

DS #:

4866

APN:

139-36-110.031 & 139-36-110.032

PROJECT:

LVCCLD Library at Bonanza S. 28th

SUBMITTAL:

2nd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		April 12, 2017
TO: Land Development Services Department of Building & Safety		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	COPIES TO:	
Drainage Study for:	T.Y. Lin International	
LVCCLD Library at Bonanza & 28th	LVCC Library District	
Cross Streets:	SEC of Bonanza Road & 28 th Street	Bart Anderson, P.E., DevCo
File Number:	F:\Depot\DSMemos\DS4866B.doc	CCRFC
Parcel Number:	139-36-110-031 & 139-36-110-032	
Zoning Action:	GPA-67913; ZON-67914 & SDR-67915	
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	2/28/2017	3/14/2017	Not Approved	\$400.00	476769: \$400
2 nd Submittal	3/28/2017	4/11/2017	See Comments Below	\$400.00	479617: \$400
TOTAL FEES (LDDRS):				\$800.00	----

REMARKS:

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

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

1. **This drainage study is acceptable in concept;** however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District* (CCRFC) has issued a letter of concurrence. The engineer should contact the CCRFC to confirm that they have begun their review.
2. The building layout in the grading plan (Sheet C4.01) and the *Developed Basin Map* (DEV1) do not match, one shows one single-planter and the other shows three-planters at the north side of the building. Provide a matching "DEV1" to *Flood Control Section* for record.

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: T20S/R61E/36
AREA M-36

March 20th, 2017

City of Las Vegas
City Planning Department
333 N. Rancho Drive
Las Vegas, NV 89106

Re: LVCCLD Library at Bonanza & 28th
2 Foot Grade Difference Between Existing Grade and Proposed Grade

To whom it may concern;

The purpose of this letter is to justify the two foot grade differential between the existing grade and proposed grade for the aforementioned project. T.Y. Lin International (TYLI) submitted a drainage study (DS 4866) to the City of Las Vegas for the project mentioned above on February 28th 2017. Comments were received from the Flood Control Department on March 14th, 2017, in which, comment no. 2 states the following:

2. Sites with a grade difference of 2 feet above or below existing are required to have approval from the *City Planning and Development Department*. The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the *City Planning Department* (229-6301). The engineer must provide Planning approval with the next submittal.

A phone conversation was had with Linda Hartman-Maynard at the City Planning Department on March 16th, 2017 where it was stated that TYLI needs to provide this letter and supporting documents as a no fee submittal to the City Planning Department.

Justification

Per the attached grading exhibit and plans, approximately 18% of the site is designed to be 2' or greater above the existing grade, in which 74% of the proposed building is 2' or greater above the existing grade. The reasoning for this is the 100 year flood flow in Bonanza is 705 cubic feet per second (CFS) based on the City of Las Vegas Central Neighborhood Flood Control Master Plan prepared by PBS & J, March 2005. Per the Clark County Regional Flood Control District Design Manual, the finished floor of the building has a minimum finished floor elevation in order to keep the building out of the 100-year flood. See the excerpt and table below:

PLANS APPROVED
PLANNING
Building & Safety Dept
City of Las Vegas, Nevada
2' GRADE DIFFERENCE
LHM MAR 22 2017 ONLY

CCRFCD Design Manual Section 304.4

E. In Non-Special Flood Hazard Areas for new construction (residential and non-residential):

1. The finished floor shall be set at a vertical distance above the gutter flowline of at least twice the depth of flow in the gutter flowline up to a maximum of 18 inches above the water surface elevation in the street.

Note: If any of the above conditions cannot be met, the maximum depth of flow in the gutter flowline shall be less than or equal to curb height (typically 6 inches). Also, other criteria such as the Federal Housing Administration (FHA) regulations may impose standards more restrictive than cited.

Table – Finish Floor Design Check

Description	Q100 cfs	Depth ft	Curb Gutter Flowline elevation	Base Flood Elevation (BFE)	Bldg Finish Floor Elev.	Min 18" above BFE water surface	CCRFCD 304.4 criteria met
Bonanza Road at upstream Building corner	705	1.27	24.63	25.63	27.75	yes	Yes

This elevation difference has been incorporated into the architectural design and will not adversely impact the aesthetics of the site.

If you have any questions or comments, please feel free to contact me at 702-522-7102 or tony.ortiz@tylin.com.

Thank you,



Tony Ortiz, P.E.
Civil Engineer
T.Y. Lin International

CC: Nelson Stone, P.E.
Tommy Huggins (CSDA)

Attachments: C4.01, C4.02, C4.03, C7.01, C7.02, 2GD



LETTER OF TRANSMITTAL

To: City of Las Vegas
333 N. Rancho Drive
Las Vegas, NV 89106

DATE	03-28-17	PROJECT NO.	701247.00
ATTENTION: Flood Control			
SUBJECT East Side Library			

We are sending the following items via:

☐ Overnight ☐ Messenger ☐ US Mail ☒ Hand Delivered ☐ Pick Up

COPIES	DATE	NO	DESCRIPTION
1	03/28/17	1	Addendum #1 to the Drainage Study
1	3/28/17	2	CD with PDF of Addendum #1

These are transmitted as checked below:

☒ For your review	☐ Approved as submitted	☐ Resubmit _____ copies for approval
☐ For your use	☐ Approved as noted	☐ Submit _____ copies for distribution
☐ As requested	☐ Returned for corrections	☐ Return _____ corrected prints
☐ For review and comment	☐ Other _____	

Remarks:

SIGNED _____

DATE _____

LETTER OF TRANSMITTAL

To: City of Las Vegas
333 N. Rancho Drive
Las Vegas, NV 89106

6.0

DATE <u>4/5/17</u> 03-28-17	PROJECT NO. 701247.00
ATTENTION: Albert Sung, P.E.	
SUBJECT East Side Library	

We are sending the following items via:

☐ Overnight ☐ Messenger ☐ US Mail ☒ Hand Delivered ☐ Pick Up

COPIES	DATE	NO	DESCRIPTION
1	04/05/17	1	Revised Sheet C4.01

These are transmitted as checked below:

☒ For your review	☐ Approved as submitted	☐ Resubmit _____ copies for approval
☐ For your use	☐ Approved as noted	☐ Submit _____ copies for distribution
☐ As requested	☐ Returned for corrections	☐ Return _____ corrected prints
☐ For review and comment		☐ Other _____

Remarks:

Albert,

Here is the revised Sheet C4.01 we discussed last week showing the planter walls being removed. If you have any questions, please let me know.

SIGNED _____

DATE _____

March 20, 2017

City of Las Vegas Public Works
333 N. Rancho Drive Las Vegas, NV 89106

Re: Drainage Study for LVVCLD Library at Bonanza & 28th (DS-4866)
Addendum No. 1

Mr. Sung,

The purpose of this letter is to address the comments contained in your March 14th, 2017 review memorandum on the subject project. A copy of the comment letter is contained in the Appendix.

Standard Form 1 is also attached for this addendum. See Appendix.

The comments are addressed as follows:

Comment No. 1

Provide a copy of the zoning/planning conditions associated with this site (GPA-67913; ZON- 67914 & SDR-67915) with the next submittal to verify compliance with conditions. Flood Control will not issue conditional approval of the drainage study without the associated zoning/planning conditions (issued by the City Council). Any associated conditions of approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.

Response:

The land use entitlements were approved by City Council on February 15, 2017. The formal approval letters and conditions of approval are found in the Appendix.

Comment No. 2

Sites with a grade difference of 2 feet above or below existing are required to have approval from the City Planning and Development Department. The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the City Planning Department (229-6301). The engineer must provide Planning approval with the next submittal.

Response:

T. Y. LIN International (TYLI) submitted a justification letter to Linda Hartman-Maynard at the City Planning Department on March 20, 2017 and received stamp of approval on March 22, 2017. The stamped planning approval is found on the justification letter in the Appendix

Comment No. 3

The site is adjacent to or crosses an existing or proposed Clark County Regional Flood Control District (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study.

Response:

Noted, TYLI will submit the conditionally approved drainage study to CCRFCD for concurrence.

Comment No. 4

On Existing Basin Map (EX1) and Developed Basin Map (DEV1), provide a street hydraulics summary table such as Q10, Q100, V10, V100 and DV parameters for all perimeter streets in the next submittal.

Response:

Summary tables for Developed and Existing scenarios are now also shown on Exhibits KEY1, EX1 and DEV1. Table information shows: Q10, Q100, V10, V100 and DxV parameters. Associated Flowmaster calculation sheets are also included. The exhibits and calcs are found in the Appendix.

Comment No. 5

The overall site consists of two parcels currently. Address whether there will be a parcel map to consolidate the parcels into one single lot.

Response:

A Reversionary (FM) Map will be used to consolidate the parcels into one single lot. This is also mentioned in the land use approval letter, Planning Department comment # 7.

Comment No. 6

It appears that there are three enclosed space adjacent to the north of the proposed new building. The spaces are closed by the building wall and some planter walls without any points for discharge. Address and resolve in the next submittal.

Response:

Per a meeting between Albert Sung, P.E. and TYLI on March 15th, 2017, TYLI will clarify that the areas in question are not enclosed spaces and are in fact planter areas. Please refer to the attached revised grading plans.

Comment No. 7

Provide a note on all grading plans: Property Owner is responsible to maintain the best management practices such as but not limited to the removal of accumulated sediment and debris and care of the vegetation.

Response:

TYLI will comply, refer to attached revised grading plans.

If you have any questions, please contact myself at 702-522-7102.

Respectfully,
T.Y. Lin International
Nelson Stone, P.E.

Cc: Tony Ortiz, P.E.



APPENDIX

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

TO:
Land Development Services
Department of Building & Safety

DATE:

March 14, 2017

FROM:
Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

SUBJECT: Drainage Study for
LVCCLD Library at Bonanza & 28th
Cross Streets: SEC of Bonanza Road & 28th Street
File Number: F:\Depot\DSMemos\DS4866A.doc
Parcel Number: 139-36-110-031 & 139-36-110-032
Zoning Action: GPA-67913; ZON-67914 & SDR-67915

COPIES TO:
T.Y. Lin International
LVCC Library District
Bart Anderson, P.E., DevCo
CCRFCDD

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	2/28/2017	3/14/2017	See Comments Below	\$400.00	476769: \$400
TOTAL FEES (LDDRS):				\$400.00	----

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

- Provide a copy of the zoning/planning conditions associated with this site (**GPA-67913; ZON-67914 & SDR-67915**) with the next submittal to verify compliance with conditions. *Flood Control* will not issue conditional approval of the drainage study without the associated zoning/planning conditions (issued by the *City Council*). Any associated conditions of approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.
- Sites with a grade difference of 2 feet above or below existing are required to have approval from the *City Planning and Development Department*. The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the *City Planning Department* (229-6301). The engineer must provide Planning approval with the next submittal.
- The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCDD) master planned facility. Therefore, CCRFCDD concurrence is required prior to final approval of the drainage study.
- On **Existing Basin Map (EX1)** and **Developed Basin Map (DEV1)**, provide a street hydraulics summary table such as Q_{10} , Q_{100} , V_{10} , V_{100} and DV parameters for all perimeter streets in the next submittal.

5. The overall site consists of two parcels currently. Address whether there will be a parcel map to consolidate the parcels into one single lot.
6. It appears that there are three enclosed space adjacent to the north of the proposed new building. The spaces are closed by the building wall and some planter walls without any points for discharge. Address and resolve in the next submittal.
7. Provide a note on all grading plans: Property Owner is responsible to maintain the best management practices such as but not limited to the removal of accumulated sediment and debris and care of the vegetation.

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 T20S/R61E/36
AREA M-36

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Library at Bonanza Road and 28th Street - Addendum No. 1 Date: March 22, 2017
Location of Development: a) Descriptive (Cross Streets) North/South: 28th Street
East/West: Bonanza Road
b) Section: 36 Township: T20S Range: R61E
c) APN: 139-36-110-031/032

Name of Owner: Las Vegas - Clark County Library District
Telephone No.: 702-507-6207 Fax No.: 702-507-6210 E-Mail Address: c/o: nelson.stone@tylin.com.
Address: 7060 W. Windmill Lane, Las Vegas, Nevada 89113

Contact Person-Name: Nelson Stone, P.E. Telephone No.: 702-522-7101
* E-Mail Address: Nelson.Stone@TYLIN.com Fax No.: 702-522-7105
Firm: TYLIN International
Address: 4031 Dean Martin Drive, Las Vegas, Nevada 89103
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	☐	

1. Total Owned Land Area: At Site: 8.34 acres Being Developed/Disturbed: 8.34 acres
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ Yes** ☒ No
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☒ Yes** ☐ No
4. Proposed type of development (Residential, Commercial, Etc.): Commercial - Proposed Library
5. Approximate upstream land area which drains to the subject site: Q100=705 cfs Bonanza Road per CLVCNFCMP E-11
6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: Q100=705 cfs Bonanza Road per CLVCNFCMP E-11
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Localized minor site drainage through sidewalk underdrains and curbs at roadway access points to 28th Street and Wardell Street.
8. Briefly describe your proposed schedule for the subject project: Construction to start Summer 2017.

 Engineer's Seal	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. *New Required Field **Review and concurrence of the Clark County Regional Flood Control District is required.	Revision	Date
Local Entity File No. _____			
REFERENCE:		STANDARD FORM 1	



February 16, 2017

**LAS VEGAS
CITY COUNCIL**

Carolyn G. Goodman
Mayor

Steven D. Ross
Mayor Pro Tem

Lois Tarkanian
Ricki Y. Barlow
Stavros S. Anthony
Bob Coffin
Bob Beers

Elizabeth N. Fretwell
City Manager

Dr. Donald R. Heezen
Las Vegas Clark County Library
7060 West Windmill Lane
Las Vegas, Nevada 89113

**RE: GPA-67913 [PRJ-67836] - GENERAL PLAN AMENDMENT RELATED
TO ZON-67914 AND SDR-67915
CITY COUNCIL MEETING OF FEBRUARY 15, 2017**

Dear Dr. Heezen:

The City Council at a regular meeting held on February 15, 2017 **APPROVED** a request for a General Plan Amendment FROM: M (MEDIUM DENSITY RESIDENTIAL) TO: PF (PUBLIC FACILITIES) on 8.34 acres at the southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), Ward 3 (Coffin) [PRJ-67836].

The Notice of Final Action was filed with the Las Vegas City Clerk on February 16, 2017.

Sincerely,

Thomas A. Perrigo
Director
Department of Planning

TAP:PL:clb

cc: Mr. Tommy Huggins
Carpenter Sellers Del Gatto Architecture
8882 Spanish Ridge Avenue
Las Vegas, Nevada 89148

CITY HALL
495 S. MAIN ST.
LAS VEGAS, NV 89101
702.229.6011
TTY 711



AGENDA SUMMARY PAGE - PLANNING
CITY COUNCIL MEETING OF: FEBRUARY 15, 2017**DEPARTMENT: PLANNING****DIRECTOR: TOM PERRIGO**☐ Consent ☒ Discussion**SUBJECT:**

GPA-67913 - GENERAL PLAN AMENDMENT - PUBLIC HEARING - APPLICANT/OWNER: LAS VEGAS - CLARK COUNTY LIBRARY DISTRICT - For possible action on a request for a General Plan Amendment FROM: M (MEDIUM DENSITY RESIDENTIAL) TO: PF (PUBLIC FACILITIES) on 8.34 acres at the southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), Ward 3 (Coffin) [PRJ-67836]. The Planning Commission (7-0 vote) and Staff recommend APPROVAL.

PROTESTS RECEIVED BEFORE:

Planning Commission Mtg.

1

City Council Meeting

0

APPROVALS RECEIVED BEFORE:

Planning Commission Mtg.

3

City Council Meeting

49

RECOMMENDATION:

The Planning Commission (7-0 vote) and Staff recommend APPROVAL.

BACKUP DOCUMENTATION:

1. Location and Aerial Maps
2. Conditions and Staff Report - GPA-67913, ZON-67914 and SDR-67915 [PRJ-67836]
3. Supporting Documentation - GPA-67913, ZON-67914 and SDR-67915 [PRJ-67836]
4. Photo(s) - GPA-67913, ZON-67914 and SDR-67915 [PRJ-67836]
5. Justification Letter - GPA-67913, ZON-67914 and SDR-67915 [PRJ-67836]
6. Submitted after Final Agenda – Support Postcards for GPA-67913 and ZON-67914 [PRJ-67836]
7. Backup Submitted from the January 10, 2017 Planning Commission Meeting

Motion made by BOB COFFIN to Approve

NOTE: The video does not reflect the vote accurately, as subsequent to the vote, COUNCILMAN BARLOW requested his vote to reflect in the affirmative.

