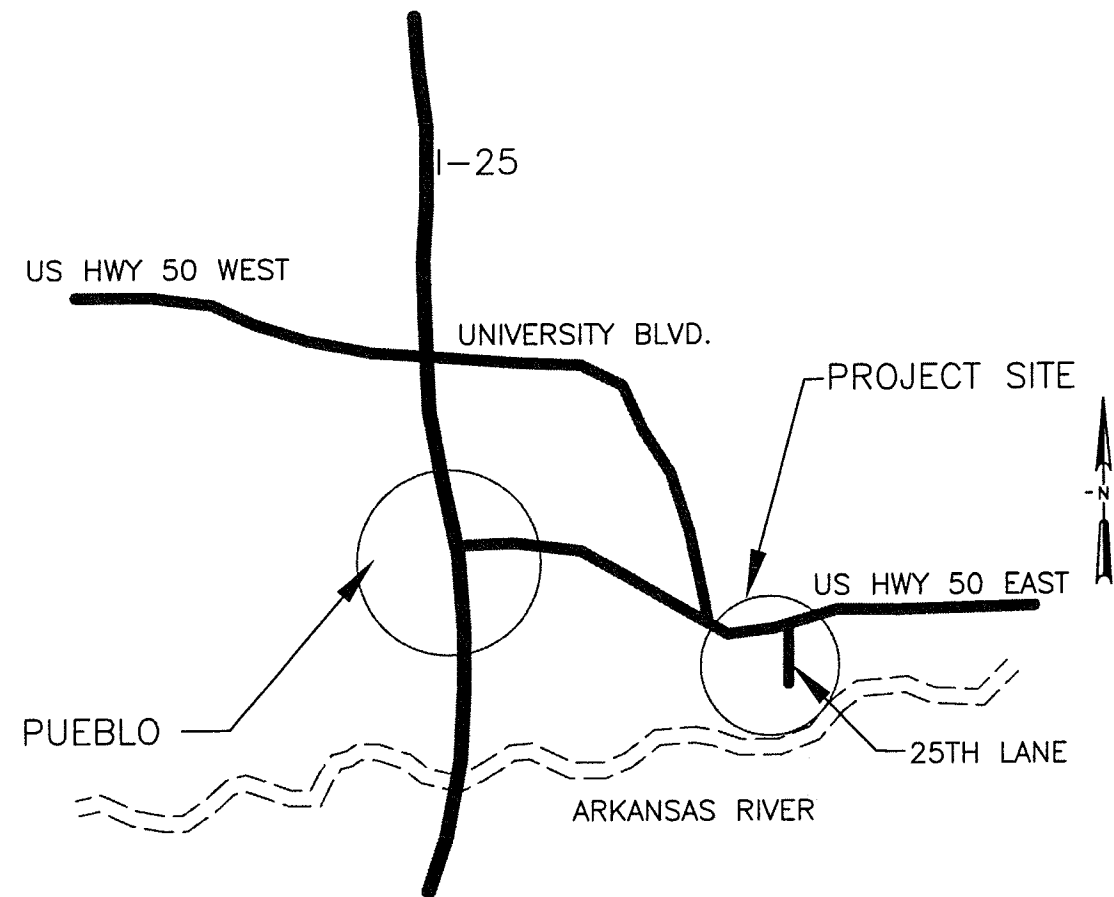


TRANSIT MIX EAST PIT, PHASE II SLURRY WALL AS-CONSTRUCTED PLANS PUEBLO, COLORADO



LOCATION MAP
NTS



SITE MAP
NTS

SHEET NUMBER	TITLE
101	COVER SHEET: GENERAL LOCATION MAP AND SITE MAP
102	KEY SHEET
103 (1-4)	SLURRY WALL PLAN
104	SLURRY WALL DETAILS

NO. BY CH APP	4 GOS MLP/SCK	5/13/2008	AS-CONSTRUCTED
	3 GOS MLP/SCK	11/19/2006	REVISION 3, REVISED KEY
	2 GOS MLP/SCK	10/24/2006	REVISION 2, ADDITIONAL BORINGS, REVISED KEY
	1 MLP/SCK	10/11/2006	REVISION 1, ADDED ALIGNMENT AND WORKPAD DETAILS
	0 MLP/SCK	9/10/2006	FOR CONSTRUCTION
			REF: 10-slurrywallprofile2.dwg
			REF: 10-
			REF: 10-
			REF: 10-

