CITY OF LAS VEGAS	*DEPARTMENT of BUILDING and SAFETY* **OFFSITE INSPECTION and TESTING SECTION** *Materials Testing Laboratory*	Procedure No.: *103*
	Procedure: **Utility Trench Backfill Material Report**	Page 1 of 7

Revision Number	Prepared By	Reviewed By	Approved By	Date Issued
0	GGJ	GGJ	BM	GGJ
Date	1-7-96	5-12-96	9-3-96	9-3-96
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Date	6-6-11	1-18-13	1-24-13	1-24-13
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DEPARTMENT of BUILDING and SAFETY

OFFSITE INSPECTION and TESTING SECTION

Materials Testing Laboratory

City of Las Vegas
Utility Trench Backfill Material Report

Procedure No. 103 Revision *9*

The italicized and underlined sections of this policy note Revision 9 changes.

1.0 PURPOSE:

1.1 This policy establishes the guidelines by which the City of Las Vegas (CLV) will review and approve the use of imported and native (in-situ) materials meeting the Final Zone Backfill requirements of Clark County Uniform Standard Specifications, Section 208, for utility trenches (Sewer, Storm Drain) in the public / private offsite improvement areas.

1.2 The Utility Trench Backfill Material shall be used in the Final Zone (as identified in the Clark County Uniform Standard Specifications, Section 208, Figure No. 1). This zone extends from the top of the Pipe Zone material to the top of the street or sidewalk subgrade within the offsite area. The public offsite area is defined from the back of sidewalk to back of sidewalk. The private offsite area is defined from the back of curb to back of curb on private streets. The CLV Quality Assurance (QA) Program is limited to monitoring the *Utility* Trench Backfill material with periodic tests for public and private offsite improvements.

NOTE 1: A Utility Trench Backfill Material Report is not required for dry utility trench backfill to be placed behind curb and gutter for both public and private offsite areas. Coordination with the CLV Offsite Inspector is required to determine the required Field Density Test Reports to be submitted to the inspector for these areas *and dry utility trench backfill placed within the street area.*

1.3 A Final Utility Trench Backfill Material Report is required to be submitted for review and approval dependent upon the project Scope of Work *for each project unless determined otherwise.*

2.0 REFERENCE CODES AND STANDARDS:

2.1 Associated CLV Procedures:

2.1.1 101 - Submittal of *Construction Phase* Report

2.1.2 102 - Type III Pipe Zone Backfill Material Report

2.1.3 104 - Trench Backfill *Operation* Report

2.2 Clark County Uniform Standard Specifications:

2.2.1 Section 105, "Control of Work".

2.2.2 Section 207 "Structural Backfill".

2.2.3 Section 208 "Trench Excavation and Backfill".

2.2.4 Section 704 "Base Aggregates".

2.3 Other:

2.3.1 NRS 338.176, NAC 625.550, the most current ASTM, AASHTO, NDOT test procedures as indicated in the applicable sections of the Uniform Standard Specifications.

3.0 STATEMENT OF POLICY:

3.1 Submittal:

3.1.1 Submittal format shall be completed in accordance with the current CLV procedure and in compliance with the NRS 338.176 and NAC 625.550 statutes.

3.1.2 The project developer or their representative shall submit a transmittal letter per the current CLV procedure "PWOIT MT 101" and a Utility Trench Backfill Material Report to the CLV for review and approval. The transmittal and report shall be submitted and approved prior to utilization of the material.

3.2 Materials Not Meeting Granular or Selected Backfill Material Specifications:

3.2.1 If the Engineer *(Geotechnical / Quality Control)* recommends the use of materials not meeting the specification requirements of Final Zone Backfill, specific recommendation parameters are required. The minimum information to be specified is:

3.2.2 Moisture range.

3.2.3 Minimum density requirement.

3.2.4 Maximum loose lift thickness

3.2.5 Compaction Method

NOTE 1: Only mechanical compaction method shall be used on material not meeting specification.

