

DS #:

4899

APN:

126-12-810-003

PROJECT:

Skye Canyon Parcel 2.27

SUBMITTAL:

2nd

SCANNED BY/DATE:

CHECKED BY/DATE:



|                                                                            |                                           |                                                                                                   |
|----------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>CITY OF LAS VEGAS</b>                                                   |                                           | <b>DATE:</b>                                                                                      |
| <b>INTER-OFFICE MEMORANDUM</b>                                             |                                           | August 29, 2017                                                                                   |
| <b>TO:</b><br>Land Development Services<br>Department of Building & Safety |                                           | <b>FROM:</b><br>Albert Sung, P.E.<br>Flood Control Project Engineer<br>Department of Public Works |
| <b>SUBJECT:</b>                                                            | Drainage Study for:                       | <b>COPIES TO:</b>                                                                                 |
|                                                                            | <b>Skye Canyon-Parcel 2.27</b>            | Slater Hanifan Group                                                                              |
| <b>Cross Streets:</b>                                                      | NEC of Grand Teton Blvd. & Egan Crest Dr. | KAG Development West LLC/<br>Ninety-Five Management, LLC                                          |
| <b>File Number:</b>                                                        | F:\Depot\DSMemos\DS4899B.doc              | Bart Anderson, P.E., DevCo                                                                        |
| <b>Parcel Number:</b>                                                      | 126-12-810-003                            | CCRFC                                                                                             |
| <b>Zoning Action:</b>                                                      | TMP-70716                                 |                                                                                                   |
| <b>FEMA Flood Zone</b>                                                     | YES NO <b>X</b>                           |                                                                                                   |
| <b>Proposed Storm Drain</b>                                                | YES <b>X</b> NO                           |                                                                                                   |

| HISTORY                    | DATE RECEIVED | DATE REVIEWED        | COMMENTS           | REVIEW FEES     | FEES PAID<br>Payment Trn # |
|----------------------------|---------------|----------------------|--------------------|-----------------|----------------------------|
| 1 <sup>st</sup> Submittal  | 6/21/2017     | 7/3/2017 & 7/12/2017 | Not Approved       | \$400.00        | 488286: \$400              |
| 2 <sup>nd</sup> Submittal  | 8/10/2017     | 8/29/2017            | See Comments Below | \$400.00        | 489350: \$400              |
| <b>TOTAL FEES (LDDRS):</b> |               |                      |                    | <b>\$800.00</b> | ----                       |

#### REMARKS:

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

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

**END OF REMARKS**

ays

T/R/S: T19S/R59E/S12  
AREA F-12



\*\*\*\*\*  
 \*\*\* FAX TX REPORT \*\*\*  
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TRANSMISSION OK

JOB NO. 0090  
 DESTINATION ADDRESS 7022845399  
 PSWD/SUBADDRESS  
 DESTINATION ID  
 ST. TIME 08/30 15:15  
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 RESULT OK

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TECHNICAL DRAINAGE STUDY  
ADDENDUM #1

**Skye Canyon Parcel 2.27**

City of Las Vegas, Nevada

Job No.: OLY1607.005

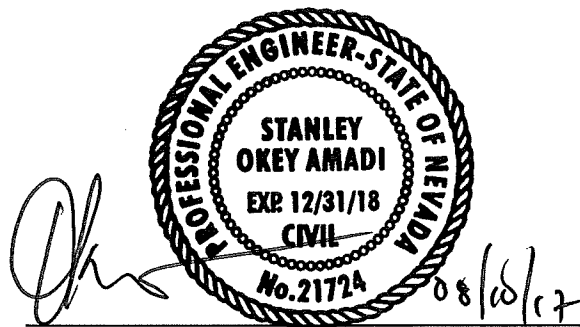
Date: August 2017

**Prepared By:**

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

**Prepared For:**

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



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

Assisted by: Erick Mata, E.I.

