

DS #: 4555

APN: 137-34-313-002

PROJECT: Esperanza-Sommerlin V23A Parcel M

SUBMITTAL: 2nd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		June 12, 2012
TO: Land Development Services Department of Public Works		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
	Esperanza – Summerlin V23A Parcel M	Slater Hanifan Group
Cross Streets:	NWC of Desert Moon Road & Fox Hill Drive	Greystone Nevada / Lennar Homes
File Number:	F:\Depot\DSMemos\DS4555B.doc	Bart Anderson, P.E., DevCo
Parcel Number:	137-34-313-002	
Zoning Action:	TMP-44928	
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	5/14/2012	5/23/2012	Not Approved	\$400.00	283362: \$400
2 nd Submittal	6/7/2012	6/12/2012	See Comments Below	\$400.00	285860: \$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:
X	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

- 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 developer/engineer proposed rough grading in the future *Phase 2* area. Consult with *City of Las Vegas Planning Department* for approval of the proposed rough grading prior to the final acceptance of the improvement plans.
- Sheet G-1 (Phase 1):**
 - The cross reference of Construction Note #9 and Detail 15/D-1 does not specify the clear width of the proposed concrete flume. Provide concrete flume width in the next submittal.
 - Add "Public" adjacent to the text string "*Varies Drainage Easement to be Privately Maintained*".
- Sheet G-4 (Phase 1):**
 - Extend the limit of the proposed drainage easement to cover the common lot until it meets the right-of-way line.

- Add "Public" adjacent to the text string "*45' Drainage and Utility Easement to be Privately Maintained*".

5. Sheet D-1 (Phase 1):

- **Detail 15:** Specify the width of the concrete flume.
- **Detail 16:** Identify a proposed 36" RCP storm drain in the detail section.

6. Private streets must be public drainage easements. Provide a note on the grading plans "Note: All Private Streets are P.U., Public Sewer Easements and Public Drainage Easements to be privately maintained by the HOA."
7. All drainage easements must be public drainage easements to be privately maintained and common lots to be labeled on the grading plans and to be dedicated as such in the final map.
8. The engineer must provide a table on the grading plans that shows a quantity estimate of all drainage improvements within Public Drainage Easements. All drainage improvements within Public Drainage Easements must be bonded and inspected.
9. The subject drainage study addresses *Interim improvements (Phase 1)* as well as the *Final improvements (Phase 1 and Phase 2)*. However, if *Phase 2 Improvements* commence more than one year after the final approval of this study, a drainage study update will be required to address the future *Phase 2 Improvements*.

In an effort to increase administrative efficiency, the City of Las Vegas Public Works Department requires all soil reports, drainage studies and traffic impact analysis submittals to be accompanied by an electronic copy of the submittal. Electronic documents must be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output replicating your submittal to be used for archival or display purposes. This may be more than one file if necessary. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats, but provided it is a high quality digitized replication of the submittal, other formats may be acceptable. If figures are in color, they must be scanned in color and saved as a separate file. The new submittal requirement is effective on **July 1, 2011**. If there are any questions regarding these new requirements, please contact Albert Sung in the Flood Section at (702) 229-2001 or Rick Schroder in Traffic Engineering at (702) 229-6327.

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/R59E/34
AREA K-34

TRANSMITTAL

To: Albert Sung, P.E.

Date: June 7, 2012

City of Las Vegas

Project No.: LEN1201.000

333 N. Rancho Drive

Las Vegas, NV 89106

From: Steve Jones, P.E.

Subject: Technical Drainage Study for Esperanza

CC: Tracy Stratton, SHG

CC: _____

CC: Chelsea Peltier, SHG

CC: _____

CC: Mark Failla, SHG

CC: _____

Transmitting Via:

- ☐ Mail
☒ Messenger / MDS
☐ Federal Express
☐ Pickup

For:

- ☒ Review & Comment
☐ Per your Request
☐ Information/File

Acknowledgement of Receipt:

- ☐ Not Required
☒ Acknowledgement Required

Received By: _____

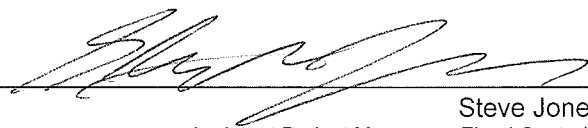
Date: _____ Time: _____

Copies	Description
<u>1</u>	<u>Addendum No. 1 to the Subject Study</u>
<u>1</u>	<u>Revised Grading Plan and Detail Sheets (bound in back)</u>
<u>1</u>	<u>Stamped and Signed Standard Form 1 (bound in front)</u>
<u>1</u>	<u>\$400 Submittal Fee (Lennar Check #11762)</u>
<u>1</u>	<u>CD containing PDF of submittal documents</u>

Comments:

Enclosed please find the above listed items in response to the comments issued on May 24, 2012 regarding the *Technical Drainage Study for Esperanza* which is a residential subdivision on Parcel M within Summerlin Village 23A.

Please contact us if there are any questions at 702-284-5300. Thanks.

Signed:  _____
Steve Jones, P.E.
Assistant Project Manager – Flood Control Division

TECHNICAL DRAINAGE STUDY
ADDENDUM NO. 1

Esperanza

City of Las Vegas, Nevada

Job No.: LEN1201.000

Date: June 2012

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:

Lennar Homes
2490 Paseo Verde Parkway, Suite 120
Henderson, NV 89014
Phone: 702-736-9100 • Fax: 702-736-9200



Steve Jones, P.E.
NV Professional Engineer No. 19638

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Esperanza – Addendum No. 1 Date: June 2012
 Location of Development: a) Descriptive (Cross Streets): North/South: Fox Hill Drive
East/West: Desert Moon Road
 b) Section: 34 Township: 20 South Range: 59 East
 c) APN: 137-34-313-002

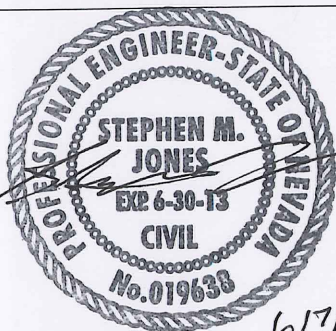
Name of Owner/Developer: Greystone Nevada, LLC / Lennar Homes
 Telephone No.: 702-736-9100 Fax No.: 702-736-9200 E-mail Address: Robert.Johnson@Lennar.com
 Address: 2490 Paseo Verde Parkway, Suite 120; Henderson, NV 89074

Contact Person – Name: Steve Jones, P.E. Telephone No.: 702-284-5300
 *E-mail Address: sjones@shg-inc.com Fax No.: 702-284-5399
 Firm: Slater Hanifan Group
 Address: 5740 S. Arville Street, Suite 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: 22.7 Acres +/- Being Developed/Disturbed: All
- 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.): Single-Family Residential
- Approximate upstream land area which drains to the subject site: 16.5 Acres
- Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation:
Conceptual Drainage Study for Summerlin Village 23A, by G.C. Wallace (DS3077);
Technical Drainage Study for Summerlin Village 23A Unit 1 Improvements, by G.C. Wallace (DS3126);
Technical Drainage Study for Summerlin Village 23A Unit 2 Improvements, by G.C. Wallace (DS3402)
- If known, please briefly identify the proposed discharge point(s) of runoff from the site: Existing Storm Drain in Fox Hill Drive
- Briefly describe your proposed schedule for the subject project: 2 Phases;
Both Phase 1 & Phase 2 technically addressed by this study.



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.

*Newly Required Field

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

Revision	Date

Local Entity File No. _____

REFERENCE: SHG Job LEN1201.000

STANDARD FORM 1

Updated 05/01/2008

LEN1201.000

June 7, 2012

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: Addendum No. 1 to the Technical Drainage Study for Esperanza
(CLV # DS4555)**

Dear Mr. Sung:

The following are responses to comments contained in the May 24, 2012 review memorandum, regarding the above referenced project. A copy of the City of Las Vegas (CLV) comment letter has been provided in Appendix A of this submittal. The comments have been individually addressed as follows:

1. **Comment:** *Provide a copy of the zoning/planning conditions associated with this site (TMP-44928) 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 associated planning conditions of approval have been included in Appendix B for reference. Note that no conditions affect the site drainage as presented in the previous submittal.

2. **Comment:** *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: The necessary coordination is currently being performed with the Planning Department. Per a June 6, 2012 phone call with Mr. Sung, it has been determined acceptable to proceed with this submittal and allow for Planning Department approval as condition of the drainage study approval.

3. **Comment:** *The developer/engineer proposed rough grading in the future Phase 2 area. Consult with City of Las Vegas Planning Department for approval of the proposed rough grading prior to the final approval of the drainage study;*

Response: The necessary coordination is currently being performed with the Planning Department. Per a June 6, 2012 phone call with Mr. Sung, it has been determined acceptable to proceed with this submittal and allow for Planning Department approval as condition of the improvement plans approval.

4. **Comment:** *Offsite grading and swale are proposed in the adjacent Parcel N to the north. A notarized letter of permission for the offsite construction must be obtained from the parcel owner prior to the final acceptance of the drainage study;*

Response: The offsite Parcel N is now owned by the same property owner, Greystone Nevada LLC or Lennar Homes. Therefore, no grading permission is required for the proposed improvements.

5. **Comment:** *Excerpt from Page 10 of the study: "Street Section A has been analyzed to show the amount of flow conveyed in the south half of Delano Avenue that has been designed to discharge out the site entry road into Desert Moon Road toward the existing 17.5-ft drop inlet..." Unless Desert Moon Road is a cross fall street, the flow out from the subject development will not cross the center line to the existing 17.5-ft drop inlet which is located on the other half of the street. Verify whether Desert Moon Road is a cross fall street with cross section in the next submittal;*

Response: Relevant plan and profile sheets from the *Village 23A Unit 1 Improvement Plans* for the area in question have been included in Appendix C. These sheets show that Desert Moon Road is a cross fall street, resulting in the 8 cfs that discharges from the site collected by the existing 17.5-ft Drop Inlet. Excerpts from the previous submittal that the existing Desert Moon drop inlet had capacity to collect the site flow have also been included in Appendix C. Therefore, no revision to the site design is required.

6. **Comment:** *Sheet G-1:*

- *Per Section Detail 10/D-1, a swale is proposed adjacent to the screen/flood wall. Show the swale on plan with flow line elevations at regular intervals;*
- *Provide dimension of a proposed riprap pad at the interface between Phase 1 and Phase 2 in Escala Street;*
- *It is not clear that what kind of surface materials are within a proposed public drainage easement at the cul-de-sac end of Barcelona Court? Are they concrete or compacted dirt with riprap for erosion protection? Provide a cross section to clarify in the next submittal;*

Response:

- The grading plan has been revised accordingly.
- The grading plan has been revised accordingly.
- The subject drainage easement does not require erosion protection because the velocities are considered non-erosive (less than 5 ft/s). A concrete flume is provided for the low flow conveyance. Therefore, the subject drainage easement is proposed with landscape rock. Note a hydraulic computation of the drainage easement flow is included in Appendix D.

7. **Comment:** *Sheet G-4 (Phase 1) – Provide a cross section at the 45-ft public drainage easement (CE “D”) to clarify the surface materials;*

Response: The grading plan has been revised accordingly. Note that no surface flow is designed to be conveyed in the drainage easement.

8. **Comment:** *Sheet D-1 (Phase 1) – Details 9 and 10, specify the solid grout wall as 8”-CMU. Indicate the depth in the proposed swale is 6” minimum;*

Response: The details have been revised accordingly.

9. **Comment:** *Phase 2 Plans – Address whether Sky Vista Drive will be at least half street improved prior to the Phase 2 construction;*

Response: Upon installation of the Phase 2 improvements, it is assumed that the collector channel in the Sky Vista Drive alignment will remain in place. If Sky Vista Drive is improved as a half street when Phase 2 construction starts, a drainage study update will be processed for this project.

10. **Comment:** *Private streets must be public drainage easements. Provide a note on the grading plans “Note: All Private Streets are P.U., Public Sewer Easements and Public Drainage Easements to be privately maintained by the H.O.A.”;*

Response: The appropriate note has been added to the plans.

11. **Comment:** *All drainage easements must be public drainage easements to be privately maintained and common lots to be labeled on the grading plans and to be dedicated as such in the final map;*

Response: The appropriate note has been added to the plans.

12. **Comment:** *The engineer must provide a table on the grading plans that shows a quantity estimate of all drainage improvements within Public Drainage Easements. All drainage improvements within Public Drainage Easements must be bonded and inspected;*

Response: Refer to Sheet G-1 on the plans for the quantity estimate of all drainage improvements, including those proposed in public drainage easements.

13. **Comment:** *The subject drainage study addresses Interim Improvements (Phase 1) as well as the Final Improvements (Phase 1 and Phase 2). However, if Phase 2 Improvements commence more than one year after the final approval of this study, a drainage study update will be required to address the future Phase 2 Improvements;*

Response: Acknowledged.

14. **Comment:** *Add a note on all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDMCA Drawing No. 421 (Stormwater Quality Management Stamp and Sign Detail);*

Response: The callout has been added to the applicable construction notes where drop inlets are proposed.

Additional Revision

In addition to the CLV comments addressed as detailed above, many finished floor elevations have also been revised. The location of the high point on the lot has been re-located on the affected lots resulting in the modification to the finished floor elevations. The finished floor evaluation analysis for the site has been re-included with this submittal with the update finished floor elevations. Note all finished floor elevations still meet flood protection criteria.

Note that only the plan sheets that have been revised to address CLV comments or show revised finished floors have been included in this submittal. The storm drain profile sheets were not revised; therefore, not re-included for your review. If you have any questions or require additional information, please do not hesitate to contact us at 284-5300.

Respectfully Submitted,

SLATER HANIFAN GROUP



Steve Jones, P.E.
Assistant Project Manager - Flood Control Division

pc: Tracy Stratton - SHG
Mark Failla, P.E., CFM - SHG
Jerry Slater, P.E. - SHG



6/7/2012

APPENDIX CONTENTS

Appendix A – 5/24/2012 CLV Comments

Appendix B – Response to Comment No. 1 (Planning Commission Approval)

Appendix C – Response to Comment No. 5 (Desert Moon Grading)

Appendix D – Response to Comment No. 6 (Barcelona Court Drainage Easement Hydraulic Calc)

Appendix E – Additional Revision (Revised Finished Floor Evaluation Analysis)

Appendix F – Revised Grading and Detail Sheets

APPENDIX A

CLV Comment Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM		DATE: May 24, 2012
TO: Land Development Services Department of Public Works		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: Esperanza – Summerlin V23A Parcel M	COPIES TO: Slater Hanifan Group
Cross Streets:	NWC of Desert Moon Road & Fox Hill Drive	Greystone Nevada / Lennar Homes
File Number:	F:\Depot\DSMemos\DS4555A.doc	Bart Anderson, P.E., DevCo
Parcel Number:	137-34-313-002	
Zoning Action:	TMP-44928	
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	5/14/2012	5/23/2012	See Comments Below	\$400.00	283362: \$400
			TOTAL FEES (LDDRS):	\$400.00	

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:
X	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 (TMP-44928) 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.
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- Offsite grading and swale are proposed in the adjacent Parcel N to the north. A notarized letter of permission for the offsite construction must be obtained from the parcel owner prior to the final acceptance of the drainage study.

5. Excerpt from Page 10 of the Study:

"Note the following regarding the interior street sections:

- *Street Section A has been analyzed to show the amount of flow conveyed in the south half of Delano Avenue that has been designed to discharge out the site entry road into Desert Moon Road toward the existing 17.5 drop inlet....."*

Unless Desert Moon Road is a cross fall street, the flow out from the subject development will not cross the center line to the existing 17.5 drop inlet which locates on the other half of the street. Verify whether Desert Moon Road is a cross fall street with cross section in the next submittal.

6. **Sheet G-1 (Phase 1):**

- Per Section Detail 10/D-1, a swale is proposed adjacent to the screen/flood wall. Show the swale on plan with flow line elevations at regular intervals.
- Provide dimension of a proposed riprap pad at the interface between Phase 1 and Phase 2 in Escala Street.
- It is not clear that what kind of surface materials are within a proposed public drainage easement at the cul-de-sac end of Barcelona Court? Are they concrete or compacted dirt with riprap for erosion protection? Provide a cross section to clarify in the next submittal.

7. **Sheet G-4 (Phase 1):** Provide a cross section at the 45'-public drainage easement (CE "D") to clarify the surface materials.8. **Sheet D-1 (Phase 1):**

Details 9 and 10: Specify the solid grout wall as "8"-CMU". Indicate that the depth in the proposed swale is 6"-minimum.

9. **Phase 2 Plans:** Address whether Sky Vista Drive will be at least half-street improved prior to the Phase 2 construction.

10. Private streets must be public drainage easements. Provide a note on the grading plans "Note: All Private Streets are P.U., Public Sewer Easements and Public Drainage Easements to be privately maintained by the HOA."

11. All drainage easements must be public drainage easements to be privately maintained and common lots to be labeled on the grading plans and to be dedicated as such in the final map.

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END OF REMARKS

ays

T/R/S: T20S/R59E/34

AREA K-34

APPENDIX B

Response to Comment No. 1
(Planning Commission Approval)



LAS VEGAS
CITY COUNCIL

CAROLYN G. GOODMAN
MAYOR

STAVROS S. ANTHONY
MAYOR PRO TEM

LOIS TARKANIAN
STEVEN D. ROSS
RICKI Y. BARLOW
BOB COFFIN
BOB BEERS

ELIZABETH N. FRETWELL
CITY MANAGER

May 9, 2012

Mr. Robert Johnson
Greystone Nevada, LLC
2490 Paseo Verde Parkway
Henderson, Nevada 89074

**RE: TMP-44928 - TENTATIVE MAP - ESPERANZA
PLANNING COMMISSION MEETING OF MAY 8, 2012**

Dear Mr. Johnson:

Your request for a Tentative Map FOR A 95-LOT SINGLE FAMILY RESIDENTIAL SUBDIVISION on 22.71 acres at the northwest corner of Fox Hill Drive and Desert Moon Road (APN 137-34-313-002), P-C (Planned Community) Zone [SF3 (Single Family Detached) Summerlin West Special Land Use Designation], Ward 2 (Beers), was considered by the Planning Commission on May 8, 2012.

The Planning Commission voted to **APPROVE** your request, subject to the following:

Planning

1. Approval of the Tentative Map shall be for no more than four (4) years. If a Final Map is not recorded on all or a portion of the area embraced by the Tentative Map with four (4) years of the approval of the Tentative Map, this action is void.
2. All development shall conform to the Summerlin West Development Agreement (DA-0001-96), Village 23A and 23B Master Development Plan (SV-0018-01), Minor Modification (MOD-2994) and the Summerlin Development Standards.
3. Street names must be provided in accordance with the City's Street Naming Regulations.
4. 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.

CITY OF LAS VEGAS
DEPARTMENT OF PLANNING
DEVELOPMENT SERVICES CENTER
333 NORTH RANCHO DRIVE
3RD FLOOR
LAS VEGAS, NEVADA 89106

VOICE 702.229.6301
FAX 702.474.0352
TTY 702.386.9108
www.lasvegasnevada.gov

Mr. Robert Johnson
Greystone Nevada, LLC
TMP-44928 - Page Two
May 9, 2012

5. In conjunction with creation, declaration and recordation of the subject common-interest community, and prior to recordation of the Covenants, Codes and Restrictions ("CC&R"), or conveyance of any unit within the community, the Developer is required to record a Declaration of Private Maintenance Requirements ("DPMR") as a covenant on all associated properties, and on behalf of all current and future property owners. The DPMR is to include a listing of all privately owned and/or maintained infrastructure improvements, along with assignment of maintenance responsibility for each to the common interest community or the respective individual property owners, and is to provide a brief description of the required level of maintenance for privately maintained components. The DPMR must be reviewed and approved by the City of Las Vegas Department of Field Operations prior to recordation, and must include a statement that all properties within the community are subject to assessment for all associated costs should private maintenance obligations not be met, and the City of Las Vegas be required to provide for said maintenance. Also, the CC&R are to include a statement of obligation of compliance with the DPMR. Following recordation, the Developer is to submit copies of the recorded DPMR and CC&R documents to the City of Las Vegas Department of Field Operations.
6. All development is subject to the conditions of City Departments and State Subdivision Statutes.

Public Works

7. Private streets must be granted and labeled on the Final Map for this site as Public Utility Easements (P.U.E.), City of Las Vegas Sewer Easements and Public Drainage Easements to be privately maintained by the Homeowner's Association.
8. Unless already constructed or guaranteed, complete all incomplete half street improvements on Fox Hill Drive and Desert Moon Road prior to the recordation of a Final Map for this site.
9. Grant appropriate public easements (Sewer, Drainage, etc) over common lots as required by the Department of Public Works on the Final Map for this site.
10. All public sewer lines shall be constructed to Pubic Standards. No curved sewer lines will be approved by the City. Where public sewer lines are within a common lot encumbered with a City of Las Vegas Sewer Easement, no trees or vegetation taller than 30 inches will be allowed within the easements. Improvement Drawings submitted to the City for review shall not be approved for construction until all required design standards are met and Public Sewer Easements necessary to connect this site to the existing public sewer system have been granted to the City.

