

DS #:

5107

APN:

125-07-211-002

PROJECT:

Skye Canyon II - Parcel 2.04

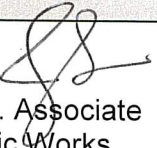
SUBMITTAL:

2nd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE: August 6, 2019
INTER-OFFICE MEMORANDUM		
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E.  Flood Control, Engr. Associate Department of Public Works
SUBJECT: Drainage Study for: Skye Canyon II – Parcel 2.06	COPIES TO: Slater Hanifan Group Ninety-Five Management Bart Anderson, P.E., DevCo CCRFCD	
Cross Streets:	Skye Canyon Park Dr. & Skye Village Rd.	
File Number:	F:\Depot\DSMemos\DS5107B.doc	
Parcel Number:	125-07-211-002	
Zoning Action:	TMP-75348; VAC-75349	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES X	NO

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	3/4/2019	3/28/2019	See Comments Below	\$400.00	\$400
2 nd Submittal	7/18/2019	8/5/2019		\$400.00	3497195: \$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.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. 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.

Please note that effective March 15, 2019, the CCRFCD adopted new requirements for drainage study concurrence submittals. Follow the link below for specific guidance.

<http://gustfront.ccrfcd.org/LandDev/LandDev.aspx>

When it is applicable, structural calculations of facilities must be approved by the *City* prior to submittal to the *Clark County Regional Flood Control District* for their review and concurrence.

2. The study assumes that all necessary perimeter roadway and drainage infrastructure improvements associated with Phase 3A are in place and functioning prior to the development of Skye Canyon II – Parcel 2.06.
3. Skye Canyon II – Parcel 2.06 onsite development is to be flood protected by Skye Canyon Phase 3A. No occupancy permits within onsite Phase 3A will be issued prior to the substantial completion of Skye Canyon Phase 3A infrastructure.
4. The development of Lots 15 through 38, including the plugging of the 72" RCP, the removal of the interim channel, and the vacation of easements will require an update to the drainage study or be

analyzed as 'Phase 2'. Said Update or 'Phase 2' is contingent upon the substantial completion of the Ultimate MPU facilities per Moccasin Road CCRFCD Flood Control Facility (US95/Kyle Canyon Road Interchange to Moccasin Road).

5. An update for Skye Canyon Phase 3A will be required to address the plugging of the 72" RCP prior to the completion of the ultimate MPU facilities per Moccasin Road CCRFCD Flood Control Facility. The Phase 2 improvements of this project will be dependent on the plugging of the 72" RCP.
6. Public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map.
7. Private streets must be public drainage easements. Provide a note on the grading plans "Note: All private streets are P.U.E., Public Sewer Easements, and Public Drainage Easements to be privately maintained by HOA."
8. Provide a note on the Grading Plans: "All interim drainage facilities are privately owned and maintained by property owner".
9. Structural plans for the storm drain improvements, including the deep drop inlets, custom storm drain manhole, and junction structures, must be submitted for review. Provide a soils report, structural calculations and specifications, two wet stamped structural sets, and a grading plan to the Building Department for processing. The engineer must provide a copy of Building Department approval of the structures to Flood Control prior to final acceptance of the drainage study.
10. The project proposes to build temporary drainage facilities during Phase 1 & 2. Prior to final plan approval the developer must complete a Maintenance & Liability Agreement for the interim drainage improvements and post a minimum maintenance bond of \$50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facilities and an exhibit that adequately shows the location and limits of the drainage facilities and an exhibit that adequately shows the location and limits of the drainage facilities to City of Las Vegas Flood Control for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (702-229-6371) to begin the agreement process.
11. Revise the grading to demonstrate the site entrance is adequately humped 6" above the 100 year water surface.
12. Revise the Cross Section Details used for the perimeter walls at Lots 1, 2, 3, 6, 47, 63, and 85 to show sufficient solid grouting as required per the Adjacent/Perimeter Street Check Table.
13. Label RCP size on profiles.
14. Provide PDEs through common lots along Skye Village Road and Skye Park Drive.
15. Revise label Section Detail F/D-1 to reflect "80 ft drainage channel and stockpile".
16. Shift the storm drain manhole #5 such that it does not straddle the property line. Relocate the storm drain manhole onsite within the Public Drainage Easement.
17. Revise the existing storm drain size on Sheet PP-11.
18. Provide a Section Detail callout along the southern property line of Lot 38 to show the required solid grouted wall per the Supplemental Finished Floor Checks Table.

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
JKS

T/R/S: T19S/R60E/S07
AREA G-07

**TECHNICAL DRAINAGE STUDY
ADDENDUM
Skye Canyon II - Parcel 2.06**

City of Las Vegas, Nevada

Job No.: OLY1813.000

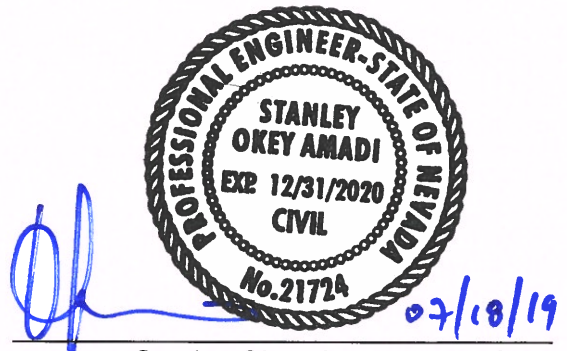
Date: July 2019

Prepared By:

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

Prepared For:

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



Stanley Okey Amadi, P.E., CFM
NV Professional Engineer No. 21724

Assisted by: D'Amato C. Hyche



OLY1813.000

July 18, 2019

Jennifer Shinn, P.E.
City of Las Vegas
333 N. Rancho Drive
Las Vegas, NV 89106

Subject: Addendum to the Technical Drainage Study for Skye Canyon II – Parcel 2.06 (DS5107A)

Ms. Shinn:

This letter certifies that all items provided on the *Addendum to the Technical Drainage Study for Skye Canyon II – Parcel 2.06* submittal CD match the paper version bound into the study.

Respectfully Submitted,
SLATER HANIFAN GROUP A WESTWOOD TEAM

A handwritten signature in blue ink that reads "D'Amato Hyche".

D'Amato Hyche
Flood Control Division

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Skye Canyon II - Parcel 2.06 (Addendum) Date: 07/18/2019
 Location of Development: a) Descriptive (Cross Streets): North/South: Skye Canyon Park Drive
East/West: Skye Village Road
 b) Section: 7 Township: 19 South Range: 60 East
 c) APN: 125-07-211-002

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

Contact Person – Name: Stanley Okey Amadi, P.E. Telephone No.: (702) 284-5300
 *E-mail Address: samadi@shg-inc.com Fax No.: (702) 284-5399
 Firm: Slater Hanifan Group
 Address: 5740 S. Arville St. Las Vegas NV 89118

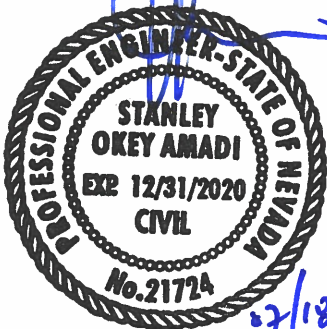
Type of Land Development/Land Disturbance Process:

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

1. Total Owned Land Area: At Site: 21.97 +/- Acres Being Developed/Disturbed: 21.97 +/- Acres
 2. Is a portion or all of the subject property located in a 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.): Single-Family Residential
 5. Approximate upstream land area which drains to the subject site: 704 acres
 6. Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation: Skye Canyon II Phase 3A (SHG, DS4931); Master Drainage Study for Skye Canyon (SHG DS4420)

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Onsite storm drain to existing storm drain in Skye Park Drive

8. Briefly describe your proposed schedule for the subject project: Two phases. Both ASAP



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:

STANDARD FORM 1

Updated 05/01/2008



OLY1813.000

7/18/2019

Jennifer Shinn, P.E. – Flood Control, Engineering Associate
City of Las Vegas Department of Public Works
333 N. Rancho Drive
Las Vegas, Nevada 89106

**Subject: Addendum to the Technical Drainage Study for Skye Canyon II – Parcel 2.06
Addendum (DS5107A)**

Dear Ms. Shinn:

This letter is submitted in response to the comments contained in the March 27, 2019 review memorandum, regarding the above referenced project. A copy of the City of Las Vegas (CLV) comment letter has been provided in Appendix A.

Revisions

Subsequent to the initial submittal and review, revisions to the site drainage plan have been made. The revisions include changes to the phase boundary and removal of the previously proposed 5'x4' RCB along Street F. The phase boundary will now include the ultimate improvements of Street F to the southern back-of-curb, thereby adding a few more lots to the Phase 1 area. The remainder lots to be constructed with Phase 2 comprises of Lots 15 thru 38. Note that the eastern stubbed end of Street F and all the adjacent street and drainage easement improvements surrounding Lot 38 will be constructed with Phase 1. An interim open channel is now proposed to convey the offsite flows from the existing 72" RCP storm drain discharging into the site from Skye Village Road. The interim channel will be filled in with Phase 2 for the construction of Lots 15 thru 38, upon capping of the existing 72" RCP. A 10'x12' RCB improved inlet with a transition structure to a new 72" RCP is proposed at the downstream end of the interim channel. The improved inlet is proposed to accommodate the required headwater to capture the flows and discharge thru the downstream 72" RCP. All the facilities including the inlet, transition structure and 72" RCP are temporary facilities to be removed with the Phase 2 improvements. Due to the above revisions, the onsite hydrology and pertinent hydraulic computations have been updated. All of the revisions to the drainage study and the improvement plans have been made while taking into consideration to properly address the comments in the review memorandum.

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

1. **Comment:** *Due to the complexity and phasing of the interim and ultimate drainage facilities, the engineer and/or developer is required to meet with Flood Control to discuss the comments prior to resubmittal. Please call Jennifer Shinn at (702) 229-6131 to schedule an appointment;*

Response: Several meetings have been held between with the engineer, developer, and Flood Control to discuss the comments and evaluate design alternatives. The current design was based on the outcome of the last meeting with CLV staff.

2. **Comment:** *The study assumes that all necessary perimeter roadway and drainage infrastructure improvements associated with Phase 3A are in place and functioning prior to the development of Skye Canyon II - Parcel 2.06;*

Response: Acknowledged.

3. **Comment:** *Skye Canyon II - Parcel 2.06 onsite development is to be flood protected by Skye Canyon Phase 3A. No occupancy permits within onsite Phase 3A will be issued prior to the substantial completion of Skye Canyon Phase 3A infrastructure;*

Response: Acknowledged.

4. **Comment:** *The development of Lot 38, including the plugging of the 72" RCP, the removal of the 5' x 4' RCB, and the vacation of easements will require an update to the drainage study or be analyzed as 'Phase 3'. Said Update or 'Phase 3' is contingent upon the substantial completion of the Ultimate MPU facilities per Moccasin Road CCRFCD Flood Control Facility (US95/Kyle Canyon Road Interchange to Moccasin Road);*

Response: Noted. An update will be provided for construction of Lots 15 thru 38. Per the last meeting with CLV staff, an update for Skye Canyon Phase 3A will be provided to address the plugging of the 72" RCP prior to the completion of the ultimate MPU facilities per Moccasin Road CCRFCD flood Control Facility. The Phase 2 improvements will be dependent on the plugging of the 72" RCP.

5. **Comment:** *The study states future removal/abandonment of interim Phase 3A and Skye Canyon — Parcel 2.06 storm drain improvements once the Ultimate MPU facilities are in place. The City requires that facilities be removed from the roadway if they are no longer needed. These facilities will need to be included in the Maintenance Bond for the interim drainage facilities;*

Response: Acknowledged. The interim channel is now proposed in place of the 5'x4' RCB. All the interim facilities (improved inlet, transition structure and 72" RCP) will be removed with the Phase 2 improvements. The interim drainage facilities will be privately maintained by the owner. It is acknowledged that a maintenance bond will be required for the facilities.

6. **Comment:** *Provide a copy of the zoning/planning conditions associated with this site 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 or approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted;*

Response: Acknowledged. Please refer to Appendix A for copies of the NOFAs associated with the site.

7. **Comment:** *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.*

When it is applicable, structural calculations of facilities must be approved by the City prior to submittal to the Clark County Regional Flood Control District for their review and concurrence;

Response: Acknowledged. A copy of the drainage study and addendum will be submitted to CCRFCD for concurrence upon receipt of a conditional approval from CLV.

8. **Comment:** *The site accepts offsite flows and conveys them through the site during Phase 1 and Phase 2. The Phase 1 drainage easement shall encompass the existing wash conveying offsite flows to the proposed onsite sump and storm drain system. The Phase 2 drainage easement shall encompass the proposed interim storm drain facility along Street 'F'. Provide a "Public Drainage Easement to be Privately Maintained" and show the easement(s) on the grading plan. Public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map;*

Response: Acknowledged. The public drainage easement for the interim channel and storm drain facilities have been depicted on the grading plans. Please note that all the interim the facilities will be privately maintained by the owner. The drainage easement will be recorded by the final map.

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

Response: Noted. Please refer to the revised plans provided with this submittal.

10. **Comment:** *Revise Lot 38 to be a public drainage easement during Phase 2;*

Response: A drainage easement over the proposed 72" RCP will be recorded on Lot 38 with the Phase 1 final map. The easement will be relinquished with Phase 2 improvements to allow construction of Lot 38.

11. **Comment:** *Per Section 1002.4 of the Manual, the headwater requirement does not satisfy the criteria of a maximum of 1.5 times the RCB height. Revise the storm drain system to satisfy Manual criteria;*

Response: The storm drain system has been revised and now includes a 10'x12' RCB improved inlet to satisfy the headwater criteria of 1.5 times the RCB height.

12. **Comment:** *Revise the proposed RCB to a minimum height of 5-feet. Revise plans and hydraulic models accordingly;*

Response: The subject RCB has been removed and replaced with an interim channel. Revised hydraulic models have been provided for the channel and storm drain system.

13. **Comment:** *Provide detailed grading and structural details of the junction structure and headwall;*

Response: Please refer to the revised grading plans and profiles provided with this submittal. The associated structural calculations details will be provided with the improvement plan submittal upon conditional approval of the drainage study.

14. **Comment:** *Revise the Grading Plans to provide a concrete apron and drivable access to the bottom of the proposed storm drain inlet structure at a grade no more than 10%;*

Response: Maintenance of the proposed interim facilities will be the responsibility of the owner. A maintenance bond will be required and will be posted by the owner.

15. **Comment:** *Structural plans for the storm drain improvements must be submitted for review. Provide a soils report, structural calculations and specifications, two wet stamped structural sets, and a grading plan to the Building Department for processing. The engineer must provide a copy of Building Department approval of the structures to Flood Control prior to final acceptance of the drainage study;*

Response: Acknowledged. The soils report, structural calculations and detailed plans will be submitted with the improvement plan review.

16. **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: Acknowledged. Please refer to the table on the revised grading plans.

17. **Comment:** *The project proposes to build temporary drainage facilities during Phase 1 & 2. Prior to final plan approval the developer must complete a Maintenance & Liability Agreement for the interim drainage improvements and post a minimum maintenance bond of \$50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facilities and an exhibit that adequately shows the location and limits of the drainage facilities and an exhibit that adequately shows the location and limits of the drainage facilities to City of Las Vegas Flood Control for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (702-229-6371) to begin the agreement process;*

Response: Acknowledged. The maintenance and liability agreement process will begin upon conditional approval of the drainage study.

18. **Comment:** *Revise Drainage Exhibits E & F to match the street names shown on the Grading Plans. In addition, revise the finish floor check tables to reflect the correct street cross sections being utilized for calculations;*

Response: Acknowledged. The Street names on Exhibits E and F have been revised to now match the Grading Plans. The finished floor check tables have also been revised to reflect the correct street cross sections being utilized.

19. **Comment:** *Review and revise the Finish Floor Check Tables to match the finish floor elevations shown on the Grading Plans, specifically Lots 56, 58, 63, 64. In addition, include Lot 104 in the analysis;*

Response: Acknowledged. Due to grading revisions, the finished floor calculations were reanalyzed for the entire site. The comment above are addressed in the revision.

20. **Comment:** *Revise the Street Check tables to correctly reference the appropriate adjacent/perimeter street. (E.g. Lot 1: Canyon View and Entry, Lot 5: Canyon View and Skye Village, etc.);*

Response: The site layout has been updated which consists of adjustments to the phasing limits. Phase 2 only consists of lots 15-38 and Phase 1 consists of lots 1-14 and 39-106. Due to regrading of the site, all the finished floors were reanalyzed inclusive of updating the adjacent/perimeter street check tables. Note that there is a high point adjacent to lots 1 and 55; therefore, there are negligible flows traveling adjacent to both lots.

21. **Comment:** *Revise the WSPG model to include Ex. SDMH #1 to account for the change in slope of the pipe;*

Response: An alternative design to the storm drain has been provided. Therefore, the WSPG model has been reanalyzed and also includes the Ex. SDMH #1 which accounts for the change in pipe slope.

22. **Comment:** *There appears to be an elevation bust listed in the Ultimate Condition WSPG Summary for the FG Elevation at the system outlet. Review and revise accordingly;*

Response: The WSPG summary tables have been updated to reflect the revised design.

23. **Comment:** *The Regional Flood Control District Manual requires 1% minimum slope around the bulb of a cul-de-sac where storm water is drained through per Section 1602. Provide the required slope in Street B cul-de-sac;*

Response: The required slope has been added in Street B cul-de-sac.

24. **Comment:** *The contours along the southern boundary of Phase 1 (Lots 11 & 101) show the grade going down towards Lots 11 & 101 while Section Detail 11/D-2 (Phase 1) shows it draining south. Revise the Grading Plans accordingly;*

Response: Acknowledged. Please refer to the revised grading plans.

25. **Comment:** *It appears the area behind the headwall at the sump does not drain. Revise the Grading Plan and Section Detail H/D-1 (Phase 1) to demonstrate positive drainage of the area;*

Response: Acknowledged. Revisions to the Grading Plan and Section Detail have been made.

26. **Comment:** *Verify the grades and slope for the pedestrian access path between Lots 69 & 70;*

Response: Grades and slope for the access path have been reviewed and verified.

27. **Comment:** *The proposed wrought iron fence RTC Uniform Standard Drawing 425.S1. Revise details and callouts to reflect standard drawing;*

Response: Details for the Wrought Iron Fence (Standard Drawing 425.S1) has been provided on Sheet DT-2.

28. **Comment:** *Landscape areas, including common lots/open spaces are not allowed to drain over the sidewalk. Provide flow lines with grades and sidewalk under drains for all landscape areas draining to the street. Revise all pertinent details accordingly;*

Response: Acknowledged. Please refer to the revised grading plans.

29. **Comment:** *Revise the Q100 flows shown on Sheet SD-3 (Phase 2) to match and reflect the total flows during the Ultimate Condition conveyed within the system;*

Response: Revisions to the Q100 flows have been made on the storm drain profile sheets to correctly reflect the total flows in the ultimate condition.

30. **Comment:** *Revise all storm drain profiles to reflect RCB, not RCP;*

Response: All the storm drain profiles have been updated and reflect the correct storm drain type per the revised design.

We believe the above responses, revised computations and revisions provided on the plans have adequately satisfied your concerns as stipulated in the review memorandum. The revised plan, profile, and detail sheets adopting the revisions addressed in in this letter have been included in Appendix F. If you have any questions or require additional information, please do not hesitate to contact us at (702) 284-5300.

Respectfully Submitted,

SLATER HANIFAN GROUP, A WESTWOOD TEAM



D'Amato C. Hyche
Flood Control Division

cc: Stanley Okey Amadi, P.E., CFM – SHG
Mark Failla, P.E., CFM – SHG
Josh Johnson, P.E. – SHG

APPENDIX

Appendix A CLV Comment Letter & NOFAs

Appendix B Drainage Exhibits

Appendix C Hydrologic Analysis

Appendix D Hydraulic Analysis

Appendix E Finished Floor Analysis

Appendix F CD of Electronic Files & Revised Improvement Plans

APPENDIX A

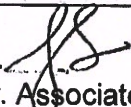
CLV Comment Letter & NOFA

CLV Comment Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

DATE: 3/27/2019

TO:
Land Development Services
Department of Building & Safety

FROM:
Jennifer Shinn, P.E. 
Flood Control, Engr. Associate
Department of Public Works

SUBJECT: Drainage Study for:

Skye Canyon II – Parcel 2.06

COPIES TO:

Slater Hanifan Group

Cross Streets: Skye Canyon Park Dr. & Skye Village Rd.

Ninety-Five Management

File Number: F:\Depot\DSMemos\DS5107A.doc

Bart Anderson, P.E., DevCo

Parcel Number: 125-07-211-002

CCRFCFCD

Zoning Action:

FEMA Flood Zone YES NO X

Proposed Storm Drain YES X NO

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	3/4/2019	3/28/2019	See Comments Below	\$400	\$400
TOTAL FEES (LDDRS):				\$400	----

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.

- Due to the complexity and phasing of the interim and ultimate drainage facilities, the engineer and/or developer is required to meet with Flood Control to discuss the comments prior to resubmittal. Please call Jennifer Shinn at (702) 229-6131 to schedule an appointment.
- The study assumes that all necessary perimeter roadway and drainage infrastructure improvements associated with Phase 3A are in place and functioning prior to the development of Skye Canyon II – Parcel 2.06.
- Skye Canyon II – Parcel 2.06 onsite development is to be flood protected by Skye Canyon Phase 3A. No occupancy permits within onsite Phase 3A will be issued prior to the substantial completion of Skye Canyon Phase 3A infrastructure.
- The development of Lot 38, including the plugging of the 72" RCP, the removal of the 5' x 4' RCB, and the vacation of easements will require an update to the drainage study or be analyzed as 'Phase 3'. Said Update or 'Phase 3' is contingent upon the substantial completion of the Ultimate MPU facilities per Moccasin Road CCRFCFCD Flood Control Facility (US95/Kyle Canyon Road Interchange to Moccasin Road).
- The study states future removal/abandonment of interim Phase 3A and Skye Canyon – Parcel 2.06 storm drain improvements once the Ultimate MPU facilities are in place. The City requires that facilities be removed from the roadway if they are no longer needed. These facilities will need to be included in the Maintenance Bond for the interim drainage facilities.

6. Provide a copy of the zoning/planning conditions associated with this site 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 or approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.
7. 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.

When it is applicable, structural calculations of facilities must be approved by the *City* prior to submittal to the *Clark County Regional Flood Control District* for their review and concurrence.

8. The site accepts offsite flows and conveys them through the site during Phase 1 and Phase 2. The Phase 1 drainage easement shall encompass the existing wash conveying offsite flows to the proposed onsite sump and storm drain system. The Phase 2 drainage easement shall encompass the proposed interim storm drain facility along Street 'F'. Provide a "Public Drainage Easement to be Privately Maintained" and show the easement(s) on the grading plan. Public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map.
9. Private streets must be public drainage easements. Provide a note on the grading plans "Note: All private streets are P.U.E., Public Sewer Easements, and Public Drainage Easements to be privately maintained by HOA."
10. Revise Lot 38 to be a public drainage easement during Phase 2.
11. Per Section 1002.4 of the Manual, the headwater requirement does not satisfy the criteria of a maximum of 1.5 times the RCB height. Revise the storm drain system to satisfy Manual criteria.
12. Revise the proposed RCB to a minimum height of 5-feet. Revise plans and hydraulic models accordingly.
13. Provide detailed grading and structural details of the junction structure and headwall.
14. Revise the Grading Plans to provide a concrete apron and drivable access to the bottom of the proposed storm drain inlet structure at a grade no more than 10%.
15. Structural plans for the storm drain improvements must be submitted for review. Provide a soils report, structural calculations and specifications, two wet stamped structural sets, and a grading plan to the Building Department for processing. The engineer must provide a copy of Building Department approval of the structures to Flood Control prior to final acceptance of the drainage study.
16. 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.
17. The project proposes to build temporary drainage facilities during Phase 1 & 2. Prior to final plan approval the developer must complete a Maintenance & Liability Agreement for the interim drainage improvements and post a minimum maintenance bond of \$50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facilities and an exhibit that adequately shows the location and limits of the drainage facilities and an exhibit that adequately shows the location and limits of the drainage facilities to City of Las Vegas Flood Control for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (702-229-6371) to begin the agreement process.
18. Revise Drainage Exhibits E & F to match the street names shown on the Grading Plans. In addition, revise the finish floor check tables to reflect the correct street cross sections being utilized for calculations.

19. Review and revise the Finish Floor Check Tables to match the finish floor elevations shown on the Grading Plans, specifically Lots 56, 58, 63, 64. In addition, include Lot 104 in the analysis.
20. Revise the Street Check tables to correctly reference the appropriate adjacent/perimeter street. (E.g. Lot 1: Canyon View and Entry, Lot 5: Canyon View and Skye Village, etc.)
21. Revise the WSPG model to include Ex. SDMH #1 to account for the change in slope of the pipe.
22. There appears to be an elevation bust listed in the Ultimate Condition WSPG Summary for the FG Elevation at the system outlet. Review and revise accordingly.
23. The Regional Flood Control District Manual requires 1% minimum slope around the bulb of a cul-de-sac where storm water is drained through per Section 1602. Provide the required slope in Street B cul-de-sac.
24. The contours along the southern boundary of Phase 1 (Lots 11 & 101) show the grade going down towards Lots 11 & 101 while Section Detail 11/D-2 (Phase 1) shows it draining south. Revise the Grading Plans accordingly.
25. It appears the area behind the headwall at the sump does not drain. Revise the Grading Plan and Section Detail H/D-1 (Phase 1) to demonstrate positive drainage of the area.
26. Verify the grades and slope for the pedestrian access path between Lots 69 & 70.
27. The proposed wrought iron fence RTC Uniform Standard Drawing 425.S1. Revise details and callouts to reflect standard drawing.
28. Landscape areas, including common lots/open spaces are not allowed to drain over the sidewalk. Provide flow lines with grades and sidewalk under drains for all landscape areas draining to the street. Revise all pertinent details accordingly.
29. Revise the Q100 flows shown on Sheet SD-3 (Phase 2) to match and reflect the total flows during the Ultimate Condition conveyed within the system.
30. Revise all storm drain profiles to reflect RCB, not RCP.

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
JKS

T/R/S: T19S/R60E/S07
AREA G-07

NOFA



**LAS VEGAS
CITY COUNCIL**

CAROLYN G. GOODMAN
Mayor

LOIS TARKANIAN
Mayor Pro Tem

STAVROS S. ANTHONY
BOB COFFIN

STEVEN G. SEROKA
MICHELE FIORE
CEDRIC CREAR

SCOTT D. ADAMS
City Manager

DEPARTMENT OF PLANNING

ROBERT SUMMERFIELD
DIRECTOR

**DEVELOPMENT
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DEPARTMENT OF PLANNING

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711 | TTY



cityoflasvegas
lasvegasnevada.gov

March 7, 2019

Mr. Bobby Williamson
MF Land, LLC
11411 Southern Highlands Parkway, Suite #300
Las Vegas, Nevada 89141

**RE: VAC-75349 [PRJ-75289] - VACATION RELATED TO MOD-75347
AND TMP-75348
CITY COUNCIL MEETING OF MARCH 6, 2019**

Dear Mr. Williamson:

The City Council at a regular meeting held on March 6, 2019 voted to **APPROVE** a request for a Petition to Vacate public drainage easements on a portion of 21.97 acres at the northeast corner of W Skye Canyon Park Drive and Skye Village Road (APN 125-07-211-002), Ward 6 (Fiore) [PRJ-75289].

This approval is subject to the following conditions:

1. The limits of this Petition of Vacation shall be that portion of the Public Drainage Easement granted per document #20170119:02860.
2. This Vacation shall record immediately prior to and concurrent with the recordation the Final Map for Skye Canyon II Phase 3A Parcel 2.06.
3. A Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the recordation of the Order of Vacation for this application. Appropriate drainage easements shall be reserved if recommended by the approved Drainage Plan/Study. The drainage study required by TMP-75348 may be used to satisfy this requirement provided that it addresses the area to be vacated.
4. All public improvements, if any, adjacent to and in conflict with this vacation application are to be modified, as necessary, at the applicant's expense prior to the recordation of an Order of Vacation.
5. All development shall be in conformance with code requirements and design standards of all City departments.

Mr. Bobby Williamson
MF Land, LLC
VAC-75349 [PRJ-75289] - Page Two
March 7, 2019

6. The Order of Vacation shall not be recorded until all of the conditions of approval have been met provided, however, that conditions requiring modification of public improvements may be fulfilled for purposes of recordation by providing sufficient security for the performance thereof in accordance with the Subdivision Ordinance of the City of Las Vegas. City Staff is empowered to modify this application if necessary because of technical concerns or because of other related review actions as long as current City right-of-way requirements are still complied with and the intent of the vacation application is not changed. If applicable, a five foot wide easement for public streetlight and fire hydrant purposes shall be retained on all vacation actions abutting public street corridors that will remain dedicated and available for public use. Also, if applicable and where needed, public easement corridors and sight visibility or other easements that would/should cross any right-of-way or easement being vacated must be retained.
7. If the Order of Vacation is not recorded within one (1) year after approval by the City of Las Vegas or an Extension of Time is not granted by the Director of Planning, then approval will terminate and a new petition must be submitted.

The Notice of Final Action was filed with the Las Vegas City Clerk on March 7, 2019.

Sincerely,



Robert Summerfield, AICP[®]
Director
Department of Planning

RTS:PL:clb

cc: Mr. Bobby Williamson
Olympia Companies
11411 Southern Highlands Parkway, Suite #300
Las Vegas, Nevada 89141

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



**LAS VEGAS
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DEPARTMENT OF PLANNING

ROBERT SUMMERFIELD
DIRECTOR

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March 7, 2019

Mr. Bobby Williamson
MF Land, LLC
11411 Southern Highlands Parkway, Suite #300
Las Vegas, Nevada 89141

**RE: MOD-75347 [PRJ-75289] - MAJOR MODIFICATION RELATED TO
VAC-75349 AND TMP-75348
CITY COUNCIL MEETING OF MARCH 6, 2019**

Dear Mr. Williamson:

The City Council at a regular meeting held on March 6, 2019 voted to **APPROVE** a request for a Major Modification of the Kyle Canyon Development Standards revised July 20, 2016 TO AMEND THE DEVELOPMENT STANDARDS TO INCLUDE PRIVATE GATED STREET SECTIONS (APNs Multiple), T-D (Traditional Development) Zone, Ward 6 (Fiore) [PRJ-75289].

The Notice of Final Action was filed with the Las Vegas City Clerk on March 7, 2019.

Sincerely,

Robert Summerfield, AICP[®]
Director
Department of Planning

RTS:PL:clb

cc: Mr. Bobby Williamson
Olympia Companies
11411 Southern Highlands Parkway, Suite #300
Las Vegas, Nevada 89141

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



**LAS VEGAS
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lasvegasnevada.gov

March 7, 2019

Mr. Bobby Williamson
MF Land, LLC
11411 Southern Highlands Parkway, Suite #300
Las Vegas, Nevada 89141

**RE: TMP-75348 [PRJ-75289] - TENTATIVE MAP RELATED TO MOD-
75347 AND VAC-75349
CITY COUNCIL MEETING OF MARCH 6, 2019**

Dear Mr. Williamson:

The City Council at a regular meeting held on March 6, 2019 voted to **APPROVE** a request for a Tentative Map FOR A 107-LOT SINGLE-FAMILY RESIDENTIAL SUBDIVISION on 21.97 acres at the northeast corner of W Skye Canyon Park Drive and Skye Village Road (APN 125-07-211-002), T-D (Traditional Development) Zone [ML (Residential Medium Low) Kyle Canyon Special Land Use Designation], Ward 6 (Fiore) [PRJ-75289].

This approval is subject to the following conditions:

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 within four (4) years of the approval of the Tentative Map, this action is void.
2. Street names must be provided in accordance with the City's Street Naming Regulations.
3. 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.
4. 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

Mr. Bobby Williamson
MF Land, LLC
TMP-75348 [PRJ-75289] - Page Two
March 7, 2019

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.

5. All development is subject to the conditions of City Departments and State Subdivision Statutes.

Public Works

6. Prior to and concurrent with the recordation of a Final Map for this site, a Petition of Vacation, such as VAC-75349, shall be recorded to eliminate the Drainage Easements within Skye Canyon Parcel II Phase 3A.
7. A Parent Final Map for Skye Canyon Phase II that creates the boundary of the Final Map for this site shall record prior to the recordation of the Final Map for this site.
8. Private streets must be granted and labeled on the Final Map for this site as Public Utility Easements (P.U.E.), Public Sewer Easements, and Public Drainage Easements to be privately maintained by the Homeowner's Association.
9. If not already constructed or guaranteed by the master developer, construct half street improvements on Skye Village Road and Skye Park Drive including appropriate overpaving (where legally able) adjacent to this site concurrent with development. Install all appurtenant underground facilities, if any, adjacent to this site needed for the future traffic signal system concurrent with development of this site. Extend all required underground utilities, such as electrical, telephone, etc., located within public rights-of-way, past the boundaries of this site prior to construction of hard surfacing (asphalt or concrete). Per condition #17 of the Skye Canyon II Parent Tentative Map (TMP-65803), if not already constructed or guaranteed by the master developer, a minimum two lanes of asphalt pavement on village streets providing the main access to this site and a working sanitary sewer connection shall be provided prior to a final inspection of any dwelling units within this Tentative Map. All existing paving damaged or removed by this development shall be restored at its original location and to its original width concurrent with development of this site.

Mr. Bobby Williamson
MF Land, LLC
TMP-75348 [PRJ-75289] - Page Three
March 7, 2019

10. 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. Per condition of approval # 19 of the Skye Canyon II Parent Tentative Map (TMP-65803), landscaping within calculated Site Visibility Restriction Zones (SVRZs) will be limited in height and type by the City Traffic Engineer.
11. Concurrent with on-site development activities, abandon the existing sewer stub in Common Element "F" to the main in Eagle Canyon Avenue to the satisfaction of the Department of Public Works.
12. A working sanitary sewer connection shall be in place prior to final inspection of any units within this development. Full permanent improvements on all major access streets, 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. All off-site improvements 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 in accordance with Title 19.02.130.D.
13. Meet with the Fire Protection Engineering Section of the Department of Fire Services to discuss fire requirements for the proposed subdivision. The design and layout of all onsite private circulation and access drives shall meet the approval of the Department of Fire Services. No parking is allowed on one side of stub streets where the curb to curb width is 32 feet unless allowed by the Fire Code.
14. A 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.

Mr. Bobby Williamson
MF Land, LLC
TMP-75348 [PRJ-75289] - Page Four
March 7, 2019

15. 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. We note that curved sewers are not allowed and do not comply with City Standards.
16. Comply with all applicable conditions of approval for the Skye Canyon II Parent Tentative Map (TMP-65803) and any other site related actions.

The Notice of Final Action was filed with the Las Vegas City Clerk on March 7, 2019.

