

DS #: 4854

APN: 126-23-000-001

PROJECT: 3090 Zone North Interim Tank

SUBMITTAL: Supplement

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		May 31, 2017
TO: Land Development Services Department of Building & Safety		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT: Drainage Study for: 3090 Zone North Interim Tank		COPIES TO: Slater Hanifan Group
Cross Streets:	NWC of Centennial Parkway and Puli Road	Ninety-Five Management, LLC
File Number:	F:\Depot\DSMemos\DS4854C.doc	Bart Anderson, P.E., DevCo
Parcel Number:	126-23-000-001	
Zoning Action:	SDR-xxxxx	
FEMA Flood Zone	YES NO X	
Proposed Storm Drain	YES NO X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	12/15/2016	1/3/2017	Not Approved	\$400.00	467949: \$400
2 nd Submittal	4/13/2017	4/27/2017	Approved	\$400.00	481745: \$400
Supplement	5/16/2017	5/31/2017	See Comment Below	N/C	N/C
TOTAL FEES (LDDRS):				\$800.00	----

REMARKS:

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

- The project proposes to build a temporary drainage swale in *Centennial Parkway* between the proposed water tank and *Puli Road* alignment. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (off-site berms or channels) and post a minimum maintenance bond of \$25,000 or 25-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facility and an 8.5-inch by 11-inch exhibit that adequately shows the location and limits of the drainage facility to *Flood Control* for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (229-6371) to begin the agreement process.

In order for the maintenance bond to be released in the future, a drainage update / letter will be required to justify that the offsite berms / channels are no longer necessary and can be removed.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see <http://ndep.nv.gov/bwpc/storm01.htm> or call (775) 687-9429.

END OF REMARKS

ays

T/R/S: T19S/R59E/23
AREA F-23

 *** FAX TX REPORT ***

TRANSMISSION OK

JOB NO. 4136
 DESTINATION ADDRESS 7022845399
 PSWD/SUBADDRESS
 DESTINATION ID
 ST. TIME 05/31 16:17
 USAGE T 00' 38
 PGS. 2
 RESULT OK

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM		DATE: May 31, 2017
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TECHNICAL DRAINAGE STUDY SUPPLEMENT
(Response to CLV Comments)

3090 Zone North Interim Tank

Unincorporated Clark County, Nevada

Job No.: OLY1606.000

Date: May 2017

Prepared By:

Slater Hanifan Group, Inc.
5740 S. Arville Street, Suite 216
Las Vegas, Nevada 89118
Phone: 702-284-5300 • Fax: 702-284-5399

Prepared For:

Ninety-Five Management, LLC
11411 Southern Highlands Parkway, Suite 300
Las Vegas, NV 89141
Phone: 702-220-6565 • Fax: 702-220-6566



Fred Retzlaff, P.E.
NV Professional Engineer No. 15751

Assisted by: Jonathan S Rocha, E.I.

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: 3090 Zone North Interim Tank Date: May 2017
 Location of Development: a) Descriptive (Cross Streets): North/South: Shaumber Road
East/West: Centennial Parkway
 b) Section: 23 Township: 19 South Range: 59 East
 c) APN: Portion of 126-23-000-003

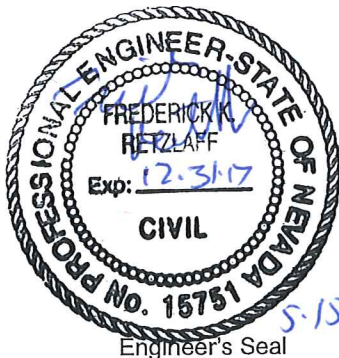
Name of Owner: Ninety-Five Management, LLC
 Telephone No.: 702-220-6565 Fax No.: 702-220-6566 E-mail Address: mbolduc@olympiacompanies.com
 Address: 11411 Southern Highlands Parkway, Suite 300 Las Vegas NV 89141

Contact Person – Name: Fred Retzlaff, P.E. Telephone No.: (702) 284-5300
 *E-mail Address: fretzlaff@shg-inc.com Fax No.: (702) 284-5399
 Firm: Slater Hanifan Group
 Address: 5740 S. Arville #216 Las Vegas NV 89118

Type of Land Development/Land Disturbance Process:

☐ Rezoning	☐ Subdivision Map	☐ Clearing and grading Only
☐ Parcel Map	☐ Planned Unit Development	☐ Other (Please specify below)
☐ Large Parcel Map	☒ Building Permit	☐

- Total Owned Land Area: At Site: +/- 10 Acres Being Developed/Disturbed: +/- 3 Acres
- Is a portion or all of the subject property located in a FEMA Flood Hazard Area? ☐ Yes** ☒ No
- Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☒ Yes** ☐ No
- Proposed type of development (Residential, Commercial, Etc.): Reservoir
- Approximate upstream land area which drains to the subject site: +/- 6 Acres
- Has the site drainage been evaluated in the past? ☐ Yes** ☒ No If yes, please identify documentation: _____
- If known, please briefly identify the proposed discharge point(s) of runoff from the site: Southeast of site towards undeveloped land.
- Briefly describe your proposed schedule for the subject project: 1 Phase, ASAP



Submit this form as part of the required drainage study to the local entity which has jurisdiction over The subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

***Newly Required Field**

**Review and concurrence of the Clark County Regional Flood Control District is required

Local Entity File No.	Revision	Date

REFERENCE:

STANDARD FORM 1

Updated 05/01/2008

OLY1606.000

May 15, 2017

Albert Sung, P.E.
Flood Control Project Engineer
City of Las Vegas Department of Public Works
333 N. Rancho Drive
Las Vegas, Nevada 89106

Subject: Supplement to the Response to CLV Comments to the Technical Drainage Study for 3090 Zone North Interim Tank (DS-4854)

Dear Mr. Sung:

This letter is submitted in response to the approval conditions contained in the April 27, 2017 review memorandum, regarding the above referenced project. A copy of the City of Las Vegas (CLV) Department of Public Works approval letter has been provided in Appendix A.

The approval conditions in the review memorandum have been individually addressed as follows:

1. **Condition:** *The project proposes to build a temporary drainage swale in Centennial Parkway between the proposed water tank and Puli Road alignment. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (off-site berms or channels) and post a minimum maintenance bond of \$25,000 or 25-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facility and an 8.5-inch by 11-inch exhibit that adequately shows the location and limits of the drainage facility to Flood Control for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (229- 6371) to begin the agreement process.*

In order for the maintenance bond to be released in the future, a drainage update / letter will be required to justify that the offsite berms / channels are no longer necessary and can be removed.

Response: Acknowledged. Prior to the final plan approval, the maintenance and liability agreement for the interim drainage improvements will be submitted to CLV Flood Control for review. The maintenance and liability agreement will be coordinated once the drainage study is conditionally approved. The exhibit illustrating the location and limits of the drainage facility identified as Exhibit EX-1 has been provided in Appendix C.

2. **Condition:** *Provide riprap sizing calculation for the access roadside channel in Centennial parkway to Flood Control Section prior to the final approval of the improvement plans.*

Response: Per varied revised slopes across the outlet channel, the riprap sizes have been listed in the table below.

Summary of Outlet Channel Riprap Size				
Station		Slope S	Flow Depth (ft) D	Design Riprap Size (inches) D ₅₀
02+50.00	06+50.00	5.30%	1.81	12
06+50.00	09+50.00	4.30%	1.88	12
09+50.00	10+50.00	8.20%	1.70	18
10+50.00	12+00.00	3.00%	1.95	12
12+00.00	14+00.00	5.80%	1.81	18
14+00.00	15+50.00	8.20%	1.70	18
15+50.00	END	3.50%	1.90	12

Riprap sizing calculations and supportive FlowMaster computations for each slope have been provided in Appendix B. Note that the revised slope and riprap sizes has had no effect on increasing the channel flow depth and remains within the 2-foot channel flow depth reported by the approved study.

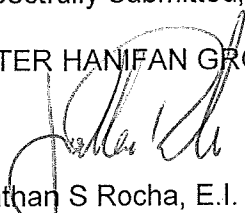
3. **Condition:** *In Section Detail A/CD5, provide a layer of geo-filter fabric beneath the proposed riprap over compacted base for erosion protection.*

Response: Section Detail A/CD5 has been revised with a layer of geo-filter fabric for erosion protection. The section detail has been provided with the revised plan, profile and detail sheets provided in Appendix D.

The revised plan, profile, and detail sheets adopting the revisions addressed in in this letter have been included in Appendix D. If you have any questions or require additional information, please do not hesitate to contact us at 284-5300.

Respectfully Submitted,

SLATER HANIFAN GROUP


Jonathan S Rocha, E.I.
Flood Control Division

cc: Mark Failla, P.E., CFM – SHG
Fred Retzlaff, P.E. - SHG
David Haile, P.E. – SHG

APPENDIX

Appendix A CLV Approval Letter

Appendix B Riprap Sizing Computations

- Rip-rap Sizing Calculations
- Outlet Channel FlowMaster Calculations

Appendix C Site Plan Exhibit

Appendix D Revised Grading, Profile & Detail Sheets & CD (Electronic Files)

APPENDIX A

CLV Approval Letter

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		April 27, 2017
TO: Land Development Services Department of Building & Safety		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: 3090 Zone North Interim Tank	
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- Provide riprap sizing calculation for the access roadside channel in *Centennial Parkway* to Flood Control Section prior to the final approval of the improvement plans.
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END OF REMARKS

ays

T/R/S: T19S/R59E/23
AREA F-23

APPENDIX B

Riprap Sizing Computations

Riprap Sizing Calculations

OLY1606 3090 Zone North Interim Tank
Riprap Sizing Summary Table

Station	Slope S	Manning's Roughness ¹ n	Flow Rate (cfs) Q	Flow Depth (ft) D	Side Slopes (ZH:1V)	Velocity (ft/s) V	Specific Gravity S _g	Design Riprap Size (inches) D50 _b	Minimum D50 ³ (ft) D ₅₀
02+50.00	5.30%	0.040	76.0	1.81	3	7.7	2.5	12	12
06+50.00	4.30%	0.040	76.0	1.88	3	7.2	2.5	12	10
09+50.00	8.20%	0.042	76.0	1.70	3	8.7	2.5	18	18
10+50.00	3.00%	0.040	76.0	1.95	3	6.6	2.5	12	8
12+00.00	5.80%	0.042	76.0	1.81	3	7.7	2.5	18	13
14+00.00	8.20%	0.042	76.0	1.70	3	8.7	2.5	18	18
15+50.00	3.50%	0.040	76.0	1.91	3	7.0	2.5	12	9

Formula

1) $n = 0.0395(D50)^{1/6}$

2) $R_h = A / P$

3) $D50 = ((V \cdot S^{0.17}) / (3 \cdot (S_g - 1)))^2$

Source

DDM⁵ Equation 732

Manning's Formula

DDM⁵ Equation 734

Outlet Channel FlowMaster Calculations

Section 11 - Outlet Channel Centennial Parkway 3.0%

Worksheet for Triangular Channel

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 3.0%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