Mr. Robert Johnson
Greystone Nevada, LLC
TMP-44928 - Page Three
May 9, 2012

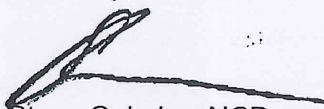
11. Appropriate public easements (Sewer, Drainage, Emergency Access, etc) to be privately maintained over the adjacent common lot "D" of the Summerlin Village 23A Unit No. 2 Final Map (book 121 page 12) shall be granted to the City of Las Vegas by separate document as determined by the Department of Public Works prior to the recordation of a Final Map requiring these easements.
12. The design and layout of all onsite private circulation and access drives shall meet the approval of the Department of Fire Services prior to the issuance of any permits.
13. A Homeowner's Association shall be established to maintain all perimeter walls, private roadways, landscaping and common areas created with this development. All landscaping 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. Prior to the release of a Final Map for recordation on this site, the property owner must contact the Special Improvement District Section of the Department of Public Works (229 2136) and sign a notarized affidavit acknowledging and agreeing to a per lot assessment of all lots that will be created through a Final Map for this site. The City shall prepare an apportionment report following recordation of the Final Map and this apportionment report must be signed by the property owner prior to the release of any building permits for this site.
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, submittal of any construction drawings or the submittal of a Map subdividing this site, 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.
16. A minimum of two lanes of asphalt pavement on Fox Hill Drive adjacent to this site, and a working sanitary sewer connection shall be in place prior to final inspection of any owner occupied units within this development. Per Title 19.12.130.B.2, 50% of the full permanent improvements on Desert Moon Drive and Fox Hill Drive, including all required landscaped areas between the perimeter wall and adjacent public street, shall be constructed and accepted by the City prior to issuance of any building permits beyond 50% of all units within this development. Additionally per Title 19.12.130.B.3 all off-site improvements for Desert Moon Road and Fox Hill Drive adjacent to this site, including all required landscaped areas between the perimeter walls and adjacent public streets, shall be constructed and accepted prior to issuance of building permits beyond 75%. The above thresholds notwithstanding, all required improvements shall be constructed within 24 months of approval of construction drawings unless otherwise allowed by the Department of Public Works.

Mr. Robert Johnson
Greystone Nevada, LLC
TMP-44928 - Page Four
May 9, 2012

17. Site development to comply with all applicable conditions of approval for Summerlin Village 23A, SV-0018-01, Z 0119-96 and all other applicable site-related actions.
18. The approval of all Public Works related improvements shown on this Tentative Map is in concept only. Specific design and construction details relating to size, type and/or alignment of improvements, including but not limited to street, sewer and drainage improvements, shall be resolved prior to approval of the construction plans by the City. No deviations from adopted City Standards shall be allowed unless specific written approval for such is received from the City Engineer prior to the recordation of a Final Map or the approval of subdivision-related construction plans, whichever may occur first. Approval of this Tentative Map does not constitute approval of any deviations. If such approval cannot be obtained, a revised Tentative Map must be submitted showing elimination of such deviations.

This action by the Planning Commission on May 8, 2012 is final unless a written appeal is filed with the City Clerk within seven days of the date of the Planning Commission's decision or there is a review action filed by the City Council within the same time period.

Sincerely,



Steve Gebeke, AICP
Planning Supervisor
Case Planning Division

SG:clb

cc: Ms. Chelsea Peltier
Slater Hanifan Group
5740 South Arville Street, Suite #216
Las Vegas, Nevada 89118

APPENDIX C

Response to Comment No. 5
(Desert Moon Grading)

SUMMERLIN



SM

THE PASEOS

VILLAGE 23A UNIT 1 IMPROVEMENTS

DESERT SUNRISE ROAD FROM STA 100+00 TO 111+80.96, FOX HILL DRIVE FROM STA 111+80.96 TO 142+46.77, PASEO FLOWER COURT
~~SPINE ROAD FROM STA 100+00 TO 142+46.77, CUL-DE-SAC 'A',~~
DESERT MOON ROAD FROM STA 100+00 TO 132+48.53, PASEO BREEZE DRIVE FORM STA 132+48.53 TO STA 145+75, PASEO MIST DRIVE
~~LOOP 'A' FROM STA 100+00 TO 145+75, SPOKE 'A'~~

APN # 137-22-000-005

SID #XXX PROJECT NO.: YYY

2002

DEVELOPER

The Howard Hughes Corporation

An Affiliate of THE ROUSE COMPANY

THE HOWARD HUGHES CORPORATION
a Delaware corporation

10000 W. CHARLESTON, SUITE 200
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300
OFFICE FAX NO. (702) 791-4450

ENGINEER



G.C. WALLACE, INC.
Engineers/Planners/Surveyors

1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

PROJECT NAME: Village 23A Unit 1
This project complies with the Las Vegas Valley Water District's technical requirements. However, this plan is NOT APPROVED FOR CONSTRUCTION.
at this time and this signature does not provide or imply a water commitment.
LWWD #82: *[Signature]* DATE: 9/5/02

The attached Special License approval does not assure or guarantee liability for known or unknown defects with existing or proposed improvements. Resolution of any conflict will be accomplished pursuant to local Ordinances, Nevada Revised Statutes and/or Public Utility Commission Rules and Regulations.

DRAINAGE CERTIFICATION

I CERTIFY THAT THE DRAINAGE PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT.

[Signature]
BERT A. HUGHES R.F.E. 10259
DATE: 9/2/02

THE HOWARD HUGHES CORPORATION,
a Delaware corporation

By: *[Signature]* DATE: 9-28-02
JOHN T. FORTS
TITLE: SENIOR VICE PRESIDENT, DEVELOPMENT

*APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND / OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED CITY ENGINEERING STANDARDS OR ANY OTHER CITY STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD. DRAWINGS AND SPECIFICATIONS CLARIFY COUNTY AREA NEVADA.

[Signature] DATE: 9-18-2002
CHARLES KARWOWSKI JR., PE #474
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

CIVIL PLANNING DEPARTMENT
THE PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING AND DEVELOPMENT DEPARTMENT.

[Signature] DATE: 9-17-02
M. MARCO WHEELER, AICP, CURRENT PLANNING MANAGER

NEVADA POWER COMPANY DISCLAIMER

NOTE: EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS.
CALL BEFORE YOU DIG: (1-800) 227-2600

NEVADA POWER Co. *[Signature]* DATE: 9-30-02
REVIEWED BY

[Signature] DATE: 9/11/02
LAS VEGAS VALLEY WATER DISTRICT
(SHEETS 1,2,6,9-14,16-31,34-40,44,45,42,43)
DATE: 9.4.02
CIVIL FIRE DEPARTMENT
[Signature] DATE: 08.30.02
SPRINT
[Signature] DATE: 9-4-02
SOUTHWEST GAS CORP.

Control Construction
SEWER AS-BUILT

CITY OF LAS VEGAS DRAWING NO. SHEET 1 OF 61

SHEET	1	107-V-3574-1	1 OF 61 SHEETS
SUMMERLIN VILLAGE 23A UNIT 1 IMPROVEMENTS COVER SHEET			
G.C. WALLACE, INC. Engineers/Planners/Surveyors 1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146 OFFICE: (702) 804-2000, FAX: (702) 804-2299 SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130 OFFICE: (702) 804-2160, FAX: (702) 804-2295			
DESIGN: GHW	DRAWN: JJJ	CHECK: BAH	ISSUE DATE:
ISSUE DATE:	ISSUE EDITOR:	PLOT DATE: 08-24-02	PLOTTIME: 19:20:11
REV	DATE	DESCRIPTION	DATE
1	9/11/02	ADD IRRIGATION SLEEVES AND RELOCATE TRANSFORMER AND SERVICE PEDESTAL	9/11/02
2	9/11/02	CHANGE WATER ALIGNMENT AND ADD 3'-1/2" AND 6" METERS AND RINGS	9/11/02
3	9/11/02	REMOVED STREET NAMES, ADD PARALLEL PARKING & CURB, REVISE LANDSCAPE	9/11/02
4	9/11/02	PANEL WIDTH	9/11/02
DATE: 9/27/02 EXP: 6/2/03			



BASIS OF BEARINGS
NORTH 89°45'05" EAST BEING THE SOUTHWEST CORNER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE #1, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

REFER TO SHEET 2 FOR CONSTRUCTION NOTES

SCALE: HORIZ. 1" = 20'

VERT. 1" = 5

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM.
PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM.
CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET
OF DRAWINGS.

NOTE

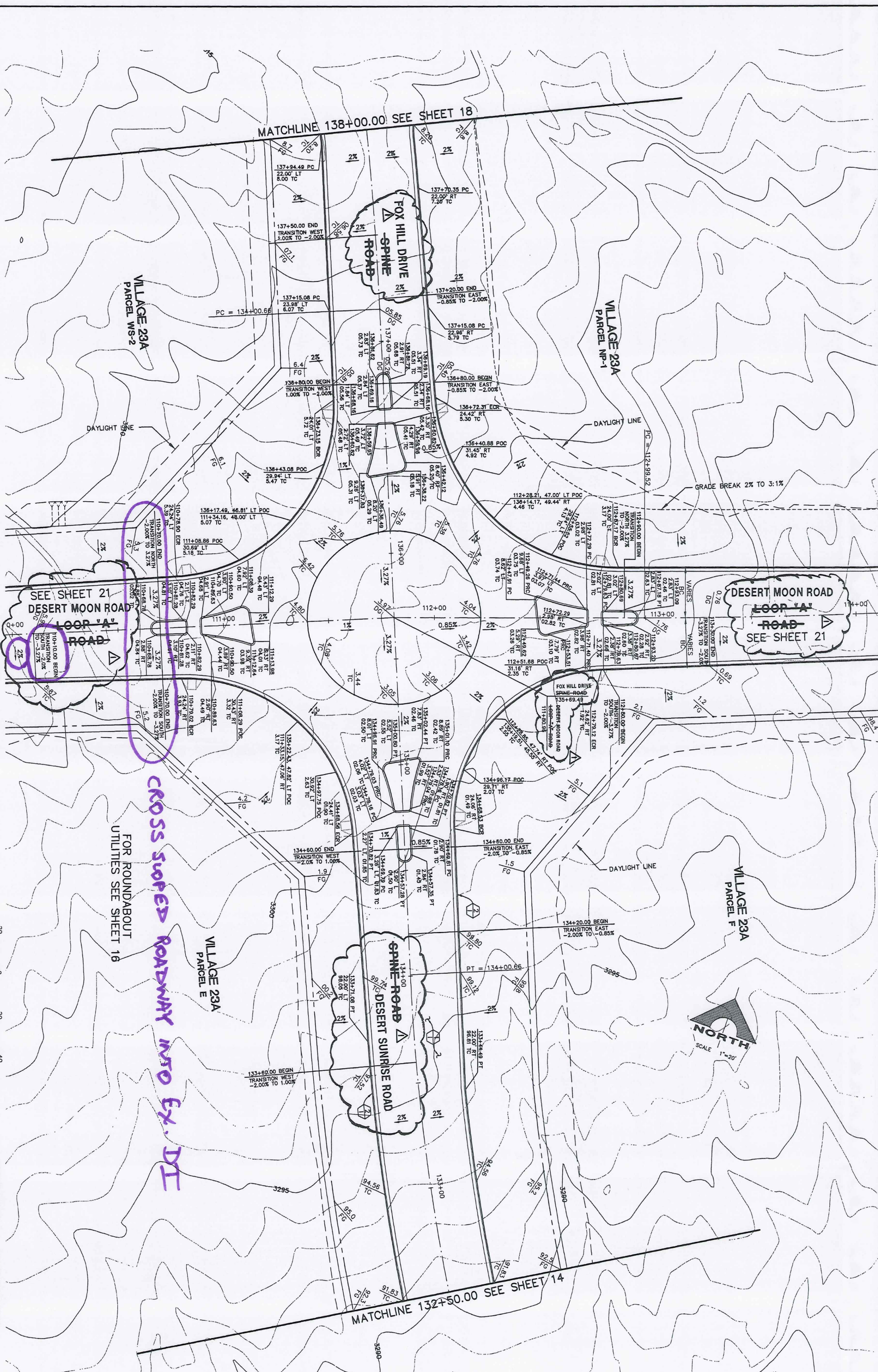
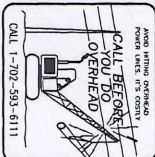


Avoid cutting underground utility lines. It's costly.

Call before you Dig.

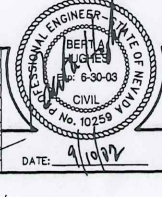
1-800-227-2600

UNCOMMON SENSE ALERT (USA)



15	SHEET	SUMMERLIN
		VILLAGE 23A UNIT 1 IMPROVEMENTS
		ROUNDBOUT GRADING PLAN
JOB NO. 62023.221		

 **G.C. WALLACE, INC.**
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

[illegible]

BENCHMARK	
BM #	DATE
34526	7/1/02
34527	7/1/02
34528	7/1/02
34529	7/1/02
34530	7/1/02
34531	7/1/02
34532	7/1/02
34533	7/1/02
34534	7/1/02
34535	7/1/02
34536	7/1/02

BASIS OF BEARINGS
NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 28 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDS OFFICE, CLARK COUNTY, NEVADA

ROUNDABOUT UTILITY PLAN

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

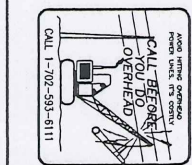
REFER TO SHEET 2 FOR CONSTRUCTION NOTES

NOTE:
THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

APPROVAL:
LAS VEGAS VALLEY WATER DISTRICT
DATE: 9/16/02

NOTE:
INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING, PER MANUFACTURER INSTRUCTIONS.

Call before you Dig.
1-800-227-2800
www.callbeforeyoudig.com



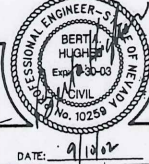
CALL BEFORE YOU DIG
1-800-227-2800
www.callbeforeyoudig.com

SUMMERLIN
VILLAGE 23A UNIT 1 IMPROVEMENTS
ROUNDABOUT UTILITY PLAN

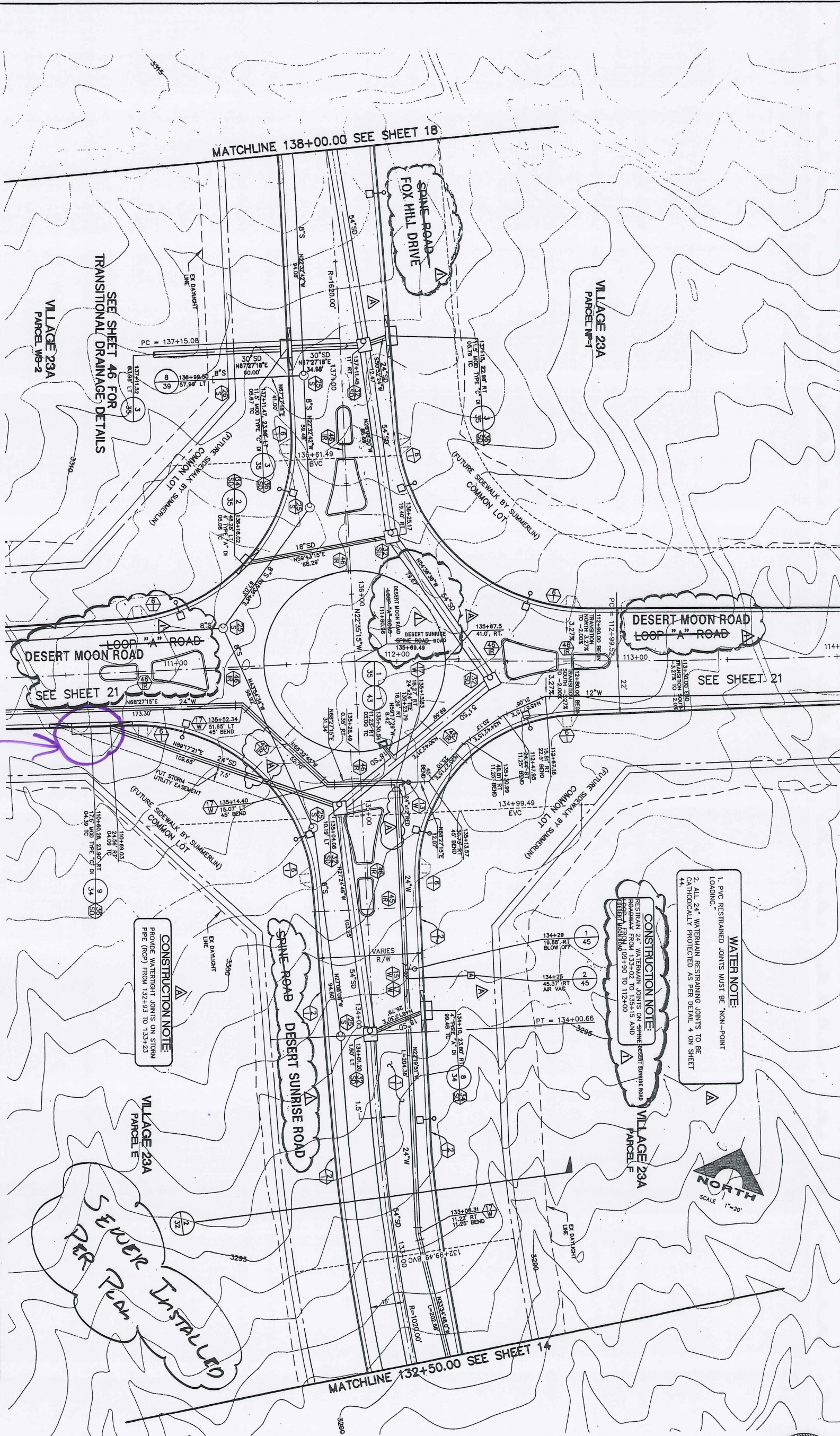
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
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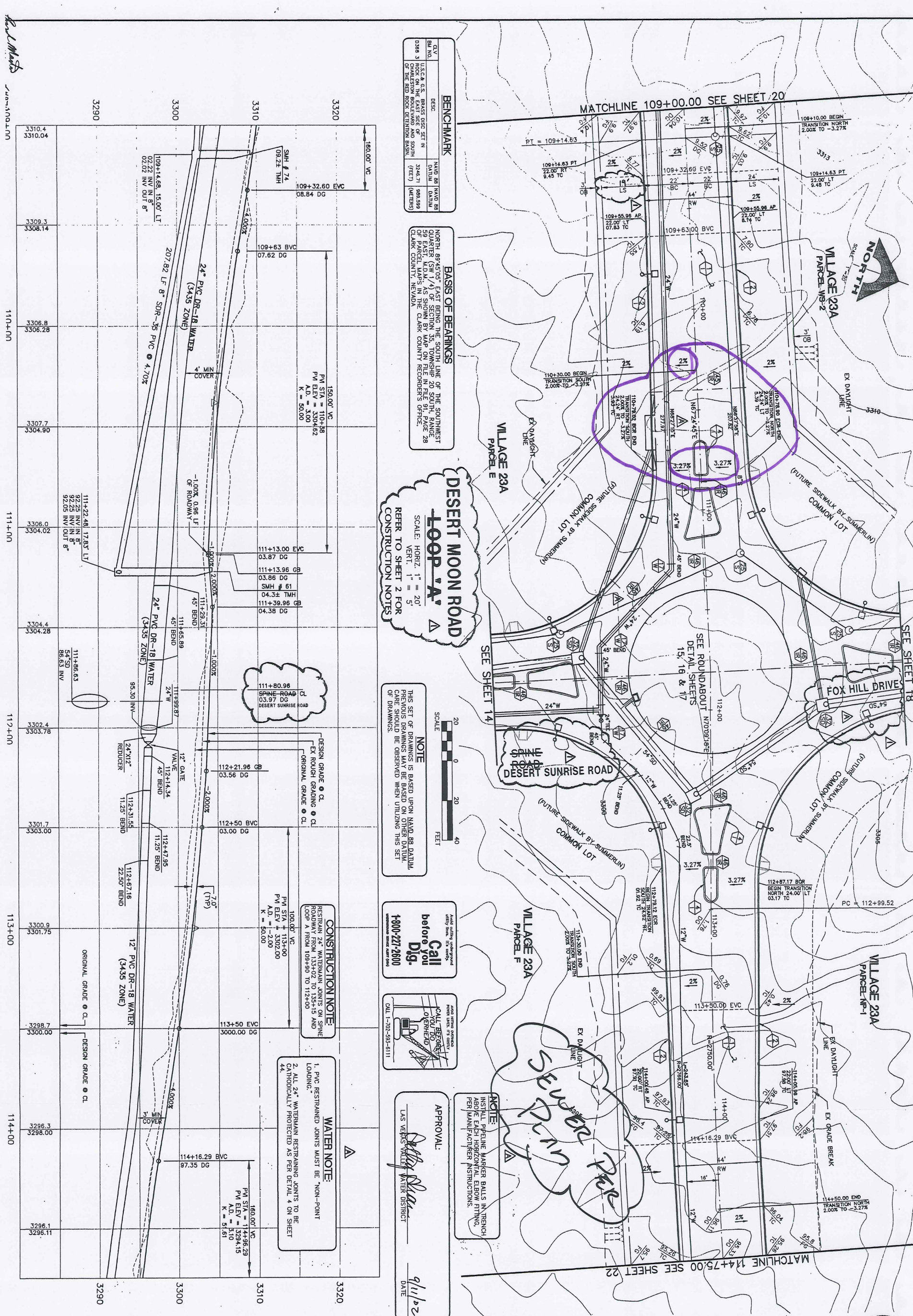
DESIGN: J.L.J.
DRAWN: SDC
CHECK: GBW
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 08-22-02
PLOT TIME: 18:57:15

REV	DATE	DESCRIPTION
1	12/12/01	REVISED STREET NAMES
2	9/9/02	CHANGES TO PLANS PRIOR TO CLV APPROVAL
3	9/16/02	DATE AGN. APP. DATE GCW. APP.