Sincerely,



Robert Summerfield, AICP[®]
Director
Department of Planning

RTS:PL:clb

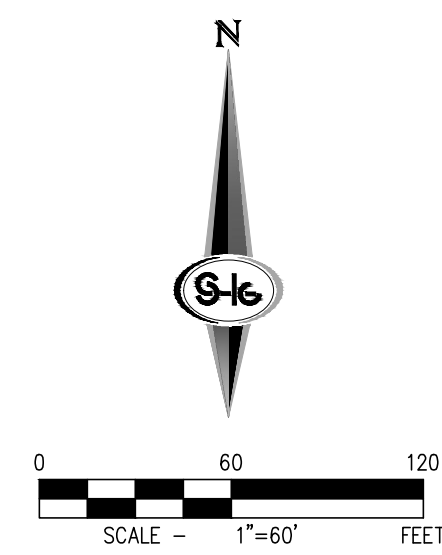
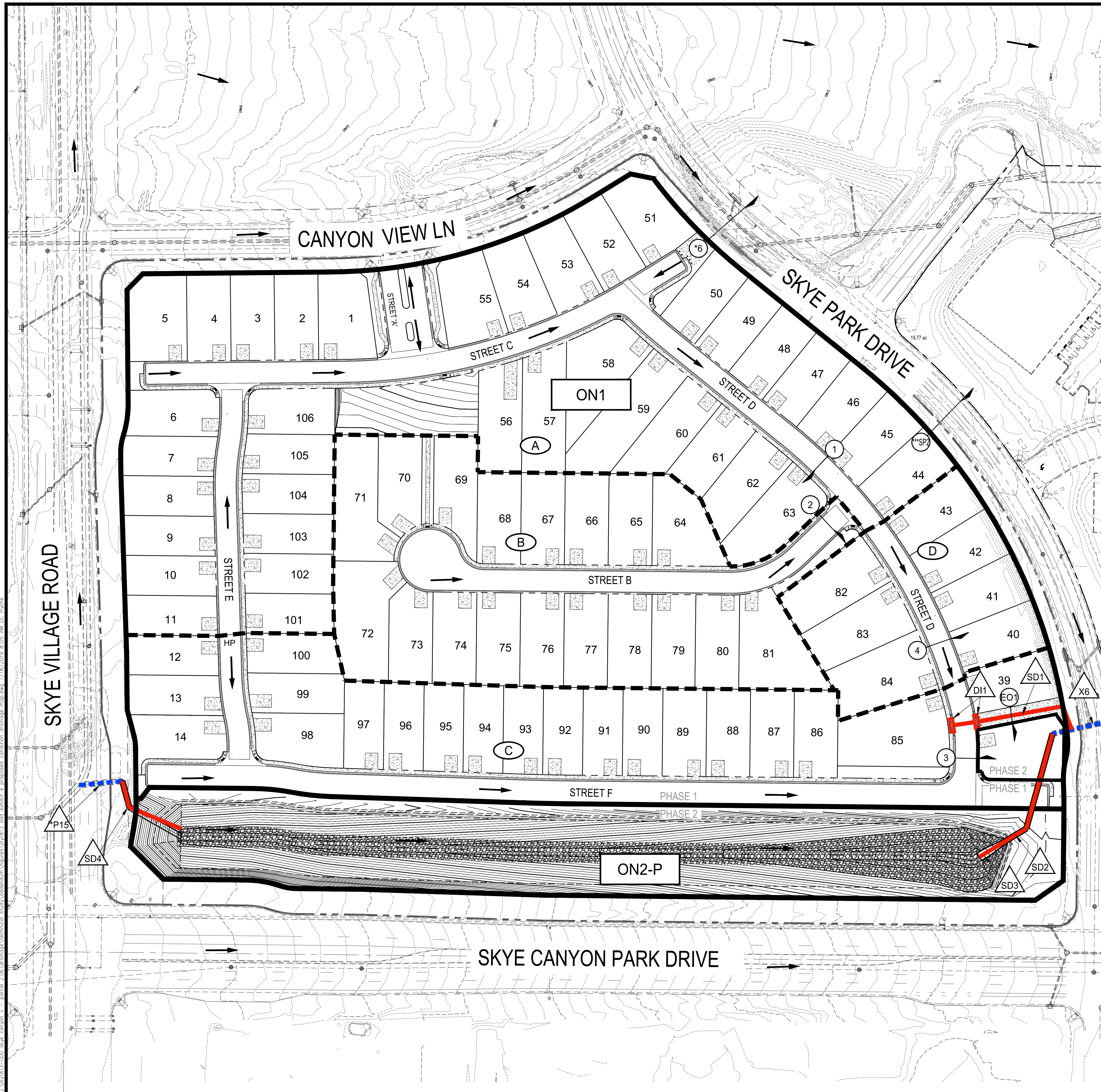
cc: Mr. Bobby Williamson
Olympia Companies
11411 Southern Highlands Parkway, Suite #300
Las Vegas, Nevada 89141

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

APPENDIX B

Drainage Exhibits

\\s01813-000\sky-canyon-ii - parcel 2.06\drainage\Technical Study\addendum\figures\oly1813 add exhibit e proposed condition drainage map.dwg 7/18/2019 8:05 AM DC Hyche



LEGEND	
	BASIN BOUNDARY
	PRO-RATED SUBBASIN BOUNDARY
	EXISTING FACILITY
	PROPOSED FACILITY
	BASIN ID
	PRO-RATED SUBBASIN ID
	FLOW DIRECTION
	FLOWMASTER SECTION
	FACILITY ID

Proposed Condition Flow Rate Summary			
Basin ID	Area (ac)	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)
ON1	16.71	50.0	25.0
ON2-P	3.06	10.0	5.0

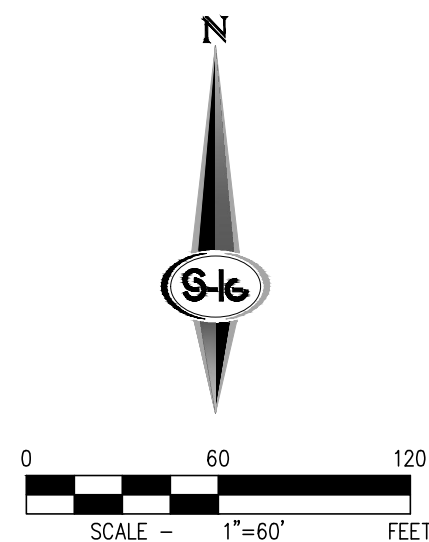
Prorated Flow Summary					
Basin ID	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)	10-yr Unit Flow (cfs/acre)
ON1	50.0	25.0	16.71	2.99	1.50
Subbasin ID	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)	10-yr Unit Flow (cfs/acre)
ON1(A)	22.2	11.1	7.42	2.99	1.50
ON1(B)	10.8	5.4	3.61	2.99	1.50
ON1(C)	12.8	6.4	4.29	2.99	1.50
ON1(D)	4.2	2.1	1.39	2.99	1.50
TOTAL	50.00	25.00	16.71		

Proposed 100-Year Section Summary					
Section ID	Q ₁₀₀ (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV
1	22.2	0.60	0.49	2.76	1.35
Q = ON1(A)		4.00	0.37	5.23	1.94
2	10.8	3.11	0.31	4.01	1.24
Q = ON1(B)		5.10	0.29	4.83	1.40
3	12.8	1.50	0.37	3.15	1.17
Q = ON1(C)		3.81	0.32	4.51	1.44
4	37.2	1.00	0.52	3.96	2.06
Q = ON1(A) + ON1(B) + ON1(D)					
*6	9.0	2.3	0.42	4.44	1.90
***SP2	37.0	1.90	0.54	4.40	2.40

Flood Control Facilities Summary			
Facility ID	Facility Description	Q ₁₀₀ (cfs)	Notes
SD1	36" RCP	50	Proposed Storm Drain Lateral
DI1	15" Type CM2 Sump	Two DI's each collecting 25 cfs	Proposed Drop Inlets
SD2	72" RCP	432	Proposed Storm Drain
SD3	10"x12" RCB	432	Proposed Storm Drain
SD4	72" RCP	422	Proposed Storm Drain Lateral
X6	72" RCP	534	Referenced Facility
*P15	72" RCP	422	Referenced Facility

*REFERENCED FROM INFRASTRUCTURE 3A STUDY
***REFERENCED FROM SKYE CANYON PHASE 3 (SMITH CENTER) STUDY

\\p1813-000 skye canyon ii - parcel 2.06\drainage\technical study\addendum\figures\oly1813 add exhibit f ultimate condition drainage map - copy.dwg, 7/18/2019, 8:02 AM, DC, hcyte



LEGEND	
	BASIN BOUNDARY
	PRO-RATED SUBBASIN BOUNDARY
	EXISTING FACILITY
	PROPOSED FACILITY
	BASIN ID
	PRO-RATED SUBBASIN ID
	FLOW DIRECTION
	FLOWMASTER SECTION
	FACILITY ID

Ultimate Condition Flow Rate Summary			
Basin ID	Area (ac)	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)
ON1	16.71	50.0	25.0
ON2	3.06	10.0	5.0

Prorated Flow Summary				
Basin ID	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
ON1	50.00	25.00	16.71	2.99
Subbasin ID	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
ON1(A)	22.2	11.1	7.42	2.99
ON1(B)	10.8	5.4	3.61	2.99
ON1(C)	12.8	6.4	4.29	2.99
ON1(D)	4.2	2.1	1.39	2.99
TOTAL	50.0	25.0	16.71	

Ultimate Condition 100-Year Section Summary					
Section ID	Q ₁₀₀ (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV
1 Q = ON1(A)	22.2	0.60	0.49	2.76	1.35
		4.00	0.37	5.23	1.94
2 Q = ON1(B)	10.8	3.11	0.31	4.01	1.24
		5.10	0.29	4.83	1.40
3 Q = ON1(C) + ON2	22.8	1.50	0.43	3.77	1.62
		3.81	0.38	5.15	1.96
4 Q = ON1(A) + ON1(B) + ON1(D)	37.2	1.00	0.52	3.96	2.06
*6	9.0	2.3	0.42	4.44	1.90
**H1	15.0	3.56	0.37	5.20	1.90
***SP2	37.0	1.90	0.54	4.40	2.40

Emergency Overflow Easement Summary					
Section ID	Q ₁₀₀ (cfs)	Type (ft)	Type of Analysis	Slope (%)	Depth (ft)
Section EO1 (Q = ON1 + ON2)	60.0	Concrete U-Channel	Normal Depth	0.50	0.56
			Weir	N/A	0.98

Flood Control Facilities Summary			
Facility ID	Facility Description	Q ₁₀₀ (cfs)	Notes
SD1	36" RCP	60	Proposed Storm Drain Lateral
DI1	15" Type CM2 Sump	Two DI's each collecting 30 cfs	Proposed Drop Inlets
X6	72" RCP	112	Referenced Facility
*P15	72" RCP	422	Capped off

*REFERENCED FROM INFRASTRUCTURE 3A STUDY
**REFERENCED FROM SKYE CANYON PHASE 1 INFRASTRUCTURE STUDY
***REFERENCED FROM SKYE CANYON PHASE 3 (SMITH CENTER) STUDY

APPENDIX C

Hydrologic Analysis

Soils and Curve Number Data

Soil Data & Curve Number Computation

Project Name & Number: OLY1813.000 Skye Canyon II Parcel 2.06 (Addendum)

Date: 7/17/2019

By: DCH

Data:

Reference:

Exhibit D
NRCS Soil Data

Soil Type - Soil Survey Area & Version, Soil Description				A	B	C	D
LV	155	Las Vegas Valley 2016	Cave gravelly fine sandy loam, 4 to 15 percent slopes	0%	0%	0%	100%
LV	400	Las Vegas Valley 2016	Tencee very gravelly fine sandy loam, 2 to 8 percent slopes	0%	0%	0%	100%

Land Use	A	B	C	D
Residential (<6,000 sf)*	89	92	94	95
Newly Graded	77	86	91	94

PROPOSED CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP PERCENTS				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
ON1	LV	155	100.0%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	16.71	95.00
TOTAL PERCENT			100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									16.71	95.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP PERCENTS				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
ON2-P	LV	155	69.9%	Newly Graded	0%	0%	0%	100%	77	86	91	94	2.14	65.74
	LV	400	30.1%	Newly Graded	0%	0%	0%	100%	77	86	91	94	0.92	28.26
TOTAL PERCENT			100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									3.06	94.0

ULTIMATE CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP PERCENTS				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
ON2	LV	155	69.9%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	2.14	66.44
	LV	400	30.1%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	0.92	28.56
TOTAL PERCENT			100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									3.06	95.0

5740 S. Arville St., Suite 216 - Las Vegas, NV 89118

Ph. 702-284-5300 - Fx. 702-284-5399

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

RUNOFF CURVE NUMBERS (URBAN AREAS¹)

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area ²	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ³ :					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved: curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved: open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴ ...		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
See Table 602A					

Developing urban areas

Newly graded areas (pervious areas only, no vegetation) ⁵	77	86	91	94
--	----	----	----	----

- 1 Average runoff condition, and $I_p = 0.2S$.
- 2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system. Impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using Figure 603.
- 3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.
- 4 Composite CN's for natural desert landscaping should be computed using Figure 603 based on the impervious area percentage (CN #98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.
- 5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using Figure 603 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Revision	Date

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

RUNOFF CURVE NUMBERS (SEMIARID RANGELANDS¹)

Cover description		Curve numbers for hydrologic soil group—			
Cover type	Hydrologic condition ²	A ³	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

¹Average runoff condition, and $I_a = 0.2S$.

²Poor: < 30% ground cover (litter, grass, and brush overstory).

Fair: 30 to 70% ground cover.

Good: > 70% ground cover.

³Curve numbers for group A have been developed only for desert shrub.

Revision	Date

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

RUNOFF CURVE NUMBERS - RESIDENTIAL DISTRICTS

Average Lot Size or Usage ¹	Percent Impervious ²	Curve Number for Hydrologic Soil Groups			
		A	B	C	D
Apartments/Condos	72	81	88	91	93
Townhouses/6,000 sq ft lots or less ³	69	80	87	90	92
7,000 sq ft lots	63	76	84	89	91
8,000 sq ft lots	58	73	82	88	90
10,000 sq ft lots	38	61	75	83	87
14,000 sq ft lots	30	57	72	81	86
20,000 sq ft lots	25	54	70	80	85
40,000 sq ft lots	20	51	68	79	84
80,000 sq ft lots	12	46	65	77	82

1 Lot size should represent the size of the average lot and not the gross acreage divided by the number of lots.

2 Actual percent impervious value should be compared to selected land use type.

3 In cases where average residential lots are smaller than 6,000 sq ft, commercial/business/industrial land use should be used.

Revision	Date

REFERENCE:

TABLE 602A

Standard Form 4 Computations

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

Project Name & Number: OLY1813-000 Skye Canyon II Parcel 2.06 (Addendum)

Description: Lag time standard form 4 calculations

By: DCH

Date: 7/17/2019

SUB-BASIN DATA				INITIAL / OVERLAND TIME (Ti)				TRAVEL TIME (Tt)				Tc		Tc Check		TLag		
DESIG:	DEV./EX. (D or E)	CN	K	AREA Ac	AREA Mi^2	INITIAL LENGTH Feet	SLOPE %	Ti Min	TRAVEL LENGTH Feet	SLOPE %	VELOCITY FPS	V1	V2	Tt Min	Tc Calc.	Total Length Feet	Tc Check	TLag Hours
			[1]		[2]			[3]				[4]	[5]	[6]	[7]	[8]	[9]	[10]
PROPOSED CONDITION																		
ON1	D	95.0	0.864	16.71	0.0261	100	1.00	4.25	1540	2.53	3.21	4.87	6.15		10.40	1640	19.111	0.104
ON2-P	D	94.0	0.851	3.06	0.0048	100	2.23	3.43	1010	2.97	3.48	5.27	4.01		7.44	1110	16.167	0.074
ULTIMATE CONDITION																		
ON2	D	95.0	0.864	3.06	0.0048	115	1.00	4.56	1120	2.68	3.31	5.01	4.58		9.14	1235	16.861	0.091
[1] $K = 0.0132 (CN) - 0.39$ [2] $A = \text{Area}/640$ [3] $Ti = (1.8 (1.1-K) L^{0.5})/S^{0.33}$ [4] For Existing Conditions: $V1 = 14.8 * (S/100)^{0.5}$ For Developed Conditions: $V1 = 20.2 * (S/100)^{0.5}$ [5] For Existing Conditions: $V2 = 29.4 * (S/100)^{0.5}$ For Developed Conditions: $V2 = 30.6 * (S/100)^{0.5}$ [6] $Tt = L/(60*V)$ [7] $Tc = Ti + Tt$ [8] Total L = Initial L + Travel L [9] $Tc = (L/180) + 10$ [10] $\text{TLag} = (0.6*Tc)/60$ [11] Min TLag = 0.05 Note: For Travel Time Calcs: V1 applies to first 500 feet and V2 applies to remaining distance.																		
REFERENCE :																		

STANDARD FORM 4

Proposed Condition HEC-1 Analysis

PRO

```

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   JUN 1998
*   VERSION 4.1
*
* RUN DATE 25JUN19 TIME 16:20:57
*
*****

```

```

*****
*
* U.S. ARMY CORPS OF ENGINEERS
* HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET
* DAVIS, CALIFORNIA 95616
* (916) 756-1104
*
*****

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X X XXXXXX XXXX X
X X X X X XX
X X X X X
XXXXXX XXXX X XXXXX X
X X X X X
X X X X X
X X XXXXXX XXXX XXX

```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY, DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1

HEC-1 INPUT

PAGE 1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

*DIAGRAM
1 ID SLATER HANIFAN GROUP, A WESTWOOD TEAM
2 ID SKYE CANYON II PARCEL 2.06
3 ID TECHNICAL DRAINAGE STUDY
4 ID PROPOSED DRAINAGE CONDITION
5 ID
6 ID RETURN PERIOD ----- 100 & 10-YEAR
7 ID DISTRIBUTION ----- 6-HOUR SDN3
8 ID PROJECT NO. ----- OLY1813.000
9 ID FILENAME ----- PRO.H1
10 ID DATE ----- JUNE 2019
11 ID MODELED BY ----- DCH
12 ID
13 ID PRECIPITATION STORM EVENT RATIOS
14 ID STORM EVENT RATIO
15 ID 100-YR 1.00
16 ID 10-YR 0.56
17 ID
18 IT 5 0 0 300
19 IO 5 0 0
20 IN 5 0 0
21 JR PREC 1.00 0.56
*
22 KK ON1
23 BA 0.0261
24 PB 2.86
25 PC 0 0.020 0.057 0.070 0.087 0.108 0.124 0.130 0.130 0.130
26 PC 0.130 0.130 0.130 0.133 0.140 0.142 0.148 0.158 0.172 0.181
27 PC 0.190 0.197 0.199 0.200 0.201 0.204 0.214 0.229 0.241 0.249
28 PC 0.251 0.256 0.270 0.278 0.281 0.283 0.295 0.322 0.352 0.409
29 PC 0.499 0.590 0.710 0.744 0.781 0.812 0.819 0.835 0.851 0.856
30 PC 0.860 0.868 0.876 0.888 0.910 0.926 0.937 0.950 0.970 0.976
31 PC 0.982 0.985 0.987 0.989 0.990 0.993 0.993 0.994 0.995 0.998
32 PC 0.998 0.999 1.000
33 LS 0 95.0
34 UD 0.104
*
35 KK ON2-P
36 BA 0.0048
37 LS 0 94.0
38 UD 0.074
*
39 ZZ

```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```

INPUT
LINE (V) ROUTING (--->) DIVERSION OR PUMP FLOW
NO. (.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```


PRO

22 ON1

35 ON2-P

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
*
* RUN DATE 25JUN19 TIME 16:20:57 *
*

*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
*

SLATER HANIFAN GROUP, A WESTWOOD TEAM
SKYE CANYON II PARCEL 2.06
TECHNICAL DRAINAGE STUDY
PROPOSED DRAINAGE CONDITION

RETURN PERIOD ----- 100 & 10-YEAR
DISTRIBUTION ----- 6-HOUR SDN3
PROJECT NO. ----- OLY1813.000
FILENAME ----- PRO.H1
DATE ----- JUNE 2019
MODELED BY ----- DCH

PRECIPITATION STORM EVENT RATIOS
STORM EVENT RATIO
100-YR 1.00
10-YR 0.56

19 IO OUTPUT CONTROL VARIABLES

IPRNT 5 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN 5 MINUTES IN COMPUTATION INTERVAL
IDATE 1 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 300 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 2 0 ENDING DATE
NDTIME 0055 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-Feet
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
1.00 .56

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION	
				RATIO 1	RATIO 2
				1.00	.56
HYDROGRAPH AT					
+	ON1	.03	1 FLOW	50.	25.
			TIME	3.50	3.50
HYDROGRAPH AT					
+	ON2-P	.00	1 FLOW	10.	5.
			TIME	3.50	3.50

PRO

*** NORMAL END OF HEC-1 ***

Ultimate Condition HEC-1 Analysis

```

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
* JUN 1998
* VERSION 4.1
*
* RUN DATE 25JUN19 TIME 09:45:54
*
*****

```

ULT

```

*****
*
* U.S. ARMY CORPS OF ENGINEERS
* HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET
* DAVIS, CALIFORNIA 95616
* (916) 756-1104
*
*****

```

```

X X XXXXXX XXXX X
X X X X X XX
X X X X X
XXXXXX XXXX X XXXX X
X X X X X
X X X X X
X X XXXXXX XXXX XXX

```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
 THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
 NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
 DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
 KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1

HEC-1 INPUT

PAGE 1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

*DIAGRAM

```

1 ID SLATER MANIFAN GROUP, A WESTWOOD TEAM
2 ID SKYE CANYON II PARCEL 2.06
3 ID TECHNICAL DRAINAGE STUDY
4 ID ULTIMATE DRAINAGE CONDITION
5 ID
6 ID RETURN PERIOD ----- 100 & 10-YEAR
7 ID DISTRIBUTION ----- 6-HOUR SDN3
8 ID PROJECT NO. ----- OLY1813.000
9 ID FILENAME ----- ULT.H1
10 ID DATE ----- JUNE 2019
11 ID MODELED BY ----- DCH
12 ID
13 ID PRECIPITATION STORM EVENT RATIOS
14 ID STORM EVENT RATIO
15 ID 100-YR 1.00
16 ID 10-YR 0.56
17 ID
18 IT 5 0 0 300
19 IO 5 0 0
20 IN 5 0 0
21 JR PREC 1.00 0.56
*

```

```

22 KK ON1
23 BA 0.0261
24 PB 2.86
25 PC 0 0.020 0.057 0.070 0.087 0.108 0.124 0.130 0.130 0.130
26 PC 0.130 0.130 0.130 0.133 0.140 0.142 0.148 0.158 0.172 0.181
27 PC 0.190 0.197 0.199 0.200 0.201 0.204 0.214 0.229 0.241 0.249
28 PC 0.251 0.256 0.270 0.278 0.281 0.283 0.295 0.322 0.352 0.409
29 PC 0.499 0.590 0.710 0.744 0.781 0.812 0.819 0.835 0.851 0.856
30 PC 0.860 0.868 0.876 0.888 0.910 0.926 0.937 0.950 0.970 0.976
31 PC 0.982 0.985 0.987 0.989 0.990 0.993 0.993 0.994 0.995 0.998
32 PC 0.998 0.999 1.000
33 LS 0 95.0
34 UD 0.104
*

```

