation. Developer shall have acquired, at no expense to the District, all easements and other rights or interests reasonably required by the District for installing and maintaining that portion of the Sewer Improvements to be dedicated to and owned by the District, which easements shall be conveyed to the District in both substance and form acceptable to the District. After receipt of written approval from the District for construction, a preconstruction conference shall be held with the Developer and the District's engineer and/or inspectors. All review costs shall be paid in full to the District prior to commencement of actual construction. Upon satisfactory compliance with all of the foregoing requirements and those contained in Paragraph 2 below, the Developer shall proceed to install at Developer's sole cost and expense the Sewer Improvements as shown on the plans and profile drawings approved by the District, and in accordance with the Standard Construction Documents of the District in a workman-like manner on or before the date one (1) year from date of this Agreement. During installation, no work shall be covered in any manner until the work has been fully inspected by the District Inspector. If the line is covered before said inspection, the District shall require the line to be uncovered for inspection. The actual interconnection of Developer's sewer system with the District's main line or lines shall be done at a time and in a manner approved by the District at the Developer's expense. The Developer, at the time of the initial installation, shall install appropriate wyes in the sewer main line for each connection to be serviced, and extend lateral sewer lines to a point inside of any curb, gutter and sidewalk within the property line of each connection or lot. Such lateral extension shall not end under a driveway. This work shall be subject to District inspection before the same is covered or interconnected with the main lines owned by the District. If the work is covered before such inspection, the District shall require the line to be uncovered for inspection and may disconnect the Developer's system from the District's sewer system.

c. Connection to District Lines. Developer's sewer system shall not be connected to the District lines until all of the following have occurred:

(i) Completion of all elements of the approved sewer design according to the approved plans and drawings and the District's Standard Construction Documents For Sewer Extensions.

(ii) All manholes shall be brought to grade and the complete sewer system shall be flushed and cleaned and documentation provided for such work.

(iii) All impact fees shall be paid in accordance with District rules and regulations.

(iv) Developer shall furnish "field-marked drawings" to the District showing the physical location of all sewer mains, laterals, wye stations, manholes and other facilities as they are actually installed. Upon full performance by Developer of all of the obligations set forth in this Agreement and compliance with the District's rules and regulations, the Developer shall be permitted to connect the Sewer Improvements to the District's sewer system and to utilize the same.

d. Assumption of Ownership by the District. After the Warranty Period described in paragraph 19, the District shall assume ownership of the Developer's Sewer Improvements. The Sewer Improvements shall be free and clear of all liens and encumbrances. The District shall thereafter be the sole owner and shall operate and maintain such Sewer Improvements; however, the District shall not own or have any duty to maintain any service laterals extending from the sewer mains to any individual lots or connections.

2. LETTER OF CREDIT. APPLICANT hereby files, as an independent guarantee with District, for the purpose of insuring construction and installation of the Improvements and/or payment of the Fees, an **IRREVOCABLE LETTER OF CREDIT**, numbered _____, issued by _____, in the amount of \$ _____, (herein the "Proceeds"). The Letter of Credit is issued in favor of the District to the account of _____, APPLICANT herein, and is made a part of this Agreement as Exhibit _____ (hereinafter the "Letter of Credit"). This Letter of Credit shall be on a form acceptable to District, in an amount which is equal to the District Engineer's estimate of the cost of the Sewer Improvements (the "Base Amount") plus an additional 20% of such Base Amount for warranty and contingency purposes (the "Warranty Amount"). If (1) the Sewer Improvements are not completed as required by this Agreement on or before the date one (1) year after the date of this Agreement or if, (2) the Sewer Improvements are not installed strictly in accordance with paragraph 1 above, a written notice of the deficiency has been given to the Developer and the Developer fails, to respond to the notice of deficiency within ten (10) days after the notice is sent, the District may present the Letter of Credit to the issuer and, upon release of the funds from the issuer, utilize all or a portion of the proceeds to either complete the Sewer Improvements as required herein or alter or repair the Sewer Improvements to conform to the requirements hereof, and to pay for any administrative, engineering, legal, procurement, and other services incident to completion or repair of the Sewer Improvements.