	LYMAN HENN, INC. 110 16TH STREET, SUITE 700 DENVER, CO 80202
--	--

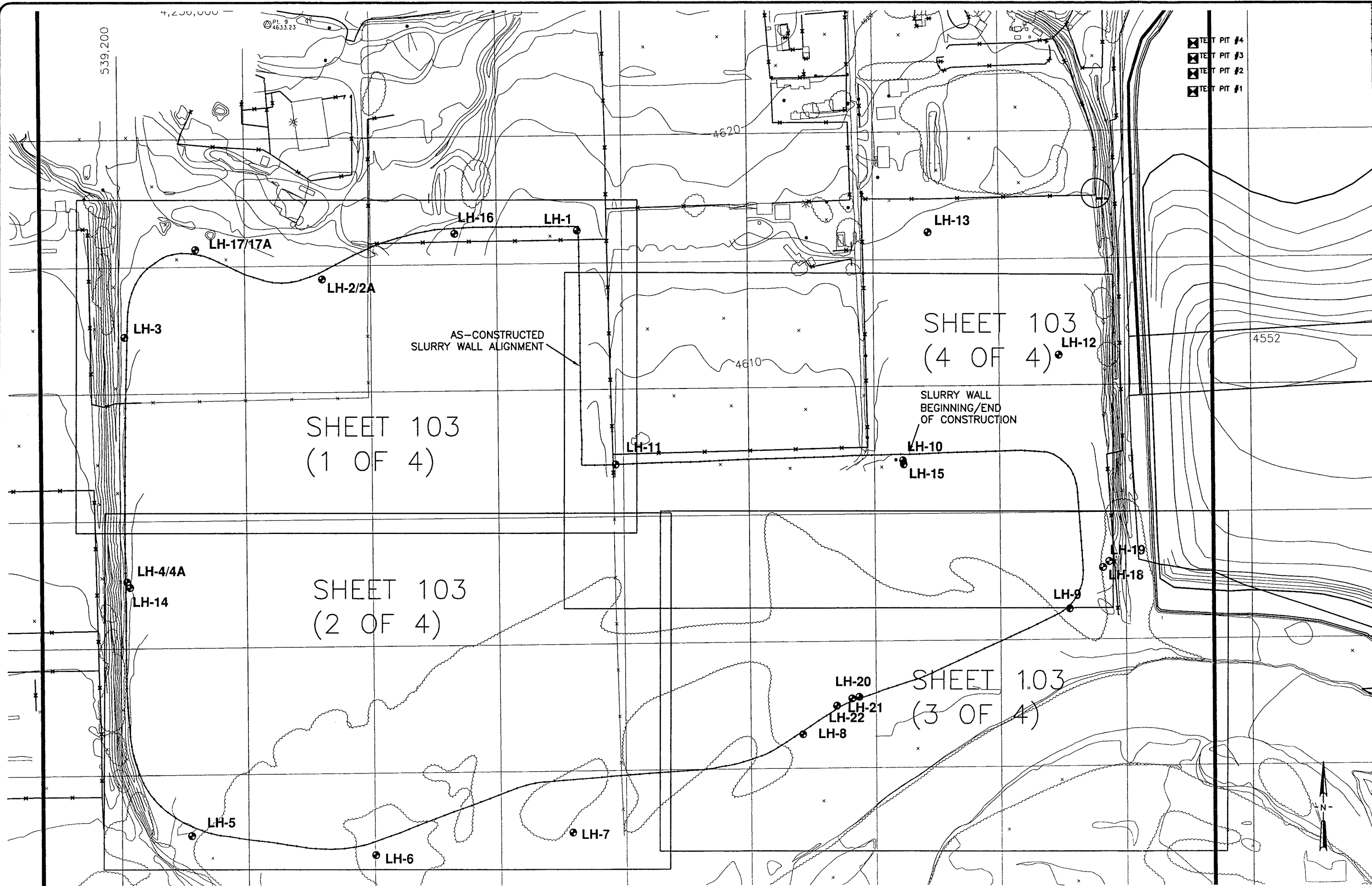
TRANSIT MIX EAST PIT, PHASE II SLURRY WALL DESIGN	COVER SHEET
--	-------------

DESIGNED: MLP
DETAILED: GOS
CHECKED: SCK
APPROVED: SCK
DATE: MARCH 12, 2009
PROJECT NO.
106087-000

SHEET
101

G:\PROJECTS\106087-000\TRANSIT MIX EAST PIT\W\1\Final\AS-Built Report\Final Survey Alignment\Transit Mix Design AS-Built rev1.dwg

G:\PROJECTS\106087-000\TRANSIT MIX EAST PIT\W\1\Final\AS-Built Report\Final Survey Alignment\Transit Mix Design AS-Built rev1.dwg



- NOTES:
1. ALIGNMENT SHOWN IS BASED ON AS-BUILT SURVEY PERFORMED BY MANGINI REEVES, INC. FEB 2009.
 2. ALIGNMENT IS OVERLAIN ON BASE MAP PROVIDED BY MANGINI REEVES, INC.
 3. SEE AS-BUILT REPORT FOR DETAILS REGARDING STATIONING.