SUBJECT 17.5' DI





BENCHMARK			
CLV	DESC	NAVD 83	NAVD 83
BM NO.		DATUM	DATUM
0368 3	USC & S. BRASS DISC SET IN CONCRETE	3346.71	968.599
OF THE RED ROCK DETENTION BASIN, CLARK COUNTY, NEVADA		(FEET)	(METERS)

BASIS OF BEARINGS
NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 33 EAST, CLARK COUNTY, NEVADA, BEING THE SOUTH LINE OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE.

DESERT MOON ROAD - LOOP 'A'
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'
REFER TO SHEET 2 FOR CONSTRUCTION NOTES

NOTE
THIS SET OF DRAWINGS IS BASED UPON NAVD 83 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

Call before you dig.
1-800-277-2600
Avoid utility underground utility lines. Use caution. Call before you dig. (Call before you dig logo)

CALL BEFORE YOU DIG
1-800-277-2600
1-702-593-5111

APPROVAL:
[Signature]
LAS VEGAS WATER DISTRICT
DATE: 9/11/12

CONSTRUCTION NOTE:
BESTMAN 24" WATERMAIN JOINTS ON SPINE ROADWAY FROM 133+02 TO 135+15 AND LOOP 'A' FROM 109+90 TO 112+00

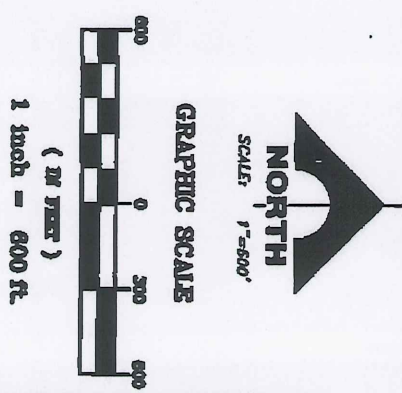
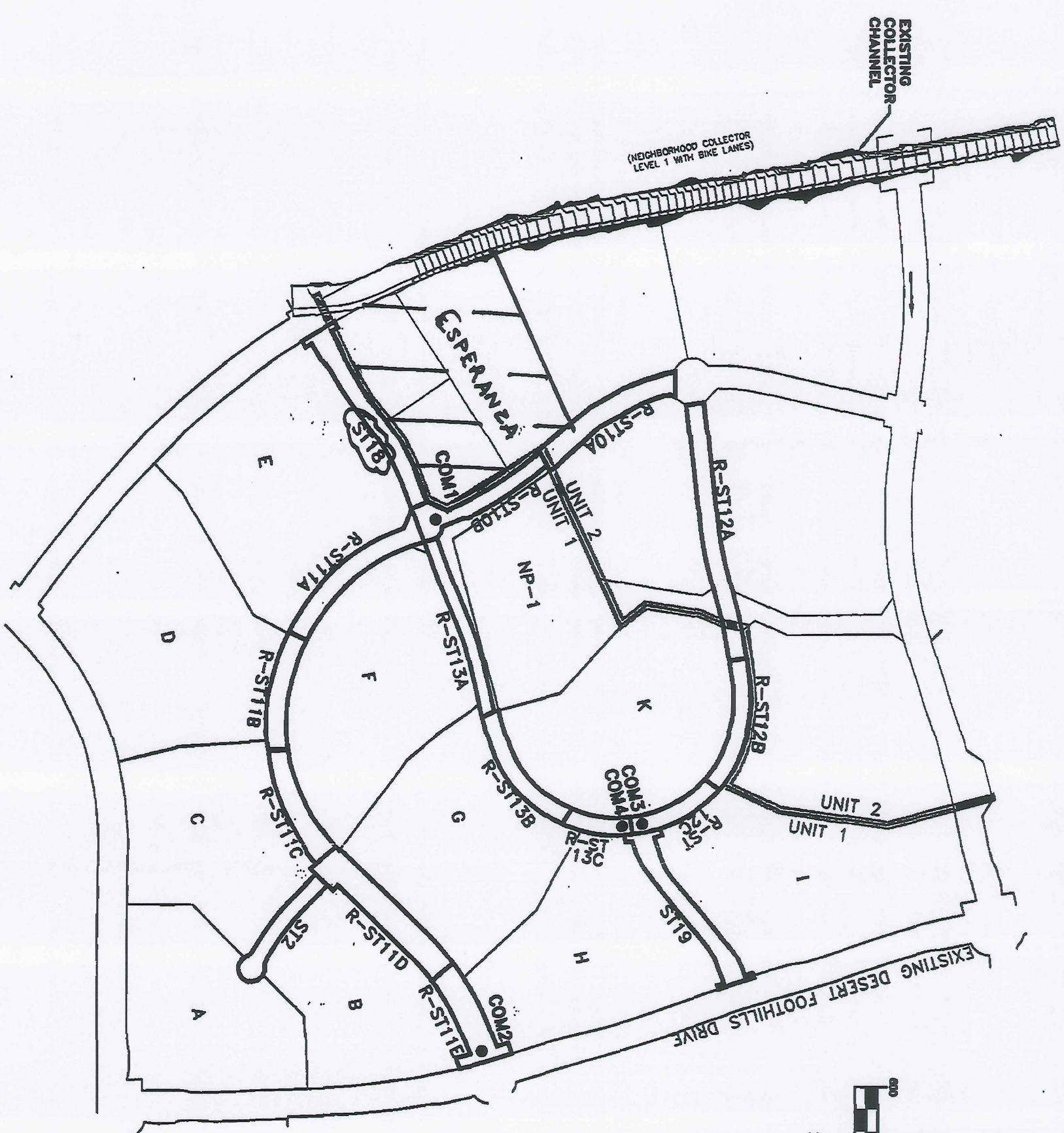
WATER NOTE:
1. PVC RESTRAINED JOINTS MUST BE "NON-POINT LOADING."
2. ALL 24" WATERMAIN RESTRAINED JOINTS TO BE CATHODICALLY PROTECTED AS PER DETAIL 4 ON SHEET 44.

SUMMERLIN
VILLAGE 23A UNIT 1 IMPROVEMENTS
DESERT MOON LOOP 'A' PLAN AND PROFILE
ROAD STA 109+00 TO 114+75

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD., LAS VEGAS, NEVADA 89148
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

DESIGN: J.J.	12/12/02	REVISE STREET NAMES & LANDSCAPE PANEL	7/16/02	NO	1/10/12
DRAWN: SDG	9/5/02	CHANGES TO PLANS PRIOR TO CLV APPROVAL	7/16/02	NO	1/10/12
CHECK: CBW					
ISSUE DATE:					
ISSUE EDITOR:					
PLOT DATE: 08-22-02					
PLOT TIME: 19:07:34					

BERT A. HUGHES
Professional Engineer - State of Nevada
No. 10259
DATE: 9/10/12



SUMMARY OF HEC-1 MODEL

BASIN OR LOC.	Q100 (CFS)	Q10 (CFS)
RST10A**	8	4
RST10B	6	3
COM1	14	7
RST11A	8	4
RST11B	6	3
RST11C	6	3
RST11D	11	6
RST11E	8	4
COM2	39	20
RST12A**	10	5
RST12B	6	3
RST12C	4	2
COM3	20	10
RST13A	6	3
RST13B	6	3
RST13C	3	2
COM4	14	7
ST2*	6	3
ST18*	8	4
ST19*	8	4

* TAKEN DIRECTLY FROM THE CONCEPTUAL STUDY
 ** WILL BE DEVELOPED IN FUTURE PHASES

PORTION OF SUBBASIN A (88)
 COMBINES W/ ST18 (88)
 @ EX. 17.5' DROP INLET
 IN DESERT MOON

- R-ST11B REVERSED DRAINAGE BASINS
- COM1 CONCENTRATION POINT
- SUBBASIN BOUNDARY
- UNIT BOUNDARY

SUMMERLIN VILLAGE 23A
 UNIT 1 IMPROVEMENTS
FIGURE 5
 DRAINAGE BASINS FOR
 DROP INLET SIZES

Loop Road "A" - Section 3 Worksheet for Irregular Channel

Project Description	
Worksheet	SECTION 3
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Slope	2.75 %
Discharge	26.00 cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results	
Mannings Coefficient	0.016
Water Surface Elevation	0.56 ft
Elevation Range	0.00 to 1.09
Flow Area	4.8 ft²
Wetted Perimeter	23.42 ft
Top Width	22.81 ft
Actual Depth	0.56 ft
Critical Elevation	0.70 ft
Critical Slope	0.59 %
Velocity	5.38 ft/s
Velocity Head	0.45 ft
Specific Energy	1.01 ft
Froude Number	2.06
Flow Type	Supercritical

Calculation Messages:
Water elevation exceeds lowest end station by 0.60244135e-1 ft.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+24.0	0+68.0	0.016

Natural Channel Points	
Station (ft)	Elevation (ft)
0+24.0	0.50
0+24.5	0.50
0+24.5	0.00
0+26.0	0.13
0+26.0	0.17
0+66.0	0.92
0+66.0	0.75
0+66.0	0.72
0+67.5	0.59
0+67.5	1.09

PROP. $Q_{100} = 16 \text{ CFS} < 26 \text{ CFS DESIGN}$

∴ DRAINAGE PATTERN TO ALLOW
FLOW DISCHARGE TO DESERT
MOON OK.

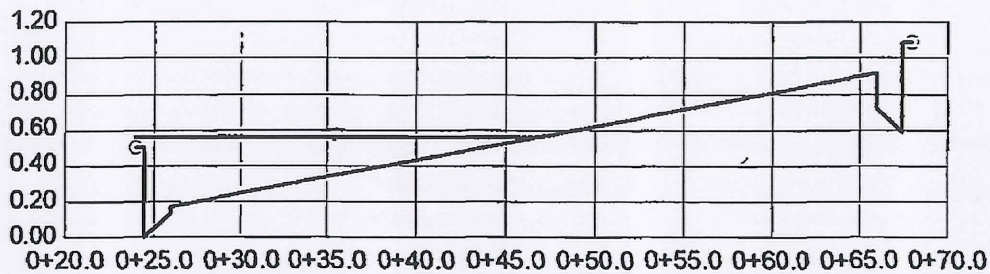
Loop Road "A" - Section 3
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
0+68.0	1.09

Section 3 Cross Section for Irregular Channel

Project Description	
Worksheet	SECTION 3
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.016
Slope	2.75 %
Water Surface Elevation	0.56 ft
Elevation Range	0.00 to 1.09
Discharge	26.00 cfs



V:10.0
H:1
NTS

Modified Type C Drop Inlet Sizing on a C. G.

17.5-ft Drop Inlet (Section 3)

Known:

Q_s =	Half Street flow (cfs)	26.0
S_o =	Longitudinal slope (ft/ft)	0.028
n =	Manning's roughness coef	0.016
V_s =	Flow velocity (fps)	5.4
D =	Flow depth (ft)	0.56
S_x =	Street transverse slope (ft/ft)	0.03
W =	Gutter Width (ft)	1.5
a =	Gutter Depression (in)	4.0
L_g =	Length of grate (ft)	18.0
L_c =	Length of curb opening (ft)	17.50
C_g =	Clogging factor for grate (%)	50
C_c =	Clogging factor for curb opening (%)	50

Grate Capacity Calculations

R_s = Frontal flow factor = $1 - 0.09 \cdot (V_s - V_o)$ if $V_s > V_o$; else $R_s = 1$	1.00
V_o = Splash over velocity = $p + q \cdot L_g^{-1} \cdot L_g^2 + s \cdot L_g^3$ (fps)	15.26
E_o = Grate flow ratio = Q_w / Q_s	0.16
Q_w = Frontal flow = $A_w \cdot V_s$	4.18
Q_s = Side flow = $Q_s - Q_w$ (cfs)	21.8
R_s = Side flow factor = $1 / (1 + (0.15 \cdot V_s^{1.5}) / (S_x \cdot L_g^2))$	0.63
Q_o = Flow intercepted = $[R_s \cdot E_o + R_c \cdot (1 - E_o)] \cdot Q_s$	18.0

* $p=1.76$; $q=3.12$; $r=0.45$; $s=0.03$ (based on Bar P 1-1/8 grate)

Curb Opening Capacity Calculations

S_e = Equivalent cross slope = $S_x + S_y \cdot E_o$ (ft/ft)	0.071
S_w = Gutter cross slope = $(0.137 + a \cdot e \cdot W) / W$	0.230
L_t = Total interception $L_t = 0.60 \cdot Q_s^{0.42} \cdot S_o^{0.30} \cdot (1/n \cdot S_e)^{0.6}$ (ft)	46.89
Q_c = Flow intercepted = $(1 - (1 - L_t/L_g)^{1.5}) \cdot Q_s$ (cfs)	8.1

Total Inlet Calculations

Q_d = Total flow intercepted = $Q_w + Q_c$ (cfs)	26.0
Q_{in} = Flow bypass = $Q_s - Q_d$ (cfs)	0.00
q = Interception per unit ratio = Q_d / L_g (cfs/ft)	1.44
E_q = Efficiency = $(Q_d / Q_s) \cdot 100$	100%

APPENDIX D

Response to Comment No. 6
(Barcelona Court Drainage Easement Hydraulic Computation)

Barcelona Court Drainage Easement Worksheet for Trapezoidal Channel

Project Description	
Worksheet	Barcelona Court Drainage Easement - Depth
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

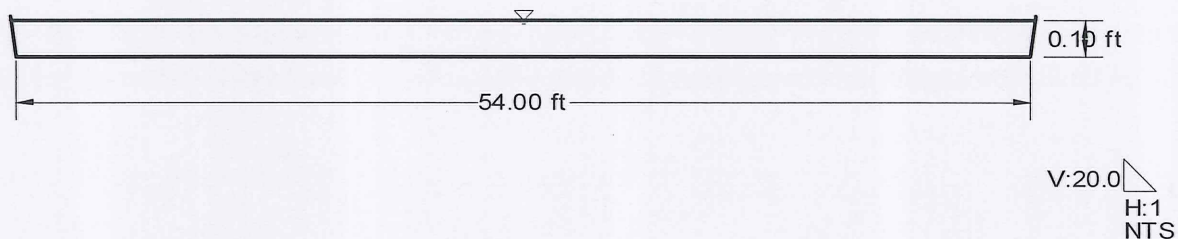
Input Data	
Mannings Coefficient	0.025
Channel Slope	1.90 %
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Bottom Width	54.00 ft
Discharge	9.00 cfs

Results	
Depth	0.10 ft
Flow Area	5.2 ft ²
Wetted Perimeter	54.61 ft
Top Width	54.58 ft
Critical Depth	0.10 ft
Critical Slope	2.00 %
Velocity	1.72 ft/s
Velocity Head	0.05 ft
Specific Energy	0.14 ft
Froude Number	0.98
Flow Type	Subcritical

Barcelona Court Drainage Easement Cross Section for Trapezoidal Channel

Project Description	
Worksheet	Barcelona Court Drainage Easement - Depth
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.025
Channel Slope	1.90 %
Depth	0.10 ft
Left Side Slope	3.00 H : V
Right Side Slope	3.00 H : V
Bottom Width	54.00 ft
Discharge	9.00 cfs



APPENDIX E
Additional Revision
(Revised Finished Floor Evaluation Analysis)

ESPERANZA - PHASES 1 & 2 FINISH FLOOR ANALYSIS - CITY OF LAS VEGAS JURISDICTION										
INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C ¹ (ft)	F/L ² (ft)	D ₁₀₀ (ft)	Flowline F.F. ³ _{min} (ft)	T/C + 6" F.F. ⁴ _{min} (ft)	F.F. ⁵ _{Design} (ft)	Flowline Check	T/C + 6" Check	Phase?
1	D	3319.34	3318.96	0.37	3319.70	3319.84	3321.2	OK	OK	1
2	D	3318.58	3318.20	0.37	3318.94	3319.08	3320.4	OK	OK	1
3	D	3316.75	3316.37	0.37	3317.11	3317.25	3318.6	OK	OK	1
4	D	3314.62	3314.24	0.37	3314.98	3315.12	3316.5	OK	OK	1
5	D	3312.66	3312.28	0.37	3313.02	3313.16	3314.5	OK	OK	1
6	D	3311.35	3310.97	0.37	3311.71	3311.85	3313.2	OK	OK	1
7	D	3310.93	3310.55	0.37	3311.29	3311.43	3312.8	OK	OK	1
8	C1	3311.55	3311.17	0.43	3312.03	3312.05	3312.8	OK	OK	1
9	C1	3315.25	3314.87	0.43	3315.73	3315.75	3316.5	OK	OK	1
10	C1	3319.65	3319.27	0.43	3320.13	3320.15	3320.8	OK	OK	1
11	C1	3322.88	3322.50	0.43	3323.36	3323.38	3324.1	OK	OK	1
12	C1	3325.64	3325.26	0.43	3326.12	3326.14	3326.9	OK	OK	1
13	B1	3328.17	3327.79	0.35	3328.49	3328.67	3329.4	OK	OK	1
14	B1	3330.73	3330.35	0.35	3331.05	3331.23	3332.0	OK	OK	1
15	B1	3334.91	3334.53	0.35	3335.23	3335.41	3336.4	OK	OK	2
16	B1	3337.68	3337.30	0.35	3338.00	3338.18	3339.1	OK	OK	2
17	B1	3339.01	3338.63	0.35	3339.33	3339.51	3340.3	OK	OK	2
18	B1	3339.85	3339.47	0.35	3340.17	3340.35	3341.7	OK	OK	2
19	B2	3340.92	3340.54	0.39	3341.32	3341.42	3342.8	OK	OK	2
20	B2	3342.43	3342.05	0.39	3342.83	3342.93	3344.3	OK	OK	2
21	B2	3343.87	3343.49	0.39	3344.27	3344.37	3345.7	OK	OK	2
22	B2	3345.46	3345.08	0.39	3345.86	3345.96	3347.3	OK	OK	2
23	B2	3346.91	3346.53	0.39	3347.31	3347.41	3348.8	OK	OK	2
24	B2	3348.37	3347.99	0.39	3348.77	3348.87	3350.2	OK	OK	2
25	B2	3349.83	3349.45	0.39	3350.23	3350.33	3351.7	OK	OK	2
26	B2	3351.50	3351.12	0.39	3351.90	3352.00	3353.3	OK	OK	2
27	B2	3353.31	3352.93	0.39	3353.71	3353.81	3355.2	OK	OK	2
28	B2	3354.98	3354.60	0.39	3355.38	3355.48	3356.8	OK	OK	2
29	B2	3356.24	3355.86	0.39	3356.64	3356.74	3358.1	OK	OK	2
30	B2	3356.82	3356.44	0.39	3357.22	3357.32	3358.6	OK	OK	2
31	A	3356.82	3356.44	0.43	3357.30	3357.32	3358.7	OK	OK	2
32	A	3356.88	3356.30	0.43	3357.16	3357.18	3358.0	OK	OK	2
33	A	3355.75	3355.37	0.43	3356.23	3356.25	3357.1	OK	OK	2
34	A	3353.22	3352.84	0.43	3353.70	3353.72	3354.6	OK	OK	2
35	A	3350.40	3350.02	0.43	3350.88	3350.90	3351.6	OK	OK	1
36	A	3347.33	3346.95	0.43	3347.81	3347.83	3348.6	OK	OK	1
37	A	3344.51	3344.13	0.43	3344.99	3345.01	3345.8	OK	OK	1
38	A	3340.23	3339.85	0.43	3340.71	3340.73	3341.5	OK	OK	1
39	A	3337.24	3336.86	0.43	3337.72	3337.74	3338.5	OK	OK	1
40	A	3334.49	3334.11	0.43	3334.97	3334.99	3335.7	OK	OK	1
41	A	3331.52	3331.14	0.43	3332.00	3332.02	3332.8	OK	OK	1
42	A	3328.79	3328.41	0.43	3329.27	3329.29	3330.6	OK	OK	1
43	A	3327.02	3326.64	0.43	3327.50	3327.52	3328.9	OK	OK	1
44	A	3326.11	3325.73	0.43	3326.59	3326.61	3328.0	OK	OK	1
45	A	3324.60	3324.22	0.43	3325.08	3325.10	3326.4	OK	OK	1
46	A	3323.30	3322.92	0.43	3323.78	3323.80	3325.1	OK	OK	1
47	A	3322.27	3321.89	0.43	3322.75	3322.77	3324.1	OK	OK	1
48	A	3321.61	3321.23	0.43	3322.09	3322.11	3323.4	OK	OK	1
49	A	3321.00	3320.62	0.43	3321.48	3321.50	3322.8	OK	OK	1
50	A	3325.48	3325.10	0.43	3325.96	3325.98	3326.7	OK	OK	1
51	A	3323.74	3323.36	0.43	3324.22	3324.24	3325.6	OK	OK	1
52	A	3322.66	3322.28	0.43	3323.14	3323.16	3324.5	OK	OK	1
53	A	3321.76	3321.38	0.43	3322.24	3322.26	3323.6	OK	OK	1
54	A	3321.12	3320.74	0.43	3321.60	3321.62	3323.0	OK	OK	1
55	D	3319.52	3319.14	0.37	3319.88	3320.02	3321.4	OK	OK	1
56	D	3318.89	3318.51	0.37	3319.25	3319.39	3320.7	OK	OK	1
57	D	3317.67	3317.29	0.37	3318.03	3318.17	3319.5	OK	OK	1
58	D	3315.85	3315.47	0.37	3316.21	3316.35	3317.7	OK	OK	1
59	D	3313.90	3313.52	0.37	3314.26	3314.40	3315.7	OK	OK	1
60	D	3311.94	3311.56	0.37	3312.30	3312.44	3313.8	OK	OK	1
61	C2	3326.39	3326.01	0.39	3326.79	3326.89	3328.2	OK	OK	1
62	C2	3328.14	3327.76	0.39	3328.54	3328.64	3330.0	OK	OK	1
63	C2	3329.47	3329.09	0.39	3329.87	3329.97	3331.3	OK	OK	1