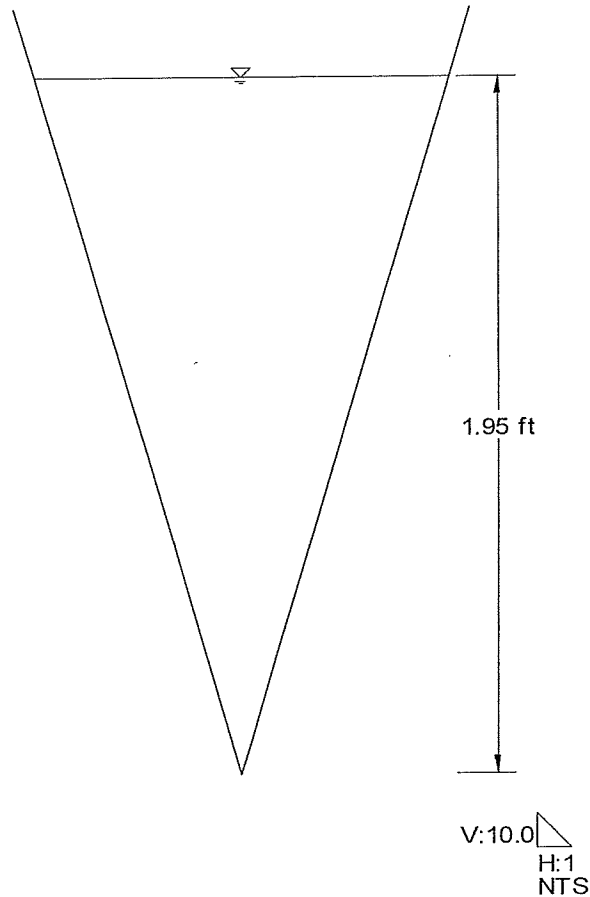
Input Data	
Mannings Coefficient	0.037
Channel Slope	3.00 %
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs

Results	
Depth	1.95 ft
Flow Area	11.5 ft ²
Wetted Perimeter	12.36 ft
Top Width	11.73 ft
Critical Depth	2.09 ft
Critical Slope	2.10 %
Velocity	6.63 ft/s
Velocity Head	0.68 ft
Specific Energy	2.64 ft
Froude Number	1.18
Flow Type	Supercritical

Section 11 - Outlet Channel Centennial Parkway 3.0% **Cross Section for Triangular Channel**

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 3.0%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.037
Channel Slope	3.00 %
Depth	1.95 ft
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs



Section 11 - Outlet Channel Centennial Parkway 3.5%

Worksheet for Triangular Channel

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 3.5%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Mannings Coefficient	0.037
Channel Slope	3.50 %
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs

Results	
Depth	1.91 ft
Flow Area	10.9 ft ²
Wetted Perimeter	12.07 ft
Top Width	11.45 ft
Critical Depth	2.09 ft
Critical Slope	2.15 %
Velocity	6.96 ft/s
Velocity Head	0.75 ft
Specific Energy	2.66 ft
Froude Number	1.26
Flow Type	Supercritical

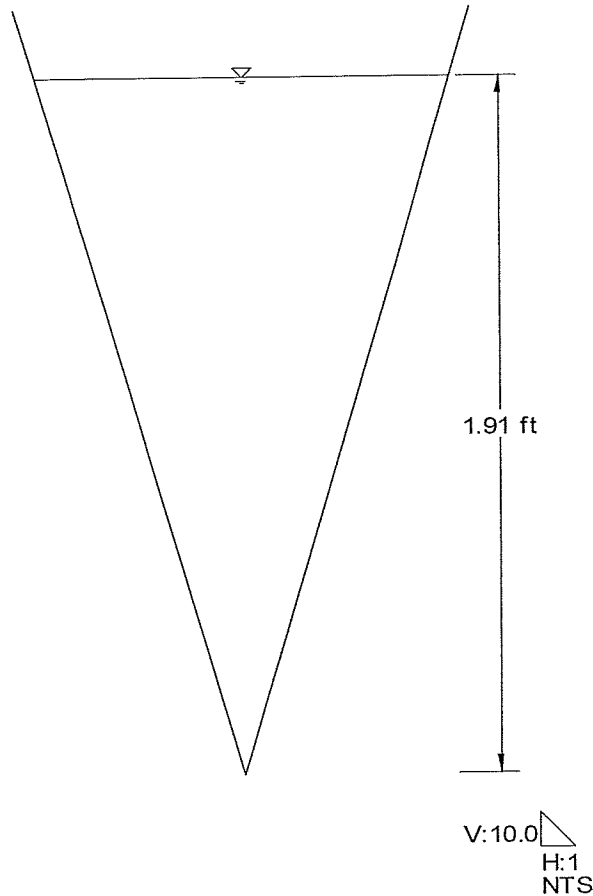
Section 11 - Outlet Channel Centennial Parkway 3.5%
Cross Section for Triangular Channel

Project Description

Worksheet	Section 11 - Outlet Channel Centennial Parkway 3.5%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data

Mannings Coefficient	0.037
Channel Slope	3.50 %
Depth	1.91 ft
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs



Section 11 - Outlet Channel Centennial Parkway 4.3%

Worksheet for Triangular Channel

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 4.3%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

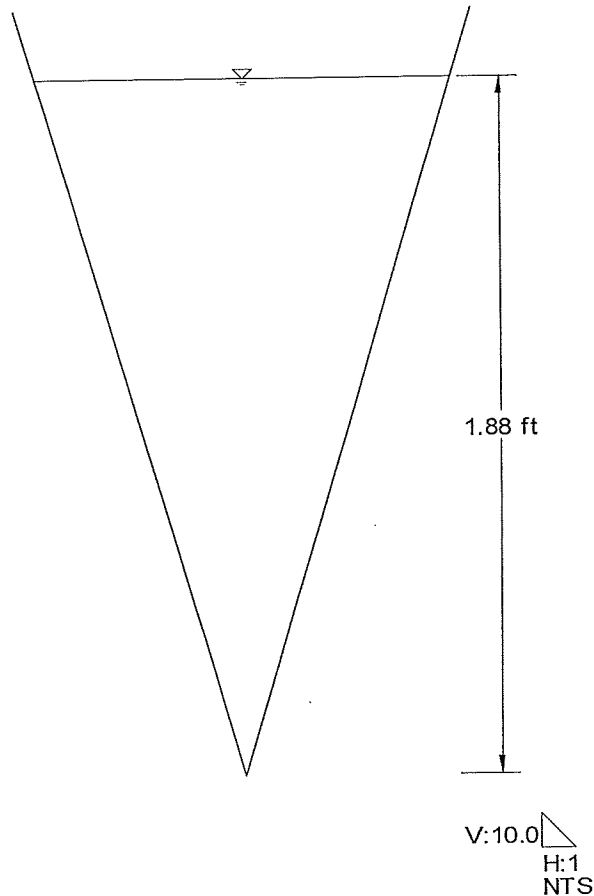
Input Data	
Mannings Coefficient	0.040
Channel Slope	4.30 %
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs

Results	
Depth	1.88 ft
Flow Area	10.6 ft ²
Wetted Perimeter	11.91 ft
Top Width	11.30 ft
Critical Depth	2.09 ft
Critical Slope	2.46 %
Velocity	7.15 ft/s
Velocity Head	0.79 ft
Specific Energy	2.68 ft
Froude Number	1.30
Flow Type	Supercritical

Section 11 - Outlet Channel Centennial Parkway 4.3% **Cross Section for Triangular Channel**

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 4.3%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Channel Slope	4.30 %
Depth	1.88 ft
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs



Section 11 - Outlet Channel Centennial Parkway 5.3%

Worksheet for Triangular Channel

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 5.3%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

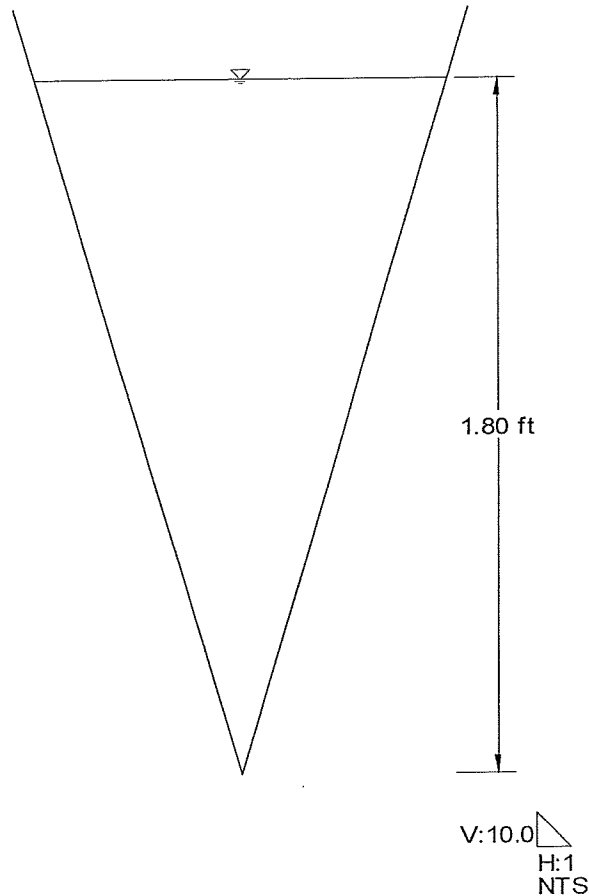
Input Data	
Mannings Coefficient	0.040
Channel Slope	5.30 %
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs

Results	
Depth	1.80 ft
Flow Area	9.7 ft ²
Wetted Perimeter	11.40 ft
Top Width	10.81 ft
Critical Depth	2.09 ft
Critical Slope	2.40 %
Velocity	7.80 ft/s
Velocity Head	0.95 ft
Specific Energy	2.75 ft
Froude Number	1.45
Flow Type	Supercritical

Section 11 - Outlet Channel Centennial Parkway 5.3% **Cross Section for Triangular Channel**

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 5.3%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.040
Channel Slope	5.30 %
Depth	1.80 ft
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs



Section 11 - Outlet Channel Centennial Parkway 5.8%

Worksheet for Triangular Channel

Project Description

Worksheet	Section 11 - Outlet Channel Centennial Parkway 5.8%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data

Mannings Coefficient	0.042
Channel Slope	5.80 %
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs

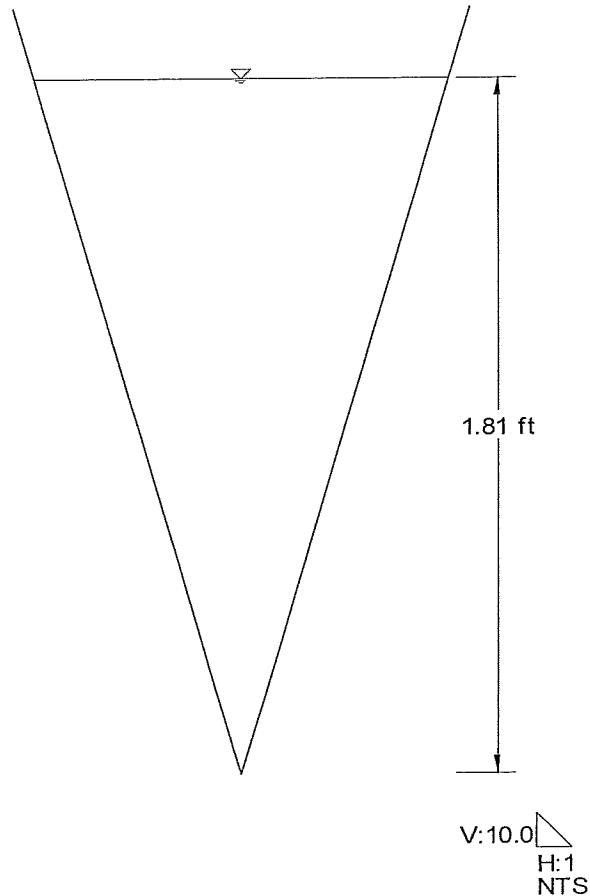
Results

Depth	1.81 ft
Flow Area	9.9 ft ²
Wetted Perimeter	11.47 ft
Top Width	10.88 ft
Critical Depth	2.09 ft
Critical Slope	2.72 %
Velocity	7.71 ft/s
Velocity Head	0.92 ft
Specific Energy	2.74 ft
Froude Number	1.43
Flow Type	Supercritical