LEGEND

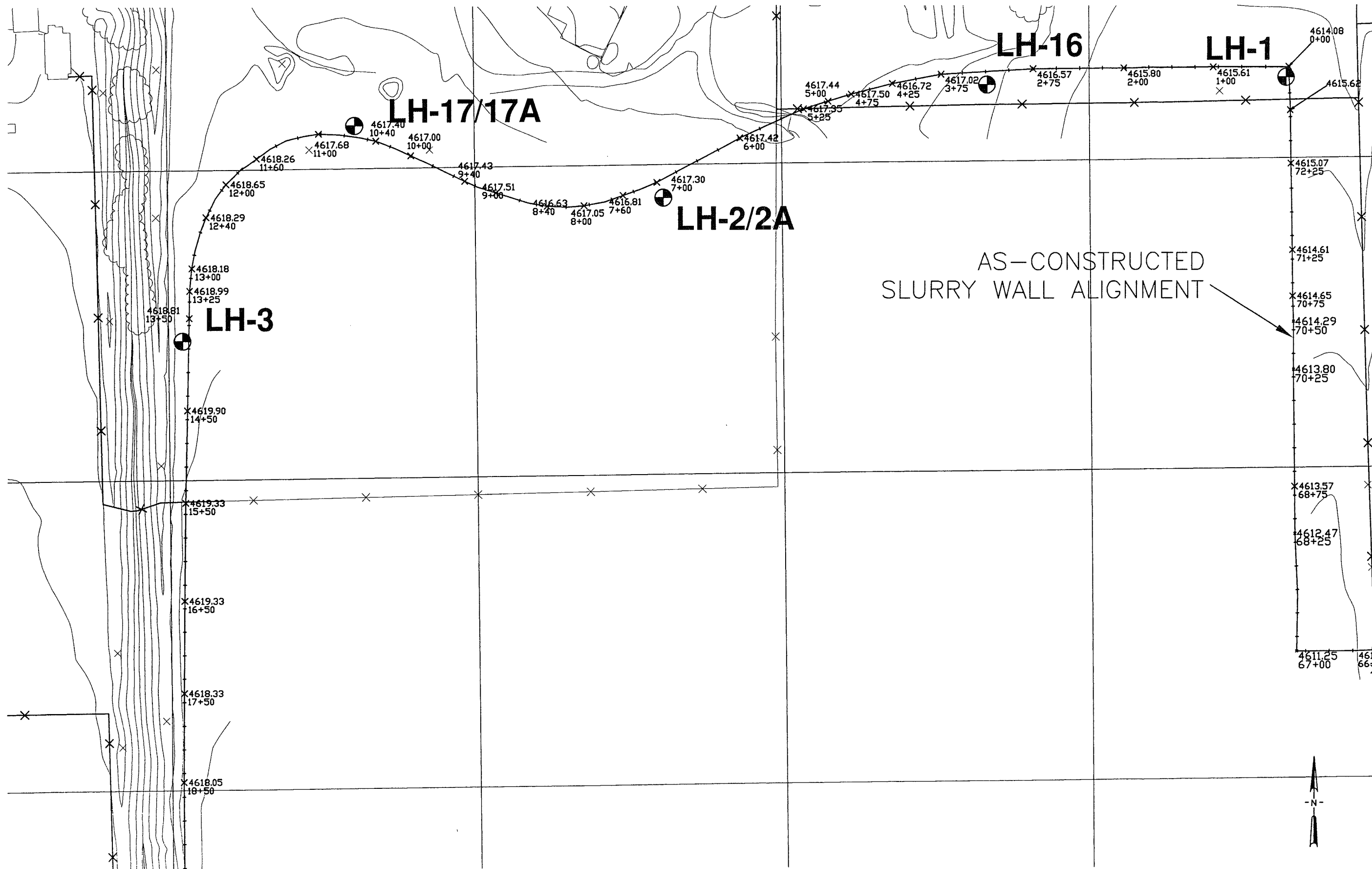


LYMAN HENN, INC. BORING
(MAY/JUNE/OCT 2008)
LYMAN HENN, INC. TEST PIT
(AUG 2008)

0 120 240
SCALE IN FEET

3/12/2009 AS-CONSTRUCTED		4 GDS MLP SCK
11/19/2008 REVISION 3: REVISED KEY		3 GDS MLP SCK
10/24/2008 REVISION 2: ADDITIONAL BORINGS, REVISED KEY		2 GDS MLP SCK
10/17/2008 REVISION 1: ADDED ALIGNMENT AND WORKPAD DETAILS		1 MLP SCK SCK
10/10/2008 FOR CONSTRUCTION		0 MLP SCK SCK
XREF1 ID: 3:slurrywallprofiletransfer2.dwg		
XREF2 ID:		
XREF3 ID:		
XREF4 ID:		
XREF5 ID:		
LYMAN HENN, INC. 110 16TH STREET, SUITE 700 DENVER, CO 80202		
TRANSIT MIX EAST PIT, PHASE II SLURRY WALL DESIGN		
KEY SHEET		
DESIGNED: MLP DETAILED: GDS CHECKED: SCK APPROVED: SCK DATE: MARCH 12, 2009 PROJECT NO. 106087-000		
SHEET 102		

6:\PROJECTS\0808\Transit Mix East Pit\H11\Final As-Built Report\Final Survey Alignment\Transit Mix Design As-Built rev1.dwg



- NOTES:
1. ALIGNMENT SHOWN IS BASED ON AS-BUILT SURVEY PERFORMED BY MANGINI REEVES, INC. FEB 2009.
 2. ALIGNMENT IS OVERLAIN ON BASE MAP PROVIDED BY MANGINI REEVES, INC.
 3. SEE AS-BUILT REPORT FOR DETAILS REGARDING STATIONING.