ESPERANZA - PHASES 1 & 2										
FINISH FLOOR ANALYSIS - CITY OF LAS VEGAS JURISDICTION										
INPUT INFORMATION					FINISHED FLOORS					NOTES
Lot Number	Hydraulic Section Utilized	T/C ¹ (ft)	F/L ² (ft)	D ₁₀₀ (ft)	Flowline F.F. _{min} ³ (ft)	T/C + 6" F.F. _{min} ⁴ (ft)	F.F. _{Design} (ft)	Flowline Check	T/C + 6" Check	Phase?
64	C2	3330.56	3330.18	0.39	3330.96	3331.06	3332.4	OK	OK	1
65	C2	3331.65	3331.27	0.39	3332.05	3332.15	3333.3	OK	OK	1
66	C2	3332.60	3332.22	0.39	3333.00	3333.10	3334.5	OK	OK	1
67	C2	3335.09	3334.71	0.39	3335.49	3335.59	3336.9	OK	OK	1
68	C2	3336.20	3335.82	0.39	3336.60	3336.70	3338.0	OK	OK	1
69	C2	3337.35	3336.97	0.39	3337.75	3337.85	3339.2	OK	OK	1
70	C2	3338.42	3338.04	0.39	3338.82	3338.92	3340.3	OK	OK	1
71	C2	3339.37	3338.99	0.39	3339.77	3339.87	3341.2	OK	OK	1
72	C2	3339.95	3339.57	0.39	3340.35	3340.45	3341.7	OK	OK	1
73	C2	3341.61	3341.23	0.39	3342.01	3342.11	3342.2	OK	OK	1
74	C2	3339.09	3338.71	0.39	3339.49	3339.59	3340.9	OK	OK	1
75	C2	3337.87	3337.49	0.39	3338.27	3338.37	3339.7	OK	OK	1
76	C2	3336.74	3336.36	0.39	3337.14	3337.24	3338.6	OK	OK	1
77	C2	3335.62	3335.24	0.39	3336.02	3336.12	3337.5	OK	OK	1
78	C2	3334.62	3334.24	0.39	3335.02	3335.12	3336.3	OK	OK	1
79	C2	3332.91	3332.53	0.39	3333.31	3333.41	3334.9	OK	OK	1
80	C2	3332.31	3331.93	0.39	3332.71	3332.81	3333.9	OK	OK	1
81	C2	3331.12	3330.74	0.39	3331.52	3331.62	3333.0	OK	OK	1
82	C2	3330.01	3329.63	0.39	3330.41	3330.51	3331.8	OK	OK	1
83	C2	3328.91	3328.53	0.39	3329.31	3329.41	3330.7	OK	OK	1
84	C2	3327.27	3326.89	0.39	3327.67	3327.77	3329.1	OK	OK	1
85	B2	3341.43	3341.05	0.39	3341.83	3341.93	3343.3	OK	OK	1
86	B2	3342.92	3342.54	0.39	3343.32	3343.42	3344.8	OK	OK	2
87	B2	3344.38	3344.00	0.39	3344.78	3344.88	3346.2	OK	OK	2
88	B2	3345.97	3345.59	0.39	3346.37	3346.47	3347.8	OK	OK	2
89	B2	3347.43	3347.05	0.39	3347.83	3347.93	3349.3	OK	OK	2
90	B2	3349.01	3348.63	0.39	3349.41	3349.51	3350.8	OK	OK	2
91	B2	3350.55	3350.17	0.39	3350.95	3351.05	3352.4	OK	OK	2
92	B2	3352.20	3351.82	0.39	3352.60	3352.70	3354.0	OK	OK	2
93	B2	3353.98	3353.60	0.39	3354.38	3354.48	3355.8	OK	OK	2
94	B2	3355.63	3355.25	0.39	3356.03	3356.13	3357.5	OK	OK	2
95	B2	3356.54	3356.16	0.39	3356.94	3357.04	3358.2	OK	OK	2

Where:

1: Top of Curb at High Side of Lot

2: TC-0.38 (For Roll Curb)

3: Minimum Allowable Finished Floor Elevation above flowline elevation @ high side of lot = (2 x D₁₀₀) + F/L

4: City of Las Vegas minimum allowable finished floor elevation = T.C. @ high side of lot + 6-inches

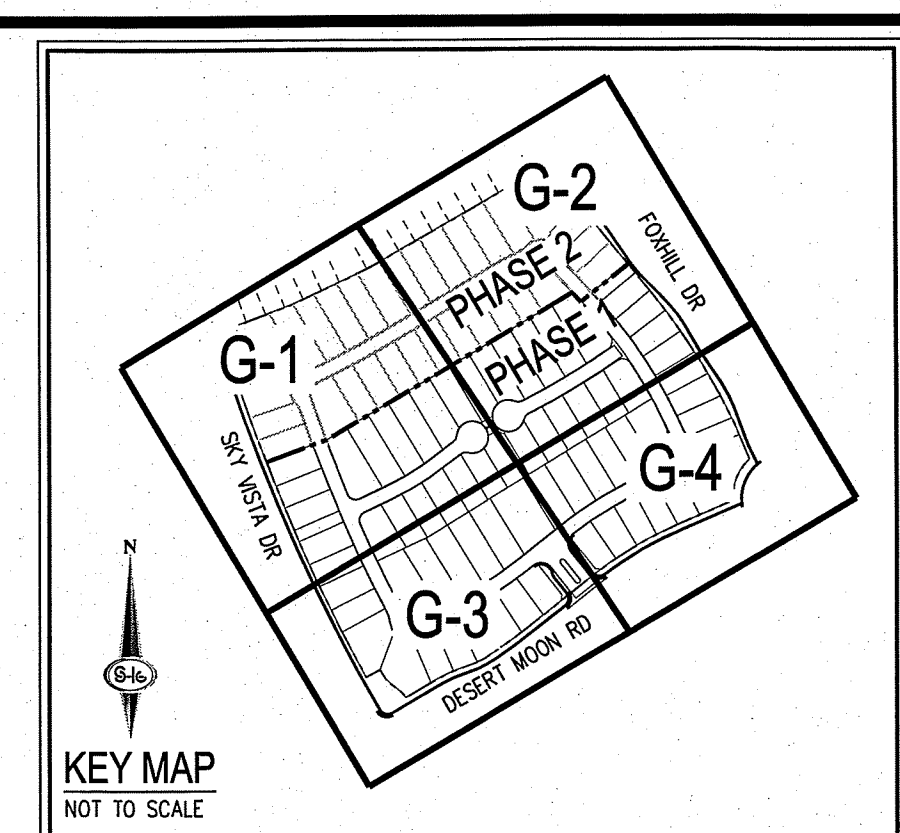
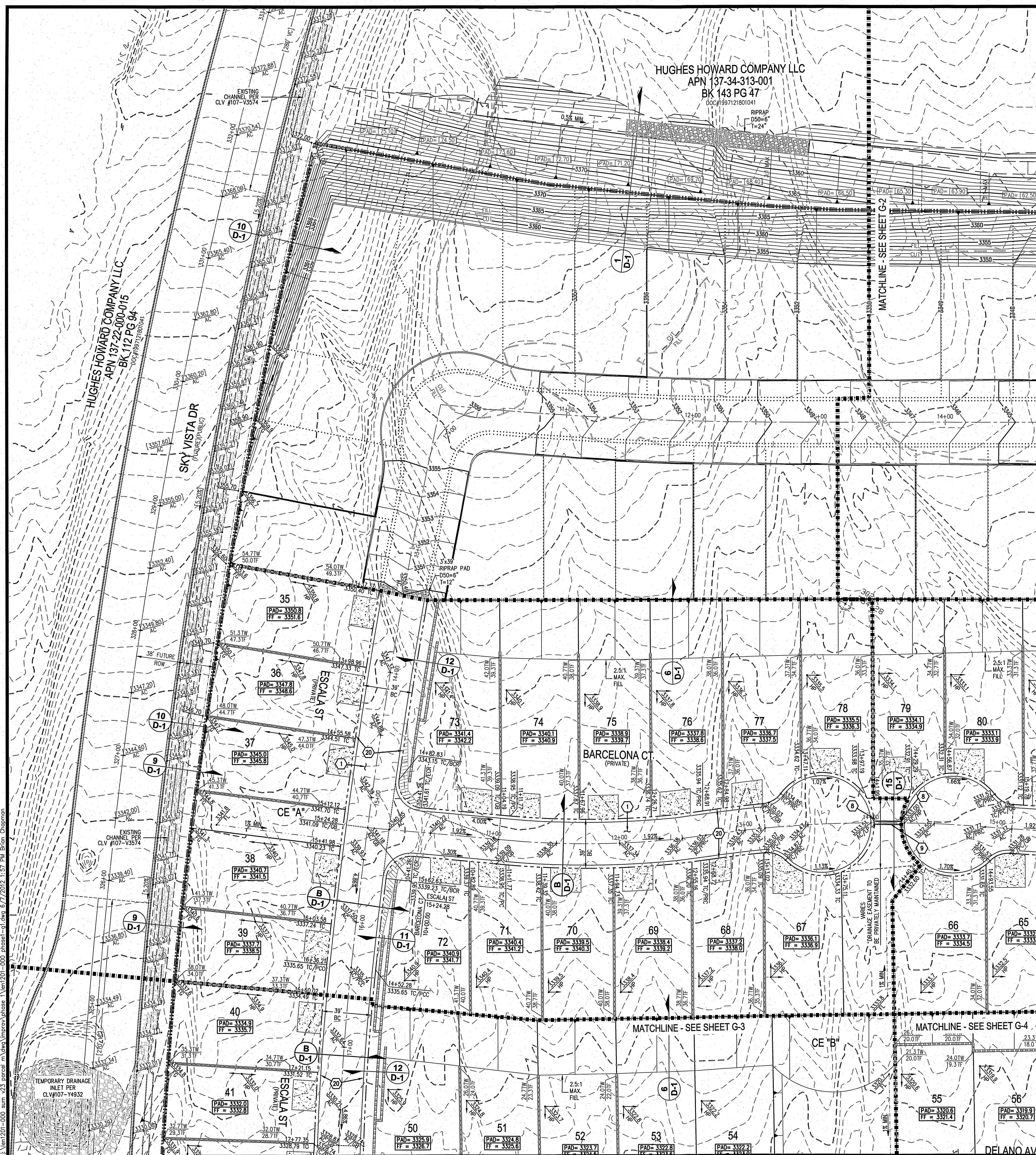
City of Las Vegas Finished Floor Criteria:

-The finished floor shall be set 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 WSEL in the street.

-The finished floor shall be set a vertical distance of at least 6-inches above the highest adjacent top of curb.

APPENDIX F

Revised Grading & Detail Sheets



PHASE I DRAINAGE QUANTITIES (PRIVATE)		
1. 7.5' MOD TYPE 'CM' DROP INLET	EA	2
2. 10.0' MOD TYPE 'CM' DROP INLET	EA	2
3. 18" CLASS III RCP STORM DRAIN	LF	212
4. 24" CLASS III RCP STORM DRAIN	LF	21
5. 36" CLASS III RCP STORM DRAIN	LF	74
6. 48" TYPE I SDMH	EA	2
7. 60" TYPE II SDMH	EA	1
8. CONCRETE FLUME	LF	21.5'
9.		

STORMWATER RUNOFF MANAGEMENT
(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAYS OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN TITLE 24.40 AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY. REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NV100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO NEW INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NV100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

GENERAL NOTES

1. SEE SHEETS 9-13 FOR WALL PLAN.
2. SEE PLAN AND PROFILE SHEETS FOR CENTERLINE AND BACK OF CURB CURVE DATA.
3. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2006, SECTION 2304.11.2.2.
4. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEERING FIRM BEFORE BEGINNING CONSTRUCTION.
5. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
6. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
7. SEE DETAIL SHEETS FOR STREET SECTIONS AND DETAILS.
8. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
9. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL.
10. EXISTING UTILITY LOCATIONS, SHOWN HEREON, ARE APPROXIMATE ONLY. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY STRUCTURES AND FACILITIES. NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE EXISTING CONSTRUCTION. ENGINEER/OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLACING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
11. NO STRUCTURE, VEGETATION, OR OBJECTS OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXISTS) WITHIN THE SIGHT VISIBILITY ZONES.
12. ALL ELEVATIONS SHOWN, WITH EXCEPTION TO PAD AND FINISHED FLOOR ELEVATIONS, ARE THE VALUE SHOWN PLUS 3300'.

DRAINAGE EASEMENT NOTE
ALL DRAINAGE EASEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA.

PRIVATE STREETS NOTE
ALL PRIVATE STREETS ARE P.U., PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA.

LEGAL DESCRIPTION
PARCEL 11 AS SHOWN ON FILE IN BOOK 143, PAGE 47 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA, LYING WITHIN SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

FEMA FLOOD ZONE DESIGNATION
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (AREA OUTSIDE THE 500-YEAR FLOOD PLAIN) PER FIRM PANEL 3200322150E, DATED SEPTEMBER 27, 2002.

PERIMETER SIDEWALKS
PERIMETER SIDEWALK DISPLAYED FOR CONCEPTUAL PURPOSES ONLY. MASTER DEVELOPER TO PROVIDE DESIGN AND CONNECTIONS FOR ON-SITE PEDESTRIAN ACCESS.

BENCHMARK
FOUND NODOT BRASS CAP, 50 FEET NORTH OF STATION 787+19.42 OF CHARLESTON BLVD, OLIV9-345SE6
NAVD 88 ELEVATION = 978.351 METERS = 3209.81 FEET

BASIS OF BEARING
NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN BOOK 143, PAGE 47 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

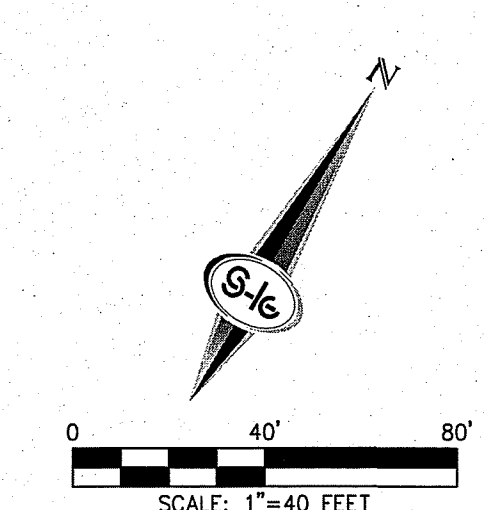
FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY _____ ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.
JERRY J. SLATER, P.E. 14167 _____ DATE _____

SUMMERLIN
SUMMERLIN RESIDENTIAL DESIGN REVIEW COMMITTEE _____ DATE _____
THIS SIGNATURE IS LIMITED TO APPROVAL OF THESE DOCUMENTS FOR CONFORMANCE TO THE DESIGN INTENT OF THE APPLICABLE DESIGN CRITERIA. NEITHER SUMMERLIN NOR THE SUMMERLIN RESIDENTIAL DESIGN REVIEW COMMITTEE ASSUMES RESPONSIBILITY FOR PLAN CONFORMANCE WITH APPLICABLE LAWS, ORDINANCES, AND CODES.

Call before you Dig
Avoid cutting underground utility lines.
Call
811
1-800-227-2600
OR
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

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

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929



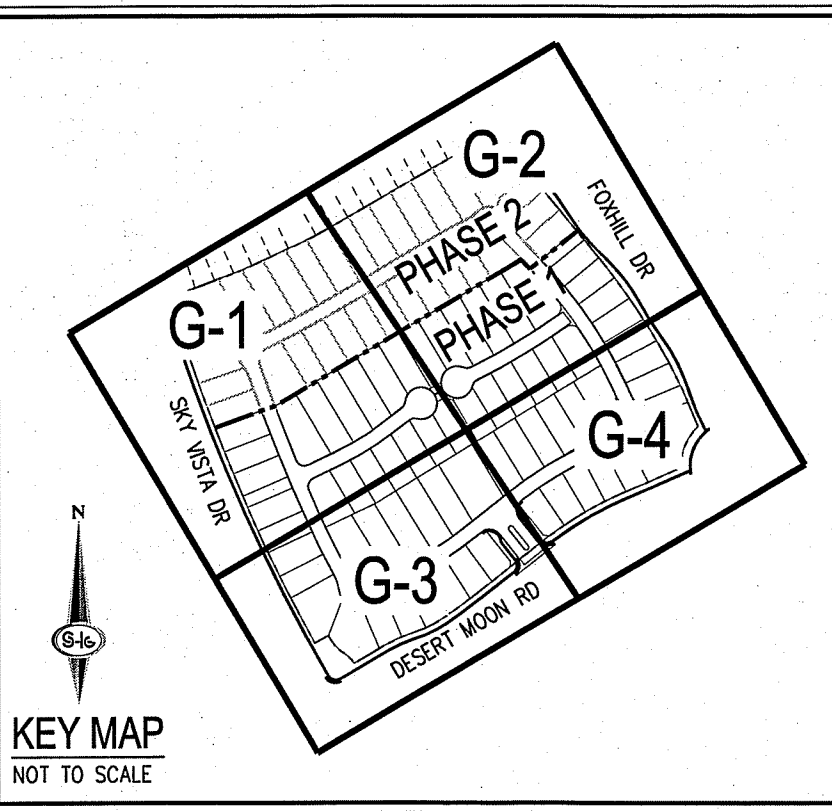
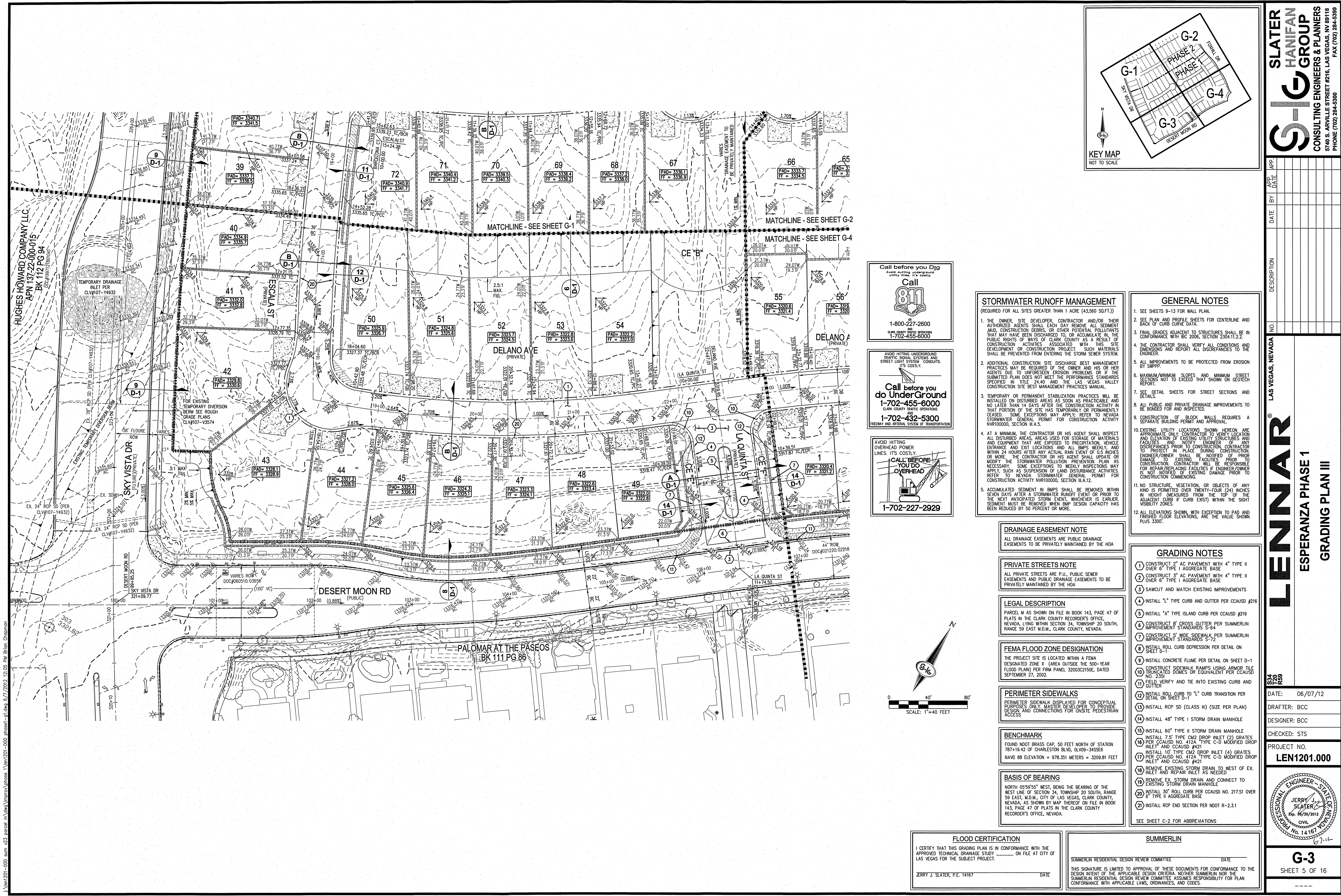
SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89119
PHONE (702) 264-5300 FAX (702) 264-5300

LENNAR
ESPERANZA PHASE 1
GRADING PLAN I

DATE: 06/07/12
DRAFTER: BCC
DESIGNER: BCC
CHECKED: STS
PROJECT NO. LEN1201.000

JERRY J. SLATER
P.E. 14167
CIVIL ENGINEER - STATE OF NEVADA

G-1
SHEET 3 OF 16



Call before you Dig
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CLARK COUNTY PUBLIC OPERATIONS
1-702-455-6000

Call before you do UnderGround
1-702-455-6000
CLARK COUNTY PUBLIC OPERATIONS
1-702-455-6000

Call before you do Overhead
1-702-227-2929

- ### STORMWATER RUNOFF MANAGEMENT
- (REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))
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 3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NV100000, SECTION III.4.5.
 4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NV100000, SECTION III.4.12.
 5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

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LEGAL DESCRIPTION

PARCEL M AS SHOWN ON FILE IN BOOK 143, PAGE 47 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA, LYING WITHIN SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

FEMA FLOOD ZONE DESIGNATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (AREA OUTSIDE THE 500-YEAR FLOOD PLAIN) PER FIRM PANEL 32003C2150E, DATED SEPTEMBER 27, 2002.