A. It is expressly understood and agreed upon among the parties that this Agreement shall not relieve Developer, independent of the issuer, from the obligation to complete and fully pay for the Improvements and/or fully pay the Fees. Should Developer fail to perform its responsibilities under this Agreement in any degree, Developer agrees to compensate District for all costs, including Incidental Costs, related to Developer's Failure to Perform its obligation to complete and warrant the Improvements or pay the Fees to the extent that such costs are not adequately covered by the Proceeds.

3. REFUND. In the event the District determines it is necessary to demand funds secured by the Letter of Credit to satisfactorily complete construction of the Sewer Improvements or to make repairs during the warranty period, the District may Present the Letter of Credit to the issuer and utilize all or any portion of the funds secured by the Letter of Credit, and the District may cause the Sewer Improvements (or any part of them) to be constructed or

completed or repaired using the funds released by the presentment of the Letter of Credit. Any funds not expended in connection with the completion or repair of the Sewer Improvements by the District shall be refunded to the Developer upon completion of the Sewer Improvements, less sums retained by the District to cover its administrative and other expenses incurred by the District in completing or repairing the Sewer Improvements.

4. FINAL RELEASE. Upon full performance of all of the Developer's obligations pursuant to paragraph 1 above and paragraph 19 below, the District shall authorize release of the Letter of Credit.

5. NON-RELEASE OF DEVELOPER'S OBLIGATIONS. It is understood and agreed between the parties that the Letter of Credit Bond and any presentation by the District of the Letter of Credit shall not constitute a waiver by or estoppel against the District and shall not release or relieve the Developer from Developer's obligations to install and fully pay for the Sewer Improvements as required in paragraph 1 above, and the right of the District to demand bond funds shall not affect any rights and remedies of the District against the Developer for breach of any covenant herein, including the covenants of paragraphs 1 and 19 of this Agreement. Further, the Developer agrees that if the District demands funds from the issuer and performs or causes to be performed all or any portion of the work required to be performed by the Developer hereunder, that any and all costs incurred by the District in so doing which are not collected by the District by presenting the Letter of Credit shall be paid by the Developer, including construction, administrative engineering, legal, and procurement fees and costs.

6. RULES AND REGULATIONS. The Developer hereby agrees at all times to abide by the established rules and regulations of the District, including but not limited to, the payment of fees and charges as the same shall become due and construction of the Sewer Improvements in accordance with the District's Standard Construction Documents For Sewer Extensions.

7. DEVELOPER'S REPRESENTATIONS. Developer hereby acknowledges and represents to the District that:

a. Developer is the owner of the property described above and for which this Agreement is made;

b. Any streets and/or easements related to the property for which this Agreement is made, and in which the District will be required to install or maintain its facilities as a result of this Agreement have been dedicated as public streets or recorded as sanitary sewer easements in the Office of the Salt Lake County Recorder, State of Utah.

8. IMPACT FEES. The Developer hereby agrees to bear the total costs of constructing all sewer lines and related facilities required for the servicing of Developer's development (including extensions from existing District sewer mains to the development, the sewer collection system within the development, and laterals to each lot or connection within the

development). No lot or parcel of real property shall be connected to any portion of the District's existing sewer system until the applicable impact fee shall be paid to the District for that lot or parcel. The impact fees shall be those established by the District's Board of Trustees which are in effect on the date when the impact fees are actually paid to the District.

9. BINDING EFFECT. The agreements herein contained shall inure to the benefit of, and be binding upon, the parties hereto and their respective heirs, representatives, agents, officers, employees, successors and assigns.

