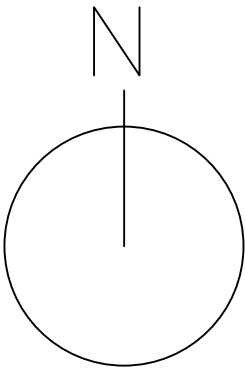
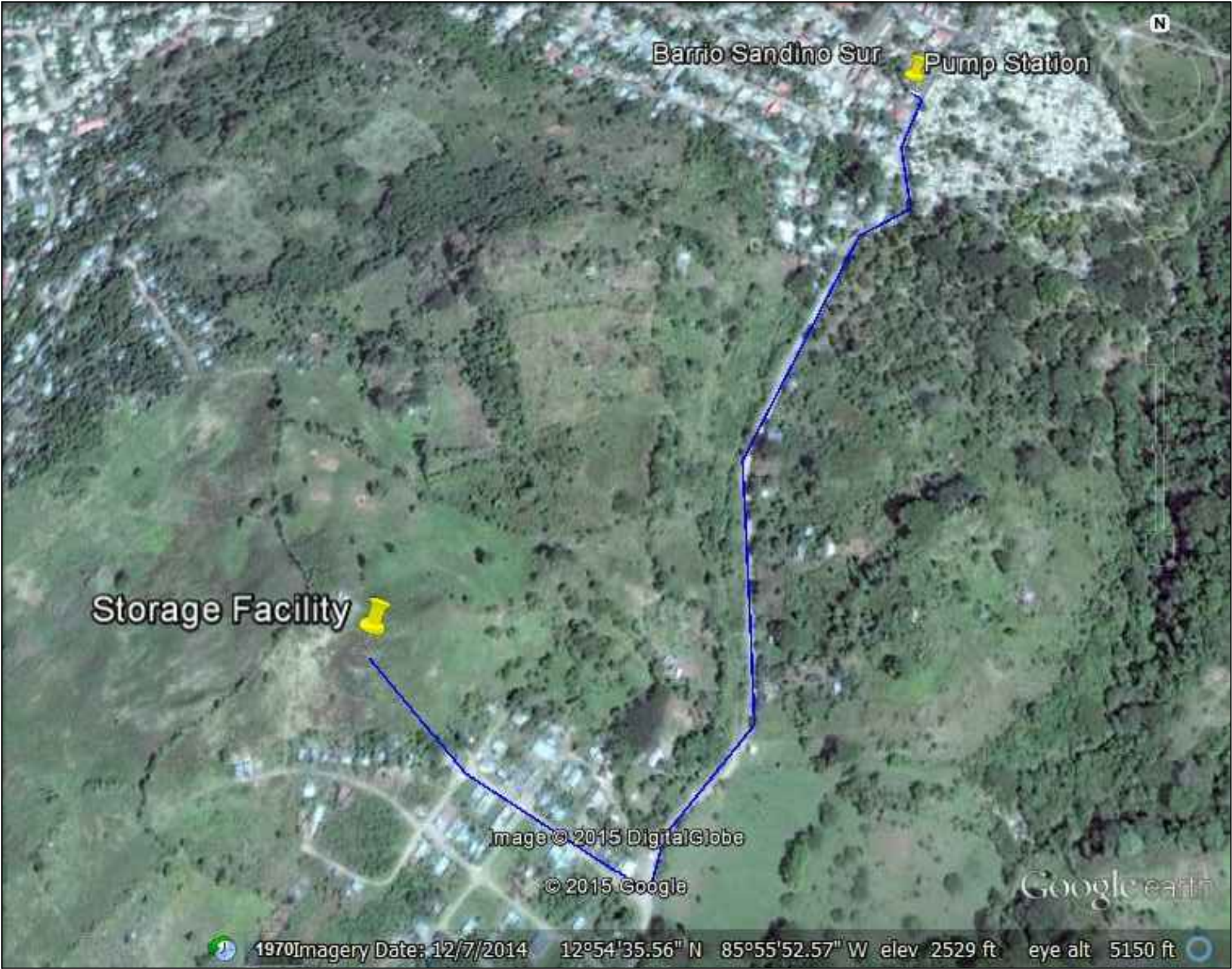


REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

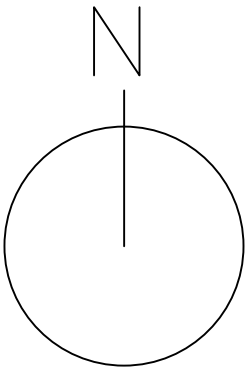
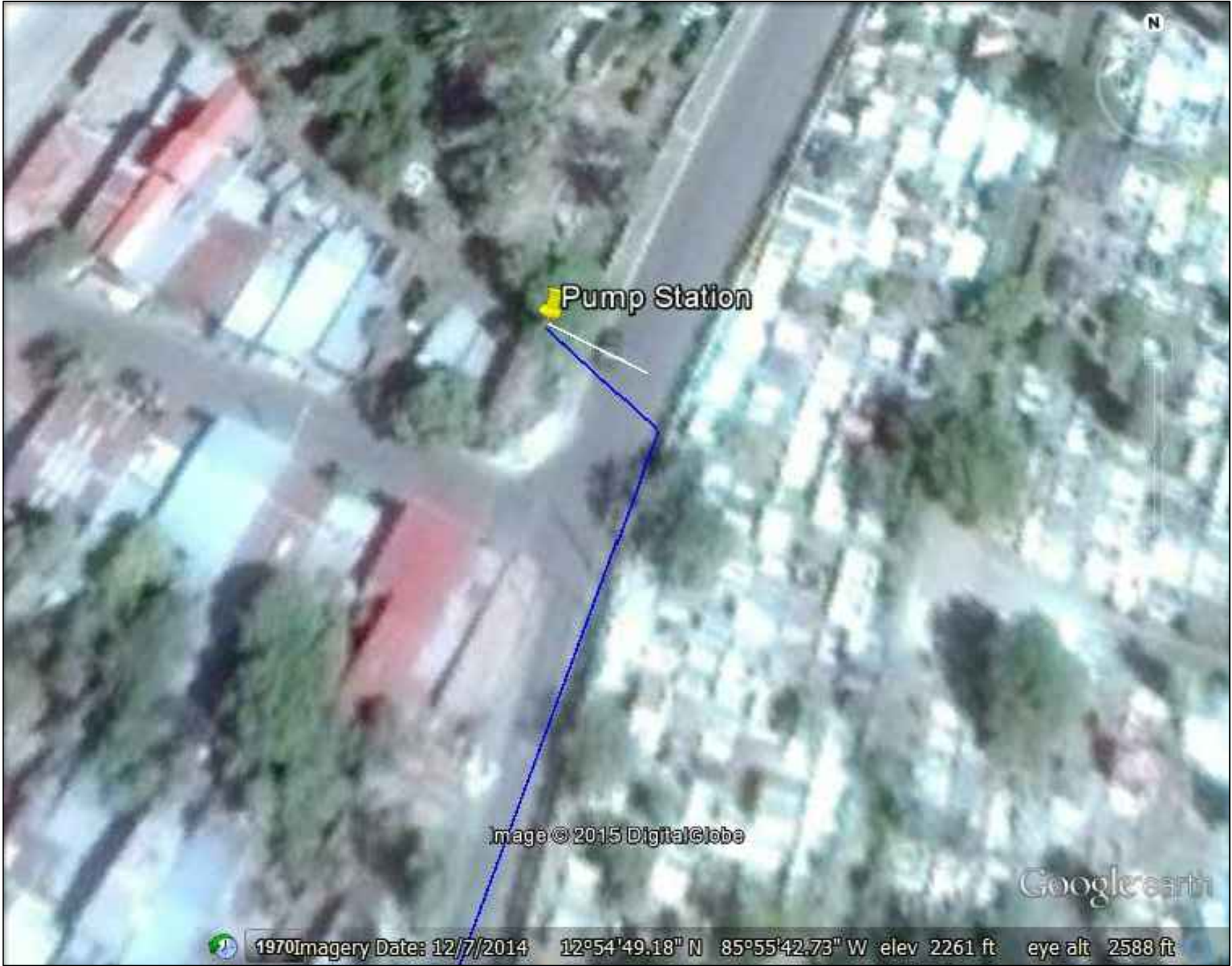


Uphill Pipeline Overview/ Tubería Ascendente



PROJECT: Saldrach Zeledon			
TITLE: Uphill Pipeline Overview			
DRAFTER: Ryan McKnight	DATE: 02-01-14	INDEX #: B0001-00	REV: 0
REVISOR: Megan Kehoe	DATE: 07-17-15	SCALE: 1:1	SHEET #: 1 of 28

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

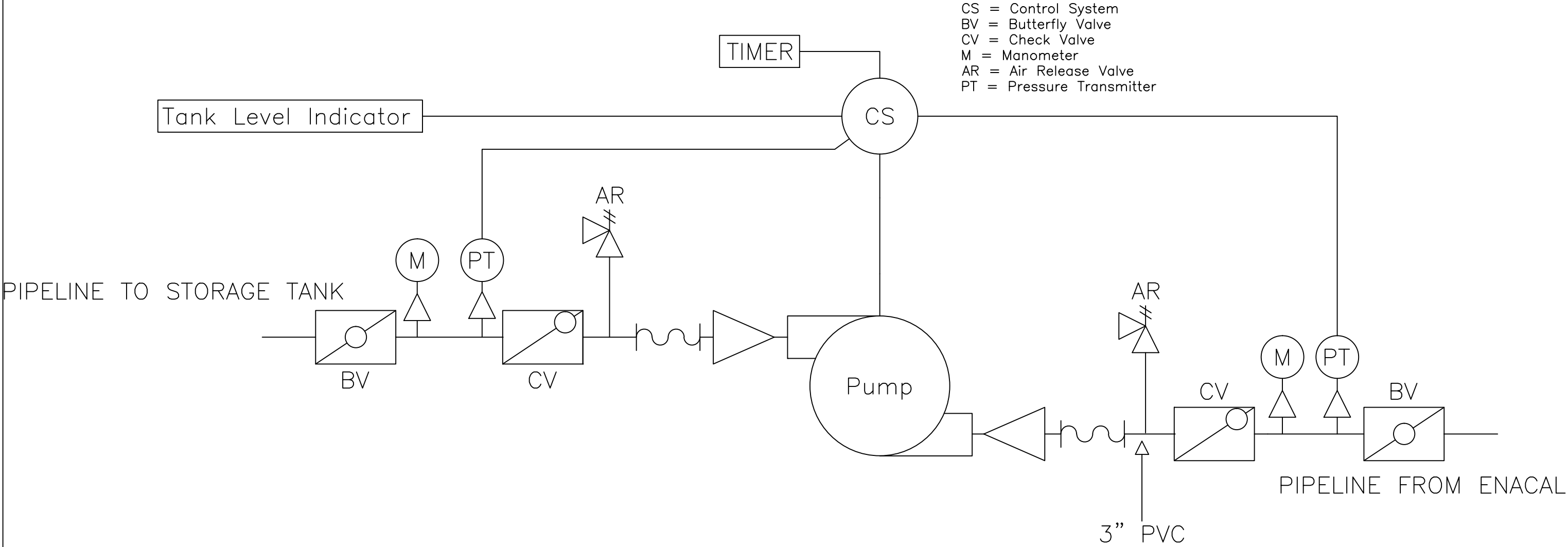


○ Uphill Pipeline Overview/ Tubería Ascendente



PROJECT: Saldrach Zeledon			
TITLE: Pump Station Location			
DRAFTER: Ryan McKnight	DATE: 02-01-14	INDEX #: B0001-00	REV: 0
REVISOR: Megan Kehoe	DATE: 07-17-15	SCALE: 1:1	SHEET #: 2 of 28

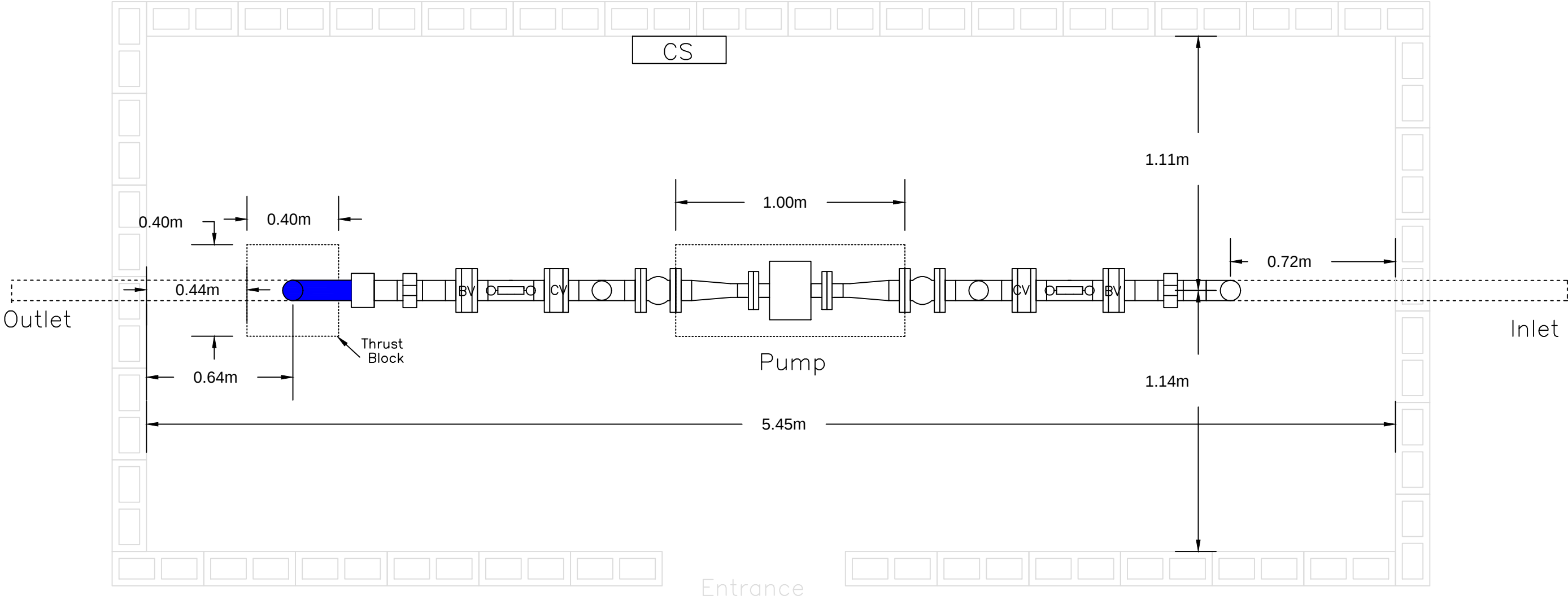
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REV	DESCRIPTION	DATE	APPROVED
1	Delete the Flow Indicator	02-16-14	APPROVED

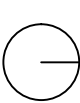


 PUMP STATION P&ID

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline				
		TITLE: Pump Station P&ID		
DRAFTER: MATT DERICHWEILER	DATE: 1-25-14	INDEX #: N/A	REV:	
REVISOR: G.Z, K.S	DATE: 6-5-15	SCALE: SHEET #: N/A 3 of 28		