Section 11 - Outlet Channel Centennial Parkway 5.8% **Cross Section for Triangular Channel**

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 5.8%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.042
Channel Slope	5.80 %
Depth	1.81 ft
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs



Section 11 - Outlet Channel Centennial Parkway 8.2% **Worksheet for Triangular Channel**

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 8.2%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

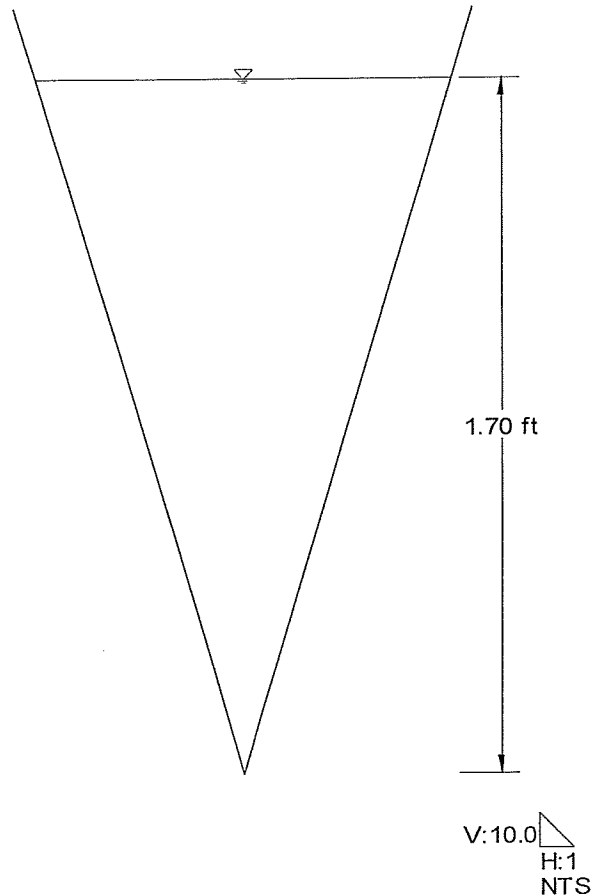
Input Data	
Mannings Coefficient	0.042
Channel Slope	8.20 %
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs

Results	
Depth	1.70 ft
Flow Area	8.7 ft ²
Wetted Perimeter	10.77 ft
Top Width	10.22 ft
Critical Depth	2.09 ft
Critical Slope	2.76 %
Velocity	8.73 ft/s
Velocity Head	1.18 ft
Specific Energy	2.89 ft
Froude Number	1.67
Flow Type	Supercritical

Section 11 - Outlet Channel Centennial Parkway 8.2% **Cross Section for Triangular Channel**

Project Description	
Worksheet	Section 11 - Outlet Channel Centennial Parkway 8.2%
Flow Element	Triangular Channel
Method	Manning's Formula
Solve For	Channel Depth

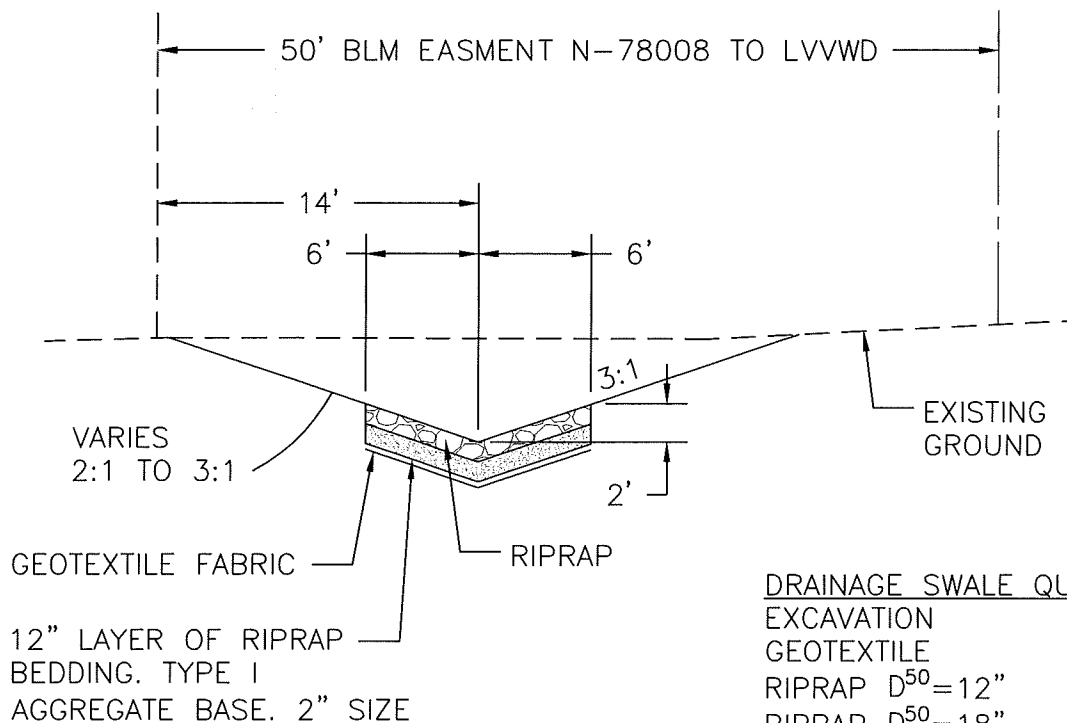
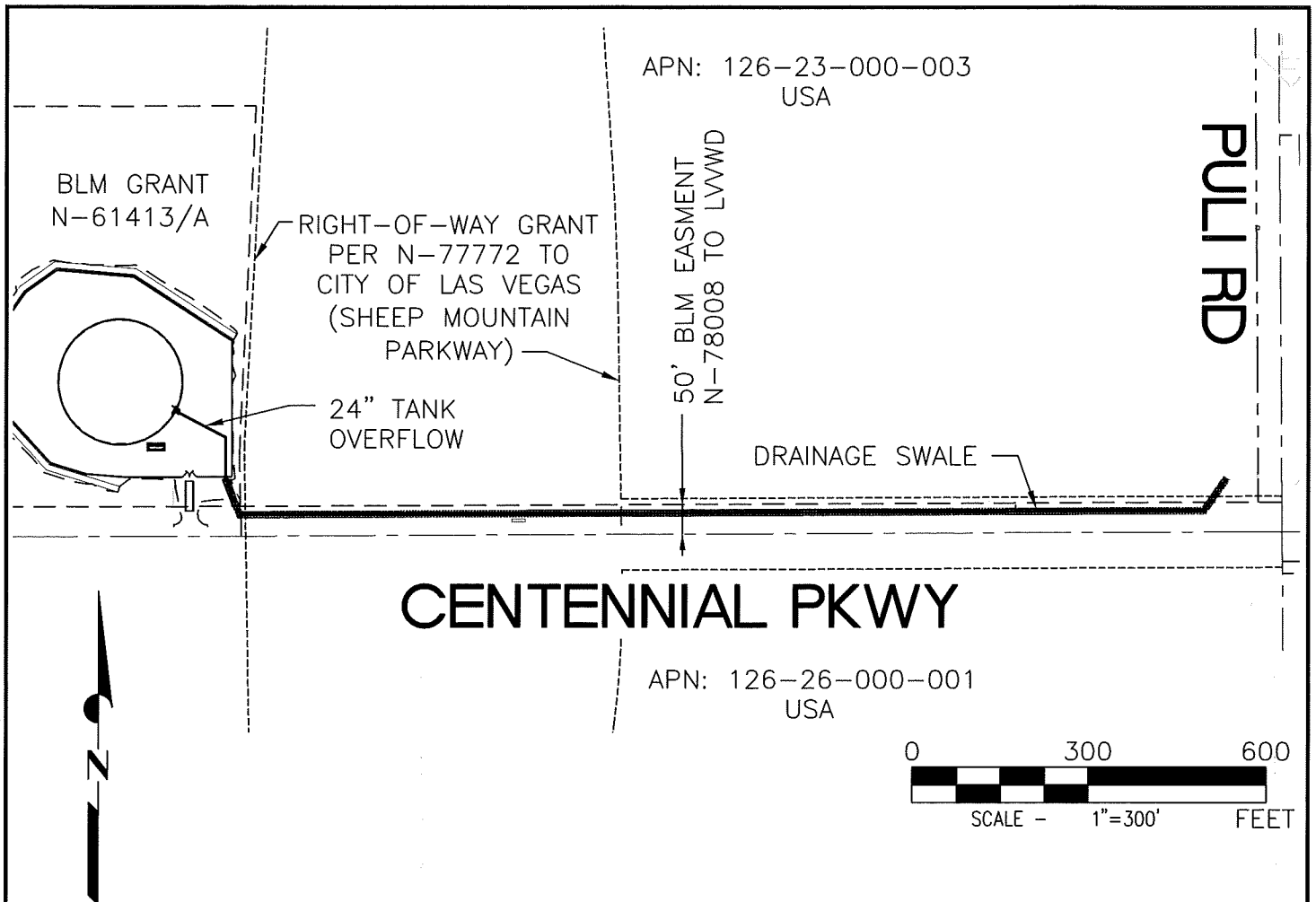
Section Data	
Mannings Coefficient	0.042
Channel Slope	8.20 %
Depth	1.70 ft
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Discharge	76.00 cfs



APPENDIX C

Site Plan Exhibit

j:\oly1606.000 skye canyon 3090 zone north inlet/outlet tank\dwg\figures\clv flood site plan.dwg 5/15/2017 11:20 AM Sergio Elizondo



DRAINAGE SWALE QUANTITIES	
EXCAVATION	2,640 CY
GEOTEXTILE	2,293 SY
RIPRAP D ⁵⁰ =12"	1,129 CY
RIPRAP D ⁵⁰ =18"	600 CY

S-I-G SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NINETY-FIVE MANAGEMENT, LLC