Passed For: 7; Against: 0; Abstain: 0; Did Not Vote: 0; Excused: 0

BOB COFFIN, RICKI Y. BARLOW, LOIS TARKANIAN, CAROLYN G. GOODMAN,
STEVEN D. ROSS, STAVROS S. ANTHONY, BOB BEERS; (Against-None); (Abstain-None);
(Did Not Vote-None); (Excused-None)





**LAS VEGAS
CITY COUNCIL**

Carolyn G. Goodman
Mayor

Steven D. Ross
Mayor Pro Tem

Lois Tarkanian
Ricki Y. Barlow
Stavros S. Anthony
Bob Coffin
Bob Beers

Elizabeth N. Fretwell
City Manager

February 16, 2017

Dr. Donald R. Heezen
Las Vegas Clark County Library
7060 West Windmill Lane
Las Vegas, Nevada 89113

**RE: ZON-67914 [PRJ-67836] - REZONING RELATED TO GPA-67913 AND
SDR-67915
CITY COUNCIL MEETING OF FEBRUARY 15, 2017**

Dear Dr. Heezen:

The City Council at a regular meeting held on February 15, 2017 **APPROVED** a request for a Rezoning FROM: R-3 (MEDIUM DENSITY RESIDENTIAL) TO: C-V (CIVIC) on 8.34 acres at the southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), Ward 3 (Coffin) [PRJ-67836].

The Notice of Final Action was filed with the Las Vegas City Clerk on February 16, 2017.

Sincerely,

Thomas A. Perrigo
Director
Department of Planning

TAP:PL:clb

CITY HALL
495 S. MAIN ST.
LAS VEGAS, NV 89101
702.229.6011
TTY 711



cc: Mr. Tommy Huggins
Carpenter Sellers Del Gatto Architecture
8882 Spanish Ridge Avenue
Las Vegas, Nevada 89148



AGENDA SUMMARY PAGE - PLANNING
CITY COUNCIL MEETING OF: FEBRUARY 15, 2017**DEPARTMENT: PLANNING****DIRECTOR: TOM PERRIGO**☐ Consent ☒ Discussion**SUBJECT:**

ZON-67914 - REZONING RELATED TO GPA-67913 - PUBLIC HEARING - APPLICANT/OWNER: LAS VEGAS - CLARK COUNTY LIBRARY DISTRICT - For possible action on a request for a Rezoning FROM: R-3 (MEDIUM DENSITY RESIDENTIAL) TO: C-V (CIVIC) on 8.34 acres at the southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), Ward 3 (Coffin) [PRJ-67836]. The Planning Commission (7-0 vote) and Staff recommend APPROVAL.

PROTESTS RECEIVED BEFORE:

Planning Commission Mtg.

1

City Council Meeting

0

APPROVALS RECEIVED BEFORE:

Planning Commission Mtg.

3

City Council Meeting

49

RECOMMENDATION:

The Planning Commission (7-0 vote) and Staff recommend APPROVAL.

BACKUP DOCUMENTATION:

1. Consolidated Backup
2. Location and Aerial Maps
3. Supporting Documentation
4. Backup Submitted from the January 10, 2017 Planning Commission Meeting

Motion made by BOB COFFIN to Approve

NOTE: The video does not reflect the vote accurately, as subsequent to the vote, COUNCILMAN BARLOW requested his vote to reflect in the affirmative.

Passed For: 7; Against: 0; Abstain: 0; Did Not Vote: 0; Excused: 0

BOB COFFIN, RICKI Y. BARLOW, LOIS TARKANIAN, CAROLYN G. GOODMAN,
STEVEN D. ROSS, STAVROS S. ANTHONY, BOB BEERS; (Against-None); (Abstain-None);
(Did Not Vote-None); (Excused-None)

↑
PASSED



February 15, 2017

**LAS VEGAS
CITY COUNCIL**

Carolyn G. Goodman
Mayor

Steven D. Ross
Mayor Pro Tem

Lois Tarkanian
Ricki Y. Barlow
Stavros S. Anthony
Bob Coffin
Bob Beers

Elizabeth N. Fretwell
City Manager

Dr. Donald R. Heezen
Las Vegas Clark County Library
7060 West Windmill Lane
Las Vegas, Nevada 89113

**RE: SDR-67915 [PRJ-67836] - SITE DEVELOPMENT PLAN REVIEW
RELATED TO GPA-67913 AND ZON-67914
CITY COUNCIL MEETING OF FEBRUARY 15, 2017**

Dear Dr. Heezen:

The City Council at a regular meeting held on February 15, 2017 **APPROVED** a request for a Site Development Plan Review FOR A PROPOSED 39,898 SQUARE-FOOT LIBRARY on a portion of 8.34 acres at the southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), R-3 (Medium Density Residential) Zone [PROPOSED: C-V (Civic)], Ward 3 (Coffin) [PRJ-67836].

This approval is subject to the following conditions:

Planning

1. Approval of General Plan Amendment (GPA-67913) and Rezoning (ZON-67914) shall be required, if approved.
2. This approval shall be void two years from the date of final approval, unless exercised pursuant to the provisions of LVMC Title 19.16. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan, landscape plan, and building elevations, date stamped 11/28/16, except as amended by conditions herein.
4. The Trash Enclosure and Mechanical Equipment shall be screened in accordance with Title 19.08.040(E)(4).
5. All necessary building permits shall be obtained and final inspections shall be completed in compliance with Title 19 and all codes as required by the Department of Building and Safety.

CITY HALL
495 S. MAIN ST.
LAS VEGAS, NV 89101
702.229.6011
TTY 711



Dr. Donald R. Heezen
Las Vegas Clark County Library
SDR-67915 [PRJ-67836] - Page Two
February 16, 2017

6. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.
7. *Revising map →* The applicant shall coordinate with the City Surveyor and other city staff to determine the most appropriate mapping action necessary to consolidate the existing lots. The mapping action shall be completed and recorded prior to the issuance of any building permits.
8. A fully operational fire protection system, including fire apparatus roads, fire hydrants and water supply, shall be installed and shall be functioning prior to construction of any combustible structures.
10. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

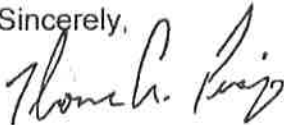
11. Dedicate a bus turn-out per Standard Drawing #234.1 and grant a Bus Shelter Pad Easement to the Regional Transportation Commission per Standard Drawing #234.2 prior to issuance of permits for this site. Construct the required bus turn-out concurrent with on-site development activities.
12. Correct all American's with Disabilities Act (ADA) deficiencies on the sidewalks adjacent to this site in accordance with code requirements of Title 13.56.040 to the satisfaction of the City Engineer concurrent with development of this site.
13. Landscape and maintain all unimproved rights-of-way adjacent to this site. All landscaping and private improvements installed with this project shall be situated and maintained so as to not create sight visibility obstructions for vehicular traffic at all development access drives and abutting street intersections.
14. A Traffic Impact Analysis or other information acceptable to the Traffic Engineering Division must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits.

Dr. Donald R. Heezen
Las Vegas Clark County Library
SDR-67915 [PRJ-67836] - Page Three
February 16, 2017

15. A Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits or submittal of any construction drawings, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage plan/study. The developer of this site shall be responsible to construct such neighborhood or local drainage facility improvements as are recommended by the City of Las Vegas Neighborhood Drainage Studies and approved Drainage Plan/Study concurrent with development of this site.

The Notice of Final Action was filed with the Las Vegas City Clerk on February 16, 2017.

Sincerely,



Thomas A. Perrigo
Director
Department of Planning

TAP:PL:clb

cc: Mr. Tommy Huggins
Carpenter Sellers Del Gatto Architecture
8882 Spanish Ridge Avenue
Las Vegas, Nevada 89148

AGENDA SUMMARY PAGE - PLANNING
CITY COUNCIL MEETING OF: FEBRUARY 15, 2017**DEPARTMENT: PLANNING****DIRECTOR: TOM PERRIGO**☐ Consent ☒ Discussion**SUBJECT:**

SDR-67915 - SITE DEVELOPMENT PLAN REVIEW RELATED TO GPA-67913 AND ZON-67914 - PUBLIC HEARING - APPLICANT/OWNER: LAS VEGAS - CLARK COUNTY LIBRARY DISTRICT - For possible action on a request for a Site Development Plan Review FOR A PROPOSED 39,898 SQUARE-FOOT LIBRARY on a portion of 8.34 acres at the southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), R-3 (Medium Density Residential) Zone [PROPOSED: C-V (Civic)], Ward 3 (Coffin) [PRJ-67836]. The Planning Commission (7-0 vote) and Staff recommend APPROVAL.

PROTESTS RECEIVED BEFORE:

Planning Commission Mtg.

1

City Council Meeting

0

APPROVALS RECEIVED BEFORE:

Planning Commission Mtg.

2

City Council Meeting

50

RECOMMENDATION:

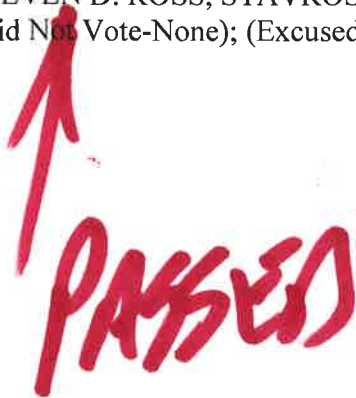
The Planning Commission (7-0 vote) and Staff recommend APPROVAL, subject to conditions:

BACKUP DOCUMENTATION:

1. Consolidated Backup
2. Location and Aerial Maps
3. Supporting Documentation
4. Submitted after Final Agenda – Support Postcards
5. Backup Submitted from the January 10, 2017 Planning Commission Meeting

Motion made by BOB COFFIN to Approve subject to conditions

Passed For: 7; Against: 0; Abstain: 0; Did Not Vote: 0; Excused: 0

BOB COFFIN, RICKI Y. BARLOW, LOIS TARKANIAN, CAROLYN G. GOODMAN,
STEVEN D. ROSS, STAVROS S. ANTHONY, BOB BEERS; (Against-None); (Abstain-None);
(Did Not Vote-None); (Excused-None)

PASSED



DEPARTMENT OF PLANNING
Development Services Center
333 North Rancho Drive | 3rd Floor
Las Vegas, Nevada 89106

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U.S. POSTAGE >>
ZIP 89101
01 171
0001403424 EE

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Las Vegas, Nevada 89148

107 LRDFNMP 89148



*City of Las Vegas***AGENDA MEMO - PLANNING**

CITY COUNCIL MEETING DATE: FEBRUARY 15, 2017

DEPARTMENT: PLANNING

ITEM DESCRIPTION: APPLICANT/OWNER: LAS VEGAS - CLARK COUNTY
LIBRARY DISTRICT**** STAFF RECOMMENDATION(S) ****

CASE NUMBER	RECOMMENDATION	REQUIRED FOR APPROVAL
GPA-67913	Staff recommends APPROVAL.	
ZON-67914	Staff recommends APPROVAL.	GPA-67913
SDR-67915	Staff recommends APPROVAL, subject to conditions:	GPA-67913 ZON-67914

**** NOTIFICATION ******NEIGHBORHOOD ASSOCIATIONS NOTIFIED** 42**NOTICES MAILED** 312 - GPA-67913 and ZON-67914 (By City Clerk)
312 - SDR-67915 (By City Clerk)**APPROVALS** 3 - GPA-67913 and ZON-67914
2 - SDR-67915**PROTESTS** 0 - GPA-67913 and ZON-67914
0 - SDR-67915

**** CONDITIONS ****

SDR-67915 CONDITIONS

Planning

1. Approval of General Plan Amendment (GPA-67913) and Rezoning (ZON-67914) shall be required, if approved.
2. This approval shall be void two years from the date of final approval, unless exercised pursuant to the provisions of LVMC Title 19.16. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan, landscape plan, and building elevations, date stamped 11/28/16, except as amended by conditions herein.
4. The Trash Enclosure and Mechanical Equipment shall be screened in accordance with Title 19.08.040(E)(4).
5. All necessary building permits shall be obtained and final inspections shall be completed in compliance with Title 19 and all codes as required by the Department of Building and Safety.
6. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.
7. The applicant shall coordinate with the City Surveyor and other city staff to determine the most appropriate mapping action necessary to consolidate the existing lots. The mapping action shall be completed and recorded prior to the issuance of any building permits.
8. A fully operational fire protection system, including fire apparatus roads, fire hydrants and water supply, shall be installed and shall be functioning prior to construction of any combustible structures.
10. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Conditions Page Two
February 15, 2017 – City Council Meeting

Public Works

11. Dedicate a bus turn-out per Standard Drawing #234.1 and grant a Bus Shelter Pad Easement to the Regional Transportation Commission per Standard Drawing #234.2 prior to issuance of permits for this site. Construct the required bus turn-out concurrent with on-site development activities.
12. Correct all American's with Disabilities Act (ADA) deficiencies on the sidewalks adjacent to this site in accordance with code requirements of Title 13.56.040 to the satisfaction of the City Engineer concurrent with development of this site.
13. Landscape and maintain all unimproved rights-of-way adjacent to this site. All landscaping and private improvements installed with this project shall be situated and maintained so as to not create sight visibility obstructions for vehicular traffic at all development access drives and abutting street intersections.
14. A Traffic Impact Analysis or other information acceptable to the Traffic Engineering Division must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits.
15. A Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits or submittal of any construction drawings, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage plan/study. The developer of this site shall be responsible to construct such neighborhood or local drainage facility improvements as are recommended by the City of Las Vegas Neighborhood Drainage Studies and approved Drainage Plan/Study concurrent with development of this site.

**** STAFF REPORT ****

PROJECT DESCRIPTION

This is a request for a General Plan Amendment, Rezoning, and a Site Development Plan Review for a proposed 39,898 square-foot Library located on a portion of 8.34 acres on the southeast corner of Bonanza Road and 28th Street.

ISSUES

- A General Plan Amendment is required to amend the Southeast Sector Plan from M (Medium Density Residential) to PF (Public Facilities). Staff recommends approval of this request.
- A Rezoning application is required to change the zoning designation of the subject site(s) from R-3 (Medium Density Residential) to C-V (Civic). Staff recommends approval of this request.
- A Site Development Plan Review is required to ensure compatibility of the development with existing and planned development in the surrounding area. Staff recommends approval of this application.

ANALYSIS

The subject site was a public housing project that has since been demolished, and currently has a General Plan Designation of M (Medium Density Residential) and is zoned R-3 (Medium Density Residential). The applicant has proposed to amend the Southeast Sector of the General Plan from M (Medium Density Residential) to PF (Public Facilities) with a zoning designation of C-V (Civic) in order to redevelop the site into a public library. Staff supports this request as the proposed M (Medium Density Residential) General Plan Designation and the C-V (Civic) zoning district are compatible with the existing surrounding Multi-Family Residential and commercial land uses.

As described by Title 19.10, *"The purpose of the C-V District is to provide for the continuation of existing public and quasi-public uses and for the development of new schools, libraries, public parks, public flood control facilities, police, fire, electrical transmission facilities, Water District and other public utility facilities."* Proposed for the subject site is a 39,898 square-foot public library that includes an outdoor plaza with seating.

Staff Report Page Two
February 15, 2017 – City Council Meeting

The minimum development standards for property in the C-V (Civic) District shall be established by the City Council in connection with the approval of a rezoning application and shall be designed to ensure compatibility of the development with existing and planned development in the surrounding area. These standards include:

1. *Buildings and plazas within the C-V District shall be located at the front of the site at the minimum setback line established by the approved site development plan and should make a strong tie to the building lines of each street unless the applicant can demonstrate by substantial and convincing evidence that to do so would be infeasible.*

The applicant has proposed the library building to be aligned along Bonanza Road with a minimum setback of 24 feet. With the subject site essentially having four street frontages, the applicant has proposed Bonanza Road as the primary roadway for the building lines. Staff supports this request.