3.3 Use of an Inter-Agency Quality Assurance Committee (IQAC) approved Type 2 Aggregate Base Material in the Final Backfill Zone as Selected Backfill Material:

3.3.1 A Utility Trench Backfill Report is required when using this material in the Final Backfill Zone as a Selected Backfill material.

3.3.2 The report text shall include the pit name, Maximum Dry Density and Optimum Moisture.

3.3.3 A copy of the IQAC approved test report (with IQAC approval stamp) or copy of the current IQAC web page listing with the pit shall be included with the report.

3.4 Use of an Inter-Agency Quality Assurance Committee (IQAC) approved Controlled Low Strength Material (CLSM) in the Final Backfill Zone:

3.4.1 The CLSM backfill shall be as specified in Clark County Standard Specifications, subsection 704.03.07 "Controlled Low Strength Material".

NOTE 2: Testing of the CLSM is not required if an IQAC approved CLSM mix design is used for the Final Zone Backfill.

3.4.2 The approved CLSM mix design to be used shall be a Class 1 mix design unless noted otherwise by the Geotechnical Engineer.

3.4.3 The Utility Trench Backfill Report shall identify the proposed IQAC approved CLSM mix design to be used.

3.4.4 A copy of each "Trip Ticket" shall be required to be included with the Trench Backfill Report(s).

3.5 Use of Non Approved IQAC Controlled Low Strength Material (CLSM) Mix Designs in the Final Backfill Zone:

3.5.1 The CLSM backfill shall be as specified in Clark County Standard Specifications, subsection 704.03.07 "Controlled Low Strength Material".

3.5.2 The use of the CLSM shall be as specified in Clark County Standard Specifications, subsection 208.03.09 "Use of CLSM" with the following clarifications:

3.5.2.1 An unapproved IQAC approved mix design shall be submitted to the CLV for review and approval prior to the use of the mix design.

3.5.2.2 A Daily Placement Inspection Report shall be written including the location of the CLSM placement. The location shall include as a minimum the utility line being covered, the street name, the station to station location, and beginning and ending elevations. Copies of the daily "Trip Tickets" shall be included with the Daily Placement Inspection Report. Copies of these reports shall be included in the Trench Backfill Report(s).

3.5.2.3 One set of six (6) four-inch diameter by eight-inch high test cylinders shall be made for every 150 cubic yards or fraction thereof. A report of the results shall be submitted to the CLV project inspector.

3.5.2.4 Placement of backfill or other materials on top to the CLSM shall not be allowed until the CLSM has passed the "ball drop" test per ASTM D602. Results of this test shall be submitted to the CLV inspector for their review and approval.

4.0 REPORTS:

4.1 General Requirements for Report Content:

4.1.1 The report shall include, at a minimum, the following information:

4.1.1.1 Revised reports shall include the issue date for the report being superseded, as well as the revision date.

4.1.1.2 Project / Permit Name *as shown on the CLV Off-Site Construction Permit Hard Card*.

4.1.1.3 Project / Permit Number, *for civil permits, as shown on the CLV Off-Site Construction Permit Hard Card*.

4.1.1.4 Project / Permit Plan Number *as shown on the CLV Off-Site Construction Permit Hard Card* .

4.1.1.5 Referenced Reports shall be identified by the accepted QC report issue date and CLV acceptance letter date.

4.1.1.6 *The report shall state for what use the approved material has been approved (i.e. Selected Backfill, Granular Backfill, etc.).*

4.1.1.7 The report must be prepared by, or under the direction of a Professional Engineer registered in the State of Nevada. The report shall be signed and stamped by the responsible engineer.

4.1.1.8 Use the appropriate approved project Plan and Profile sheets to determine the specific location for the area being submitted for review and acceptance **for this report**. The locations shall be noted in the text of the report in a similar format as shown below:

Table 1

Street Name	Type of Utility	Station Number		Station Number
			to	

NOTE 2: If the street names are revised after a construction phase report has been submitted to the CLV and approved by the CLV, subsequent construction phase reports shall reference the original street name as well as the revised street name.

NOTE 3: If an IQAC approved Type 2 Aggregate is used as Pipe Zone Backfill Material, include the Pit name and proctor information as shown on the approved IQAC list.