3090 ZONE NORTH INLET/OUTLET PIPELINE

SITE PLAN

DATE: 5/15/2017

DRAFTER: SE

DESIGNER: SE

CHECKED: DH

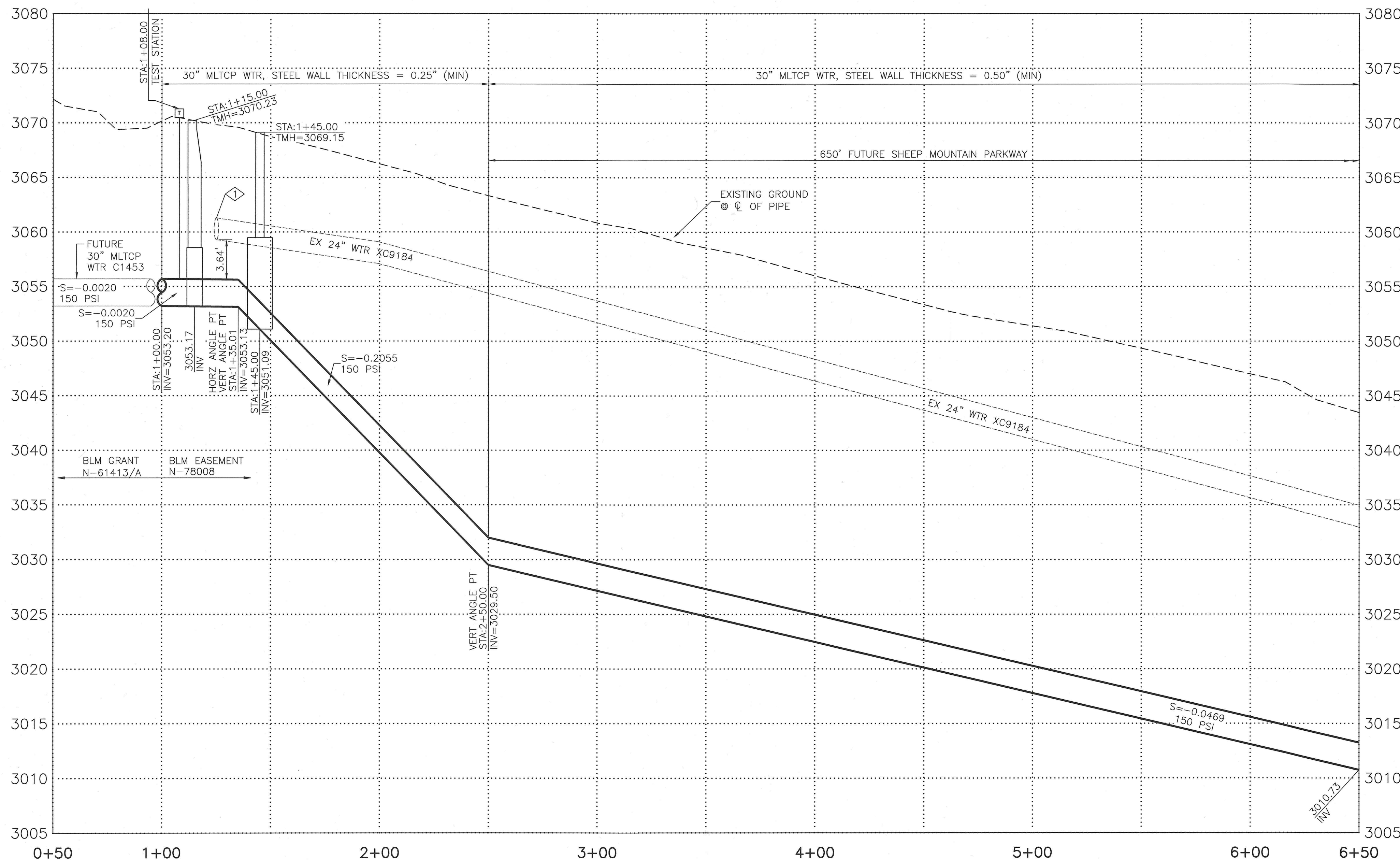
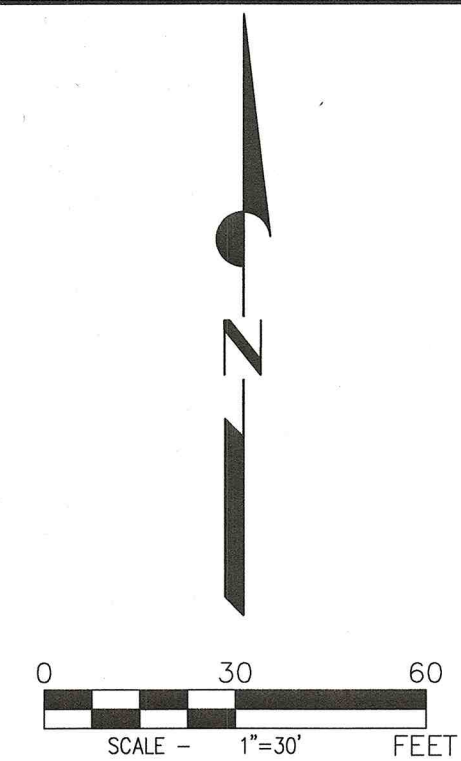
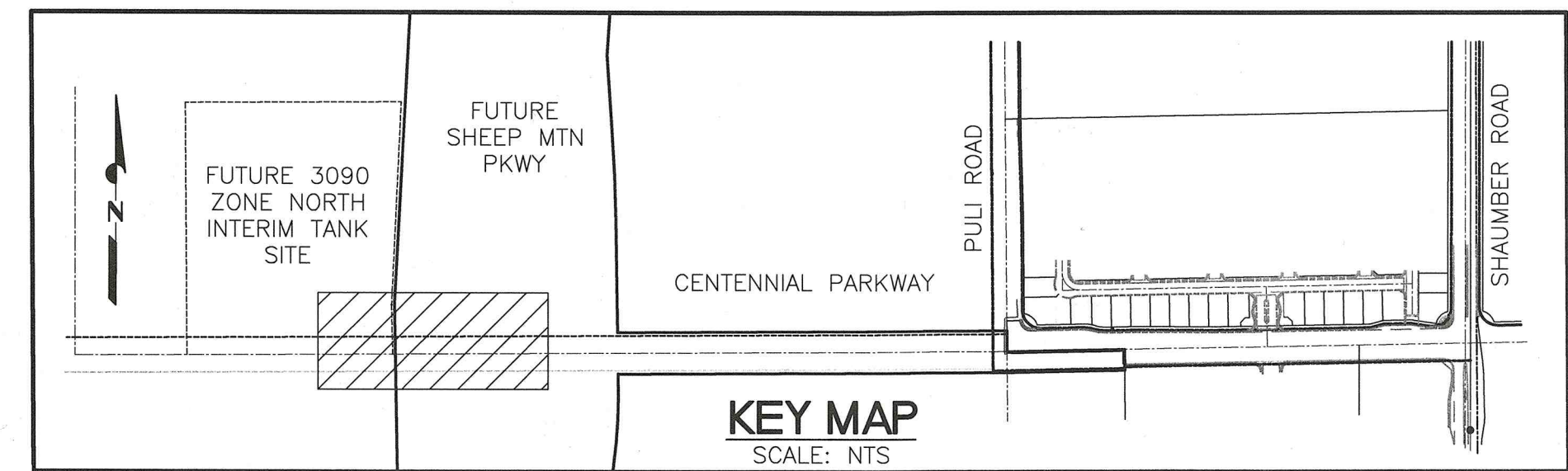
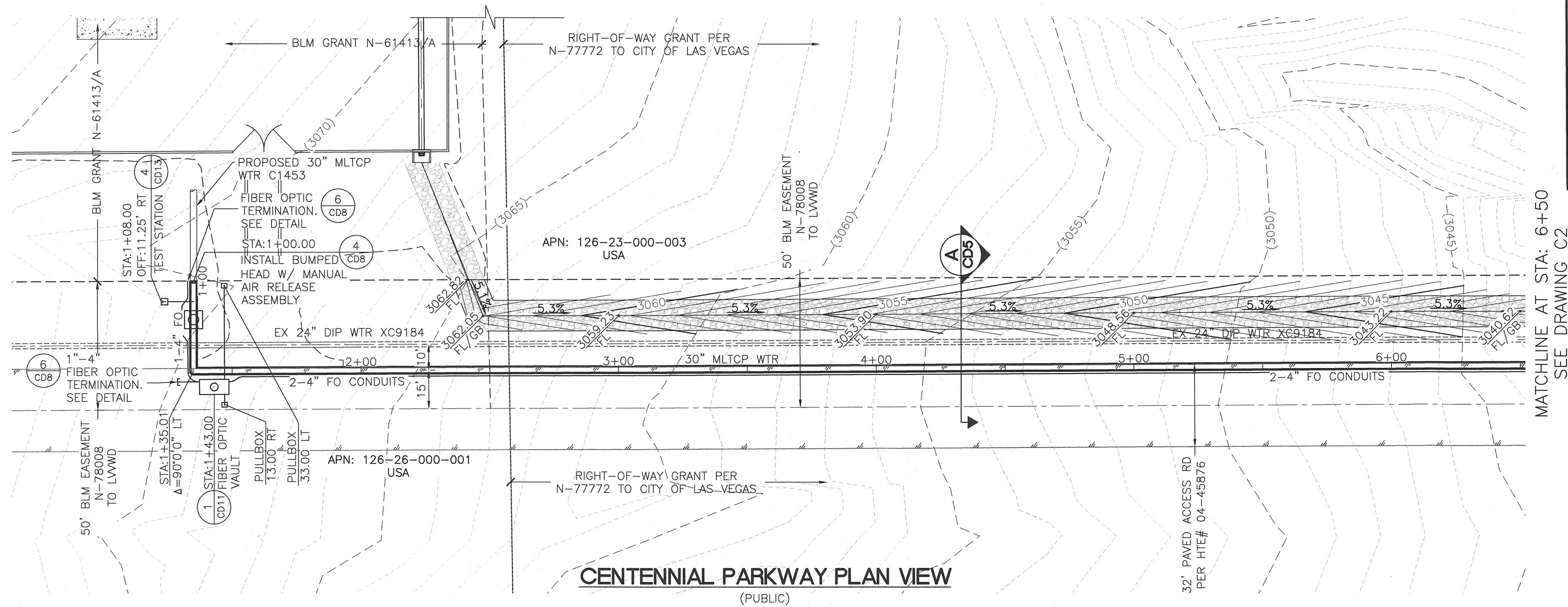
PROJECT NO.
OLY1606

EX-1

SHEET 1 OF 1

APPENDIX D

Revised Grading, Profile and Detail Sheets
& CD (Electronic Files)



STA: 1+00.00 TO STA: 2+50.00
NEW 30" MLTCP DATA
STL CYL OD = 31.5"
STL CYL THK = 0.250"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

STA: 2+50.00 TO STA: 6+50.00
NEW 30" MLTCP DATA
STL CYL OD = 32.0"
STL CYL THK = 0.50"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

WELD ALL JOINTS FROM
STA. 1+00 TO 1+53



POT HOLE SCHEDULE		
NO.	ELEVATION	DESCRIPTION
1	3061.29	24" DIP WATERLINE
2	2967.06	12" DIP WATERLINE
3	2971.26	4" PE GAS
4	2941.78	12" PVC WATERLINE
5	2942.04	14" CONC ENCASEMENT
6	2929.02	20" CONC ENCASEMENT
7	2927.32	2" PE GAS
8	2909.53	4" PE GAS