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	Add dimensions, scales	02-13-14	APPROVED




PUMP STATION MECHANICAL PLANE VIEW

PROJECT:

Nica 1 Sadrach Zeledon Water Distribution Pipeline



RICE UNIVERSITY

ENGINEERSWITHOUTBORDERS

TITLE:

Pump Station Mechanical Top View

DRAFTER:

George Zhu

DATE:

1-26-14

INDEX #:

N/A

REV:

REVISOR:

G.Z, K,S

DATE:

7-19-15

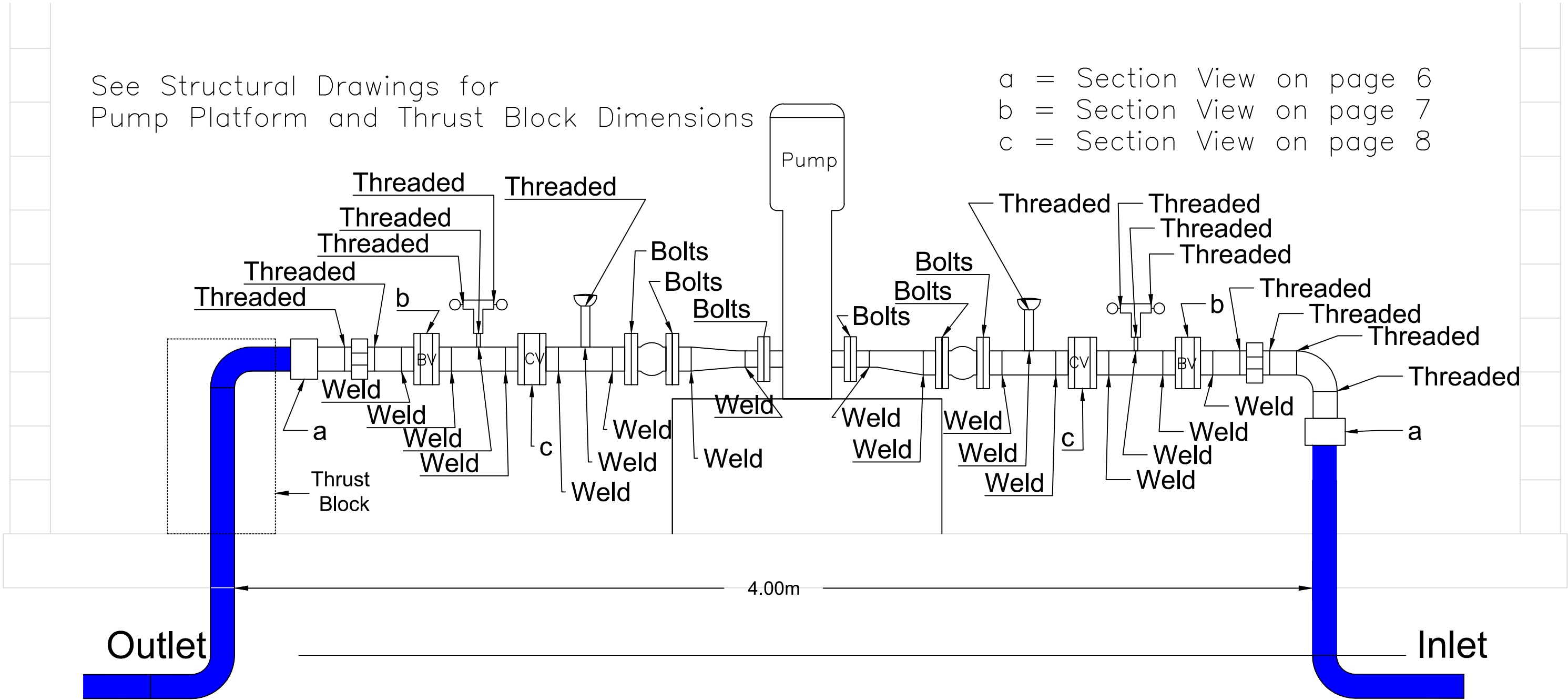
SHEET #:

4 of 28

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

See Structural Drawings for
 Pump Platform and Thrust Block Dimensions

- a = Section View on page 6
- b = Section View on page 7
- c = Section View on page 8

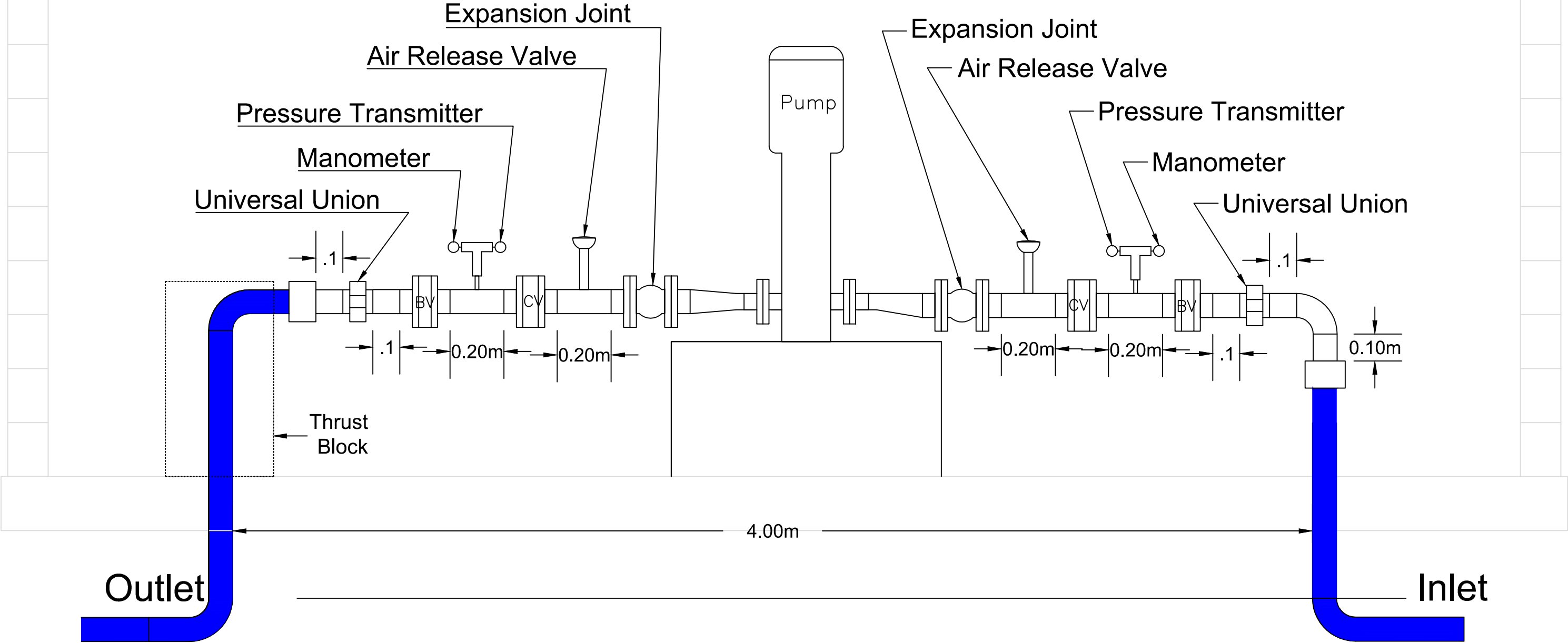



 PUMP STATION MECHANICAL SECTION VIEW

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
			
TITLE: Pump Station Mechanical Side View			
DRAFTER: Matt Derichsweiler	DATE: 2-19-14	INDEX #: N/A	REV:
REVISOR: G. Z.,K. S.	DATE: 5-26-14	SHEET #: 5 of 28	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

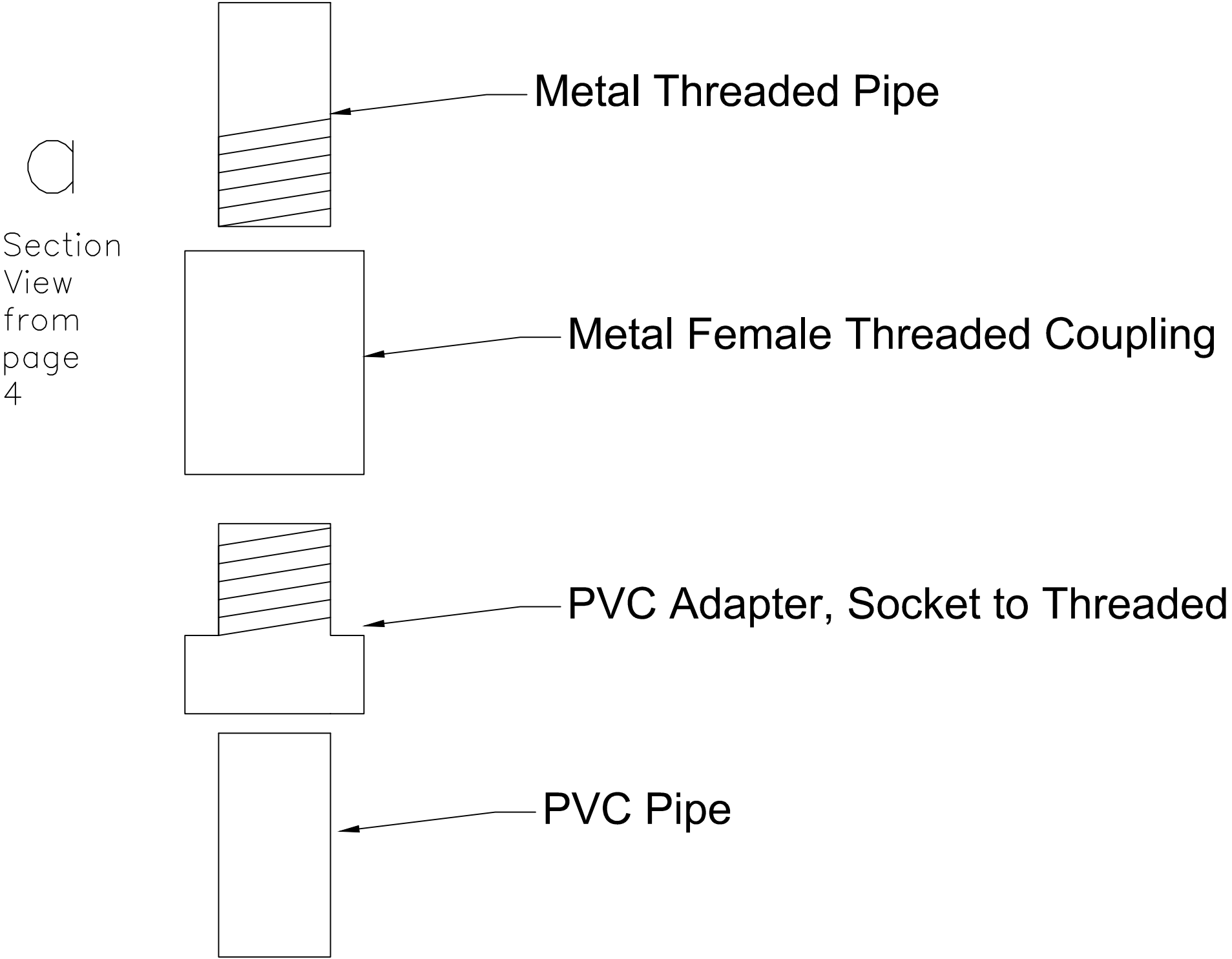
See Structural Drawings for
Pump Platform and Thrust Block Dimensions




 PUMP STATION MECHANICAL SECTION VIEW

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
			
TITLE: Pump Station Mechanical Side View			
DRAFTER: Matt Derichsweiler	DATE: 2-19-14	INDEX #: N/A	REV:
REVISOR: G. Z.,K. S.	DATE: 5-26-14	SHEET #: 6 of 28	

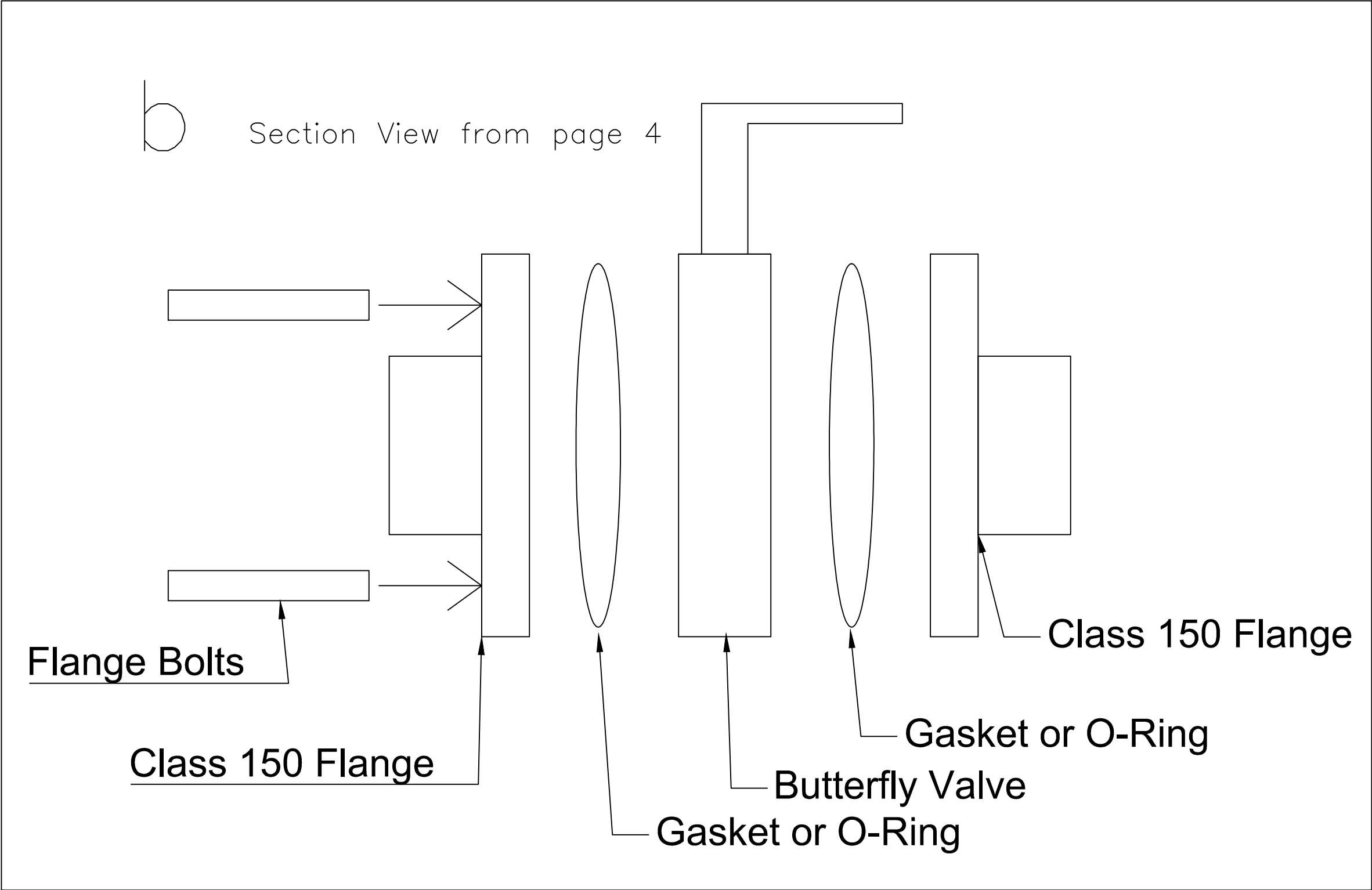
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED




 PUMP STATION MECHANICAL SECTION VIEW

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
			
TITLE: PVC-To-Metal Section Detail			
DRAFTER: Matt Derichsweiler	DATE: 2-19-14	INDEX #: N/A	REV:
REVISOR: G. Z.,K. S.	DATE: 5-26-14	SCALE: SHEET #: 20:1 7 of 28	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

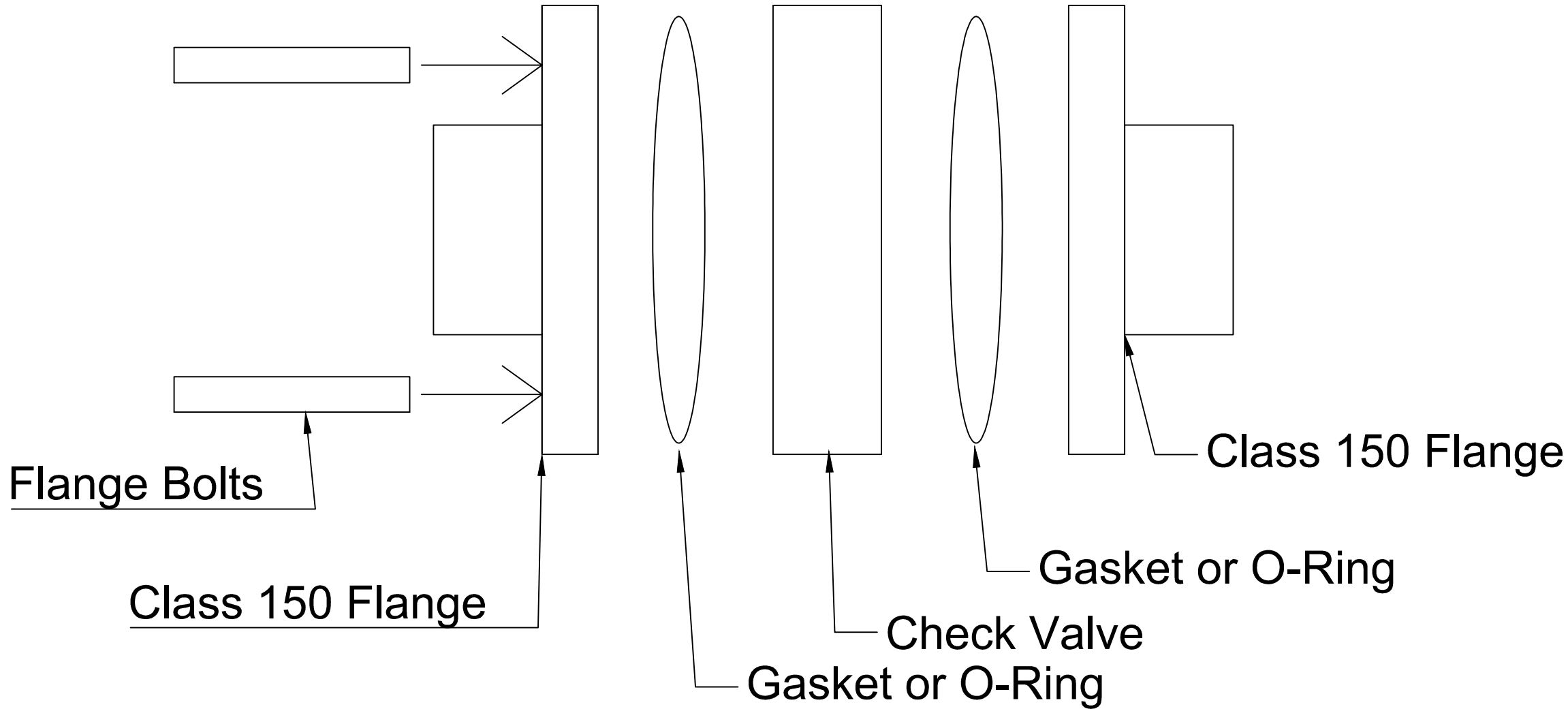



PUMP STATION MECHANICAL SECTION VIEW

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
			
TITLE: Butterfly Valve Section Detail			
DRAFTER: Matt Derichsweiler	DATE: 2-19-14	INDEX #: N/A	REV:
REVISOR: G. Z.,K. S.	DATE: 5-26-14	SCALE: SHEET #: 20:1 8 of 28	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

C Section View from page 4

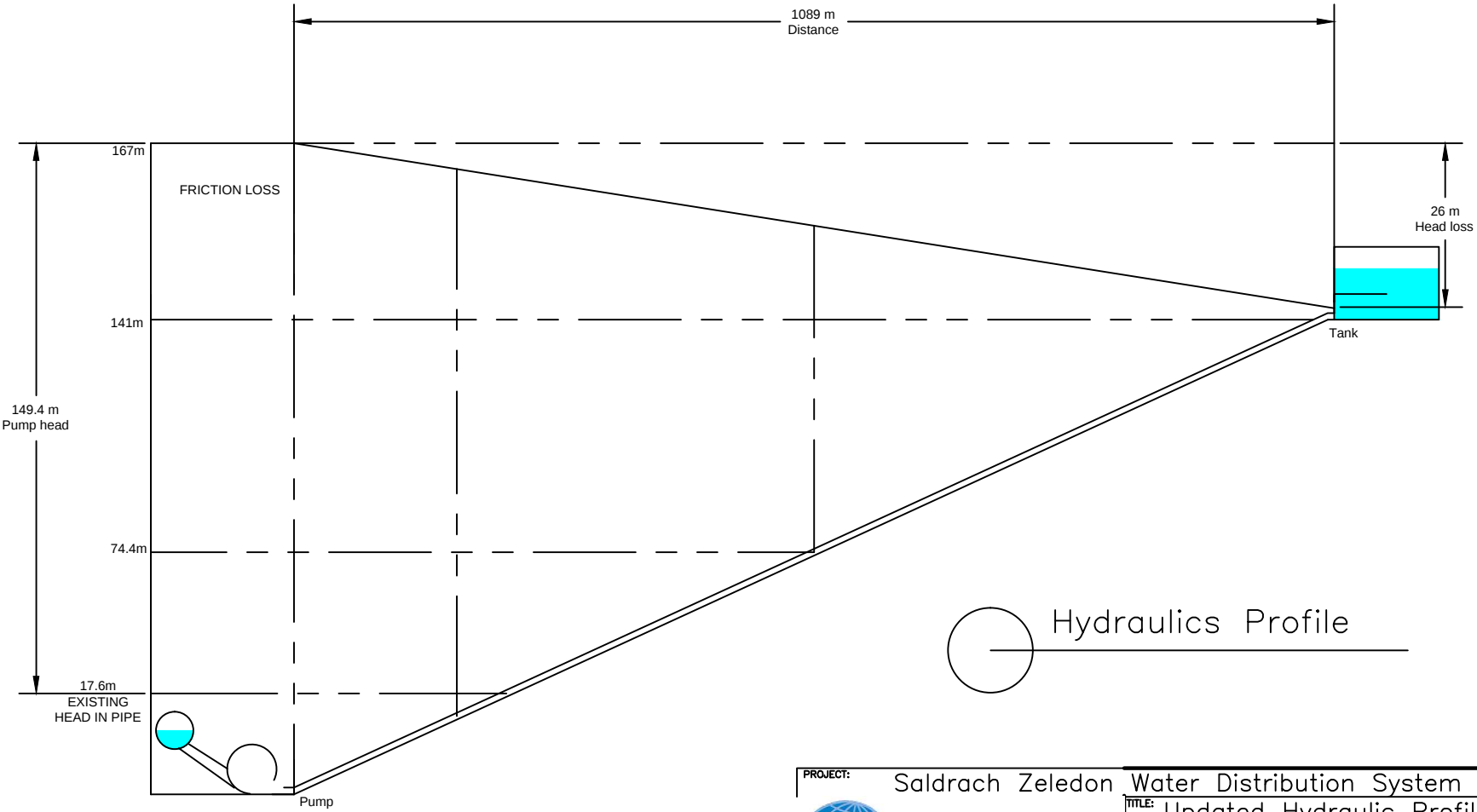



 PUMP STATION MECHANICAL SECTION VIEW

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
			
TITLE: Check Valve Section Detail			
DRAFTER: Matt Derichsweiler	DATE: 2-19-14	INDEX #: N/A	REV:
REVISOR: G. Z.,K. S.	DATE: 5-26-14	SCALE: SHEET #: 20:1 9 of 28	

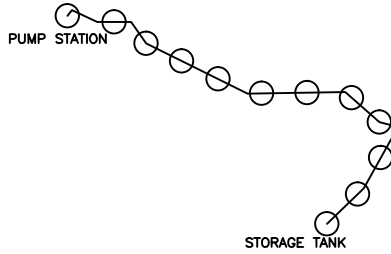
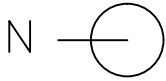
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

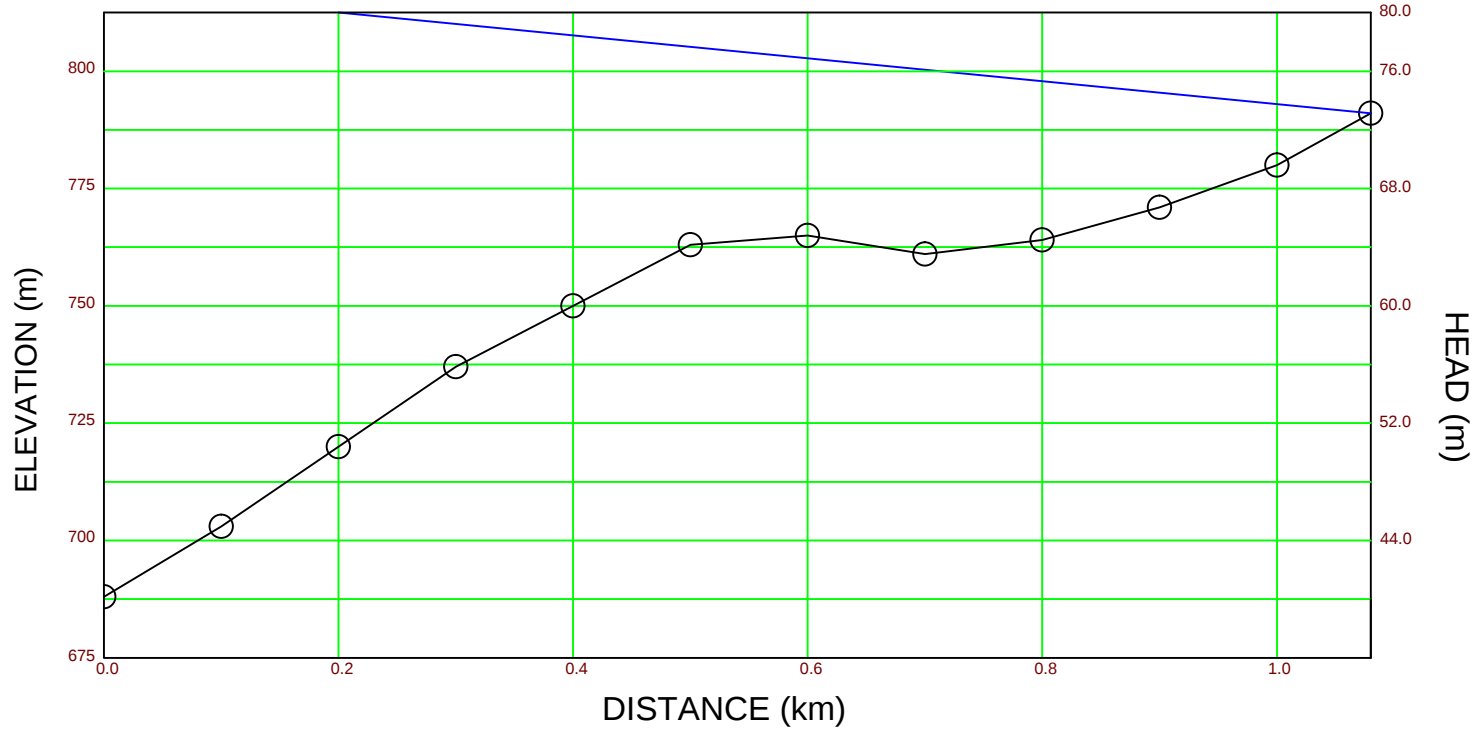


PROJECT:		Saldrach Zeledon Water Distribution System		
		TITLE: Updated Hydraulic Profile		
DRAFTER:	Martin Torres	DATE:	07-16-15	REV: 0
REVISOR:	[REVISOR]	DATE:	00-00-00	SCALE: SHEET #:
		1:1 10 OF 10		