```

35 KK ON2
36 BA 0.0048
37 LS 0 95.0
38 UD 0.091
*
39 ZZ

```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```

INPUT
LINE (V) ROUTING (--->) DIVERSION OR PUMP FLOW

NO. (.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```


ULT

22 ON1

35 ON2

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 25JUN19 TIME 09:45:54 *

* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *

SLATER HANIFAN GROUP, A WESTWOOD TEAM
SKYE CANYON II PARCEL 2.06
TECHNICAL DRAINAGE STUDY
ULTIMATE DRAINAGE CONDITION

RETURN PERIOD ----- 100 & 10-YEAR
DISTRIBUTION ----- 6-HOUR SDN3
PROJECT NO. ----- OLY1813.000
FILENAME ----- ULT.H1
DATE ----- JUNE 2019
MODELED BY ----- DCH

PRECIPITATION STORM EVENT RATIOS
STORM EVENT RATIO
100-YR 1.00
10-YR 0.56

19 IO OUTPUT CONTROL VARIABLES

IPRNT 5 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN 5 MINUTES IN COMPUTATION INTERVAL
IDATE 1 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 300 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 2 0 ENDING DATE
NDTIME 0055 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-Feet
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
1.00 .56

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION	
				RATIO 1	RATIO 2
				1.00	.56
HYDROGRAPH AT					
+	ON1	.03	1 FLOW	50.	25.
			TIME	3.50	3.50
HYDROGRAPH AT					
+	ON2	.00	1 FLOW	10.	5.
			TIME	3.50	3.50

ULT

*** NORMAL END OF HEC-1 ***

APPENDIX D

Hydraulic Analysis

Street Flow 100-Yr Computations (Proposed Condition)

Worksheet for 1 - 100-Yr Onsite Street Sections (min)

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.60 %
Discharge 22.20 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+15.50	0.38
0+28.50	0.12
0+28.50	0.08
0+29.50	0.00
0+30.62	0.38
0+31.00	0.38
0+36.00	0.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+28.50, 0.08)	0.016
(0+28.50, 0.08)	(0+36.00, 0.48)	0.013

Options

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

Worksheet for 1 - 100-Yr Onsite Street Sections (min)

Results

Normal Depth	0.49	ft
Elevation Range	0.00 to 0.48	ft
Flow Area	8.03	ft ²
Wetted Perimeter	36.33	ft
Hydraulic Radius	0.22	ft
Top Width	36.00	ft
Normal Depth	0.49	ft
Critical Depth	0.49	ft
Critical Slope	0.00559	ft/ft
Velocity	2.76	ft/s
Velocity Head	0.12	ft
Specific Energy	0.60	ft
Froude Number	1.03	
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	0.49	ft
Critical Depth	0.49	ft
Channel Slope	0.60	%
Critical Slope	0.00559	ft/ft

Cross Section for 1 - 100-Yr Onsite Street Sections (min)

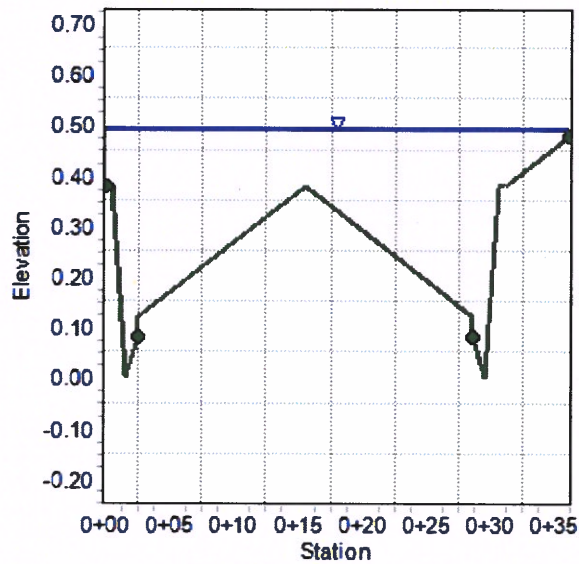
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.60	%
Normal Depth	0.49	ft
Discharge	22.20	ft ³ /s

Cross Section Image



Worksheet for 1 - 100-Yr Onsite Street Sections (max)

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 4.00 %
Discharge 22.20 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+15.50	0.38
0+28.50	0.12
0+28.50	0.08
0+29.50	0.00
0+30.62	0.38
0+31.00	0.38
0+36.00	0.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+28.50, 0.08)	0.016
(0+28.50, 0.08)	(0+36.00, 0.48)	0.013

Options

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

Worksheet for 1 - 100-Yr Onsite Street Sections (max)

Results

Normal Depth		0.37	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		4.25	ft ²
Wetted Perimeter		29.61	ft
Hydraulic Radius		0.14	ft
Top Width		29.39	ft
Normal Depth		0.37	ft
Critical Depth		0.49	ft
Critical Slope		0.00588	ft/ft
Velocity		5.23	ft/s
Velocity Head		0.42	ft
Specific Energy		0.80	ft
Froude Number		2.42	
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	0.37	ft
Critical Depth	0.49	ft
Channel Slope	4.00	%
Critical Slope	0.00588	ft/ft

Cross Section for 1 - 100-Yr Onsite Street Sections (max)

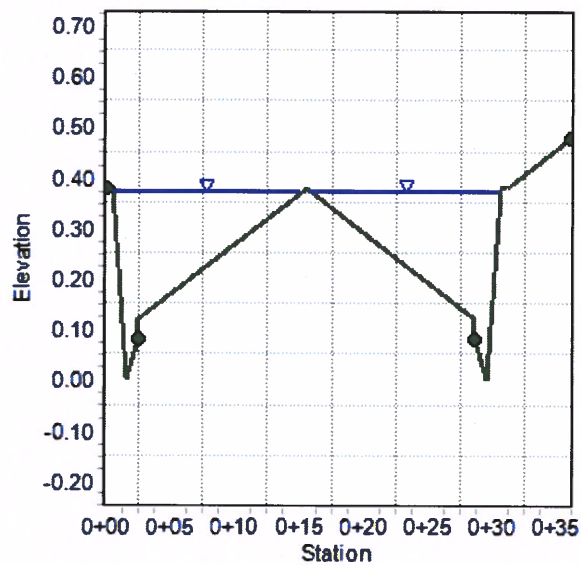
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 4.00 %
Normal Depth 0.37 ft
Discharge 22.20 ft³/s

Cross Section Image



Worksheet for 2 - 100-Yr Onsite Street Sections (min)

Results

Normal Depth		0.31	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		2.69	ft ²
Wetted Perimeter		23.32	ft
Hydraulic Radius		0.12	ft
Top Width		23.12	ft
Normal Depth		0.31	ft
Critical Depth		0.39	ft
Critical Slope		0.00662	ft/ft
Velocity		4.01	ft/s
Velocity Head		0.25	ft
Specific Energy		0.56	ft
Froude Number		2.07	
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	0.31	ft
Critical Depth	0.39	ft
Channel Slope	3.11	%
Critical Slope	0.00662	ft/ft

Cross Section for 2 - 100-Yr Onsite Street Sections (min)

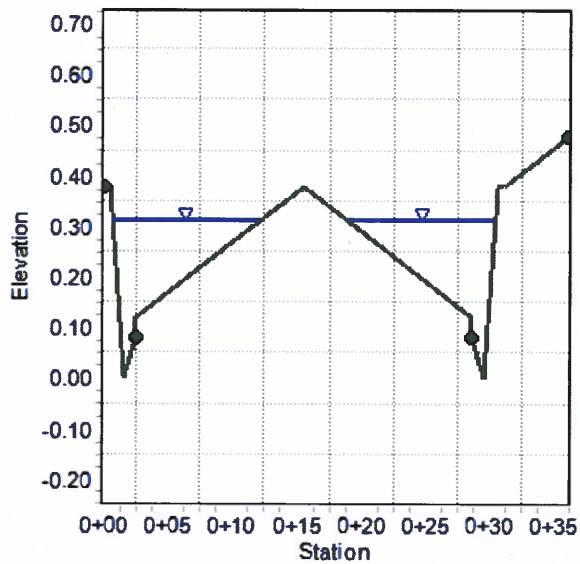
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 3.11 %
Normal Depth 0.31 ft
Discharge 10.80 ft³/s

Cross Section Image



Worksheet for 2 - 100-Yr Onsite Street Sections (max)

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 5.10 %
Discharge 10.80 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+15.50	0.38
0+28.50	0.12
0+28.50	0.08
0+29.50	0.00
0+30.62	0.38
0+31.00	0.38
0+36.00	0.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+28.50, 0.08)	0.016
(0+28.50, 0.08)	(0+36.00, 0.48)	0.013

Options

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

Worksheet for 2 - 100-Yr Onsite Street Sections (max)

Results

Normal Depth		0.29	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		2.23	ft ²
Wetted Perimeter		21.11	ft
Hydraulic Radius		0.11	ft
Top Width		20.92	ft
Normal Depth		0.29	ft
Critical Depth		0.39	ft
Critical Slope		0.00660	ft/ft
Velocity		4.83	ft/s
Velocity Head		0.36	ft
Specific Energy		0.66	ft
Froude Number		2.61	
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	0.29	ft
Critical Depth	0.39	ft
Channel Slope	5.10	%
Critical Slope	0.00660	ft/ft

Project Description

Manning Formula

Normal Depth

10.80 ft³/s

Worksheet for 3 - 100-Yr Onsite Street Sections (min)

Results

Normal Depth		0.37	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		4.07	ft ²
Wetted Perimeter		28.95	ft
Hydraulic Radius		0.14	ft
Top Width		28.74	ft
Normal Depth		0.37	ft
Critical Depth		0.41	ft
Critical Slope		0.00648	ft/ft
Velocity		3.15	ft/s
Velocity Head		0.15	ft
Specific Energy		0.52	ft
Froude Number		1.48	
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	0.37	ft
Critical Depth	0.41	ft
Channel Slope	1.50	%
Critical Slope	0.00648	ft/ft

Project Description

Manning Formula

Normal Depth

12.80 ft³/s

Project Description

Input Data

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+15.50	0.38
0+28.50	0.12
0+28.50	0.08
0+29.50	0.00
0+30.62	0.38
0+31.00	0.38
0+36.00	0.48

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+28.50, 0.08)	0.016
(0+28.50, 0.08)	(0+36.00, 0.48)	0.013

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

Worksheet for 3 - 100-Yr Onsite Street Sections (max)

Results

Normal Depth	0.32	ft
Elevation Range	0.00 to 0.48 ft	
Flow Area	2.84	ft ²
Wetted Perimeter	23.98	ft
Hydraulic Radius	0.12	ft
Top Width	23.79	ft
Normal Depth	0.32	ft
Critical Depth	0.41	ft
Critical Slope	0.00643	ft/ft
Velocity	4.51	ft/s
Velocity Head	0.32	ft
Specific Energy	0.63	ft
Froude Number	2.30	
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	0.32	ft
Critical Depth	0.41	ft
Channel Slope	3.81	%
Critical Slope	0.00643	ft/ft

Cross Section for 3 - 100-Yr Onsite Street Sections (max)

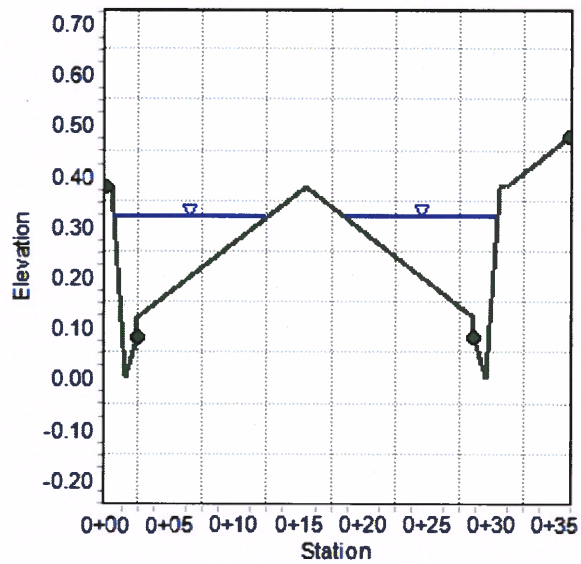
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 3.81 %
Normal Depth 0.32 ft
Discharge 12.80 ft³/s

Cross Section Image



Worksheet for 4 - 100-Yr Onsite Street Sections

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 1.00 %
Discharge 37.20 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+15.50	0.38
0+28.50	0.12
0+28.50	0.08
0+29.50	0.00
0+30.62	0.38
0+31.00	0.38
0+36.00	0.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+28.50, 0.08)	0.016
(0+28.50, 0.08)	(0+36.00, 0.48)	0.013

Options

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

Worksheet for 4 - 100-Yr Onsite Street Sections

Results

Normal Depth		0.52	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		9.39	ft ²
Wetted Perimeter		36.40	ft
Hydraulic Radius		0.26	ft
Top Width		36.00	ft
Normal Depth		0.52	ft
Critical Depth		0.58	ft
Critical Slope		0.00502	ft/ft
Velocity		3.96	ft/s
Velocity Head		0.24	ft
Specific Energy		0.77	ft
Froude Number		1.37	
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	0.52	ft
Critical Depth	0.58	ft
Channel Slope	1.00	%
Critical Slope	0.00502	ft/ft

Project Description

Manning Formula

Normal Depth

37.20 ft³/s

The graph shows the vertical alignment of a road. The horizontal axis represents the stationing from 0+00 to 0+35. The vertical axis represents the elevation in feet, ranging from -0.20 to 0.70. A horizontal blue line is drawn at an elevation of approximately 5.2 feet. The road profile is shown as a black line. It starts at an elevation of about 3.8 feet at station 0+00, drops to 0.0 feet at station 0+02, rises to a peak of 0.38 feet at station 0+15, falls to 0.0 feet at station 0+28, and rises to 0.48 feet at station 0+35. A blue arrow points to the horizontal line at station 0+18.

Channel Section Computations

Worksheet for CH1 - Channel Section (min)

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 2.59 %
Discharge 432.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	19.95
0+30.00	4.95
0+45.00	0.00
0+55.00	0.00
0+70.00	4.95
0+80.00	9.95

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 19.95)	(0+30.00, 4.95)	0.025
(0+30.00, 4.95)	(0+70.00, 4.95)	0.043
(0+70.00, 4.95)	(0+80.00, 9.95)	0.025

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 2.79 ft
Elevation Range 0.00 to 19.95 ft
Flow Area 51.51 ft²
Wetted Perimeter 27.81 ft
Hydraulic Radius 1.85 ft

Worksheet for CH1 - Channel Section (min)

Results

Top Width	26.91	ft
Normal Depth	2.79	ft
Critical Depth	2.89	ft
Critical Slope	0.02246	ft/ft
Velocity	8.39	ft/s
Velocity Head	1.09	ft
Specific Energy	3.88	ft
Froude Number	1.07	
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	2.79	ft
Critical Depth	2.89	ft
Channel Slope	2.59	%
Critical Slope	0.02246	ft/ft

Project Description

Manning Formula

Normal Depth

432.00 ft³/s

The diagram illustrates a parabolic curve with the following data points:

Station	Elevation
0+00	20.00
0+30	5.00
0+45	0.00
0+60	5.00
0+80	10.00

A horizontal line is drawn at an elevation of 3.00 between stations 0+30 and 0+60. The vertical clearance between this line and the curve at station 0+45 is 3.00.

Worksheet for CH1 - Channel Section (max)

Results

Top Width	25.43	ft
Normal Depth	2.55	ft
Critical Depth	2.89	ft
Critical Slope	0.02246	ft/ft
Velocity	9.58	ft/s
Velocity Head	1.42	ft
Specific Energy	3.97	ft
Froude Number	1.27	
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	2.55	ft
Critical Depth	2.89	ft
Channel Slope	3.73	%
Critical Slope	0.02246	ft/ft

Cross Section for CH1 - Channel Section (max)

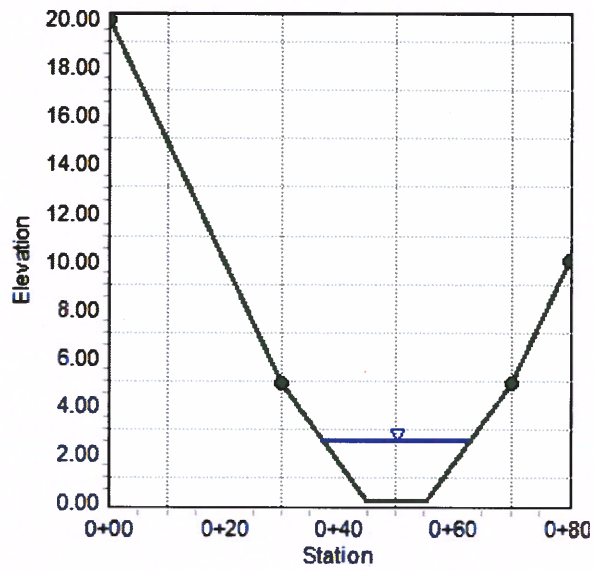
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 3.73 %
Normal Depth 2.55 ft
Discharge 432.00 ft³/s

Cross Section Image



Street Flow 100-Yr Computations (Ultimate Condition)

Worksheet for 3 - 100-Yr Onsite Street Sections (min)

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 1.50 %
Discharge 22.80 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+15.50	0.38
0+28.50	0.12
0+28.50	0.08
0+29.50	0.00
0+30.62	0.38
0+31.00	0.38
0+36.00	0.48

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+28.50, 0.08)	0.016
(0+28.50, 0.08)	(0+36.00, 0.48)	0.013

Options

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

Worksheet for 3 - 100-Yr Onsite Street Sections (min)

Results

Normal Depth		0.43	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		6.05	ft ²
Wetted Perimeter		33.69	ft
Hydraulic Radius		0.18	ft
Top Width		33.42	ft
Normal Depth		0.43	ft
Critical Depth		0.49	ft
Critical Slope		0.00568	ft/ft
Velocity		3.77	ft/s
Velocity Head		0.22	ft
Specific Energy		0.65	ft
Froude Number		1.56	
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	0.43	ft
Critical Depth	0.49	ft
Channel Slope	1.50	%
Critical Slope	0.00568	ft/ft

Cross Section for 3 - 100-Yr Onsite Street Sections (min)

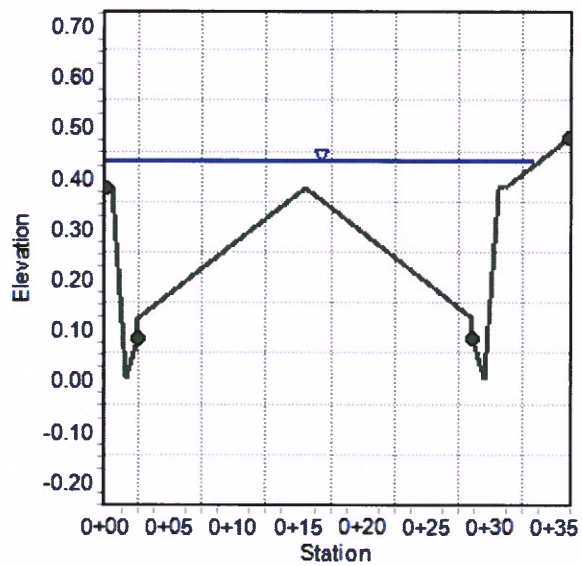
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 1.50 %
Normal Depth 0.43 ft
Discharge 22.80 ft³/s

Cross Section Image



Project Description

Manning Formula

Normal Depth

3.81 %

22.80 ft³/s

Elevation (ft)

0+00.00	0.38
0+00.38	0.38
0+01.50	0.00
0+02.50	0.08
0+02.50	0.12
0+15.50	0.38
0+28.50	0.12
0+28.50	0.08
0+29.50	0.00
0+30.62	0.38
0+31.00	0.38
0+36.00	0.48

Roughness Coefficient

(0+00.00, 0.38)	(0+02.50, 0.08)	0.013
(0+02.50, 0.08)	(0+28.50, 0.08)	0.016
(0+28.50, 0.08)	(0+36.00, 0.48)	0.013

Pavlovskii's Method

Worksheet for 3 - 100-Yr Onsite Street Sections (max)

Results

Normal Depth		0.38	ft
Elevation Range	0.00 to 0.48 ft		
Flow Area		4.42	ft ²
Wetted Perimeter		30.24	ft
Hydraulic Radius		0.15	ft
Top Width		30.02	ft
Normal Depth		0.38	ft
Critical Depth		0.49	ft
Critical Slope		0.00585	ft/ft
Velocity		5.15	ft/s
Velocity Head		0.41	ft
Specific Energy		0.79	ft
Froude Number		2.37	
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	0.38	ft
Critical Depth	0.49	ft
Channel Slope	3.81	%
Critical Slope	0.00585	ft/ft

Cross Section for 3 - 100-Yr Onsite Street Sections (max)

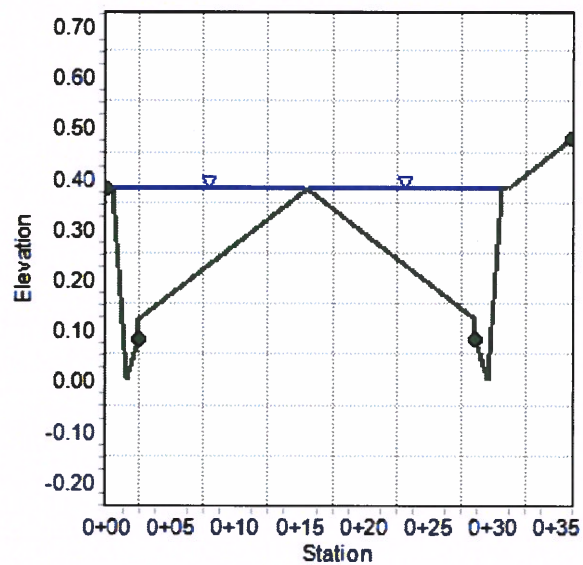
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 3.81 %
Normal Depth 0.38 ft
Discharge 22.80 ft³/s

Cross Section Image



Emergency Overflow Computations

Worksheet for E01 (normal)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50	%
Bottom Width	20.00	ft
Discharge	60.00	ft ³ /s

Results

Normal Depth	0.56	ft
Flow Area	11.28	ft ²
Wetted Perimeter	21.13	ft
Hydraulic Radius	0.53	ft
Top Width	20.00	ft
Critical Depth	0.65	ft
Critical Slope	0.00309	ft/ft
Velocity	5.32	ft/s
Velocity Head	0.44	ft
Specific Energy	1.00	ft
Froude Number	1.25	
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	0.56	ft
Critical Depth	0.65	ft
Channel Slope	0.50	%
Critical Slope	0.00309	ft/ft

Cross Section for E01 (normal)

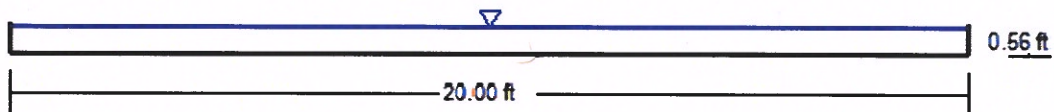
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.50 %
Normal Depth	0.56 ft
Bottom Width	20.00 ft
Discharge	60.00 ft ³ /s

Cross Section Image



V: 1
H: 1

Worksheet for E01 (weir)

Project Description

Solve For

Headwater Elevation

Input Data

Discharge		60.00	ft ³ /s
Crest Elevation		0.00	ft
Tailwater Elevation		0.56	ft
Crest Surface Type	Paved		
Crest Breadth		0.50	ft
Crest Length		20.00	ft

Results

Headwater Elevation	0.98	ft
Headwater Height Above Crest	0.98	ft
Tailwater Height Above Crest	0.56	ft
Weir Coefficient	3.09	US
Submergence Factor	1.00	
Adjusted Weir Coefficient	3.09	US
Flow Area	19.62	ft ²
Velocity	3.06	ft/s
Wetted Perimeter	21.96	ft
Top Width	20.00	ft

Cross Section for E01 (weir)

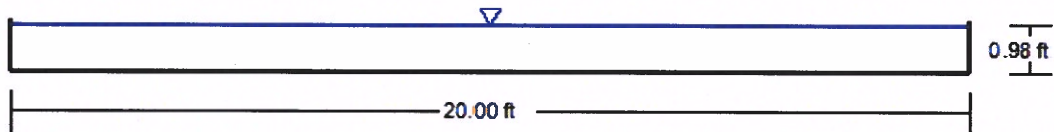
Project Description

Solve For Headwater Elevation

Input Data

Discharge	60.00	ft ³ /s
Headwater Elevation	0.98	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.56	ft
Crest Surface Type	Paved	
Crest Breadth	0.50	ft
Crest Length	20.00	ft

Cross Section Image



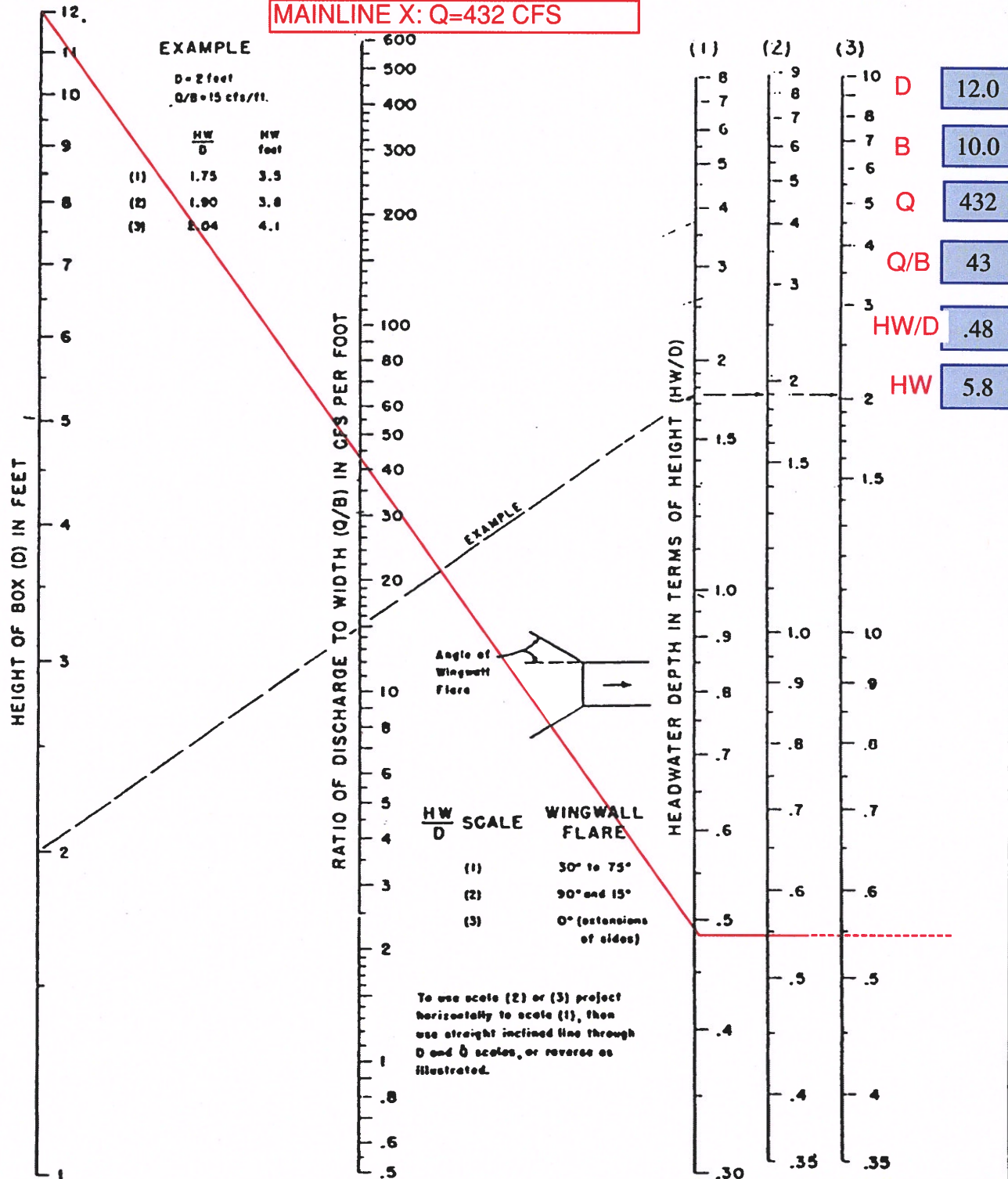
V: 1
H: 1

Nomograph

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

NOMOGRAPH - INLET CONTROL BOX CULVERT

MAINLINE X: Q=432 CFS



Revision	Date

Rip-Rap Size Computations



Rip Rap Sizing Computation

Project Name & Number: OLY1813.000

Date: 7/18/2019

By: DCH

Location: Channel Section

Known Information:

Reference:

Rip Rap protection at

V = Velocity (fps)

10.04

WSPG Hydraulic / Flowmaster Calculations

S_g = Specific Gravity of Rock (typ=2.5)

2.5

Use Typical

s = Longitudinal Channel Slope (ft/ft)

0.0259

Grading Plan

Solve For:

d₅₀ = 1.44 ft - Average Rock Size

d₅₀ = 17 in - Average Rock Size

Thickness = 34 in - Thickness of Rip Rap protection

Manning's 'n' = 0.042 - Roughness Coefficient

Equations:

Based upon a Stable Channel Lining

$$d_{50} = ((vel * S^{0.17}) / (3 * (S_g - 1)))^2$$

Equation 734*

$$n = 0.0395(d_{50})^{1/6}$$