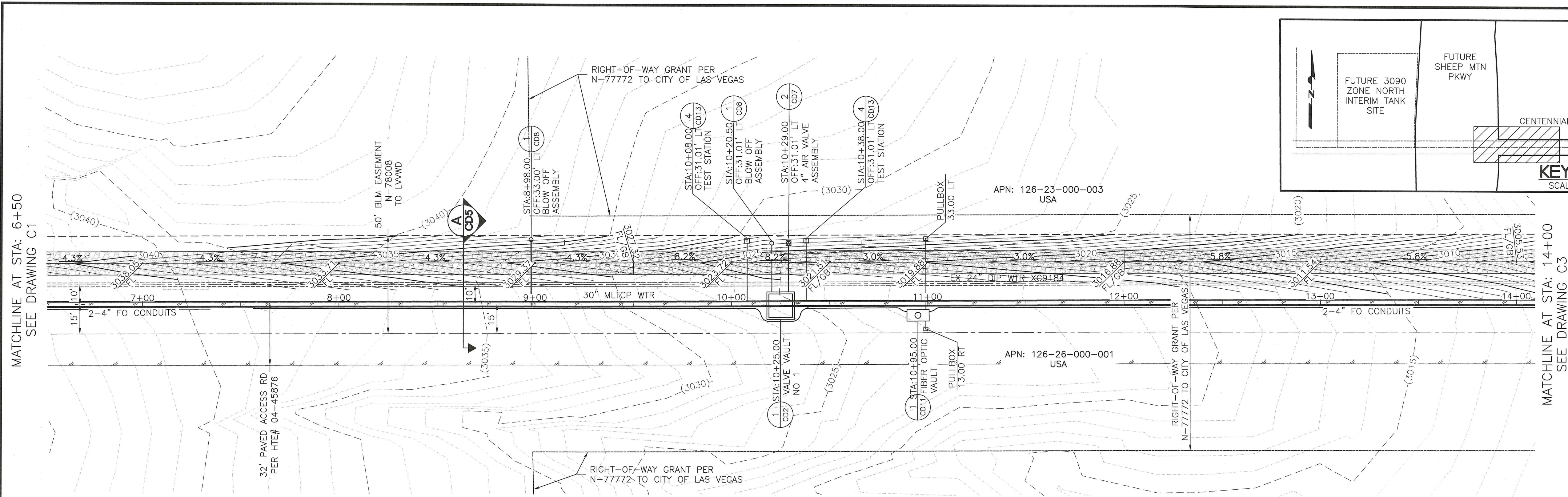
LAS VEGAS VALLEY WATER DISTRICT
S-I-G
SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
PHONE (702) 264-5300 FAX (702) 264-5398

VERIFY SCALE
1/2" = 0'
1/2" = 15'
1" = 30'
BAR REPRESENTS
ONE AND ONE-HALF
INCHES ON ORIGINAL

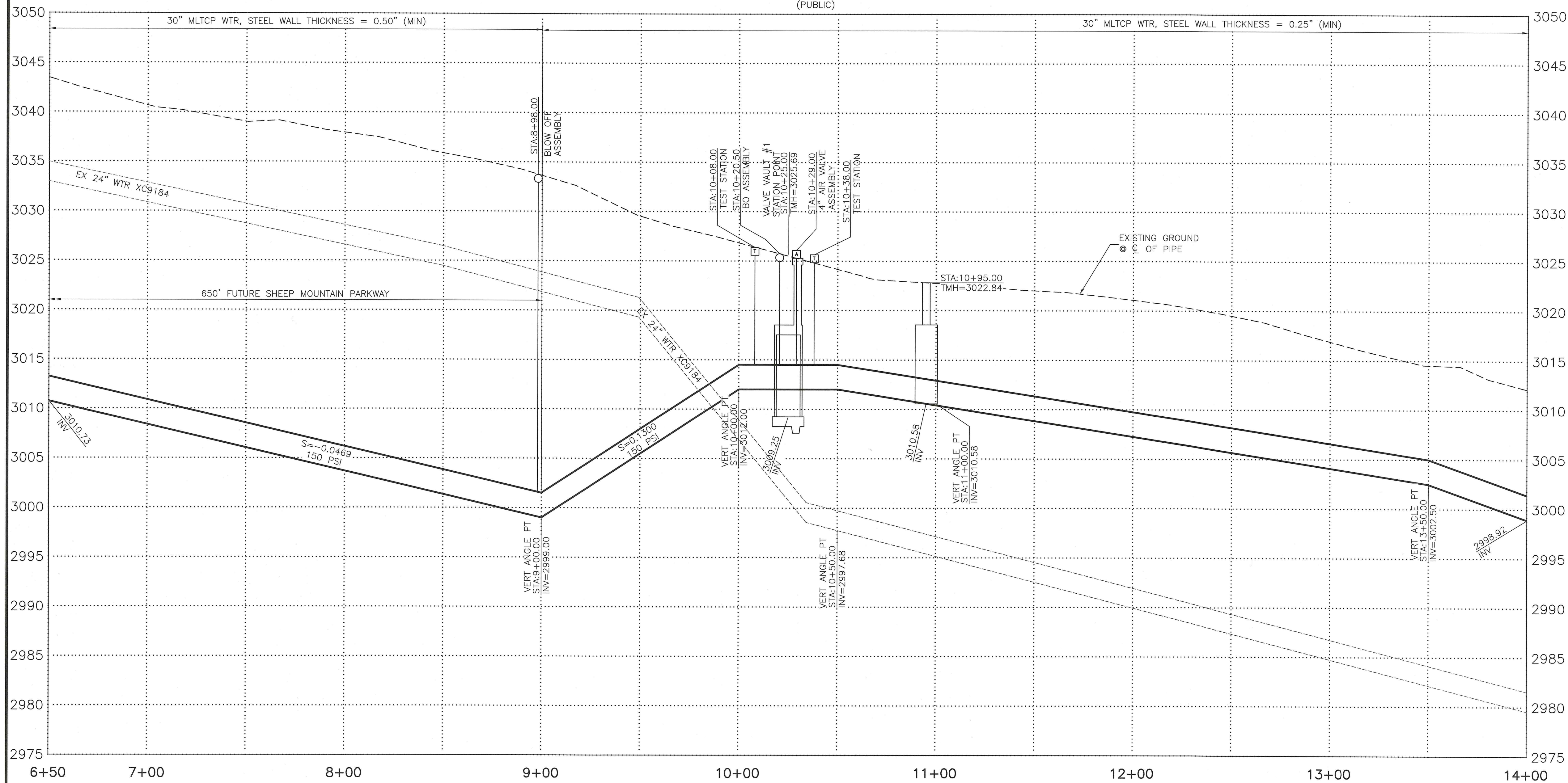
3090 ZONE NORTH INTERIM TANK
INLET/OUTLET PIPELINE
CENTENNIAL PARKWAY PLAN AND PROFILE I
SCALE: AS NOTED
HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=6'

REVISIONS:
DRAWN BY: SE
CHECKED BY: DBH
RECOMMENDED BY: CHRISTOPHER M. LUQUETTE, P.E. SR. CIVIL ENGINEER DATE: 5/15/2017
ACCEPTED BY: RYAN C. PEARSON, P.E. DESIGN MANAGER DATE: 5/15/2017
CONTRACT NUMBER
C1454
DRAWING NUMBER C1
SHEET 9 OF 26
100% SUBMITTAL - NOT FOR CONSTRUCTION

CLV DWG # H-68541



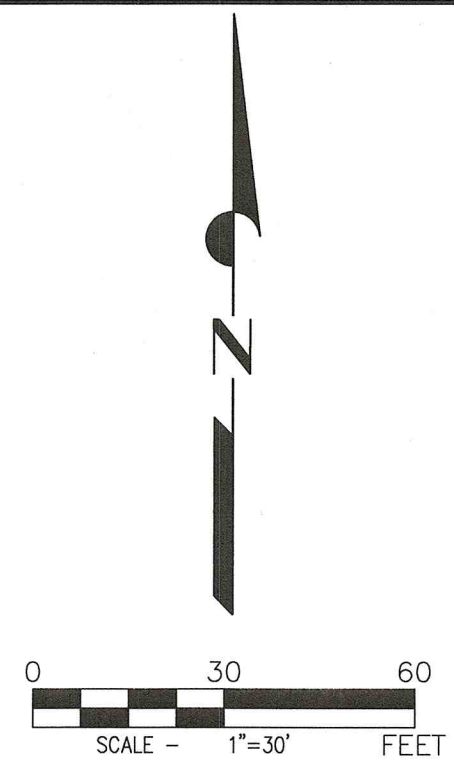
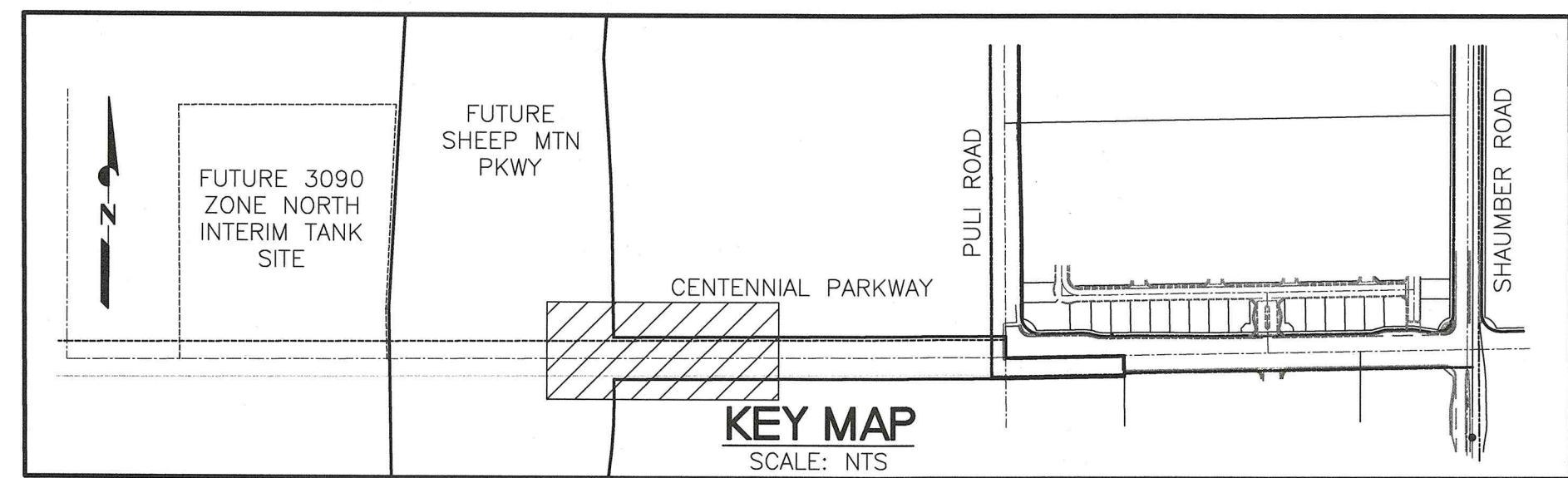
CENTENNIAL PARKWAY PLAN VIEW



CENTENNIAL PARKWAY PROFILE VIEW

HORIZ. SCALE: 1"=30'

VERT. SCALE: 1"=6'



STA: 6+50.00 TO STA: 9+00.00
NEW 30" MLTCP DATA
STL CYL OD = 32.0"
STL CYL THK = 0.50"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

STA: 9+00.00 TO STA: 14+00.00
NEW 30" MLTCP DATA
STL CYL OD = 31.5"
STL CYL THK = 0.250"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

WELD ALL JOINTS FROM
STA. 7+59 TO 8+91
STA. 10+50 TO 14+00



LAS VEGAS VALLEY WATER DISTRICT

VERIFY SCALE
1/2" = 0'
1/2" = 15'
1" = 30'