REVISIONS			
REV	DESCRIPTION	DATE	APPROV



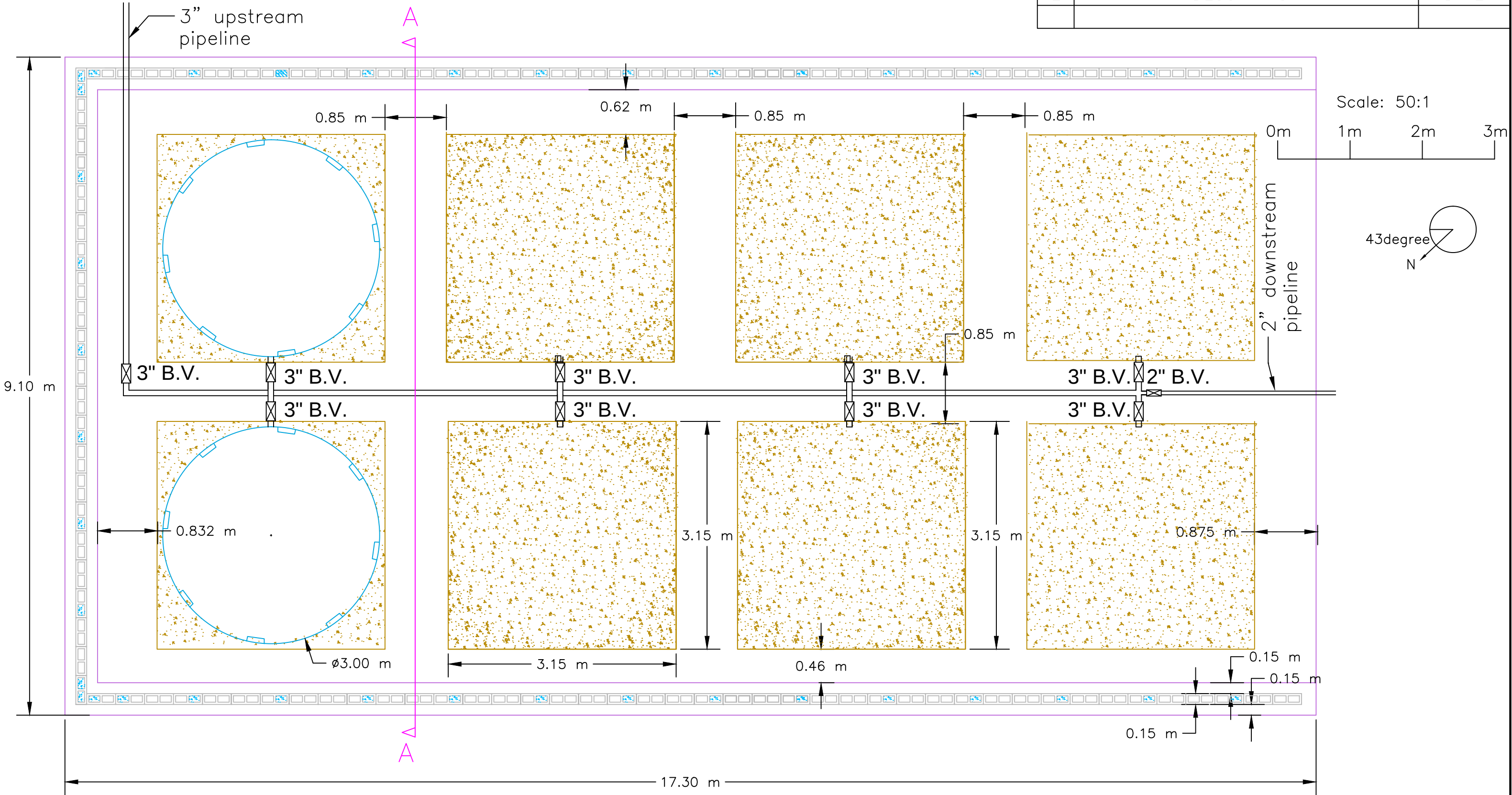
PLAN AND PROFILE FROM PUMP STATION TO STORAGE TANK

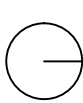


Saldrach Zeledon Water Distribution System

TITLE: Plan and Profile			
DRAFTER:	Martin Torres	DATE:	07-16-15
REVISOR:	Kyle Shepherd	DATE:	07-18-15
SCALE:	1:1	SHEET #:	9 OF 9

REVISIONS		
REV	DESCRIPTION	DATE



 STORAGE FACILITY PLAN

PROJECT:

Nica 1 Sadrach Zeledon Water Distribution Pipeline



RICE UNIVERSITY
ENGINEERSWITHOUTBORDERS

TITLE:

Storage Facility Plan

DRAFTER:

NS

DATE:

2-15-14

INDEX #:

REV:

REVISOR:

MK

DATE:

9-27-14

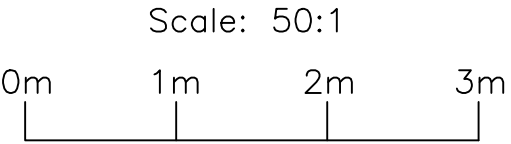
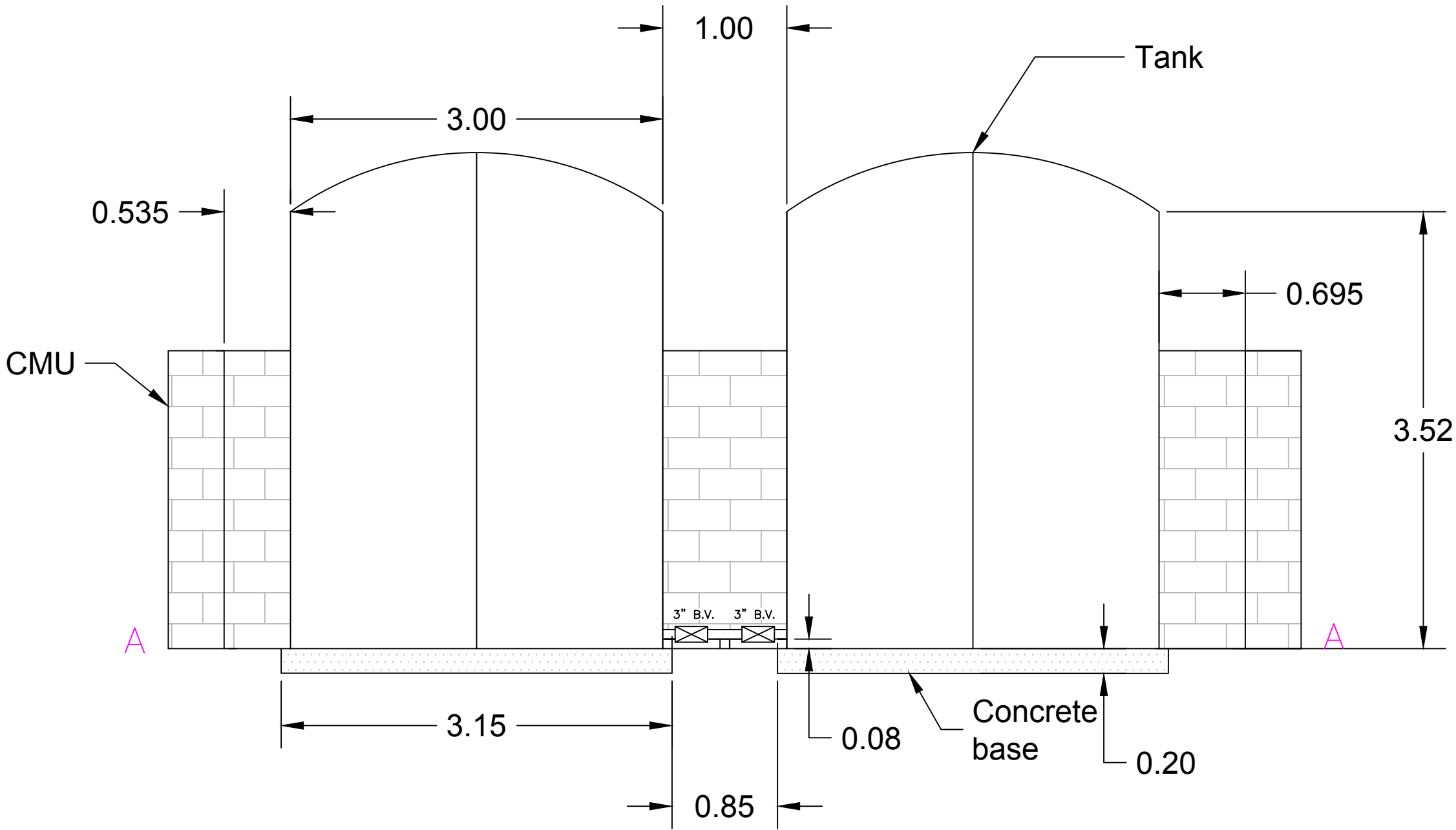
SCALE:

50:1

SHEET #:

12 OF 28

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



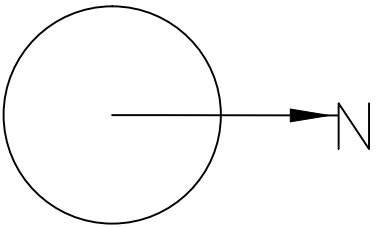
STORAGE FACILITY SECTION VIEW

PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Storage Facility Section View			
DRAFTER: David Fraga	DATE: 02-15-14	INDEX #: B0001-00	REV: 0
REVISOR: Megan Kehoe	DATE: 02-22-14	SCALE: 50:1	SHEET #: 0 of 0



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

Downstream Piping Network



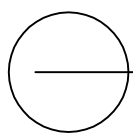
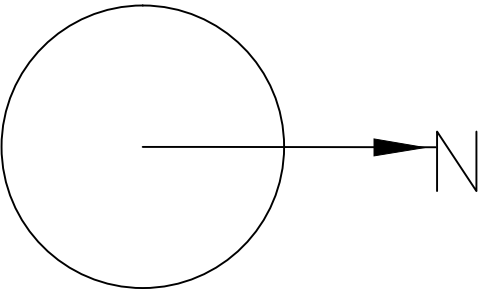
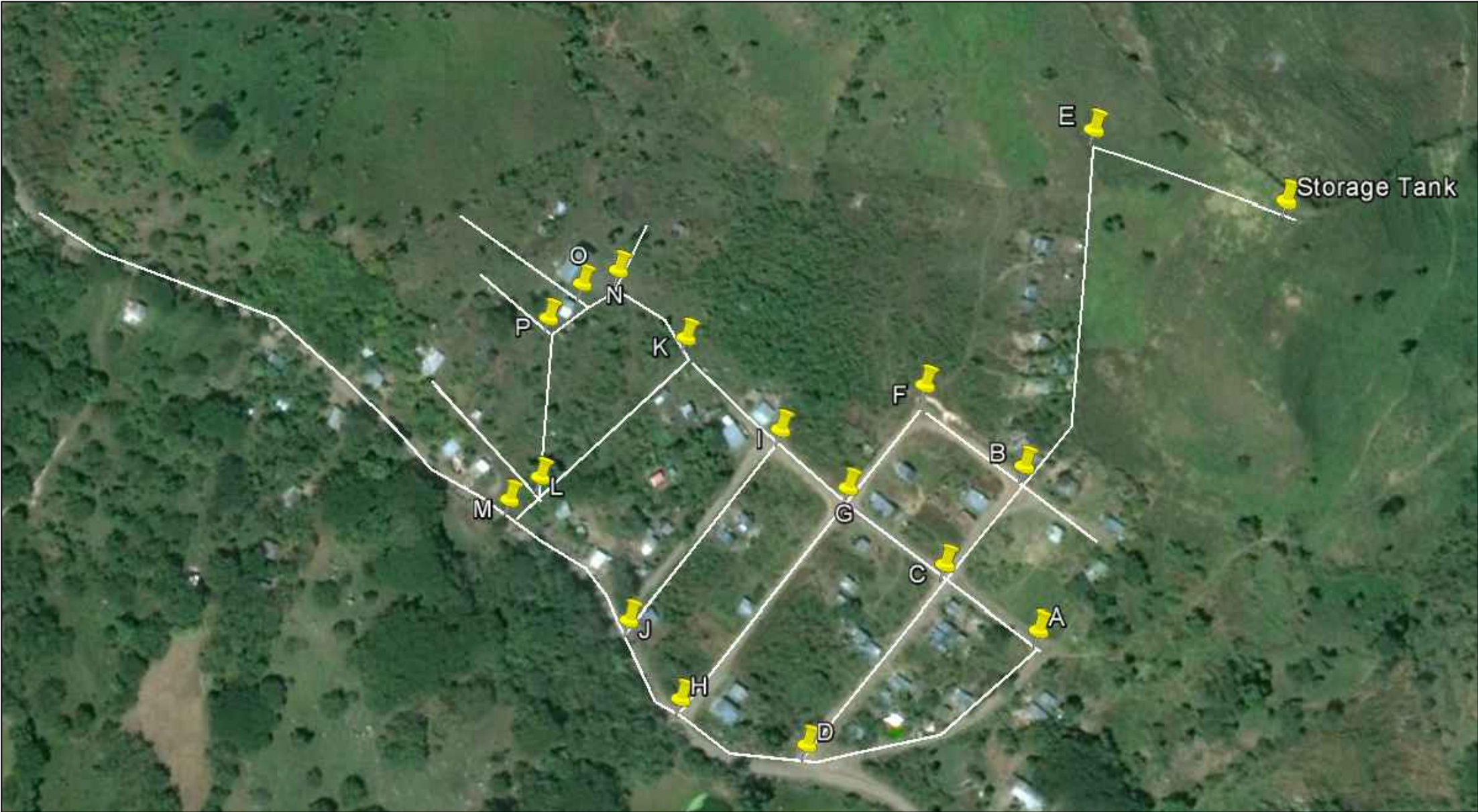
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
TITLE: Downstream Intersections			
DRAFTER: Lindsey Witte	DATE: 2-22-14	INDEX #: N/A	REV:
REVISOR:	DATE:	SCALE: N/A	SHEET #: 1 OF 4



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



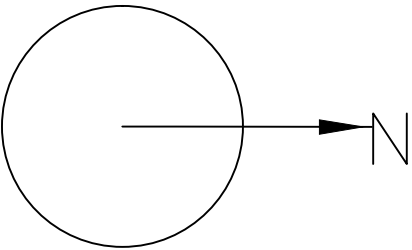
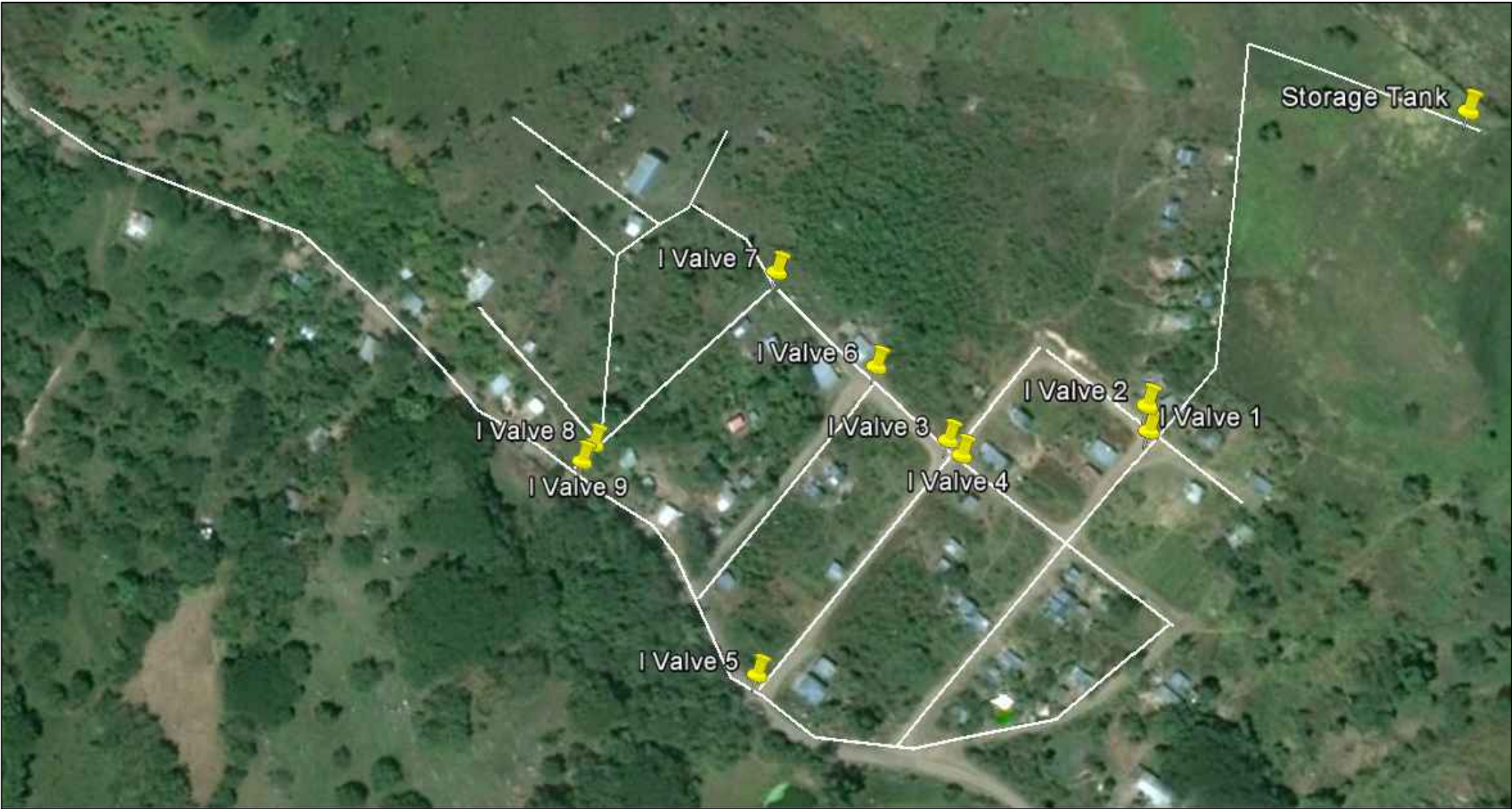
Downhill Pipeline Intersections

PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
TITLE: Downstream Intersections			
DRAFTER: Lindsey Witte	DATE: 2-22-14	INDEX #: N/A	REV:
REVISOR:	DATE:	SCALE: SHEET #: N/A 1 OF 4	



PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



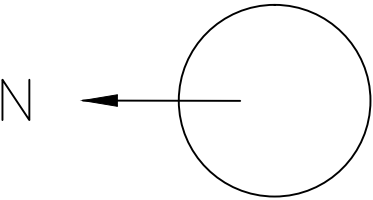
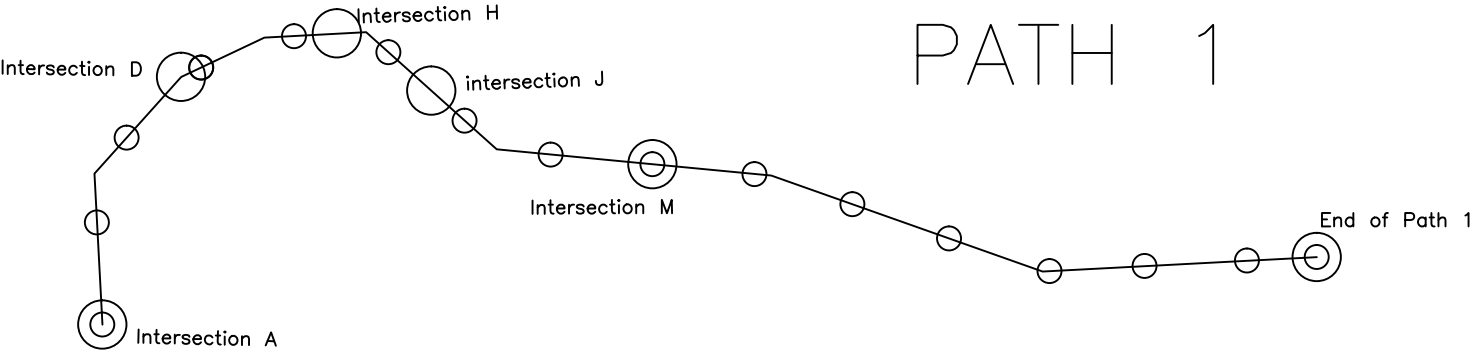
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Downhill Isolation Valves

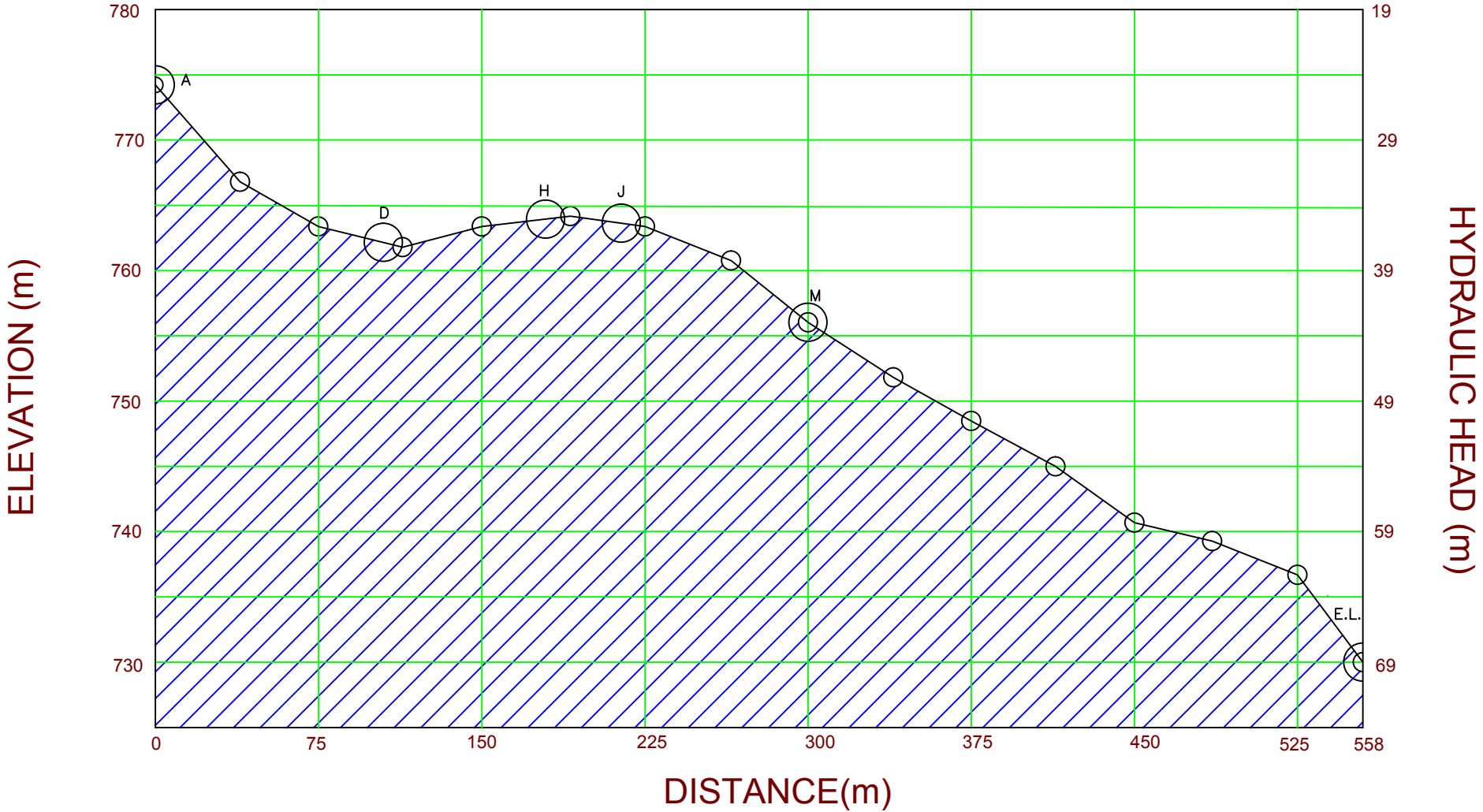
PROJECT: Nica 1 Sadrach Zeledon Water Distribution Pipeline			
TITLE: Downstream Intersections			
DRAFTER: Lindsey Witte	DATE: 2-22-14	INDEX #: N/A	REV:
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



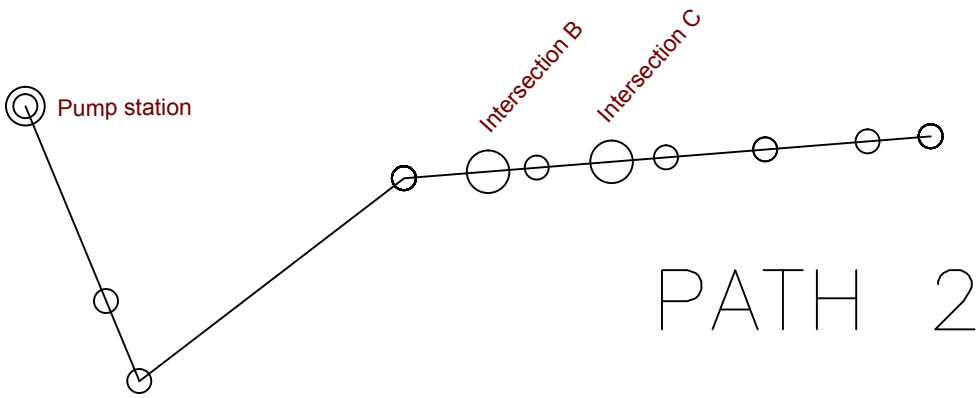
ELEVATION PROFILE



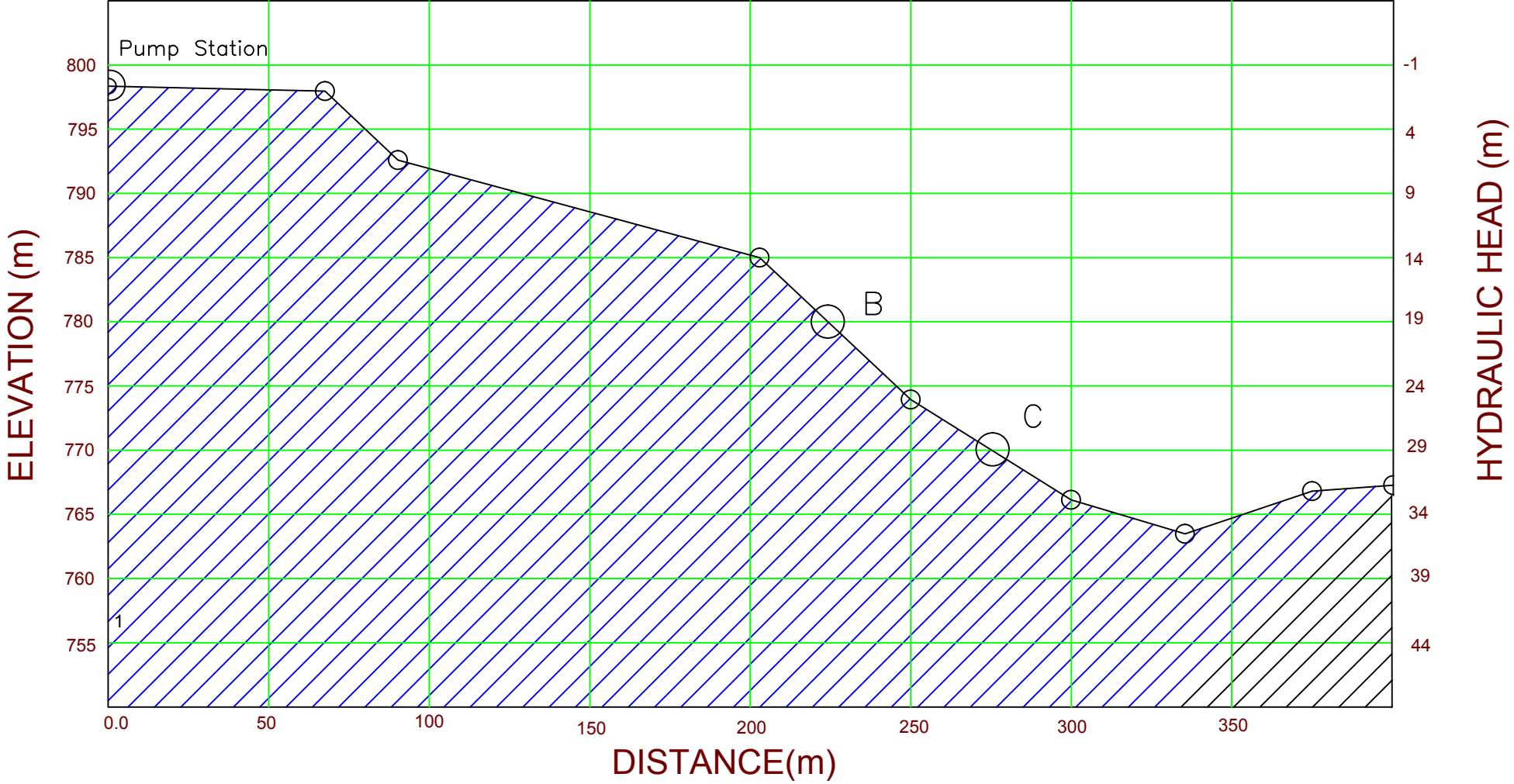
PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Downstream Plan & Profile #1			
DRAFTER: Will Kasper	DATE: 2-13-14	INDEX #: B0001-00	REV: 0
REVISOR: Lindsey Witte	DATE: 2-27-14	SCALE: 1:1	SHEET #: 0 OF 0