Equation 732*

Recommendations:

* Provided 18-in Riprap

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Design Manual

5740 S. Arville St., Suite 216 - Las Vegas, NV 89118
Ph. 702-284-5300 - Fx. 702-284-5399

WSPGW Models (Proposed Condition)

Proposed Condition WSPG Summary

Parcel 2.06 - Mainline

WSPG Station	Storm Drain Dimension	Invert Elevation (ft)	Q ₁₀₀ (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL / Freeboard Check
1000.000	72" RCP	2787.67	534.00	2792.66	21.26	N/A	System Outlet	N/A
1102.120	72" RCP	2789.72	534.00	2795.46	19.17	2807.00	EX. SDMH	OK
1102.120	72" RCP	2789.72	482.00	2797.70	17.05	2807.00	JUNCTION AT EX. SDMH	OK
1124.710	72" RCP	2790.17	482.00	2798.22	17.05	2807.48	SDMH #6	OK
1124.710	72" RCP	2790.17	432.00	2799.91	15.28	2807.48	JUNCTION AT SDMH #6	OK
1149.460	72" RCP	2790.67	432.00	2801.09	15.28	2809.20	SDMH #4	OK
1272.830	72" RCP	2792.13	432.00	2803.24	15.28	2809.29	SDMH #3	OK
1309.490	72" RCP	2796.76	432.00	2803.63	15.28	2811.00	REACH	OK
1329.490	72" RCP	2797.50	432.00	2807.40	4.37	2811.00	TRANSITION	OK
1341.490	10' x 12' RCB	2797.95	432.00	2807.37	4.59	2810.79	RCB TO HEADWALL	OK
1387.600	IRREGULAR SECTION	2799.67	432.00	2807.78	1.61	2809.63	TRANSITION	OK
1391.890	IRREGULAR SECTION	2799.83	422.00	2807.78	1.62	2813.45	OPEN CHANNEL	OK
1391.890	IRREGULAR SECTION	2799.83	422.00	2807.78	1.62	2813.45	JUNCTION IN OPEN CHANNEL	OK
1749.790	IRREGULAR SECTION	2813.18	422.00	2815.94	8.35	2826.50	OPEN CHANNEL	OK
1937.430	IRREGULAR SECTION	2818.04	422.00	2820.80	8.35	2831.50	OPEN CHANNEL	OK
2346.310	IRREGULAR SECTION	2828.63	422.00	2831.49	7.94	2842.00	OPEN CHANNEL	OK
2420.830	72" RCP	2830.56	422.00	2834.42	21.95	2853.77	SDMH #2	OK
2454.790	72" RCP	2831.44	422.00	2835.39	21.38	2853.41	SDMH #1	OK
2509.610	72" RCP	2833.97	422.00	2839.40	15.69	2852.75	EX. SD	OK

MAIN

T1 SKYE CANYON II PARCEL 2.06

T2 TDS ADD, JUNE 2019

T3 PROPOSED CONDITION STORM DRAIN

[illegible]

FILE: MAIN.WSW

MAIN
W S P G W - EDIT LISTING - Version 14.10
Date: 7-17-2019 Time: 7:43:36

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD	SECT	CHN	NO OF	AVE	PIER	HEIGHT	1	BASE	ZL	ZR	INW	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH		DROP													

CD	3	3	0	.000	12.000	10.000	.000	.000	.00												
CD	30	4	0		2.500																
CD	72	4	0		6.000																
CD	2	5	0	.000																	

FILE:

W S P G W - EDIT LISTING - Version 14.10
Date: 7-17-2019 Time: 7:43:36

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD	SECT	NO OF	X(1)	Y(1)	X(2)	Y(2)	X(3)	Y(3)	X(4)	Y(4)	X(5)	Y(5)	X(6)	Y(6)	X(7)	Y(7)	X(N+1)	Y(N+1)	X(35)	Y(35)
CODE	NO	POINTS	X(8)	Y(8)	X(9)	Y(9)	X(10)	Y(10)	X(11)	Y(11)	X(N)	Y(N)								

PTS	2	6	.000	20.000	30.000	5.000	45.000	.000	55.000	.000	70.000	5.000	80.000	10.000						
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W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING

SKYE CANYON II PARCEL 2.06

TDS ADD, JUNE 2019

PROPOSED CONDITION STORM DRAIN

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	1 IS A SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT																
			1000.000	2787.670	72																
ELEMENT NO 2 IS A REACH	U/S DATA	STATION	INVERT	SECT																	
		1102.120	2789.720	72																	
ELEMENT NO 3 IS A JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4								
		1102.120	2789.720	72	30	0	.013	52.000	.000	2793.220	.000	90.000	.000								

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH	U/S DATA	STATION	INVERT	SECT																	
		1124.710	2790.170	72																	
ELEMENT NO 5 IS A JUNCTION	U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4								
		1124.710	2790.170	72	30	0	.013	50.000	.000	2793.160	.000	81.000	.400								

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A REACH	U/S DATA	STATION	INVERT	SECT																	
		1149.456	2790.666	72																	

ELEMENT NO	7 IS A REACH	U/S DATA	STATION	INVERT	SECT	MAIN	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO	8 IS A REACH	U/S DATA	1149.457	2790.667	72	N .013	.000	.000	-15.000	0
ELEMENT NO	9 IS A REACH	U/S DATA	1149.458	2790.668	72	N .013	.000	.000	-15.000	1
ELEMENT NO	10 IS A REACH	U/S DATA	1149.459	2790.669	72	N .013	.000	.000	-15.000	0
W S P G W										
WATER SURFACE PROFILE - ELEMENT CARD LISTING										
ELEMENT NO	11 IS A REACH	U/S DATA	1272.827	2792.127	72	N .013	.000	.000	15.000	0
ELEMENT NO	12 IS A REACH	U/S DATA	1272.828	2792.128	72	N .013	.000	.000	15.000	0
ELEMENT NO	13 IS A REACH	U/S DATA	1272.829	2792.129	72	N .013	.000	.000	15.000	1
ELEMENT NO	14 IS A REACH	U/S DATA	1272.830	2792.130	72	N .013	.000	.000	13.000	0
ELEMENT NO	15 IS A REACH	U/S DATA	1309.490	2796.760	72	N .013	.000	.000	.000	0
ELEMENT NO	16 IS A TRANSITION	U/S DATA	1329.490	2797.500	3	N .013	.000	.000	.000	0
ELEMENT NO	17 IS A REACH	U/S DATA	1341.489	2797.949	3	N .013	.000	.000	15.000	0
ELEMENT NO	18 IS A REACH	U/S DATA	1341.490	2797.950	3	N .013	.000	.000	9.400	0
ELEMENT NO	19 IS A TRANSITION	U/S DATA	1387.600	2799.670	2	N .043	.000	.000	.000	0
ELEMENT NO	20 IS A REACH	U/S DATA	1391.890	2799.830	2	N .043	.000	.000	.000	0
ELEMENT NO	21 IS A JUNCTION	U/S DATA	1391.890	2799.830	2	N .043	.000	.000	.000	0
Q4 INVERT-3 INVERT-4 PHI 3 PHI 4										
							.000	2799.830	.000	.000
							RADIUS	ANGLE		
							.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

MAIN

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 4

ELEMENT NO	22 IS A REACH	U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 22	IS A REACH	U/S DATA	1749.790	2813.180	2	.043	.000	.000	0
ELEMENT NO 23	IS A REACH	U/S DATA	1937.430	2818.040	2	.043	.000	.000	0
ELEMENT NO 24	IS A REACH	U/S DATA	2346.308	2828.628	2	.043	.000	.000	0
ELEMENT NO 25	IS A REACH	U/S DATA	2346.309	2828.629	2	.043	.000	.000	0
ELEMENT NO 26	IS A REACH	U/S DATA	2346.310	2828.630	2	.043	.000	.000	0
ELEMENT NO 27	IS A WALL EXIT	U/S DATA	2346.310	2828.630	2	.043	.000	.000	0

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO	28 IS A REACH	U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 28	IS A REACH	U/S DATA	2420.828	2830.558	72	.013	.000	15.000	0
ELEMENT NO 29	IS A REACH	U/S DATA	2420.829	2830.559	72	.013	.000	15.000	0
ELEMENT NO 30	IS A REACH	U/S DATA	2420.830	2830.560	72	.013	.000	15.000	1
ELEMENT NO 31	IS A REACH	U/S DATA	2454.785	2831.435	72	.013	.000	-15.000	0
ELEMENT NO 32	IS A REACH	U/S DATA	2454.786	2831.436	72	.013	.000	-15.000	0
ELEMENT NO 33	IS A REACH	U/S DATA	2454.787	2831.437	72	.013	.000	-15.000	1
ELEMENT NO 34	IS A REACH	U/S DATA	2454.788	2831.438	72	.013	.000	-15.000	0

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 5

ELEMENT NO	35 IS A REACH	U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 35	IS A REACH	U/S DATA	2454.789	2831.439	72	.013	.000	-15.000	0
ELEMENT NO 36	IS A REACH	U/S DATA	2454.790	2831.440	72	.013	.000	-5.000	0

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SKYE CANYON II PARCEL 2.06
TDS ADD, JUNE 2019
PROPOSED CONDITION STORM DRAIN
WATER SURFACE PROFILE LISTING

Date: 7-17-2019 Time: 7:43:40

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/ I.D.	Base Wt	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall		ZR	Type Ch
1000.000	2787.670	4.986	2792.656	534.00	21.26	7.02	2799.68	.00	5.74	4.50	6.000	.000	.00	.00	.0
14.180	.0201					.0154	.22	4.99	1.59	4.41	.013		.00	.00	PIPE
1014.180	2787.954	5.031	2792.986	534.00	21.09	6.91	2799.89	.00	5.74	4.42	6.000	.000	.00	.00	.0
61.216	.0201					.0147	.90	5.03	1.55	4.41	.013		.00	.00	PIPE
1075.395	2789.183	5.332	2794.515	534.00	20.11	6.28	2800.80	.00	5.74	3.77	6.000	.000	.00	.00	.0
26.725	.0201					.0140	.37	5.33	1.34	4.41	.013		.00	.00	PIPE
1102.120	2789.720	5.741	2795.461	534.00	19.17	5.71	2801.17	.00	5.74	2.44	6.000	.000	.00	.00	.0
JUNCT STR	.0000					.0134	.00	5.74	1.00		.013		.00	.00	PIPE
1102.120	2789.720	7.979	2797.699	482.00	17.05	4.51	2802.21	.00	5.63	.00	6.000	.000	.00	.00	.0
22.590	.0199					.0130	.29	7.98	.00	4.08	.013		.00	.00	PIPE
1124.710	2790.170	8.048	2798.218	482.00	17.05	4.51	2802.73	.00	5.63	.00	6.000	.000	.00	.00	.0
JUNCT STR	.0000					.0117	.00	8.05	.00		.013		.00	.00	PIPE
1124.710	2790.170	9.735	2799.905	432.00	15.28	3.62	2803.53	.00	5.47	.00	6.000	.000	.00	.00	.0
24.746	.0200					.0104	.26	9.74	.00	3.77	.013		.00	.00	PIPE
1149.456	2790.666	9.676	2800.342	432.00	15.28	3.62	2803.97	.00	5.47	.00	6.000	.000	.00	.00	.0
1149.457	2790.667	9.855	2800.522	432.00	15.28	3.62	2804.15	.00	5.47	.00	6.000	.000	.00	.00	.0
1149.458	2790.668	10.214	2800.882	432.00	15.28	3.62	2804.51	.00	5.47	.00	6.000	.000	.00	.00	.0

MAIN														
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/FT	Base I.D.	No Wth Prs/Pip
1149.459	2790.669	10.393	2801.062	432.00	15.28	3.62	2804.69	.00	5.47	.00	6.000	.000	.00	.0
1149.460	2790.670	10.416	2801.086	432.00	15.28	3.62	2804.71	.00	5.47	.00	6.000	.000	.00	.0
123.367	.0118	-	-	-	-	.0104	1.28	10.42	.00	4.62	.013	.00	.00	PIPE
1272.827	2792.127	10.422	2802.549	432.00	15.28	3.62	2806.17	.00	5.47	.00	6.000	.000	.00	.0
1272.828	2792.128	10.600	2802.728	432.00	15.28	3.62	2806.35	.00	5.47	.00	6.000	.000	.00	.0
1272.829	2792.129	10.960	2803.089	432.00	15.28	3.62	2806.71	.00	5.47	.00	6.000	.000	.00	.0
1272.830	2792.130	11.115	2803.244	432.00	15.28	3.62	2806.87	.00	5.47	.00	6.000	.000	.00	.0
36.660	.1263	-	-	-	-	.0104	.38	11.11	.00	2.20	.013	.00	.00	PIPE

★ FILE: MAIN.WSW

W S P G W - CIVILDESIGN Version 14.08
Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING

SKYE CANYON II PARCEL 2.06

TDS ADD, JUNE 2019

Date: 7-17-2019 Time: 7:43:40

PROPOSED CONDITION STORM DRAIN

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/FT	Base I.D.	No Wth Prs/Pip
1309.490	2796.760	6.856	2803.626	432.00	15.28	3.62	2807.25	.00	5.47	.00	6.000	.000	.00	.0
TRANS STR	.0370	-	-	-	-	.0003	.01	6.87	.00	-	.013	.00	.00	PIPE
1329.490	2797.500	9.895	2807.395	432.00	4.37	.30	2807.69	.00	3.87	10.00	12.000	10.000	.00	.0
11.613	.0374	-	-	-	-	.0003	.00	9.90	.24	1.68	.013	.00	.00	BOX
1341.103	2797.935	9.435	2807.369	432.00	4.58	.33	2807.69	.00	3.87	10.00	12.000	10.000	.00	.0
.386	.0374	-	-	-	-	.0003	.00	9.43	.26	1.68	.013	.00	.00	BOX
1341.490	2797.950	9.419	2807.369	432.00	4.59	.33	2807.70	.00	3.87	10.00	12.000	10.000	.00	.0

[illegible]

Date: 7-17-2019 Time: 7:43:40

PROPOSED CONDITION STORM DRAIN

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/ Base Ft or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1404.245	2800.291	7.486	2807.777	422.00	1.78	.05	2807.83	.00	2.86	49.94				0 .0
5.896	.0373					.0004	.00	7.49	.14	2.521	.043			IR-OPEN
1410.142	2800.511	7.264	2807.774	422.00	1.87	.05	2807.83	.00	2.86	49.05				0 .0
5.715	.0373					.0004	.00	7.26	.15	2.521	.043			IR-OPEN
1415.857	2800.724	7.047	2807.771	422.00	1.96	.06	2807.83	.00	2.86	48.19				0 .0
5.539	.0373					.0005	.00	7.05	.16	2.521	.043			IR-OPEN
1421.396	2800.930	6.838	2807.768	422.00	2.06	.07	2807.83	.00	2.86	47.35				0 .0
5.360	.0373					.0006	.00	6.84	.17	2.521	.043			IR-OPEN
1426.756	2801.130	6.634	2807.765	422.00	2.16	.07	2807.84	.00	2.86	46.54				0 .0
5.190	.0373					.0007	.00	6.63	.19	2.521	.043			IR-OPEN

1431.946	2801.324	6.437	2807.761	422.00	2.26	.08	2807.84	.00	2.86	45.75	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
5.022	.0373					.0008	.00	6.44	.20	2.521	.043		IR-OPEN
1436.968	2801.511	6.245	2807.757	422.00	2.37	.09	2807.84	.00	2.86	44.98	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.854	.0373					.0009	.00	6.25	.21	2.521	.043		IR-OPEN
1441.822	2801.692	6.060	2807.752	422.00	2.49	.10	2807.85	.00	2.86	44.24	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.689	.0373					.0010	.00	6.06	.22	2.521	.043		IR-OPEN
1446.511	2801.867	5.880	2807.747	422.00	2.61	.11	2807.85	.00	2.86	43.52	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.526	.0373					.0011	.01	5.88	.24	2.521	.043		IR-OPEN
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Program Package Serial Number: 7189
WATER SURFACE PROFILE LISTING
SKYE CANYON II PARCEL 2.06
TDS ADD, JUNE 2019
Date: 7-17-2019 Time: 7:43:40

***** PROPOSED CONDITION STORM DRAIN *****													
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base I.D.	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude	N	Norm Dp	"N"	X-Fall	ZR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1451.038	2802.036	5.706	2807.742	422.00	2.74	.12	2807.86	.00	2.86	42.82		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.371	.0373					.0013	.01	5.71	.25	2.521	.043		IR-OPEN
1455.408	2802.199	5.537	2807.736	422.00	2.87	.13	2807.86	.00	2.86	42.15		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.210	.0373					.0015	.01	5.54	.27	2.521	.043		IR-OPEN
1459.619	2802.356	5.373	2807.729	422.00	3.01	.14	2807.87	.00	2.86	41.49		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.054	.0373					.0017	.01	5.37	.29	2.521	.043		IR-OPEN
1463.673	2802.507	5.215	2807.722	422.00	3.16	.15	2807.88	.00	2.86	40.86		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.901	.0373					.0019	.01	5.21	.31	2.521	.043		IR-OPEN
1467.575	2802.653	5.061	2807.714	422.00	3.31	.17	2807.88	.00	2.86	40.24		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.755	.0373					.0022	.01	5.06	.33	2.521	.043		IR-OPEN

1471.329	2802.793	4.912	2807.705	422.00	3.47	.19	2807.89	.00	2.86	39.47	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.630	.0373					.0025	.01	4.91	.35	2.521		IR-OPEN	
1474.959	2802.928	4.768	2807.696	422.00	3.64	.21	2807.90	.00	2.86	38.61	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.505	.0373					.0029	.01	4.77	.37	2.521		IR-OPEN	
1478.464	2803.059	4.626	2807.685	422.00	3.82	.23	2807.91	.00	2.86	37.76	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.382	.0373					.0033	.01	4.63	.39	2.521		IR-OPEN	
1481.846	2803.185	4.489	2807.674	422.00	4.01	.25	2807.92	.00	2.86	36.93	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.256	.0373					.0037	.01	4.49	.42	2.521		IR-OPEN	

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Program Package Serial Number: 7189

W S P G W - CIVILDESIGN Version 14.08

WATER SURFACE PROFILE LISTING

Date: 7-17-2019 Time: 7:43:40

SKYE CANYON II PARCEL 2.06

TDS ADD, JUNE 2019

PROPOSED CONDITION STORM DRAIN

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Height/Dia.	Base Wt I.D.	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude	Norm Dp	"N"	X-Fall	ZR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1485.102	2803.307	4.354	2807.661	422.00	4.20	.27	2807.94	.00	2.86	36.13		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.125	.0373					.0043	.01	4.35	.44	2.521	.043		IR-OPEN
1488.228	2803.423	4.224	2807.647	422.00	4.41	.30	2807.95	.00	2.86	35.34		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.999	.0373					.0048	.01	4.22	.47	2.521	.043		IR-OPEN
1491.227	2803.535	4.096	2807.631	422.00	4.62	.33	2807.96	.00	2.86	34.58		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.863	.0373					.0055	.02	4.10	.50	2.521	.043		IR-OPEN
1494.090	2803.642	3.972	2807.614	422.00	4.85	.36	2807.98	.00	2.86	33.83		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.727	.0373					.0063	.02	3.97	.53	2.521	.043		IR-OPEN
1496.817	2803.744	3.851	2807.594	422.00	5.08	.40	2808.00	.00	2.86	33.11		2	0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.578	.0373					.0071	.02	3.85	.57	2.521	.043		IR-OPEN

1499.395	2803.840	3.733	2807.573	422.00	5.33	.44	2808.01	.00	2.86	32.40	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.425	.0373					.0081	.02	3.73	.60	2.521			IR-OPEN
1501.820	2803.930	3.618	2807.549	422.00	5.59	.49	2808.03	.00	2.86	31.71	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.258	.0373					.0093	.02	3.62	.64	2.521			IR-OPEN
1504.078	2804.015	3.506	2807.521	422.00	5.87	.53	2808.06	.00	2.86	31.04	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.077	.0373					.0105	.02	3.51	.68	2.521			IR-OPEN
1506.154	2804.092	3.397	2807.489	422.00	6.15	.59	2808.08	.00	2.86	30.38	2	0	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1.875	.0373					.0120	.02	3.40	.72	2.521			IR-OPEN