BAR REPRESENTS
ONE AND ONE-HALF
INCHES ON ORIGINAL

3090 ZONE NORTH INTERIM TANK
INLET/OUTLET PIPELINE

CENTENNIAL PARKWAY PLAN AND PROFILE II

REVISIONS:

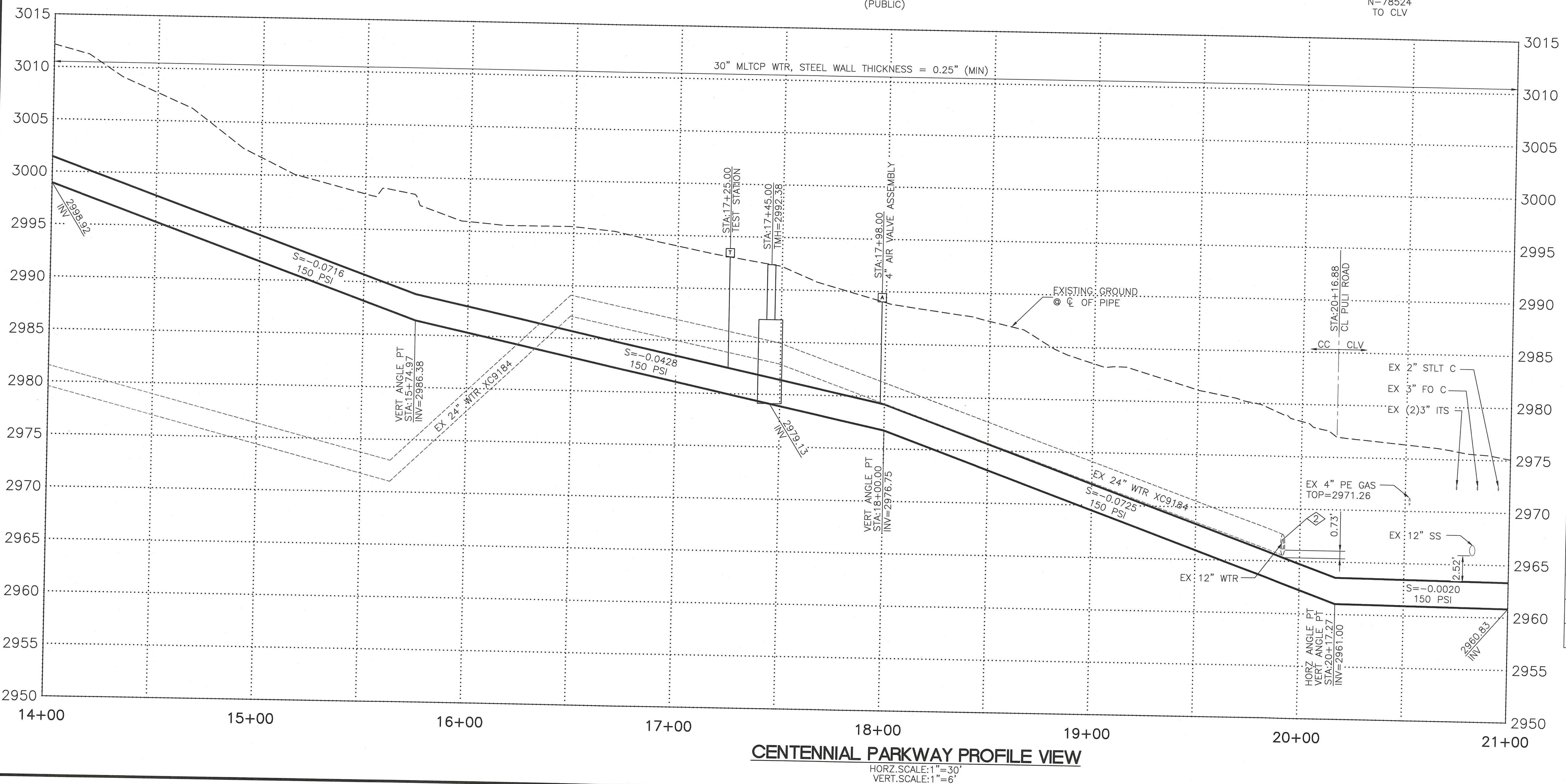
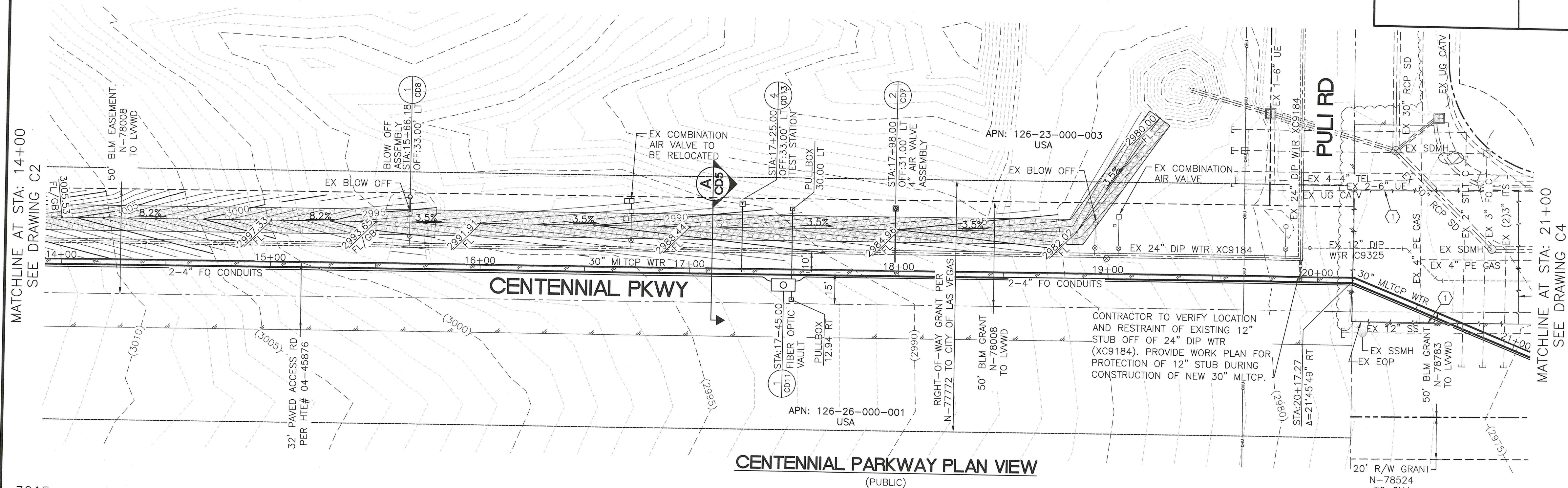
CONTRACT NUMBER
C1454

DRAWING NUMBER C2
SHEET 10 OF 26

CLV DWG # H-68541

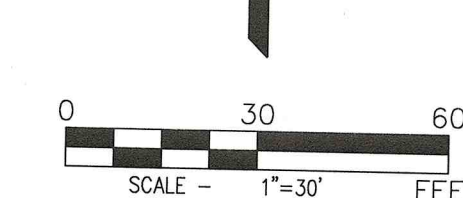
100% SUBMITTAL - NOT FOR CONSTRUCTION

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 264-5500 FAX (702) 264-5599



CONSTRUCTION NOTES

- SAWCUT AND REPLACE EXISTING AC IN ACCORDANCE WITH USDOCA DWG NO. 500.1 - 500.5
- SAWCUT AND REPLACE EXISTING SIDEWALK PER USDOCA DWG NO. 234
- SAWCUT AND REPLACE EXISTING CURB AND GUTTER PER USDOCA DWG NO. 216



SCALE: 1"=30'
FEET

STA: 14+00.00 TO STA: 15+75
NEW 30" MLTWP DATA
STL CYL OD = 32.0
STL CYL THK = 0.50"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

STA: 15+75 TO STA: 21+00.00
NEW 30" MLTWP DATA
STL CYL OD = 31.5
STL CYL THK = 0.250"
MORTAR LINING THK = 0.50"
MORTAR COATING THK = 1.0"

WELD ALL JOINTS FROM
STA. 14+00 TO 15+75
STA. 20+70 TO 21+00



AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEMS AND STREET LIGHT SYSTEM CONDUITS. IT'S COSTLY.
Call before you dig
1-702-455-6000
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
1-800-227-2600
AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

POT HOLE SCHEDULE		
NO.	ELEVATION	DESCRIPTION
1	3061.29	24" DIP WATERLINE
2	2967.06	12" DIP WATERLINE
3	2971.26	4" PE GAS
4	2941.78	12" PVC WATERLINE
5	2942.04	14" CONC ENCASEMENT
6	2929.02	20" CONC ENCASEMENT
7	2927.32	2" PE GAS
8	2909.53	4" PE GAS

3090 ZONE NORTH INTERIM TANK
INLET/OUTLET PIPELINE

CENTENNIAL PARKWAY PLAN AND PROFILE III

DRAWN BY: SE
CHECKED BY: DBH
RECOMMENDED BY: CHRISTOPHER M. LIQUETTE, P.E. SR. CIVIL ENGINEER DATE
ACCEPTED BY: RYAN C. PEARSON, P.E. DESIGN MANAGER DATE

PROFESSIONAL ENGINEER
DAVID B. HAILE
Exp. 06/30/2017
CIVIL
Lic. No. 14968

CONTRACT NUMBER
C1454
DRAWING NUMBER C3
SHEET 11 OF 26

REVISIONS:

100% SUBMITTAL - NOT FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
S-I-G
SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
400 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 248-5500 FAX (702) 248-5599

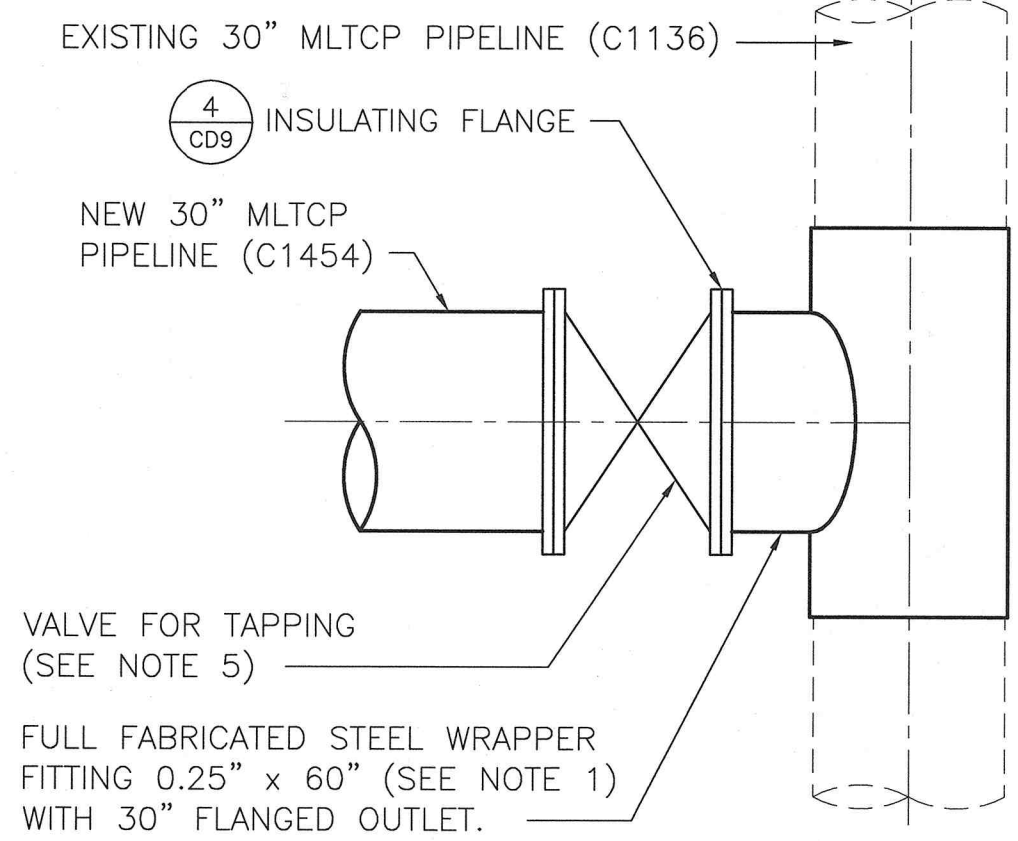
VERIFY SCALE
1/2" = 0'
1/2" = 15'
1/2" = 30'
1/2" = 60'