10. DEFAULT. In the event either party hereto defaults on any of the covenants and agreements contained herein, the defaulting party shall pay all costs and expenses, including a reasonable attorney's fee, incurred by the other party in enforcing its rights hereunder whether incurred through litigation or otherwise.

11. TREATMENT CAPACITY. The District's obligation to provide sewer service hereunder is subject to and conditioned upon the availability of adequate treatment capacity at the sewer treatment facilities serving the District and shall be subject to any limitations, requirements and regulations which may be established and enacted from time to time by the governing body of the sewer treatment facility, or by any other governmental entity having jurisdiction over the parties hereto.

12. COUNTERPARTS. The fact that the parties hereto execute multiple but identical counterparts of this Agreement shall not affect the validity or efficacy of their execution, and such counterparts, taken together, shall constitute one and the same instrument, and each such counterpart shall be deemed an original.

13. SEVERABILITY. Should any portion of this Agreement for any reason be declared invalid or unenforceable, the invalidity or unenforceability of such portion shall not affect the remaining portions of the Agreement which shall be deemed in full force and effect as if this Agreement had been executed with the invalid portions eliminated.

14. WAIVER. No waiver of any of the provisions of this Agreement shall operate as a waiver of any other provision, regardless of any similarity that may exist between such provisions, nor shall a waiver in one instance operate as a waiver in any future event. No waiver shall be binding unless executed in writing by the waiving party.

15. OTHER BONDS. This Agreement and the Letter of Credit do not alter the obligation of Developer to provide other bonds under applicable ordinances of any city or county having jurisdiction over Developer's development. The furnishing of security in compliance with the requirements of other jurisdictions shall not adversely affect the ability of the District to present the Letter of Credit as provided herein.

16. TIME OF ESSENCE. The parties agree that time is of the essence in the

performance of all duties herein.

17. EXHIBITS. Any exhibit(s) to the Agreement are incorporated herein by this reference, and failure to attach any such exhibit shall not affect the validity of this Agreement or of such exhibit. An unattached exhibit is available from the records of the parties.

18. WARRANTY. The Developer hereby warrants and guarantees that the Sewer Improvements installed, and every part thereof, shall remain in good condition and free from all defects due to faulty materials or workmanship for a warranty period of one (1) year from the date of final inspection and acceptance of the same by the District, and the Developer shall promptly make all repairs, corrections, and/or replacements for all defects in workmanship, materials, and equipment during the warranty period, without additional charges or cost to the District. As security for Developer's performance under this warranty, the District shall be entitled to withhold release of the 20% Warranty Amount until the warranty period has been completed. The District shall have the right to present the Letter of Credit and utilize the funds received therefrom to make corrections and repairs on the Sewer Improvements during the warranty period as provided in paragraphs 2 and 4 hereof.

19. CAPTIONS. The captions preceding the paragraphs of this Agreement are for convenience only and shall not affect the interpretation of any provision herein.

20. GOVERNING LAW. This Agreement and the performance hereunder shall be governed by the laws of the State of Utah.

21. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties with respect to the subject matter hereof, and no prior or contemporaneous promises, representations, warranties or understandings between the parties regarding the subject matter hereof, which are not contained herein shall be of any force or effect. Any amendment to this Agreement shall be made in writing and signed by the parties hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective duly authorized representatives this _____ day of _____, 20____.

SANDY SUBURBAN IMPROVEMENT DISTRICT

BY: _____
GENERAL MANAGER

DEVELOPER: _____

BY: _____

TITLE: _____

**DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is an Individual)**

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he executed the foregoing document.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

APPENDIX V

ESCROW BOND AGREEMENT

TO: SANDY SUBURBAN IMPROVEMENT DISTRICT

DATE OF MAKING: _____

SUBDIVISION NAME: _____

We, the undersigned, _____ hereinafter called “Developer” and _____, a state or federally chartered financial institution insured by the FDIC or NCUSIF doing business in the State of Utah, hereinafter called “Bank”, represent and certify that the bank has deposited in an account known as:

Account name and number

the total sum of \$_____, which sum is segregated into a base amount of \$_____, hereinafter called “Base Amount” which represents the estimated cost of development, and a warranty amount of \$_____, hereinafter called “Warranty Amount” which represents 20% of the estimated cost for the express purpose of assuring and guaranteeing the completion, by Developer, of all such set forth in the Sewer Extension Agreement entered into by Developer on the _____ day of _____, 20____, and other conditions of approval set forth on the plat or in documents held by the Sandy Suburban Improvement District, hereinafter called “District”, or required by the policies of the District. The improvements to be completed hereunder (hereinafter called “Improvements”) are the following:

We and each of us in consideration of the District’s approval of the aforementioned development represent, agree and voluntarily bind ourselves to perform the obligations specified herein and as follows:

1. We shall hold the above stated sum until all improvements are completed according to the terms herein, at the _____ branch/office of Bank in the aforesaid account. No releases will be made without the written authorization of the District.

2. If the Developer shall completely perform the Improvements, which are estimated to cost \$_____, and obtain written approval by the District, and if there shall be no material defects in workmanship or materials for one year from the date of said approval, then Bank and Developer shall have no obligation under this Bond, otherwise, this Bond shall remain in full force and effect.
3. Upon Developer's completion of the Improvements and upon written approval by the District, the Developer may request, in writing, the release of the Base Amount of this Bond. The Warranty Amount shall remain in full force for one year following the aforementioned date of approval.
4. Any money held hereunder may be used by the District to complete or repair any of the Improvements.
5. Before any portion of this Bond shall be released, the Developer shall file a statement signed by the Developer or its authorized representative with the District that no workmanship or material liens have been filed encumbering any of the Improvements, or the project for which they are to be built.
6. Bank shall certify to the District upon demand the balance remaining in the Bond and shall state an itemized account of the amount held for Improvements and the amount released with respect to the Improvements and the date of release.
7. Developer shall notify all subcontractors working on the project for which this Bond is provided of the material terms of this Bond or show the subcontractors a true copy of this Bond.
8. Bank hereby represents that it is insured by the Federal Deposit Insurance Corporation (FDIC) or the National Credit Union Share Insurance Fund (NCUSIF).
9. Upon written demand and certification by the District to Bank that the Developer has failed to satisfactorily complete the Improvements in a timely manner, or that Developer has otherwise defaulted under the terms of the agreement, then Bank shall promptly pay to the District the amount of this Bond still held by Bank. Any such funds shall be held by the District and expended to complete or repair Improvements as needed, and the balance of the unexpended money returned to Bank, holding 50 percent of the money so expended to cover the District's overhead and costs.
10. This agreement shall not relieve Developer of the obligation to install and fully pay for the Improvements.

WHEREUPON, the parties hereto have set their hands the day and year first above written.

DEVELOPER

By _____

Title _____

Mailing Address _____

Phone Number _____

ATTEST: (If a corporation)

By _____

Title _____

BANK

By _____

Title _____

Mailing Address _____

Phone Number _____

ATTEST: (If a corporation)

By _____

Title _____

APPENDIX VI

**SEWER EXTENSION AGREEMENT
SANDY SUBURBAN IMPROVEMENT DISTRICT**
(Escrow Agreement Form)

AGREEMENT entered into between _____ (hereinafter "Developer"), whose address is _____, and Sandy Suburban Improvement District, (hereinafter "District"), whose address is 8855 South 700 West, Sandy, Utah 84070.

RECITALS

WHEREAS, the Developer proposes to install sanitary sewer pipe lines, manholes and related structures and facilities (hereinafter "Sewer Improvements"), on land located within the boundaries of, and in an area to be served by, the District, and to connect the Sewer Improvements to the District's sewer system in order to provide for collection, transmission, treatment, and disposal of sewage from the land on which the Sewer Improvements are to be installed; and

WHEREAS, said proposed Sewer Improvements are to be located at approximately _____; and

WHEREAS, the District, in accordance with its rules and regulations, cannot/ will not connect the Sewer Improvements to the District's sewer system or otherwise approve or accept any work by the Developer unless an agreement with related security is made to assure completion of the Sewer Improvements according to the District's Standard Construction Documents For Sewer Extensions, and the plans and profile drawings approved by the District's engineer.