2. *Pedestrian open spaces and plazas shall be integral to the overall design of the proposed development and shall be located in areas of high pedestrian traffic in such a manner to be convenient and readily accessible. Pedestrian open spaces and plaza shall include without limitation benches, pergolas, landscape arbors, artwork and landscape to sufficiently shade or soften the space.*

The applicant has proposed a building that resembles the shape of the letter “L,” allowing for the building to surround a plaza area adjacent to the main entrance. The design of the plaza area includes pedestrian pathways that lead from the bus stop adjacent to Bonanza Road, and 28th Street. In addition, pedestrian pathways also lead from the parking lot south of the library structure. The plaza area includes outdoor seating with several benches and tables, and mature shade trees.

3. *Parking lots shall be located to the side or rear of buildings and away from the street front and shall not be permitted on street corners unless the applicant can demonstrate by substantial and convincing evidence that to do so would be infeasible.*

The subject site is fronted on four sides by roadways: Bonanza Road, 28th Street, Walnut Avenue, and Wardelle Street making it impossible for the applicant to

Staff Report Page Three
February 15, 2017 – City Council Meeting

avoid having the parking lot on a street front. The primary parking lot is south of the structure, with a small parking lot located on the east side of the library structure.

In addition to the typical areas such as a computer lab and children's and adult book stacks that are often found in a library setting, the proposed floor plan depicts a multi-purpose room, family activity space, and a multi-generational living room centrally located amongst the adult, teen, and children's book stacks. The proposed floor plan provides appropriate and usable space for every generation.

The proposed elevations depict a white, modern building accented with grey cement masonry units (CMUs), light grey metal doors, and dark grey columns and beams. For added depth and dimension, brightly colored (purple, orange and blue) fabric canopy covers have been provided for outdoor gathering areas and seating. The maximum height of the proposed structure is 37 feet.

The applicant has proposed to preserve as many of the existing trees currently on-site as possible by incorporating them into the courtyard and open space plan. The proposed landscape plan demonstrates 35 trees for the perimeter landscape buffers, 28 trees in the parking lot areas, 25 trees in the courtyard and open areas, and the existing 18 trees in the southern portion of the subject site that is not being developed as part of this project. In total, 106 trees are proposed for the subject site; of those, 21 of the trees demonstrated on the landscape plan for the proposed library are those that exist on the site today. Preserving these existing trees provide the proposed site established, large shade trees that will directly benefit patrons as well as employees of the proposed library.

In a report prepared by Public Works Traffic Division, it was estimated that the proposed project will add approximately 2,244 trips per day on Bonanza Road and 28th Street. Bonanza is currently at about 57 percent of capacity with 28th Street being at approximately 12 percent of capacity. With the addition of the proposed project, Bonanza Road is expected to be at about 61 percent of capacity, with 28th Street to be at approximately 27 percent of capacity. Based on Peak Hour use, the proposed development would add into the area roughly 291 additional vehicles every hour or about five vehicles every minute.

FINDINGS (GPA-67913)

Section 19.16.030(I) of the Las Vegas Zoning Code requires that the following conditions be met in order to justify a General Plan Amendment:

1. **The density and intensity of the proposed General Plan Amendment is compatible with the existing adjacent land use designations,**

The proposed PF (Public Facilities) General Plan designation allows land uses considered public or semi-public, and include such uses as the proposed library which is compatible with the existing M (Medium Density Residential) and PF (Public Facilities) General Plan designations that currently surround the subject site.

2. **The zoning designations allowed by the proposed amendment will be compatible with the existing adjacent land uses or zoning districts,**

The proposed C-V (Civic) zoning district allows for the development of new schools, libraries, public parks, police, and fire facilities. All of which are compatible with the existing residential and commercial land uses in the area.

3. **There are adequate transportation, recreation, utility, and other facilities to accommodate the uses and densities permitted by the proposed General Plan Amendment; and**

The surrounding area is currently developed, with the subject site once existing as a multi-family residential development. Utilities in the area are adequate for the proposed land use, in addition to adequate transportation including a new bus stop turn-out along the northern perimeter of the subject site.

4. **The proposed amendment conforms to other applicable adopted plans and policies that include approved neighborhood plans.**

There are no Special Area plans that apply to the subject site. The subject site is located within the Southeast Sector of the Las Vegas 2020 Master Plan, Revitalization Area. Part of the goals for the Revitalization Area is to provide walkable, transit friendly developments. This project supports this goal by revitalizing a vacant lot into a community resource for area residents that is easily accessed by public transit and provides valuable outdoor open space with seating.

FINDINGS (ZON-67914)

In order to approve a Rezoning application, pursuant to Title 19.16.090(L), the Planning Commission or City Council must affirm the following:

1. **The proposal conforms to the General Plan.**

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February 15, 2017 – City Council Meeting

If the proposed companion General Plan Amendment to PF (Public Facilities) is approved, the proposed reclassification of property to a C-V (Civic) zoning district would conform to the General Plan.

2. **The uses which would be allowed on the subject property by approving the rezoning will be compatible with the surrounding land uses and zoning districts.**

The purpose of the C-V District is to provide for the continuation of existing public and quasi-public uses and for the development of new schools, libraries, public parks, public flood control facilities, police, fire, electrical transmission facilities, Water District and other public utility facilities. These uses are compatible with the existing surrounding Multi-Family Residential.

3. **Growth and development factors in the community indicate the need for or appropriateness of the rezoning.**

The existing surrounding community is in need for a community resource such as the proposed library.

4. **Street or highway facilities providing access to the property are or will be adequate in size to meet the requirements of the proposed zoning district.**

Vehicular access to the site is provided by 28th Street and Wardelle Street, both are 60-foot Local Streets as defined by Title 13 and capable of providing adequate access to the subject site.

FINDINGS (SDR-67915)

In order to approve a Site Development Plan Review application, per Title 19.16.100(E) the Planning Commission and/or City Council must affirm the following:

1. **The proposed development is compatible with adjacent development and development in the area;**

The proposed library, if approved, will be located adjacent to existing Multi-Family Residential developments and will provide a much needed resource for the community.

2. **The proposed development is consistent with the General Plan, this Title, the Design Standards Manual, the Landscape, Wall and Buffer Standards, and other duly-adopted city plans, policies and standards;**

With approval of the companion applications for a General Plan Amendment and Rezoning, the proposed 39,898 library would be consistent with the General Plan and Title 19. The proposal substantially conforms to the Title 19 requirements for the proposed C-V (Civic) zoning district.

3. Site access and circulation do not negatively impact adjacent roadways or neighborhood traffic;

The proposed site circulation patterns and site access from both 28th Street and Wardelle Street do not negatively impact existing neighborhood traffic as 28th Street is estimated by the Department of Public Works Traffic Division to be at approximately 27 percent of capacity once the proposed project was completed.

4. Building and landscape materials are appropriate for the area and for the City;

The proposed building materials include cement plaster/stucco with a synthetic topcoat over CMU (Concrete Masonry Unit) with an exposed honed finished CMU (Concrete Masonry Unit) base for the exterior walls, and double insulated Low-E glazing to be provided in a thermally broken aluminum glazing system. These are appropriate materials for the City and the existing area.

Existing on the site today is a collection of mature pine trees the applicant has incorporated into the proposed design landscape design for the site. The existing pine trees will be part of a desert friendly plant palette appropriate for the area and City.

5. Building elevations, design characteristics and other architectural and aesthetic features are not unsightly, undesirable, or obnoxious in appearance; create an orderly and aesthetically pleasing environment; and are harmonious and compatible with development in the area;

The design characteristics of the library are not unsightly or obnoxious in appearance and create an aesthetically pleasing environment by providing area residents a community resource that includes a plaza area with outdoor seating.

6. Appropriate measures are taken to secure and protect the public health, safety and general welfare.

Development of the site as proposed will require permit review and site inspections to ensure the health, safety and general welfare of the public.

Staff finds the proposed PF (Public Facilities) General Plan designation and associated Rezoning application from R-3 (Medium Density Residential) to C-V (Civic) to be compatible with the existing surrounding zoning districts, and the proposed library land use to be also be compatible with existing surrounding land uses; therefore, staff is recommending approving of these requests. If denied, the current land use designation of M (Medium Density Residential) and R-3 (Medium Density Residential) zoning district will remain, and the subject site will not be developed for a Library, Art Gallery or Museum (Public) land use.

BACKGROUND INFORMATION

<i>Related Relevant City Actions by P&D, Fire, Bldg., etc.</i>	
01/10/17	The Planning Commission unanimously voted to recommend APPROVAL on the following requests on property located at southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), Ward 3 (Coffin) [PRJ-67836]. • General Plan Amendment (GPA-67913) southeast corner of Bonanza Road and 28th Street (APNs 139-36-110-031 and 032), Ward 3 (Coffin) [PRJ-67836] • Rezoning (ZON-67914) FROM: R-3 (MEDIUM DENSITY RESIDENTIAL) TO: C-V (CIVIC) • Site Development Plan Review (SDR-67915) FOR A PROPOSED 39,898 SQUARE-FOOT LIBRARY

<i>Most Recent Change of Ownership</i>	
07/18/16	A deed was recorded for a change in ownership.

<i>Related Building Permits/Business Licenses</i>	
There are no related building permits or business licenses for the subject site(s).	

<i>Pre-Application Meeting</i>	
Month/date/year	Staff conducted a pre-application meeting where the submittal requirements for a General Plan Amendment, Rezoning, and Site Development Plan Review were discussed.

Staff Report Page Eight

February 15, 2017 – City Council Meeting

Neighborhood Meeting	
12/20/16	Meeting Start Time: 6:00 p.m. Meeting End Time: 6:35 p.m. Attendance: 3 members of the public appeared. 7 members of the development team. 1 Ward 3 Council Office staff member. 1 Department of Planning staff member. The applicants provided a formal presentation of the project and took questions/comments from the public. In general, the public was very supportive of the project. One noted that she was happy to see that the existing trees on the site were being preserved; another liked that the facilities would also support community functions.

Field Check	
12/05/16	During a routine field check staff observed a vacant, undeveloped lot.

Details of Application Request	
Site Area	
Net Acres	8.34

Surrounding Property	Existing Land Use Per Title 19.12	Planned or Special Land Use Designation	Existing Zoning District
Subject Property	Undeveloped	M (Medium Density Residential)	R-3 (Medium Density Residential)
North	Social Service Provider	M (Medium Density Residential)	R-3 (Medium Density Residential)
	Multi-Family Residential		
	General Retail Store, Other Than Listed / Gaming Establishment, Restricted / Car Wash, Full Service / Package Liquor Off-Sale Establishment		

<i>Surrounding Property</i>	<i>Existing Land Use Per Title 19.12</i>	<i>Planned or Special Land Use Designation</i>	<i>Existing Zoning District</i>
South	Multi-Family Residential	ML (Medium Low Density Residential)	R-3 (Medium Density Residential)
	Government Facility	PF (Public Facilities)	C-V (Civic)
East	Multi-Family Residential	M (Medium Density Residential)	R-3 (Medium Density Residential)
	Senior Citizen Apartments		
West	Multi-Family Residential	M (Medium Density Residential)	R-3 (Medium Density Residential)

<i>Master Plan Areas</i>	<i>Compliance</i>
No Applicable Master Plan Area	N/A
<i>Special Purpose and Overlay Districts</i>	<i>Compliance</i>
No Applicable Special Purpose or Overlay Districts	N/A
<i>Other Plans or Special Requirements</i>	<i>Compliance</i>
Trails	N/A
Las Vegas Redevelopment Plan Area	N/A
Project of Significant Impact (Development Impact Notification Assessment)	N/A
Project of Regional Significance	N/A

DEVELOPMENT STANDARDS

Pursuant to 19.10, the following standards apply:

<i>Standard</i>	<i>Provided</i>
Setbacks • Front • Side • Corner • Rear	24 Feet 125 Feet 120 Feet 134 Feet
Trash Enclosure	By Condition
Mech. Equipment	By Condition

Staff Report Page Two
February 15, 2017 – City Council Meeting

Pursuant to 19.10, the following standards apply:

Landscaping and Open Space Standards		
Standards	Provided	
	Ratio	Trees
Buffer Trees:		
• North	1 Tree / 20 Linear Feet	13 Trees
• South	1 Tree / 20 Linear Feet	3 Trees
• East	1 Tree / 20 Linear Feet	9 Trees
• West	1 Tree / 20 Linear Feet	10 Trees
TOTAL PERIMETER TREES		35 Trees
Parking Area Trees	1 Tree / 6 Uncovered Spaces, plus 1 tree at the end of each row of spaces	28 Trees
LANDSCAPE BUFFER WIDTHS		
Min. Zone Width		
• North	19 Feet	
• South	10 Feet	
• East	19 Feet	
• West	48 Feet	

Street Name	Functional Classification of Street(s)	Governing Document	Actual Street Width (Feet)	Compliance with Street Section
Bonanza Road	Primary Arterial	Master Plan of Streets & Highways	100	Y
28 th Street	Local Street	Title 13	60	Y
Walnut Avenue	Local Street	Title 13	60	Y
Wardelle Street	Local Street	Title 13	60	Y

Pursuant to Title 19.08 and 19.12, the following parking standards apply:

Parking Requirement							
Use	Gross Floor Area or Number of Units	Required			Provided		Compliance
		Parking Ratio	Parking		Parking		
			Regular	Handi-capped	Regular	Handi-capped	
Library, Art Gallery or Museum (Public)	39,898 SF	1:300	133				
TOTAL SPACES REQUIRED			133		137		Y
Regular and Handicap Spaces Required			128	5	132	5	Y

March 20th, 2017

City of Las Vegas
City Planning Department
333 N. Rancho Drive
Las Vegas, NV 89106

Re: LVCCLD Library at Bonanza & 28th
2 Foot Grade Difference Between Existing Grade and Proposed Grade

To whom it may concern;

The purpose of this letter is to justify the two foot grade differential between the existing grade and proposed grade for the aforementioned project. T.Y. Lin International (TYLI) submitted a drainage study (DS 4866) to the City of Las Vegas for the project mentioned above on February 28th 2017. Comments were received from the Flood Control Department on March 14th, 2017, in which, comment no. 2 states the following:

2. Sites with a grade difference of 2 feet above or below existing are required to have approval from the *City Planning and Development Department*. The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the *City Planning Department* (229-6301). The engineer must provide Planning approval with the next submittal.

A phone conversation was had with Linda Hartman-Maynard at the City Planning Department on March 16th, 2017 where it was stated that TYLI needs to provide this letter and supporting documents as a no fee submittal to the City Planning Department.

Justification

Per the attached grading exhibit and plans, approximately 18% of the site is designed to be 2' or greater above the existing grade, in which 74% of the proposed building is 2' or greater above the existing grade. The reasoning for this is the 100 year flood flow in Bonanza is 705 cubic feet per second (CFS) based on the City of Las Vegas Central Neighborhood Flood Control Master Plan prepared by PBS & J, March 2005. Per the Clark County Regional Flood Control District Design Manual, the finished floor of the building has a minimum finished floor elevation in order to keep the building out of the 100 year flood. See the excerpt and table below:

PLANS APPROVED
PLANNING
Building & Safety Dept.
City of Las Vegas, Nevada
2' GRADE DIFFERENCE
LHM MAR 22 2017 ONLY

CCRFCD Design Manual Section 304.4

E. In Non-Special Flood Hazard Areas for new construction (residential and non-residential):

1. The finished floor shall be set at a vertical distance above the gutter flowline of at least twice the depth of flow in the gutter flowline up to a maximum of 18 inches above the water surface elevation in the street.

Note: If any of the above conditions cannot be met, the maximum depth of flow in the gutter flowline shall be less than or equal to curb height (typically 6 inches). Also, other criteria such as the Federal Housing Administration (FHA) regulations may impose standards more restrictive than cited.

Table – Finish Floor Design Check

Description	Q100 cfs	Depth ft	Curb Gutter Flowline elevation	Base Flood Elevation (BFE)	Bldg Finish Floor Elev.	Min 18" above BFE water surface	CCRFCD 304.4 criteria met
Bonanza Road at upstream Building corner	705	1.27	24.63	25.63	27.75	yes	Yes

TYLIN INTERNATIONAL

engineers | planners | scientists

This elevation difference has been incorporated into the architectural design and will not adversely impact the aesthetics of the site.

If you have any questions or comments, please feel free to contact me at 702-522-7102 or tony.ortiz@tylin.com.