SCALE
HORIZ. SCALE
VERT. SCALE
AS NOTED
UNLESS OTHERWISE NOTED

CLV DWG # H-68541

A:\CLV1606-000-Skye Canyon 3090 Zone North Interim Tank\dwg\Improv\Inlet_Outlet\15/2017 11:28 AM Sergio Elizondo

EXISTING PIPE DATA:	
STEEL CYLINDER OD:	31.875"
CYLINDER THICKNESS:	0.1875"
LINING THICKNESS:	0.50"
COATING THICKNESS:	1.00"
ROD THICKNESS: (IF APPLICABLE)	N/A



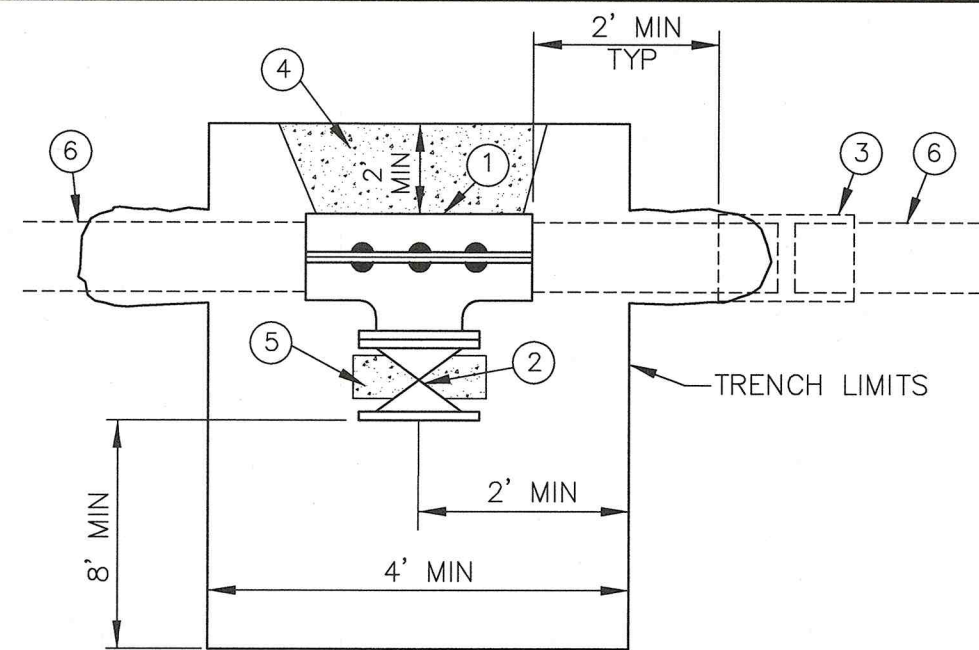
NOTES:

- TAPPING FITTING SHALL BE FULL WRAPPER DESIGN AND DESIGNED IN ACCORDANCE WITH AWWA MANUAL M11.
- DESIGN PRESSURE = 150 PSI
STATIC PRESSURE = 85 PSI
- TEST FABRICATED STEEL TAPPING FITTING PER SPECIFICATIONS SECTION 33 13 02
- ALL FERROUS METALS SHALL BE COATED PER SECTION 09 96 00, PROTECTIVE COATINGS. APPLY REINFORCED MORTAR COATING AFTER COMPLETION.
- TAPPING VALVE TO BE LEFT IN PLACE.
- THE EXISTING PIPE SHALL REMAIN IN SERVICE, WITH WATER FLOWING, DURING ENTIRE TAPPING OPERATION, UNLESS OTHERWISE APPROVED BY LVWD.
- VERIFY POSITION OF PROPOSED TAP PRIOR TO COMMENCING OPERATION. POSITION TAP AT LEAST 5 FEET FROM JOINT IN EXISTING PIPE.
- VALVE TO BE SUPPORTED DURING THE WET TAP PROCESS.
- CONTRACTOR SHALL VERIFY SIZE, THICKNESS, LINING AND COATING OF EXISTING PIPELINE PRIOR TO COMPLETION OF WET TAP.
- ATTACH LEADS TO EITHER SIDE OF INSULATING FLANGE. CONNECT TO TEST STATION AT STA 32+80.00.

WET TAP OF EXISTING STEEL MAINS

NOT TO SCALE

1
CD5
C5



ITEM DESCRIPTION

- | ITEM | DESCRIPTION |
|------|-----------------------------|
| 1 | TAPPING SLEEVE |
| 2 | GATE VALVE |
| 3 | EXISTING COUPLING OR COLLAR |
| 4 | CONCRETE THRUST BLOCK |
| 5 | SUPPORT VALVE AS REQUIRED |
| 6 | EXISTING PIPE |

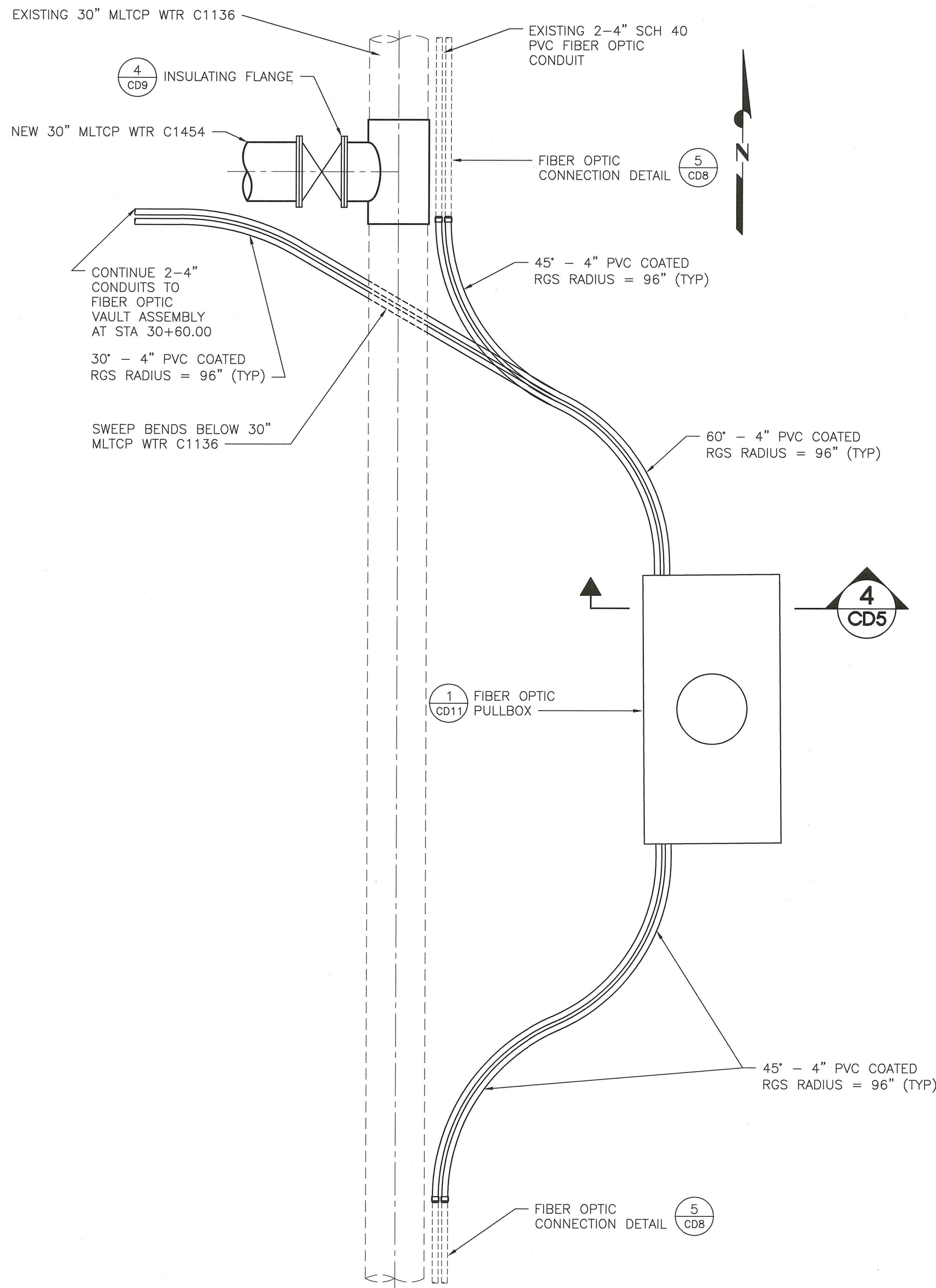
NOTES:

- CLEARANCE FROM A COLLAR OR PIPE JOINT SHALL BE A MINIMUM OF 2 FEET FROM THE EDGE OF TAPPING SLEEVE TO COLLAR OR PIPE JOINT. THE EXISTING PIPE SHALL BE EXPOSED SUFFICIENTLY TO ENSURE THAT SUCH MINIMUM CLEARANCE IS PROVIDED.
- TRENCH SHALL MEET ALL OSHA REQUIREMENTS.
- GATE VALVE TO BE TEMPORARILY SUPPORTED DURING THE WET TAP PROCESS.