NOW, THEREFORE, in consideration of the mutual promises of the parties, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

AGREEMENT

1. INSTALLATION OF IMPROVEMENTS.

a. Plans and Specifications. The Developer shall provide three (3) sets of plans and profile drawings of the Sewer Improvements and sewer system design for review and acceptance by the District. This design shall also provide for additional capacity for tributary areas if the District so directs. The District's engineer shall thereafter make its recommendations to the District, and the District shall approve or reject the Developer's plans and drawings, and may provide to Developer recommendations for changes.

b. Installation. Developer shall have acquired, at no expense to the District, all easements and other rights or interests reasonably required by the District for installing and

maintaining that portion of the Sewer Improvements to be dedicated to and owned by the District, which easements shall be conveyed to the District in both substance and form acceptable to the District. After receipt of written approval from the District for construction, a preconstruction conference shall be held with the Developer and the District's engineer and/or inspectors. All review costs shall be paid in full to the District prior to commencement of actual construction. Upon satisfactory compliance with all of the foregoing requirements and those contained in Paragraph 2 below, the Developer shall proceed to install at Developer's sole cost and expense the Sewer Improvements as shown on the plans and profile drawings approved by the District, and in accordance with the Standard Construction Documents of the District in a workman-like manner on or before the date one (1) year from date of this Agreement. During installation, no work shall be covered in any manner until the work has been fully inspected by the District Inspector and written permission to cover given. If the line is covered before said inspection, the District shall require the line to be uncovered for inspection. The actual interconnection of Developer's sewer system with the District's main line or lines shall be done at a time and in a manner approved by the District at the Developer's expense. The developer, at the time of the initial installation, shall install appropriate wyes in the sewer main line for each connection to be serviced, and extend lateral sewer lines to a point inside of any curb, gutter and sidewalk within the property line of each connection or lot. Such lateral extension shall not end under a driveway. This work shall be subject to District inspection before the same is covered or interconnected with the main lines owned by the District. If the work is covered before such inspection, the District shall require the line to be uncovered for inspection and may disconnect the Developer's system from the District's sewer system.

c. Connection to District Lines. Developer's sewer system shall not be connected to the District's lines until all of the following have occurred:

(i) Completion of all elements of the approved sewer design according to the approved plans and drawings and the District's Standard Construction Documents For Sewer Extensions.

(ii) All manholes shall be brought to grade and the complete sewer system shall be flushed and cleaned and documentation provided for such work.

(iii) All impact fees shall be paid in accordance with District rules and regulations.

(iv) Developer shall furnish "field-marked drawings" to the District showing the physical location of all sewer mains, laterals, wye stations, manholes and other facilities as they are actually installed. Upon full performance by Developer of all of the obligations set forth in this Agreement and compliance with the District's rules and regulations, the Developer shall be permitted to connect the Sewer Improvements to the District's sewer system and to utilize the same.

d. Assumption of Ownership by the District. After the Warranty Period described in paragraph 19, the District shall assume ownership of the Developer's Sewer Improvements. The Sewer Improvements shall be free and clear of all liens and encumbrances. The District shall thereafter be the sole owner and shall operate and maintain such Sewer Improvements; however, the District shall not own or have any duty to maintain any service laterals extending from the sewer mains to any individual lots or connections.