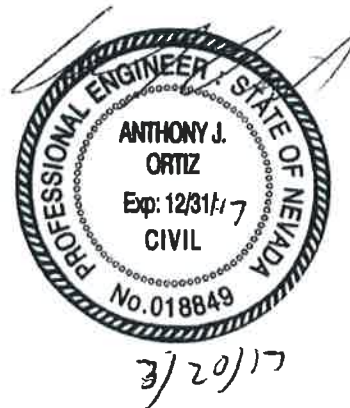
Thank you,

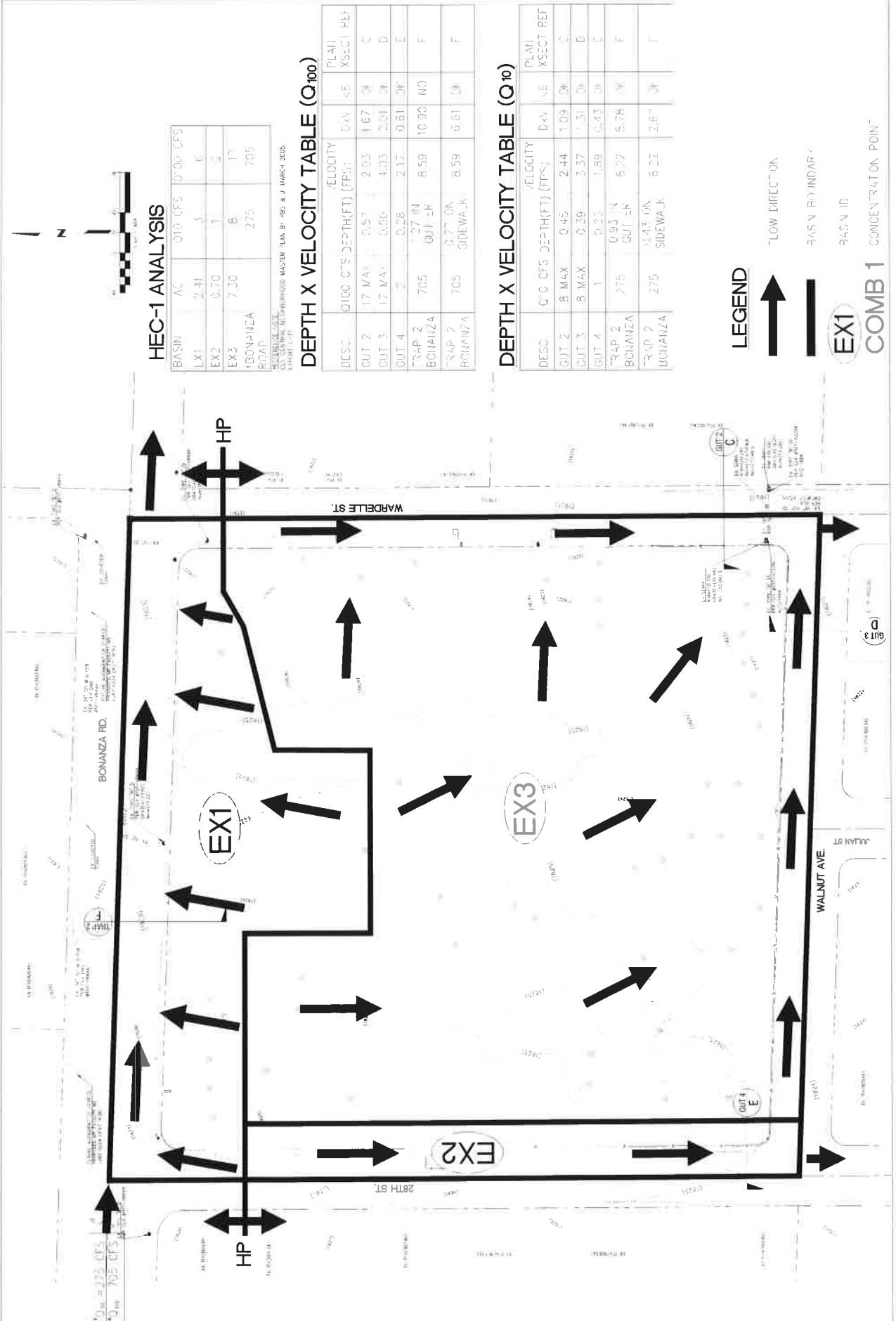


Tony Ortiz, P.E.
Civil Engineer
T.Y. Lin International

CC: Nelson Stone, P.E.
Tommy Huggins (CSDA)

Attachments: C4.01, C4.02, C4.03, C7.01, C7.02, 2GD





HEC-1 ANALYSIS

BASIN	AC	Q100 CFS	Q100 CFS
EX1	2.41	3	6
EX2	0.70	1	3
EX3	7.30	17	17
BONANZA ROAD		275	705

ALL STORM WATERSHED MASTER PLAN BY BES & J MARCH 2005
 V10011-1-10

DEPTH X VELOCITY TABLE (Q₁₀₀)

DESC.	Q100 CFS	DEPTH(FT)	VELOCITY (FPS)	PLAN X SECT REF
GUT 2	17 MAX	0.57	2.93	167 OF C
GUT 3	17 MAX	0.50	4.03	240 OF D
GUT 4	17 MAX	0.28	2.17	0.61 OF E
RAP 2	705	27 IN	8.59	10.95 OF F
RAP 2	705	0.77 ON SIDEWALK	8.59	6.61 OF F

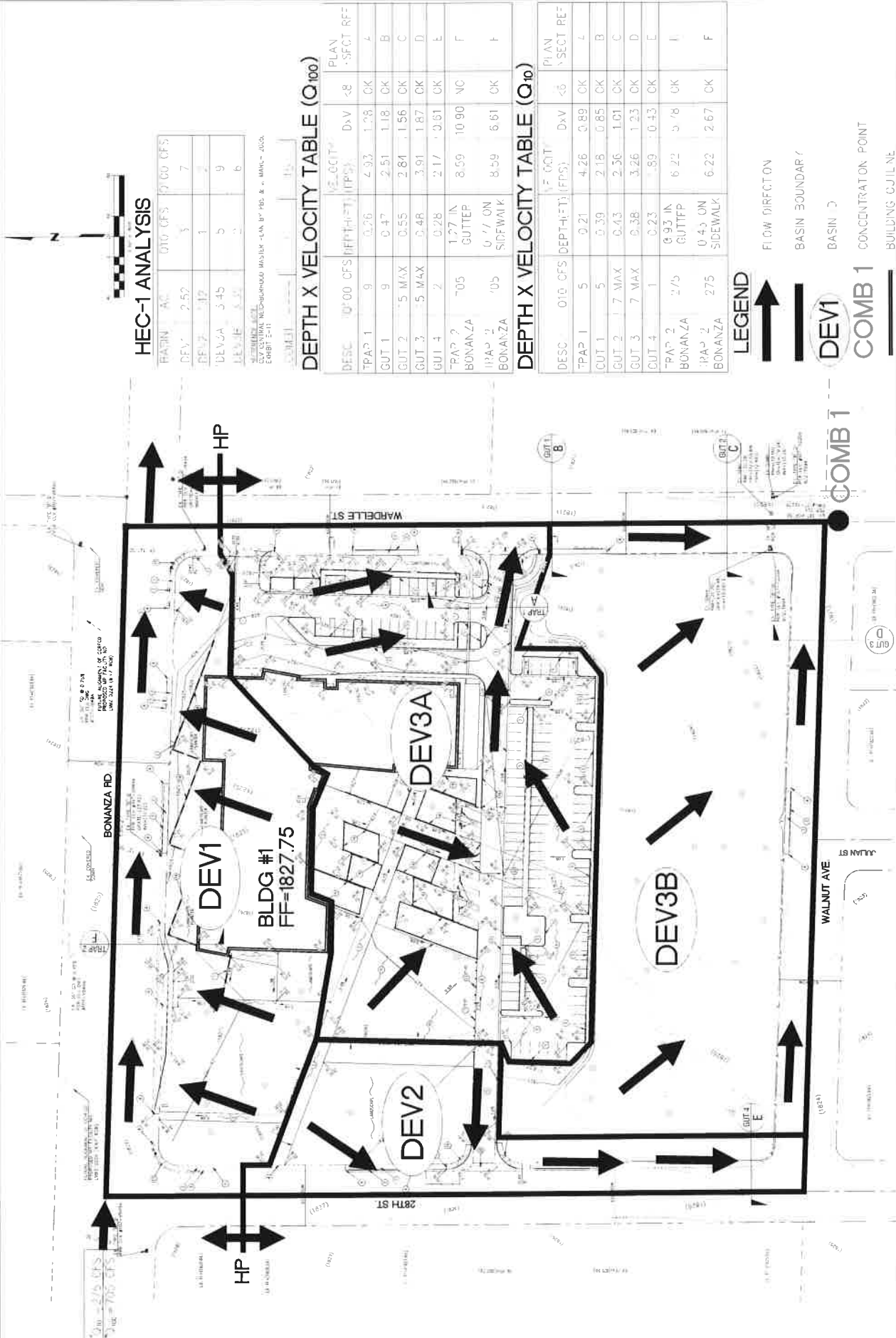
DEPTH X VELOCITY TABLE (Q₁₀)

DESC.	Q10 CFS	DEPTH(FT)	VELOCITY (FPS)	PLAN X SECT REF
GUT 2	8 MAX	0.45	2.44	1.09 OF C
GUT 3	8 MAX	0.39	3.37	1.31 OF D
GUT 4	1	0.23	1.89	0.43 OF E
RAP 2	275	0.95 IN	6.27	5.78 OF F
RAP 2	275	0.43 ON SIDEWALK	6.27	2.67 OF F

LEGEND

- ↑ LOW DIRECTION
- 3/4" N BONDAR
- 3/4" N ID
- CONCENTRATION POINT
- EX1
- COMB 1

EX1



HEC-1 ANALYSIS

PARAM	AO	Q10 CFS	Q30 CFS
CFV	2.52	5	7
CFZ	0.12	1	2
DEVC	3.45	5	9
DEVF	5.05	2	6

DEPTH X VELOCITY TABLE (Q_{100})

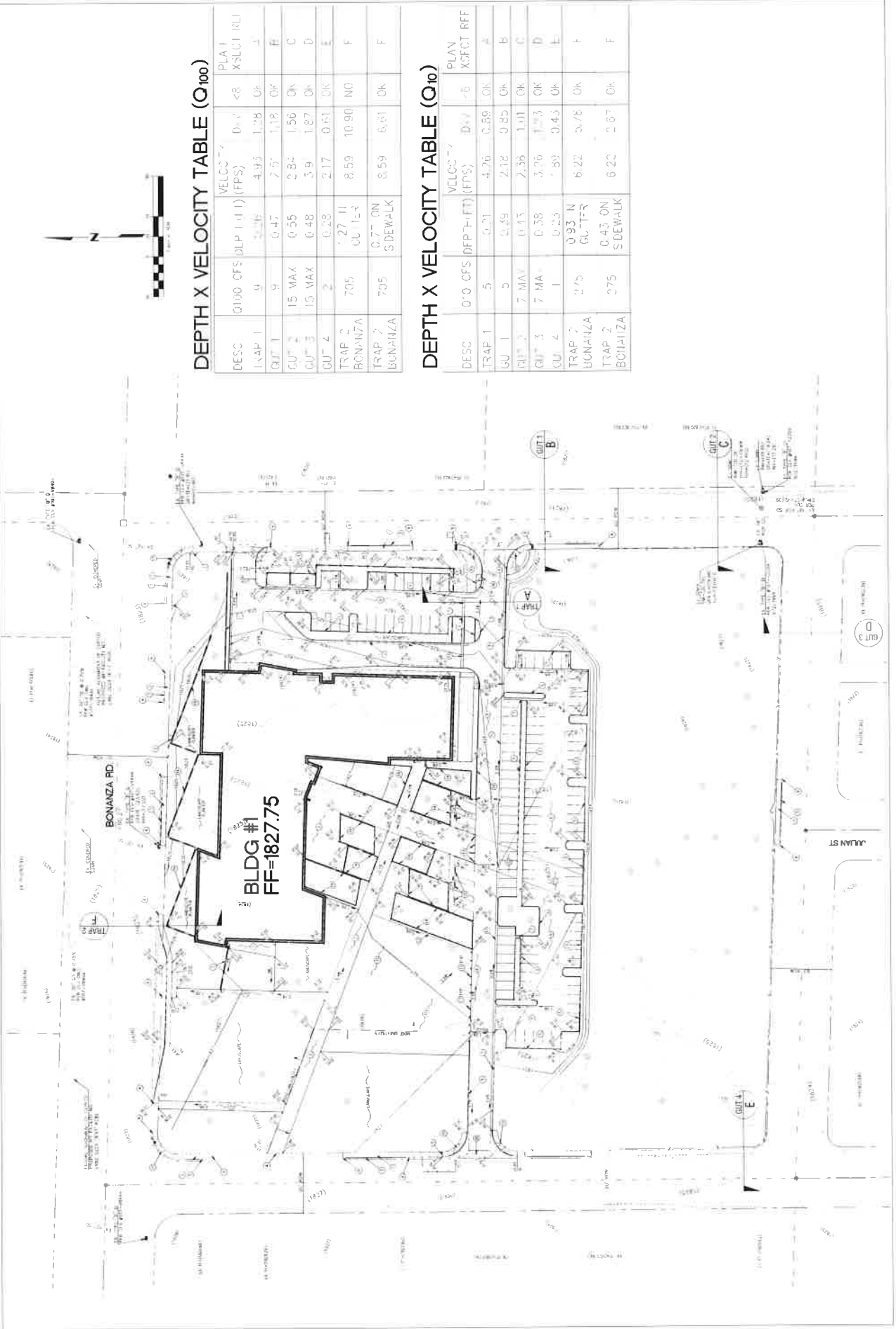
DESC	10:00 CFS	IN (H=1)	VELOCITY (FPS)	DAV	PLAN -SFCT RF=
TPA? 1	9	0.26	4.93	1.78	A
GUT 1	9	0.47	2.51	1.18	B
GUT 2	5 MAX	0.55	2.84	1.56	C
GUT 3	5 MAX	0.48	3.91	1.87	D
GUT 4	2	0.28	2.17	0.61	E
TPA? 2	05	1.27 IN	8.59	10.90	F
BONAZA		GUTTER			
TPA? 2	05	0.77 ON	8.59	6.61	F
BONAZA		SIDEWALK			

DEPTH X VELOCITY TABLE (Q₁₀)

DESC	OTD CFS	DEPTH-T1 (FPS)	ΔF (CUT)	Δx	Δδ	PLAN SECTION REF
TAP 1	5	0.21	4.26	0.89	OK	L
CUT 1	5	0.39	2.18	0.85	OK	B
CUT 2	7 MAX	0.43	2.36	1.01	OK	C
CUT 3	7 MAX	0.38	3.26	1.23	OK	D
CUT 4	1	0.23	5.89	0.43	OK	E
TAP 2	2/5	0.93 IN GUTTER	6.22	5/8	OK	H
BONAZA	275	0.45 ON SIDEWALK	6.22	2.67	OK	F

LEGEND

↑ FLOW DIRECTION
BASIN BOUNDARY
DEV1
COMB1
BASIN ID
CONCENTRATION PROFILE
BUILDING OUTLINE



DEPTH X VELOCITY TABLE (Q₁₀₀)

DESC	Q100 CFS	DLP (L I I) (FPS)	VELOC (FPS)	PLAN XSLECT RFI
TRAP 1	9	0.47	2.5	OK
CU 1	15 MAX	0.55	2.8	OK
CU 2	15 MAX	0.48	3.9	OK
CU 3	2	0.28	2.17	OK
TRAP 2	705	0.27	11	NO
BONANZA		0.27	11	NO
TRAP 3	705	0.27	11	NO
BONANZA		0.27	11	NO

DEPTH X VELOCITY TABLE (Q₁₀)

DESC	Q10 CFS	DLP (L I I) (FPS)	VELOC (FPS)	PLAN XSLECT RFI
TRAP 1	5	0.21	4.76	OK
CU 1	5	0.29	2.18	OK
CU 2	7 MAX	0.15	2.36	OK
CU 3	7 MAX	0.38	3.76	OK
CU 4	1	0.25	1.89	OK
TRAP 2	2/5	0.93	N	OK
BONANZA		0.93	N	OK
TRAP 3	275	0.43	ON	OK
BONANZA		0.43	ON	OK



Proposed Q100 flow D x V requirements (<8) are planned to be met at the minor onsite gutters and swales. See table below for results.