EXCAVATION FOR WET TAPS

NOT TO SCALE

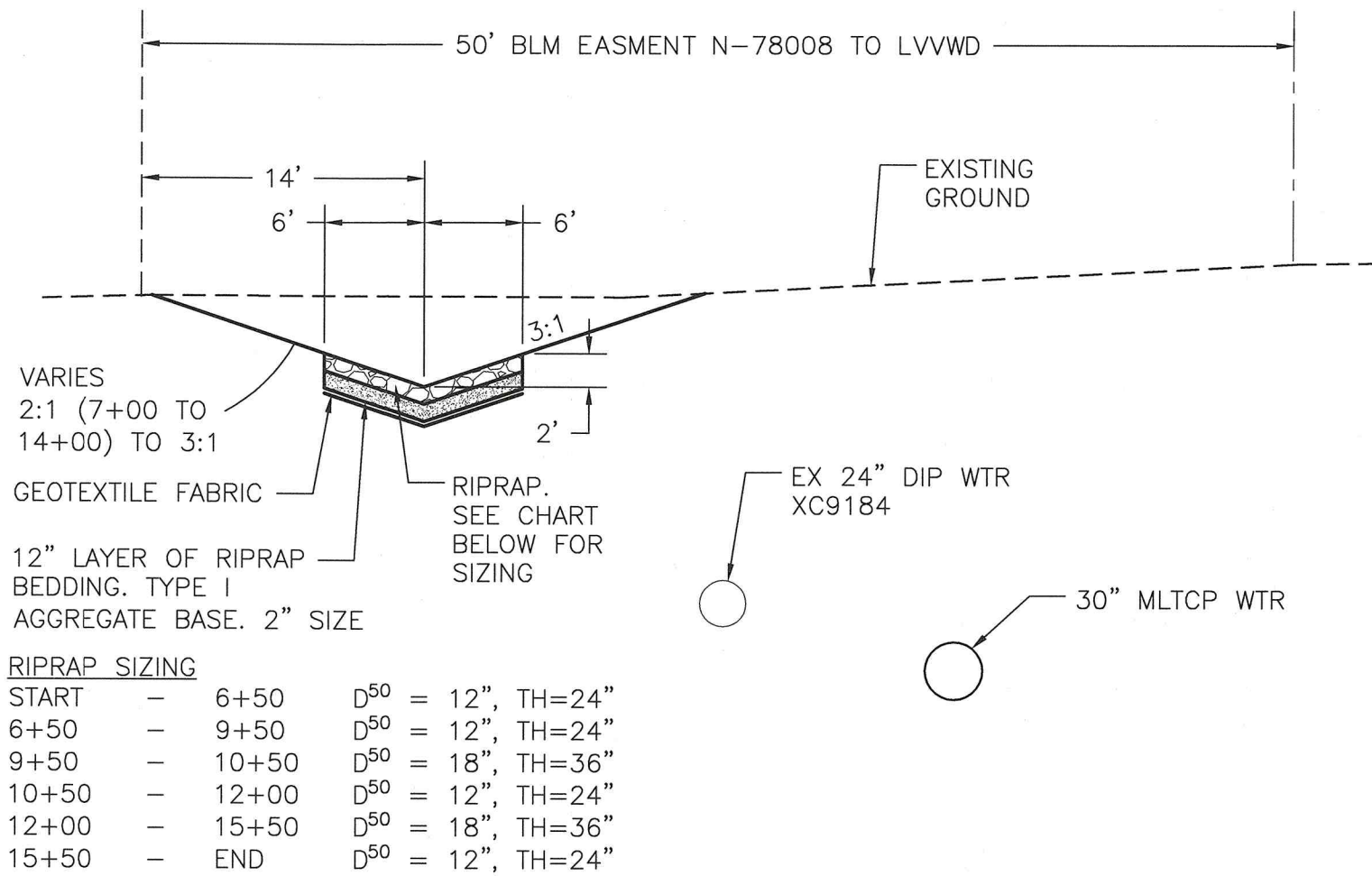
2
CD5



FIBER OPTIC CONNECTION DETAIL C1136 TO C1454

NOT TO SCALE

3
CD5
C5



SECTION

NOT TO SCALE

A

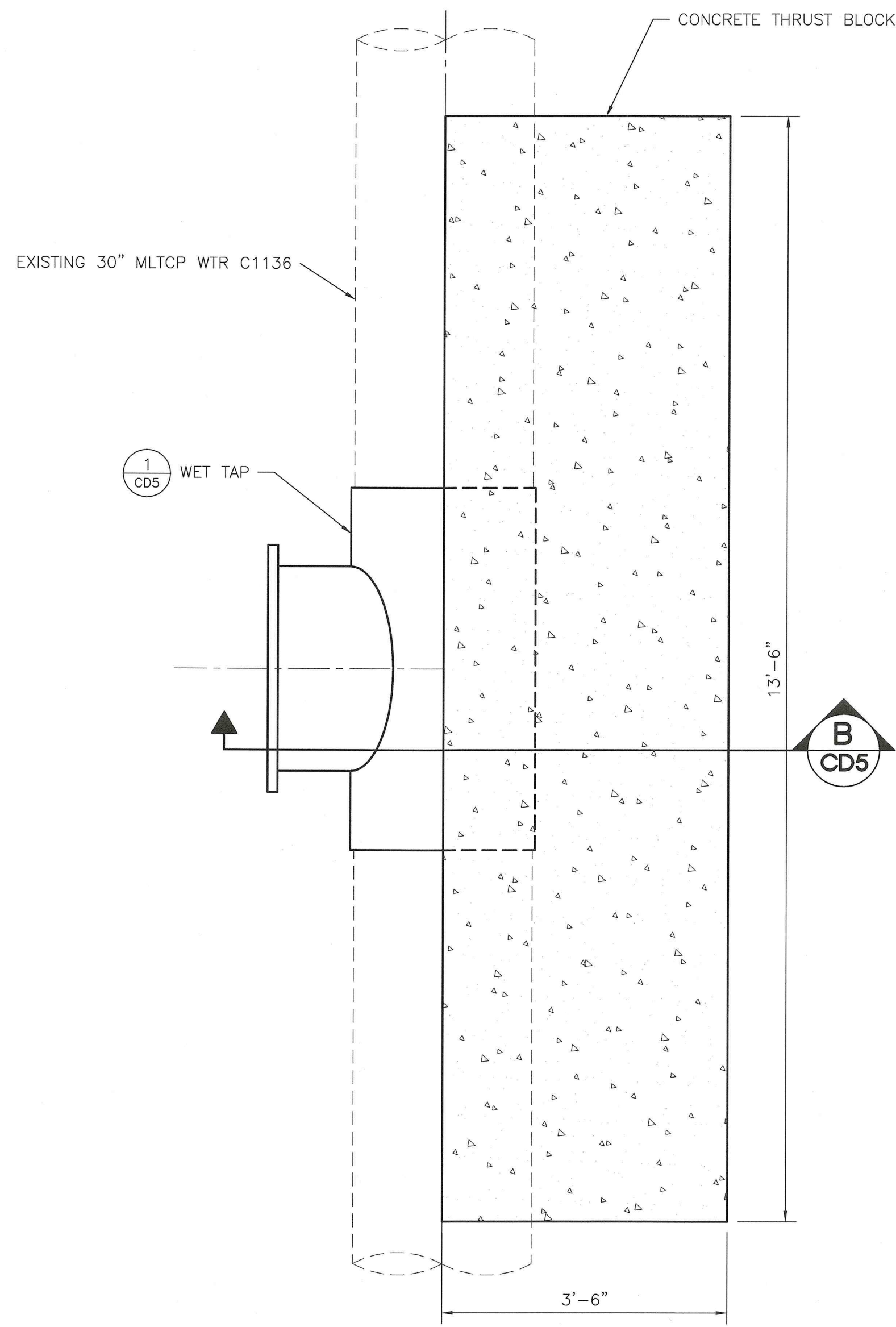
TO C1136 SHAUMBER RD
NORTH CONDUITS

TO C1454 PIPELINE
CONDUITS WEST

VAULT WALL END SECTION

NOT TO SCALE

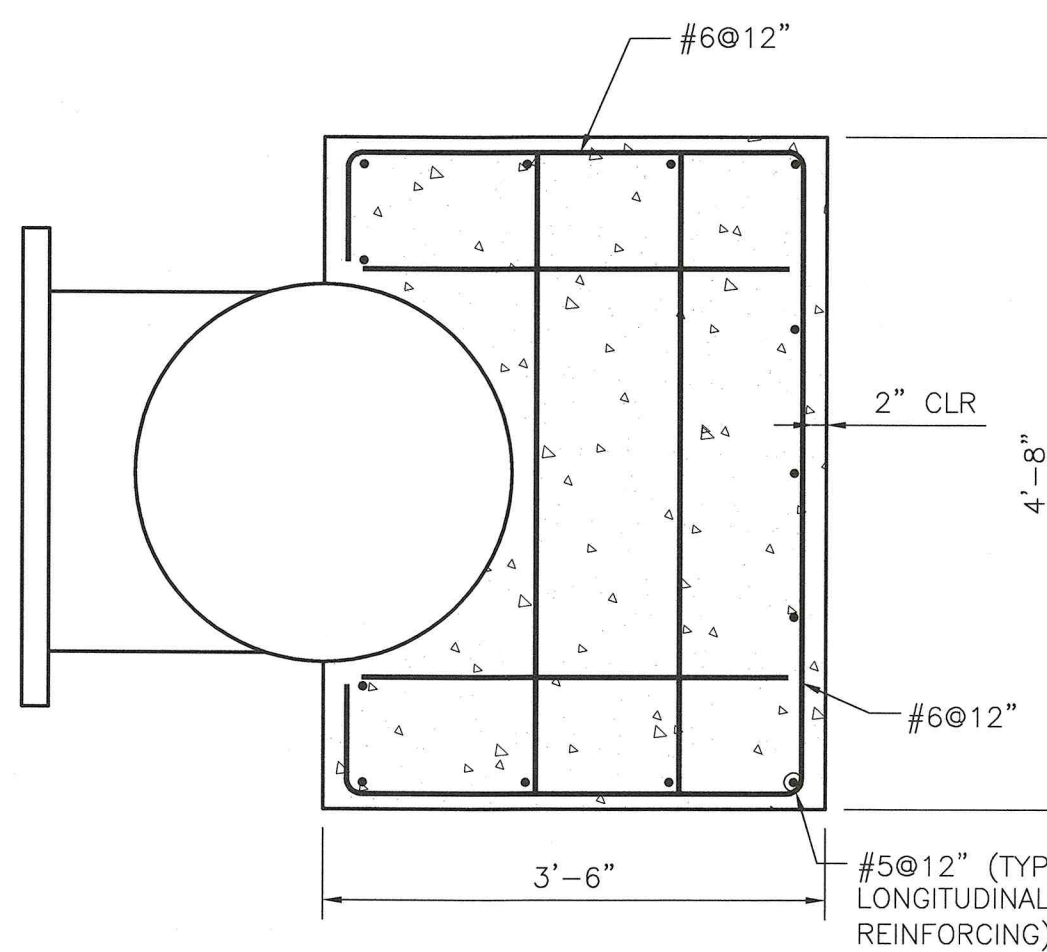
4
CD5



PLAN

NOT TO SCALE

B
CD5



SECTION

NOT TO SCALE

B

THRUST BLOCK

NOT TO SCALE

5
CD5

LAS VEGAS VALLEY WATER DISTRICT		SLATER HANIFAN GROUP CONSULTING ENGINEERS & PLANNERS 5700 S. ARVILLE STREET #216 LAS VEGAS, NV 89118 PHONE (702) 248-5500 FAX (702) 248-5505	
VERIFY SCALE	1/2 0 1/2 1	SCALE HORIZONTAL SCALE VERTICAL SCALE AS NOTED AS NOTED	3090 ZONE NORTH INTERIM TANK INLET/OUTLET PIPELINE
WET TAP AND FIBER OPTIC CONNECTION DETAILS		DRAWN BY: 5/15/2017 CHECKED BY: 5/15/2017 RECOMMENDED BY: CHRISTOPHER M. LUQUETTE, P.E. SR. CIVIL ENGINEER DATE ACCEPTED BY: RYAN C. PEARSON, P.E. DESIGN MANAGER DATE	
CONTRACT NUMBER		C1454	
DRAWING NUMBER		CD5	
SHEET		18 OF 26	

CLV DWG # H-68541

100% SUBMITTAL - NOT FOR CONSTRUCTION