▲ FILE: MAIN.MSW													PAGE 6

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WATER SURFACE PROFILE LISTING

SKYE CANYON II PARCEL 2.06
TDS ADD, JUNE 2019

PROPOSED CONDITION STORM DRAIN

***** HYDRAULIC JUMP *****													No Wth
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/ or I.D.	Base Wt
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1508.029	2804.162	3.291	2807.453	422.00	6.45	.65	2808.10	.00	2.86	29.75		-	2
1.091	.0373					.0133	.01	3.29	.77	2.521	.043	-	-
1509.120	2804.203	3.225	2807.427	422.00	6.65	.69	2808.11	.00	2.86	29.35		-	2
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-
HYDRAULIC JUMP													IR-OPEN
1509.120	2804.203	2.521	2806.724	422.00	9.53	1.41	2808.13	.00	2.86	25.13		-	2
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-
213.865	.0373					.0373	7.98	2.52	1.27	2.521	.043	-	-
1722.985	2812.180	2.521	2814.701	422.00	9.53	1.41	2816.11	.00	2.86	25.13		-	2
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-
19.210	.0373					.0355	.68	2.52	1.27	2.521	.043	-	-
1742.195	2812.897	2.587	2815.484	422.00	9.18	1.31	2816.79	.00	2.86	25.52		-	2
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-
5.630	.0373					.0316	.18	2.59	1.21	2.521	.043	-	-
													IR-OPEN

1747.825	2813.107	2.674	2815.781	422.00	8.76	1.19	2816.97	.00	2.86	26.04	2	0	.0
1.965	.0373	- -	- -	- -	- -	.0277	.05	2.67	1.13	2.521	- -	- -	IR-OPEN
1749.790	2813.180	2.763	2815.943	422.00	8.35	1.08	2817.03	.00	2.86	26.58	2	0	.0
179.640	.0259	- -	- -	- -	- -	.0259	4.65	2.76	1.07	2.763	- -	- -	IR-OPEN
1929.430	2817.833	2.763	2820.596	422.00	8.35	1.08	2821.68	.00	2.86	26.58	2	0	.0
8.000	.0259	- -	- -	- -	- -	.0259	.21	2.76	1.07	2.763	- -	- -	IR-OPEN
1937.430	2818.040	2.764	2820.803	422.00	8.35	1.08	2821.89	.00	2.86	26.58	2	0	.0
403.044	.0259	- -	- -	- -	- -	.0259	10.44	2.76	1.07	2.764	- -	- -	IR-OPEN
FILE: MAIN.MSW													
W S P G W - CIVILDESIGN Version 14.08													
Program Package Serial Number: 7189													
WATER SURFACE PROFILE LISTING													
SKYE CANYON II PARCEL 2.06													
TDS ADD, JUNE 2019													
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PROPOSED CONDITION STORM DRAIN													
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/FT or I.D.	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
2340.474	2828.477	2.764	2831.240	422.00	8.35	1.08	2832.32	.00	2.86	26.58			0 .0
5.834	.0259	- -	- -	- -	- -	.0251	.15	2.76	1.07	2.764	.043	- -	IR-OPEN
2346.308	2828.628	2.808	2831.436	422.00	8.16	1.03	2832.47	.00	2.86	26.85			0 .0
.001	1.0000	- -	- -	- -	- -	.0240	.00	2.81	1.04	1.051	.043	- -	IR-OPEN
2346.309	2828.629	2.823	2831.452	422.00	8.09	1.02	2832.47	.00	2.86	26.94			0 .0
.001	1.0000	- -	- -	- -	- -	.0232	.00	2.82	1.03	1.051	.043	- -	IR-OPEN
2346.310	2828.630	2.861	2831.491	422.00	7.94	.98	2832.47	.00	2.86	27.17			0 .0
WALL EXIT	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2346.310	2828.630	2.861	2831.491	422.00	7.94	.98	2832.47	.00	2.86	27.17			0 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2346.310	2828.630	3.723	2832.353	422.00	22.90	8.14	2840.49	.00	5.43	5.82	6.000	.000	0 .0

MAIN														
74.518	.0259	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2420.830	2830.560	3.860	2834.420	422.00	21.95	7.48	2841.90	.00	5.43	5.75	6.000	.000	.00	.0
33.955	.0258	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2454.790	2831.440	3.949	2835.389	422.00	21.38	7.10	2842.49	.00	5.43	5.69	6.000	.000	.00	.0
8.271	.0461	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2463.061	2831.821	4.033	2835.854	422.00	20.88	6.77	2842.62	.00	5.43	5.63	6.000	.000	.00	.0
14.061	.0461	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2477.122	2832.469	4.210	2836.680	422.00	19.91	6.15	2842.83	.00	5.43	5.49	6.000	.000	.00	.0
11.227	.0461	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
* FILE: MAIN.WSW														

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W S P G W - CIVILDESIGN Version 14.08
Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING

SKYE CANYON II PARCEL 2.06

TDS ADD, JUNE 2019

PROPOSED CONDITION STORM DRAIN

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.-FT	Height for I.D.	No With Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR Type Ch
2488.349	2832.987	4.402	2837.389	422.00	18.98	5.60	2842.98	.00	5.43	5.30	6.000	.000	.00 .0
8.767	.0461	- -	- -	- -	- -	.0119	.10	4.40	1.63	2.87	.013	.00	.00 PIPE
2497.116	2833.391	4.611	2838.002	422.00	18.10	5.09	2843.09	.00	5.43	5.06	6.000	.000	.00 .0
6.517	.0461	- -	- -	- -	- -	.0108	.07	4.61	1.49	2.87	.013	.00	.00 PIPE
2503.632	2833.691	4.843	2838.534	422.00	17.26	4.62	2843.16	.00	5.43	4.73	6.000	.000	.00 .0
4.288	.0461	- -	- -	- -	- -	.0098	.04	4.84	1.34	2.87	.013	.00	.00 PIPE
2507.920	2833.889	5.108	2838.997	422.00	16.45	4.20	2843.20	.00	5.43	4.27	6.000	.000	.00 .0
1.690	.0461	- -	- -	- -	- -	.0090	.02	5.11	1.18	2.87	.013	.00	.00 PIPE
2509.610	2833.967	5.428	2839.395	422.00	15.69	3.82	2843.22	.00	5.43	3.52	6.000	.000	.00 .0

Page 8

MAIN

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Proposed Condition WSPG Summary

Parcel 2.06 - Lateral

WSPG Station	Storm Drain Dimension	Invert Elevation (ft)	Q ₁₀₀ (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL Check ¹
1000.000	36" RCP	2789.72	50.00	2799.91	7.07	2807.00	EX. SDMH #1	N/A
1022.580	36" RCP	2793.16	50.00	2800.28	7.07	2807.48	SDMH #6	OK
1053.870	36" RCP	2793.69	50.00	2800.70	7.07	2807.87	SDMH #5	OK
1161.810	72" RCP	2795.57	50.00	2801.30	7.07	2808.01	WALL ENTRANCE	OK
1164.310	72" RCP	2795.57	50.00	2801.32	7.07	2808.01	SDDI #2	OK
1164.310	36" RCP	2795.57	25.00	2802.48	3.54	2806.62	JUNCTION AT SDDI #2	OK
1195.330	72" RCP	2796.09	25.00	2802.53	3.54	2806.62	SDDI #1	OK

LAT

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

PAGE 1

DROP

PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

TDS. JUNE 2019

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

W S ELEV
2799.905

ELEMENT NO	2	IS A REACH	*	*
			*	*

STATION	INVERT	SECT
1	100.00	1
2	100.00	1
3	100.00	1
4	100.00	1
5	100.00	1
6	100.00	1
7	100.00	1
8	100.00	1
9	100.00	1
10	100.00	1
11	100.00	1
12	100.00	1
13	100.00	1
14	100.00	1
15	100.00	1
16	100.00	1
17	100.00	1
18	100.00	1
19	100.00	1
20	100.00	1
21	100.00	1
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23	100.00	1
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37	100.00	1
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39	100.00	1
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41	100.00	1
42	100.00	1
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44	100.00	1
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93	100.00	1
94	100.00	1
95	100.00	1
96	100.00	1
97	100.00	1
98	100.00	1
99	100.00	1
100	100.00	1

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STATION	INVERT	SECT
1	100.00	1
2	100.00	1
3	100.00	1
4	100.00	1
5	100.00	1
6	100.00	1
7	100.00	1
8	100.00	1
9	100.00	1
10	100.00	1
11	100.00	1
12	100.00	1
13	100.00	1
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92	100.00	1
93	100.00	1
94	100.00	1
95	100.00	1
96	100.00	1
97	100.00	1
98	100.00	1
99	100.00	1
100	100.00	1

Estimate	Number	Percentage
1022.576	2793.156	36

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STATION INVERT SECT

STATION	INVERT	ELEV.
1022	577	2793.157
36		

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STATION	INVERT	SECT
1	1.00	1
2	1.00	1
3	1.00	1
4	1.00	1
5	1.00	1
6	1.00	1
7	1.00	1
8	1.00	1
9	1.00	1
10	1.00	1
11	1.00	1
12	1.00	1
13	1.00	1
14	1.00	1
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93	1.00	1
94	1.00	1
95	1.00	1
96	1.00	1
97	1.00	1
98	1.00	1
99	1.00	1
100	1.00	1

STATION	INVERT	SECT
1022	578	2793
		158
		36

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STATION	INVERT	SECT
1	1.00	1
2	1.00	1
3	1.00	1
4	1.00	1
5	1.00	1
6	1.00	1
7	1.00	1
8	1.00	1
9	1.00	1
10	1.00	1
11	1.00	1
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94	1.00	1
95	1.00	1
96	1.00	1
97	1.00	1
98	1.00	1
99	1.00	1
100	1.00	1

STATION	INVERT	SECT
1022	579	2793
		159
		36

* * *

ECT.CE17 E/CZ.ZOT

OC

STATION	INVERT	SECT
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STATION	INVERT	SECT
1022	590	36

0C 00T:CE/7 00C:770T

STATION	INVERT	SECT
1	1.00	1
2	1.00	1
3	1.00	1
4	1.00	1
5	1.00	1
6	1.00	1
7	1.00	1
8	1.00	1
9	1.00	1
10	1.00	1
11	1.00	1
12	1.00	1
13	1.00	1
14	1.00	1
15	1.00	1
16	1.00	1
17	1.00	1
18	1.00	1
19	1.00	1
20	1.00	1
21	1.00	1
22	1.00	1
23	1.00	1
24	1.00	1
25	1.00	1
26	1.00	1
27	1.00	1
28	1.00	1
29	1.00	1
30	1.00	1
31	1.00	1
32	1.00	1
33	1.00	1
34	1.00	1
35	1.00	1
36	1.00	1
37	1.00	1
38	1.00	1
39	1.00	1
40	1.00	1
41	1.00	1
42	1.00	1
43	1.00	1
44	1.00	1
45	1.00	1
46	1.00	1
47	1.00	1
48	1.00	1
49	1.00	1
50	1.00	1
51	1.00	1
52	1.00	1
53	1.00	1
54	1.00	1
55	1.00	1
56	1.00	1
57	1.00	1
58	1.00	1
59	1.00	1
60	1.00	1
61	1.00	1
62	1.00	1
63	1.00	1
64	1.00	1
65	1.00	1
66	1.00	1
67	1.00	1
68	1.00	1
69	1.00	1
70	1.00	1
71	1.00	1
72	1.00	1
73	1.00	1
74	1.00	1
75	1.00	1
76	1.00	1
77	1.00	1
78	1.00	1
79	1.00	1
80	1.00	1
81	1.00	1
82	1.00	1
83	1.00	1
84	1.00	1
85	1.00	1
86	1.00	1
87	1.00	1
88	1.00	1
89	1.00	1
90	1.00	1
91	1.00	1
92	1.00	1
93	1.00	1
94	1.00	1
95	1.00	1
96	1.00	1
97	1.00	1
98	1.00	1
99	1.00	1
100	1.00	1

STATION	INVERT	SECT
10E3	96E	3703
		60E
		36

1053.865 7/93.685 36

STATION	TIM/EDT	CECT
1	12:00	12:00
2	12:05	12:05
3	12:10	12:10
4	12:15	12:15
5	12:20	12:20
6	12:25	12:25
7	12:30	12:30
8	12:35	12:35
9	12:40	12:40
10	12:45	12:45
11	12:50	12:50
12	12:55	12:55
13	13:00	13:00
14	13:05	13:05
15	13:10	13:10
16	13:15	13:15
17	13:20	13:20
18	13:25	13:25
19	13:30	13:30
20	13:35	13:35
21	13:40	13:40
22	13:45	13:45
23	13:50	13:50
24	13:55	13:55
25	14:00	14:00
26	14:05	14:05
27	14:10	14:10
28	14:15	14:15
29	14:20	14:20
30	14:25	14:25
31	14:30	14:30
32	14:35	14:35
33	14:40	14:40
34	14:45	14:45
35	14:50	14:50
36	14:55	14:55
37	15:00	15:00
38	15:05	15:05
39	15:10	15:10
40	15:15	15:15
41	15:20	15:20
42	15:25	15:25
43	15:30	15:30
44	15:35	15:35
45	15:40	15:40
46	15:45	15:45
47	15:50	15:50
48	15:55	15:55
49	16:00	16:00
50	16:05	16:05
51	16:10	16:10
52	16:15	16:15
53	16:20	16:20
54	16:25	16:25
55	16:30	16:30
56	16:35	16:35
57	16:40	16:40
58	16:45	16:45
59	16:50	16:50
60	16:55	16:55
61	17:00	17:00
62	17:05	17:05
63	17:10	17:10
64	17:15	17:15
65	17:20	17:20
66	17:25	17:25
67	17:30	17:30
68	17:35	17:35
69	17:40	17:40
70	17:45	17:45
71	17:50	17:50
72	17:55	17:55
73	18:00	18:00
74	18:05	18:05
75	18:10	18:10
76	18:15	18:15
77	18:20	18:20
78	18:25	18:25
79	18:30	18:30
80	18:35	18:35
81	18:40	18:40
82	18:45	18:45
83	18:50	18:50
84	18:55	18:55
85	19:00	19:00
86	19:05	19:05
87	19:10	19:10
88	19:15	19:15
89	19:20	19:20
90	19:25	19:25
91	19:30	19:30
92	19:35	19:35
93	19:40	19:40
94	19:45	19:45
95	19:50	19:50
96	19:55	19:55
97	20:00	20:00
98	20:05	20:05
99	20:10	20:10
100	20:15	20:15

STATION	INVERT	SECT
1053	866	3703
		696
		36

1053.866 2/93.686 36

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STATION	INVERT	SECT
1052	2702	20

1053.867 2793.687 36

Page 1

ELEMENT NO	11 IS A REACH	U/S DATA	STATION	INVERT	SECT	LAT	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 11	IS A REACH	U/S DATA	1053.868	2793.688	36	N .013	.000	.000	-15.000	0
ELEMENT NO 12	IS A REACH	U/S DATA	1053.869	2793.689	36	N .013	.000	.000	-15.000	0
ELEMENT NO 13	IS A REACH	U/S DATA	1053.870	2793.690	36	N .013	.000	.000	-4.000	0
W S P G W										
WATER SURFACE PROFILE - ELEMENT CARD LISTING										
ELEMENT NO 14	IS A REACH	U/S DATA	1161.810	2795.570	36	N .013	.000	.000	.000	0
ELEMENT NO 15	IS A WALL ENTRANCE	U/S DATA	1161.810	2795.570	36	FP .013	.000	.000	.000	0
ELEMENT NO 16	IS A REACH	U/S DATA	1164.310	2795.570	36	N .013	.000	.000	.000	0
ELEMENT NO 17	IS A JUNCTION	U/S DATA	1164.310	2795.570	36	N .013	.000	.000	.000	0
Q4 INVERT-3 INVERT-4 PHI 3 PHI 4										
.000 2795.570 .000 90.000 .000										
RADIUS ANGLE										
.000 .000										
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING										
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING										
ELEMENT NO 18	IS A WALL EXIT	U/S DATA	1164.310	2795.570	36	N .013	.000	.000	.000	0
ELEMENT NO 19	IS A REACH	U/S DATA	1195.330	2796.090	36	N .013	.000	.000	.000	0
ELEMENT NO 20	IS A SYSTEM HEADWORKS	U/S DATA	1195.330	2796.090	36	N .013	.000	.000	.000	0
W S ELEV										
.000										

PROPOSED CONDITION STORM DRAIN (LATERAL)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Height/ Dia.-FT or I.D.	Base Wt	No Wth Prs/Pip
L/Elem	Ch Slope												
1000.000	2789.720	10.185	2799.905	50.00	7.07	.78	2800.68	.00	2.30	.00	3.000	.000	.00
22.575	.1522					.0056	.13	10.19	.00	.89	.013	.00	PIPE
1022.575	2793.155	6.954	2800.109	50.00	7.07	.78	2800.89	.00	2.30	.00	3.000	.000	.00
1022.576	2793.156	6.992	2800.148	50.00	7.07	.78	2800.92	.00	2.30	.00	3.000	.000	.00
1022.577	2793.157	7.029	2800.186	50.00	7.07	.78	2800.96	.00	2.30	.00	3.000	.000	.00
1022.578	2793.158	7.067	2800.225	50.00	7.07	.78	2801.00	.00	2.30	.00	3.000	.000	.00
1022.579	2793.159	7.104	2800.263	50.00	7.07	.78	2801.04	.00	2.30	.00	3.000	.000	.00
1022.580	2793.160	7.119	2800.279	50.00	7.07	.78	2801.06	.00	2.30	.00	3.000	.000	.00
31.285	.0168					.0056	.18	7.12	.00	1.64	.013	.00	PIPE
1053.865	2793.685	6.847	2800.532	50.00	7.07	.78	2801.31	.00	2.30	.00	3.000	.000	.00
1053.866	2793.686	6.884	2800.571	50.00	7.07	.78	2801.35	.00	2.30	.00	3.000	.000	.00
1053.867	2793.687	6.922	2800.609	50.00	7.07	.78	2801.39	.00	2.30	.00	3.000	.000	.00
1053.868	2793.688	6.960	2800.648	50.00	7.07	.78	2801.42	.00	2.30	.00	3.000	.000	.00
1053.870	2793.690	7.007	2800.697	50.00	7.07	.78	2801.47	.00	2.30	.00	3.000	.000	.00
107.940	.0174					.0056	.61	7.01	.00	1.62	.013	.00	PIPE

WALL ENTRANCE		LAT													
1161.810	2795.570	5.733	2801.303	50.00	7.07	.78	2802.08	.00	2.30	.00	3.000	.000	.00	0	.0
2.500	.0000	- -	- -	- -	- -	.0056	.01	5.73	.00	.00	.013	.00	.00	PIPE	
1164.310	2795.570	5.747	2801.317	50.00	7.07	.78	2802.09	.00	2.30	.00	3.000	.000	.00	0	.0
JUNCT STR	.0000	- -	- -	- -	- -	.0035	.00	5.75	.00		.013	.00	.00	PIPE	
1164.310	2795.570	6.913	2802.483	25.00	3.54	.19	2802.68	.00	1.61	.00	3.000	.000	.00	0	.0
WALL EXIT		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	
1164.310	2795.570	6.913	2802.483	25.00	3.54	.19	2802.68	.00	1.61	.00	3.000	.000	.00	0	.0
31.020	.0168	- -	- -	- -	- -	.0014	.04	6.91	.00	1.11	.013	.00	.00	PIPE	
1195.330	2796.090	6.437	2802.527	25.00	3.54	.19	2802.72	.00	1.61	.00	3.000	.000	.00	0	.0
		- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	-	

WSPGW Models (Ultimate Condition)

Ultimate Condition WSPG Summary

Parcel 2.06 - Lateral

WSPG Station	Storm Drain Dimension	Invert Elevation (ft)	Q ₁₀₀ (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL Check ¹
1000.00	72" RCP	2789.72	60.00	2800.27	8.49	2807.00	EX. SDMH	OK
1022.58	36" RCP	2793.16	60.00	2800.81	8.49	2807.48	SDMH #6	OK
1053.87	36" RCP	2793.69	60.00	2801.41	8.49	2807.87	SDMH #5	OK
1161.81	36" RCP	2795.57	60.00	2802.28	8.49	2806.62	WALL ENTRANCE	OK
1164.31	36" RCP	2795.57	60.00	2802.30	8.49	2806.62	SDDI #2	OK
1164.31	36" RCP	2796.09	30.00	2803.98	4.24	2806.62	JUNCTION AT SDDI #2	OK
1195.33	36" RCP	2796.09	30.00	2804.04	4.24	2806.62	SDDI #1	OK

T1 SKYE CANYON II PARCEL 2.06				LAT	
T2 TDS, JUNE 2019					
T3 ULTIMATE CONDITION STORM DRAIN (LATERAL)					
SO	1000.0002789.720	72	2800.27	15.0	1
R	1022.5752793.155	36		15.0	
R	1022.5762793.156	36		15.0	
R	1022.5772793.157	36		15.0	
R	1022.5782793.158	36		15.0	
R	1022.5792793.159	36		15.0	
R	1022.5802793.160	36		6.0	
R	1053.8652793.685	36		-15.0	1
R	1053.8662793.686	36		-15.0	
R	1053.8672793.687	36		-15.0	
R	1053.8682793.688	36		-15.0	
R	1053.8692793.689	36		-15.0	
R	1053.8702793.690	36		-15.0	
R	1161.8102795.570	36		-4.0	
WE		36			
R	1164.3102795.570	36			
JX	1164.3102796.090	36	2796.09	90.0	
WX		36			
R	1195.3302796.090	36			
SH	1195.3302796.090	36			
CD	36	4	0	.000	.000