Description	Q100 cfs	Depth ft	Velocity fps	DxV	<8	Max velocity per Table 703	Swale velocity check	Plan Xsect ref
Irregular Trap 1	9	0.26	4.93	1.28	ok	35.0	ok	A
Gutter 1	9	0.47	2.51	1.18	ok	35.0	ok	B
Gutter 2	15 max.	0.55	2.84	1.56	ok	35.0	ok	C
Gutter 3	15 max.	0.48	3.91	1.87	ok	35.0	ok	D
Gutter 4	2	0.28	2.17	0.61	ok	35.0	ok	E
Irregular Trap 2, Bonanza Road	705	1.27 in gutter	8.59	10.90	no	35.0	ok	F
Irregular Trap 2, Bonanza Road	705	0.77 on S/W	8.59	6.61	yes	35.0	ok	F

Dev 100

Cross Section for Irregular Section - 1

TRAP 1

Project Description

Friction Method

Manning Formula

Solve For

Normal Depth

ON-SITE ROAD
ACCESS TO
EMER

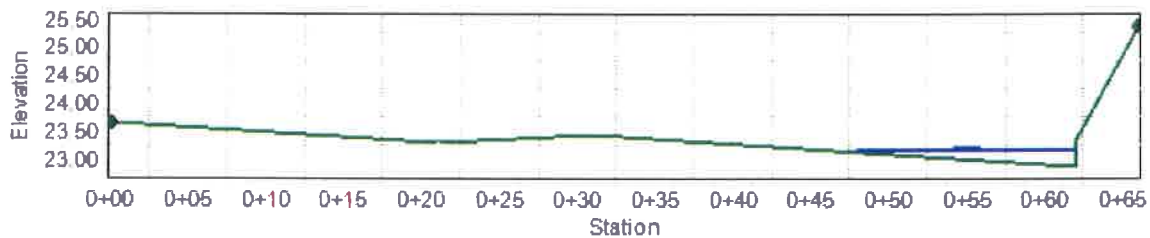
Input Data

Channel Slope 0.02900 ft/ft

Normal Depth 0.26 ft

Discharge 9.00 ft³/s

Cross Section Image



Dev 100

Worksheet for Irregular Section - 1

TRAP 1

Results

Critical Depth	0.37	ft
Critical Slope	0.00442	ft/ft
Velocity	4.93	ft/s
Velocity Head	0.38	ft
Specific Energy	0.64	ft
Froude Number	2.42	
Flow Type	Supercritical	

ON SITE
EXIT
TO EAST

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.26	ft
Critical Depth	0.37	ft
Channel Slope	0.02900	ft/ft
Critical Slope	0.00442	ft/ft

DEV 100

Cross Section for Gutter - 1

BUT 1

WARDEN

Project Description

Solve For

Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	9.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	18.75	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Dev 100

Worksheet for Gutter - 1

GUT 1

WARDELL

Project Description

Solve For

Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	9.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	18.75	ft
Flow Area	3.59	ft ²
Depth	0.47	ft
Gutter Depression	0.09	ft
Velocity	2.51	ft/s

DEV 100

Cross Section for Gutter - 2 GUT 2

Project Description

Solve For

Spread

SO END
WANDERLE ST

Input Data

Channel Slope	0.00300	ft/ft
Discharge	15.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	22.84	ft
Roughness Coefficient	0.013	

Cross Section Image



V. 1
H: 1

Del 100

Worksheet for Gutter - 2

GUT 2

Project Description

SOUTH END

Solve For

Spread

WANNELLE ST

Input Data

Channel Slope	0.00300	ft/ft
Discharge	15.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	22.84	ft
Flow Area	5.29	ft ²
Depth	0.55	ft
Gutter Depression	0.09	ft
Velocity	2.84	ft/s

DEV 100

Cross Section for Gutter - 3

GUT 3

Project Description

WALNUT AVE

Solve For

Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	15.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	19.41	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

DEV 100

Worksheet for Gutter - 3

GUT 3

Project Description

WALNUT AVE

Solve For

Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	15.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	19.41	ft
Flow Area	3.83	ft ²
Depth	0.48	ft
Gutter Depression	0.09	ft
Velocity	3.91	ft/s

Dev 100

Cross Section for Gutter - 4

GUT 4

28th ST.

Project Description

Solve For

Spread

Input Data

Channel Slope	0.00500	ft/ft
Discharge	2.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	9.25	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Dev 100

Worksheet for Gutter - 4

GUT 4

Project Description

28th STREET

Solve For

Spread

Input Data

Channel Slope	0.00500	ft/ft
Discharge	2.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	9.25	ft
Flow Area	0.92	ft ²
Depth	0.28	ft
Gutter Depression	0.09	ft
Velocity	2.17	ft/s

DEV 100

BONNIE ROAD.

Cross Section for Irregular Section - 2

TRAP 2

Project Description

Friction Method

Manning Formula

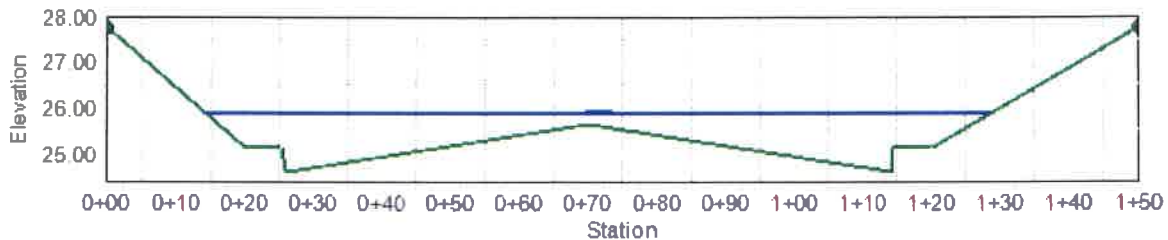
Solve For

Normal Depth

Input Data

Channel Slope	0.00890	ft/ft
Normal Depth	1.27	ft
Discharge	705.00	ft ³ /s

Cross Section Image



DXV ON SIDEWALK

$$D = 1.27' - 0.5 = 0.77$$

$$V = 8.59 \text{ FPS}$$

$$DXV = 6.61 < 8 \therefore \text{OKAY}$$

FINISH FLOOR CHECK

$$BFE = 24.63 + 1.27'$$

$$BFE = 25.63' \text{ WSEL}$$

$$FF = 27.75$$

$$\Delta = FF - BFE$$

$$\Delta = 2.12' > 1.50' \text{ REQUIRED MINIMUM } \therefore \text{OK}$$

TRAP 2

(TRAP 2)

Friction Method	Manning Formula
Solve For	Normal Depth

Channel Slope	0.00890	ft/ft
Discharge	705.00	ft ³ /s
Section Definitions		

Station (ft)	Elevation (ft)
0+00	27.75
0+20	25.13
0+26	25.13
0+26	24.63
0+70	25.65
1+15	24.63
1+15	25.13
1+20	25.13
1+50	27.75

Start Station	Ending Station	Roughness Coefficient
(0+00, 27.75)	(1+50, 27.75)	0.013

Current Koughness vweigted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Normal Depth		1.27 ft
Elevation Range	24.63 to 27.75 ft	
Flow Area		82.12 ft²
Wetted Perimeter		115.55 ft

Dev 100

Worksheet for Irregular Section - 2 Bonanza Road

TRAP 2

Results

Hydraulic Radius	0.71	ft
Top Width	114.73	ft
Normal Depth	1.27	ft
Critical Depth	1.62	ft
Critical Slope	0.00247	ft/ft
Velocity	8.59	ft/s
Velocity Head	1.15	ft
Specific Energy	2.42	ft
Froude Number	1.79	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.27	ft
Critical Depth	1.62	ft
Channel Slope	0.00890	ft/ft
Critical Slope	0.00247	ft/ft

Proposed Q10 flow D x V requirements (<6) are planned to be met at the minor onsite gutters and swales. See table below for results.

Description	Q10 cfs	Depth ft	Velocity fps	DxV	<6	Max velocity per Table 703	Swale velocity check	Plan Xsect ref
Irregular Trap 1	5	0.21	4.26	0.89	ok	35.0	ok	A
Gutter 1	5	0.39	2.18	0.85	ok	35.0	ok	B
Gutter 2	7 max.	0.43	2.36	1.01	ok	35.0	ok	C
Gutter 3	7 max.	0.38	3.26	1.23	ok	35.0	ok	D
Gutter 4	1	0.23	1.89	0.43	ok	35.0	ok	E
Irregular Trap 2, Bonanza Road	275	0.93 in gutter	6.22	5.78	ok	35.0	ok	F
Irregular Trap 2, Bonanza Road	275	0.43 on S/W	6.22	2.67	ok	35.0	ok	F

Project Description

Solve For	Normal Depth
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Section Definitions

Worksheet for DEV10Irregular Section - 1

Results

Critical Depth	0.29	ft
Critical Slope	0.00478	ft/ft
Velocity	4.26	ft/s
Velocity Head	0.28	ft
Specific Energy	0.49	ft
Froude Number	2.33	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.21	ft
Critical Depth	0.29	ft
Channel Slope	0.02900	ft/ft
Critical Slope	0.00478	ft/ft

Project Description

Manning Formula

Normal Depth

Channel Slope	0.02900	ft/ft
Normal Depth	0.21	ft
Discharge	5.00	ft ³ /s

The graph shows the vertical alignment of a road. The x-axis represents the stationing from 0+00 to 0+60, and the y-axis represents the elevation in feet from 22.80 to 25.60. The green line represents the existing ground surface, and the blue line represents the proposed road grade. A vertical curve is shown between stations 0+50 and 0+60, with a vertical curve symbol at station 0+55.

Station	Elevation (ft)	Type
0+00	23.65	Ground
0+10	23.45	Ground
0+20	23.30	Ground
0+30	23.45	Ground
0+40	23.25	Ground
0+50	23.05	Ground
0+60	22.85	Ground
0+00	23.65	Proposed Grade
0+10	23.45	Proposed Grade
0+20	23.25	Proposed Grade
0+30	23.05	Proposed Grade
0+40	22.85	Proposed Grade
0+50	22.65	Proposed Grade
0+60	22.45	Proposed Grade

Project Description

Input Data

Station (ft)

Elevation (ft)

Roughness Segment Definitions

Start Station

Ending Station

Roughness Coefficient

(0+00, 27.75)

 $(1+50, 27.75)$

0.013

Options

Results

Normal Depth		0.93	ft	✓
Elevation Range	24.63 to 27.75 ft			
Flow Area		44.23	ft²	
Wetted Perimeter		101.04	ft	

Worksheet for DEV10Irregular Section - 2

Results

Hydraulic Radius	0.44	ft
Top Width	100.27	ft
Normal Depth	0.93	ft
Critical Depth	1.11	ft
Critical Slope	0.00299	ft/ft
Velocity	6.22	ft/s
Velocity Head	0.60	ft
Specific Energy	1.53	ft
Froude Number	1.65	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.93	ft
Critical Depth	1.11	ft
Channel Slope	0.00890	ft/ft
Critical Slope	0.00299	ft/ft

Worksheet for DEV10Gutter - 1

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	5.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	14.90	ft
Flow Area	2.29	ft ²
Depth	0.39	ft ✓
Gutter Depression	0.09	ft ✓
Velocity	2.18	ft/s ✓

Cross Section for DEV10Gutter - 1

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	5.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	14.90	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Worksheet for DEV10Gutter - 2

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	7.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	17.02	ft
Flow Area	2.96	ft ²
Depth	0.43	ft
Gutter Depression	0.09	ft
Velocity	2.36	ft/s

Cross Section for DEV10Gutter - 2

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	7.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	17.02	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Worksheet for DEV10Gutter - 3

Project Description

Solve For

Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	7.00	ft³/s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	14.41	ft
Flow Area	2.14	ft²
Depth	0.38	ft ✓
Gutter Depression	0.09	ft
Velocity	3.26	ft/s ✓

Cross Section for DEV10Gutter - 3

Project Description

Solve For Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	7.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	14.41	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Worksheet for DEV10Gutter - 4

Project Description

Solve For Spread

Input Data

Channel Slope	0.00500	ft/ft
Discharge	1.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	6.79	ft
Flow Area	0.53	ft ² ✓
Depth	0.23	ft ✓
Gutter Depression	0.09	ft ✓
Velocity	1.89	ft/s ✓

Cross Section for DEV10Gutter - 4

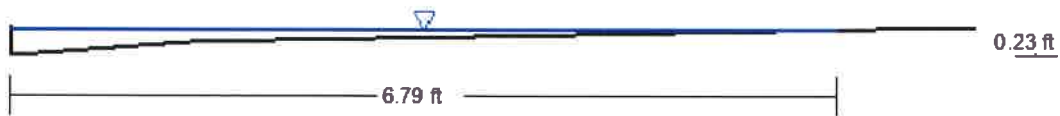
Project Description

Solve For Spread

Input Data

Channel Slope	0.00500	ft/ft
Discharge	1.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	6.79	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Existing Q100 flow D x V requirements (<8) are planned to be met at the offsite gutters. See table below for results.

Description	Q100 cfs	Depth ft	Velocity fps	DxV	<8	Max velocity per Table 703	Swale velocity check	Plan Xsect ref
Irregular Trap 1	na	na	na	na	na	na	na	na
Gutter 1	na	na	na	na	na	na	na	na
Gutter 2	17 max.	0.57	2.93	1.67	ok	35.0	ok	C
Gutter 3	17 max.	0.50	4.03	2.01	ok	35.0	ok	D
Gutter 4	2	0.28	2.17	0.61	ok	35.0	ok	E
Irregular Trap 2, Bonanza Road	705	1.27 in gutter	8.59	10.90	no	35.0	ok	F
Irregular Trap 2, Bonanza Road	705	0.77 on S/W	8.59	6.61	ok	35.0	ok	F

Worksheet for EX100Irregular Section - 2

Results

Hydraulic Radius	0.71	ft
Top Width	114.73	ft
Normal Depth	1.27	ft
Critical Depth	1.62	ft
Critical Slope	0.00247	ft/ft
Velocity	8.59	ft/s
Velocity Head	1.15	ft
Specific Energy	2.42	ft
Froude Number	1.79	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.27	ft
Critical Depth	1.62	ft
Channel Slope	0.00890	ft/ft
Critical Slope	0.00247	ft/ft

Cross Section for EX100Irregular Section - 2

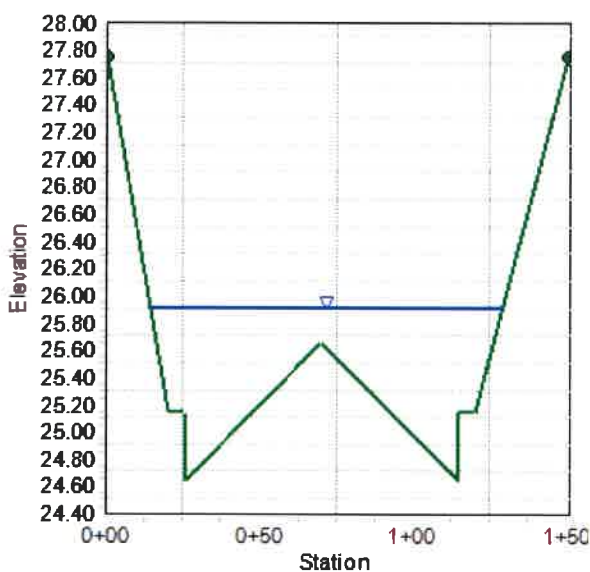
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.00890	ft/ft
Normal Depth	1.27	ft
Discharge	705.00	ft ³ /s

Cross Section Image



Worksheet for EX100Gutter - 2

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	17.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	23.96	ft
Flow Area	5.81	ft ²
Depth	0.57	ft ✓
Gutter Depression	0.09	ft
Velocity	2.93	ft/s ✓

Cross Section for EX100Gutter - 2

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	17.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	23.96	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Worksheet for EX100Gutter - 3

Project Description

Solve For Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	17.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	20.37	ft
Flow Area	4.22	ft ²
Depth	0.50	ft ✓
Gutter Depression	0.09	ft
Velocity	4.03	ft/s ✓

Cross Section for EX100Gutter - 3

Project Description

Solve For Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	17.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	20.37	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Worksheet for EX100Gutter - 4

Project Description

Solve For Spread

Input Data

Channel Slope	0.00500	ft/ft
Discharge	2.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	9.25	ft
Flow Area	0.92	ft ²
Depth	0.28	ft ✓
Gutter Depression	0.09	ft
Velocity	2.17	ft/s ✓

Cross Section for EX100Gutter - 4

Project Description

Solve For Spread

Input Data

Channel Slope	0.00500	ft/ft
Discharge	2.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	9.25	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Existing Q10 flow D x V requirements (<6) are planned to be met at the offsite gutters. See table below for results.