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



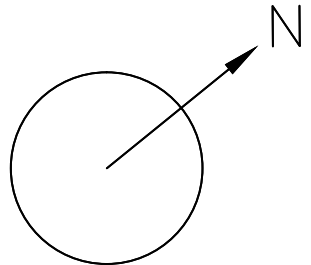
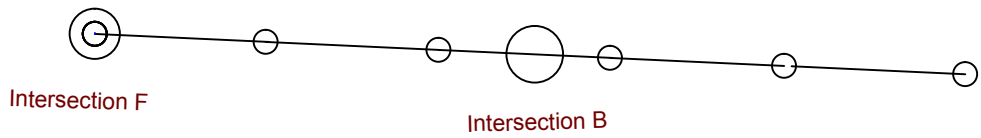
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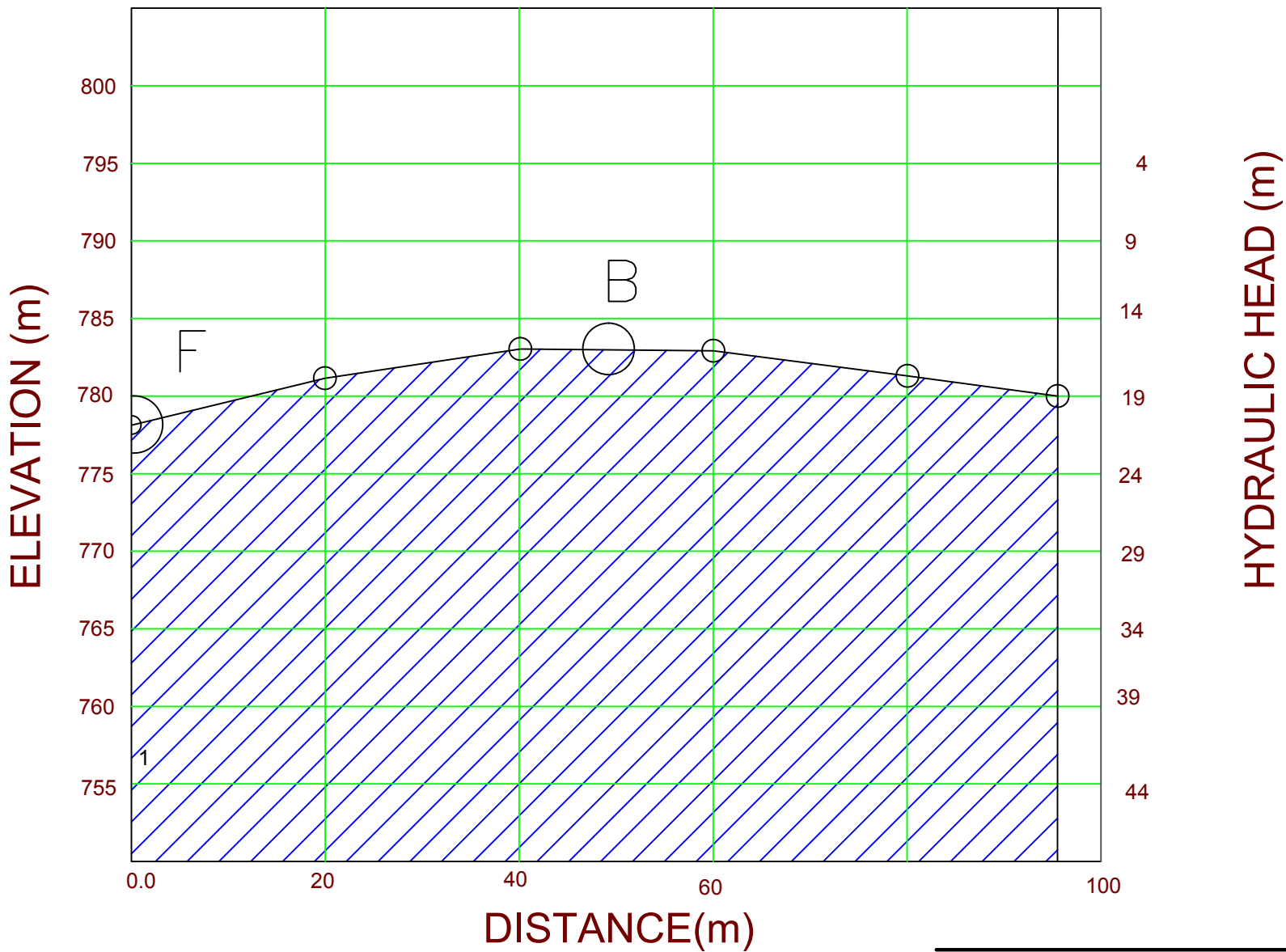
PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Plan and Profile Pipe #2			
DRAFTER: Jessica Griffiths	DATE: 2-23-14	INDEX #: B0001-00	REV: 0
REVISOR: Lindsey Witte	DATE: 2-28-14	SCALE: SHEET #: 1:1 0 of 0	



PATH 3



ELEVATION PROFILE



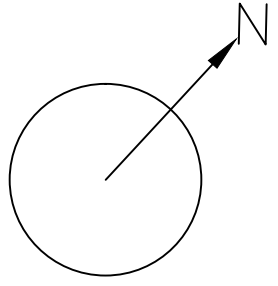
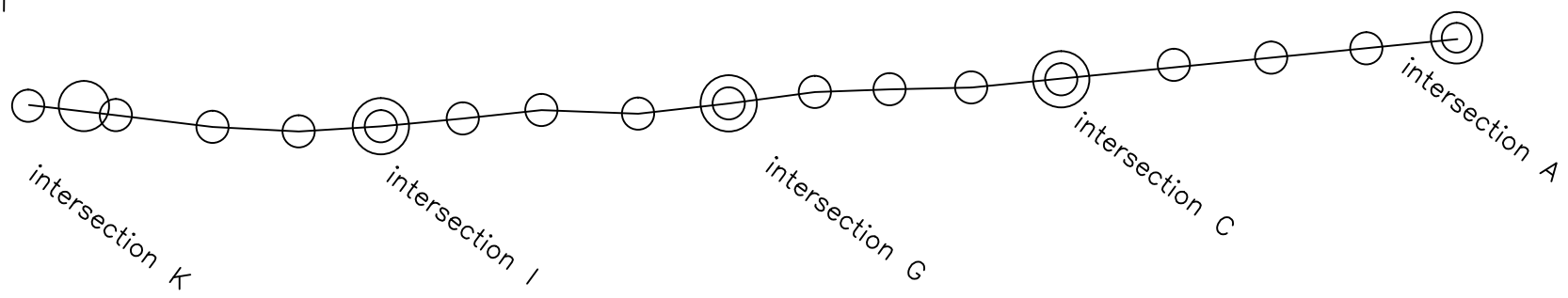
Saldrach Zeledon Water Distribution System



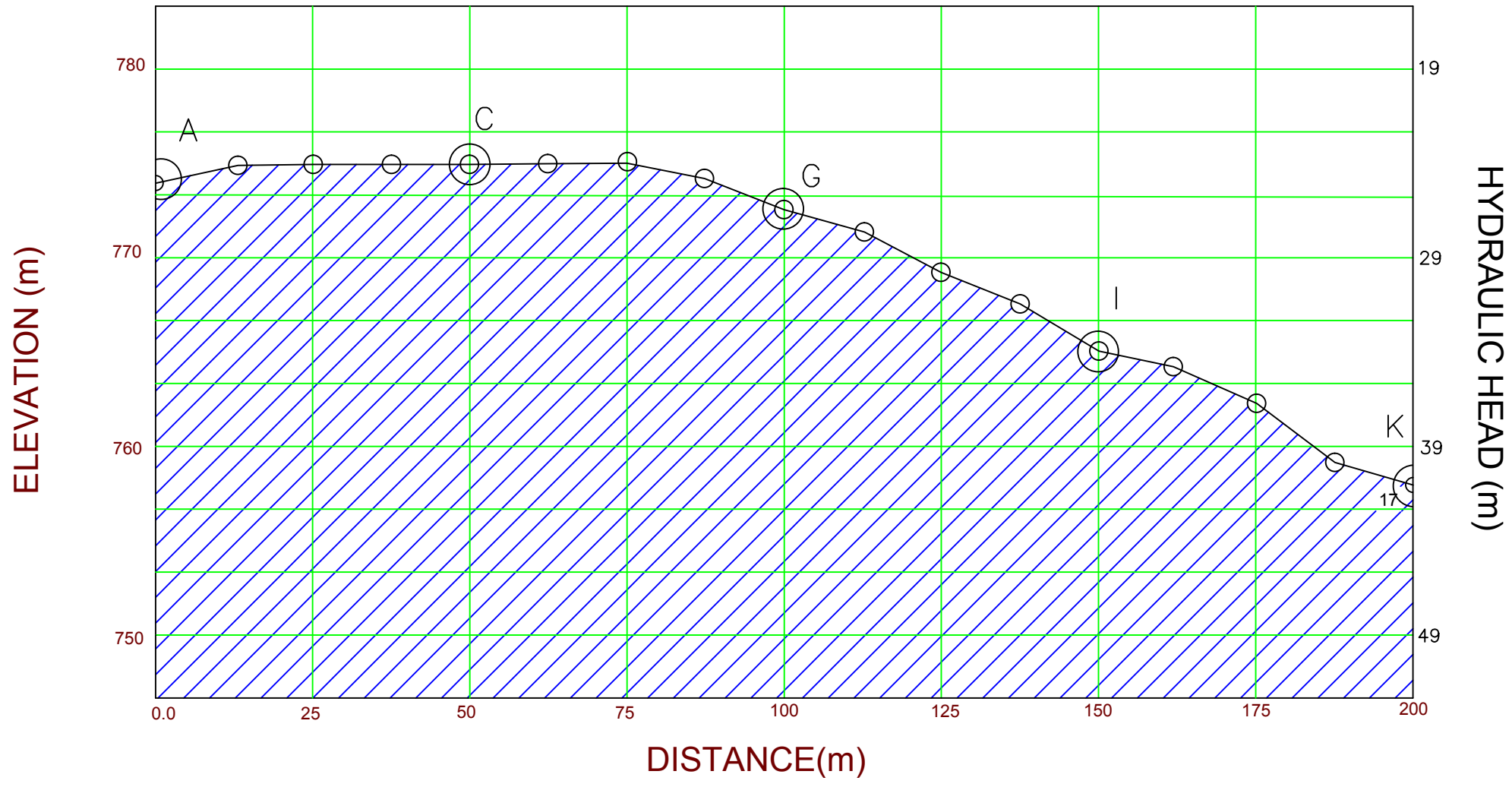
TITLE: Downstream Plan and Profile Pipe #3			
DRAFTER: Jessica Griffiths	DATE: 2-8-14	INDEX #: B0001-00	REV: 0
REVISOR: Lindsey Witte	DATE: 2-27-14	SCALE: 1:1	SHEET #: 0 of 0

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

PATH 4



ELEVATION PROFILE



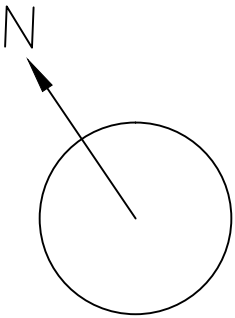
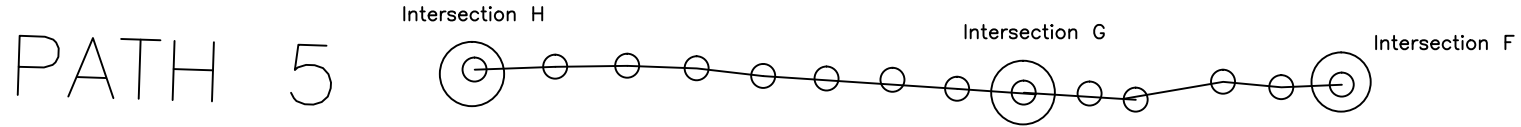
PROJECT: Saldrach Zeledon Water Distribution System



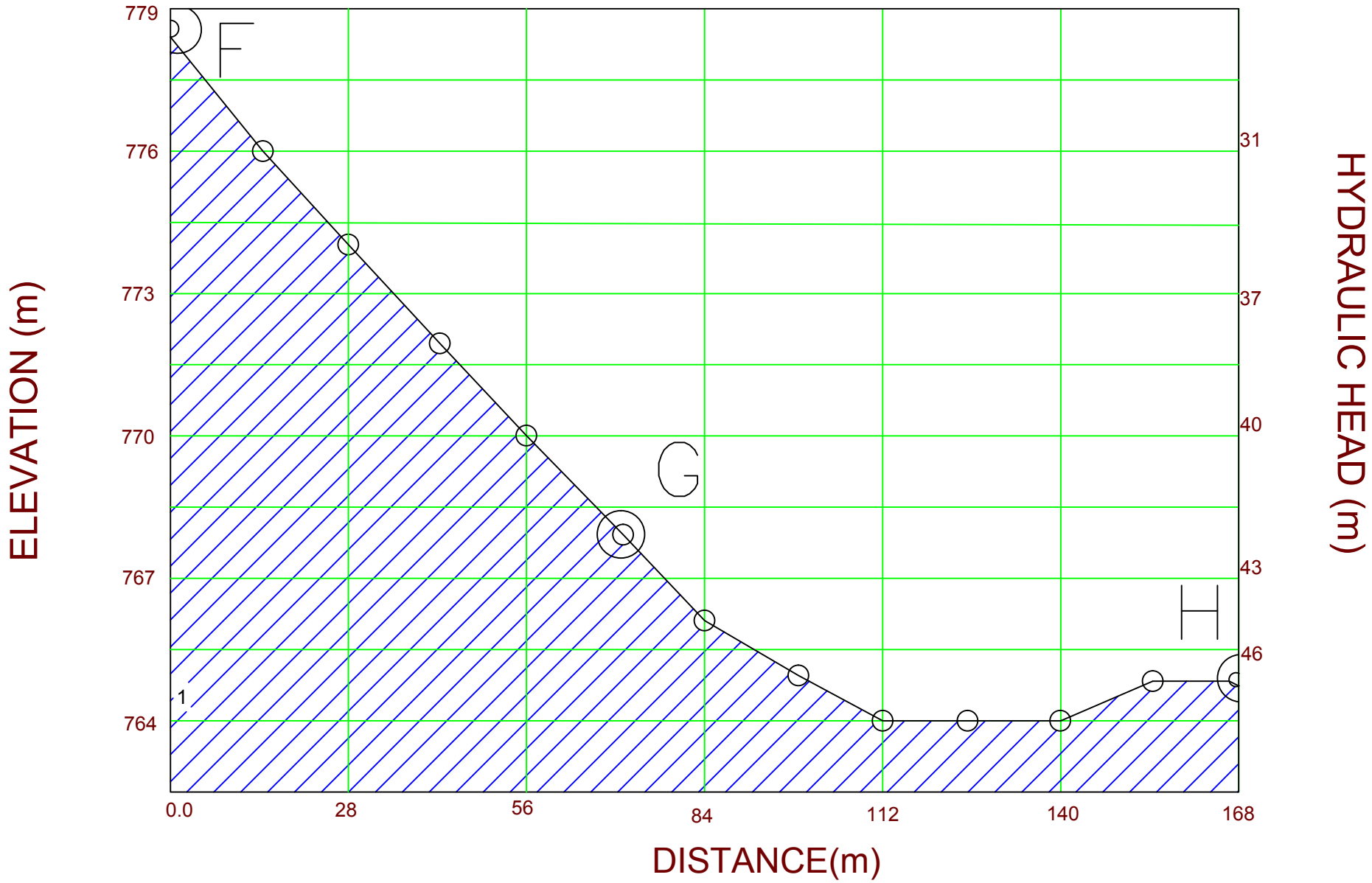
RICE UNIVERSITY
ENGINEERSWITHOUTBORDERS

FILE: Downstream Plan & Profile #4			
DRAFTER: Michael Donatti	DATE: 2-13-14	INDEX #: B0001-00	REV: 0
REVISOR: Marty Grimes	DATE: 02-25-14	SCALE: 1:1	SHEET #: 0 OF 0

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



ELEVATION PROFILE

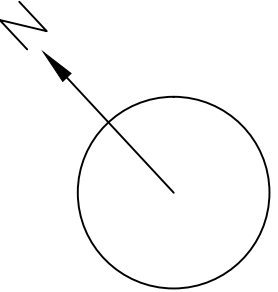
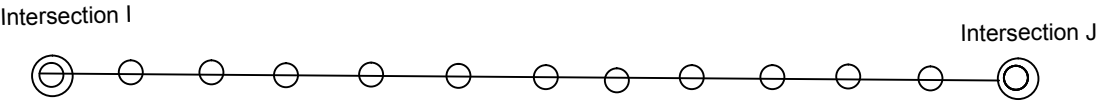


PROJECT: Saldrach Zeledon Water Distribution System			
FILE: Downstream Plan & Profile #5			
DRAFTER: Run Jiang	DATE: 02-16-14	INDEX #: B0001-00	REV: 0
REVISOR: Lindsey Witte	DATE: 02-27-14	SCALE: 1:1	SHEET #: 0 of 0