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL  
**DRAINAGE STUDY INFORMATION FORM**

Name of Development: Skye Canyon – Parcel 2.27 (Addendum No.1) Date: August 2017  
Location of Development: a) Descriptive (Cross Streets): North/South: Egan Crest Drive  
East/West: Eagle Canyon Avenue  
b) Section: 12 Township: 19 South Range: 59 East  
c) APN: 126-12-810-003

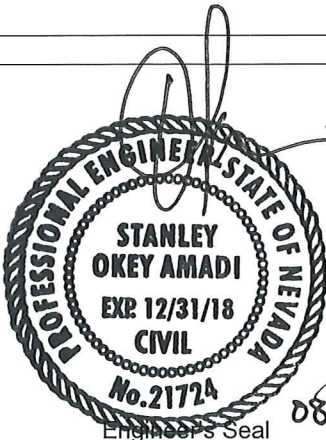
Name of Owner/Developer: KAG Development West LLC / Ninety-Five Management, LLC  
Telephone No.: 702-220-6565 Fax No.: 702-220-6566 E-mail Address: mbolduc@olympiacompanies.com  
Address: 11411 Southern Highlands Parkway, Suite 300; Las Vegas, NV 89141

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 Street, Suite 216; Las Vegas, NV 89118

Type of Land Development/Land Disturbance Process:

|                                           |                                                              |                                                       |
|-------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Rezoning         | <input checked="" type="checkbox"/> Subdivision Map          | <input type="checkbox"/> Clearing and grading Only    |
| <input type="checkbox"/> Parcel Map       | <input checked="" type="checkbox"/> Planned Unit Development | <input type="checkbox"/> Other (Please specify below) |
| <input type="checkbox"/> Large Parcel Map | <input type="checkbox"/> Building Permit                     |                                                       |

1. Total Owned Land Area: At Site: +/- 19.5 Acres Being Developed/Disturbed: All
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: Approx. 60 acres
6. Has the site drainage been evaluated in the past? ☒ Yes\*\* ☐ No If yes, please identify documentation: Master Drainage Study for Skye Canyon (SHG, DS4420); Master Drainage Study for Kyle Canyon (GCW, DS4091)  
Technical Drainage Study for Skye Canyon – Phase 2 Infrastructure (SHG, DS4739)
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Eagle Canyon - Local storm drain at northeast corner of the project site.
8. Briefly describe your proposed schedule for the subject project: 1 Phase after completion of Phase 2 Infrastructure (DS4739)



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

**\*Newly Required Field**

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

| Revision | Date |
|----------|------|
|          |      |
|          |      |
|          |      |
|          |      |

Local Entity File No. \_\_\_\_\_

REFERENCE: *SHG Job No. OLY1607.005*

STANDARD FORM 1

Updated 05/01/2008



OLY1607.005

August 10, 2017

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

**Subject: Addendum No.1 to the Technical Drainage Study for Skye Canyon Parcel 2.27 (CLV DS4899)**

Dear Mr. Sung:

This letter is submitted in response to comments contained in the July 13, 2017 review memorandum, regarding the above referenced project. A copy of the City of Las Vegas (CLV) Department of Public Works comment letter has been provided in Appendix A.

The comments have been individually addressed as follows:

1. **Comment:** *Provide a copy of the zoning/planning conditions associated with this site (TMP-70716) with the next submittal to verify compliance with conditions. Flood Control will not issue conditional approval of the drainage study without the associated zoning/planning conditions (issued by the City Council). Any associated conditions of approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.*

**Response:** Noted. The zoning/planning condition have been provided in Appendix G for your reference.

2. **Comment:** *An update to the **Skye Canyon Phase 2 Infrastructure Drainage Study** has been submitted for review recently. The subject **Parcel 2.27** drainage study cannot be approved prior to the conditional approval of the **Phase 2 Infrastructure** study update.*

**Response:** Acknowledged.

3. **Comment:** *No Certificate of Occupancy on the houses will be issued until after the Detention Basin #1 has been accepted for Substantial Completion by the City.*

**Response:** Noted.

4. **Comment:** *All roadway and flood control facilities as proposed and approved in **Skye Canyon Phase 2 Infrastructures** must be substantially constructed prior to the issuance of occupancy permits.*

**Response:** Noted.

5. **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.*

**Response:** Noted. The Technical Drainage Study and this Addendum will be submitted to CCRFCD for concurrence upon receipt of a conditional approval from CLV.