CD	72	4	0	.000	.000
Q			30.000	.0	

ELEMENT NO	11 IS A REACH	U/S DATA	STATION	INVERT	SECT	LAT	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 11	IS A REACH	U/S DATA	1053.868	2793.688	36	N .013	.000	.000	-15.000	0
ELEMENT NO 12	IS A REACH	U/S DATA	1053.869	2793.689	36	N .013	.000	.000	-15.000	0
ELEMENT NO 13	IS A REACH	U/S DATA	1053.870	2793.690	36	N .013	.000	.000	-4.000	0
W S P G W										
WATER SURFACE PROFILE - ELEMENT CARD LISTING										
ELEMENT NO 14	IS A REACH	U/S DATA	1161.810	2795.570	36	N .013	.000	.000	.000	0
ELEMENT NO 15	IS A WALL ENTRANCE	U/S DATA	1161.810	2795.570	36	FP .013	.000	.000	.000	0
ELEMENT NO 16	IS A REACH	U/S DATA	1164.310	2795.570	36	N .013	.000	.000	.000	0
ELEMENT NO 17	IS A JUNCTION	U/S DATA	1164.310	2796.090	36	N .013	.000	.000	.000	0
Q4 INVERT-3 INVERT-4 PHI 3 PHI 4										
.000 2796.090 .000 90.000 .000										
RADIUS ANGLE										
.000 .000										
ELEMENT NO 18	IS A WALL EXIT	U/S DATA	1164.310	2796.090	36	N .013	.000	.000	.000	0
ELEMENT NO 19	IS A REACH	U/S DATA	1195.330	2796.090	36	N .013	.000	.000	.000	0
ELEMENT NO 20	IS A SYSTEM HEADWORKS	U/S DATA	1195.330	2796.090	36	N .013	.000	.000	.000	0
W S ELEV										
.000										

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING

Date: 7-16-2019 Time: 3:40:39

SKYE CANYON II PARCEL 2.06

TDS, JUNE 2019

ULTIMATE CONDITION STORM DRAIN (LATERAL)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/FT	Base I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
1000.000	2789.720	10.550	2800.270	60.00	8.49	1.12	2801.39	.00	2.50	.00	3.000	.000	.00	.00	.0
22.575	.1522					.0081	.18	10.55	.00	.98	.013	.00	.00	.00	PIPE
1022.575	2793.155	7.409	2800.564	60.00	8.49	1.12	2801.68	.00	2.50	.00	3.000	.000	.00	.00	.0
1022.576	2793.156	7.463	2800.619	60.00	8.49	1.12	2801.74	.00	2.50	.00	3.000	.000	.00	.00	.0
1022.577	2793.157	7.518	2800.675	60.00	8.49	1.12	2801.79	.00	2.50	.00	3.000	.000	.00	.00	.0
1022.578	2793.158	7.572	2800.730	60.00	8.49	1.12	2801.85	.00	2.50	.00	3.000	.000	.00	.00	.0
1022.579	2793.159	7.627	2800.786	60.00	8.49	1.12	2801.90	.00	2.50	.00	3.000	.000	.00	.00	.0
1022.580	2793.160	7.648	2800.808	60.00	8.49	1.12	2801.93	.00	2.50	.00	3.000	.000	.00	.00	.0
31.285	.0168					.0081	.25	7.65	.00	1.84	.013	.00	.00	.00	PIPE
1053.865	2793.685	7.487	2801.172	60.00	8.49	1.12	2802.29	.00	2.50	.00	3.000	.000	.00	.00	.0
1053.866	2793.686	7.542	2801.228	60.00	8.49	1.12	2802.35	.00	2.50	.00	3.000	.000	.00	.00	.0
1053.867	2793.687	7.596	2801.283	60.00	8.49	1.12	2802.40	.00	2.50	.00	3.000	.000	.00	.00	.0
1053.868	2793.688	7.651	2801.339	60.00	8.49	1.12	2802.46	.00	2.50	.00	3.000	.000	.00	.00	.0

1053.869	2793.689	7.795	2801.394	60.00	8.49	1.12	2802.51	.00	2.50	.00	3.000	.000	.00	0	.0
1053.870	2793.690	7.719	2801.409	60.00	8.49	1.12	2802.53	.00	2.50	.00	3.000	.000	.00	0	.0
107.940	.0174					.0081	.87	7.72	.00	1.82	.013	.00	.00	PIPE	
WALL	ENTRANCE														
1161.810	2795.570	6.712	2802.282	60.00	8.49	1.12	2803.40	.00	2.50	.00	3.000	.000	.00	0	.0
2.500	.0000					.0081	.02	6.71	.00	.00	.013	.00	.00	PIPE	
1164.310	2795.570	6.732	2802.302	60.00	8.49	1.12	2803.42	.00	2.50	.00	3.000	.000	.00	0	.0
JUNCT STR	.0000					.0051	.00	6.73	.00		.013	.00	.00	PIPE	
1164.310	2796.090	7.891	2803.981	30.00	4.24	.28	2804.26	.00	1.77	.00	3.000	.000	.00	0	.0
WALL	EXIT														
1164.310	2796.090	7.891	2803.981	30.00	4.24	.28	2804.26	.00	1.77	.00	3.000	.000	.00	0	.0
31.020	.0000					.0020	.06	7.89	.00	.00	.013	.00	.00	PIPE	
1195.330	2796.090	7.954	2804.044	30.00	4.24	.28	2804.32	.00	1.77	.00	3.000	.000	.00	0	.0

APPENDIX E

Finished Floor Analysis

Phase 1 – Finished Floor Analysis

**SKYE CANYON II - PARCEL 2.06 PHASE 1 ADDENDUM
FINISH FLOOR - 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	See References on Last Sheet
1	1	2837.87	2837.49	0.49	2838.47	2838.37	2839.4	OK	OK	
2	1	2839.85	2839.47	0.49	2840.45	2840.35	2841.6	OK	OK	
3	1	2841.83	2841.45	0.49	2842.43	2842.33	2843.6	OK	OK	
4	1	2843.81	2843.43	0.49	2844.41	2844.31	2845.6	OK	OK	
5	1	2845.61	2845.23	0.49	2846.21	2846.11	2847.4	OK	OK	
6	1	2842.77	2842.39	0.49	2843.37	2843.27	2844.7	OK	OK	
7	1	2843.07	2842.69	0.49	2843.67	2843.57	2845.1	OK	OK	
8	1	2843.36	2842.98	0.49	2843.96	2843.86	2845.4	OK	OK	
9	1	2843.66	2843.28	0.49	2844.26	2844.16	2845.7	OK	OK	
10	1	2843.96	2843.58	0.49	2844.56	2844.46	2846.0	OK	OK	
11	1	2844.26	2843.88	0.49	2844.86	2844.76	2846.3	OK	OK	
12	3	2844.26	2843.88	0.37	2844.62	2844.76	2846.3	OK	OK	
13	3	2843.98	2843.60	0.37	2844.34	2844.48	2845.8	OK	OK	
14	3	2842.67	2842.29	0.37	2843.03	2843.17	2844.5	OK	OK	
39	3	2807.61	2807.23	0.37	2807.97	2808.11	2809.4	OK	OK	
40	4	2808.14	2807.76	0.52	2808.80	2808.64	2810.0	OK	OK	
41	4	2808.68	2808.30	0.52	2809.34	2809.18	2810.6	OK	OK	
42	4	2809.21	2808.83	0.52	2809.87	2809.71	2811.1	OK	OK	
43	4	2809.75	2809.37	0.52	2810.41	2810.25	2811.7	OK	OK	
44	4	2810.28	2809.90	0.52	2810.94	2810.78	2812.2	OK	OK	
45	1	2810.92	2810.54	0.49	2811.52	2811.42	2812.7	OK	OK	
46	1	2812.27	2811.89	0.49	2812.87	2812.77	2814.0	OK	OK	
47	1	2814.35	2813.97	0.49	2814.95	2814.85	2816.0	OK	OK	
48	1	2816.49	2816.11	0.49	2817.09	2816.99	2818.1	OK	OK	
49	1	2818.63	2818.25	0.49	2819.23	2819.13	2820.2	OK	OK	
50	1	2820.82	2820.44	0.49	2821.42	2821.32	2822.4	OK	OK	
51	1	2823.28	2822.90	0.49	2823.88	2823.78	2825.3	OK	OK	
52	1	2822.93	2822.55	0.49	2823.53	2823.43	2825.4	OK	OK	
53	1	2826.20	2825.82	0.49	2826.80	2826.70	2827.7	OK	OK	
54	1	2828.87	2828.49	0.49	2829.47	2829.37	2830.4	OK	OK	
55	1	2831.87	2831.49	0.49	2832.47	2832.37	2833.3	OK	OK	
56	1	2830.76	2830.38	0.49	2831.36	2831.26	2833.9	OK	OK	
57	1	2828.60	2828.22	0.49	2829.20	2829.10	2830.8	OK	OK	

SKYE CANYON II - PARCEL 2.06 PHASE 1 ADDENDUM FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION										
INPUT INFORMATION				FINISHED FLOORS						
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	NOTES
58	1	2821.87	2821.49	0.49	2822.47	2822.37	2824.2	OK	OK	See References on Last Sheet
59	1	2820.03	2819.65	0.49	2820.63	2820.53	2821.8	OK	OK	
60	1	2817.90	2817.52	0.49	2818.50	2818.40	2819.7	OK	OK	
61	1	2815.77	2815.39	0.49	2816.37	2816.27	2817.5	OK	OK	
62	1	2813.63	2813.25	0.49	2814.23	2814.13	2815.4	OK	OK	
63	1	2811.53	2811.15	0.49	2812.13	2812.03	2813.5	OK	OK	
64	1	2822.58	2822.20	0.49	2823.18	2823.08	2824.0	OK	OK	
65	2	2825.39	2825.01	0.31	2825.63	2825.89	2827.0	OK	OK	
66	2	2828.19	2827.81	0.31	2828.43	2828.69	2829.8	OK	OK	
67	2	2831.00	2830.62	0.31	2831.24	2831.50	2832.7	OK	OK	
68	2	2833.86	2833.48	0.31	2834.10	2834.36	2835.6	OK	OK	
69	2	2836.68	2836.30	0.31	2836.92	2837.18	2838.3	OK	OK	
70	2	2837.82	2837.44	0.31	2838.06	2838.32	2840.0	OK	OK	
71	2	2837.82	2837.44	0.31	2838.06	2838.32	2841.2	OK	OK	
72	2	2837.30	2836.92	0.31	2837.54	2837.80	2840.1	OK	OK	
73	2	2836.76	2836.38	0.31	2837.00	2837.26	2838.7	OK	OK	
74	2	2836.00	2835.62	0.31	2836.24	2836.50	2837.4	OK	OK	
75	2	2833.85	2833.47	0.31	2834.09	2834.35	2835.4	OK	OK	
76	2	2830.97	2830.59	0.31	2831.21	2831.47	2832.5	OK	OK	
77	2	2828.16	2827.78	0.31	2828.40	2828.66	2829.7	OK	OK	
78	2	2825.36	2824.98	0.31	2825.60	2825.86	2826.8	OK	OK	
79	2	2822.55	2822.17	0.31	2822.79	2823.05	2824.0	OK	OK	
80	2	2819.75	2819.37	0.31	2819.99	2820.25	2821.2	OK	OK	
81	2	2816.99	2816.61	0.31	2817.23	2817.49	2818.7	OK	OK	
82	2	2809.75	2809.37	0.31	2809.99	2810.25	2811.8	OK	OK	
83	4	2809.06	2808.68	0.52	2809.72	2809.56	2811.1	OK	OK	
84	4	2808.33	2807.95	0.52	2808.99	2808.83	2810.3	OK	OK	
85	4	2808.09	2807.71	0.52	2808.75	2808.59	2810.2	OK	OK	
86	3	2816.21	2815.83	0.37	2816.57	2816.71	2818.1	OK	OK	
87	3	2818.30	2817.92	0.37	2818.66	2818.80	2820.2	OK	OK	
88	3	2820.40	2820.02	0.37	2820.76	2820.90	2822.2	OK	OK	
89	3	2822.50	2822.12	0.37	2822.86	2823.00	2824.3	OK	OK	
90	3	2824.40	2824.02	0.37	2824.76	2824.90	2826.3	OK	OK	

SKYE CANYON II - PARCEL 2.06 PHASE 1 ADDENDUM FINISH FLOOR - 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	See References on Last Sheet
91	3	2826.31	2825.93	0.37	2826.67	2826.81	2828.2	OK	OK	
92	3	2828.23	2827.85	0.37	2828.59	2828.73	2830.1	OK	OK	
93	3	2830.14	2829.76	0.37	2830.50	2830.64	2832.0	OK	OK	
94	3	2832.05	2831.67	0.37	2832.41	2832.55	2833.9	OK	OK	
95	3	2833.95	2833.57	0.37	2834.31	2834.45	2835.8	OK	OK	
96	3	2835.86	2835.48	0.37	2836.22	2836.36	2837.7	OK	OK	
97	3	2837.85	2837.47	0.37	2838.21	2838.35	2839.6	OK	OK	
98	3	2842.75	2842.37	0.37	2843.11	2843.25	2844.7	OK	OK	
99	3	2844.02	2843.64	0.37	2844.38	2844.52	2846.0	OK	OK	
100	3	2844.25	2843.87	0.37	2844.61	2844.75	2846.1	OK	OK	
101	3	2844.25	2843.87	0.37	2844.61	2844.75	2846.3	OK	OK	
102	1	2843.95	2843.57	0.49	2844.55	2844.45	2845.8	OK	OK	
103	1	2843.65	2843.27	0.49	2844.25	2844.15	2845.7	OK	OK	
104	1	2843.35	2842.97	0.49	2843.95	2843.85	2845.4	OK	OK	
105	1	2843.03	2842.65	0.49	2843.63	2843.53	2845.1	OK	OK	
106	1	2842.66	2842.28	0.49	2843.26	2843.16	2844.5	OK	OK	
Where: 1: Top of Curb at High Side of Lot 2: TC-0.38 (For Roll Curb), TC-0.5 (For L Curb) 3: Minimum Allowable Finished Floor Elevation above flowline elevation @ high side of lot = (2 x D ₁₀₀) + F/L 4: City of Las Vegas minimum allowable finished floor elevation = T.C. @ high side of lot + 6-inches 5: These lots have an adjacent solid grouted wall that protects the FF. 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.										

Adjacent/Perimeter Street Check

Lot Number	Street	High TC ¹	High FL ²	Section	Flow Depth ³	Min FF ⁴	Design FF	Check	Solid Grout
1	Canyon View	2839.31	2838.81	*6	0.42	2839.65	2839.4	CHECK	Yes
2	Canyon View	2841.82	2841.32	*6	0.42	2842.16	2841.6	CHECK	Yes
3	Canyon View	2844.11	2843.61	*6	0.42	2844.45	2843.6	CHECK	Yes
4	Canyon View	2846.13	2845.63	*6	0.42	2846.47	2845.6	CHECK	Yes
5	Canyon View	2847.75	2847.25	*6	0.42	2848.09	2847.4	CHECK	Yes
6	Skye Village	2850.56	2850.06	*6	0.42	2850.90	2844.7	CHECK	Yes
6	Street C	2845.96	2845.58	1	0.49	2846.56	2844.7	CHECK	Yes
7	Skye Village	2850.79	2850.29	*6	0.42	2851.13	2845.1	CHECK	Yes
8	Skye Village	2851.06	2850.56	*6	0.42	2851.40	2845.4	CHECK	Yes
9	Skye Village	2851.33	2850.83	*6	0.42	2851.67	2845.7	CHECK	Yes
10	Skye Village	2851.60	2851.10	*6	0.42	2851.94	2846.0	CHECK	Yes
11	Skye Village	2851.86	2851.36	*6	0.42	2852.20	2846.3	CHECK	Yes
12	Skye Village	2852.14	2851.64	*6	0.42	2852.48	2846.3	CHECK	Yes
13	Skye Village	2852.45	2851.95	*6	0.42	2852.79	2845.8	CHECK	Yes
14	Skye Village	2852.91	2852.41	*6	0.42	2853.25	2844.5	CHECK	Yes
14	Street F	2842.60	2842.22	3	0.37	2842.96	2844.5	OK	No
39	Skye Park	2807.19	2806.71	*SP2	0.54	2807.79	2809.4	OK	No
40	Skye Park	2807.75	2807.27	*SP2	0.54	2808.35	2810.0	OK	No
41	Skye Park	2809.57	2809.09	*SP2	0.54	2810.17	2810.6	OK	No
42	Skye Park	2810.52	2810.04	*SP2	0.54	2811.12	2811.1	CHECK	Yes
43	Skye Park	2811.47	2810.99	*SP2	0.54	2812.07	2811.7	CHECK	Yes
44	Skye Park	2813.37	2812.89	*SP2	0.54	2813.97	2812.2	CHECK	Yes
45	Skye Park	2814.32	2813.84	*SP2	0.54	2814.92	2812.7	CHECK	Yes
46	Skye Park	2815.27	2814.79	*SP2	0.54	2815.87	2814.0	CHECK	Yes
47	Skye Park	2816.22	2815.74	*SP2	0.54	2816.82	2816.0	CHECK	Yes
48	Skye Park	2817.31	2816.81	*6	0.42	2817.65	2818.1	OK	No
49	Skye Park	2818.53	2818.03	*6	0.42	2818.87	2820.2	OK	No
50	Skye Park	2819.73	2819.23	*6	0.42	2820.07	2822.4	OK	No
51	Skye Park	2821.90	2821.40	*6	0.42	2822.24	2825.3	OK	No
51	Canyon View	2825.61	2825.11	*6	0.42	2825.95	2825.3	CHECK	Yes
52	Canyon View	2826.83	2826.33	*6	0.42	2827.17	2825.4	CHECK	Yes
53	Canyon View	2828.31	2827.81	*6	0.42	2828.65	2827.7	CHECK	Yes
54	Canyon View	2830.09	2829.59	*6	0.42	2830.43	2830.4	CHECK	Yes
55	Canyon View	2832.21	2831.71	*6	0.42	2832.55	2833.3	OK	No
58	Street C	2826.31	2825.93	1	0.49	2826.91	2824.2	CHECK	Yes

63	Street B	2817.46	2817.08	2	0.31	2817.70	2813.5	CHECK	Yes
82	Street B	2815.21	2814.83	2	0.31	2815.45	2811.8	CHECK	Yes
85	Street F	2814.38	2814.00	3	0.37	2814.74	2810.2	CHECK	Yes
98	Street F	2840.41	2840.03	3	0.37	2840.77	2844.7	OK	No
106	Street C	2840.53	2840.15	1	0.49	2841.13	2844.5	OK	No

1: High TC is the elevation at the high side of the adjacent perimeter street

2: 0.5-ft is subtracted from the High TC to obtain the High FL elevation

3: Flow depth is the normal depth in adjacent perimeter street

4: Min FF is the High FL plus twice the depth of flow.

Specific Energy Check							
Lot Number	High TC ¹	High FL ²	Section	Specific Energy ³	Min FF ⁴	Design FF	Check
3	2841.83	2841.45	1	0.80	2842.25	2843.60	OK
4	2843.81	2843.43	1	0.80	2844.23	2845.60	OK
44	2810.28	2809.90	1	0.80	2810.70	2812.20	OK
45	2810.92	2810.54	1	0.80	2811.34	2812.70	OK

1: High TC is the elevation at the high side of the adjacent perimeter street

2: 0.38-ft is subtracted from the High TC to obtain the High FL elevation

2: Specific energy depth is taken from FlowMaster calculation for street directing flow toward lot.

3: Min FF is the High FL plus the specific energy depth.

Phase 2 – Finished Floor Analysis

**SKYE CANYON II - PARCEL 2.06 PHASE 2 ADDENDUM
FINISH FLOOR - 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	See References on Last Sheet
15	3	2842.60	2842.22	0.43	2843.08	2843.10	2844.6	OK	OK	
16	3	2841.92	2841.54	0.43	2842.40	2842.42	2843.7	OK	OK	
17	3	2841.17	2840.79	0.43	2841.65	2841.67	2843.0	OK	OK	
18	3	2840.41	2840.03	0.43	2840.89	2840.91	2842.2	OK	OK	
19	3	2839.33	2838.95	0.43	2839.81	2839.83	2841.1	OK	OK	
20	3	2837.75	2837.37	0.43	2838.23	2838.25	2839.6	OK	OK	
21	3	2835.85	2835.47	0.43	2836.33	2836.35	2837.7	OK	OK	
22	3	2833.94	2833.56	0.43	2834.42	2834.44	2835.7	OK	OK	
23	3	2832.03	2831.65	0.43	2832.51	2832.53	2833.8	OK	OK	
24	3	2830.13	2829.75	0.43	2830.61	2830.63	2831.9	OK	OK	
25	3	2828.23	2827.85	0.43	2828.71	2828.73	2830.0	OK	OK	
26	3	2826.33	2825.95	0.43	2826.81	2826.83	2828.1	OK	OK	
27	3	2824.42	2824.04	0.43	2824.90	2824.92	2826.2	OK	OK	
28	3	2822.51	2822.13	0.43	2822.99	2823.01	2824.3	OK	OK	
29	3	2820.61	2820.23	0.43	2821.09	2821.11	2822.4	OK	OK	
30	3	2818.70	2818.32	0.43	2819.18	2819.20	2820.5	OK	OK	
31	3	2816.80	2816.42	0.43	2817.28	2817.30	2818.6	OK	OK	
32	3	2814.89	2814.51	0.43	2815.37	2815.39	2816.7	OK	OK	
33	3	2813.08	2812.70	0.43	2813.56	2813.58	2814.9	OK	OK	
34	3	2811.32	2810.94	0.43	2811.80	2811.82	2813.1	OK	OK	

**SKYE CANYON II - PARCEL 2.06 PHASE 2 ADDENDUM
FINISH FLOOR - 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	See References on Last Sheet
35	3	2809.63	2809.25	0.43	2810.11	2810.13	2811.4	OK	OK	
36	3	2809.05	2808.67	0.43	2809.53	2809.55	2810.9	OK	OK	
37	3	2809.64	2809.26	0.43	2810.12	2810.14	2811.7	OK	OK	
38	3	2808.19	2807.81	0.43	2808.67	2808.69	2809.9	OK	OK	
Where:										
1: Top of Curb at High Side of Lot										
2: TC-0.38 (For Roll Curb), TC-0.5 (For L Curb)										
3: Minimum Allowable Finished Floor Elevation above flowline elevation @ high side of lot = (2 x D ₁₀₀) + F/L										
4: City of Las Vegas minimum allowable finished floor elevation = T.C. @ high side of lot + 6-inches										
5: These lots have an adjacent solid grouted wall that protects the FF.										
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.										

Supplemental Finished Floor Checks

Adjacent/Perimeter Street Check									
Lot Number	Street	High TC ¹	High FL ²	Section	Flow Depth ³	Min FF ⁴	Design FF	Check	Solid Grout
15	Skye Village	2853.70	2853.20	*6	0.42	2854.04	2844.6	CHECK	Yes
15	Skye Canyon	2853.00	2852.62	*H	0.37	2853.36	2844.6	CHECK	Yes
16	Skye Canyon	2851.88	2851.50	*H	0.37	2852.24	2843.7	CHECK	Yes
17	Skye Canyon	2849.88	2849.50	*H	0.37	2850.24	2843.0	CHECK	Yes
18	Skye Canyon	2848.64	2848.26	*H	0.37	2849.00	2842.2	CHECK	Yes
19	Skye Canyon	2847.45	2847.07	*H	0.37	2847.81	2841.1	CHECK	Yes
20	Skye Canyon	2846.23	2845.85	*H	0.37	2846.59	2839.6	CHECK	Yes
21	Skye Canyon	2844.02	2843.64	*H	0.37	2844.38	2837.7	CHECK	Yes
22	Skye Canyon	2842.01	2841.63	*H	0.37	2842.37	2835.7	CHECK	Yes
23	Skye Canyon	2840.00	2839.62	*H	0.37	2840.36	2833.8	CHECK	Yes
24	Skye Canyon	2839.00	2838.62	*H	0.37	2839.36	2831.9	CHECK	Yes
25	Skye Canyon	2835.10	2834.72	*H	0.37	2835.46	2830.0	CHECK	Yes