Description	Q10 cfs	Depth ft	Velocity fps	DxV	<6	Max velocity per Table 703	Swale velocity check	Plan Xsect ref
Irregular Trap 1	na	na	na	na	na	na	na	na
Gutter 1	na	na	na	na	na	na	na	na
Gutter 2	8 max.	0.45	2.44	1.09	ok	35.0	ok	C
Gutter 3	8 max.	0.39	3.37	1.31	ok	35.0	ok	D
Gutter 4	1	0.23	1.89	0.43	ok	35.0	ok	E
Irregular Trap 2, Bonanza Road	275	0.93 in gutter	6.22	5.78	ok	35.0	ok	F
Irregular Trap 2, Bonanza Road	275	0.43 on S/W	6.22	2.67	ok	35.0	ok	F

Worksheet for EX10Irregular Section - 2

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.00890 ft/ft ✓
Discharge 275.00 ft³/s ✓
Section Definitions

Station (ft)	Elevation (ft)
0+00	27.75
0+20	25.13
0+26	25.13
0+26	24.63
0+70	25.65
1+15	24.63
1+15	25.13
1+20	25.13
1+50	27.75

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 27.75)	(1+50, 27.75)	0.013

Options

Current Roughness Weighted Method Pavlovskii's Method
Open Channel Weighting Method Pavlovskii's Method
Closed Channel Weighting Method Pavlovskii's Method

Results

Normal Depth 0.93 ft ✓
Elevation Range 24.63 to 27.75 ft
Flow Area 44.23 ft²
Wetted Perimeter 101.04 ft

Worksheet for EX10Irregular Section - 2

Results

Hydraulic Radius	0.44	ft
Top Width	100.27	ft
Normal Depth	0.93	ft ✓
Critical Depth	1.11	ft
Critical Slope	0.00299	ft/ft
Velocity	6.22	ft/s ✓
Velocity Head	0.60	ft
Specific Energy	1.53	ft
Froude Number	1.65	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.93	ft ✓
Critical Depth	1.11	ft
Channel Slope	0.00890	ft/ft
Critical Slope	0.00299	ft/ft

Worksheet for EX10Gutter - 2

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	8.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	17.93	ft
Flow Area	3.28	ft ²
Depth	0.45	ft ✓
Gutter Depression	0.09	ft ✓
Velocity	2.44	ft/s ✓

Cross Section for EX10Gutter - 2

Project Description

Solve For Spread

Input Data

Channel Slope	0.00300	ft/ft
Discharge	8.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	17.93	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Worksheet for EX10Gutter - 3

Project Description

Solve For Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	8.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	15.19	ft
Flow Area	2.38	ft ² ✓
Depth	0.39	ft ✓
Gutter Depression	0.09	ft ✓
Velocity	3.37	ft/s ✓

Cross Section for EX10Gutter - 3

Project Description

Solve For Spread

Input Data

Channel Slope	0.00700	ft/ft
Discharge	8.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	15.19	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

Worksheet for EX10Gutter - 4

Project Description

Solve For Spread

Input Data

Channel Slope	0.00500	ft/ft
Discharge	1.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Roughness Coefficient	0.013	

Results

Spread	6.79	ft
Flow Area	0.53	ft ² ✓
Depth	0.23	ft ✓
Gutter Depression	0.09	ft
Velocity	1.89	ft/s ✓

Cross Section for EX10Gutter - 4

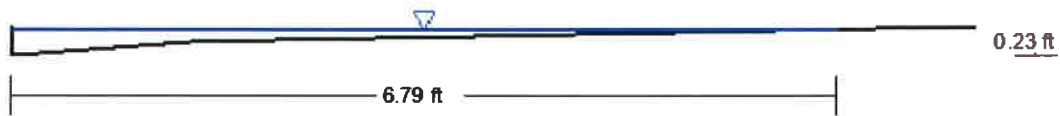
Project Description

Solve For Spread

Input Data

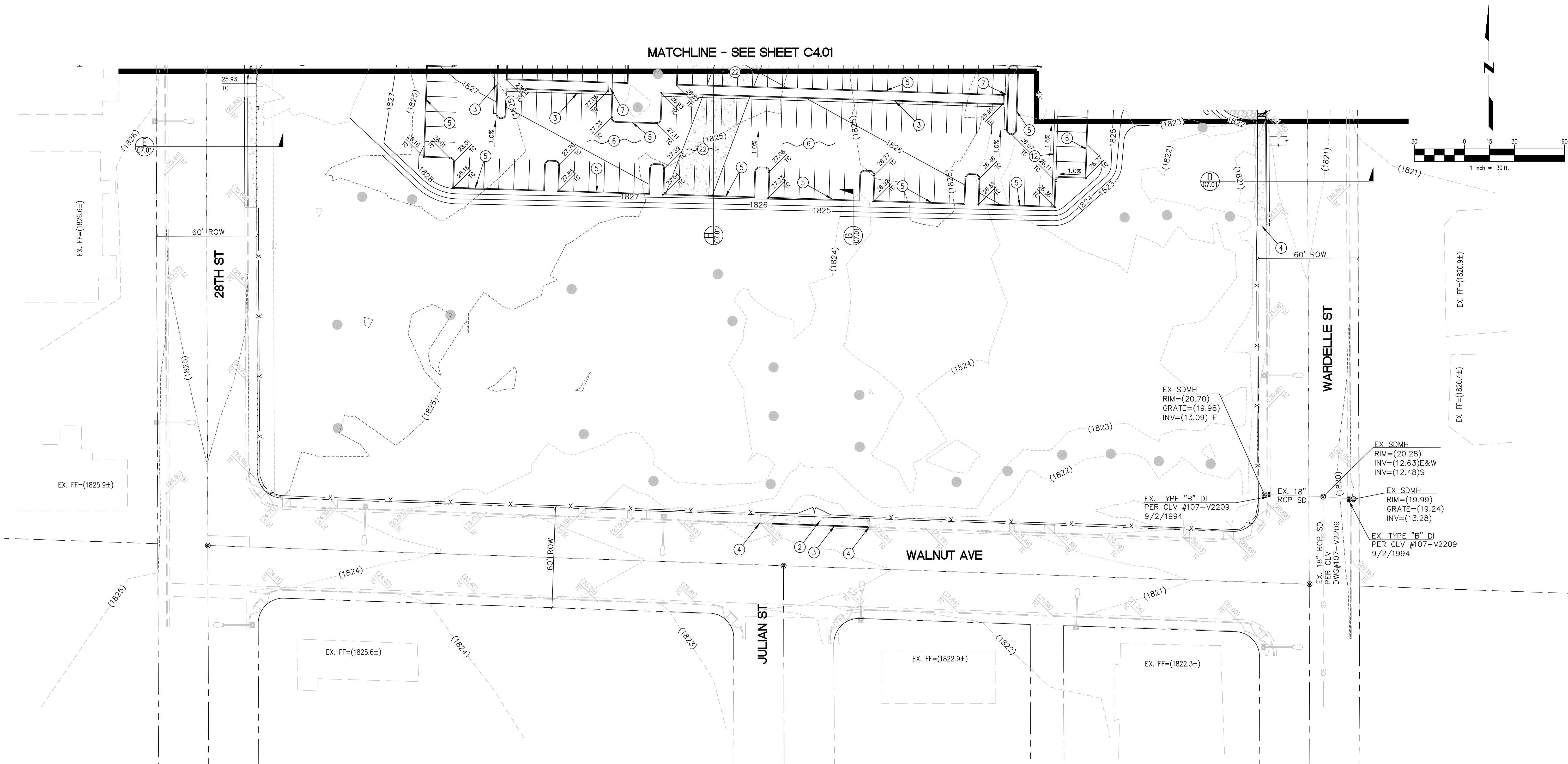
Channel Slope	0.00500	ft/ft
Discharge	1.00	ft ³ /s
Gutter Width	1.50	ft
Gutter Cross Slope	0.08	ft/ft
Road Cross Slope	0.02	ft/ft
Spread	6.79	ft
Roughness Coefficient	0.013	

Cross Section Image



V: 1
H: 1

MATCHLINE - SEE SHEET C4.01



LEGEND

EXISTING	PROPOSED	
---	---	RIGHT-OF-WAY/PROPERTY CENTERLINE
---	---	TYPE "L" CURB & GUTTER
---	---	TYPE "A" CURB
---	---	CONCRETE
---	---	SCREEN/RETAINING WALL
---	---	CONTOUR
---	---	WATER LINE
---	---	SANITARY SEWER LINE
---	---	GAS LINE
---	---	STORM DRAIN
---	---	TELEPHONE LINE
---	---	UNDERGROUND ELECTRIC
---	---	FIRE HYDRANT
---	---	WATER VALVE
---	---	METERS/PULL BOXES
---	---	REDUCER
---	---	MANHOLE
---	---	CLEANOUT
---	---	SPOT ELEVATION

CONSTRUCTION NOTES

- CONSTRUCT WALL PER DRAWINGS BY OTHERS
- CONSTRUCT CONCRETE SIDEWALK PER CCAUSD #234. REFER TO ARCHITECT'S PLAN FOR PAVEMENT PATTERN (ON-SITE ONLY).
- CONSTRUCT "L" TYPE CURB & GUTTER PER CCAUSD #216
- MATCH EXISTING
- CONSTRUCT 6" TYPE "A" CURB PER CCAUSD #219
- CONSTRUCT 3.5" AC OVER 6" TYPE II BASE, PER GEOTECHNICAL REPORT.
- CONSTRUCT 2' WIDE CONCRETE CHANNEL PER DETAIL 2, SHEET C7.01
- CONSTRUCT SIDEWALK UNDER DRAIN PER CCAUSD #236.
- CONSTRUCT BUS TURN OUT PER CCAUSD #231.1 & 234.2.
- CONSTRUCT SIDEWALK RAMP PER CCAUSD #235 (CASE III)
- CONSTRUCT 2" DECOMPOSED GRANITE OVER 6" TYPE II
- CONSTRUCT 2' WIDE CONCRETE VALLEY GUTTER PER DETAIL 1, SHEET C7.01
- BOLLARD POST, REFER TO ARCHITECTURAL PLANS
- PLANTER WALL, REFER TO ARCHITECTURAL/LANDSCAPE PLANS
- INSTALL JENSEN PRECAST BUMPER BLOCK, MODEL S-72(OR APPROVED EQUAL)
- TRANSITION FROM 0" CURB TO 6" TYPE "A" CURB
- RECONSTRUCT EXISTING SIDEWALK RAMP PER CCAUSD #235 (CASE III)
- CONSTRUCT 0" TYPE "A" CURB PER CCAUSD #219
- CONSTRUCT 0" TYPE "L" CURB PER CCAUSD #216
- CONSTRUCT COMMERCIAL DRIVEWAY PER CCAUSD #228
- CONSTRUCT 2' WIDE CURB OPENING
- CONSTRUCT 7" 600 PSI FLEXURAL STRENGTH CONCRETE PAVEMENT OVER 8" COMPACTED TYPE II BASE OVER 12" COMPACTED STRUCTURAL FILL PER GEOTECHNICAL REPORT
- REMOVE EXISTING STREETLIGHT AND REINSTALL PER CCAUSD #314.

GEOTECHNICAL REPORT NOTE:

ALL GRADING SHALL CONFORM TO THE GEOTECHNICAL REPORT PREPARED BY NINYO AND MOORE, DATED 3/18/16 PROJECT NO. 303997002.

DRAINAGE NOTE

AN EFFORT HAS BEEN MADE TO ENSURE POSITIVE DRAINAGE AWAY FROM THE BUILDING AT A 2.0% MINIMUM EXCEPT IN CASES WHERE HANDICAP ACCESS PREVENTS THAT.

BMP NOTE

PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES SUCH AS BUT NOT LIMITED TO THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF THE VEGETATION.

GENERAL NOTE:

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BASIS OF BEARING

SOUTH 00°09'57" EAST, BEING THE BEARING OF THE CENTERLINE OF THIRTIETH STREET AND THE EAST LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 36, TOWNSHIP 20 SOUTH, RANGE 61 EAST, M.D.M., CLARK COUNTY, NEVADA, AS SHOWN IN FILE 138 OF SURVEYS, PAGE 82, OFFICIAL RECORDS OF CLARK COUNTY, NEVADA.

BENCHMARK

CITY OF LAS VEGAS VERTICAL CONTROL POINT "BLV01 36W6", BEING A RIVET AND PLATE IN THE TOP OF CURB @ NW CORNER OF STEWART & 28TH ST.
ELEVATION: 1830.51 (US SURVEY FEET)
557.941 (METERS)

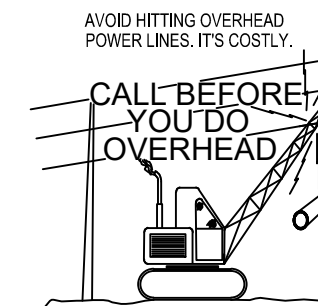
BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).



1-800-227-2600



1-702-432-5300



1-702-227-2929

T.Y. LIN
INTERNATIONAL

4031 DEAN MARTIN DR.
LAS VEGAS, NV 89103
P: 702-522-7100
F: 702-522-7105
WWW.TYLIN.COM

LAUGHLIN

LVCCCLD EAST LAS VEGAS LIBRARY

GRADING PLAN 2

CLARK COUNTY

DATE: 02/27/17

DRAFTER: T.O.

DESIGNER: T.O.

CHECKED: N.S.

PROJECT NO.

701247.00

C4.02

CLV #

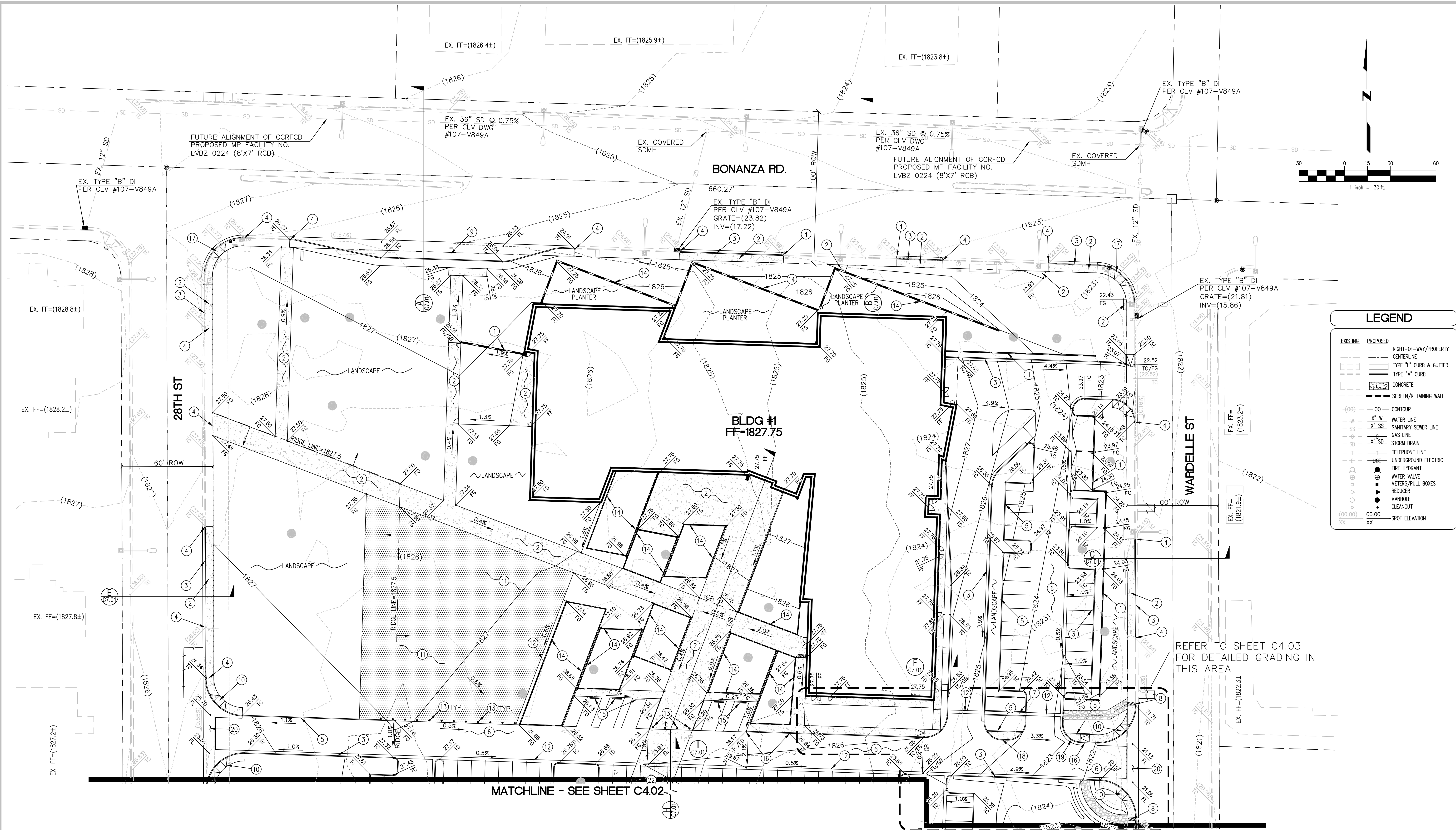
APP. DATE

BY

DATE

DESCRIPTION

NO.