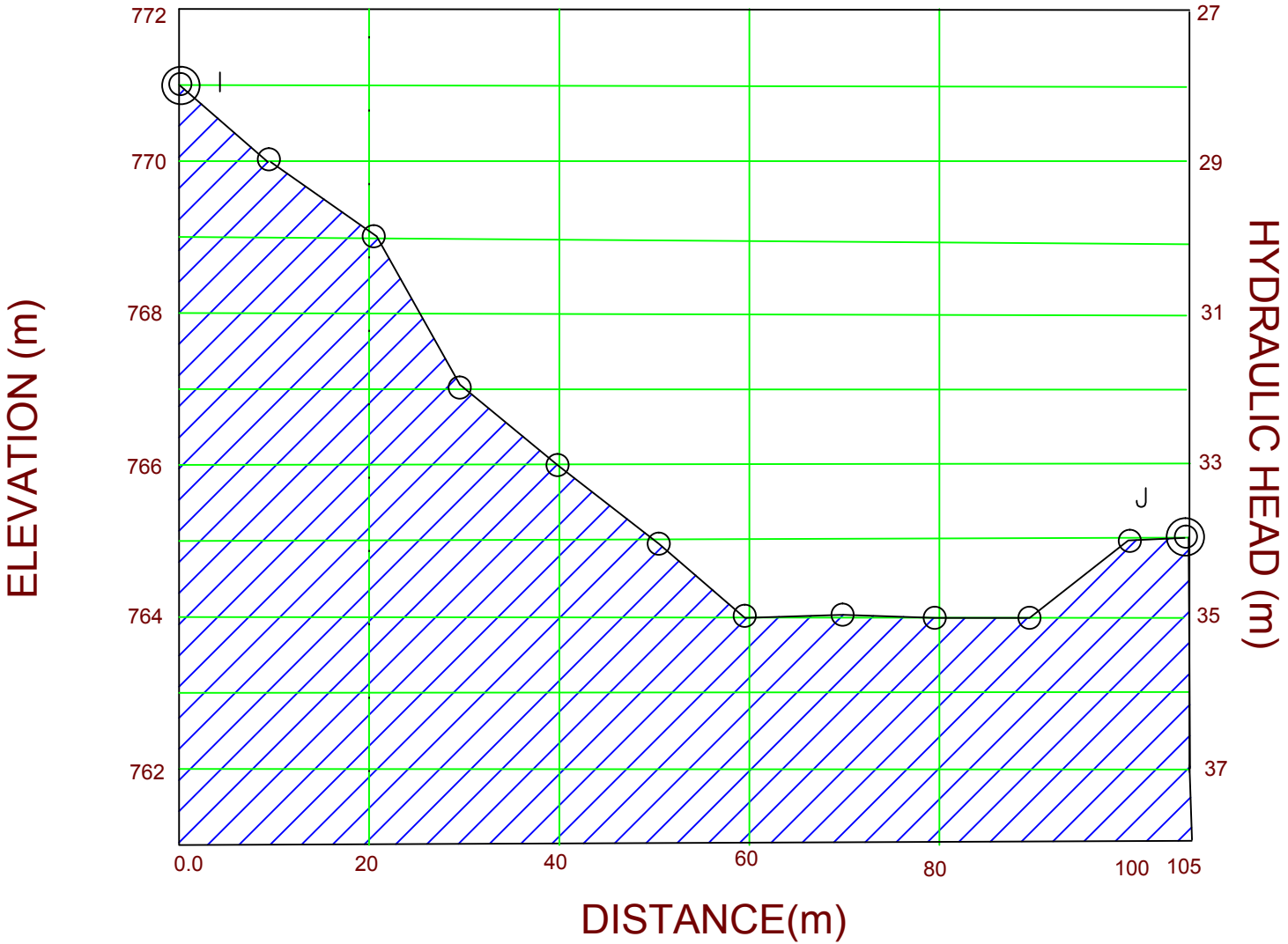


PATH 6

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



ELEVATION PROFILE

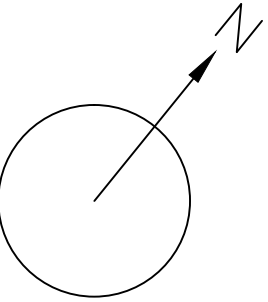
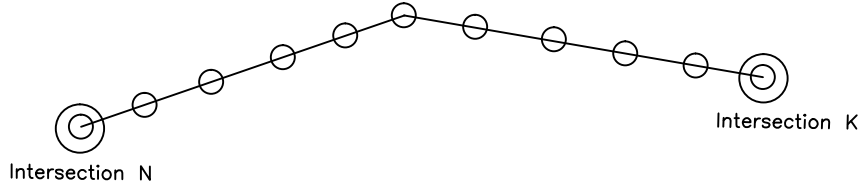


PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Downstream Plan & Profile #6			
DRAFTER: Marty Grimes	DATE: 2-12-14	INDEX #: B0001-00	REV: 0
REVISOR: Lindsey Witte	DATE: 2-27-14	SCALE: 1:1	SHEET #: 0 of 0



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

PATH 7



ELEVATION PROFILE

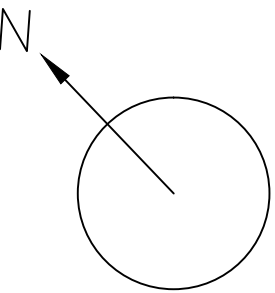
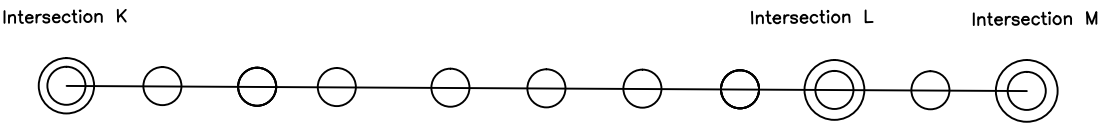


PROJECT: Saldrach Zeledon Water Distribution System			
FILE: Downstream Plan & Profile #7			
DRAFTER: Lindsey Witte	DATE: 2-12-14	INDEX #: B0001-00	REV: 0
REVISOR: Marty Grimes	DATE: 2-27-14	SCALE: 1:1	SHEET #: 0 of 0

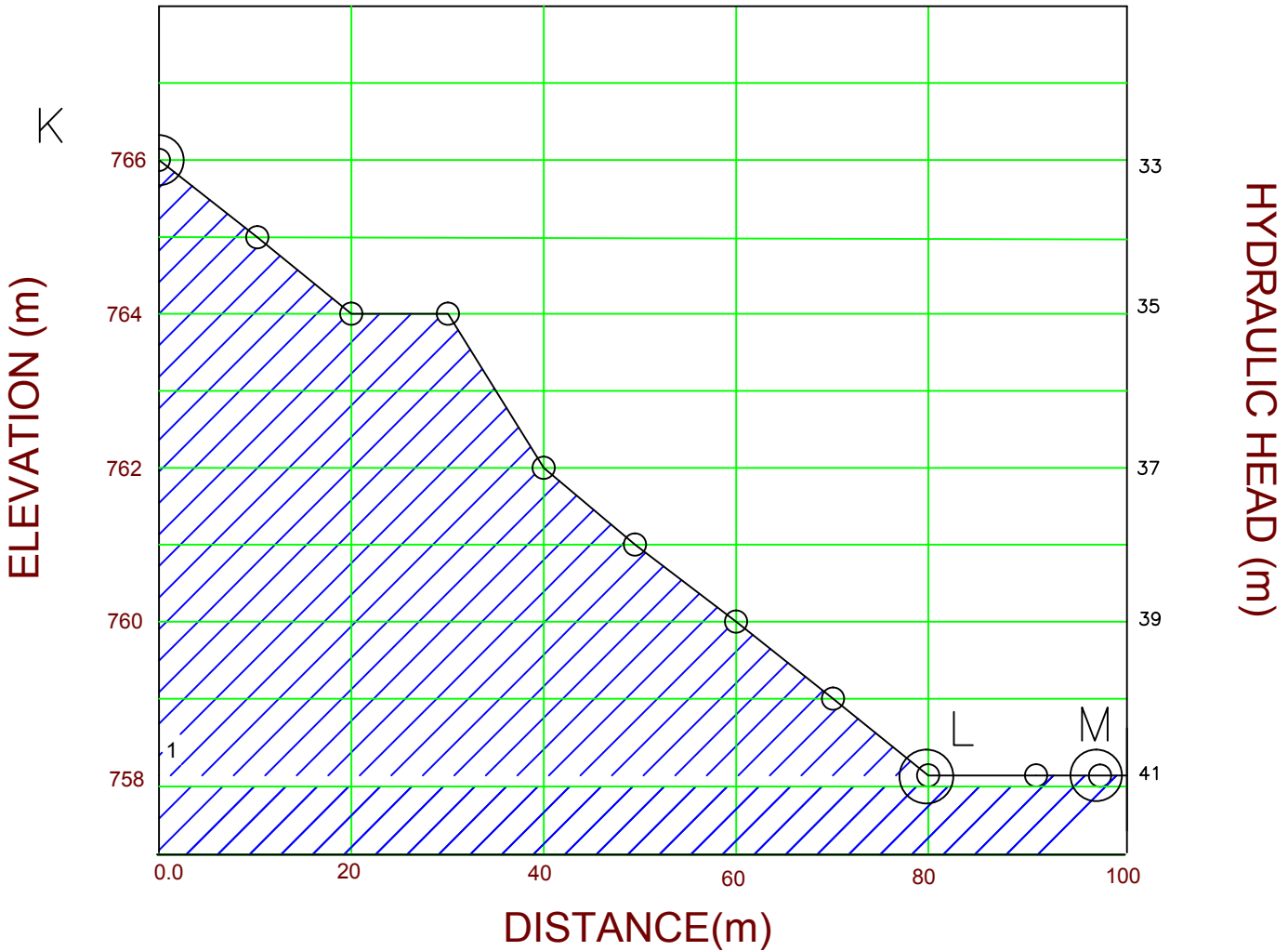


REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

PATH 8



ELEVATION PROFILE

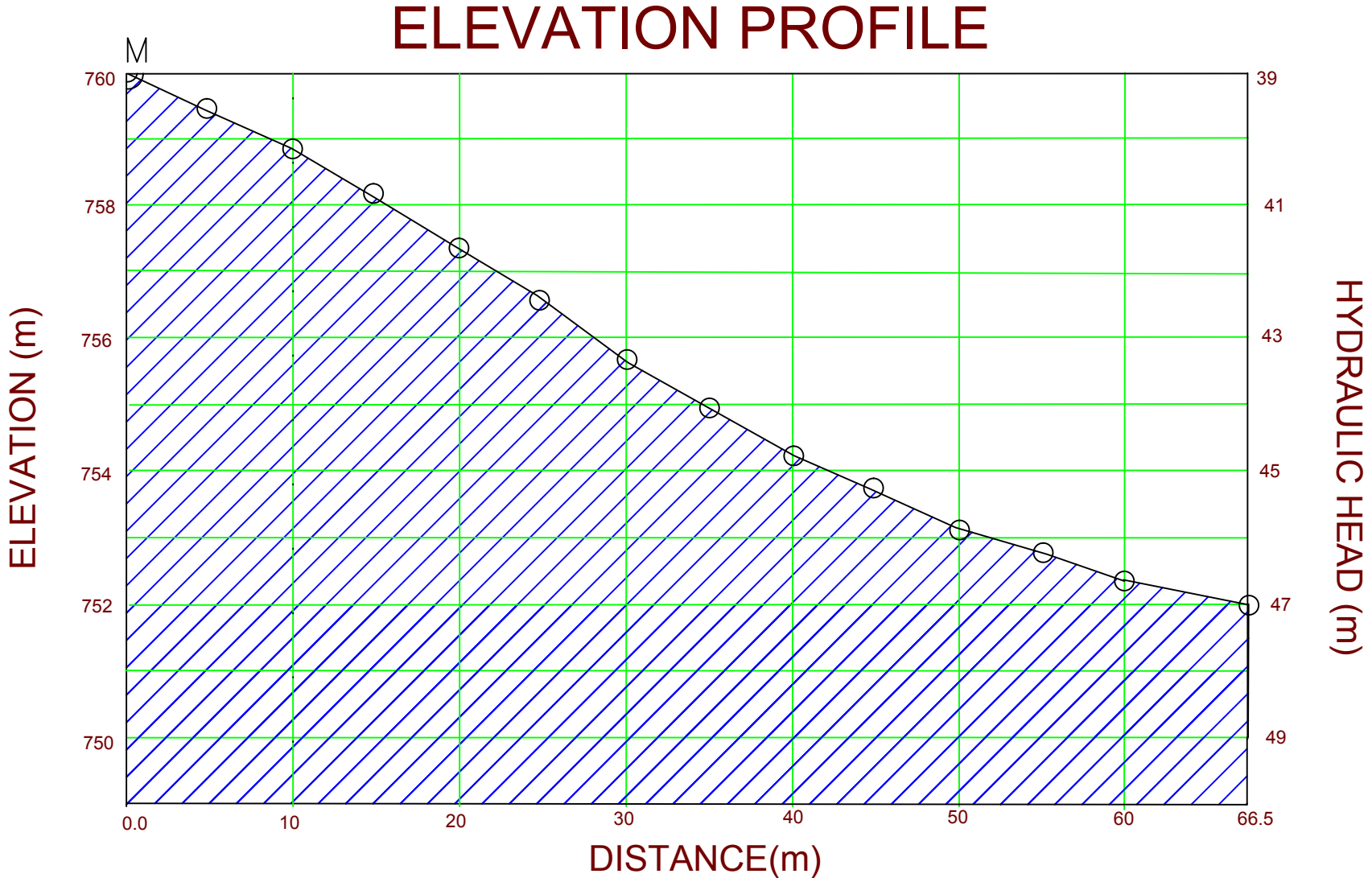
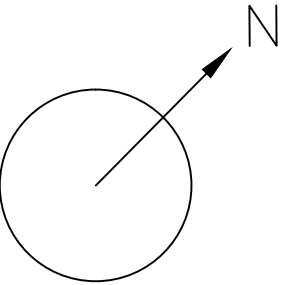
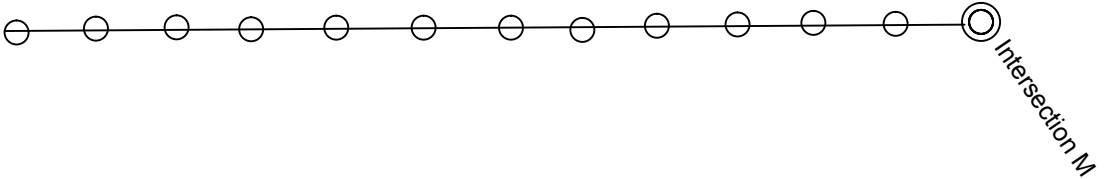


PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Downstream Plan & Profile Pipe #8			
DRAFTER: Lucas Bizzaro	DATE: 2-9-14	INDEX #: B0001-00	REV: 0
REVISOR: Marty Grimes	DATE: 2-27-14	SCALE: SHEET #: 1:1 0 of 0	