6. **Comment:** *As of the **Skye Canyon Phase 2 Infrastructure Update** recently submitted for review, a comment has been issued to revise the proposed connection of the parcel stub (36"-RCP) directly to a new storm drain manhole in the mainline in Eagle Canyon Avenue instead of tying to a series of drop inlets at the northeast corner of the subject parcel. Review and revise the grading plan and all pertinent sheets and details accordingly in the next submittal.*

**Response:** Per the meeting with Oh Sang Kwon and Albert Sung at City of Las Vegas, the recently submitted Addendum to Update No.4 to the Infrastructure study has addressed the various options of the lateral connection. It was accepted to keep the current design since all other explored options do not meet storm drain criteria. Also note that one of the proposed inlets previously in series has been removed and replaced with a manhole. In addition, the proposed Parcel 2.27 storm drain and hydraulic model has been slightly modified and extended further onsite. See Appendix E for all storm drain computations.

7. **Comment:** *Provide a calculation of the total energy head where the flow from Pinion Ridge St. and the flow discharging from the drainage easement rectangular channel to the west converge. This total energy head also equal to the maximum ponding depth at this location must be compared to all adjacent properties.*

**Response:** Note that the design has been revised to intercept and convey all onsite flows below ground in the extended storm drain system. Since all flow is now collected by the proposed sump drop inlets, an energy head loss computation is no longer required at this location.

8. **Comment:** *Check the velocities listed in Developed Condition 100-Year Street Flow Summary table on Exhibit E. Section ID 3 lists a velocity for the minimum slope of 2.4 fps but per the FlowMaster output it is shown 5.4 fps. Please clarify.*

**Response:** Acknowledged. The velocity for Section 3 has been revised to 5.4 fps. Note that slight grading adjustments to the site entry have been proposed with this submittal and the minimum slope for section 3 has been updated. The revised computation for the minimum section 3 slope has been provided in Appendix D for your reference. Also find the revised finished floors due to the slight grading adjustments to the entry in Appendix F. Note that the pertinent finished floors that were revised have been highlighted red for ease of review.

9. **Comment:** *Check input values for Section B (Normal Depth) Cross Section for Rectangular Channel FlowMaster calculations. The input slope for this channel is 4.08% but the grading plans show the channel slope as 4.43%.*



**Response:** Section B has been removed since all flow is being collected by the proposed sump drop inlets. However, an emergency condition analysis is now provided and utilizes the correct slopes at Section EO1. See Appendix D for the emergency overflow computations.

10. **Comment:** *The following finish floors do not meet the Regional Flood Control District minimum criteria of twice the  $Q_{100}$  depth of flow up to 18-inches above the water surface (CCRFCD Manual Section 304.4.E.1) or 6-inch minimum above the highest adjacent top of curb (CCRFCD Manual Section 1602 304.4.E.1). The following finish floors should be revised or alternate flood protection provided.*

| LOT | FF shown | Min FF   |
|-----|----------|----------|
| 51  | 2909.30' | 2909.62' |

**Response:** Noted. Lot 51 finished floor has been revised to an elevation of 2909.62'.

11. **Comment:** *Provide construction note or clarification of concrete apron intended surrounding the drop inlet located on sheet SD-1, if that is the intention.*

**Response:** Construction Note 18 has been provided for the NDOT Type II drop inlet and concrete apron per the details on Sheet D-3. Note that the NDOT drop inlet is provided to drain any flows (estimated to be <1 cfs) generated within Common Element "B".