2. CASH DEPOSIT. The Developer has executed and delivered to the District an agreement entitled "Escrow Bond Agreement", pursuant to which Developer has deposited in an appropriate account a check in the amount of \$ _____, (the "Cash Deposit") which contains an amount which is equal to the District Engineer's estimate of the cost of the Sewer Improvements (the "Base Amount") plus an additional 20% of such Base Amount for warranty and contingency purposes (the "Warranty Amount"). If (1) the Sewer Improvements are not completed as required by this Agreement on or before the date one (1) year after the date of this Agreement or if, (2) the Sewer Improvements are not installed strictly in accordance with paragraph 1 above, a written notice of the deficiency has been given to the Developer, and the developer fails to acknowledge the deficiency within ten (10) days after the notice is sent, the District may utilize all or a portion of the Cash Deposit to either complete the Sewer Improvements as required herein or alter or repair the Sewer Improvements to conform to the requirements hereof, and to pay for any administrative, engineering, legal, procurement, and other services incident to completion or repair of the Sewer Improvements.

3. REFUND OF WITHDRAWAL. In the event the District determines it is necessary to withdraw funds from the Cash Deposit to satisfactorily complete construction of the Sewer Improvements or to make repairs during the warranty period, the District may withdraw all or any portion of the Cash Deposit together with any accrued interest and may cause the Sewer Improvements (or any part of them) to be constructed or completed or repaired using the funds received from the Cash Deposit. Any withdrawn funds not expended in connection with the completion or repair of the Sewer Improvements by the District shall be refunded to Developer upon completion of the Sewer Improvements, less sums retained by the District to cover its administrative and other expenses incurred by the District in completing or repairing the Sewer Improvements.

4. FINAL RELEASE. Upon full performance of all of the Developer's obligations pursuant to paragraph 1 above and paragraph 19 below, the District shall release any remaining balance in the Cash Deposit, including any accrued interest, to the Developer.

5. NON-RELEASE OF DEVELOPER'S OBLIGATIONS. It is understood and agreed between the parties that the establishment and availability to the District of the Cash Deposit as herein provided and any withdrawals from the Cash Deposit by the District shall not constitute a waiver by or estoppel against the District and shall not release or relieve the Developer from Developer's obligations to install and fully pay for the Sewer Improvements as required in paragraph 1 above, and the right of the District to withdraw from the Cash Deposit shall not affect any rights and remedies of the District against the Developer for breach of any covenant herein, including the covenants of paragraphs 1 and 19 of this Agreement. Further, the Developer agrees that if the District withdraws from the Cash Deposit and performs or causes to be performed all or any portion of the work required to be performed by the Developer hereunder, that any and all costs incurred by the District in so doing which are not collected by the District by withdrawing from the Cash Deposit shall be paid by the Developer, including construction, administrative engineering, legal, and procurement fees and costs.

6. RULES AND REGULATIONS. The Developer hereby agrees at all times to abide by the established rules and regulations of the District, including but not limited to, the payment

of fees and charges as the same shall become due and construction of the Sewer Improvements in accordance with the District's Standard Construction Documents For Sewer Extensions.

7. DEVELOPER'S REPRESENTATIONS. Developer hereby acknowledges and represents to the District that:

a. Developer is the owner of the property described above and for which this Agreement is made;

b. Any streets and/or easements related to the property for which this Agreement is made, and in which the District will be required to install or maintain its facilities as a result of this Agreement have been dedicated as public streets or recorded as sanitary sewer easements in the Office of the Salt Lake County Recorder, State of Utah.

8. IMPACT FEES. The Developer hereby agrees to bear the total costs of constructing all sewer lines and related facilities required for the servicing of Developer's development (including extensions from existing District sewer mains to the development, the sewer collection system within the development, and laterals to each lot or connection within the development). No lot or parcel of real property shall be connected to any portion of the District's existing sewer system until the applicable impact fee shall be paid to the District for that lot or parcel. The applicable impact fees shall be those established by the District's Board of Trustees which are in effect on the date when the impact fees are actually paid to the District.

9. BINDING EFFECT. The agreements herein contained shall inure to the benefit of, and be binding upon, the parties hereto and their respective heirs, representatives, agents, officers, employees, successors and assigns.