4.1.1.9 The report shall contain a statement that verifies the trench backfill material complies with the requirements and recommendations of the project geotechnical report, project plans, specifications, and current CLV policies and procedures.

4.1.1.10 Sieve Analysis

4.1.1.11 Plastic Index.

4.1.1.12 Proctor information per current AASHTO T180 procedure and include a curve for each material type.

4.1.1.13 Plot plan with sample locations identified and areas indicated that are represented by the sample. The accepted area shall be in such a manner that the area is identifiable on "Xerox" copies.

4.1.1.14 If testing is provided by another laboratory, that data shall be stamped by the responsible engineer and included in the report.

4.2 Additional Requirements for Interim Report:

4.2.1 Interim (partial area release) reports for specific areas of work (i.e. utility trenches in the interior / exterior areas and / or portions of those areas) are acceptable; however the interim reports shall be referenced in the Final Utility Trench Backfill Material Report.

4.2.2 The report title shall be **"Interim Utility Trench Backfill Material Report – *(insert one of the following)*":**

4.2.2.1 *Selected Backfill*

4.2.2.2 *Granular Backfill*

4.2.2.3 *Sand Backfill*

4.2.2.4 *Controlled Low Strength Material (CLSM)*

4.2.3 Referenced CLV approved reports.

4.2.3.1 Interim / Final Type III Pipe Zone Backfill Material Report.

4.2.3.2 *Previously submitted r*eport information / test data included with approved reports, per section 4.1.1.5, shall not be included with the Final Report.

4.3 Additional Requirements for Final Report:

4.3.1 This is the **last report** for this phase of work, if Interim Reports were issued. It is the **only report** if Interim Reports were not issued. This report shall contain a statement that verifies that all of the exterior and all of the interior trench backfill material complies with the requirements and recommendations of the project geotechnical report, project plans, specifications, referenced construction phase reports, and current CLV policies and procedures. The report must be signed and stamped by the responsible engineer.

4.3.2 The report title shall be **"Final Utility Trench Backfill Material Report – *(insert one of the following)*":**

4.3.2.1 *Selected Backfill*

4.3.2.2 *Granular Backfill*

4.3.2.3 *Sand Backfill*

4.3.2.4 *Controlled Low Strength Material (CLSM)*

4.3.3 Referenced CLV approved reports.

4.3.3.1 Final Type III Pipe Zone Backfill Material Report.

4.3.3.2 Interim Utility Trench Backfill Material Report.

4.3.3.3 *Previously submitted r*eport information / test data included with approved reports, per section 4.1.1.5, shall not be included with the Final Report.

5.0 SAMPLING AND TESTING:

5.1 The material must be obtained and tested by a laboratory that is AASHTO Accredited in the procedures being reported. The most current ASTM, AASHTO, NDOT test procedures shall be used. Testing requirements shall be from the applicable sections of the Uniform Standard Specifications and current CLV policies and procedures.

> **NOTE 4:** The requirement for the AASHTO Accreditation is mandatory for all laboratories performing work submitted to the City of Las Vegas, Offsite Inspection and Testing, effective March 1, 2008. Laboratories that are not accredited in the test procedures being submitted shall contact the City of Las Vegas, Offsite Inspection and Testing, *Materials Testing Laboratory* prior to submitting the test information.

5.2 Samples shall be obtained and tested for every 1000 lineal feet and fraction thereof. A minimum of (two) 2 samples per project. If interior and exterior streets are included in the project, representative samples shall be obtained from both *the interior and exterior street* areas.

5.3 The AASHTO Soils Classification shall be included in the report.

5.4 A moisture-density value and curve must be determined for each soil type present. The current AASHTO Method T180 shall be used.

6.0 EFFECTIVE DATE AND APPROVALS:

EFFECTIVE DATE: February 1, 2013

1-24-13

Thomas Hayes, P.E. — Date
City of Las Vegas
Inspections Manager

1-24-13

Gary G. Johnson, S.E.T. — Date
City of Las Vegas
Materials Testing Supervisor