PERIMETER SIDEWALKS

PERIMETER SIDEWALK DISPLAYED FOR CONCEPTUAL PURPOSES ONLY. MASTER DEVELOPER TO PROVIDE DESIGN AND CONNECTIONS FOR ON-SITE PEDESTRIAN ACCESS

BENCHMARK

FOUND NDOT BRASS CAP, 50 FEET NORTH OF THE 787+19.42 OF CHARLESTON BLVD, 01009-34585
NAVD 88 ELEVATION = 978.351 METERS = 3209.81 FEET

BASIS OF BEARING

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN BOOK 143, PAGE 47 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

- ### GENERAL NOTES
1. SEE SHEETS 9-13 FOR WALL PLAN.
 2. SEE PLAN AND PROFILE SHEETS FOR CENTERLINE AND BACK OF CURB CURVE DATA.
 3. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH BC 2006, SECTION 3024.11.2.2.
 4. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
 5. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
 6. MAXIMUM MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
 7. SEE DETAIL SHEETS FOR STREET SECTIONS AND DETAILS.
 8. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
 9. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL.
 10. EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE. ONLY CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY STRUCTURES AND FACILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE DURING CONSTRUCTION. ENGINEER OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLACE FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCEMENT.
 11. NO STRUCTURE, VEGETATION, OR OBJECTS OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXISTS) WITHIN THE SIGHT VISIBILITY ZONES.
 12. ALL ELEVATIONS SHOWN, WITH EXCEPTION TO PAD AND FINISHED FLOOR ELEVATIONS, ARE THE VALUE SHOWN PLUS 3300.

- ### GRADING NOTES
- 1) CONSTRUCT 2" AC PAVEMENT WITH 4" TYPE II OVER 6" TYPE I AGGREGATE BASE
 - 2) CONSTRUCT 3" AC PAVEMENT WITH 4" TYPE II OVER 6" TYPE I AGGREGATE BASE
 - 3) SAWCUT AND MATCH EXISTING IMPROVEMENTS
 - 4) INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
 - 5) INSTALL "A" TYPE INTERIOR CURB PER CCAUSD #219
 - 6) CONSTRUCT 8" CROSS GUTTER PER SUMMERLIN IMPROVEMENT STANDARDS S-64
 - 7) CONSTRUCT 5" WIDE SIDEWALK PER SUMMERLIN IMPROVEMENT STANDARDS S-72
 - 8) INSTALL ROLL CURB DEPRESSION PER DETAIL ON SHEET D-1
 - 9) INSTALL CONCRETE FLUME PER DETAIL ON SHEET D-1
 - 10) CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 2351
 - 11) FIELD VERIFY AND TIE INTO EXISTING CURB AND GUTTER
 - 12) INSTALL ROLL CURB TO "L" CURB TRANSITION PER DETAIL ON SHEET D-1
 - 13) INSTALL RCP SD (CLASS III) (SIZE PER PLAN)
 - 14) INSTALL 48" TYPE I STORM DRAIN MANHOLE
 - 15) INSTALL 60" TYPE II STORM DRAIN MANHOLE
 - 16) INSTALL 7.5" TYPE CM2 DROP INLET (2) GRATES PER CCAUSD NO. 412A TYPE C-D MODIFIED DROP INLET AND CCAUSD #421
 - 17) INSTALL 10" TYPE CM2 DROP INLET (4) GRATES PER CCAUSD NO. 412A TYPE C-D MODIFIED DROP INLET AND CCAUSD #421
 - 18) REMOVE EXISTING STORM DRAIN TO WEST OF EX. INLET AND REPAIR INLET AS NEEDED
 - 19) REMOVE EX. STORM DRAIN AND CONNECT TO EXISTING STORM DRAIN MANHOLE
 - 20) INSTALL 30" ROLL CURB PER CCAUSD NO. 217.51 OVER 6" TYPE I AGGREGATE BASE
 - 21) INSTALL RCP END SECTION PER NDOT R-2.31
- SEE SHEET C-2 FOR ABBREVIATIONS

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY _____ ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY J. SLATER, P.E. 14167 _____ DATE _____

SUMMERLIN

SUMMERLIN RESIDENTIAL DESIGN REVIEW COMMITTEE _____ DATE _____

THIS SIGNATURE IS LIMITED TO APPROVAL OF THESE DOCUMENTS FOR CONFORMANCE TO THE DESIGN INTENT OF THE APPLICABLE DESIGN CRITERIA. NEITHER SUMMERLIN NOR THE SUMMERLIN RESIDENTIAL DESIGN REVIEW COMMITTEE ASSUMES RESPONSIBILITY FOR PLAN CONFORMANCE WITH APPLICABLE LAWS, ORDINANCES, AND CODES.

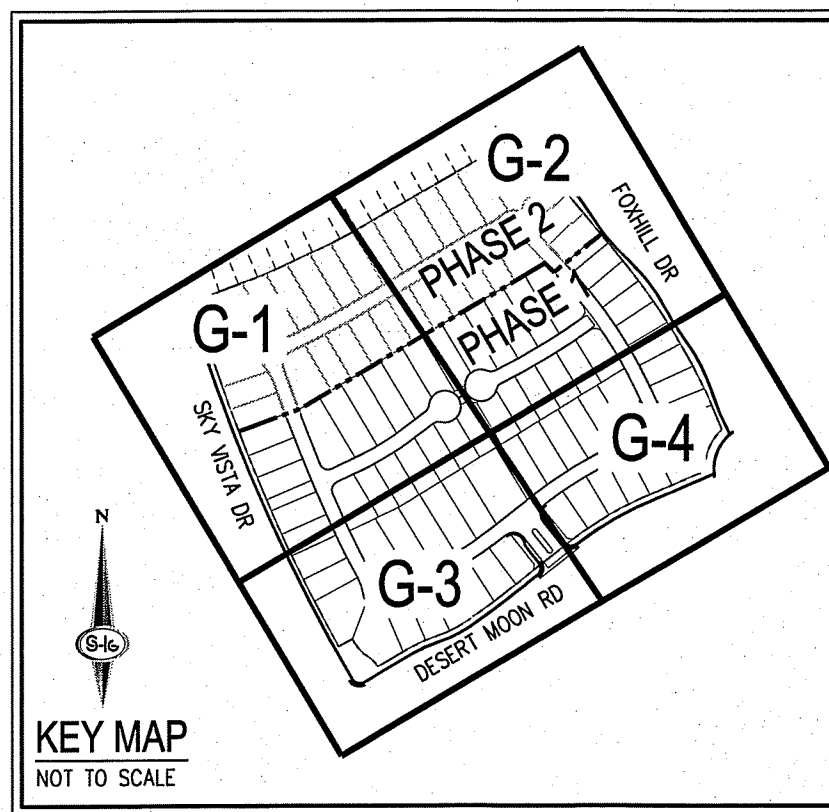
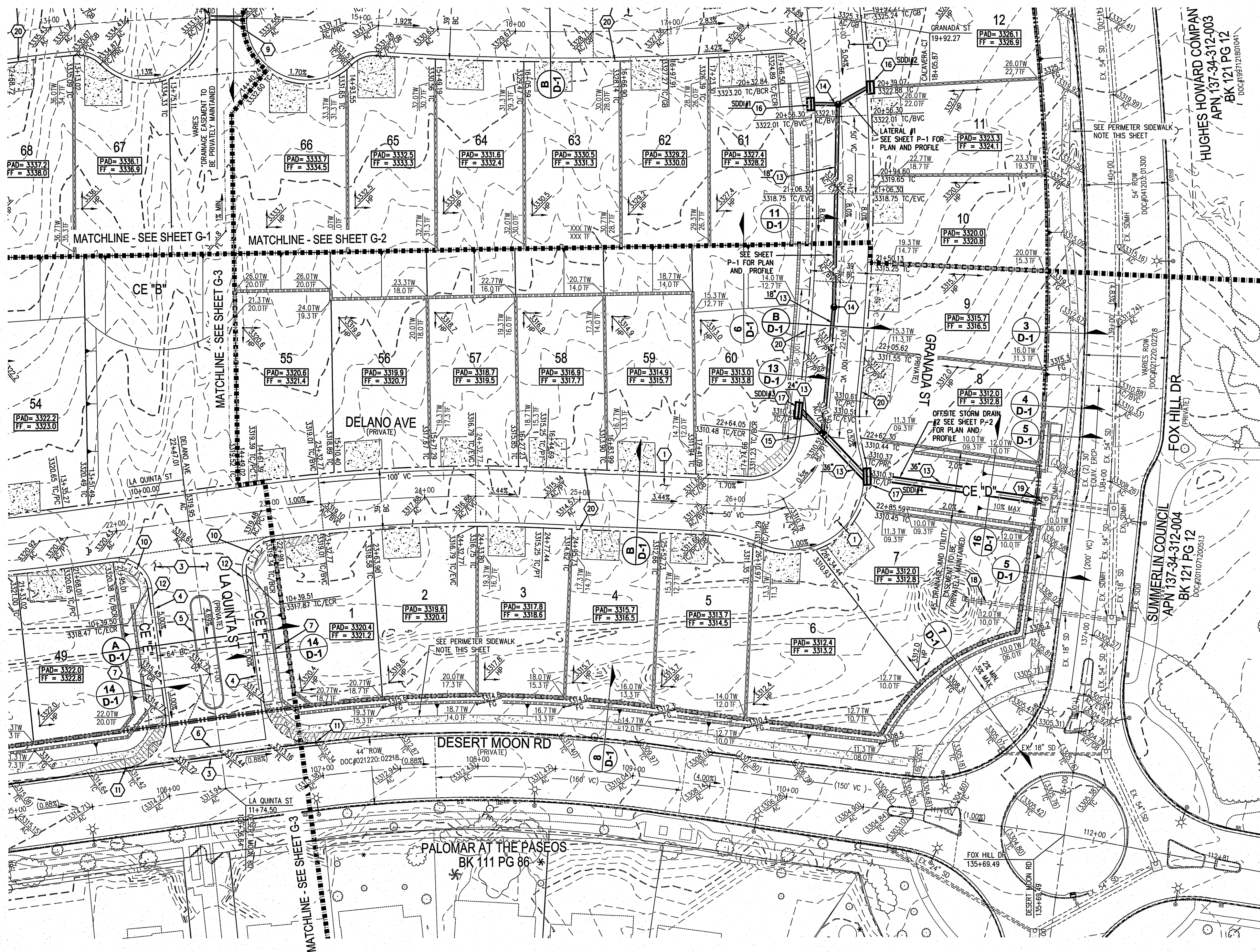
SLATER
HANFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

DATE: 06/07/12
DRAFTER: BCC
DESIGNER: BCC
CHECKED: STS
PROJECT NO. LEN1201.000

JERRY J. SLATER
P.E. 14167
CIVIL
STATE OF NEVADA
No. 14167
6-7-12

G-3
SHEET 5 OF 16

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Call before you Dig
Avoid hitting underground
utility lines. It's costly.

Call
811

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CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

AVOID HITTING UNDERGROUND
TRAFFIC SIGNAL SYSTEMS AND
STREET LIGHT SYSTEM CONDUITS.
IT'S COSTLY.

Call before you
do UnderGround
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000
AND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

AVOID HITTING UNDERGROUND
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LINES. IT'S COSTLY.

CALL BEFORE
YOU DO
OVERHEAD

1-702-227-2929

STORMWATER RUNOFF MANAGEMENT
(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))

1. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT AND CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHTS OF WAYS OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN TITLE 24-40 AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVRI00000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLES ENTRANCE AND EXIT LOCATIONS AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVRI00000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

DRAINAGE EASEMENT NOTE
ALL DRAINAGE EASEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

PRIVATE STREETS NOTE
ALL PRIVATE STREETS ARE P.U.I. PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY THE HOA

LEGAL DESCRIPTION
PARCEL M AS SHOWN ON FILE IN BOOK 143, PAGE 47 OF PLATS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA, LYING WITHIN SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST M.D.M., CLARK COUNTY, NEVADA.

FEMA FLOOD ZONE DESIGNATION
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (AREA OUTSIDE THE 500-YEAR FLOOD PLAIN) PER FIRM PANEL 320032150E, DATED SEPTEMBER 27, 2002.

PERIMETER SIDEWALKS
PERIMETER SIDEWALK DISPLAYED FOR CONCEPTUAL PURPOSES ONLY. MASTER DEVELOPER TO PROVIDE DESIGN AND CONNECTIONS FOR ONSITE PEDESTRIAN ACCESS

BENCHMARK
FOUND NDOT BRASS CAP, 50 FEET NORTH OF STATION 787+19.42 OF CHARLESTON BLVD, 0LV09-345SEE
NAVD 88 ELEVATION = 978.351 METERS = 3209.81 FEET

BASIS OF BEARING
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2. SEE PLAN AND PROFILE SHEETS FOR CENTERLINE AND BACK OF CURB CURVE DATA.
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GRADING NOTES

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2. CONSTRUCT 5" AC PAVEMENT WITH 4" TYPE II OVER 6" TYPE I AGGREGATE BASE
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4. INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
5. INSTALL "A" TYPE ISLAND CURB PER CCAUSD #219
6. CONSTRUCT 8" CROSS GUTTER PER SUMMERLIN IMPROVEMENT STANDARDS S-64
7. CONSTRUCT 5" WIDE SIDEWALK PER SUMMERLIN IMPROVEMENT STANDARDS S-7-1
8. INSTALL ROLL CURB DEPRESSION PER DETAIL ON SHEET D-1
9. INSTALL CONCRETE FLUME PER DETAIL ON SHEET D-1
10. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235
11. FIELD VERIFY AND TIE INTO EXISTING CURB AND GUTTER
12. INSTALL ROLL CURB TO "L" CURB TRANSITION PER DETAIL ON SHEET D-1
13. INSTALL RCP SD (CLASS III) (SIZE PER PLAN)
14. INSTALL 48" TYPE I STORM DRAIN MANHOLE
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SEE SHEET C-2 FOR ABBREVIATIONS

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY _____ ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

JERRY J. SLATER, P.E. 14167 _____ DATE _____

SUMMERLIN
SUMMERLIN RESIDENTIAL DESIGN REVIEW COMMITTEE _____ DATE _____
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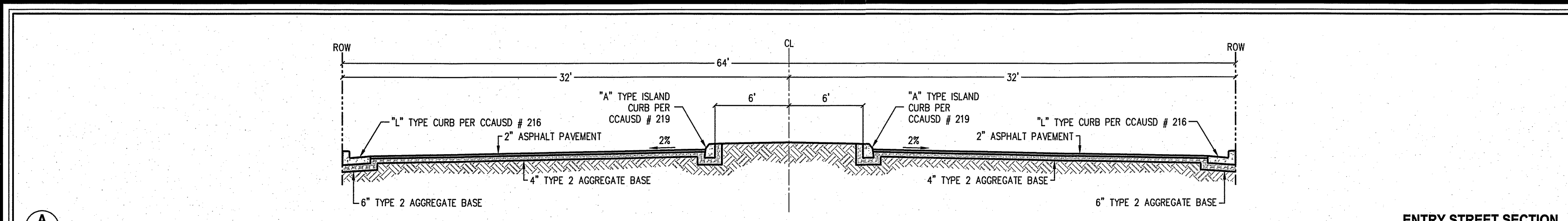
SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5599

LENNAR
ESPERANZA PHASE 1
GRADING PLAN IV

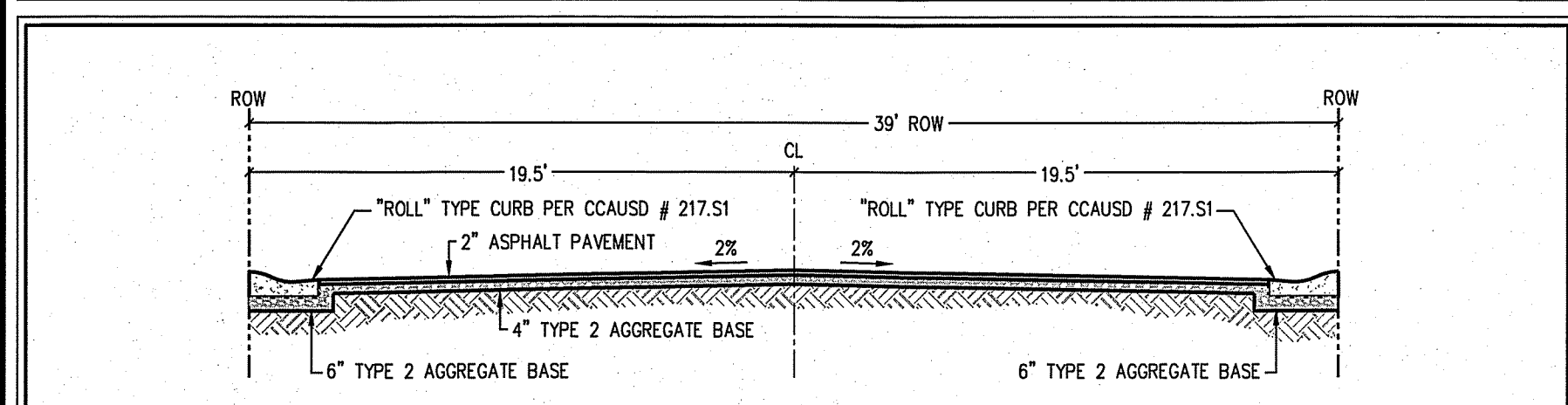
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DRAFTER: BCC
DESIGNER: BCC
CHECKED: STS
PROJECT NO. LEN1201.000