LEGEND
● LH-#

× 4611.80
57+00

LYMAN HENN, INC. BORING
(MAY/JUNE/OCT 2008)

CONSTRUCTION STATIONING, AS LAID
OUT BY HALL-IRWIN,
ELEVATION AND STATION

0 50 100
SCALE IN FEET

NO.	BY	CHK	APP
4	GOS	WLP	SCK
3	GOS	WLP	SCK
2	GOS	WLP	SCK
1	GOS	WLP	SCK
0	GOS	WLP	SCK

5/12/2008 AS-CONSTRUCTED
11/19/2008 REVISION 3, REVISED KEY
10/24/2008 REVISION 2, ADDITIONAL BORINGS, REVISED KEY
10/17/2008 REVISION 1, ADDED ALIGNMENT AND WORKPAD DETAILS
9/10/2008 FOR CONSTRUCTION

REF1 ID: 106087-000
REF2 ID:
REF3 ID:
REF4 ID:
REF5 ID:

LYMAN HENN, INC.
110 16TH STREET, SUITE 700
DENVER, CO 80202

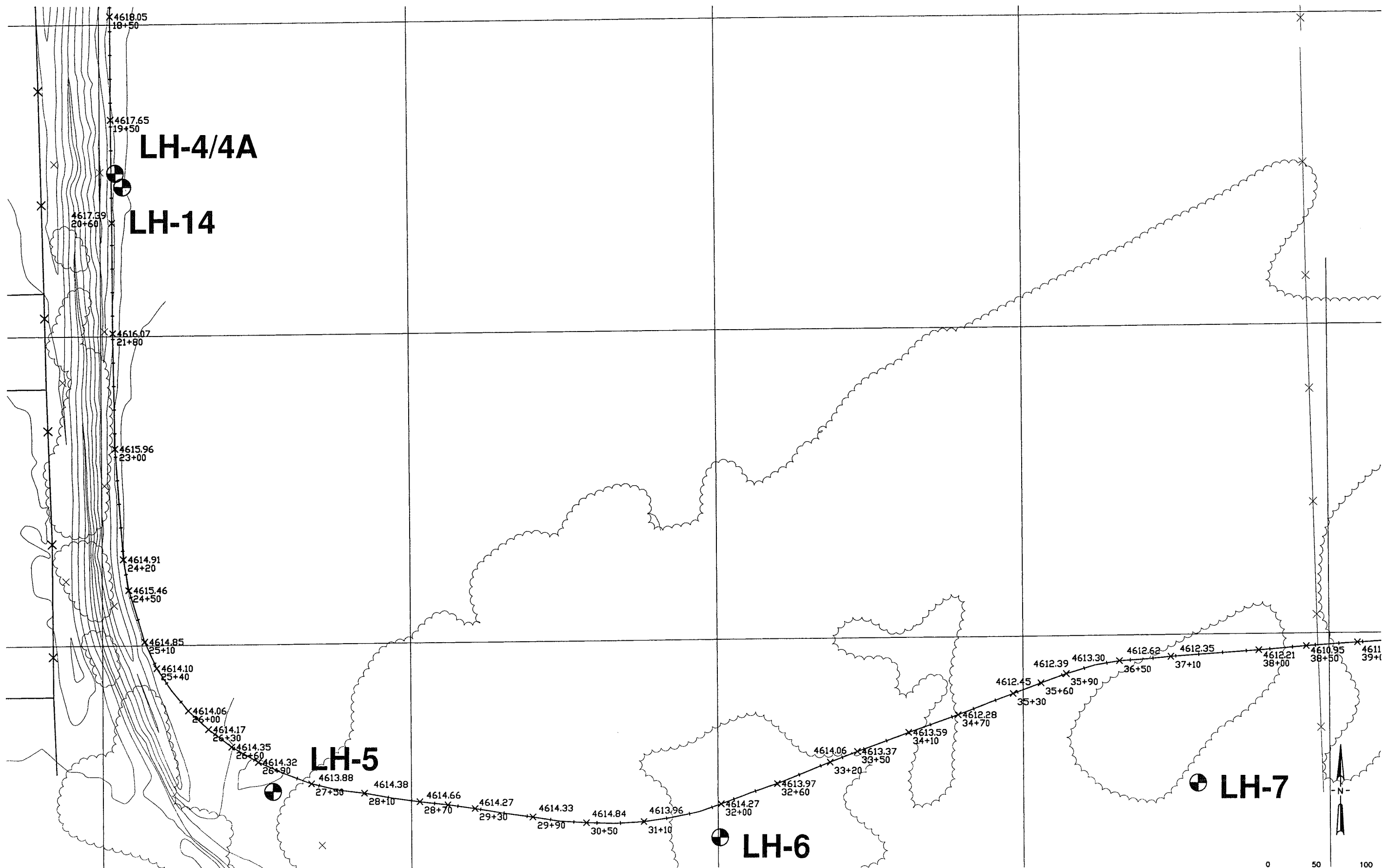
TRANSIT MIX EAST PIT, PHASE II
SLURRY WALL DESIGN
PLAN VIEW (1 OF 4)

DESIGNED: WLP
DETAILED: GOS
CHECKED: SCK
APPROVED: SCK
DATE: MARCH 12, 2009
PROJECT NO.