10. DEFAULT. In the event either party hereto defaults on any of the covenants and agreements contained herein, the defaulting party shall pay all costs and expenses, including a reasonable attorney's fee, incurred by the other party in enforcing its rights hereunder whether incurred through litigation or otherwise.

11. TREATMENT CAPACITY. The District's obligation to provide sewer service hereunder is subject to and conditioned upon the availability of adequate treatment capacity at the sewer treatment facilities serving the District and shall be subject to any limitations, requirements and regulations which may be established and enacted from time to time by the governing body of the sewer treatment facility, or by any other governmental entity having jurisdiction over the parties hereto.

12. COUNTERPARTS. The fact that the parties hereto execute multiple but identical counterparts of this Agreement shall not affect the validity or efficacy of their execution, and such counterparts, taken together, shall constitute one and the same instrument, and each such counterpart shall be deemed an original.

13. SEVERABILITY. Should any portion of this Agreement for any reason be declared invalid or unenforceable, the invalidity or unenforceability of such portion shall not affect the remaining portions of the Agreement which shall be deemed in full force and effect as if this Agreement had been executed with the invalid portions eliminated.

14. WAIVER. No waiver of any of the provisions of this Agreement shall operate as a waiver of any other provision, regardless of any similarity that may exist between such provisions, nor shall a waiver in one instance operate as a waiver in any future event. No waiver shall be binding unless executed in writing by the waiving party.

15. OTHER BONDS. This Agreement and the Cash Deposit do not alter the obligation of Developer to provide other bonds under applicable ordinances of any city or county having jurisdiction over Developer's development. The furnishing of security in compliance with the requirements of other jurisdictions shall not adversely affect the ability of the District to draw on the Cash Deposit as provided herein.

16. TIME OF ESSENCE. The parties agree that time is of the essence in the performance of all duties herein.

17. EXHIBITS. Any exhibit(s) to the Agreement are incorporated herein by this reference, and failure to attach any such exhibit shall not affect the validity of this Agreement or of such exhibit. An unattached exhibit is available from the records of the parties.

18. WARRANTY. The Developer hereby warrants and guarantees that the Sewer Improvements installed, and every part thereof, shall remain in good condition and free from all defects due to faulty materials or workmanship for a warranty period of one (1) year from the date of final inspection of the same by the District, and the Developer shall promptly make all repairs, corrections, and/or replacements for all defects in workmanship, materials, and equipment during the warranty period, without additional charges or cost to the District. As security for Developer's performance under this warranty, the District shall be entitled to withhold release of the 20% Warranty Amount until the warranty period has been completed. The District shall have the right to withdraw from the Cash Deposit to make corrections and repairs on the Sewer Improvements during the warranty period as provided in paragraphs 2 and 4 hereof.

19. CAPTIONS. The captions preceding the paragraphs of this Agreement are for convenience only and shall not affect the interpretation of any provision herein.

20. GOVERNING LAW. This Agreement and the performance hereunder shall be governed by the laws of the State of Utah.

21. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties with respect to the subject matter hereof, and no prior or contemporaneous promises, representations, warranties or understandings between the parties regarding the subject matter hereof, which are not contained herein shall be of any force or effect. Any amendment to this Agreement shall be made in writing and signed by the parties hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective duly authorized representatives this _____ day of _____, 20__.