12. **Comment:** *Lots 37 - 46 adjacent Egan Crest Drive call out retaining wall detail 14 on sheet D-1. Detail 14 provides a retaining wall with a maximum height of 6.0' but the grade differences of these lots and the adjacent ground range between 7.9' and 8.9'. Please check retaining wall height and structure details of these lots.*

**Response:** Acknowledged. Additional Detail 33 on sheet D-3 has been provided to address the retaining walls proposed for lots 37-46 adjacent to Egan Crest Drive.

13. **Comment:** *Detail 5 on Sheet D-2 was called out along Lot 27 on Grading Sheet G-5, This detail 5 cannot be located on Sheet D-2. Please clarify.*

**Response:** Acknowledged. Detail 5 has been adjusted to accurately reference Sheet D-1.

14. **Comment:** *8-inch minimum solid grouted CMU block is required for all lots where the Finished Floor elevation does not meet minimum requirement of twice the  $Q_{100}$  depth of flow up to 18-inches above the water surface along Grand Teton Drive.*

**Response:** Noted. A minimum of 8-inch CMU block will be utilized wherever solid grouting is specified along interior and perimeter streets including Grand Teton Drive.

15. **Comment:** *Sheet SD-1 storm drain profile view labels the 36" RCP as public, this should be private storm drain. A storm drain manhole should be placed at the property line of the 36" RCP to delineate where it transitions from a private to a public entity.*

**Response:** The proposed storm drain extension including the portion of the existing 36" RCP within Parcel 2.27 has been called out to be private. Note that the Phase 2 Infrastructure

Update (Addendum) has provided a manhole at the property line to separate the public and private portions of the existing 36" RCP storm drain lateral.

16. **Comment:** *All public drainage easements must be concrete lined, please revise the plans for the 20' public easement containing the U-channel at the east end of Foothill Pine Court and the drainage easement in C.E. "B". Revise the grading plan and all pertinent details accordingly.*

**Response:** The onsite flows are now proposed to be conveyed below ground with a storm drain system. Therefore, concrete lining of the drainage easements is no longer necessary. Note that an emergency overflow computation has been analyzed to flood protect any adjacent finished floors. The emergency over flow computations have been provided in Appendix D for reference.

17. **Comment:** *This drainage study assumes that the project will be constructed in one phase. If improvement plans are submitted to break the project into separate phases, a drainage study update will be required for each phase addressing the interim condition.*

**Response:** Construction of the site is now proposed to occur in two phases where the future Phase 2 will be rough graded with the Phase 1 improvements. An interim condition analysis has been provided to show a Phase 1 and Phase 2 flow compliance to downstream facilities. As a result, flows generated by the rough graded Phase 2 area ultimately generate less flow than those previously established by the developed condition where both phases for the project site. Therefore, all design parameters have been done utilizing the developed condition flow rates. See Appendix C for all interim condition hydrologic computations and Appendix B for the Interim Condition Drainage Exhibit.

The revised plan, profile and detail sheets adopting the revisions addressed in this letter have been included in Appendix H. 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



Erick Mata, E.I.  
Flood Control Division

cc: Stanley Okey Amadi, P.E. – SHG  
Mark Failla, P.E., CFM – SHG  
Tim Mulrooney, P.E. – SHG



## **APPENDIX**

**Appendix A** CLV Comment Letter

**Appendix B** Drainage Exhibits

**Appendix C** Hydrologic Computations

**Appendix D** Hydraulic Computations

- Street Section
- Interim Section
- Emergency Overflow Computations
- Drop Inlet Computations
- Nomographs

**Appendix E** Storm Drain Model

**Appendix F** Revised Finished Floors

**Appendix G** Zoning/Planning Conditions

**Appendix H** CD of Electronic Files & Revised Improvement Plans

# APPENDIX A

## CLV Comment Letter

|                                                                            |                                                       |                                                                                                   |
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|                                                                            |                                                       | CCRFCD                                                                                            |