G-4
SHEET 6 OF 16

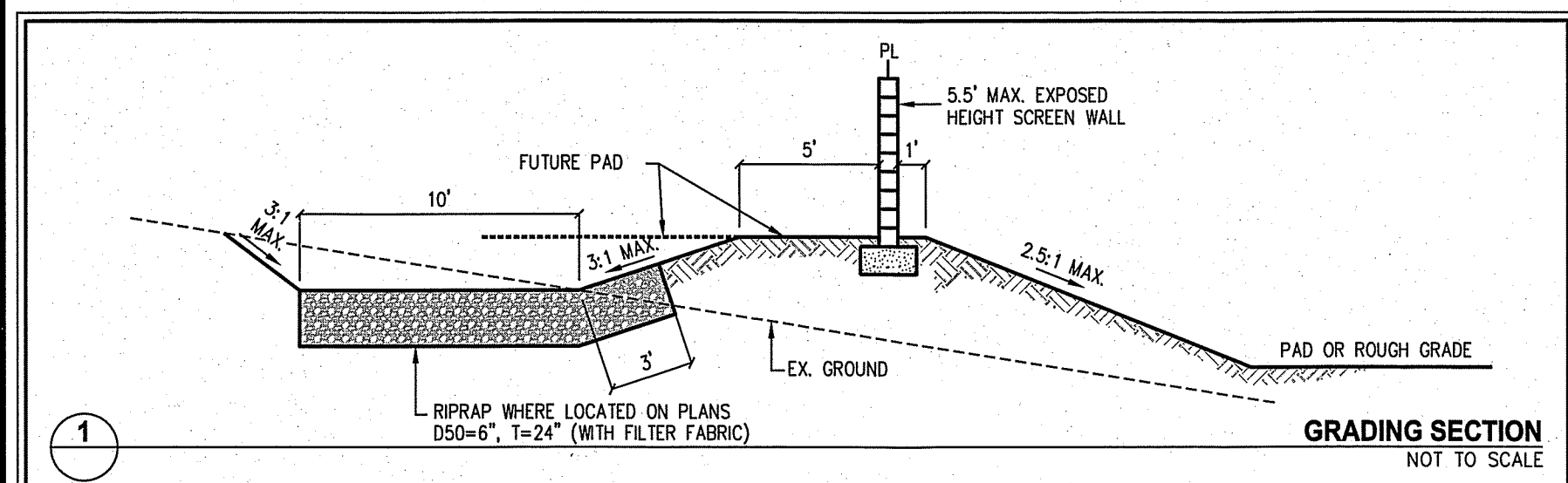
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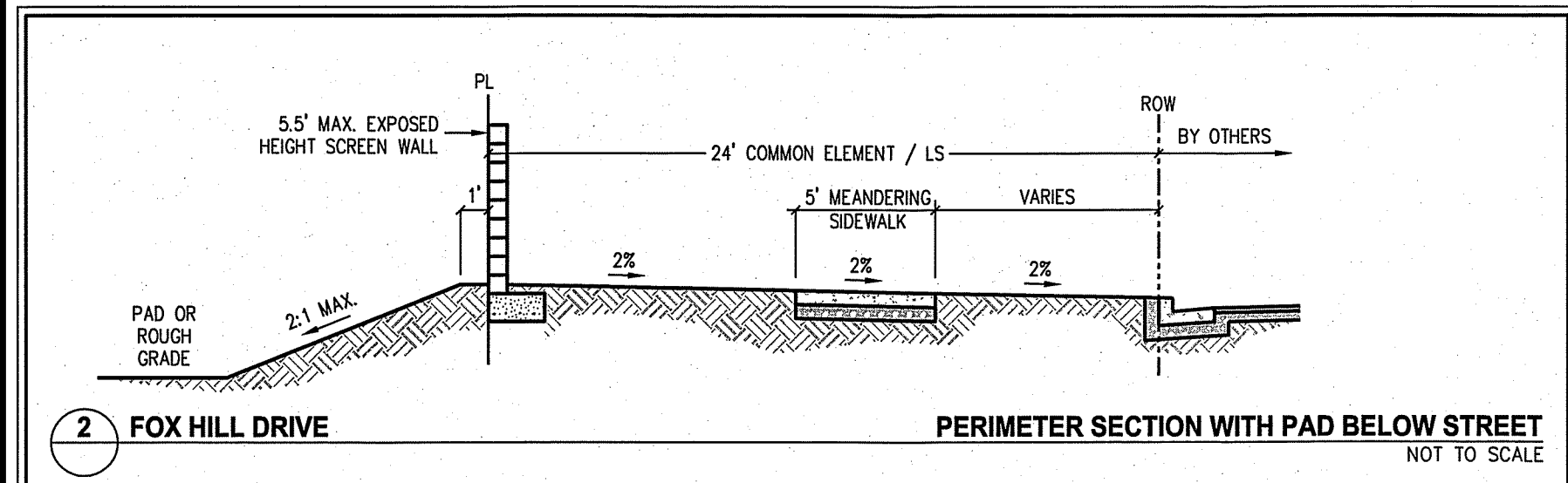
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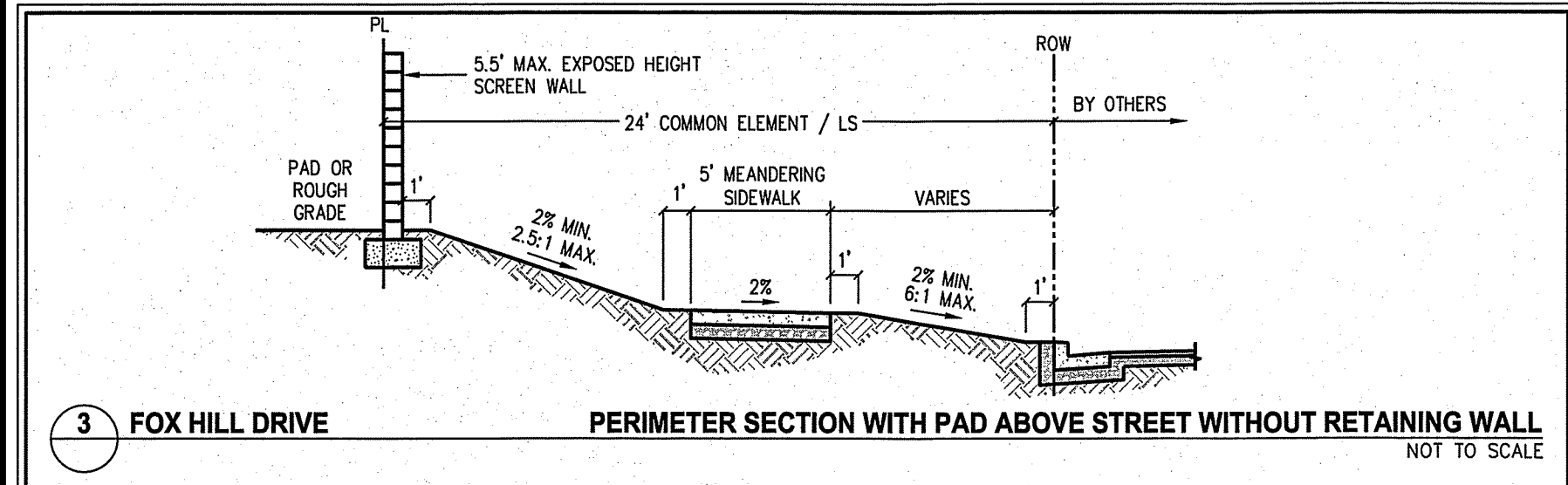
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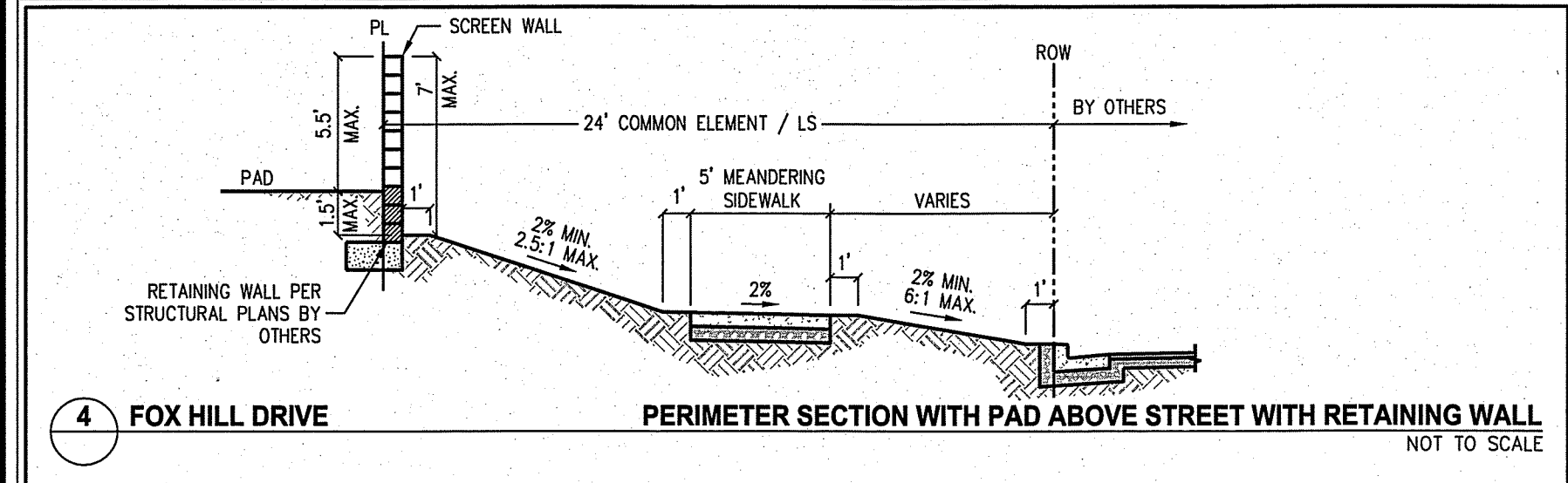
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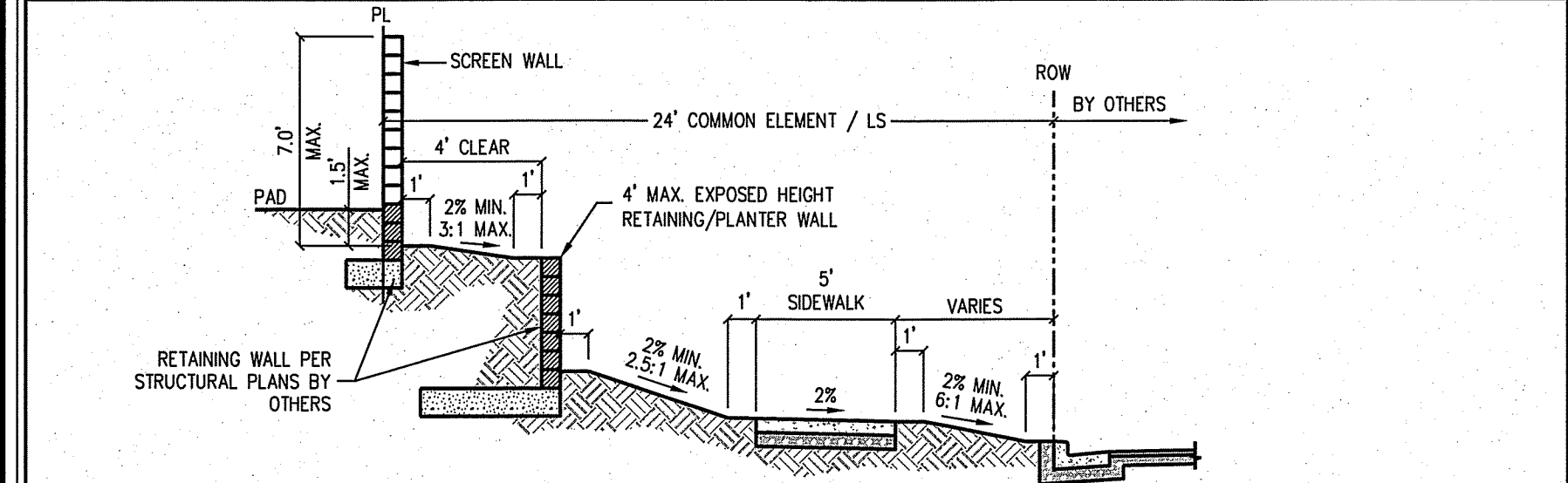
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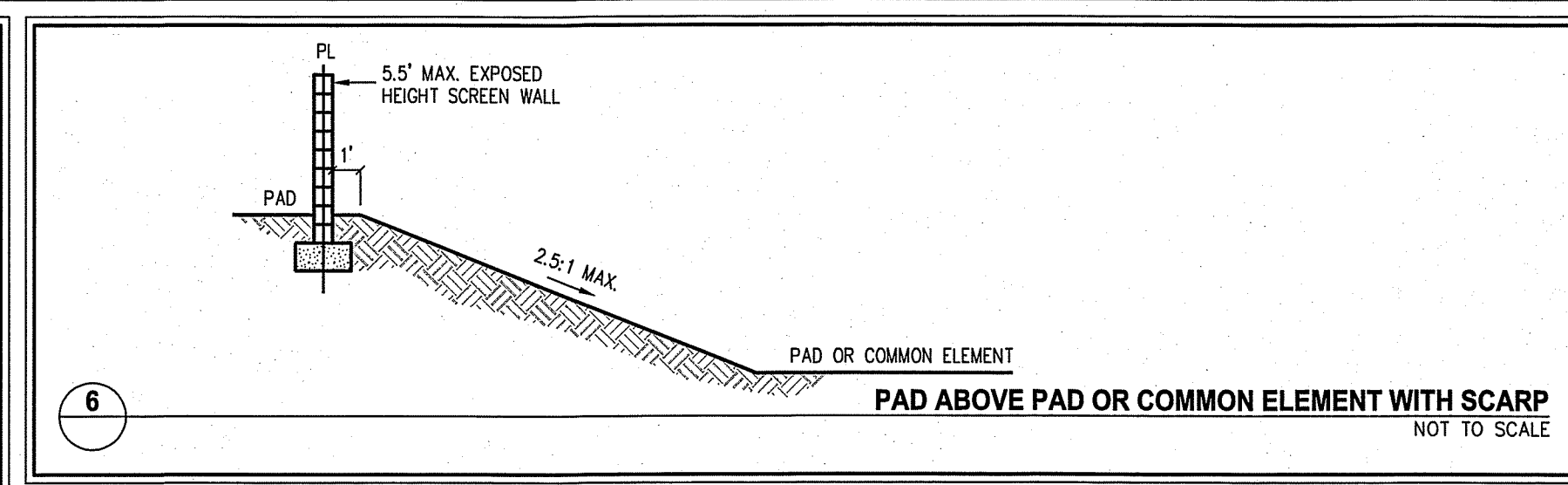
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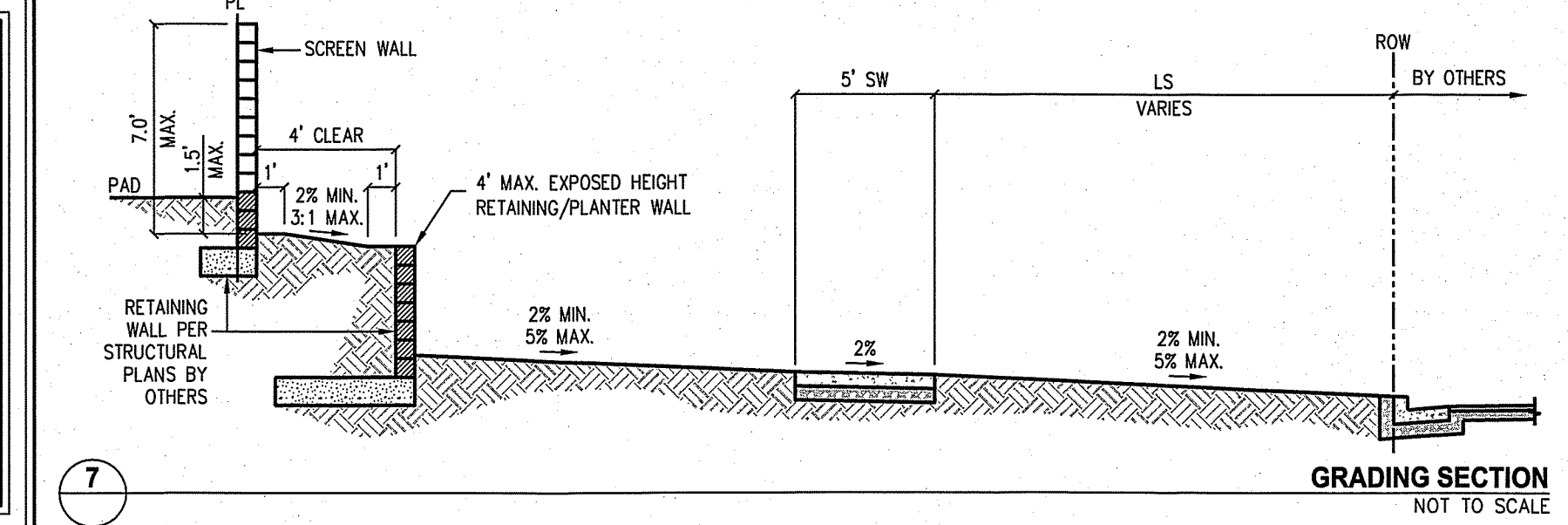
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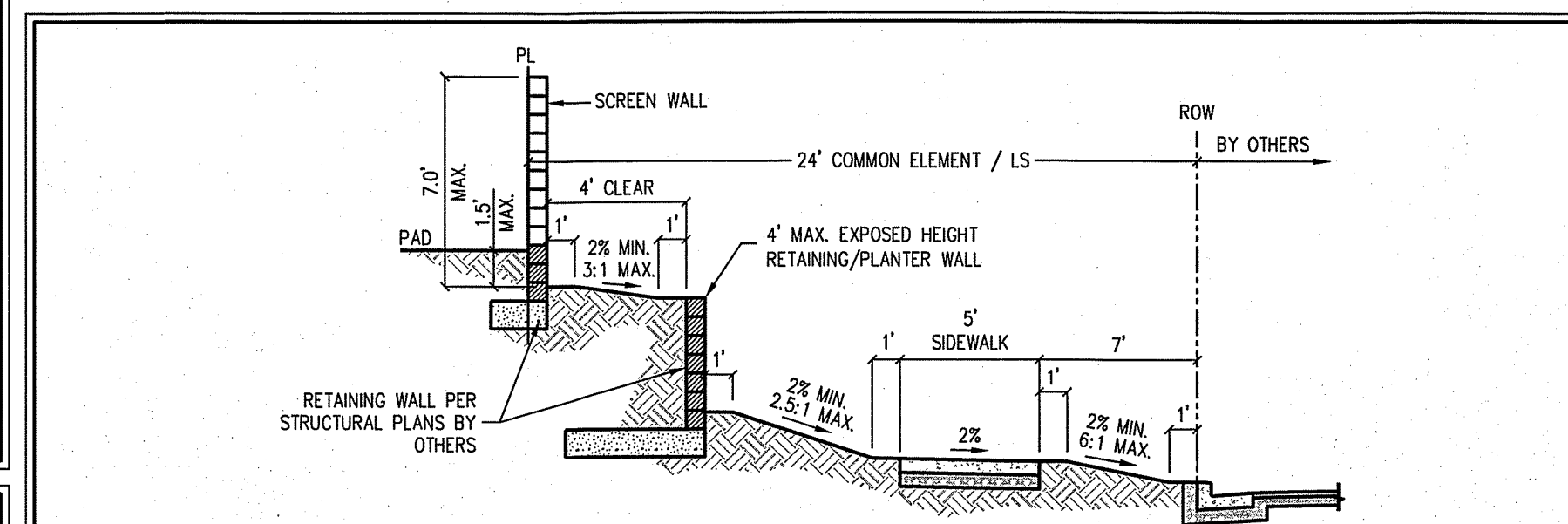
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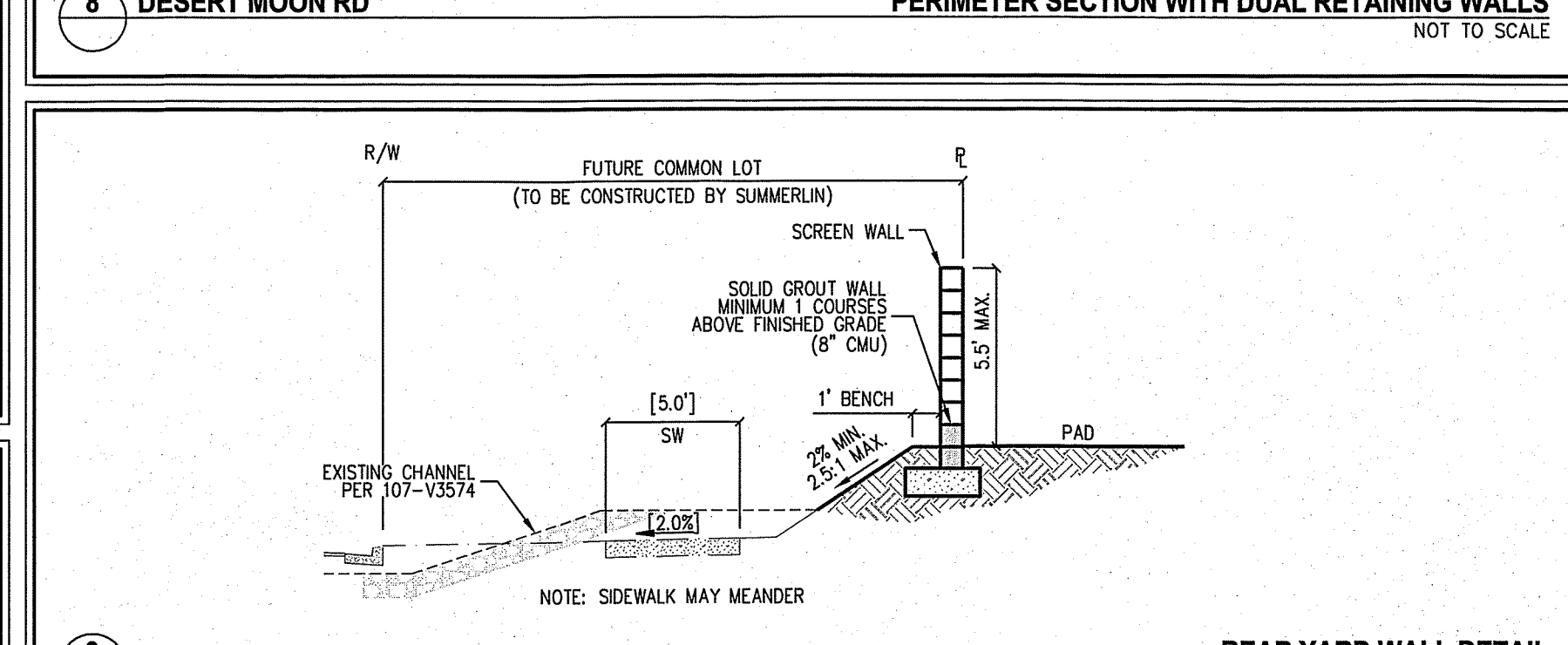
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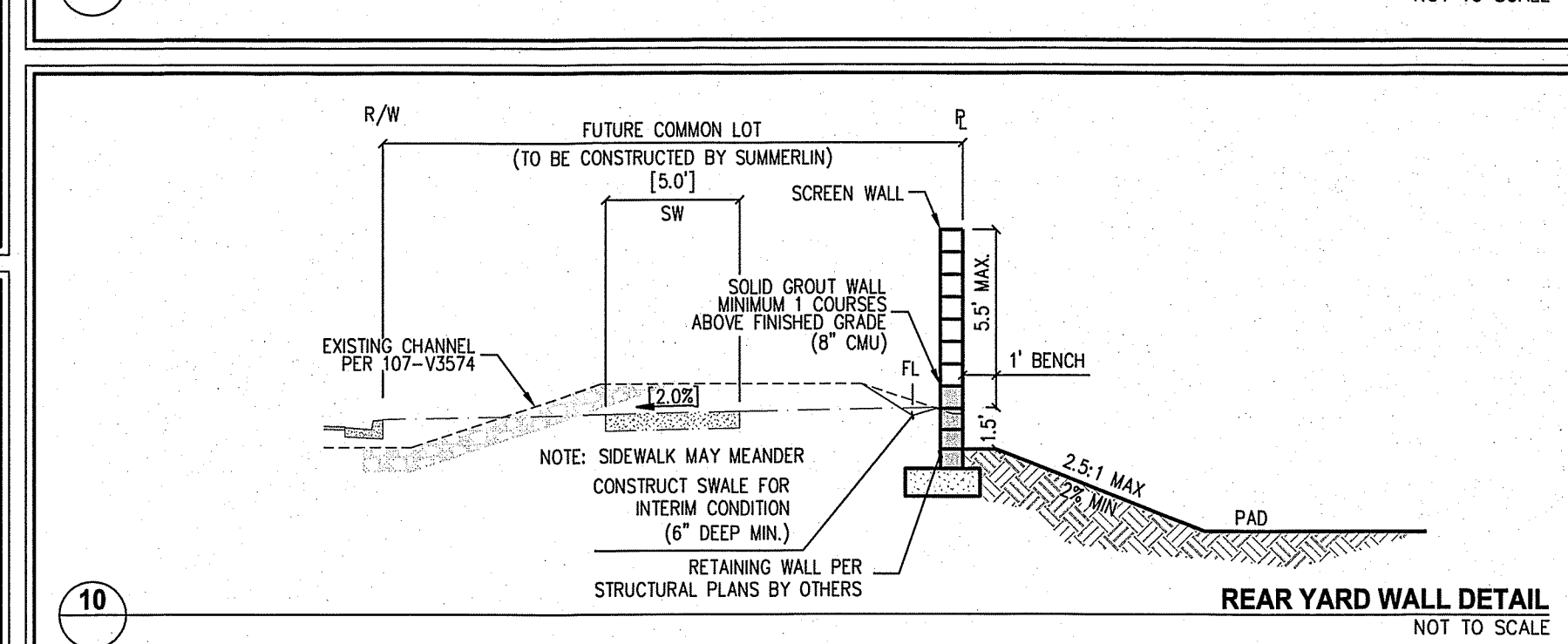
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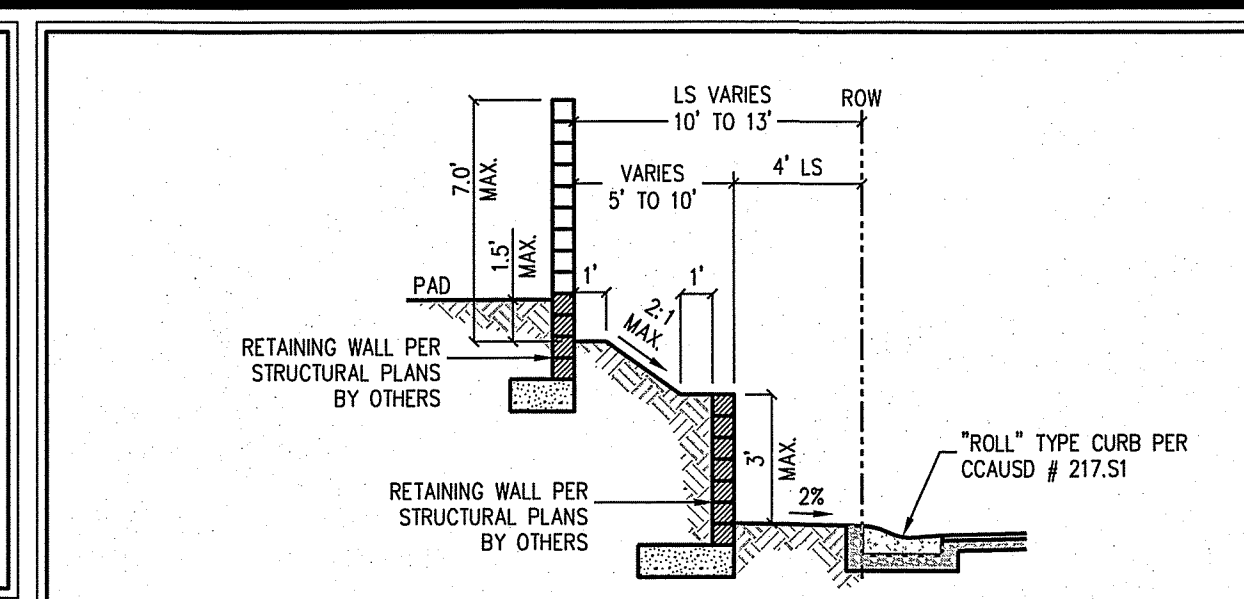
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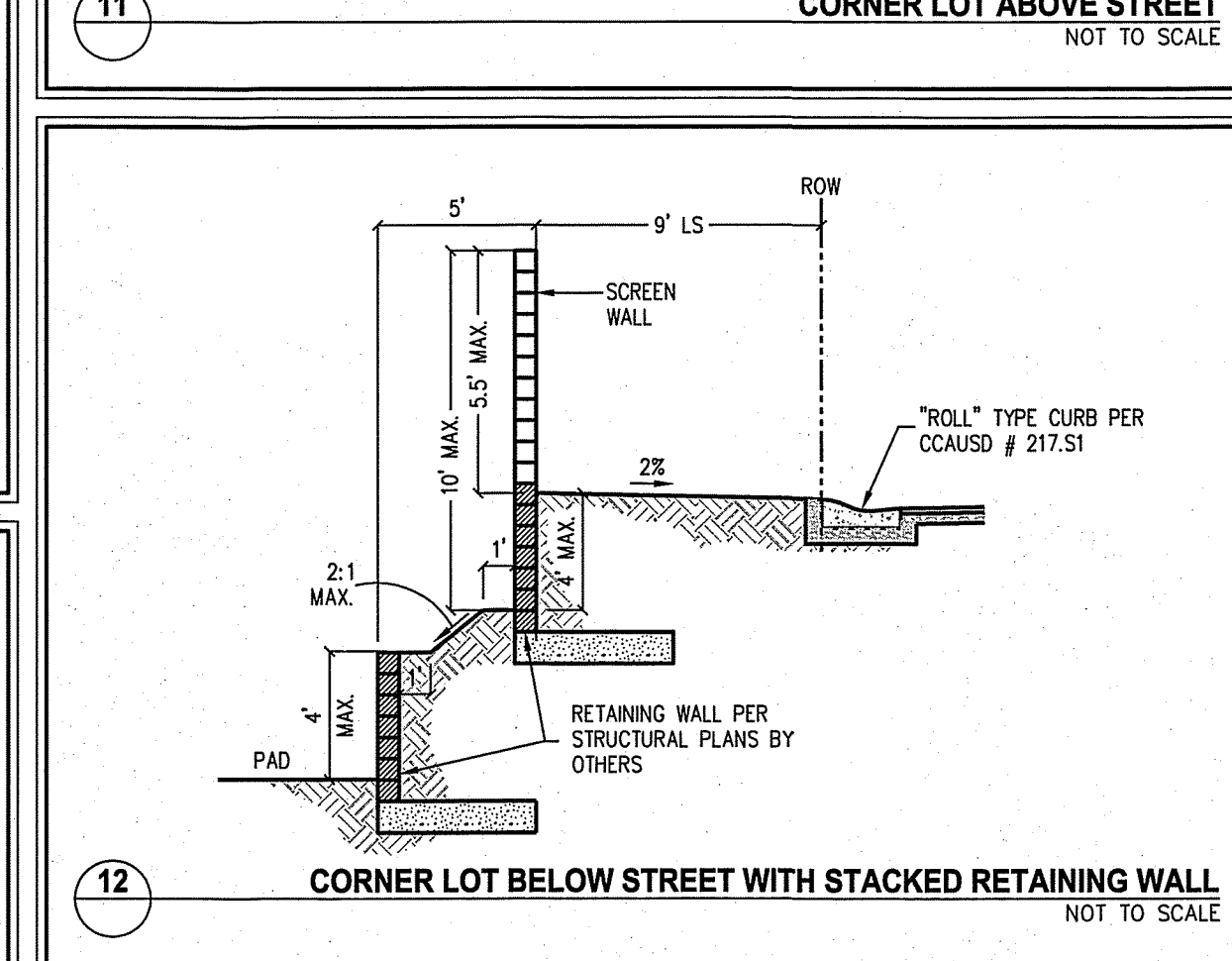
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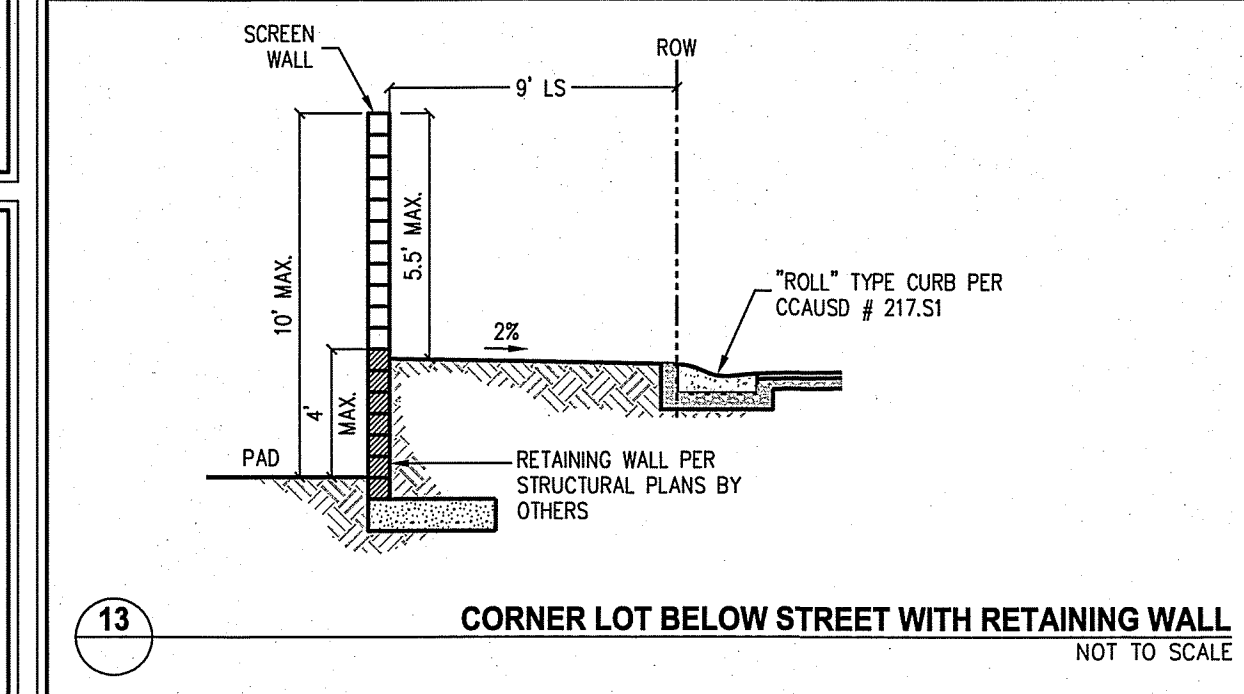
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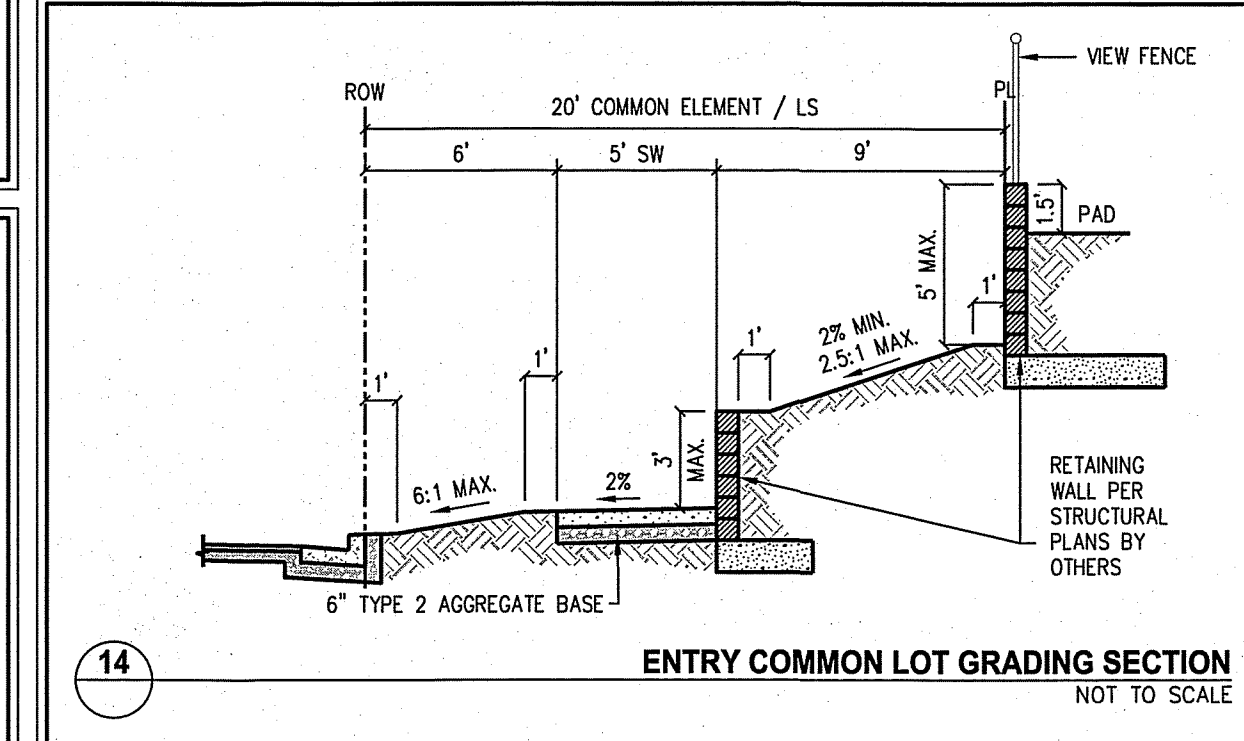
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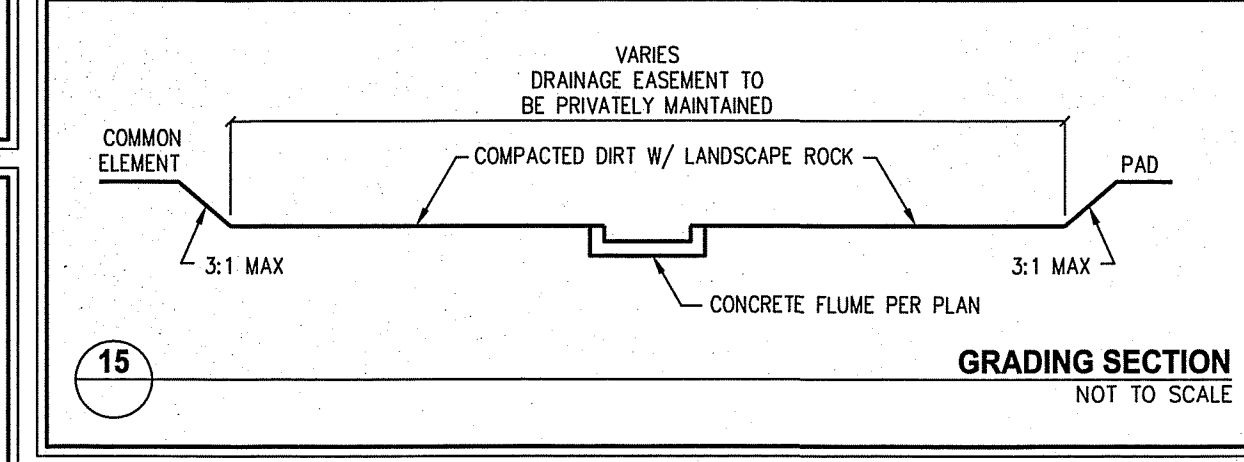
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NOT TO SCALE