26	Skye Canyon	2833.03	2832.65	*H	0.37	2833.39	2828.1	CHECK	Yes
27	Skye Canyon	2830.96	2830.58	*H	0.37	2831.32	2826.2	CHECK	Yes
28	Skye Canyon	2828.41	2828.03	*H	0.37	2828.77	2824.3	CHECK	Yes
29	Skye Canyon	2826.01	2825.63	*H	0.37	2826.37	2822.4	CHECK	Yes
30	Skye Canyon	2824.00	2823.62	*H	0.37	2824.36	2820.5	CHECK	Yes
31	Skye Canyon	2822.00	2821.62	*H	0.37	2822.36	2818.6	CHECK	Yes
32	Skye Canyon	2820.02	2819.64	*H	0.37	2820.38	2816.7	CHECK	Yes
33	Skye Canyon	2818.26	2817.88	*H	0.37	2818.62	2814.9	CHECK	Yes
34	Skye Canyon	2816.58	2816.20	*H	0.37	2816.94	2813.1	CHECK	Yes
35	Skye Canyon	2814.92	2814.54	*H	0.37	2815.28	2811.4	CHECK	Yes
36	Skye Canyon	2813.04	2812.66	*H	0.37	2813.40	2810.9	CHECK	Yes
37	Skye Canyon	2811.65	2811.27	*H	0.37	2812.01	2811.7	CHECK	Yes
37	Skye Park	2809.44	2808.96	*SP2	0.54	2810.04	2811.7	OK	No
38	Street F	2809.95	2809.57	4	0.46	2810.49	2809.9	CHECK	Yes
38	Skye Park	2808.19	2807.71	*SP2	0.54	2808.79	2809.9	OK	No

1: High TC is the elevation at the high side of the adjacent perimeter street

2: 0.38-ft is subtracted from the High TC to obtain the High FL elevation

3: Flow depth is the normal depth in adjacent perimeter street

4: Min FF is the High FL plus twice the depth of flow.

Specific Energy Check							
Lot Number	High TC ¹	High FL ²	Section	Specific Energy ³	Min FF ⁴	Design FF	Check
17	2841.17	2840.79	3	0.79	2841.58	2843.00	OK

1: High TC is the elevation at the high side of the adjacent perimeter street

2: 0.38-ft is subtracted from the High TC to obtain the High FL elevation

2: Specific energy depth is taken from FlowMaster calculation for street directing flow toward lot.

3: Min FF is the High FL plus the specific energy depth.

Emergency Overflow Finished Floor Checks

Drainage Easements Check - Emergency Overflow						
Lot Number	High TC/FL ¹	Section	Flow Depth ²	Min FF ³	Design FF	Solid Grout
38	2807.18	EO1	0.98	2808.16	2809.90	No
39	2807.18	EO1	0.98	2808.16	2809.40	No

1: High TC/FL is at the high side of the drainage easement flowline or the highest TC adjacent to the easement if flow is weiring over the curb.

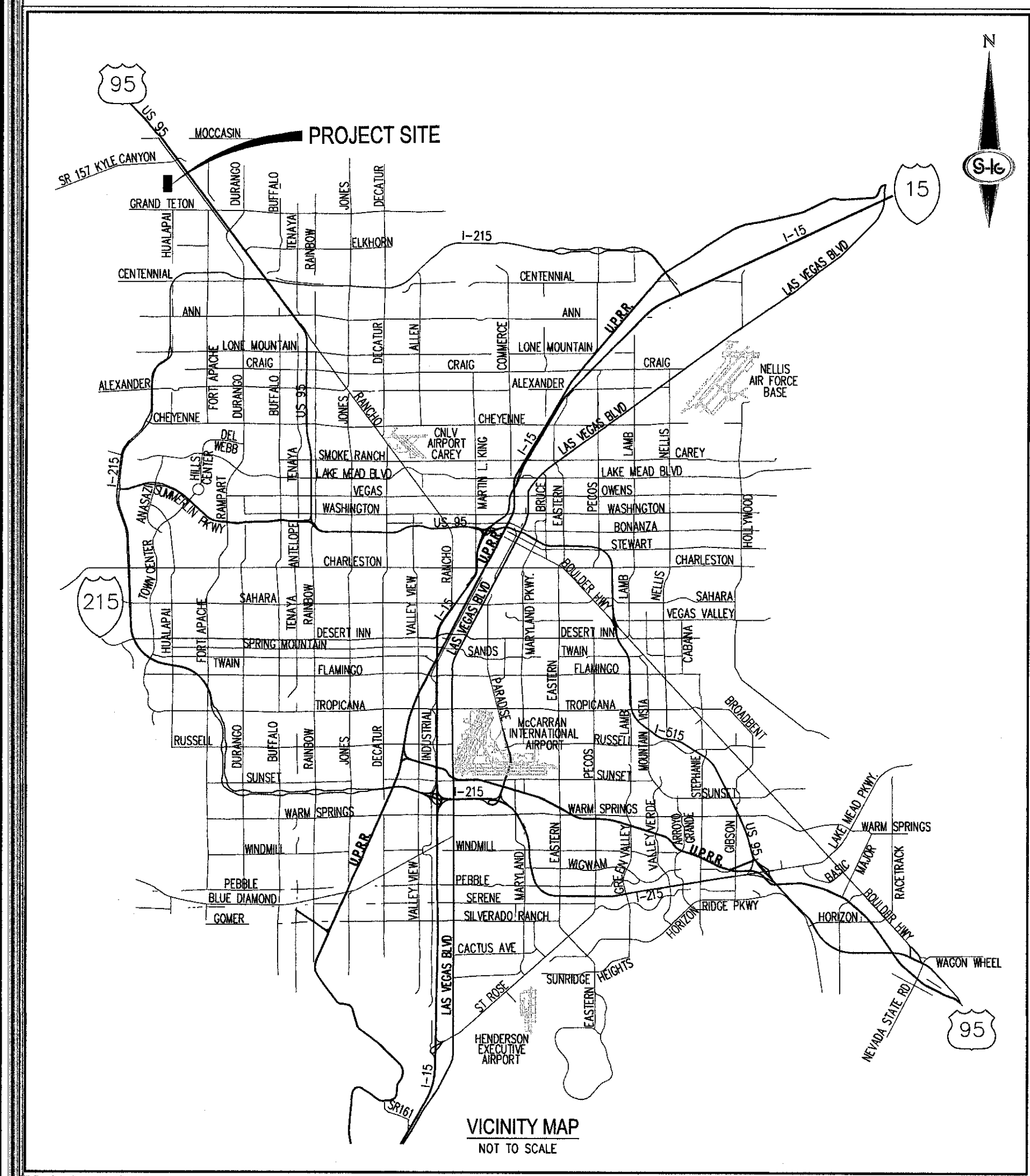
2: Flow depth is either normal depth or weir depth (whichever is higher) of the emergency overflow.

3: Min FF is the High TC/FL plus the emergency overflow depth.

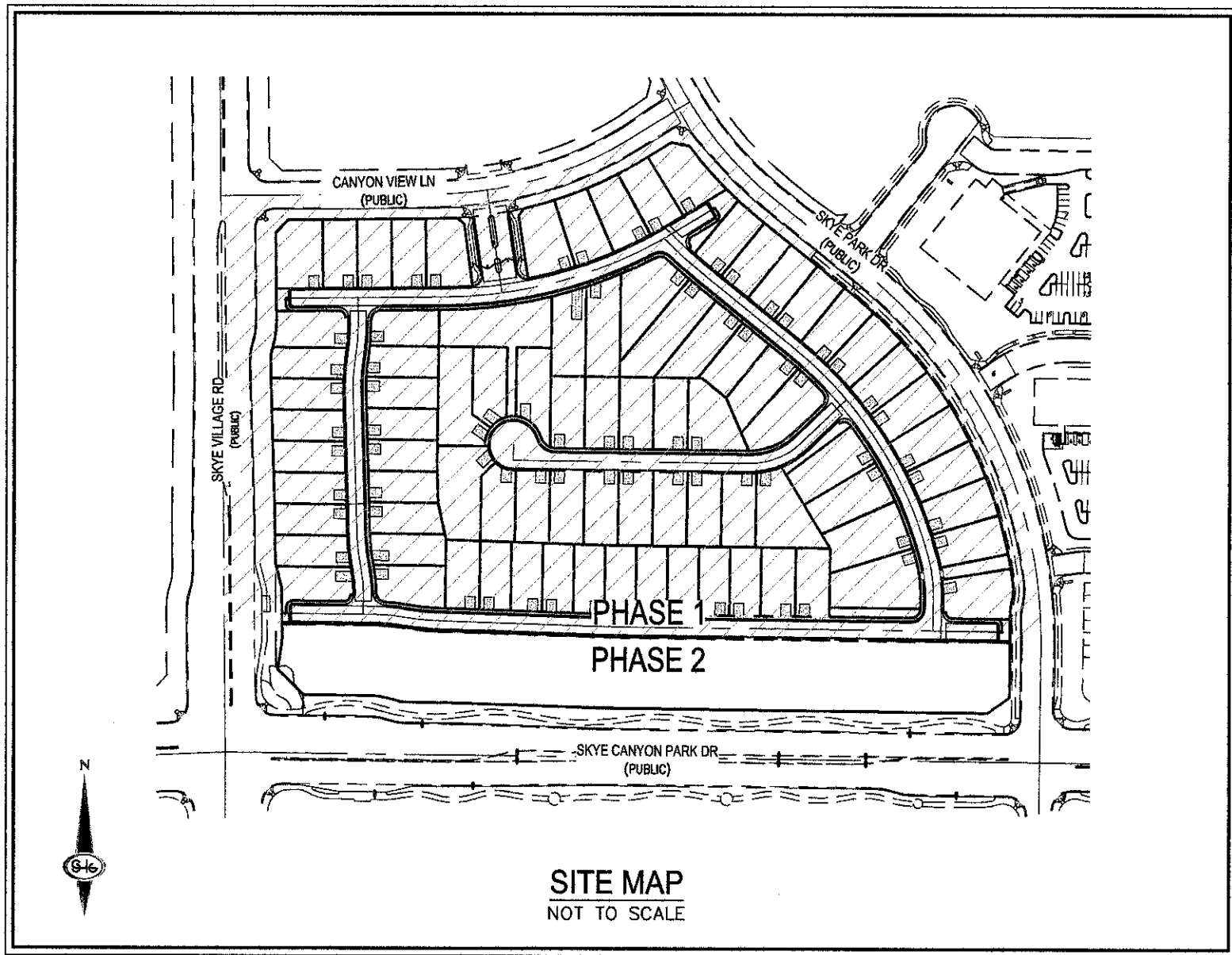
Note: Although lot 39 is a part of Phase 1, it is analyzed with the emergency overflow in Phase 2

APPENDIX F

CD of Electric Files & Revised Improvement Plans



NINETY FIVE MANAGEMENT, LLC
IMPROVEMENT PLANS
FOR
SKYE CANYON II
PARCEL 2.06 - PHASE 1
CITY OF LAS VEGAS, NEVADA
RESIDENTIAL SUBDIVISION
APN: 125-07-211-002



SHEET INDEX		
NO.	SHEET	TITLE
1	C-1	COVER SHEET
2	C-2	STANDARD NOTES
3	C-3	QUANTITIES, LEGEND, & ABBREVIATIONS
4	G-1	GRADING PLAN I
5	G-2	GRADING PLAN II
6	G-3	GRADING PLAN III
7	G-4	GRADING PLAN IV
8	G-5	GRADING PLAN V
9	D-1	SITE CROSS SECTIONS
10	D-2	SITE DETAILS
11	PP-1	PLAN & PROFILE STREET A STA 9+50 - STA 11+18
12	PP-2	PLAN & PROFILE STREET B STA 9+50 - STA 13+00
13	PP-3	PLAN & PROFILE STREET B STA 13+00 - STA 15+38
14	PP-4	PLAN & PROFILE STREET C STA 9+50 - STA 13+00
15	PP-5	PLAN & PROFILE STREET C STA 13+00 - STA 16+51
16	PP-6	PLAN & PROFILE STREET D STA 9+36 - STA 14+50
17	PP-7	PLAN & PROFILE STREET D STA 14+50 - STA 17+50
18	PP-8	PLAN & PROFILE STREET E STA 9+37 - STA 14+70
19	PP-9	PLAN & PROFILE STREET F STA 9+50 - STA 15+00
20	PP-10	PLAN & PROFILE STREET F STA 15+00 - STA 19+50
21	PP-11	PLAN & PROFILE STREET F STA 19+50 - STA 20+83
22	SD-1	PLAN & PROFILE DRAINAGE CHANNEL STA 9+15 - STA 14+50
23	SD-2	PLAN & PROFILE DRAINAGE CHANNEL STA 14+50 - STA 20+00
24	SD-3	PLAN & PROFILE DRAINAGE CHANNEL STA 20+00 - STA 23+00
25	U-1	UTILITY PLAN I
26	U-2	UTILITY PLAN II
27	U-3	UTILITY PLAN III
28	U-4	UTILITY PLAN IV
29	U-5	UTILITY PLAN V

APPROVALS

CITY ENGINEER-ALLEN PAVELKA PE, #9029 DATE

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

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS - PLANNING DEPARTMENT DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS 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.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES PROJECT NO. 15000 FIRST APPROVED DATE: 11/11/2011 APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL MAXIMUM AVAILABLE FIRE SPRINKLER FLOW 20 GPM

SHEETS: PP-1 THRU PP-11, U-1 THRU U-5
LVWD APPROVAL IS VALID FOR ONE (1) YEAR FROM SIGNATURE DATE. IF CONSTRUCTION IS NOT STARTED, PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL.

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

ENGINEER
SLATER HANIFAN GROUP, INC.
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284-5300
FX: (702) 284-5399
CONTACT: JOSH JOHNSON, P.E.

OWNER/DEVELOPER
M F LAND, LLC
OLYMPIA COMPANIES
11411 SOUTHERN HIGHLANDS #300
LAS VEGAS, NV 89141
PH: (702) 220-6565

LEGAL DESCRIPTION
THE PORTIONS OF GOVERNMENT LOT 17 OF SECTION 6 AND GOVERNMENT LOTS 7, 8, 10, 11 OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

BENCHMARK
USDA BRASS CAP ON AN IRON PIPE, 140' SOUTHWEST OF TELEPHONE POLE #28941, SOUTHWEST CORNER OF THE U.S. 95/KYLE CANYON TURNOFF.
ELEVATION = 2817.62 FEET, 858.813 METERS
N.A.V.D. 88
PER THE CLARK COUNTY VERTICAL CONTROL, LAST REVISED 2003.

BASIS OF BEARING
SOUTH 00°22'12" WEST, BEING THE BEARING OF THE WEST LINE OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

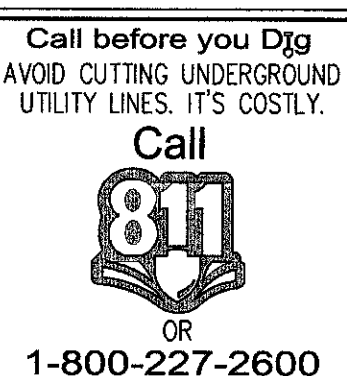
FEMA FLOOD ZONE INFORMATION
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (UNSHADED), AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANELS 32003C1735E, DATED SEPTEMBER 27, 2002. A ZONE "X" (UNSHADED) IS DEFINED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% (500 YEAR) ANNUAL CHANCE FLOOD PLAIN.

DEVIATIONS FROM STANDARDS
NONE

SWPPP NOTE
NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STOPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: [HTTP://WWW.STATE.NV.US/DWPC/STORMWATER.HTM](http://www.state.nv.us/dwpc/stormwater.htm) PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NV100000 ALONG WITH THE APPROPRIATE FILING FEE.

PROJECT INFORMATION
APN NUMBERS: 125-07-211-002
GROSS AREA: 21.974 ACRES
NET AREA: 19.114 ACRES
CURRENT ZONING: R-1
PROPOSED ZONING: R-1
TOTAL LOT COUNT: 107
TOTAL DENSITY: 4.87 DU/AC
NO. OF COMMON ELEMENTS: 10
OPEN SPACE PROVIDED: 124,564 SF
EARTHWORK SUMMARY (UNADJUSTED)
CUT 128,656 CY.
FILL 58,338 CY.
NET 70,318 CY.

GEOTECHNICAL ENGINEER
PREPARED BY: SOUTHWEST GEOTECHNICAL
ADDRESS: 5275 ARVILLE ST., LAS VEGAS, NV 89118
PHONE: 702-323-6000
PROJECT NO. 175337
DATE: 12/17/2018



SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

9-16

CITY OF LAS VEGAS, NEVADA

NINETY FIVE MANAGEMENT, LLC

SKYE CANYON II PARCEL 2.06 - PHASE 1

COVER SHEET

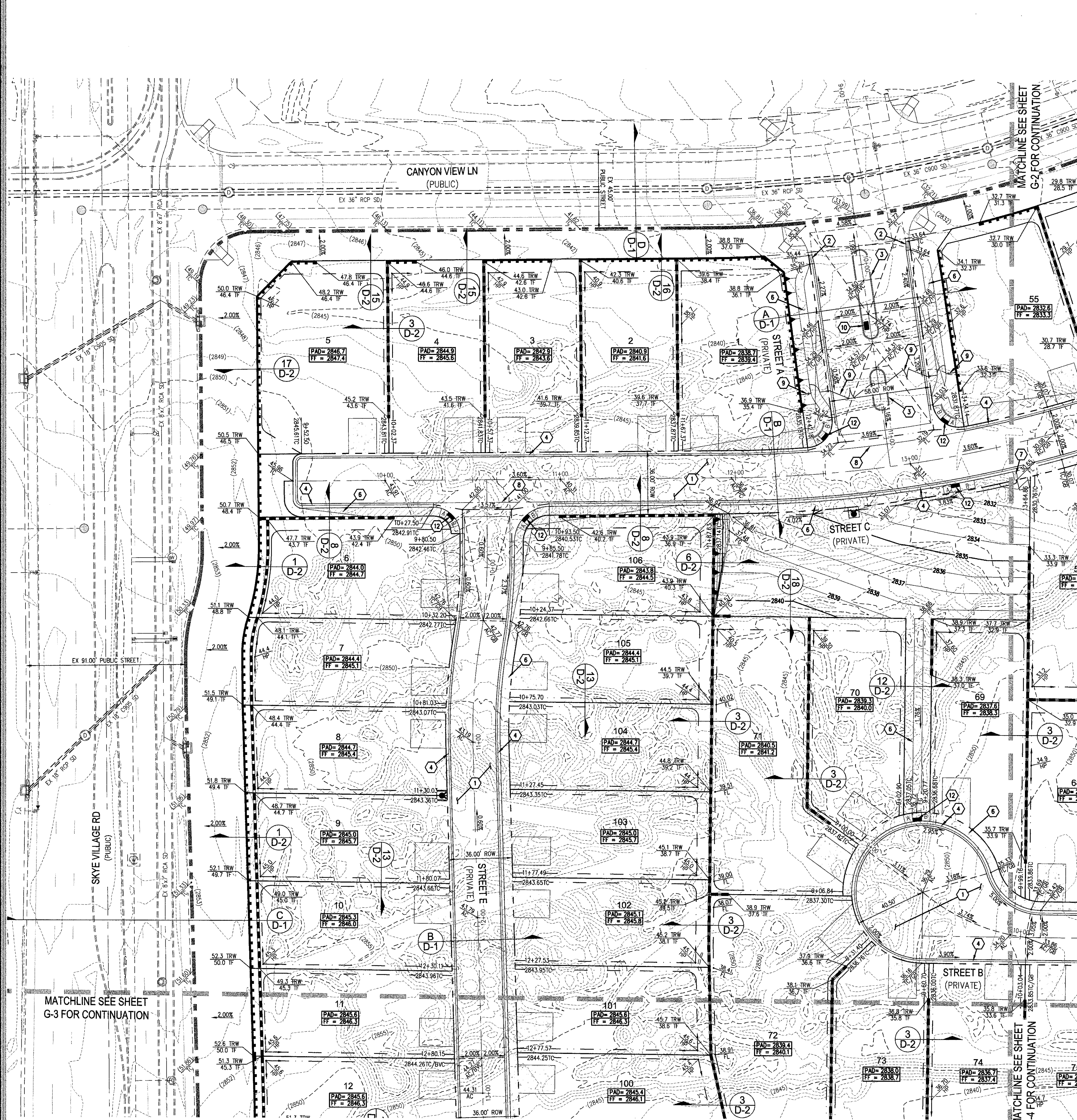
DATE: 7/18/19
DRAFTER: BKS
DESIGNER: BKS
CHECKED: JJ
PROJECT NO. OLY1813-000

ENGINEER
JOSHUA L. JOHNSON
PE No. 15789

C-1
SHEET 1 OF 19



\\NV1813-000 skye canyon ii - parcel 2.06 - phase 1.dwg 7/18/2019 12:48 PM Brian Scott



SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBTAINED DURING CONSTRUCTION.

ELEVATION NOTE
ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT
SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/2018

EARTHWORKS
EARTHWORK QUANTITIES (RAW):
CUT= 128,656 CU YDS
FILL= 58,338 CU YDS
EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DISCLAIMER NOTE
1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF 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 IN THEIR PROPER LOCATION.
2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

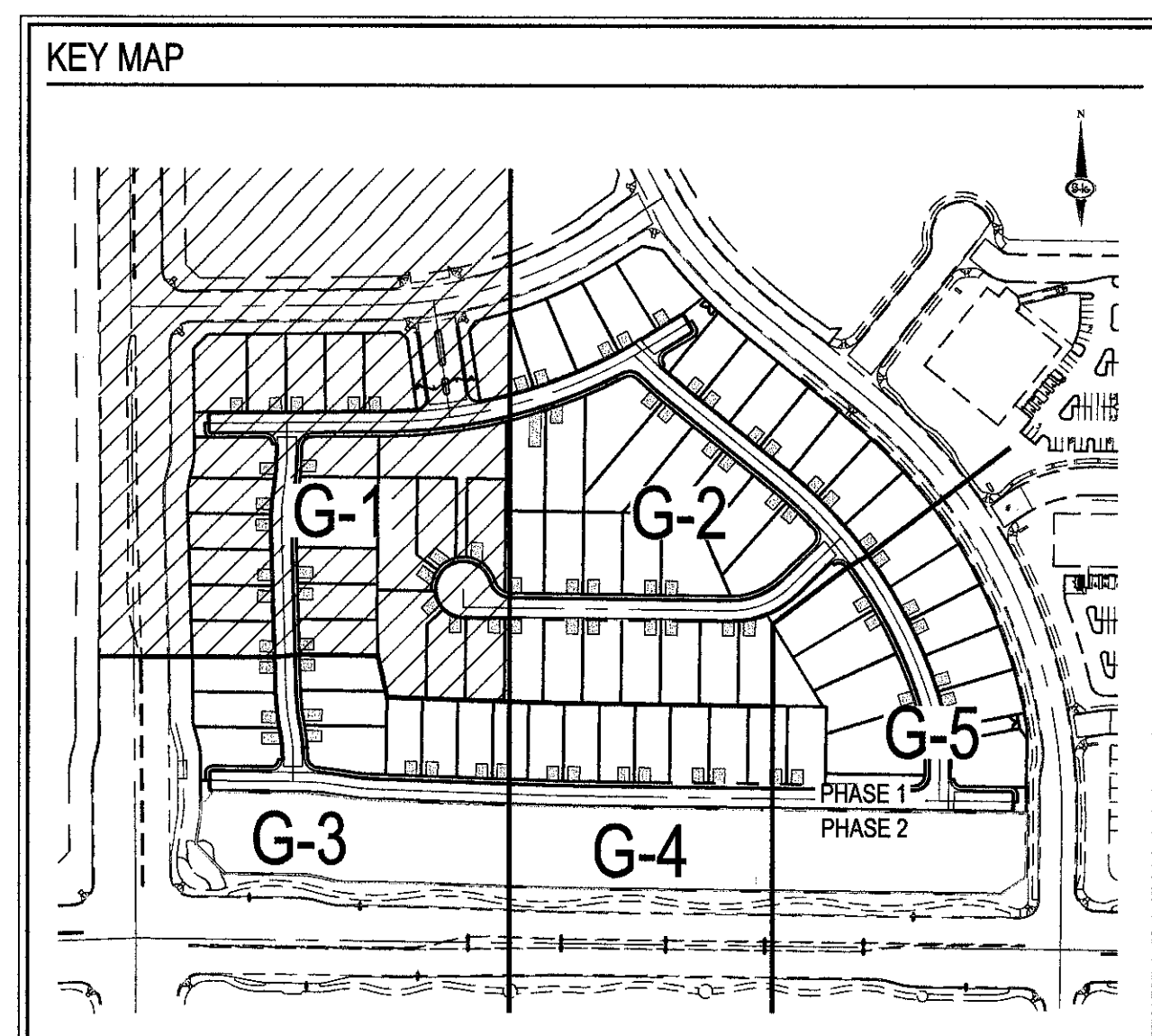
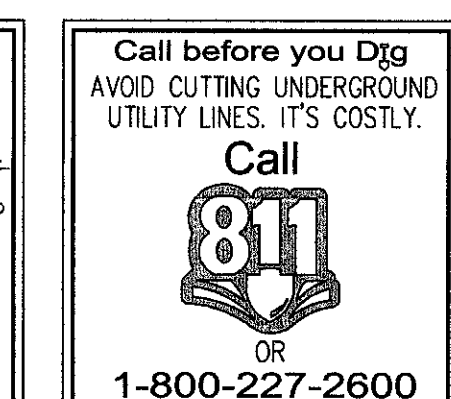
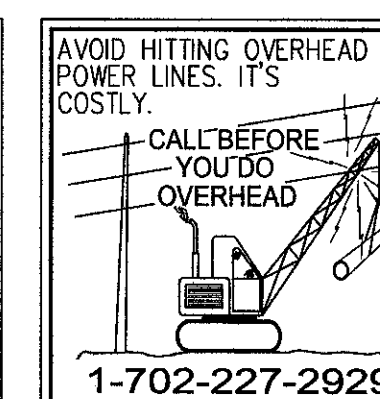
GRADING NOTES
1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.1.2.2.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
6. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
7. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
8. 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/REPLENISHING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
9. 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.

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

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

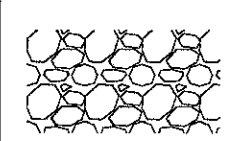
1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED 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 CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE 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 THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, 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 A 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 THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, 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.

FEMA FLOOD ZONE INFORMATION
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (UNSHADED), AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANELS 32003C7235E AND 32003C7236B BOTH DATED SEPTEMBER 27, 2002. A ZONE 'X' (UNSHADED) IS DEFINED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% (500 YEAR) ANNUAL CHANCE FLOOD PLAIN.



- GRADING NOTES**
- 1) INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
 - 2) INSTALL 5' CURB TRANSITION PER DETAIL 14, SHEET D-2
 - 3) INSTALL A TYPE CURB PER CCAUSD NO. 219
 - 4) INSTALL ROLL TYPE CURB PER CCAUSD NO. 217.51
 - 5) REMOVE EX HEADWALL PROTECT IN PLACE
 - 6) INSTALL 5' WIDE SIDEWALK PER CCAUSD NO. 234
 - 7) CONSTRUCT 2" SIDEWALK DRAIN PER CCAUSD NO. 236
 - 8) INSTALL 8' VALLEY GUTTER PER CCAUSD NO. 228
 - 9) INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
 - 10) INSTALL ACCESS GATE W/AVI LOOP
 - 11) INSTALL 6" WIDE CRUSHED ROCK FOR ACCESS ROAD
 - 12) CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235 CASE 1, AND 235.1
 - 13) INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
 - 14) INSTALL WROUGHT IRON FENCE WITH 20" MAINTENANCE GATE PER DETAIL 19, SHEET D-2
 - 15) REMOVE SECTION OF EX 72" RCP STORM DRAIN
 - 16) INSTALL WROUGHT IRON 20" MAINTENANCE GATE PER DETAIL 20, SHEET D-2
 - 17) INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
 - 18) 20" PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED BY HOA
 - 19) INSTALL RIP RAP D50=6", THICKNESS=12" (WHERE SHOWN)
 - 20) INSTALL 12.5" DROP INLET TYPE "CM2" PER CCAUSD NO. 412.1 AND 421
 - 21) INSTALL 48" TYPE I STORM DRAIN MANHOLE PER CCAUSD NO. 403.
 - 22) INSTALL CUSTOM SDMH PER STRUCTURAL DETAIL ? ON SHEET S-1
 - 23) INSTALL REMOVABLE BOLLARD PER DETAIL 22, SHEET D-2
 - 24) INSTALL 20" CUSTOM JUNCTION STRUCTURE PER STRUCTURAL DETAIL ? ON SHEET S-1

QUANTITIES	PRIVATE	PUBLIC
DRAINAGE		
48" TYPE I STORM DRAIN MANHOLE	EA	2
60" TYPE III STORM DRAIN MANHOLE	EA	4
12.5" TYPE "CM2" DROP INLET	EA	2
72" RCP STORM DRAIN	LF	290
36" RCP STORM DRAIN	LF	173
10" X 12" RCB STORM DRAIN	LF	12

LEGEND
 RIP RAP D50=18", THICKNESS=36"

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DSS107 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.
JOSH JOHNSON, P.E. 15789 DATE



SLATER
HANIFAN
GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

CITY OF LAS VEGAS, NEVADA

NINETY FIVE MANAGEMENT, LLC

SKYE CANYON II PARCEL 2.06 - PHASE 1

GRADING PLAN I

DATE: 7/18/19

DRAWN: BKS

DESIGNED: BKS

CHECKED: JJ

PROJECT NO. OLY1813-000

7/18/19

G-1

SHEET 4 OF 19

1:24,000 - 000 sky canyon ii - parcel 2.06 (sky canyon ii) - 7/18/2019 12:48 PM Brian Scott



SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR DISAPPEARED DURING CONSTRUCTION.

ELEVATION NOTE
ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT
SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATE 10/17/2018

EARTHWORKS
EARTHWORK QUANTITIES (RAW):
CUT = 128,656 CU YDS
FILL = 58,338 CU YDS
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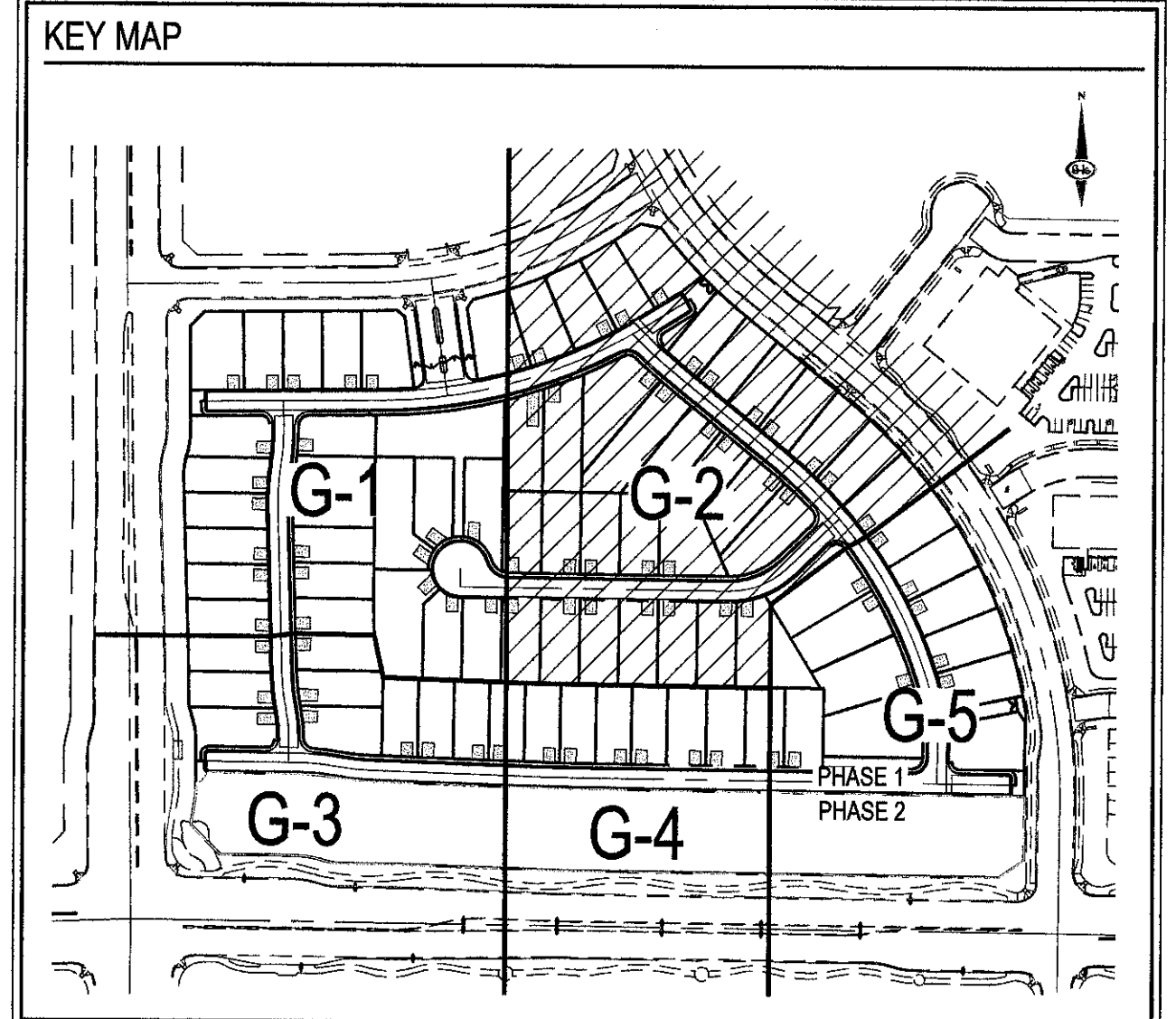
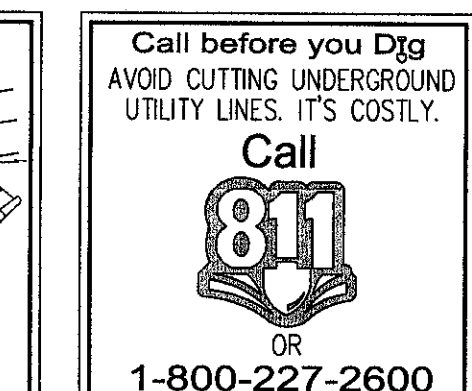
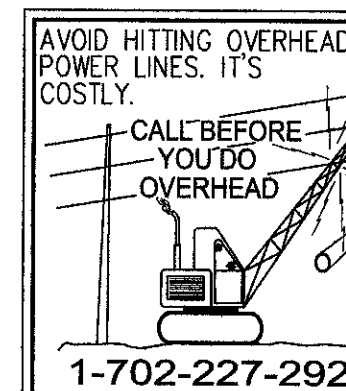
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GRADING NOTES
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9. NO STRUCTURE, VEGETATION, OR OBJECTS OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXISTS) WITHIN THE SIGHT VISIBILITY ZONES.

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES
(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 THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, 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 A 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 THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, 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.

FEMA FLOOD ZONE INFORMATION
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (UNSHADED), AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANELS 32003C1735E, AND 32003C1750 BOTH DATED SEPTEMBER 27, 2002. A ZONE "X" (UNSHADED) IS DEFINED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% (500 YEAR) ANNUAL CHANCE FLOOD PLAIN.



GRADING NOTES
1) INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
2) INSTALL 5' CURB TRANSITION PER DETAIL 14, SHEET D-2
3) INSTALL A TYPE CURB PER CCAUSD NO. 219
4) INSTALL ROLL TYPE CURB PER CCAUSD NO. 217.51
5) REMOVE EX HEADWALL PROTECT IN PLACE
6) INSTALL 5' WIDE SIDEWALK PER CCAUSD NO. 234
7) CONSTRUCT 2' SIDEWALK DRAIN PER CCAUSD NO. 236
8) INSTALL 8' VALLEY GUTTER PER CCAUSD NO. 228
9) INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
10) INSTALL ACCESS GATE W/AVI LOOP
11) INSTALL 6" WIDE CRUSHED ROCK FOR ACCESS ROAD
12) CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE, TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235 CASE I, AND 235.1
13) INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
14) INSTALL WROUGHT IRON FENCE WITH 20" MAINTENANCE GATE PER DETAIL 19, SHEET D-2
15) REMOVE SECTION OF EX 72" RCP STORM DRAIN
16) INSTALL WROUGHT IRON 20" MAINTENANCE GATE PER DETAIL 20, SHEET D-2
17) INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
18) 20" PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED BY HOA
19) INSTALL RIP RAP D50-6", THICKNESS=12" (WHERE SHOWN)
20) INSTALL 12.5" DROP INLET TYPE "CM2" PER CCAUSD NO. 412.1 AND 421
21) INSTALL 48" TYPE I STORM DRAIN MANHOLE PER CCAUSD NO. 403
22) INSTALL CUSTOM SDMH PER STRUCTURAL DETAIL ? ON SHEET S-1
23) INSTALL REMOVABLE BOLLARD PER DETAIL 22, SHEET D-2
24) INSTALL 20" CUSTOM JUNCTION STRUCTURE PER STRUCTURAL DETAIL ? ON SHEET S-1

QUANTITIES	PRIVATE	PUBLIC
DRAINAGE		
48" TYPE I STORM DRAIN MANHOLE	EA	2
60" TYPE III STORM DRAIN MANHOLE	EA	4
12.5" TYPE "CM2" DROP INLET	EA	2
72" RCP STORM DRAIN	LF	290
36" RCP STORM DRAIN	LF	173
10'W X 12'H RCB STORM DRAIN	LF	12

LEGEND
RIP RAP D50-18", THICKNESS=36"

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY D255102 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.
JOSH JOHNSON, P.E. 15789 DATE

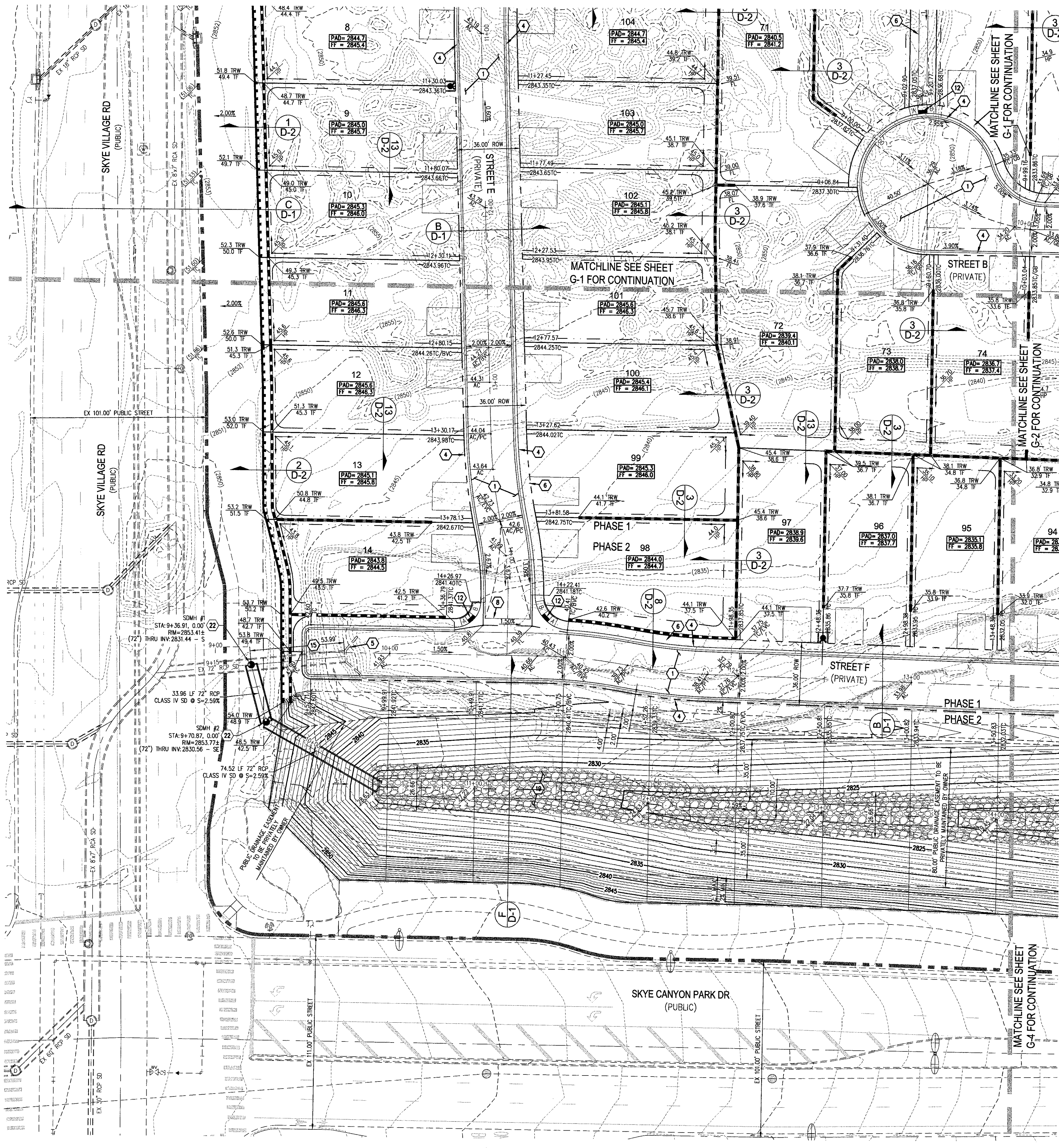
SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5309

G-2
SHEET 5 OF 19

NINETY FIVE MANAGEMENT, LLC
CITY OF LAS VEGAS, NEVADA
DATE: 7/18/19
DRAFTER: BKS
DESIGNER: BKS
CHECKED: JJ
PROJECT NO. OLY1813-000

G-2
SHEET 5 OF 19

\\s01813-000 SKYE CANYON II - parcel 2.06 (N51813-000-grd-1.dwg 7/18/2019 12:49 PM Brian Scott)



SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBTUSCURED DURING CONSTRUCTION.

ELEVATION NOTE

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/2018

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 128,656 CU YDS
FILL= 58,336 CU YDS
EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DISCLAIMER NOTE

1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF 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 IN THEIR PROPER LOCATION.
2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

GRADING NOTES

- FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.11.2.2.
- THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
- ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
- MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
- SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
- ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
- CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
- 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 PROGRESS DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLETING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
- 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.

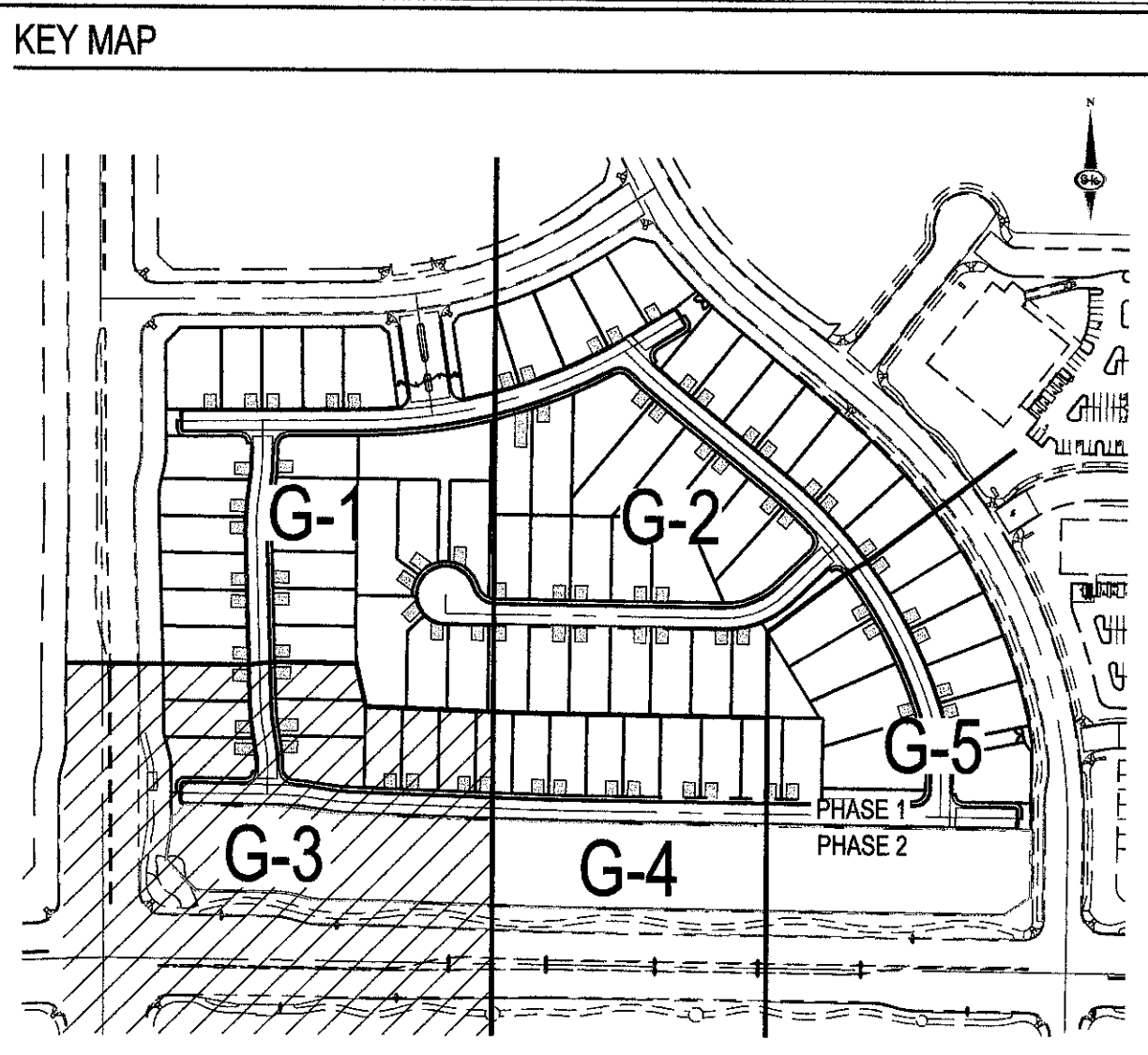
LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

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

- 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 WAY 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.
- ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNUSUAL EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
- 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 THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
- 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 A 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 THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
- 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.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (UNSHADED), AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANELS 32003C1735E AND 32003C1750 BOTH DATED SEPTEMBER 27, 2002. A ZONE 'X' (UNSHADED) IS DEFINED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% (500 YEAR) ANNUAL CHANCE FLOOD PLAIN.



GRADING NOTES

- INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- INSTALL 5' CURB TRANSITION PER DETAIL 14, SHEET D-2
- INSTALL A TYPE CURB PER CCAUSD NO. 219
- INSTALL ROLL TYPE CURB PER CCAUSD NO. 217.51
- REMOVE EX HEADWALL PROTECT IN PLACE
- INSTALL 5' WIDE SIDEWALK PER CCAUSD NO. 234
- CONSTRUCT 2" SIDEWALK DRAIN PER CCAUSD NO. 236
- INSTALL 8" VALLEY GUTTER PER CCAUSD NO. 228
- INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
- INSTALL ACCESS GATE W/AM LOOP
- INSTALL 6" WIDE CRUSHED ROCK FOR ACCESS ROAD
- CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235 CASE I, AND 235.1
- INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
- INSTALL WROUGHT IRON FENCE WITH 20" MAINTENANCE GATE PER DETAIL 19, SHEET D-2
- REMOVE SECTION OF EX 72" RCP STORM DRAIN
- INSTALL WROUGHT IRON 20" MAINTENANCE GATE PER DETAIL 20, SHEET D-2
- INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
- 20" PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED BY HOA
- INSTALL RCP R40 D50-6", THICKNESS=12" (WHERE SHOWN)
- INSTALL 12.5" DROP INLET TYPE "OM2" PER CCAUSD NO. 412.1 AND 421
- INSTALL 48" TYPE I STORM DRAIN MANHOLE PER CCAUSD NO. 403
- INSTALL CUSTOM SDMH PER STRUCTURAL DETAIL ? ON SHEET S-1
- INSTALL REMOVABLE BOLLARD PER DETAIL 22, SHEET D-2
- INSTALL 20" CUSTOM JUNCTION STRUCTURE PER STRUCTURAL DETAIL ? ON SHEET S-1

QUANTITIES

	PRIVATE	PUBLIC
DRAINAGE		
48" TYPE I STORM DRAIN MANHOLE	EA	2
60" TYPE III STORM DRAIN MANHOLE	EA	4
12.5" TYPE "OM2" DROP INLET	EA	2
72" RCP STORM DRAIN	LF	290
36" RCP STORM DRAIN	LF	173
10" X 12" RCP STORM DRAIN	LF	12

LEGEND

RIP RAP D50=18", THICKNESS=36"

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY 025102Z ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.
JOSH JOHNSON, P.E. 15789 DATE



SLATER
HANIFAN
GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5389

DATE: 7/18/19

DRAFTER: BKS

DESIGNER: BKS

CHECKED: JJ

PROJECT NO.
OLY1813-000

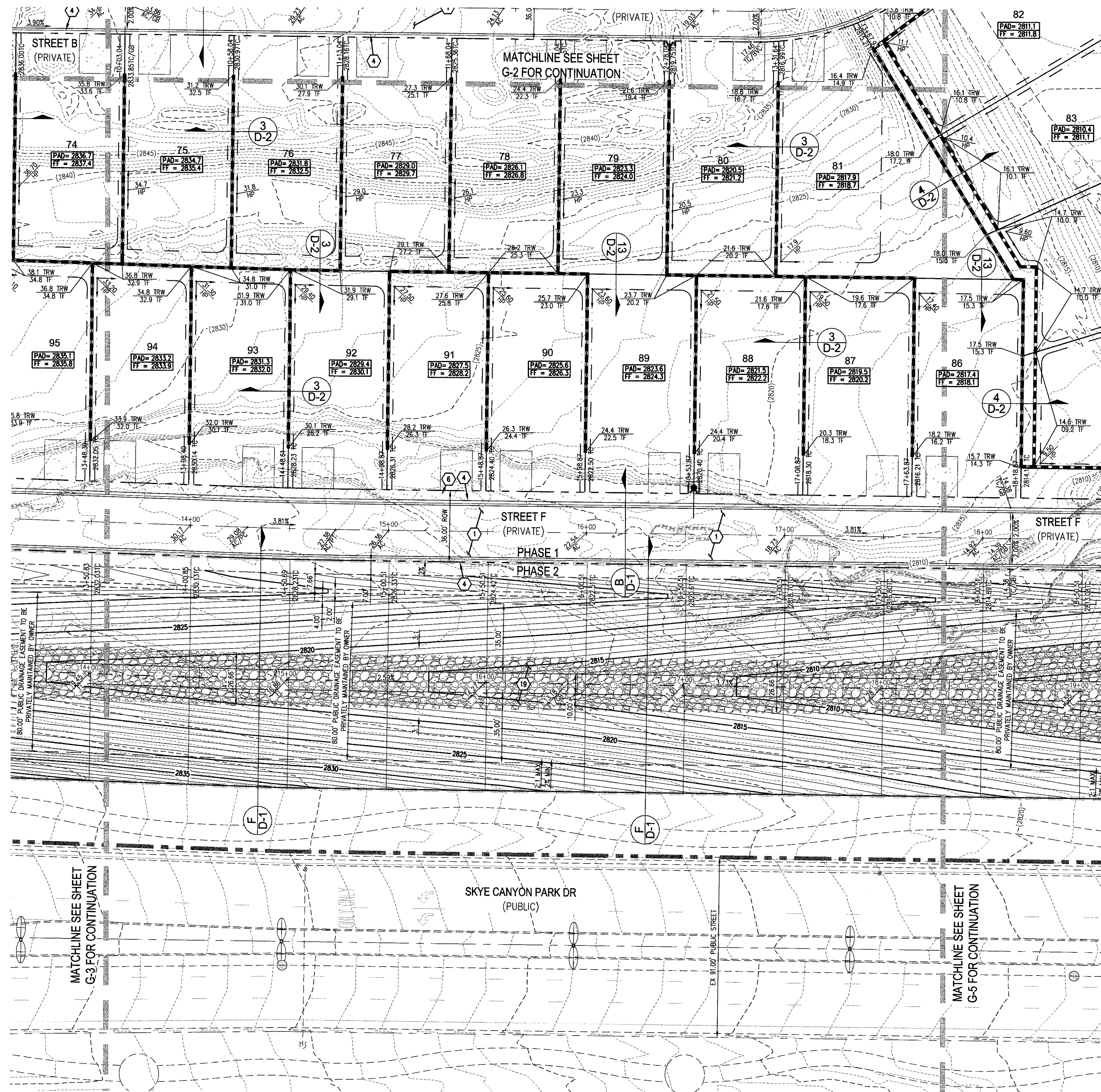
ENGINEER
JOSHUA L. JOHNSON
Exp. 06/30/2021
CIVIL
No. 15789 NVR100000

7/8/19

G-3
SHEET 6 OF 19

NINETY FIVE MANAGEMENT, LLC
SKYE CANYON II PARCEL 2.06 - PHASE 1
GRADING PLAN III

\\s01\1813-000\skye canyon ii - parcel 2.06.dwg (project) phase 1\9/18/2019 12:49 PM Byron Scott



CALL SOUTHWEST GAS AT 702-691-2111 FOR
STANDBY WHEN EXCAVATING OVER OR NEAR HIGH
PRESSURE GAS LINES

SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS
SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED,
DISTURBED, DESTROYED, OR OBSERVED DURING CONSTRUCTION.

ELEVATION NOTE

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND
THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E.
01.00 REPRESENTS 1801.00)

SOILS REPORT

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/2018

EARTHWORKS

EARTHWORK QUANTITIES (RAW):
CUT= 128,656 CU YDS
FILL= 58,338 CU YDS

EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED
LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED
AND ACTIVE GRADING PERMIT.

DISCLAIMER NOTE

- EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE
CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF
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 IN THEIR PROPER LOCATION.
- FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS
SLOPES FROM EXISTING PAVEMENT SAVOIT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED
LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF
MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL
NOTIFY THE ENGINEER.

GRADING NOTES

- FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION
2304.11.2.2.
- THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO
THE ENGINEER.
- ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
- MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH
REPORT.
- SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
- ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
- CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF
LAS VEGAS BUILDING DEPARTMENT.
- 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 SHALL BE RESPONSIBLE FOR REPAIR/REPLENISHING
FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION
COMMENCING.
- 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.

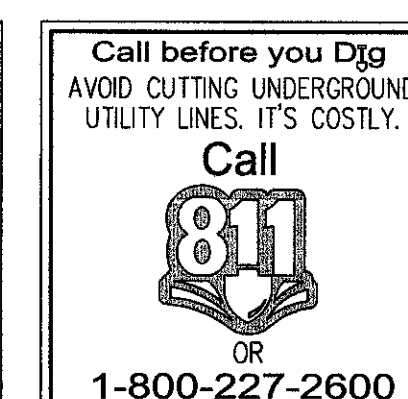
LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

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

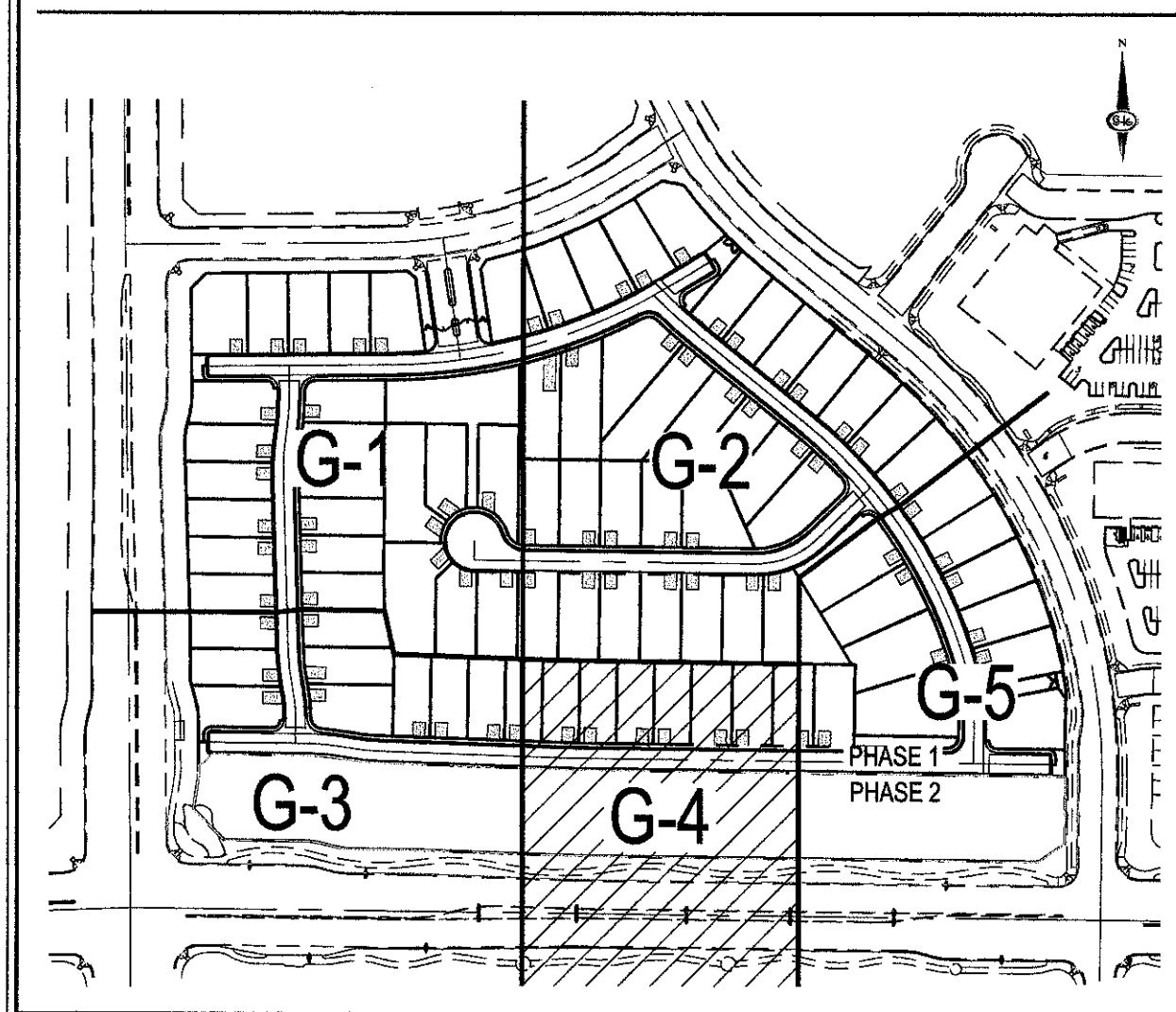
- THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY
REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY
HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY
AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR
CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER
SYSTEM.
- 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 CLARK COUNTY TITLE
24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
- 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 THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000,
SECTION III.A.5.
- 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 A 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 THE
NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
- 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.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (UNSHADED), AS DEPICTED ON
FLOOD INSURANCE RATE MAP (FIRM) PANELS 30003C1725E AND 30003C1750 BOTH DATED
SEPTEMBER 27, 2002. A ZONE 'X' (UNSHADED) IS DEFINED AS AN AREA DETERMINED TO BE
OUTSIDE THE 0.2% (500 YEAR) ANNUAL CHANCE FLOOD PLAIN.



KEY MAP



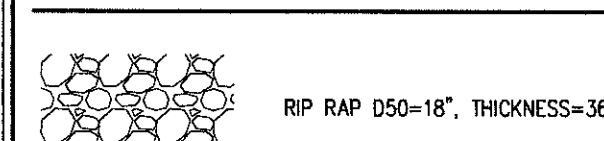
GRADING NOTES

- INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- INSTALL 5' CURB TRANSITION PER DETAIL 14, SHEET D-2
- INSTALL A TYPE CURB PER CCAUSD NO. 219
- INSTALL ROLL TYPE CURB PER CCAUSD NO. 217.51
- REMOVE EX HEADWALL PROTECT IN PLACE
- INSTALL 5' WIDE SIDEWALK PER CCAUSD NO. 234
- CONSTRUCT 2" SIDEWALK DRAIN PER CCAUSD NO. 236
- INSTALL 8" VALLEY GUTTER PER CCAUSD NO. 228
- INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
- INSTALL ACCESS GATE W/AVI LOOP
- INSTALL 6" WIDE CRUSHED ROCK FOR ACCESS ROAD
- CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES
OR EQUIVALENT PER CCAUSD NO. 235 CASE 1, AND 235.1
- INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
- INSTALL WROUGHT IRON FENCE WITH 20" MAINTENANCE GATE PER DETAIL 19,
SHEET D-2
- REMOVE SECTION OF EX 72" RCP STORM DRAIN
- INSTALL WROUGHT IRON 20" MAINTENANCE GATE PER DETAIL 20, SHEET D-2
- INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
- 20" PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED BY HOA
- INSTALL RIP RCP D50=6", THICKNESS=12" (WHERE SHOWN)
- INSTALL 12.5" DROP INLET TYPE "CM2" PER CCAUSD NO. 412.1 AND 421
- INSTALL 48" TYPE I STORM DRAIN MANHOLE PER CCAUSD NO. 403
- INSTALL CUSTOM SDMM PER STRUCTURAL DETAIL ? ON SHEET S-1
- INSTALL REMOVABLE BOLLARD PER DETAIL 22, SHEET D-2
- INSTALL 20" CUSTOM JUNCTION STRUCTURE PER STRUCTURAL DETAIL ? ON
SHEET S-1

QUANTITIES

	PRIVATE	PUBLIC
DRAINAGE		
48" TYPE I STORM DRAIN MANHOLE	EA 2	
60" TYPE III STORM DRAIN MANHOLE	EA 4	
12.5" TYPE "CM2" DROP INLET	EA 2	
72" RCP STORM DRAIN	LF 290	
36" RCP STORM DRAIN	LF 173	
10" W X 12" RCP STORM DRAIN	LF 12	

LEGEND



FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED
TECHNICAL DRAINAGE STUDY DSS1027 ON FILE AT CITY OF LAS VEGAS FOR THE
SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789

DATE

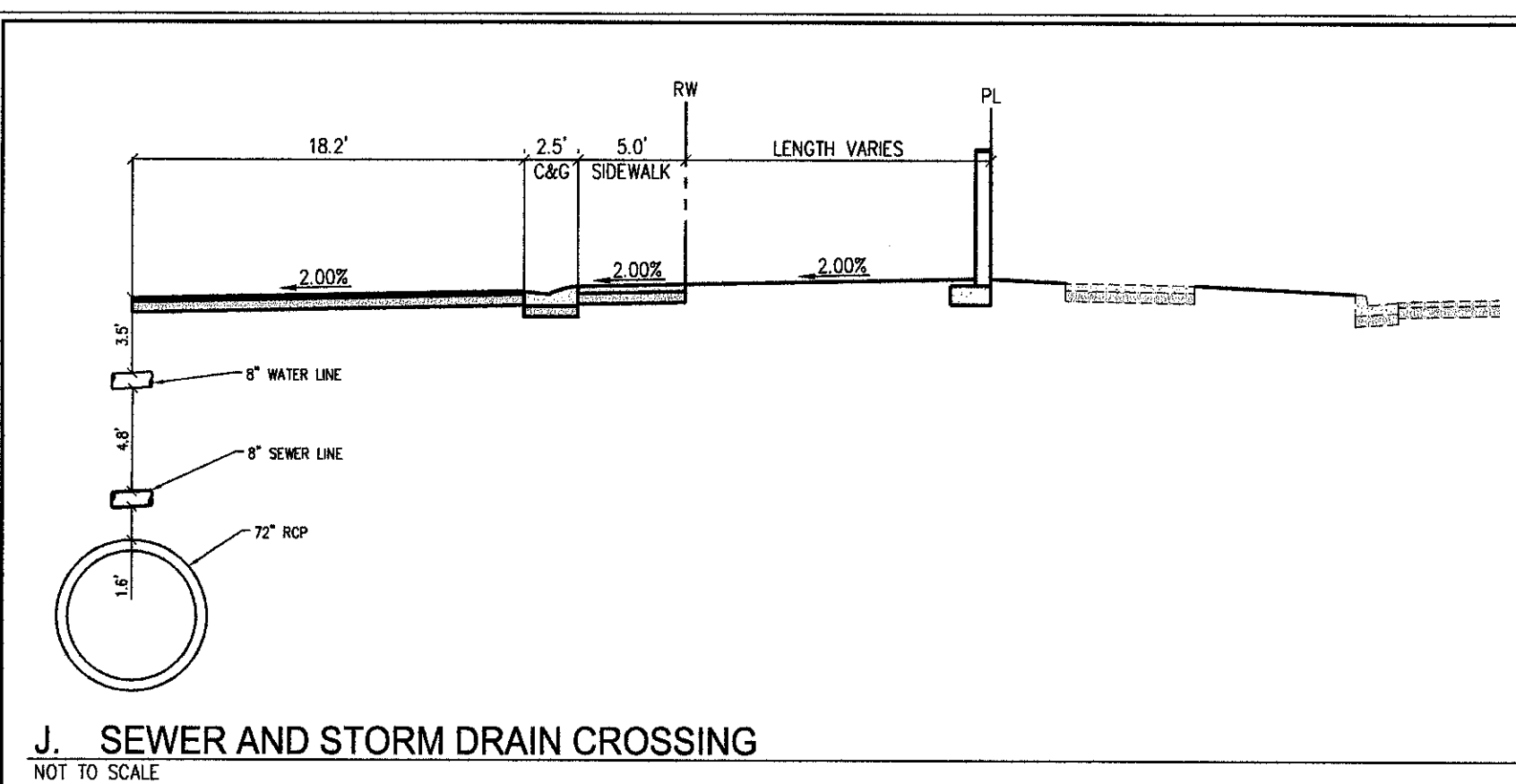
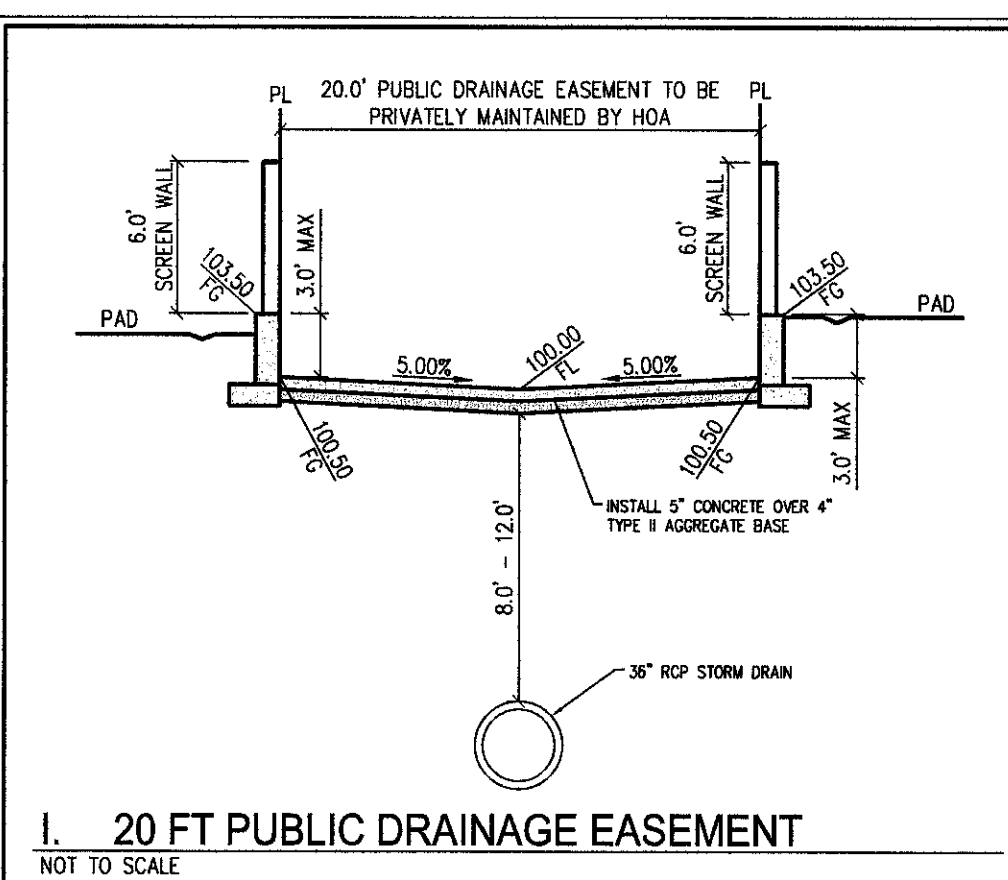
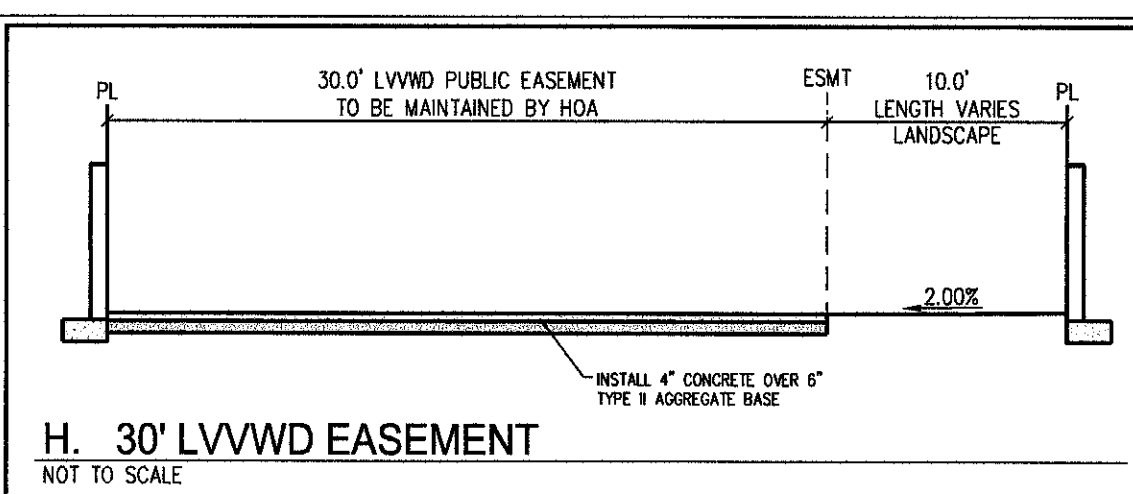
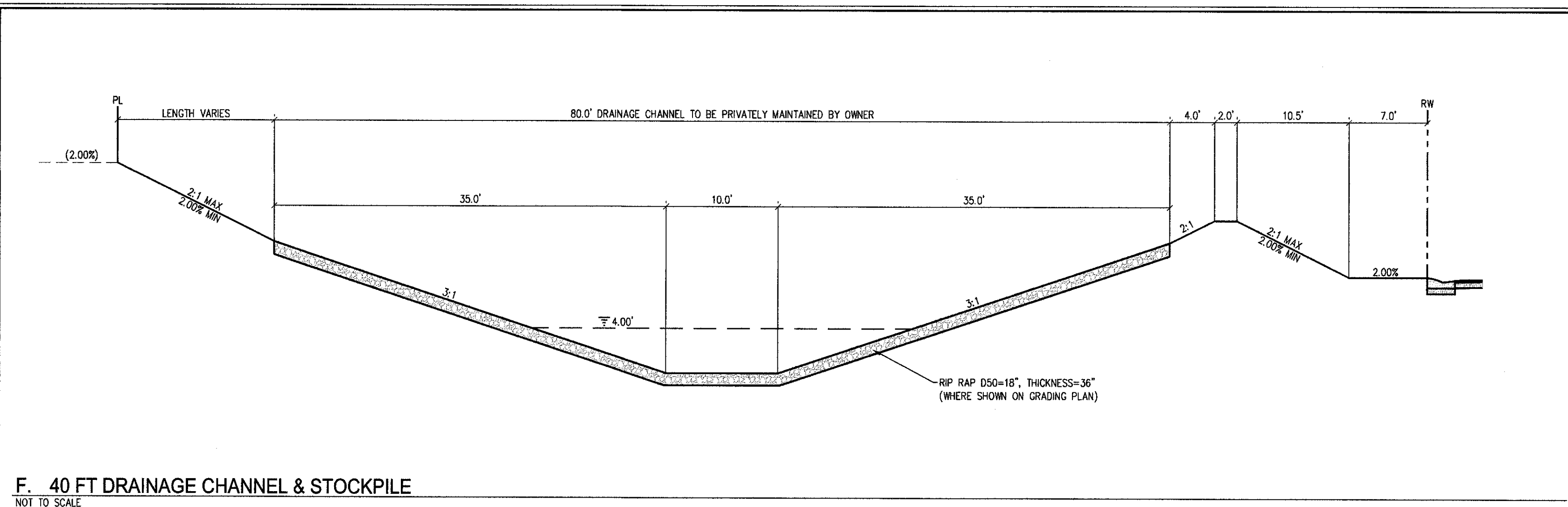
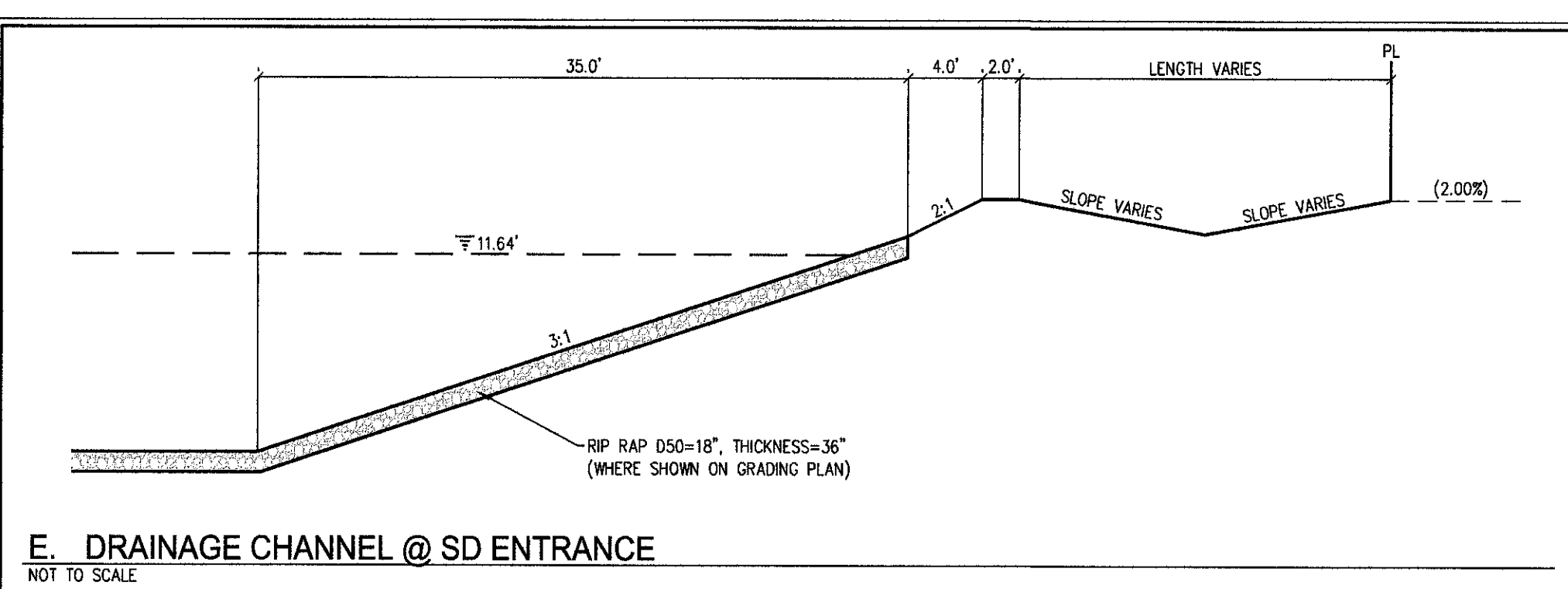
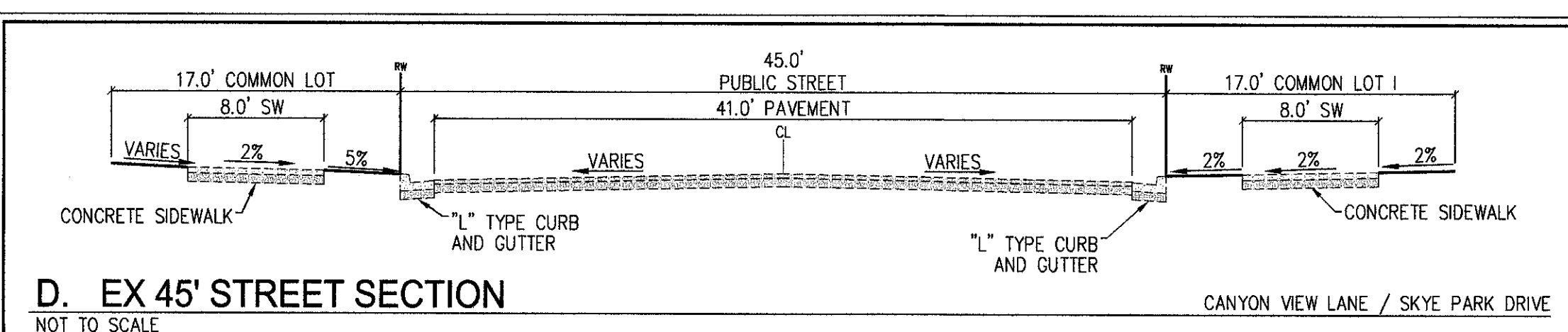
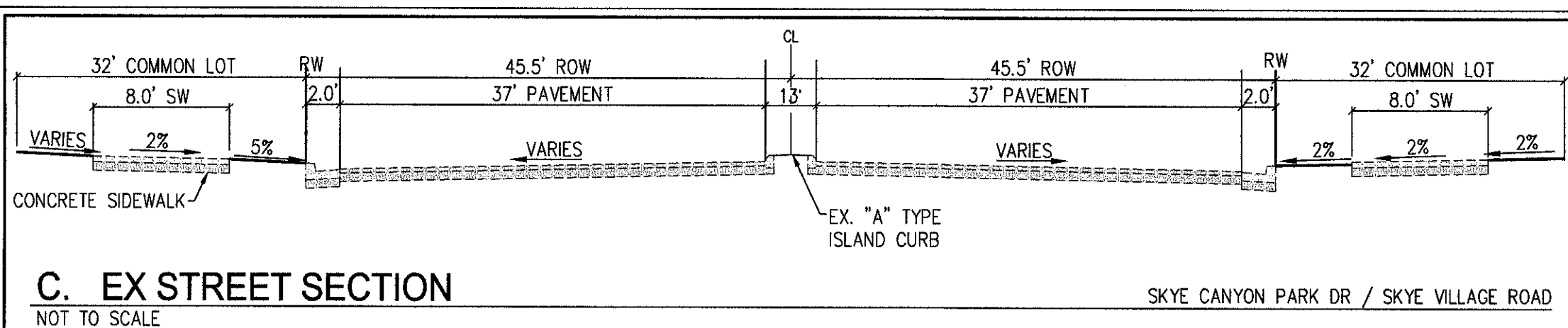
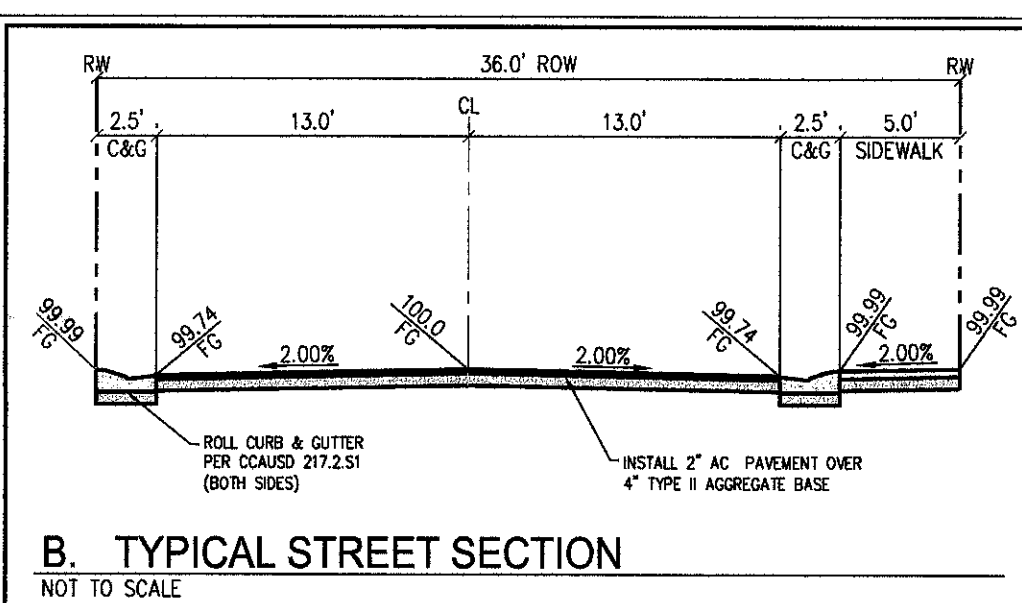
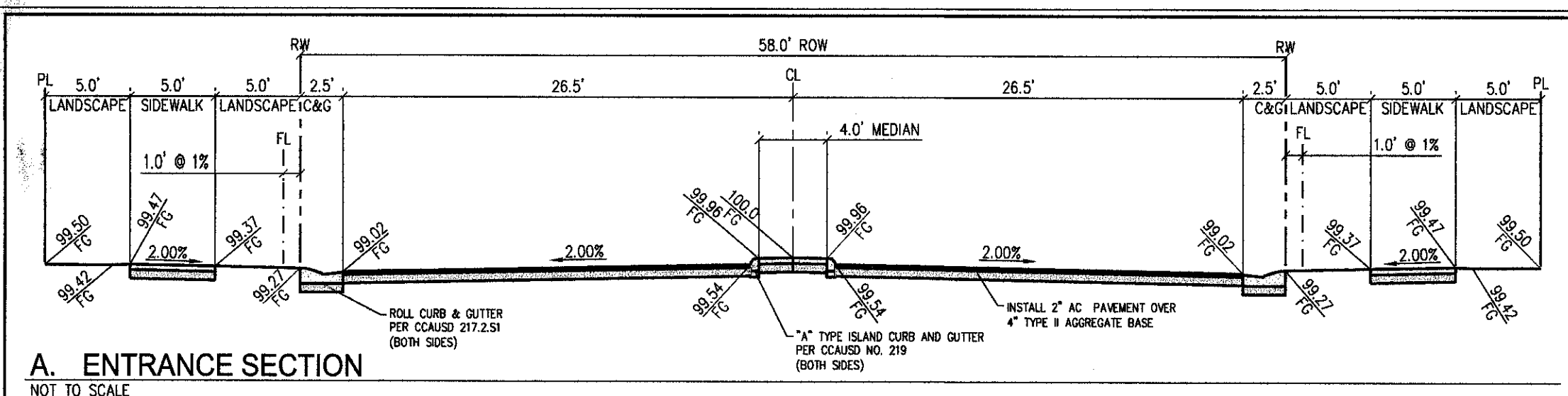
**SLATER
HANIFAN
GROUP**
a Westwood team
5740 S. ARVILLE STREET #216 LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

G-4
SHEET 7 OF 19

CITY OF LAS VEGAS, NEVADA
NINETY FIVE MANAGEMENT, LLC
SKYE CANYON II PARCEL 2.06 - PHASE 1
GRADING PLAN IV

DATE: 7/18/19
DRAFTER: BKS
DESIGNER: BKS
CHECKED: JJ
PROJECT NO.
OLY1813-000

7/18/19



S-I-G
SLATER
HANIFAN
GROUP
a Westwood team

5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5309

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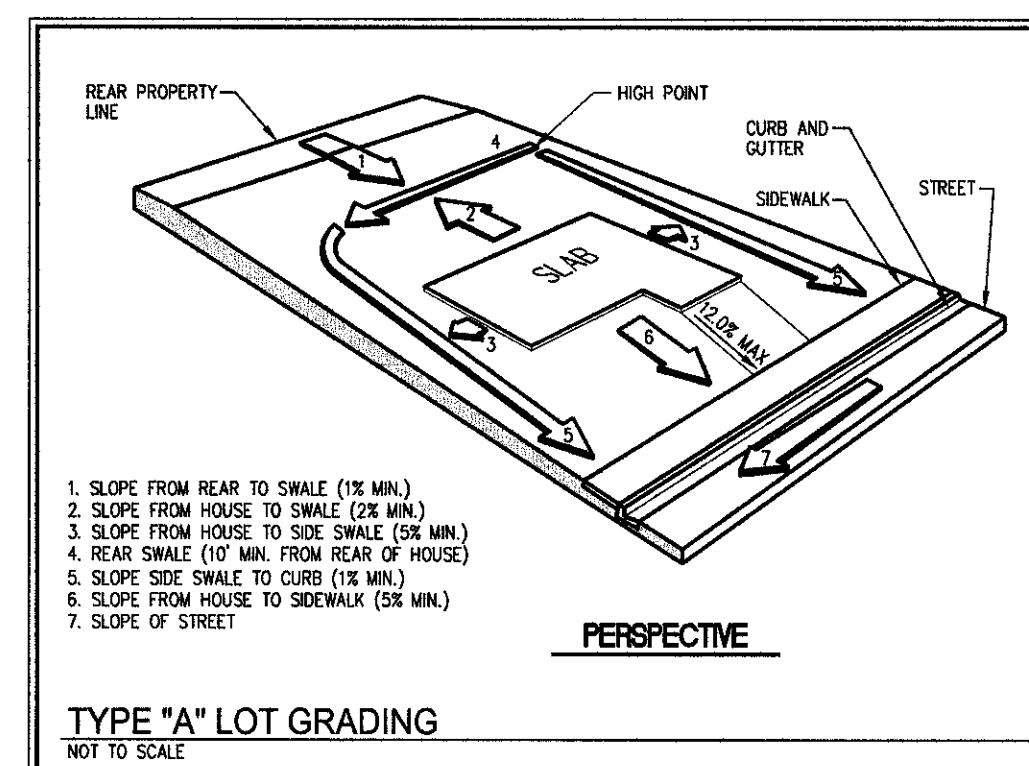
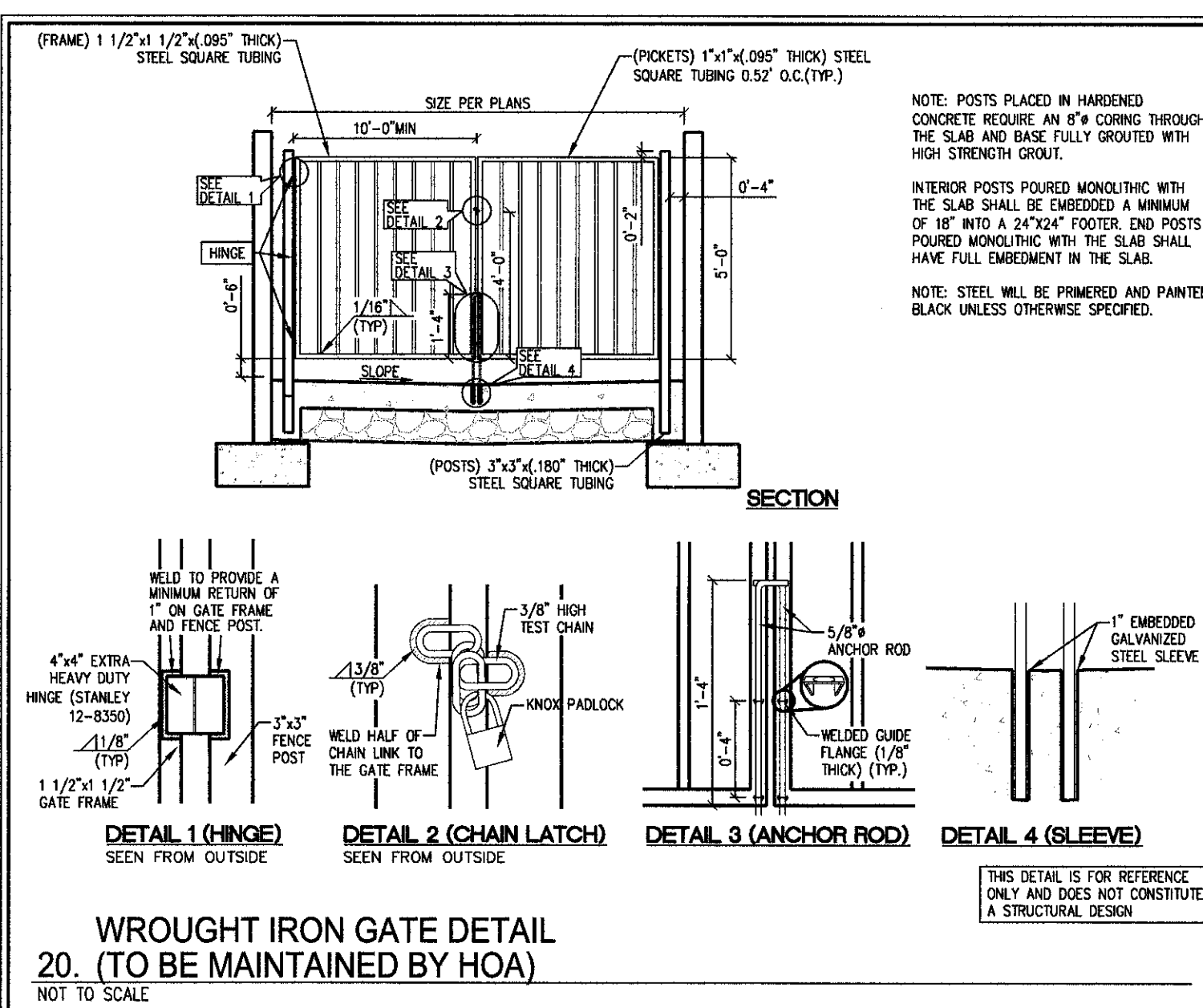
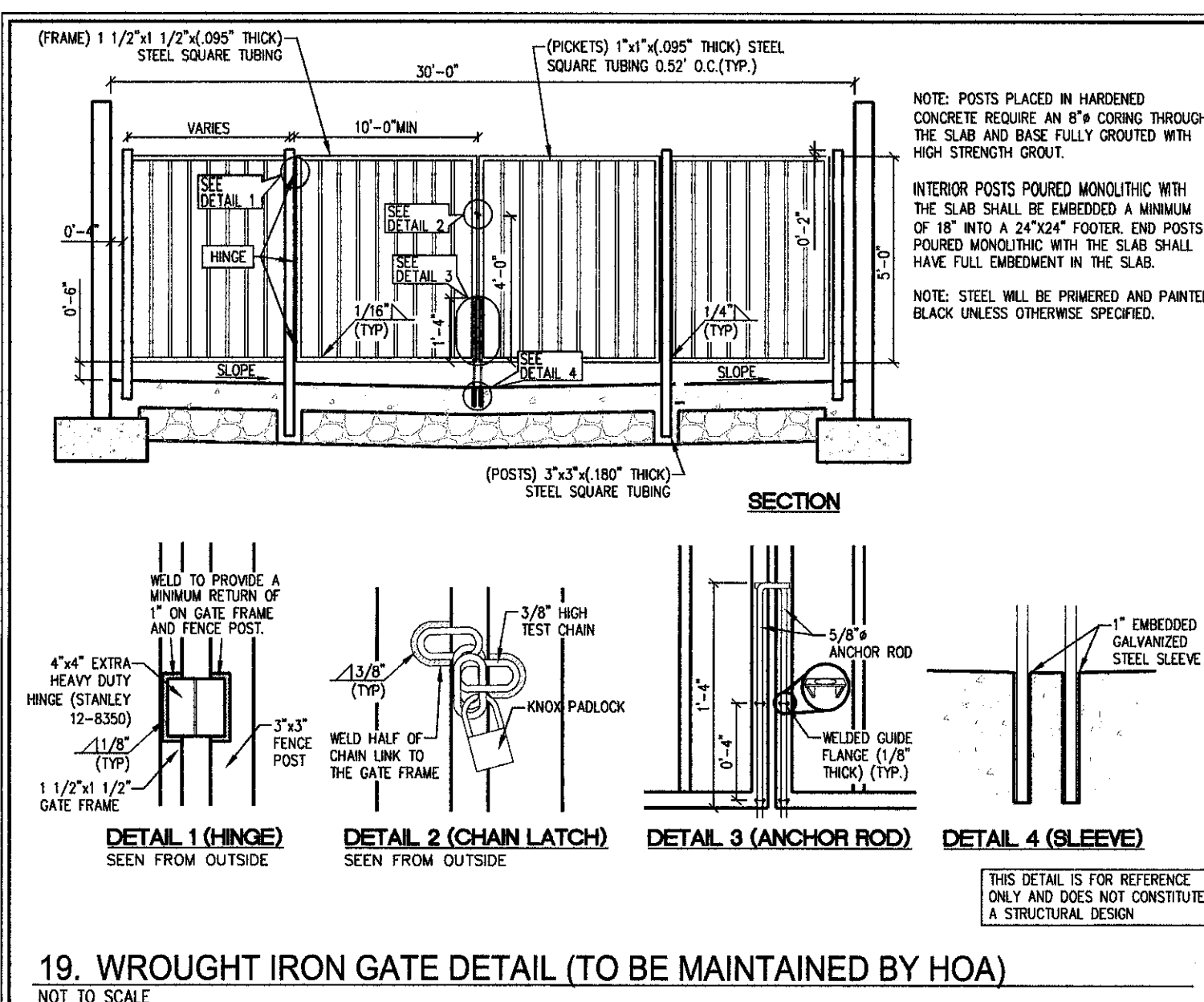
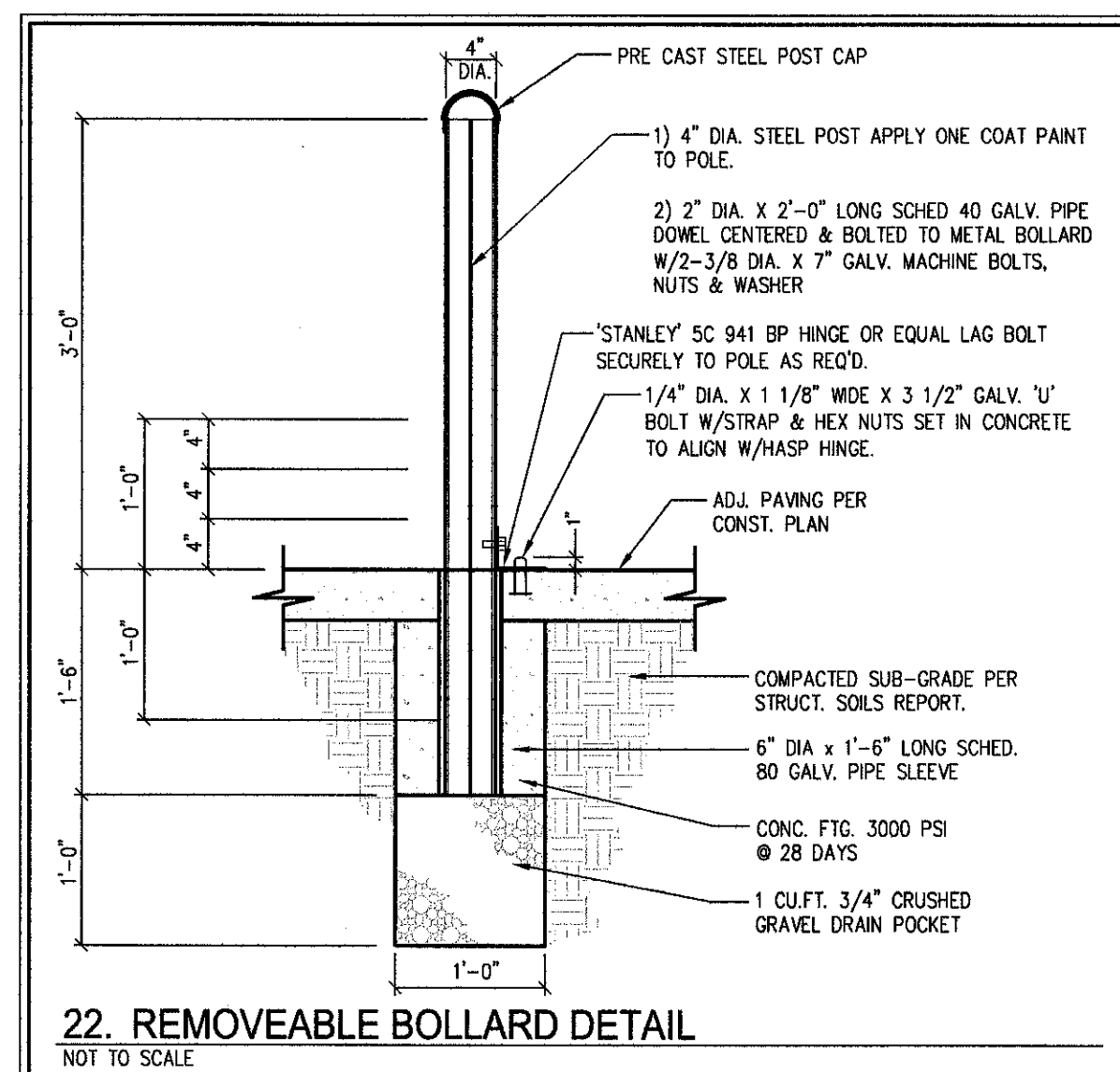
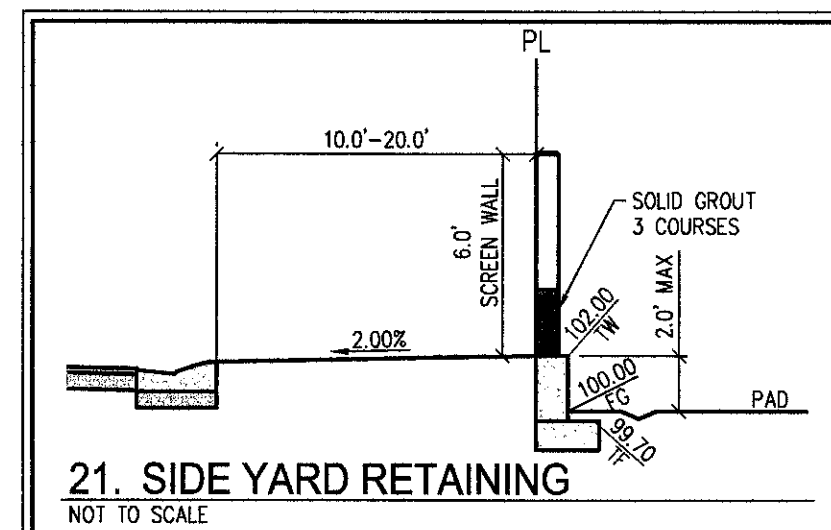
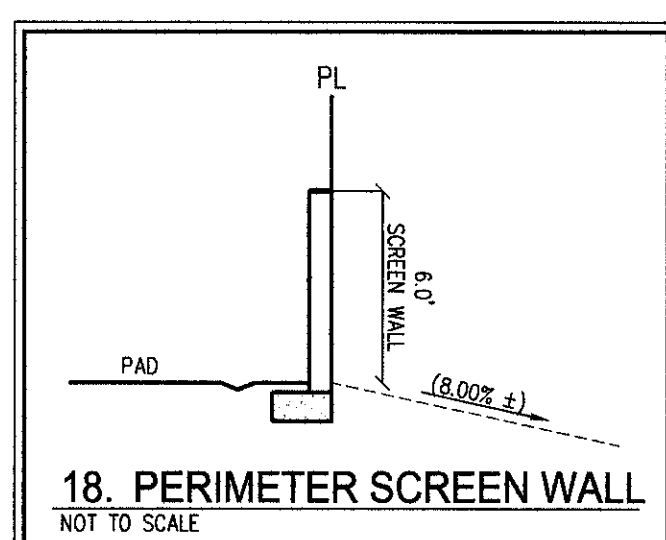
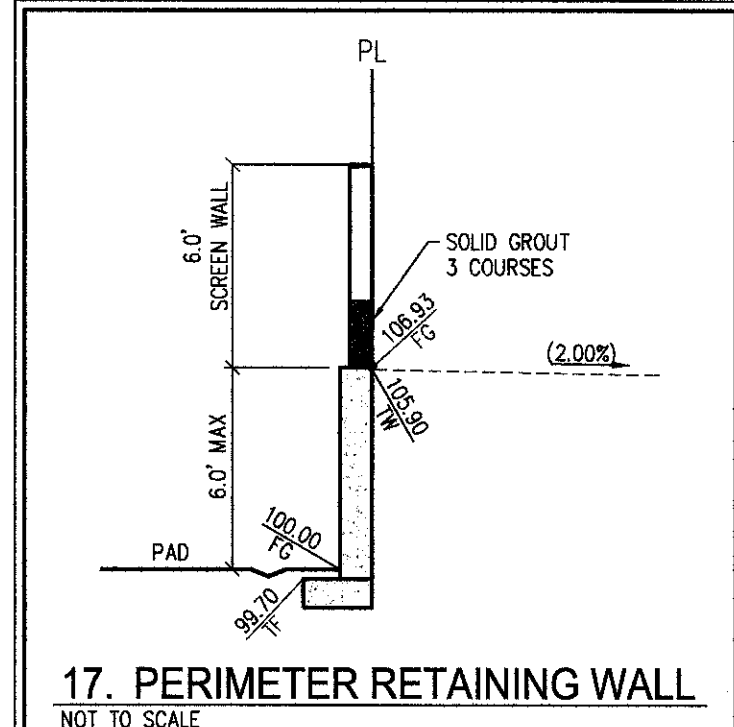
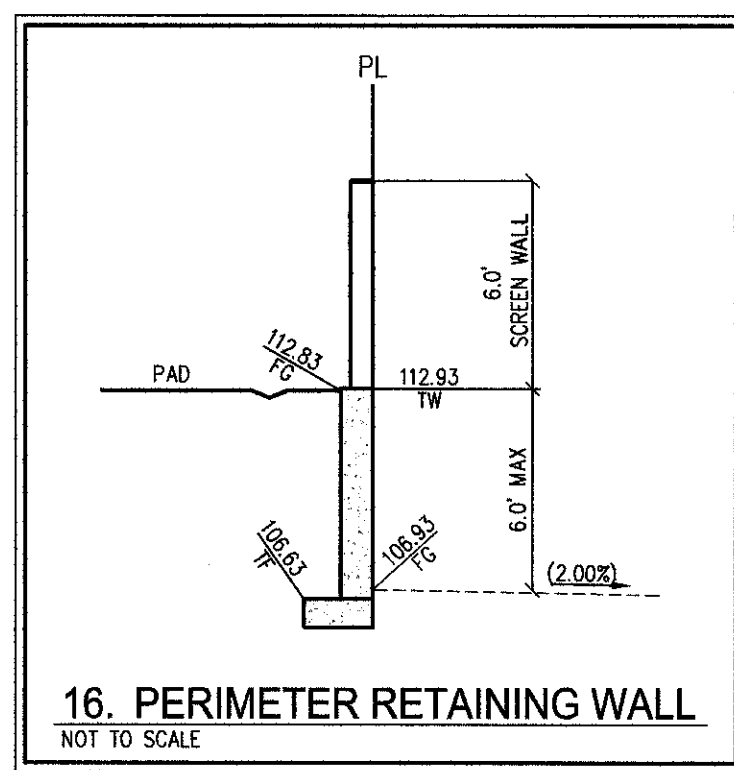
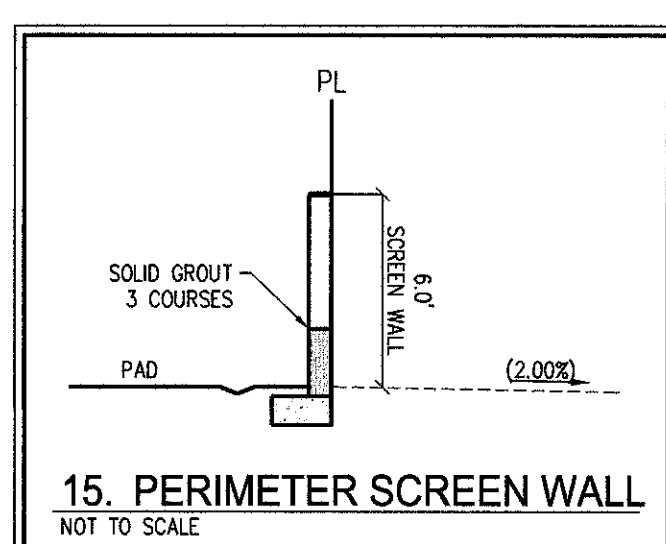
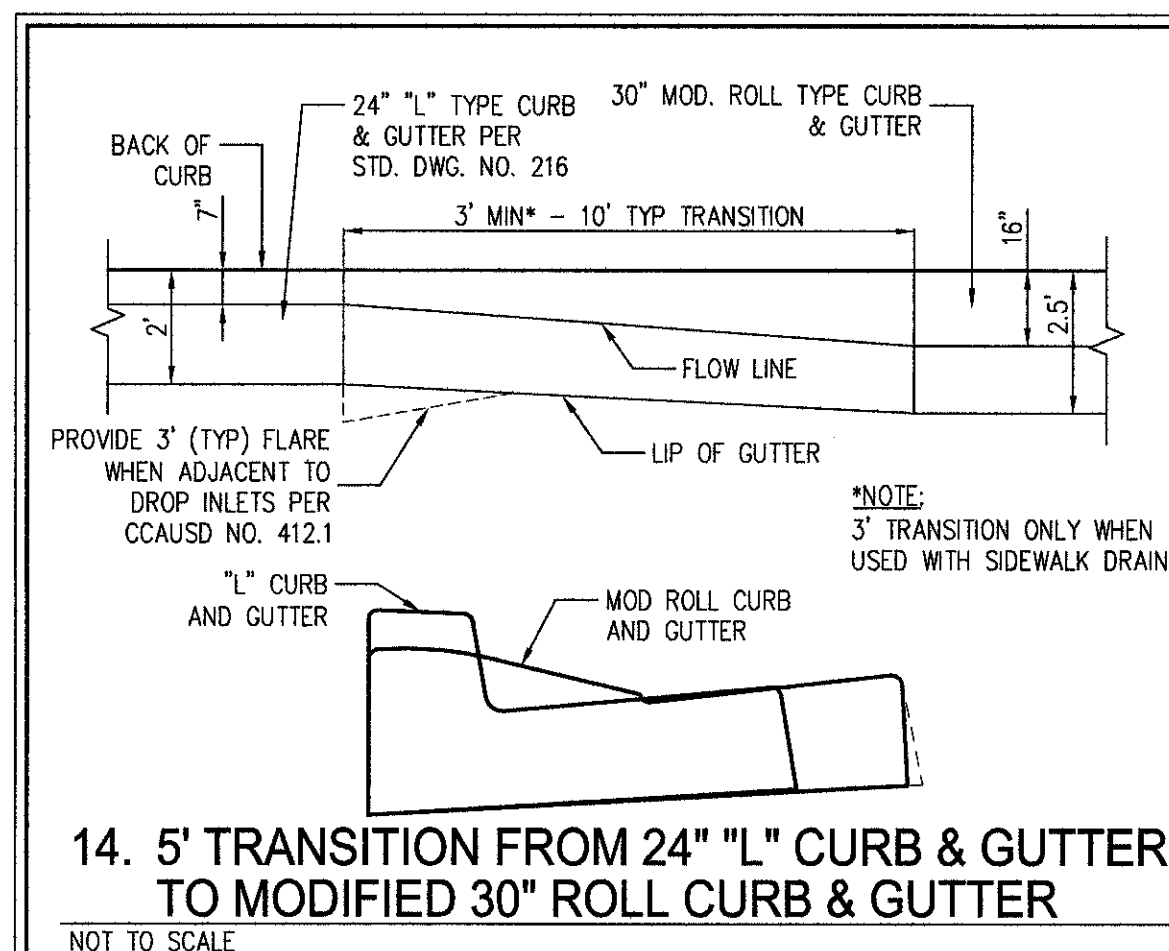
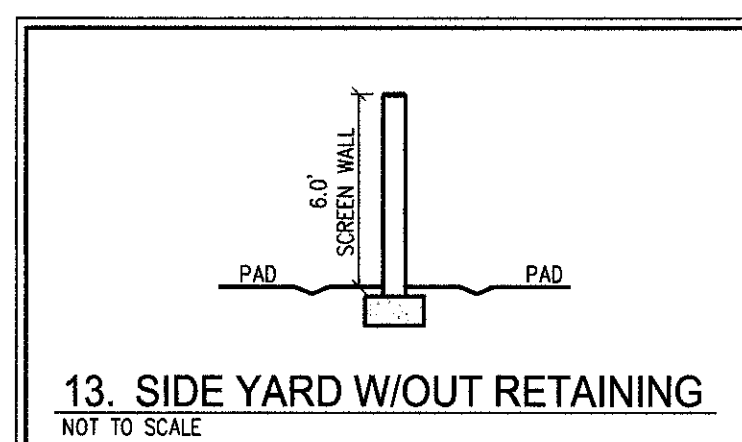
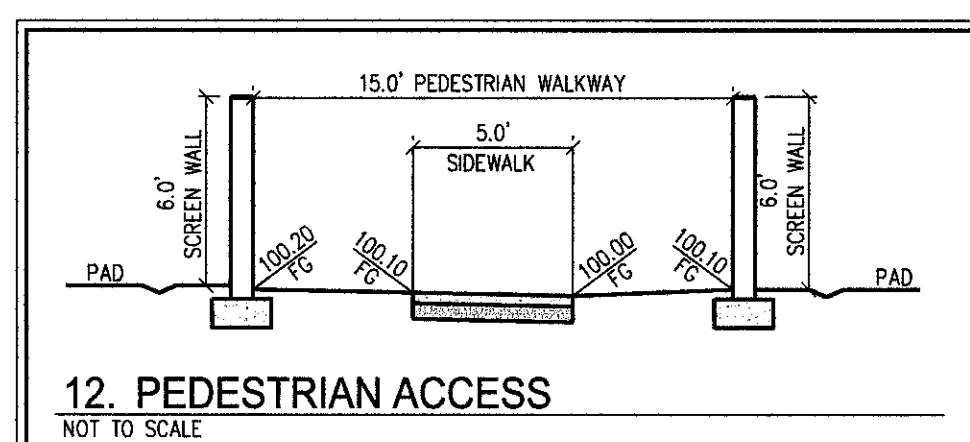
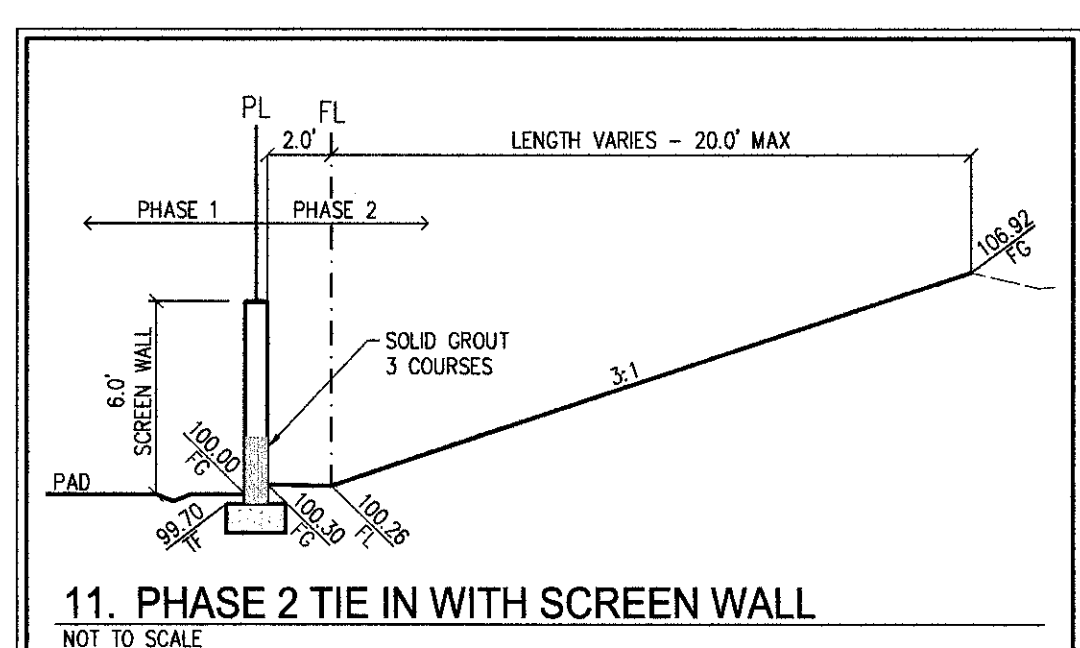
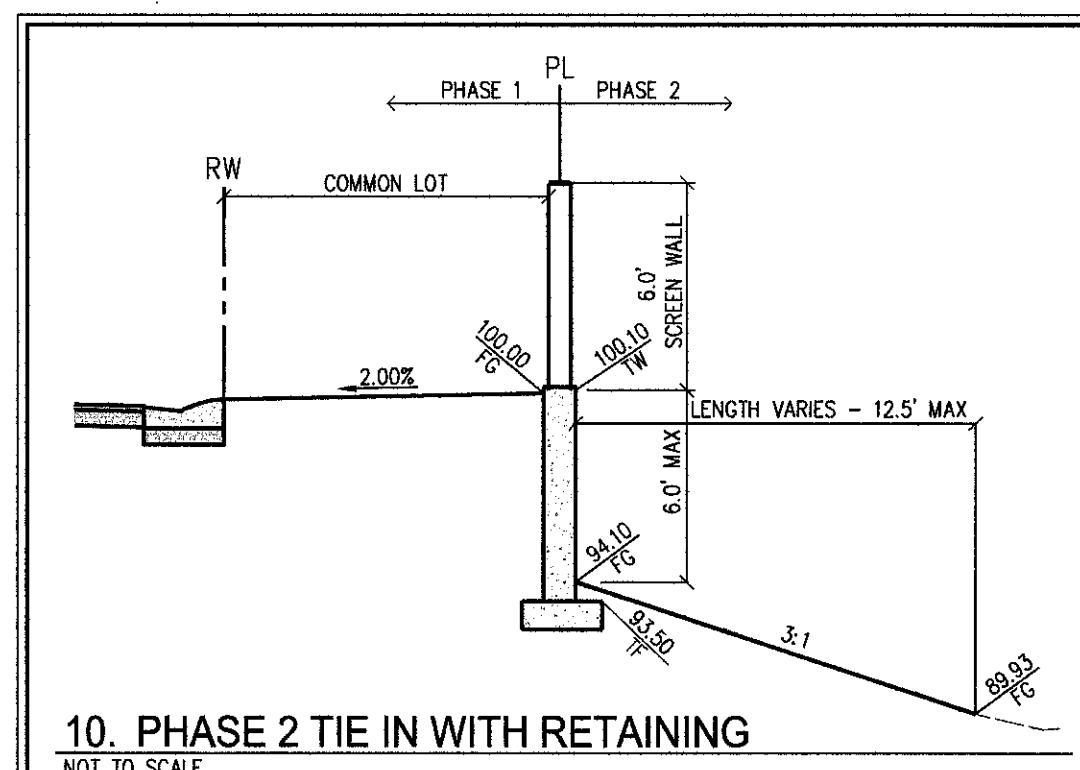
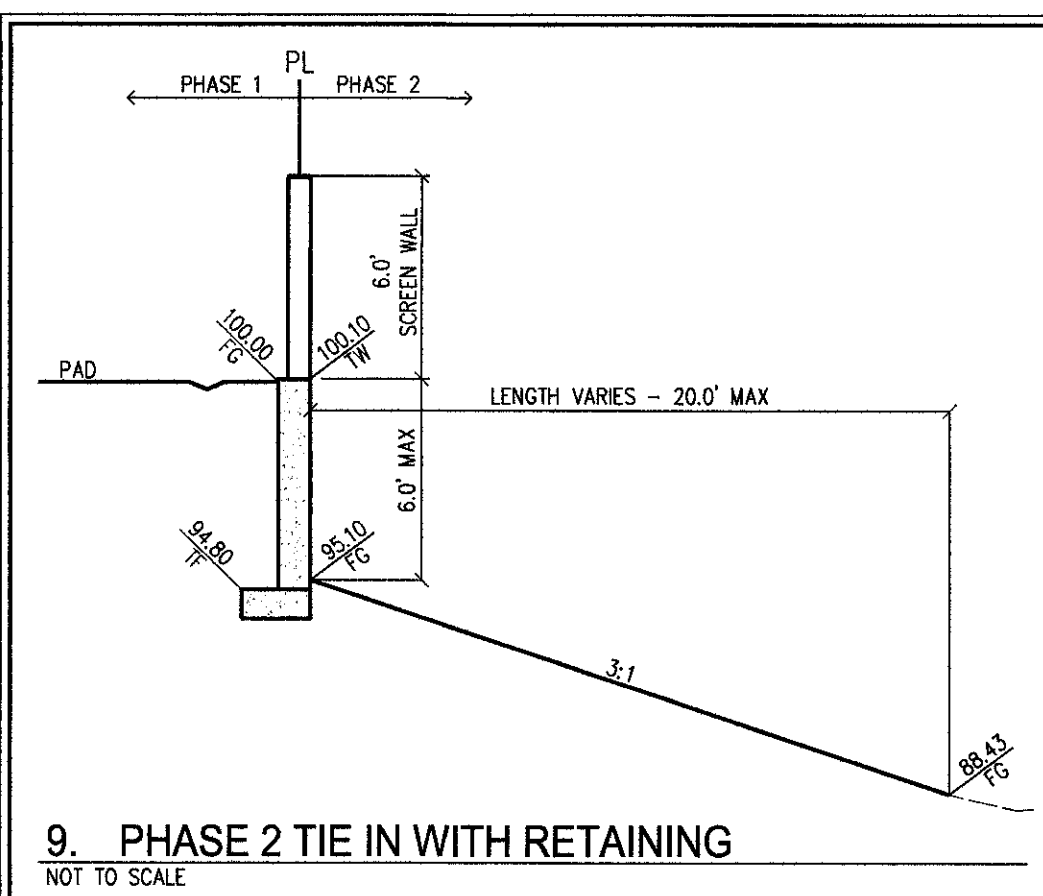
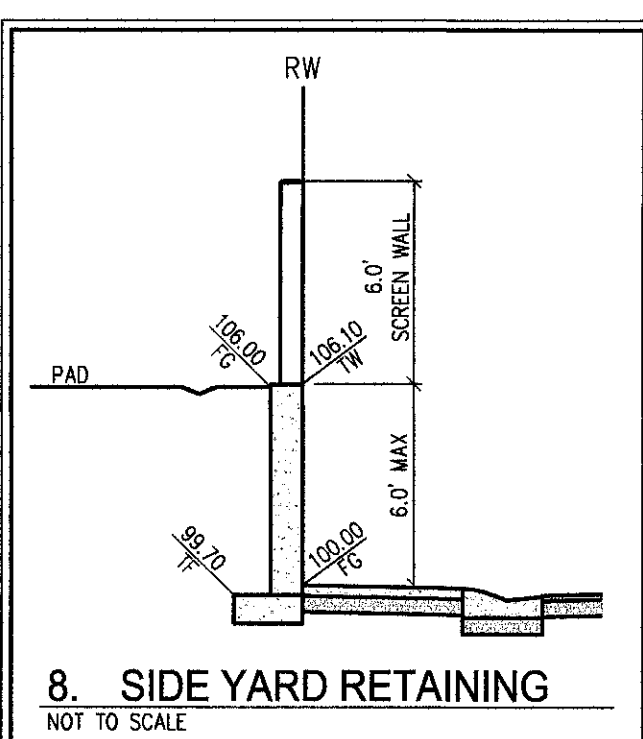
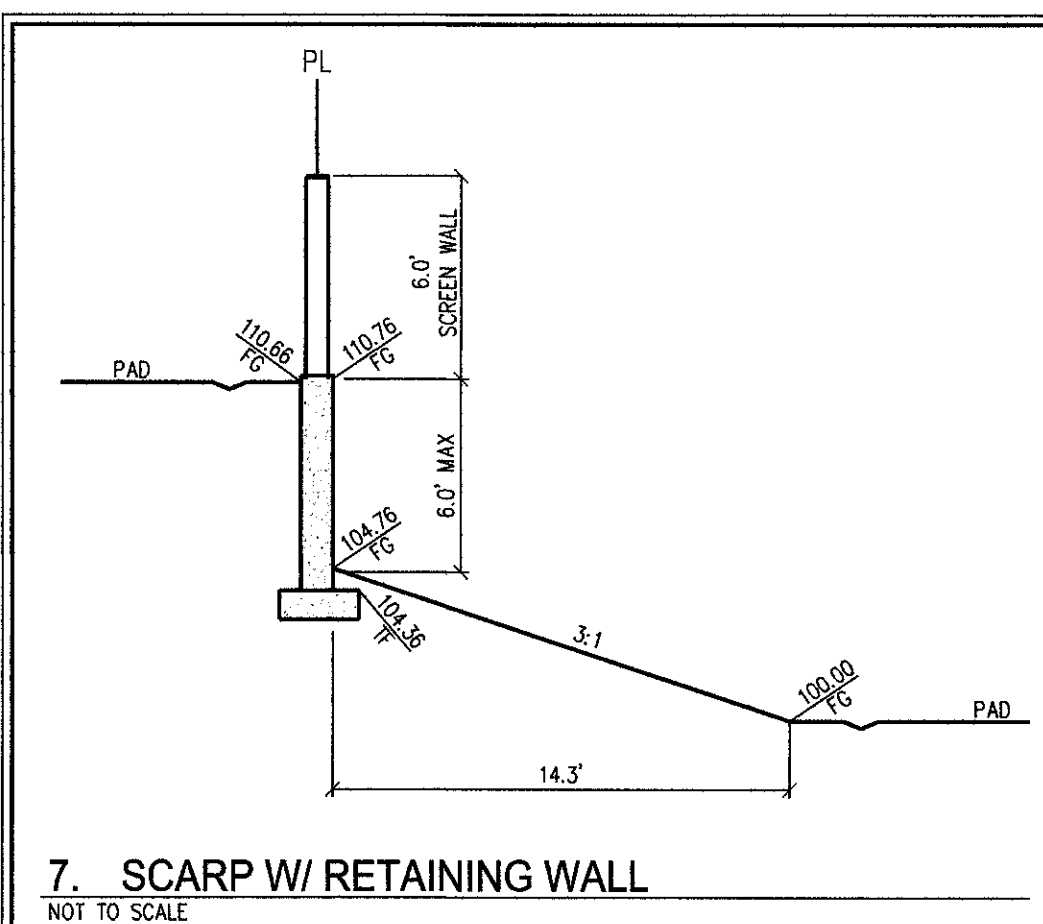
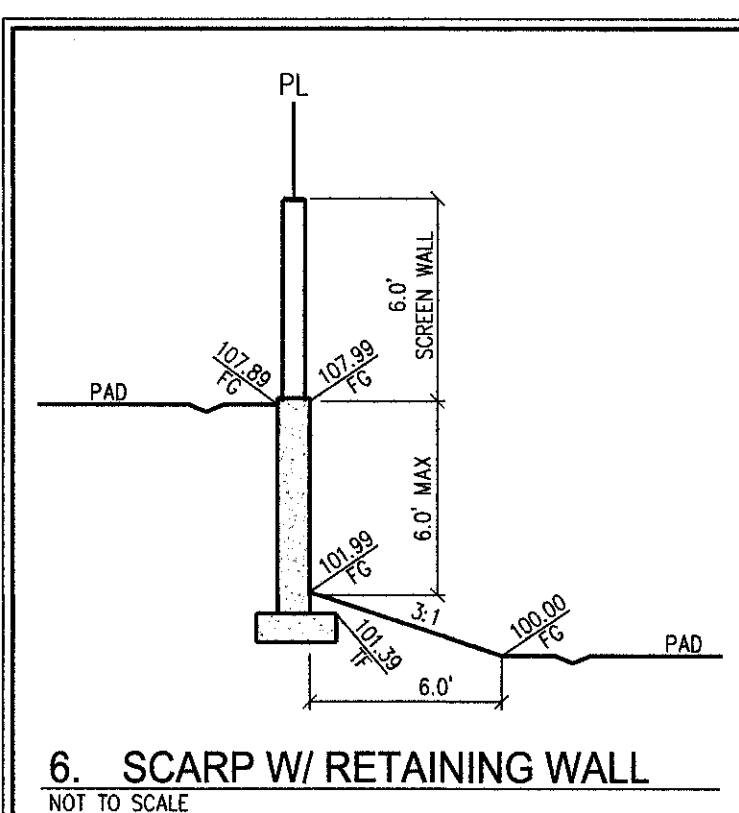
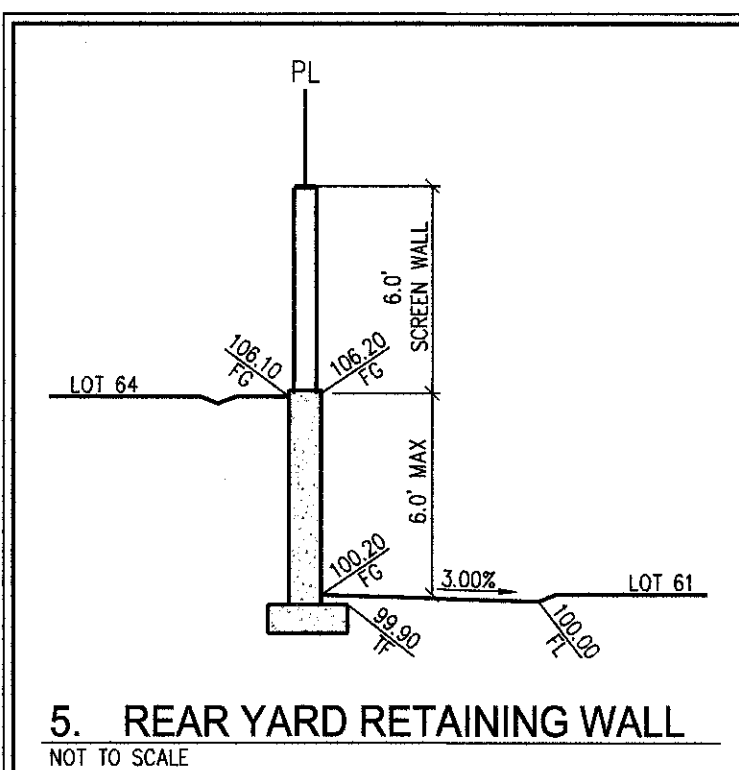
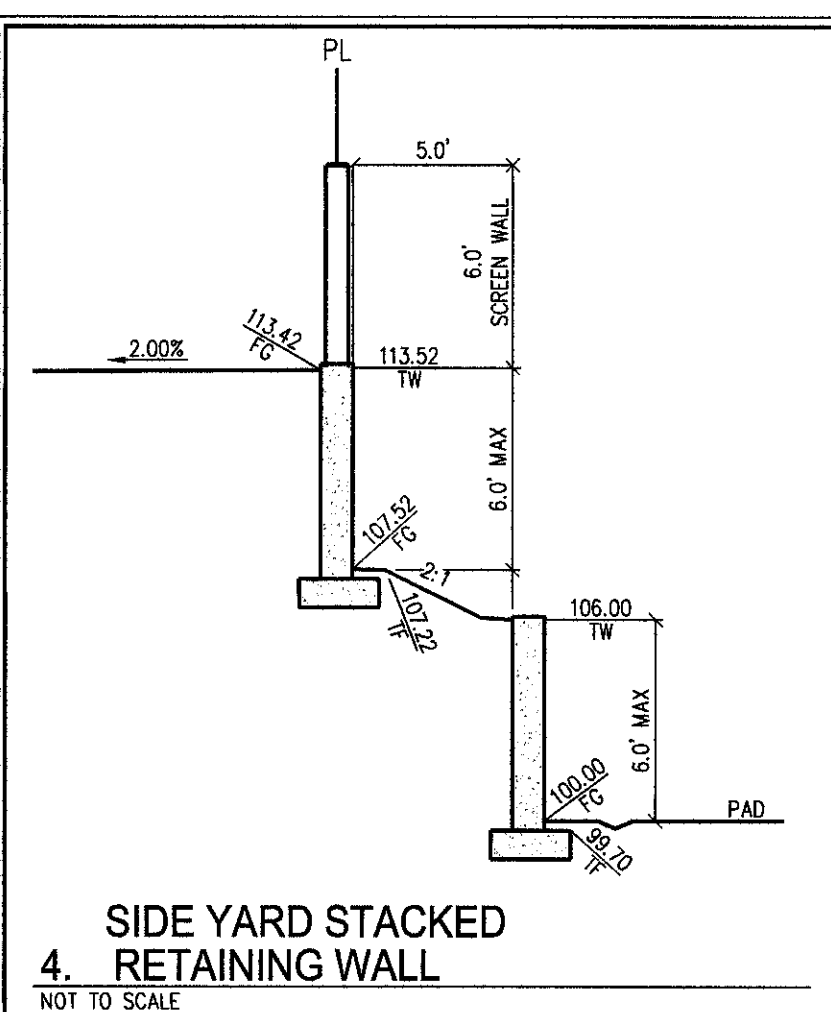
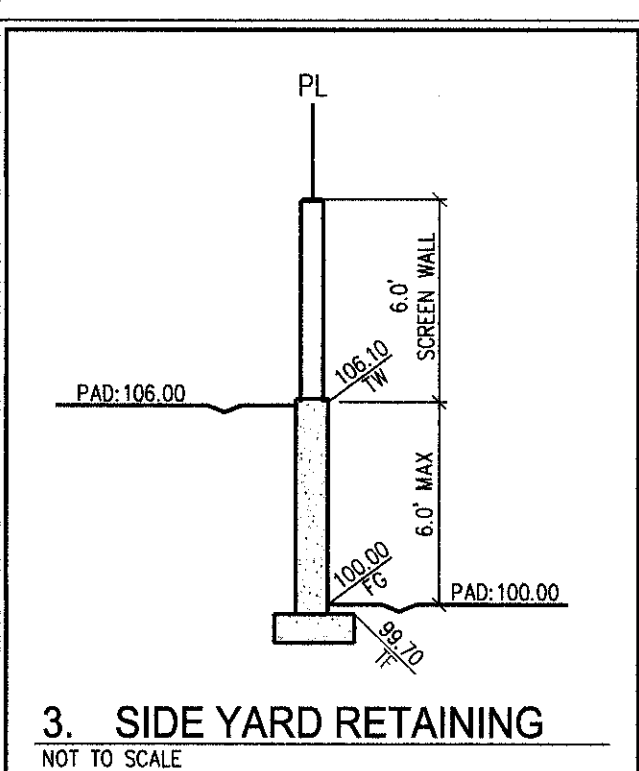
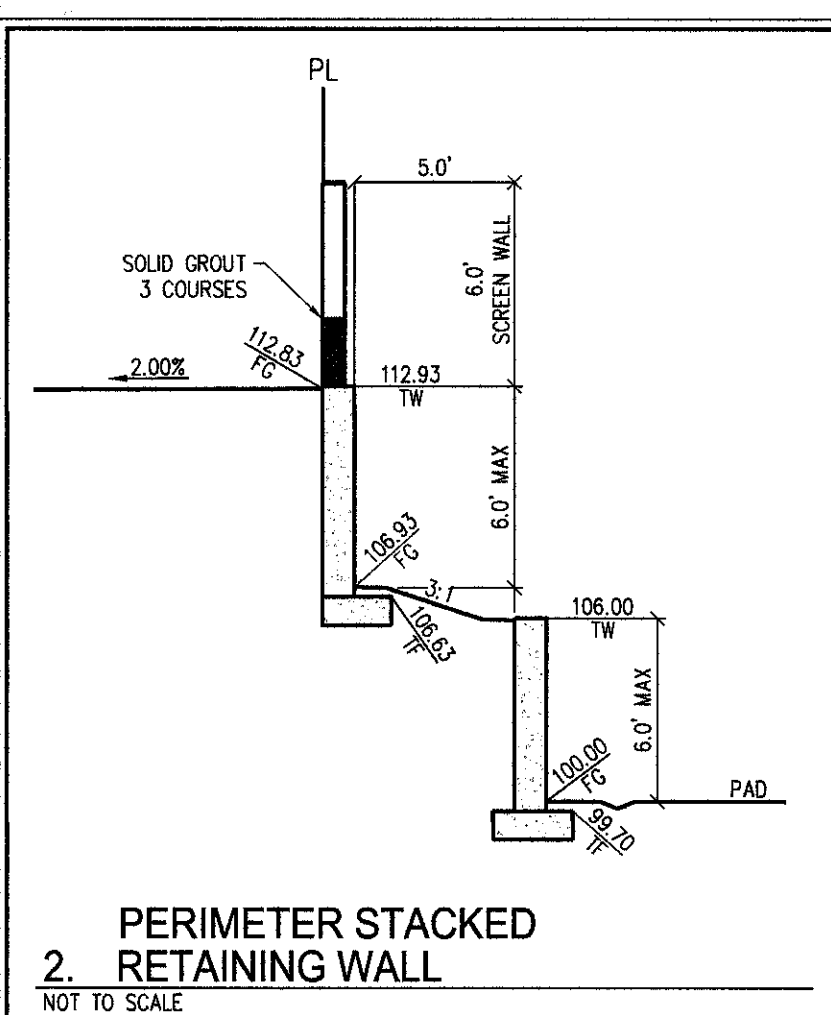
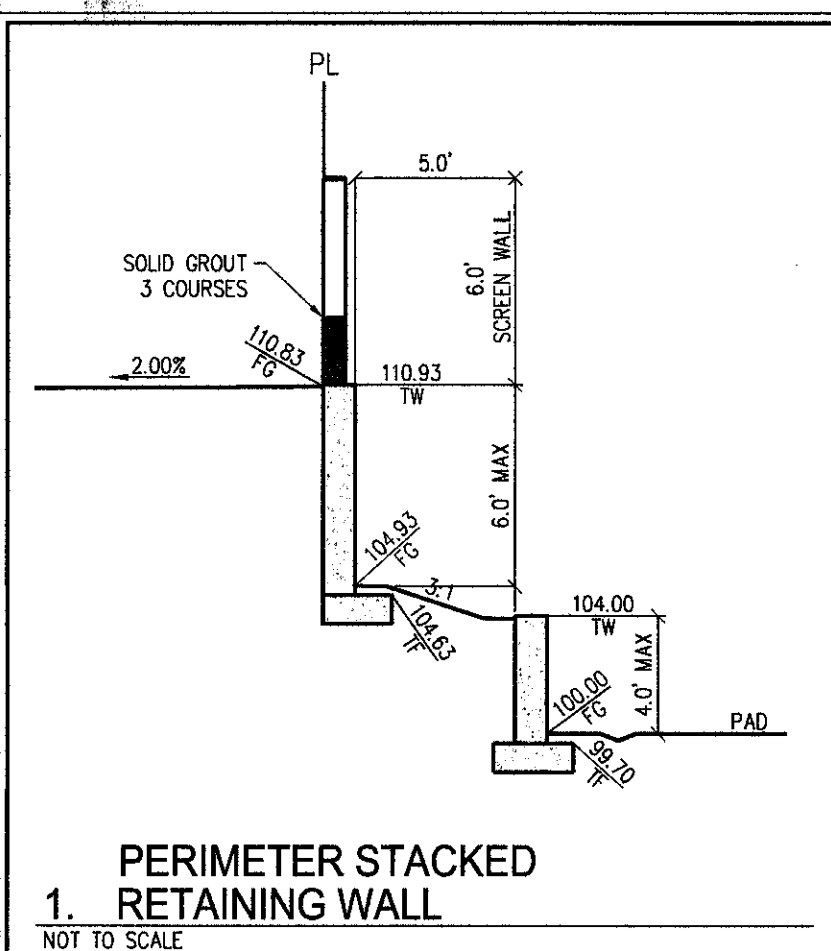
NINETY FIVE MANAGEMENT, LLC

SKYE CANYON II PARCEL 2.06 - PHASE 1

SITE CROSS SECTIONS

57102 R00E	
DATE: 7/18/19	
DRAFTER: BKS	
DESIGNER: BKS	
CHECKED: JJ	
PROJECT NO.	
OLY1813-000	

D-1
SHEET 9 OF 19



NOTE

THIS DETAIL IS FOR REFERENCE ONLY AND DOES NOT CONSTITUTE A STRUCTURAL DESIGN



0 30 60
SCALE - 1"=30' FEET

CALL SOUTHWEST GAS AT 702-651-2111 FOR
STANDBY WHEN EXCAVATING OVER OR NEAR HIGH
PRESSURE GAS LINES

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ADD 2800 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 175337 DATED 10/17/2018

EARTHWORK QUANTITIES (RAW):
CUT= 128,656 CU YDS
FILL= 58,338 CU YDS

EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED
LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED
AND ACTIVE GRADING PERMIT.

- 1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF 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 IN THEIR PROPER LOCATION.
- 2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED TOP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED SIDEWALK LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.11.2.2.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
6. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
7. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
8. 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 SHALL BE RESPONSIBLE FOR REPAIR/REPLENISH FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
9. 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONE.

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH BE REQUIRED TO FILE A SEDIMENT, WASH, CONSTRUCTION DEBRIS, AND OTHER POTENTIAL POLLUTANTS THAT MAY BE THE OWNER, SITE DEVELOPER, CONTRACTOR, OR ACCUMULATED IN THE PUBLIC RIGHTS OF WAY 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 CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS REQUIRED TO PREVENT EROSION. EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION II.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS OF STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE EROSION CONTROL POLICY AND EROSION CONTROL MEASURES AS REQUIRED. ADDITIONAL BMP INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION II.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.

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (UNSHADED), AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANELS 32003C1735E, AND 32003C1750 BOTH DATED SEPTEMBER 27, 2002. A ZONE 'X' (UNSHADED) IS DEFINED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% (500 YEAR) ANNUAL CHANCE FLOOD PLAIN.



- 1) INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- 2) INSTALL 5" CURB TRANSITION PER DETAIL 14, SHEET D-2
- 3) INSTALL A TYPE CURB PER CCAUSD NO. 219
- 4) INSTALL ROLL TYPE CURB PER CCAUSD NO. 217.S1
- 5) REMOVE EX HEADWALL PROJECT IN PLACE
- 6) INSTALL 5' WIDE SIDEWALK PER CCAUSD NO. 234
- 7) CONSTRUCT 2' SIDEWALK DRAIN PER CCAUSD NO. 236
- 8) INSTALL 8' VALLEY GUTTER PER CCAUSD NO. 228
- 9) INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
- 10) INSTALL ACCESS GATE W/AM LOOP
- 11) INSTALL 6' WIDE CRUSHED ROCK FOR ACCESS ROAD
- 12) CONSTRUCT SIDEWALK RAMPS USING ARMOR TYLE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235 CASE I, AND 235.I
- 13) INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
- 14) INSTALL WROUGHT IRON FENCE WITH 20' MAINTENANCE GATE PER DETAIL 19, SHEET D-2
- 15) REMOVE SECTION OF EX 72" ROP STORM DRAIN
- 16) INSTALL WROUGHT IRON 20' MAINTENANCE GATE PER DETAIL 20, SHEET D-2
- 17) INSTALL 4" CONCRETE OVER 6" TYPE II AGGREGATE BASE
- 18) 20' PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED BY HOA
- 19) INSTALL RRP RAP D50=6", THICKNESS=12" (WHERE SHOWN)
- 20) INSTALL 12.5' DROP INLET TYPE "CMAZ" PER CCAUSD NO. 412.I AND 421
- 21) INSTALL 48" TYPE I STORM DRAIN MANHOLE PER CCAUSD NO. 403.
- 22) INSTALL CUSTOM SDMH PER STRUCTURAL DETAIL # ON SHEET S-1
- 23) INSTALL REMOVABLE BOLLARD PER DETAIL 22, SHEET D-2
- 24) INSTALL 20' CUSTOM JUNCTION STRUCTURE PER STRUCTURAL DETAIL # ON SHEET S-1

LAS VEGAS FIRE AND RESCUE DATE

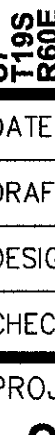
SOUTHWEST GAS CORPORATION DATE

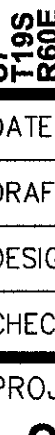
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ##### FIRST APPROVED DATE: _____
LVVWD APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL
MAXIMUM AVAILABLE FIRE SPRINKLER FLOW 20 GPM

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED
TECHNICAL DRAINAGE STUDY DS5107 ON FILE AT CITY OF LAS VEGAS FOR THE
SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE _____



SLATER HANIFAN GROUP a Westwood team 5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118 PHONE (702) 284-5300 FAX (702) 284-5399 S-I-G	
SD-3 SHEET 23 OF 19 PLAN & PROFILE DRAINAGE CHANNEL STA 20+00 - STA 23+00	
SKYE CANYON II PARCEL 2.06 - PHASE 1 CITY OF LAS VEGAS, NEVADA	
NINETY FIVE MANAGEMENT, LLC STATIONING	
DATE: 7/18/19 PROJECT NO. OLY1813-000	
DRAFTER: BKS CHECKED: JJ	
DESIGNER: BKS 	
DESCRIPTION DATE BY APP.	
NO. DATE BY APP.	

SLATER HANIFAN GROUP a Westwood team 5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118 PHONE (702) 284-5300 FAX (702) 284-5399 S-I-G	
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