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**END OF REMARKS**

T/R/S: T19S/R59E/S12  
AREA F-12

## APPENDIX B

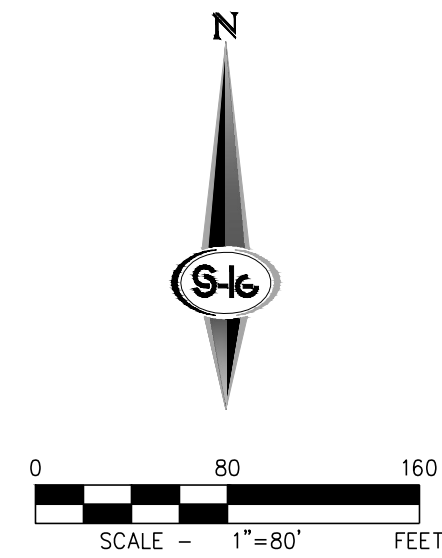
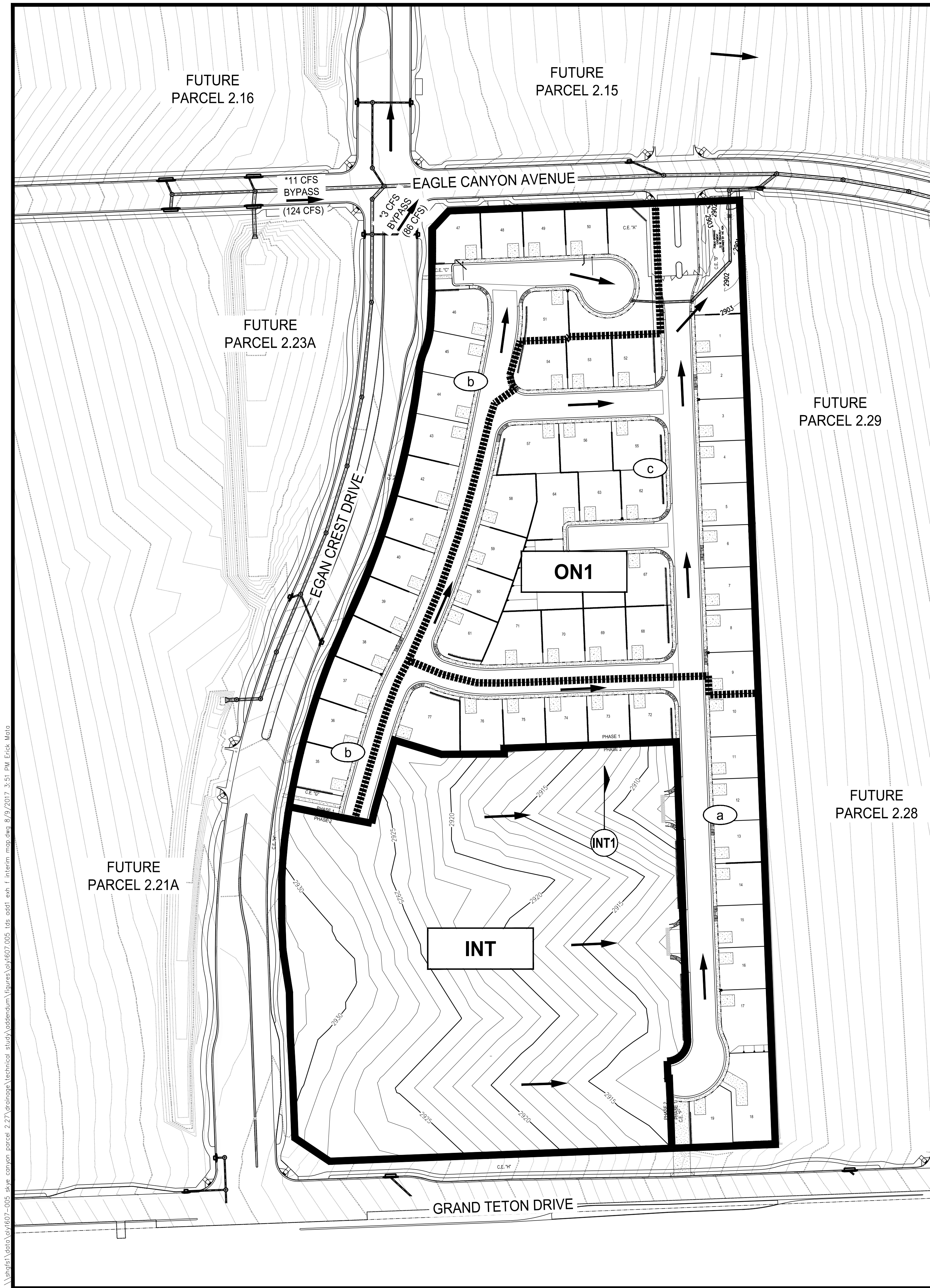
Drainage Exhibits