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

PATH 9



PROJECT: Saldrach Zeledon Water Distribution System



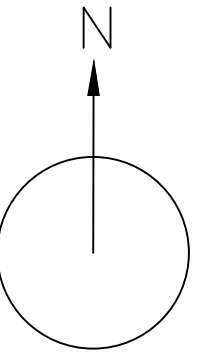
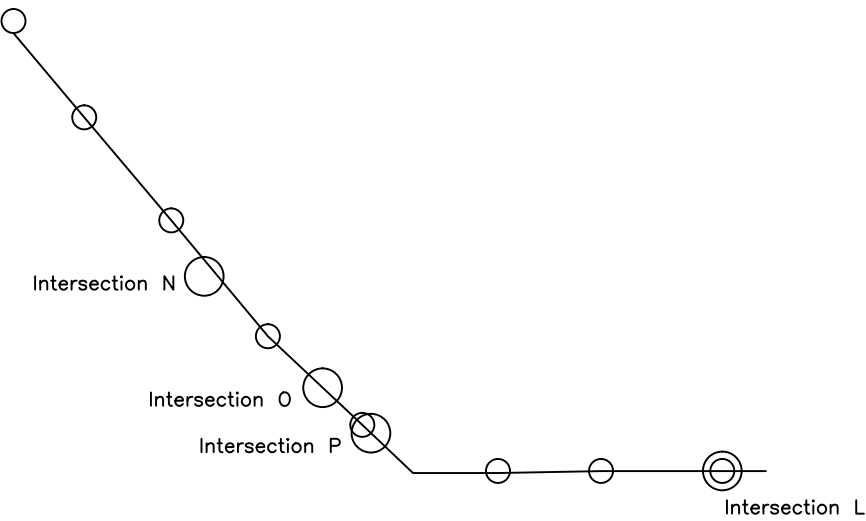
RICE UNIVERSITY
ENGINEERS WITHOUT BORDERS

FILE: Downstream Plan & Profile #9

DRAFTER: Marty Grimes	DATE: 2-12-14	INDEX #: B0001-00	REV: 0
REVISOR: Lindsey Witte	DATE: 2-27-14	SCALE: 1:1	SHEET #: 0 of 0

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

Path 10



ELEVATION PROFILE

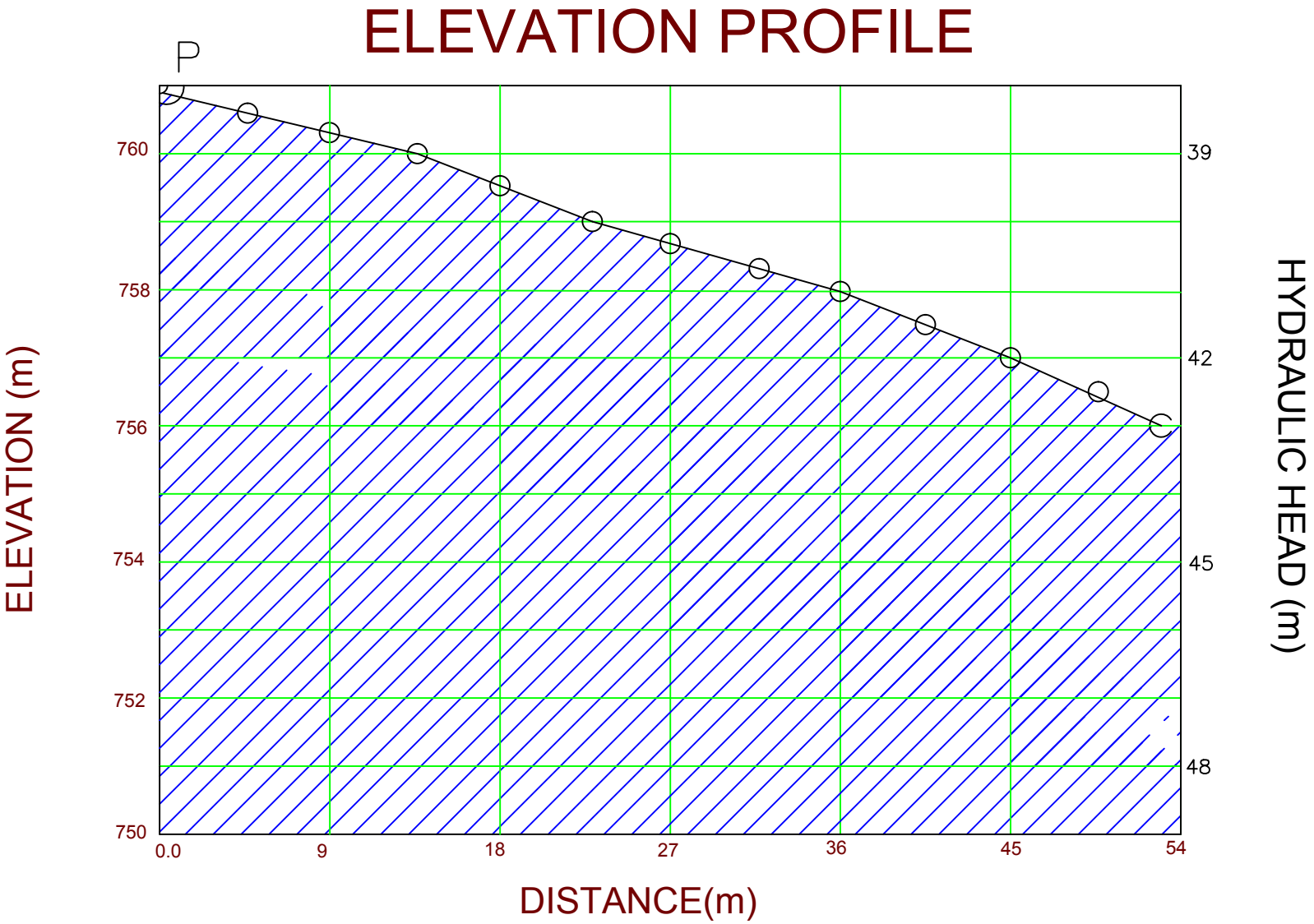
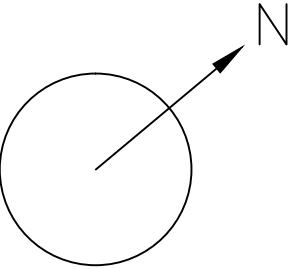
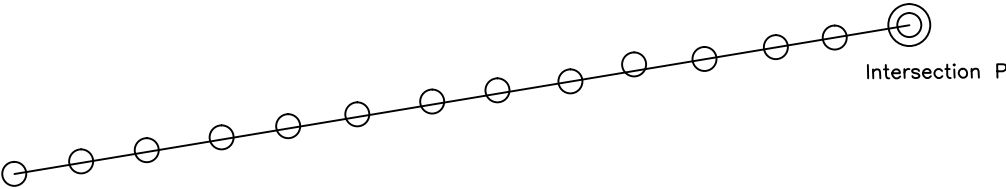


PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Plan and Profile Pipe #10			
DRAFTER: Jeffrey Joyce	DATE: 02-16-14	INDEX #: B0001-00	REV: 0
REVISOR: Lindey Witte	DATE: 02-27-14	SCALE: 1:1	SHEET #: 0 of 0



PATH 11

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

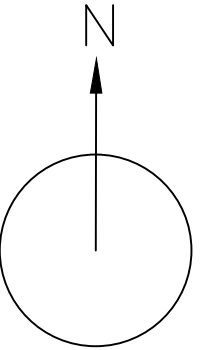
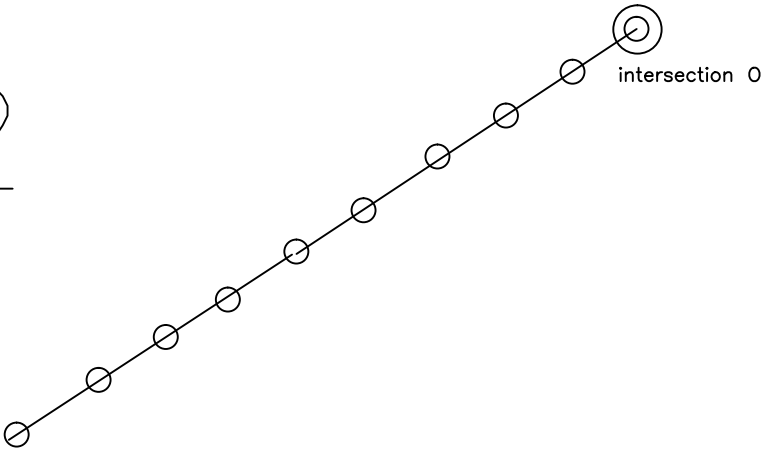


PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Downstream Plan & Profile#11			
DRAFTER: Kathleen Francis	DATE: 2-13-14	INDEX #: B0001-00	REV: 0
REVISOR: Marty Grimes	DATE: 2-27-14	SCALE: 1:1	SHEET #: 0 of 0

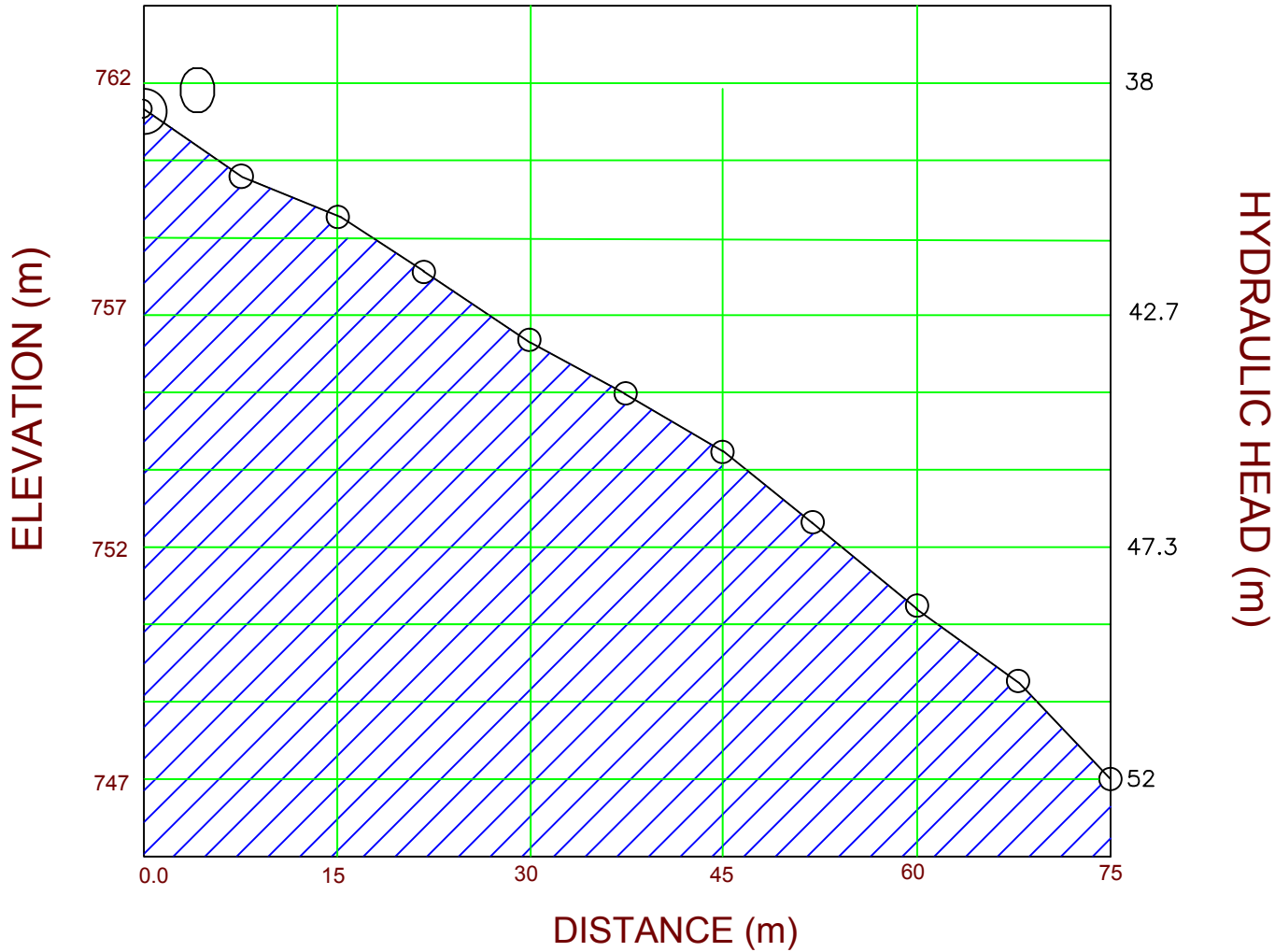


REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

PATH 12



ELEVATION PROFILE



PROJECT: Saldrach Zeledon Water Distribution System			
TITLE: Downstream Plan & Profile #12			
DRAFTER: Lindsey Witte	DATE: 2-12-14	INDEX #: B0001-00	REV: 0
REVISOR: Marty Grimes	DATE: 2-27-14	SCALE: 1:1	SHEET #: 0 of 0



Drawing Notes

Page 1 (Uphill Pipeline Overview):

1. New pump station location

Page 2 (Pump Station Location):

1. New pump station location

Page 3 (Pump Station P&ID):

1. Deleted M1 (unknown acronym)
2. Renamed Acronyms
3. Defined the New Acronyms
4. Indicated the presence of Manometers
5. Swapped positions of reducers and expansion joints
6. Added a Tank Level Indicator

Page 4 (Pump Station Mechanical Top View):

1. Cleaned up labeling so that measurements not shown in the side views are emphasized

Page 5 (Pump Station Mechanical Side View):

1. Derivative of Pump Station Mechanical Side View
2. Shows how components will be assembled

Page 6 (Pump Station Mechanical Side View):

1. Removed superfluous measurements
2. All valves, flanges and pipes are drawn to scale
3. Provided detail for PVC-to-Metal connection
4. Indicated presence of a universal union
5. Ball valve is now a butterfly valve
6. Butterfly valve is a wafer style valve, with separate attached detail
7. Added a T and a manometer
8. Check valve is a wafer style valve, with separate attached detail

9. Air release valves are now on both sides of the pump
10. Expansion joint is fully detailed
11. An eccentric reducer is on the inlet side of the pump
12. A concentric reducer is on the outlet side of the pump

Page 7 (PVC-Metal Section Detail):

1. New drawing

Page 8 (Butterfly Valve Section Detail):

1. New drawing

Page 9 (Check Valve Section Detail):

1. New drawing

Page 9:

1. New path due to new pump station location is shown above
2. Updated elevations are shown, using google earth elevation data

Page 10 (Updated Hydraulic Profile):

1. New length of pipe shown
2. New initial head in pipe shown
3. New pump head shown
4. New friction loss shown

Page 11 (Plan and Profile):

1. Revised measurements to fit all pipe components
2. Shown pipe components reflect changes in side views

Page 12 (Storage Facility Plan):

1. Changed the number of initially installed tanks from 6 to 2

Other:

1. Deleted the "Water Main to Pump Station" drawing because the new pump station is at the location of the water main

2. Pages 13 – 28 are unchanged from the original drawings