106087-000

SHEET
103

G:\PROJECTS\1060...
Transit Mix East Pit\Final As-Built Report\Final Survey Alignment\Transit Mix Design As-Built rev1.dwg



NOTES:

1. ALIGNMENT SHOWN IS BASED ON AS-BUILT SURVEY PERFORMED BY MANGINI REEVES, INC. FEB 2009.
2. ALIGNMENT IS OVERLAIN ON BASE MAP PROVIDED BY MANGINI REEVES, INC.
3. SEE AS-BUILT REPORT FOR DETAILS REGARDING STATIONING.

LEGEND

● LH-#

× 4611.80
57+00

LYMAN HENN, INC. BORING
(MAY/JUNE/OCT 2008)

CONSTRUCTION STATIONING, AS LAID
OUT BY HALL-IRWIN,
ELEVATION AND STATION

4

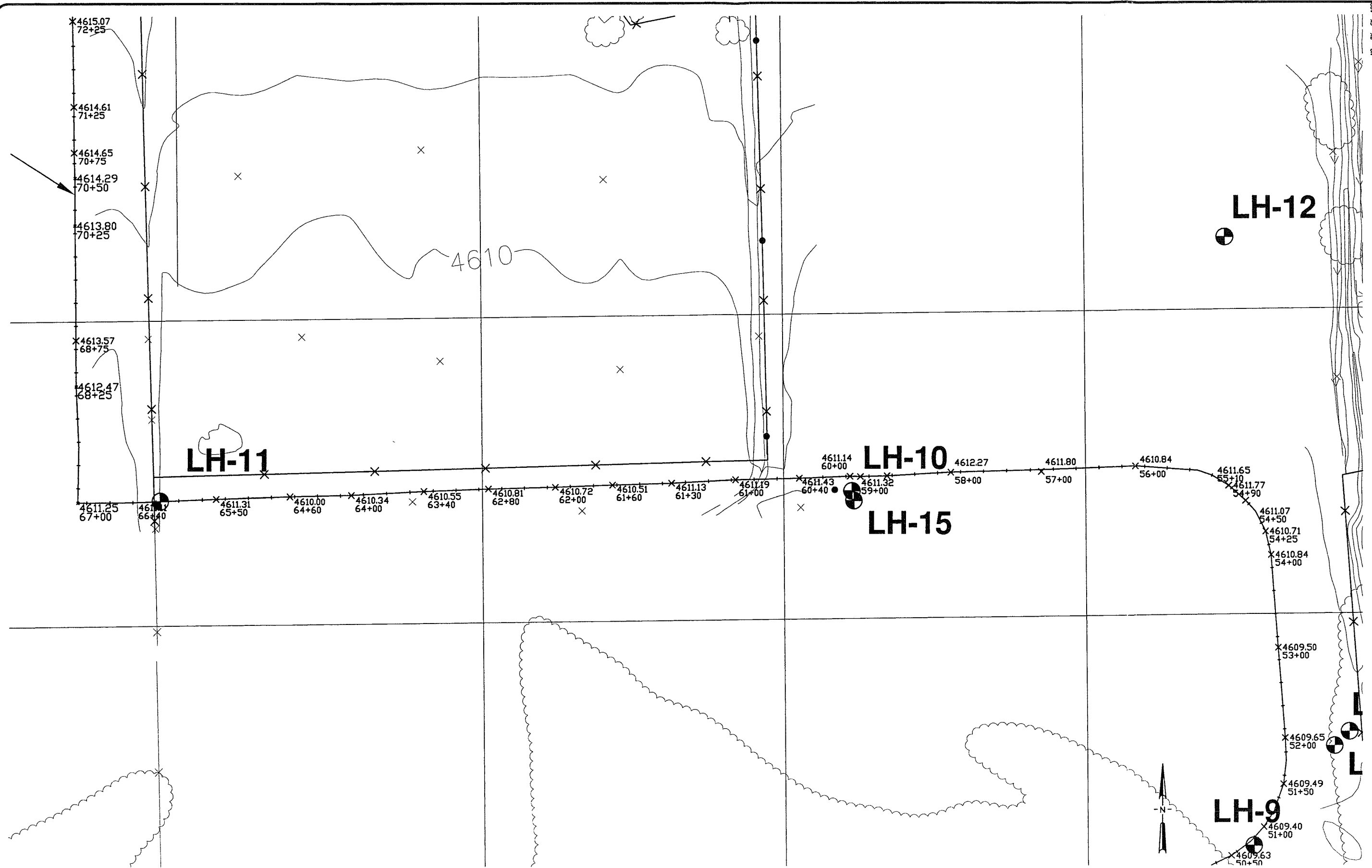
4	10/12/2009	AS-CONSTRUCTED	10/12/2009	AS-CONSTRUCTED
3	11/19/2008	REVISION 3, REVISED KEY	11/19/2008	REVISION 3, REVISED KEY
2	10/24/2008	REVISION 2, ADDITIONAL BORINGS, REVISED KEY	10/24/2008	REVISION 2, ADDITIONAL BORINGS, REVISED KEY
1	10/17/2008	REVISION 1, ADDED ALIGNMENT AND WORKPAD DETAILS	10/17/2008	REVISION 1, ADDED ALIGNMENT AND WORKPAD DETAILS
0	09/10/2008	FOR CONSTRUCTION	09/10/2008	FOR CONSTRUCTION