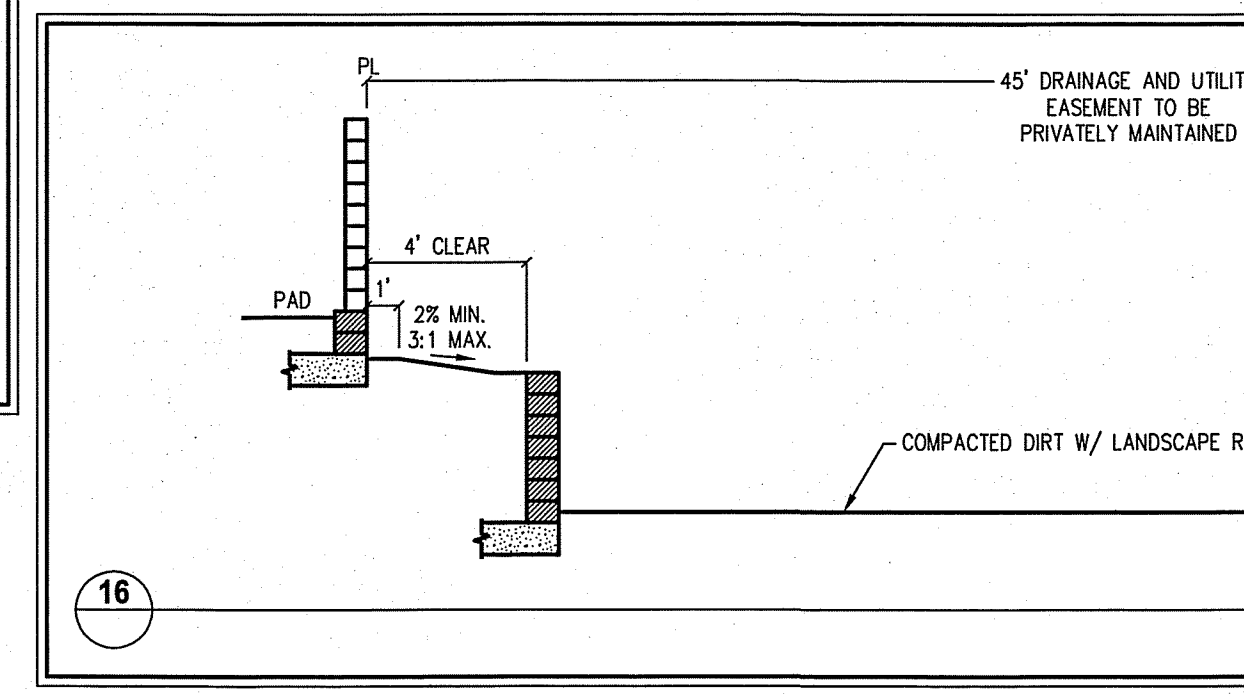
CORNER LOT BELOW STREET WITH RETAINING WALL
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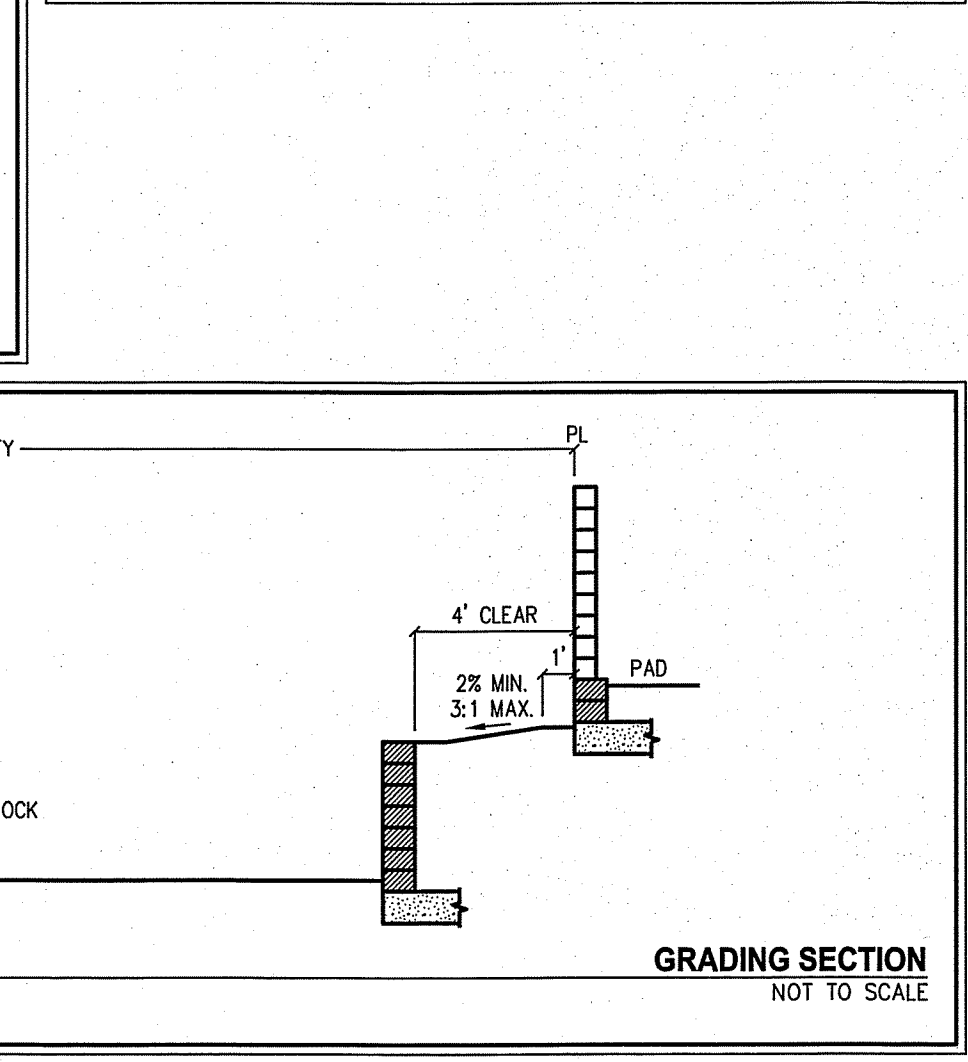
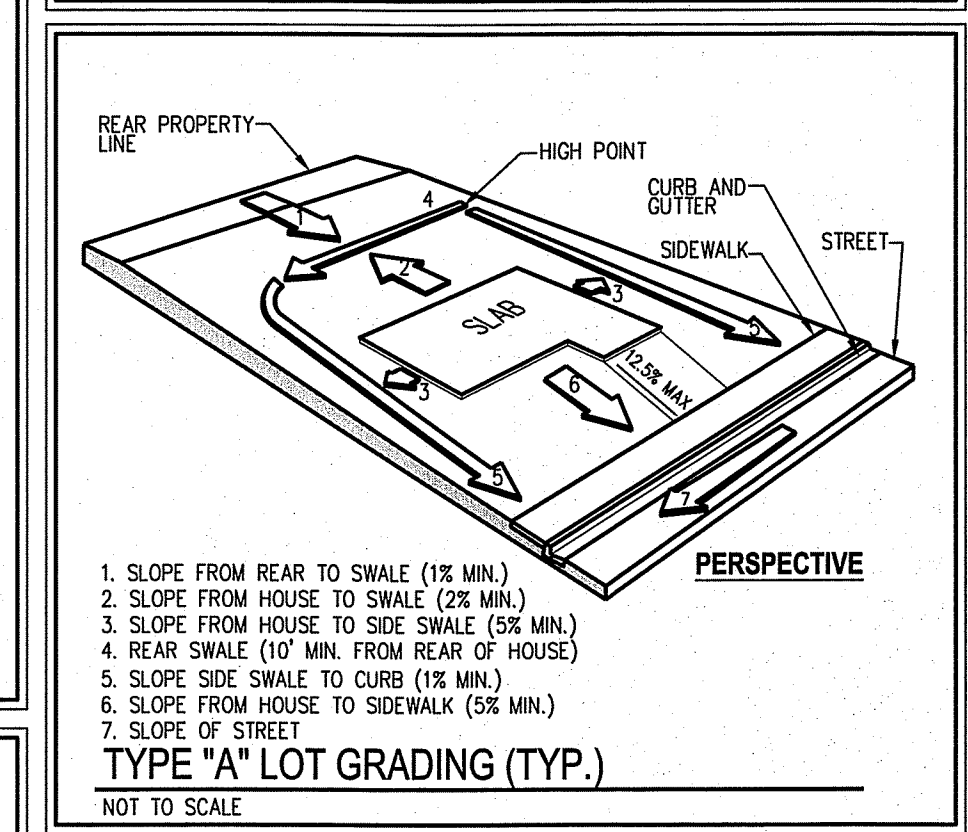
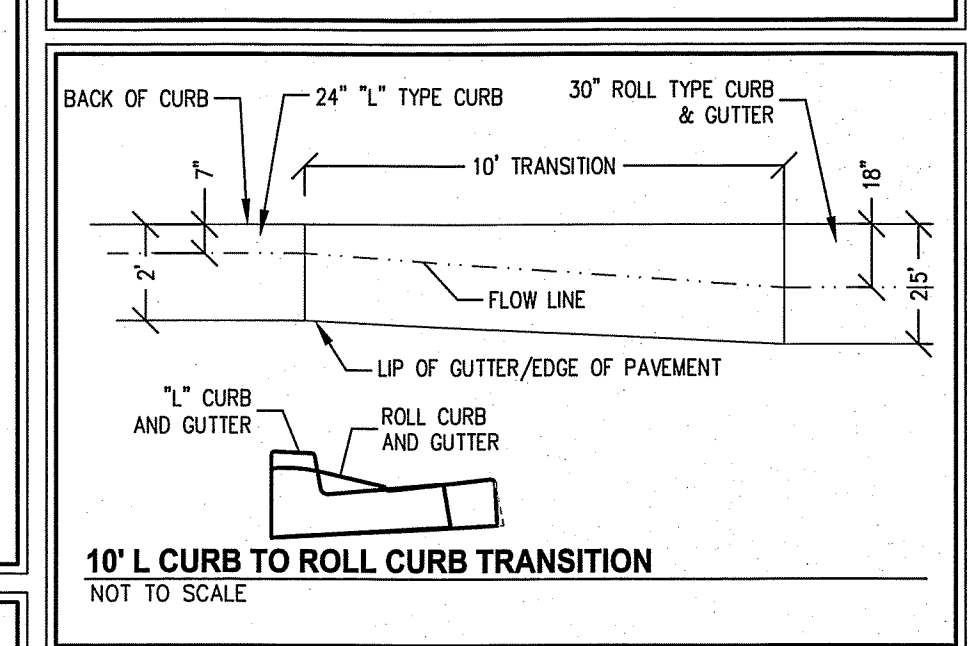
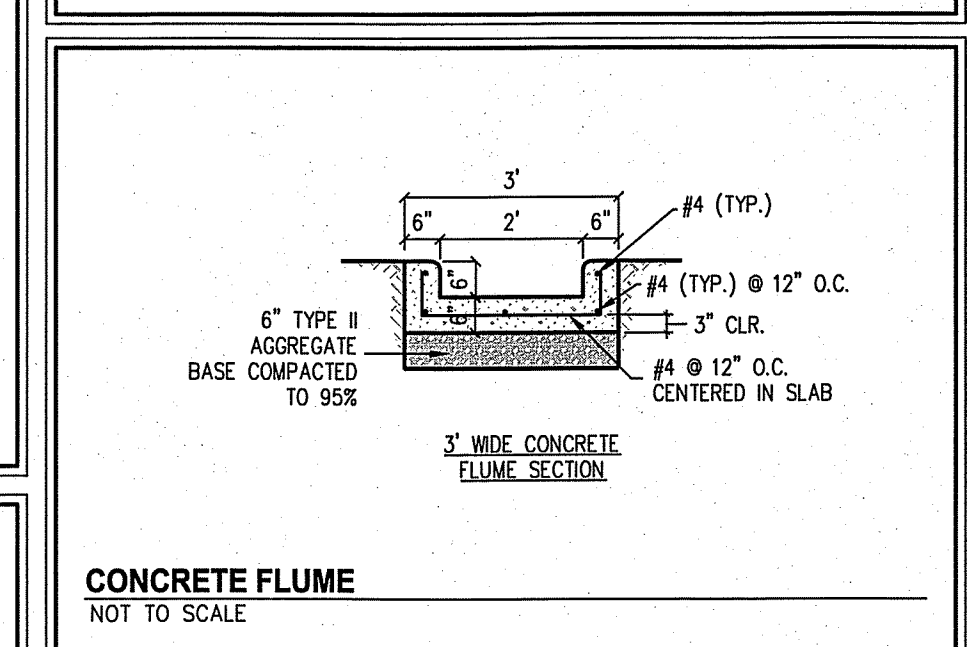
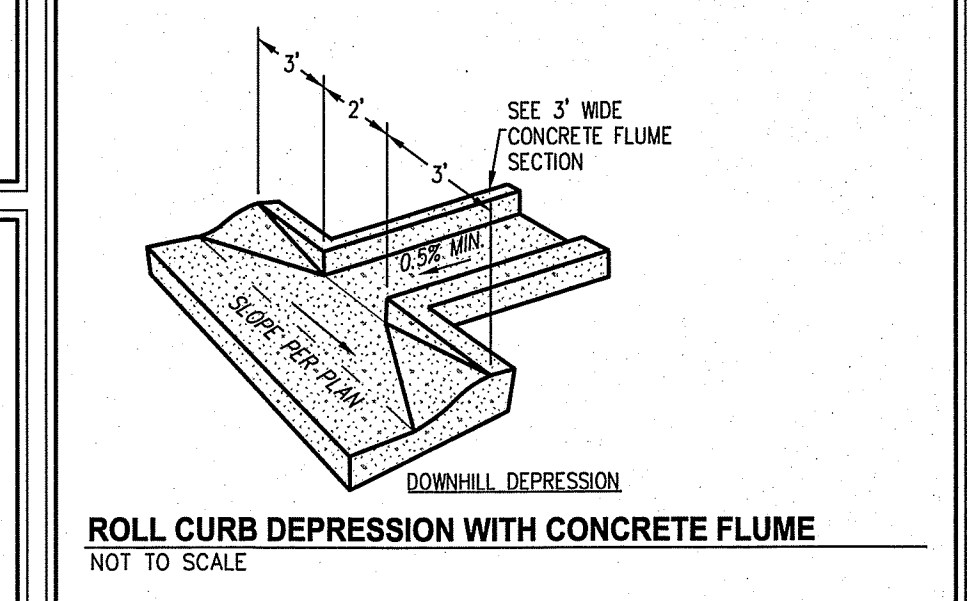
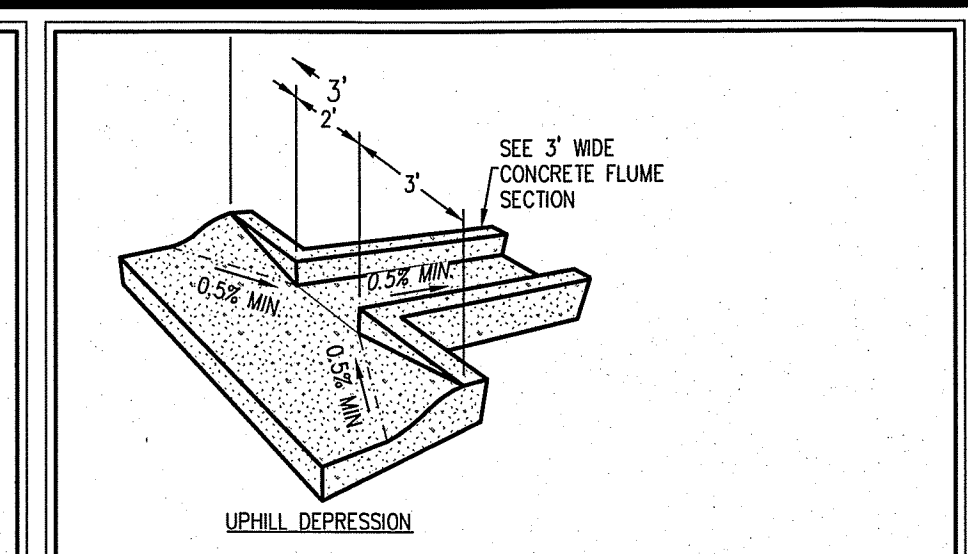
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NOT TO SCALE