LEGEND

EXISTING	PROPOSED	RIGHT-OF-WAY/PROPERTY CENTERLINE
---	---	---
---	---	TYPE "L" CURB & GUTTER
---	---	TYPE "A" CURB
---	---	CONCRETE
---	---	SCREEN/RETAINING WALL
---	---	CONTOUR
---	---	WATER LINE
---	---	SANITARY SEWER LINE
---	---	GAS LINE
---	---	STORM DRAIN
---	---	TELEPHONE LINE
---	---	UNDERGROUND ELECTRIC
---	---	FIRE HYDRANT
---	---	WATER VALVE
---	---	METERS/PULL BOXES
---	---	REDUCER
---	---	MANHOLE
---	---	CLEANOUT
---	---	SPOT ELEVATION

APP. DATE	
DATE	
BY	
DESCRIPTION	
NO.	
TY-LIN INTERNATIONAL 4031 DEAN MARTIN DR. LAS VEGAS, NV 89103 P: 702-522-7100 F: 702-522-7105 WWW.TY-LIN.COM	
CLARK COUNTY	LAUNCH
LVCCCLD EAST LAS VEGAS LIBRARY	
GRADING PLAN 1	
DATE: 02/27/17	
DRAFTER: T.O.	
DESIGNER: T.O.	
CHECKED: N.S.	
PROJECT NO. 701247.00	
CLV #	

- CONSTRUCTION NOTES**
- | | |
|--|--|
| 1. CONSTRUCT WALL PER DRAWINGS BY OTHERS | 13. BOLLARD POST, REFER TO ARCHITECTURAL PLANS |
| 2. CONSTRUCT CONCRETE SIDEWALK PER CCAUSD #234. REFER TO ARCHITECT'S PLAN FOR PAVEMENT PATTERN (ON-SITE ONLY). | 14. PLANTER WALL, REFER TO ARCHITECTURAL/LANDSCAPE PLANS |
| 3. CONSTRUCT "L" TYPE CURB & GUTTER PER CCAUSD #216 | 15. INSTALL JENSEN PRECAST BUMPER BLOCK, MODEL S-72(OR APPROVED EQUAL) |
| 4. MATCH EXISTING | 16. TRANSITION FROM 0" CURB TO 6" TYPE "A" CURB |
| 5. CONSTRUCT 6" TYPE "A" CURB PER CCAUSD #219 | 17. RECONSTRUCT EXISTING SIDEWALK RAMP PER CCAUSD #235 (CASE III) |
| 6. CONSTRUCT 3.5" AC OVER 6" TYPE II BASE, PER GEOTECHNICAL REPORT. | 18. CONSTRUCT 0" TYPE "A" CURB PER CCAUSD #219 |
| 7. CONSTRUCT 2' WIDE CONCRETE CHANNEL PER DETAIL 2, SHEET C7.01 | 19. CONSTRUCT 0" TYPE "L" CURB PER CCAUSD #216 |
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| 9. CONSTRUCT BUS TURN OUT PER CCAUSD #231.1 & 234.2. | 21. CONSTRUCT 2' WIDE CURB OPENING |
| 10. CONSTRUCT SIDEWALK RAMP PER CCAUSD #235 (CASE III) | 22. CONSTRUCT 7" 600 PSI FLEXURAL STRENGTH CONCRETE PAVEMENT OVER 8" COMPACTED TYPE II BASE OVER 12" COMPACTED STRUCTURAL FILL PER GEOTECHNICAL REPORT |
| 11. CONSTRUCT 2" DECOMPOSED GRANITE OVER 6" TYPE II | 23. REMOVE EXISTING STREETLIGHT AND REINSTALL PER CCAUSD #314. |
| 12. CONSTRUCT 2' WIDE CONCRETE VALLEY GUTTER PER DETAIL 1, SHEET C7.01 | |

BASIS OF BEARING

SOUTH 00°09'57" EAST, BEING THE BEARING OF THE CENTERLINE OF THIRTIETH STREET AND THE EAST LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 36, TOWNSHIP 20 SOUTH, RANGE 61 EAST, M.D.M., CLARK COUNTY, NEVADA, AS SHOWN IN FILE 138 OF SURVEYS, PAGE 82, OFFICIAL RECORDS OF CLARK COUNTY, NEVADA.

BENCHMARK

CITY OF LAS VEGAS VERTICAL CONTROL POINT "BLV01 36W6", BEING A RIVET AND PLATE IN THE TOP OF CURB @ NW CORNER OF STEWART & 28TH ST.
ELEVATION: 1830.51 (US SURVEY FEET)
557.941 (METERS)

BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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Call before you Dig
Call before you UnderGround
Call before you Dig
Call before you UnderGround
Call before you Dig
Call before you UnderGround

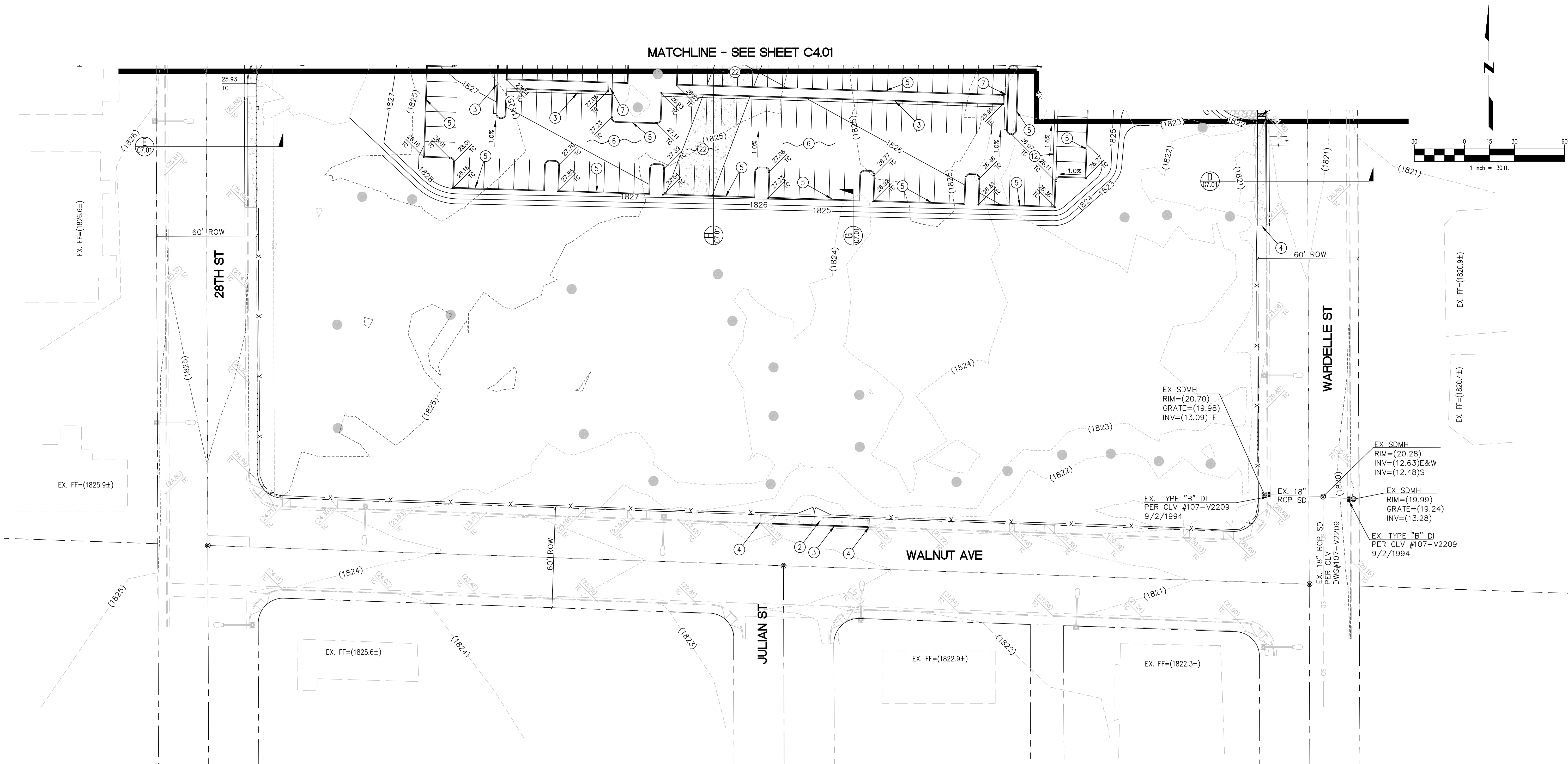
FAST
Call before you UnderGround
1-800-227-2600

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-432-5300

1-702-227-2929

C4.01

MATCHLINE - SEE SHEET C4.01



LEGEND

EXISTING	PROPOSED	
---	---	RIGHT-OF-WAY/PROPERTY CENTERLINE
---	---	TYPE "L" CURB & GUTTER
---	---	TYPE "A" CURB
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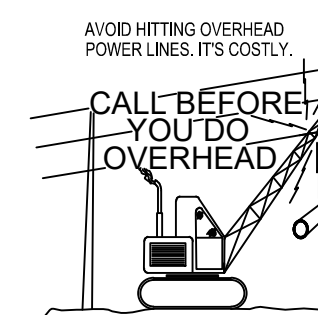
BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).



1-800-227-2600



1-702-432-5300



1-702-227-2929

T.Y. LIN
INTERNATIONAL

4031 DEAN MARTIN DR.
LAS VEGAS, NV 89103
P: 702-522-7100
F: 702-522-7105
WWW.TYLIN.COM

LAUGHLIN

LVCCCLD EAST LAS VEGAS LIBRARY

GRADING PLAN 2

CLARK COUNTY

DATE: 02/27/17

DRAFTER: T.O.

DESIGNER: T.O.

CHECKED: N.S.

PROJECT NO.