LYMAN HENN, INC.
110 16TH STREET, SUITE 700
DENVER, CO 80202

TRANSIT MIX EAST PIT, PHASE II
SLURRY WALL DESIGN
PLAN VIEW (2 OF 4)

DESIGNED: MLP	PROJECT NO.
DETAILED: GOS	106087-000
CHECKED: SKC	SHEET
APPROVED: SKC	103
DATE: MARCH 12, 2009	

6:\PROJECTS\10687 - Transit Mix East Pit\10687 Final As-Built Report\Final Survey Alignment\Transit Mix Design As-Built rev1.dwg



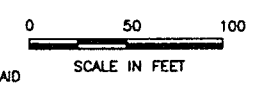
- NOTES:
1. ALIGNMENT SHOWN IS BASED ON AS-BUILT SURVEY PERFORMED BY MANGINI REEVES, INC. FEB 2009.
 2. ALIGNMENT IS OVERLAIN ON BASE MAP PROVIDED BY MANGINI REEVES, INC.
 3. SEE AS-BUILT REPORT FOR DETAILS REGARDING STATIONING.

LEGEND
LH-#

4611.80
57+00

LYMAN HENN, INC. BORING
(MAY/JUNE/OCT 2008)

CONSTRUCTION STATIONING, AS LAID
OUT BY HALL-IRWIN,
ELEVATION AND STATION



3/12/2008 AS-CONSTRUCTED	11/19/2008 REVISION 3, REVISED KEY	10/24/2008 REVISION 2, ADDITIONAL BORINGS, REVISED KEY	10/17/2008 REVISION 1, ADDED ALIGNMENT AND WORKPAD DETAILS	09/10/2008 FOR CONSTRUCTION
NO. BY CK APP	4 GOS MLP SCK	3 GOS MLP SCK	2 GOS MLP SCK	1 MLP SCK SCK
XREF1 ID: slurrywallplantransfmr2.dwg				
XREF2 ID:				
XREF3 ID:				
XREF4 ID:				
XREF5 ID:				

LYMAN HENN, INC.
110 16TH STREET, SUITE 700
DENVER, CO 80202

TRANSIT MIX EAST PIT, PHASE II
SLURRY WALL DESIGN

PLAN VIEW (4 OF 4)

DESIGNED: MLP
DETAILED: GOS
CHECKED: SCK
APPROVED: SCK
DATE: MARCH 12, 2009
PROJECT NO.