SANDY SUBURBAN IMPROVEMENT DISTRICT

BY: _____
GENERAL MANAGER

DEVELOPER: _____

BY: _____

TITLE: _____

**DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is an Individual)**

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he executed the foregoing document.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is a Corporation)

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he is the _____ of _____, a _____ corporation, and that said instrument was signed in behalf of said corporation by authority of its bylaws (or by a resolution of its Board of Directors) and said acknowledged to me that said corporation executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DEVELOPER'S ACKNOWLEDGMENT
(Complete if Developer is a Limited Liability Company)

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is a _____ of _____, a limited liability company, and that the foregoing instrument was duly authorized by the limited liability company at a lawful meeting held by authority of its operating agreement and signed in behalf of said limited liability company.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

DISTRICT'S ACKNOWLEDGMENT

STATE OF UTAH)
 :SS.
COUNTY OF SALT LAKE)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he/she is the General Manager of Sandy Suburban Improvement District, a governmental entity, and that said instrument was signed in behalf of said District by authority of its Board of Trustees and said acknowledged to me that said District executed the same.

NOTARY PUBLIC

My Commission Expires: _____
Residing at: _____

APPENDIX VII

NOTICE OF ASSUMPTION OF SEWER SYSTEM

WHEREAS, The Sandy Suburban Improvement District (hereinafter "District") provides sewer collection, transmission, and treatment services to residents and businesses within the boundaries of the District; and

WHEREAS, _____ (hereinafter "Grantor") for economic or other purposes; developed, constructed, or otherwise improved a portion of the sanitary sewer system, including but not limited to all sewer lines, manholes, and other appurtenances, located at _____ (hereinafter "Project"); and

WHEREAS, pursuant to District policy, all portions of the sewer system (other than private laterals) shall be owned and maintained by the District; and

WHEREAS, one year has passed since the Project was completed; and

WHEREAS, the Project has received a final inspection; and

WHEREAS, the total value of the Project is _____.

NOW, THEREFORE, the District assumes the property identified in the Project with all rights conveyed by the Grantor.

READ INTO THE RECORD this _____ day of _____, 20____.

SANDY SUBURBAN IMPROVEMENT DISTRICT

By:_____

BOARD CHAIRMAN

APPENDIX VIII

The checklist for steps to be followed for
Sanitary Sewer Line Installations within Sandy Suburban Improvement District

Sandy Suburban Improvement District Tasks

1. Receive project information from municipality plan review.
2. Investigate capacity of system to accommodate the proposal.
3. Check the location of existing sewer lines.
4. Contact either the owner or engineer.
5. Compile a letter of service availability to all necessary parties.
6. Once engineer's evaluation is received, project team sends letters to appropriate entity and the Developer regarding necessary documentation to proceed.
7. Confirm that all Extension Agreements and bonding documents are in place.
8. Hold preconstruction meeting with representatives from Developer and contractor.
9. Make visits to site at appropriate intervals to observe progress and quality of contractor's work.
10. Observe all tests of all sewer lines.
11. At contractor's request, televise line.
12. If needed, a letter of deficiency will be sent out to developer/contractor requesting punch-list to be completed. A 10-day response time will be given.
13. Conduct a final walk-through inspection.
14. Request preparation of record-drawing on District sheets from the engineer.
15. The District will secure final drawings from Engineers.
16. Warranty period begins.
17. Televise prior to completion of warranty period.
18. After the line has been televised and approved, a Notice of Assumption of Sewer System will be presented to the District's Board of Trustees.

APPENDIX IX

The checklist for steps to be followed for
Sanitary Sewer Line Installations within Sandy Suburban Improvement District

Developer/Owner Tasks

1. Submit three (3) copies of plan and profile.
2. Submit all Extension Agreements along with Bonding Certificate.
3. Submit right-of-way or easements for review.
4. Pay review fees to the District. Reviewed plans will not be released until payment is received.
5. Stake sewer location by developer's engineer.
6. Install sewer line.
7. All required tests are to be completed and documented.
8. Submit field-mark drawings to the District.

APPENDIX X

The checklist for steps to be followed for
Sanitary Sewer Line Installations within Sandy Suburban Improvement District

Engineer Tasks

Design / review

1. Prepare preliminary design or review.
2. Prepare cost estimate of improvements for bonding.
3. Send copy of project plans to the District (include a preliminary design and cost estimate).
4. Notify Sandy Suburban Improvement District when plans are reviewed.