701247.00

C4.02

CLV #

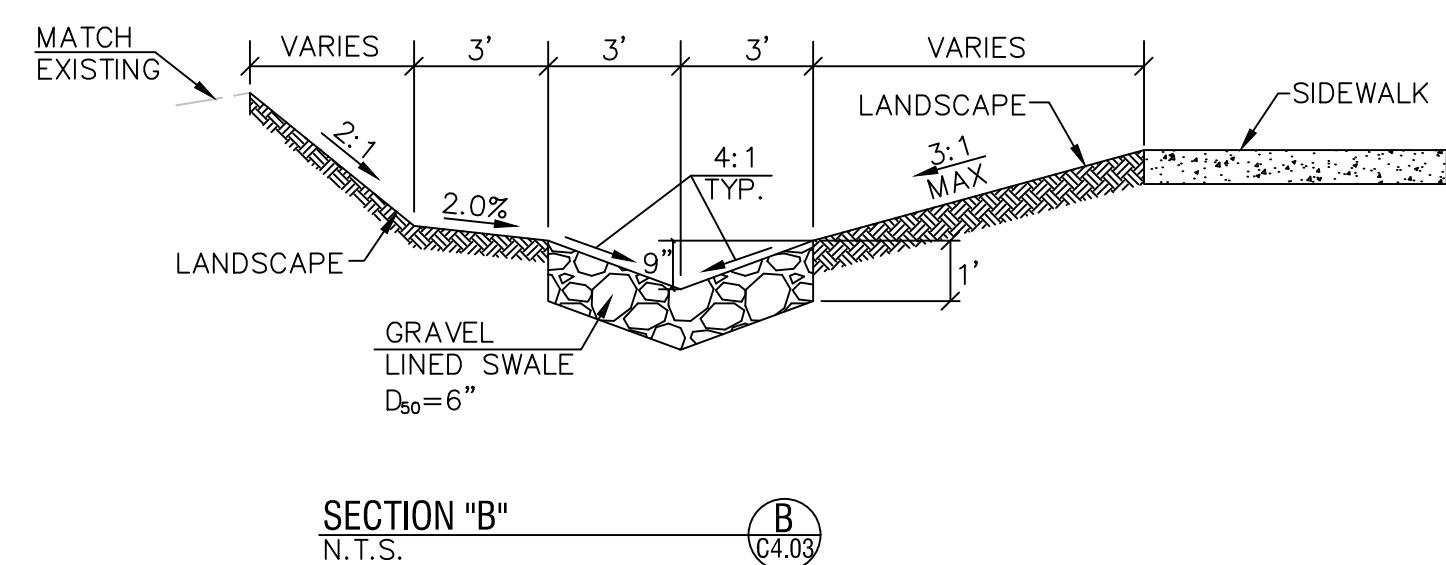
APP. DATE

BY

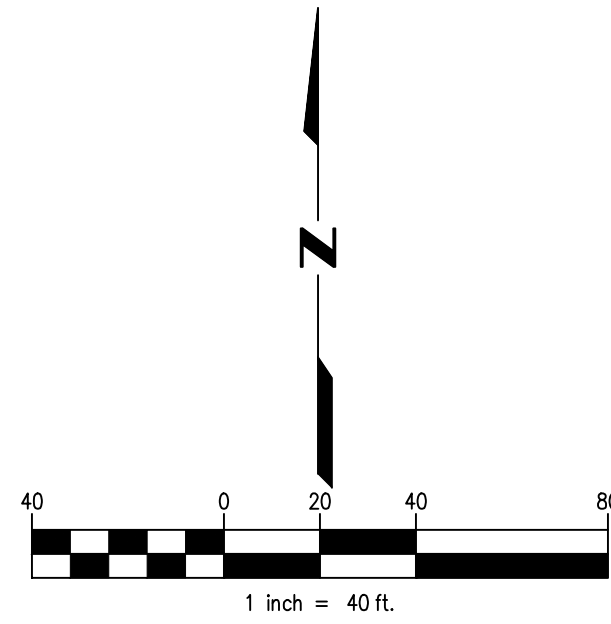
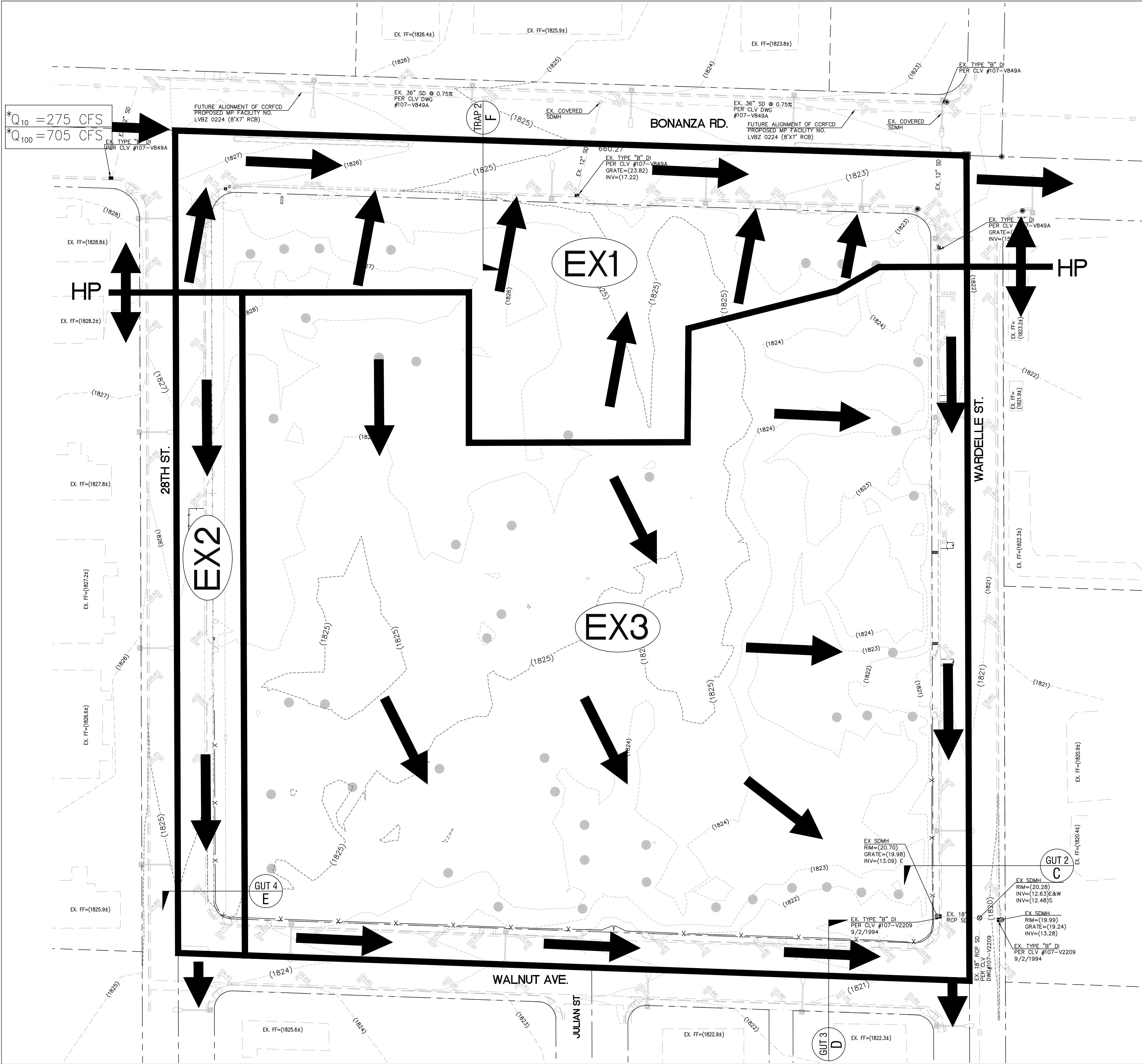
DATE

DESCRIPTION

NO.



CLV #	C4.03	PROJECT NO. 701247.00	CHECKED: N.S.	DESIGNER: T.O.	DRAFTER: T.O.	DATE: 02/27/17	CLARK COUNTY	LAUGHLIN LVCCLD EAST LAS VEGAS LIBRARY GRADING PLAN 3 (GRADING DETAIL)	 TY-LIN INTERNATIONAL 4031 DEAN MARTIN DR LAS VEGAS, NV 89103 P: 702-522-7100 F: 702-522-7105 WWW.TYUN.COM	NO.	DESCRIPTION	DATE	BY	APP. DATE



HEC-1 ANALYSIS

BASIN	AC	Q10 CFS	Q100 CFS
EX1	2.41	3	6
EX2	0.70	1	2
EX3	7.30	8	17
*BONANZA ROAD	-	275	705

*REFERENCE NOTE:
CLV CENTRAL NEIGHBORHOOD MASTER PLAN BY PBS & J, MARCH 2005,
EXHIBIT E-11

DEPTH X VELOCITY TABLE (Q₁₀₀)

DESC.	Q100 CFS	DEPTH(FT)	VELOCITY (FPS)	DxV	<8	PLAN XSECT REF
GUT 2	17 MAX	0.57	2.93	1.67	OK	C
GUT 3	17 MAX	0.50	4.03	2.01	OK	D
GUT 4	2	0.28	2.17	0.61	OK	E
TRAP 2 BONANZA	705	1.27 IN GUTTER	8.59	10.90	NO	F
TRAP 2 BONANZA	705	0.77 ON SIDEWALK	8.59	6.61	OK	F

DEPTH X VELOCITY TABLE (Q₁₀)

DESC.	Q10 CFS	DEPTH(FT)	VELOCITY (FPS)	DxV	<6	PLAN XSECT REF
GUT 2	8 MAX	0.45	2.44	1.09	OK	C
GUT 3	8 MAX	0.39	3.37	1.31	OK	D
GUT 4	1	0.23	1.89	0.43	OK	E
TRAP 2 BONANZA	275	0.93 IN GUTTER	6.22	5.78	OK	F
TRAP 2 BONANZA	275	0.43 ON SIDEWALK	6.22	2.67	OK	F

LEGEND



FLOW DIRECTION



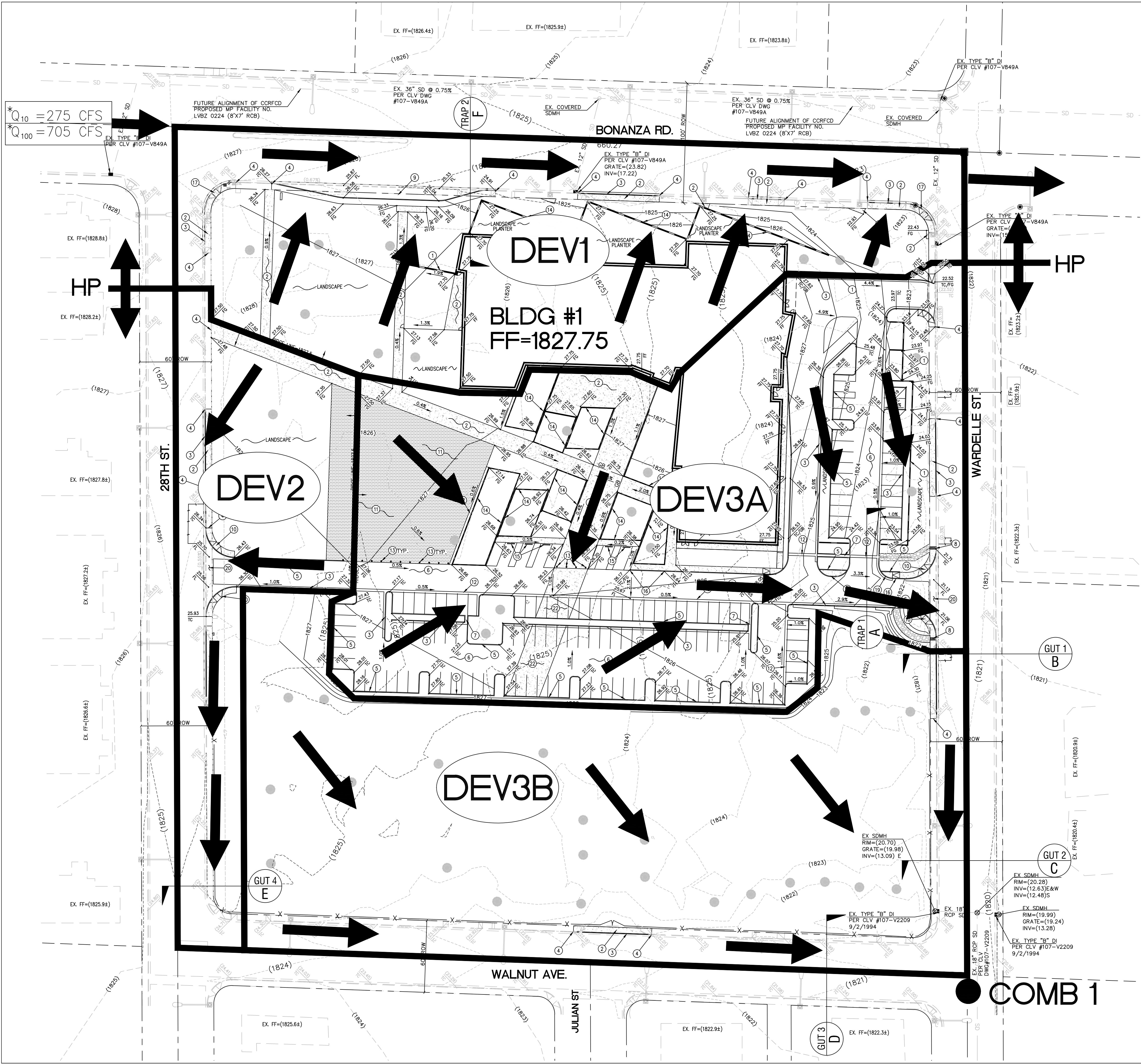
BASIN BOUNDARY



BASIN ID



CONCENTRATION POINT



HEC-1 ANALYSIS

BASIN	AC	Q10 CFS	Q100 CFS
DEV1	2.52	3	7
DEV2	1.12	1	2
DEV3A	3.45	5	9
DEV3B	3.32	2	6

*REFERENCE NOTE:
CLV CENTRAL NEIGHBORHOOD MASTER PLAN BY PBS & J, MARCH 2005,
EXHIBIT E-11

COMB1	----	7	15
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DEPTH X VELOCITY TABLE (Q₁₀₀)

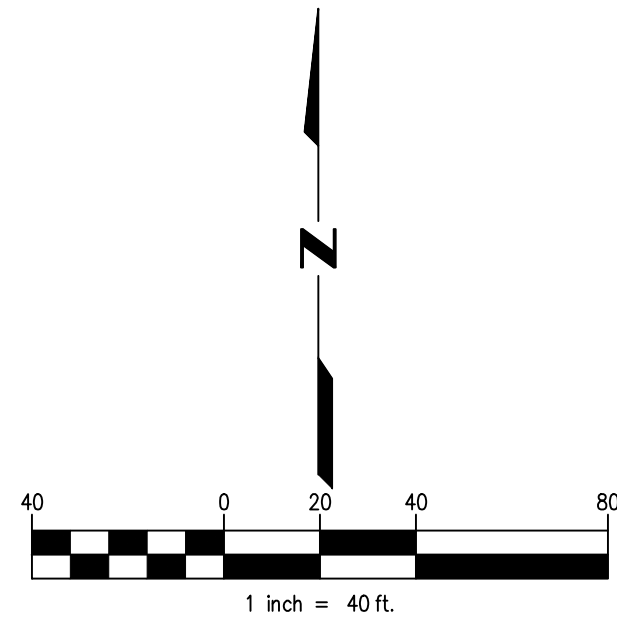
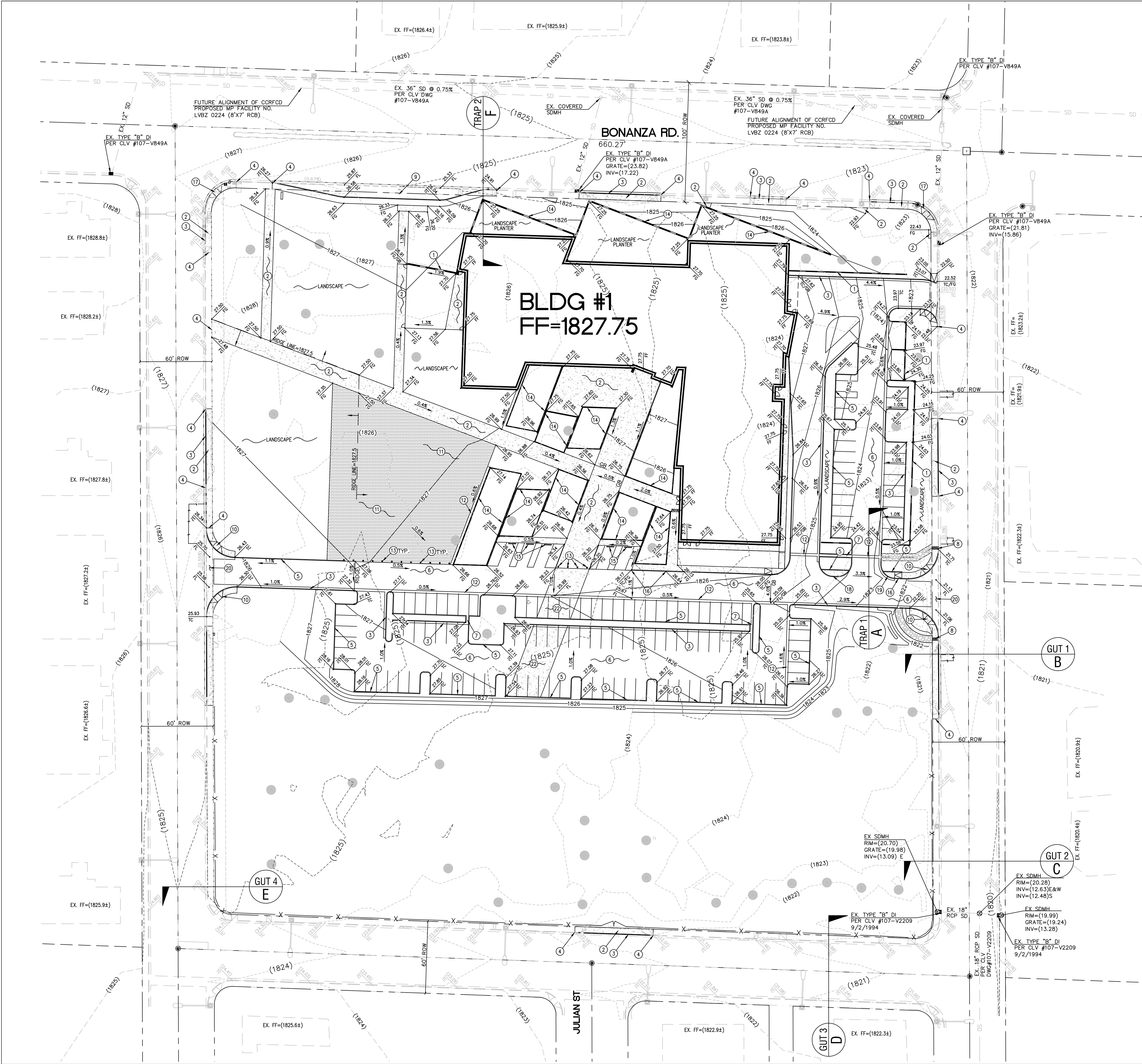
DESC.	Q100 CFS	DEPTH(FT)	VELOCITY (FPS)	DxV	<8	PLAN XSECT REF
TRAP 1	9	0.26	4.93	1.28	OK	A
GUT 1	9	0.47	2.51	1.18	OK	B
GUT 2	15 MAX	0.55	2.84	1.56	OK	C
GUT 3	15 MAX	0.48	3.91	1.87	OK	D
GUT 4	2	0.28	2.17	0.61	OK	E
TRAP 2 BONANZA	705	1.27 IN GUTTER	8.59	10.90	NO	F
TRAP 2 BONANZA	705	0.77 ON SIDEWALK	8.59	6.61	OK	F

DEPTH X VELOCITY TABLE (Q₁₀)

DESC.	Q10 CFS	DEPTH(FT)	VELOCITY (FPS)	DxV	<6	PLAN XSECT REF
TRAP 1	5	0.21	4.26	0.89	OK	A
GUT 1	5	0.39	2.18	0.85	OK	B
GUT 2	7 MAX	0.43	2.36	1.01	OK	C
GUT 3	7 MAX	0.38	3.26	1.23	OK	D
GUT 4	1	0.23	1.89	0.43	OK	E
TRAP 2 BONANZA	275	0.93 IN GUTTER	6.22	5.78	OK	F
TRAP 2 BONANZA	275	0.43 ON SIDEWALK	6.22	2.67	OK	F

LEGEND

-  FLOW DIRECTION
-  BASIN BOUNDARY
-  BASIN ID
-  CONCENTRATION POINT
-  BUILDING OUTLINE



DEPTH X VELOCITY TABLE (Q₁₀₀)

DESC.	Q100 CFS	DEPTH(FT)	VELOCITY (FPS)	DxV	<8	PLAN XSECT REF
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