GRADING SECTION
NOT TO SCALE



GRADING SECTION
NOT TO SCALE



DATE	BY	APP. DATE	DESCRIPTION	NO.

LAS VEGAS, NEVADA

LENNAR
ESPERANZA PHASE 1
GRADING SECTIONS AND DETAILS

DATE: 06/07/12
DRAFTER: BCC
DESIGNER: BCC
CHECKED: STS
PROJECT NO.
LEN1201.000

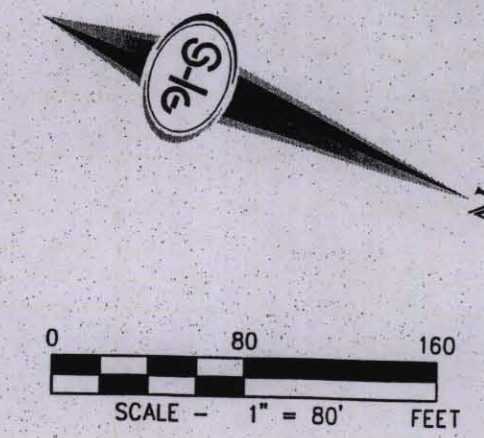
PROFESSIONAL ENGINEER - STATE OF NEVADA
JERRY J. SLATER
Exp. 06/30/2012
CIVIL
No. 14167
D-1
SHEET 7 OF 16

Flow Rate Summary					
Phase 1 & Phase 2 Proposed Condition					
Basin	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)	Area (acres)	Q ₁₀₀ Unit Flow (cfs/acre)	Q ₁₀ Unit Flow (cfs/acre)
DEV1	59	25	22.7	2.6	1.1
INT1	62	27	22.7	2.7	1.2
E.OFF1	45	20	16.5	2.7	1.2
Subbasin	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)	Area (acres)	Q ₁₀₀ Unit Flow (cfs/acre)	Q ₁₀ Unit Flow (cfs/acre)
INT1-A	16	7	5.8	2.7	1.2
INT1-B	18	8	6.5	2.7	1.2
INT1-C	19	8	6.8	2.7	1.2
INT1-D	10	4	3.6	2.7	1.2
TOTAL	62	27	22.7	2.7	1.2
E.OFF1-1	21	9	7.7	2.7	1.2
E.OFF1-2	24	11	8.8	2.7	1.2
TOTAL	45	20	16.5	2.7	1.2

100-Year Street Flow Summary - Proposed Condition Flow Rates						
Street Section ID	Contributing Flow	Slope (%)	Q ₁₀₀ (cfs)	D ₁₀₀ (ft)	V ₁₀₀ (ft/s)	D ₁₀₀ *V ₁₀₀
A	INT1-A	1.00	16	0.43	2.78	1.2
B1	INT1-B	4.56	18	0.35	5.13	1.8
B2	INT1-B	2.56	18	0.39	4.07	1.6
C1	INT1-B + INT1-C	5.04	37	0.43	6.30	2.7
C2	INT1-C	2.83	19	0.39	4.28	1.7
D	INT1-D + Bypass(INT1-A)	3.44	18	0.37	4.61	1.7

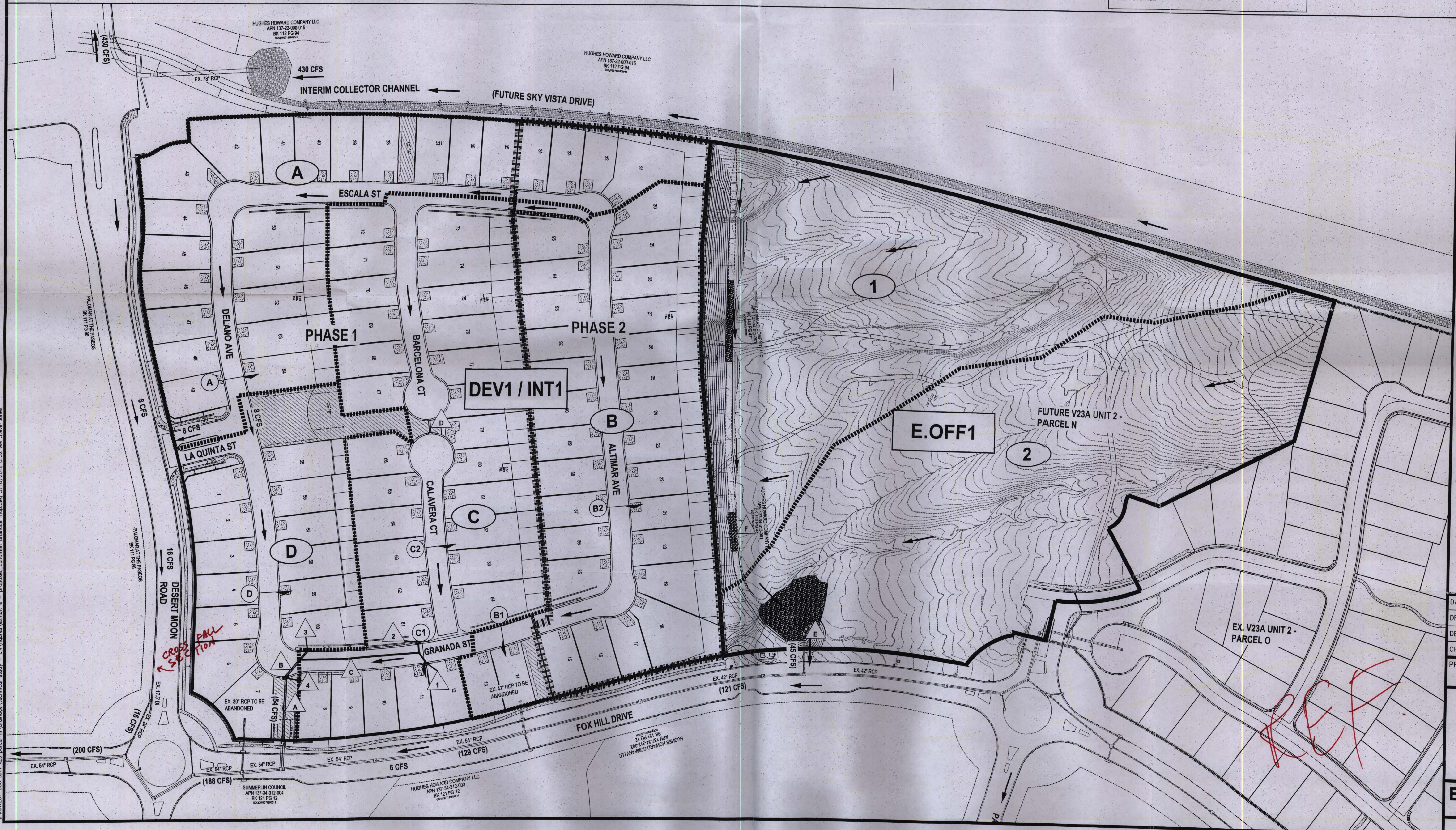
Summary of Proposed Flood Control Facilities - Proposed Condition Flow Rates				
Drainage Facility ID	Proposed Q ₁₀₀ (cfs)	Inflow Description	Size & Type	Comment
1	7	INT1-B + INT1-C	7.5-ft Type CM2 Drop Inlet & 18-inch RCP	Q _{BYPASS} = 11.5 cfs; Bypass flow is considered non-erosive
2	7	INT1-B + INT1-C	7.5-ft Type CM2 Drop Inlet & 18-inch RCP	Q _{BYPASS} = 11.5 cfs; Bypass flow is considered non-erosive
3	20	INT1 - (A - Desert Moon) - (Dis 18.2)	10.0-ft Type CM2 Drop Inlet & 24-inch RCP	Sag Inlet
4	20	INT1 - (A - Desert Moon) - (Dis 18.2)	10.0-ft Type CM2 Drop Inlet	Sag Inlet
A	54	INT1 - Desert Moon	36-inch RCP	Ex. Fox Hill SD designed to accommodate 60 cfs at this lateral location.
B	34	Dis 18.2&3	36-inch RCP	
C	14	Dis 18.2	18-inch RCP	
D	9	Hal(INT1-C)	2-ft concrete flume for low flow, remainder of easement earthen/landscape rock lined	Drainage Easement to be Privately Maintained
E	45	E.OFF1	Ex. 36-inch RCP	Proposed Interim Sump Opening with 3.3-ft Headwater
F	22	E.OFF1-1	Earthen Ditch; Riprap Lined (D ₅₀ = 6-inch) at locations of slope steeper than 0.5% or of significant transverse flow	Offsite Grading to protect Esperanza and conform Parcel N to master drainage plan

LEGEND	
	BASIN BOUNDARY
	BASIN ID
	PRO-RATED SUBBASIN BOUNDARY
	PRO-RATED SUBBASIN ID
	FLOW DIRECTION
	STREET HYDRAULIC SECTION
	FACILITY ID
8 CFS	SURFACE 100-YR FLOW RATE
(200 CFS)	STORM DRAIN 100-YR FLOW RATE
	PHASE LINE



NOTE - STORM DRAIN FLOW RATES IN FOX HILL STORM DRAIN ARE ASSOCIATED WITH THE INTERIM PHASE 1 CONDITION, UPON COMPLETION OF PHASE 2 AND FULL DEVELOPMENT OF ESPERANZA, THE STORM DRAIN FLOW RATES IN FOX HILL REDUCE TO CONFORMANCE WITH THE APPROVED UPDATE #2 TO TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 23A UNIT 2 IMPROVEMENTS.

* UTILIZED DURING EXISTING CONDITION FOR CATALINA



NO.	DESCRIPTION	DATE	BY	APP.

LENNAR HOMES
ESPERANZA
PROPOSED CONDITION DRAINAGE MAP

DATE: 05/14/2012
DRAFTER: SMJ
DESIGNER: SMJ
CHECKED: KCR
PROJECT NO.
LEN1201.000