106087-000

SHEET
103

TYPICAL CROSS-SECTION OF PROPOSED WORKING PLATFORM AND SLURRY WALL

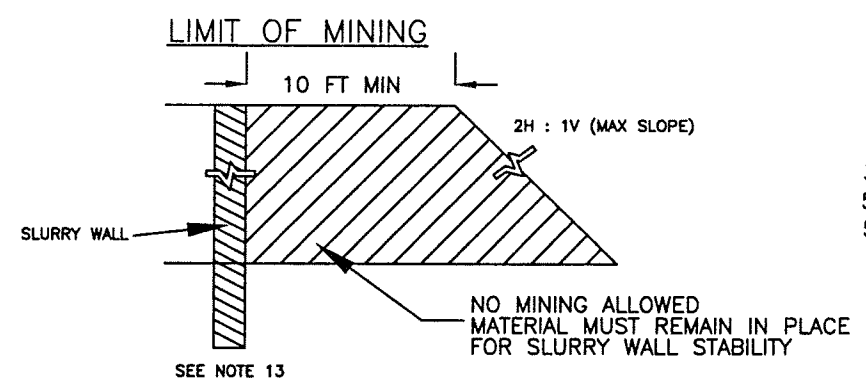
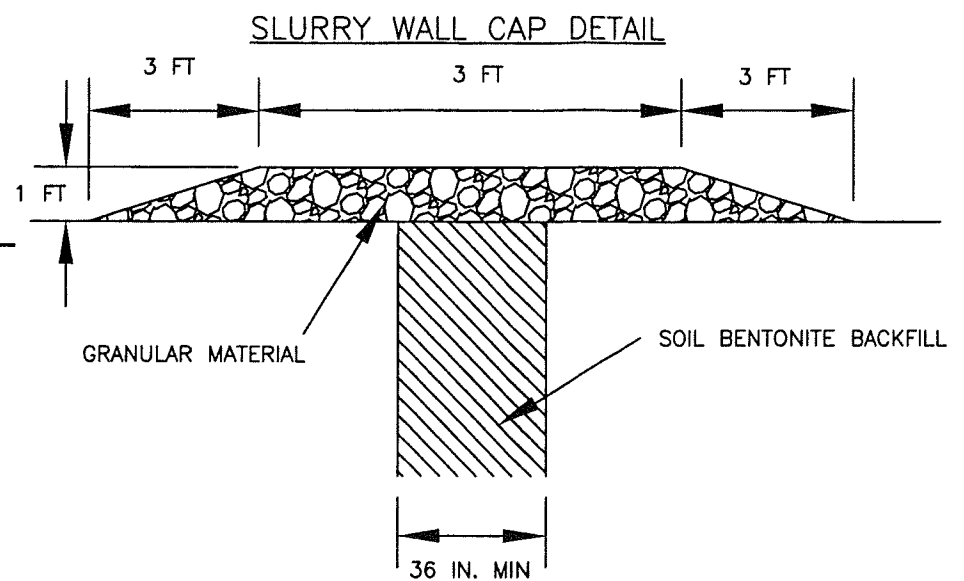
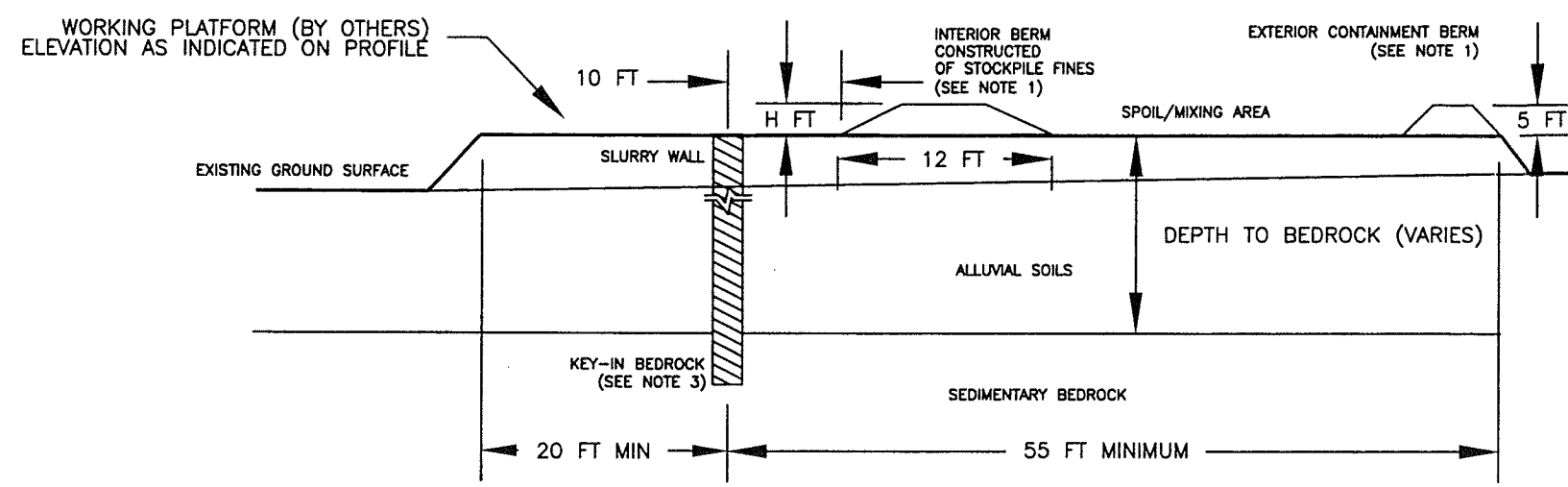


TABLE 1

STATION	KEY DEPTH
0+00 - 9+50	4 FT
9+50 - 38+00	3 FT
38+00 - 52+00	4 FT
52+00 - 59+50	3 FT
59+50 - 74+58	4 FT

TABLE 2

STATION	MINIMUM HEIGHT INTERIOR BERM STOCKPILE FINES (FT)	BERM VOLUME (CY/LINEAR FT)
0+00-12+00	2 FT	0.9
12+00-25+00	2 FT	0.9
25+00-74+58	2.75 FT	1.25

NOTES:

1. WORKPAD SHALL BE CONSTRUCTED AT 0.5% MAXIMUM GRADE AND SHALL CONSIST OF ON-SITE OVERBURDEN SOILS. WORKPAD AND WORKPAD FILL SUBGRADE WITHIN 10 FT OF SLURRY WALL ALIGNMENT SHALL BE FREE FROM ROOTS OR OTHER ORGANIC MATERIAL. INTERIOR BERM SHALL BE CONSTRUCTED OF SOILS WITH MINIMUM 80% FINES (SEE TABLE 2). EXTERIOR CONTAINMENT BERM, IF NOT INCORPORATED INTO THE BACKFILL, CAN BE CONSTRUCTED OF ANY MATERIAL. IF THE EXTERIOR BERM WILL BE INCORPORATED INTO BACKFILL MIX, IT SHALL CONSIST OF OVERBURDEN SOILS WITH MINIMUM 80% FINES.
2. THE PROPOSED SLURRY WALL WIDTH SHALL BE A MINIMUM OF 36 INCHES.
3. THE PROPOSED SLURRY WALL SHALL EXTEND FROM THE WORKING PLATFORM AND EXTEND INTO THE COMPETENT UNWEATHERED SEDIMENTARY BEDROCK THE MINIMUM SHOWN ON TABLE 1, OR AS DIRECTED BY THE ENGINEER TO OBTAIN AN ADEQUATE "KEY-IN".
4. THE PROPOSED SLURRY WALL LEAD-IN SLOPES SHALL BE NO STEEPER THAN 1:1 (HORIZONTAL: VERTICAL). BACKFILL SHALL BE PLACED USING THE LEAD-IN SLOPES. BACKFILL SHALL NOT FREE-FALL INTO THE TRENCH.
5. THE PROPOSED SLURRY WALL BACKFILL SHALL CONSIST OF A MIXTURE OF EXCAVATED SOILS (WORKING PLATFORM, OVERBURDEN, SAND AND GRAVEL), BENTONITE SLURRY, ADDITIONAL DRY BENTONITE, AND SOILS FROM THE INTERIOR BERM WHICH HAVE BEEN OBTAINED FROM THE ON-SITE STOCKPILE OF FINE-GRAINED SOILS. BACKFILL SHALL HAVE A MINIMUM 30% BY WEIGHT PASSING THE #200 SIEVE AND SLUMP OF 4 TO 6 INCHES.
6. ANY FROZEN BACKFILL MATERIAL SHALL BE REWORKED AND ACCEPTED BY THE ENGINEER PRIOR TO PLACING INTO THE TRENCH.
7. DRY BENTONITE SHALL BE ADDED TO THE BACKFILL MIXTURE, 0.5 PERCENT BY WEIGHT AND THOROUGHLY MIXED TO FORM A HOMOGENOUS MIX OF ALL BACKFILL MATERIALS PRIOR TO ANY BACKFILL PLACEMENT.
8. BEDROCK SHALL NOT BE USED IN BACKFILL.
9. BENTONITE SLURRY SHALL HAVE A MINIMUM MARSH FUNNEL VISCOSITY OF 40 SECONDS.
10. THE BACKFILL MIXTURE SHALL HAVE A UNIT WEIGHT WHICH IS A MINIMUM OF 15 POUNDS PER CUBIC FOOT GREATER THAN THAT OF THE BENTONITE SLURRY.
11. THE BACKFILL MIXTURE SHALL HAVE A PERMEABILITY OF LESS THAN 1.0×10^{-7} CENTIMETERS PER SECOND.
12. THE SLURRY WALL TRENCH DEPTH, INCLUDING THE BACKFILL SLOPE, SHALL BE PROFILED AT MINIMUM 20-FT INTERVALS AT THE BEGINNING AND END OF EACH WORK DAY TO MONITOR FOR CAVE-IN OR SEDIMENTATION IN THE BOTTOM OF THE TRENCH. IF NECESSARY THE BACKFILL SLOPE AND THE BOTTOM OF THE TRENCH SHALL BE CLEANED OUT PRIOR TO THE PLACEMENT OF BACKFILL.
13. AFTER SLURRY WALL CONSTRUCTION, THE CRESTS OF ANY PROPOSED TEMPORARY EXCAVATION SLOPES SHALL BE OFFSET A MINIMUM OF 10 FEET FROM THE SLURRY WALL. TEMPORARY EXCAVATION SLOPES ADJACENT TO THE SLURRY WALL SHOULD BE 2:1 (HORIZONTAL:VERTICAL) OR FLATTER.

NO. BY: CX App

4: GOS MJP SCK

3: GOS MJP SCK

2: GOS SCK SCK

1: MJP SCK SCK

0: MJP SCK SCK

3/12/2008 AS-CONSTRUCTED

11/19/2008 REVISION 3: REVISED KEY

10/24/2008 REVISION 2: ADDITIONAL BORINGS, REVISED KEY

10/17/2008 REVISION 1: ADDED ALIGNMENT AND WORKPAD DETAILS

9/10/2008 FOR CONSTRUCTION

XREF1 ID: slurrywallplanfor2.dwg

XREF2 ID:

XREF3 ID:

XREF4 ID:

XREF5 ID:

LYMAN HENN INC

110 18TH STREET, SUITE 700

DENVER, CO 80202

TRANSIT MIX EAST PIT, PHASE II

SLURRY WALL DESIGN

DETAILS SHEET

DESIGNED: MJP

DETAILED: GOS

CHECKED: SCK

APPROVED: SCK

DATE: MARCH 12, 2009

PROJECT NO.

106087-000

SHEET

104