\\slater\data\oly1607-005\skye canyon parcel 2.27\drainage\technical study\addendum\figures\oly1607.005\_tds\_add1\_sch 1 interim map.dwg 8/9/2017 3:51 PM Ericka Motta



| LEGEND |                             |
|--------|-----------------------------|
|        | BASIN BOUNDARY              |
|        | BASIN ID                    |
|        | PRO-RATED SUBBASIN BOUNDARY |
|        | PRO-RATED SUBBASIN ID       |
|        | FLOW DIRECTION              |

| Interim Condition Flow Rate Summary |           |                        |                       |
|-------------------------------------|-----------|------------------------|-----------------------|
| Basin/Concentration Point ID        | Area (ac) | Q <sub>100</sub> (cfs) | Q <sub>10</sub> (cfs) |
| ON1                                 | 11.0      | 33                     | 17                    |
| INT                                 | 7.1       | 12                     | 6                     |

| Interim Prorated Flow Summary |                        |              |                             |
|-------------------------------|------------------------|--------------|-----------------------------|
| Basin ID                      | Q <sub>100</sub> (cfs) | Area (acres) | 100-yr Unit Flow (cfs/acre) |
| ON1                           | 33                     | 11.0         | 3.0                         |
| Subbasin ID                   | Q <sub>100</sub> (cfs) | Area (acres) | 100-yr Unit Flow (cfs/acre) |
| ON1 (a)                       | 9                      | 2.9          | 3.0                         |
| ON1 (b)                       | 9                      | 3.1          | 3.0                         |
| ON1 (c)                       | 15                     | 5.1          | 3.0                         |
| TOTAL                         | 33                     | 11.0         |                             |

| Interim Condition Onsite Hydraulic Section Summary |                           |                        |           |            |                |
|----------------------------------------------------|---------------------------|------------------------|-----------|------------|----------------|
| Section ID                                         | Section Description       | Q <sub>100</sub> (cfs) | Slope (%) | Depth (ft) | Velocity (fps) |
| Section INT1<br>(Q = INT/3)                        | Earthen V-Ditch w/ 3:1 SS | 4.0                    | 3.88      | 0.53       | 4.68           |

| NO. | DESCRIPTION | DATE | BY | APP. | DATE |
|-----|-------------|------|----|------|------|
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |

|             |             |
|-------------|-------------|
| DATE:       | AUGUST 2017 |
| DRAFTER:    | ETM         |
| DESIGNER:   | ETM         |
| CHECKED:    | SOA         |
| PROJECT NO. | OLY1607.005 |

---

## APPENDIX C

### Hydrologic Computations

Project Name & Number: Skye Canyon Parcel 2.27

Date: 8/5/2017

By: ETM

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                                                       | 191 | Las Vegas Valley 2016 | Dalian very cobbly fine sandy loam, 2 to 8 percent slopes   | 100% | 0% | 0% | 0%   |
| 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 |

\*Commercial land use per Note 3

**DEVELOPED CONDITION**

| BASIN ID      | SURVEY AREA | SOIL TYPE | SUBAREA PERCENT | LAND USE                             | HYDROLOGIC SOIL GROUP |    |    |      | LAND USE CN |    |    |    | SUBAREA ACRES | CURVE NUMBER |
|---------------|-------------|-----------|-----------------|--------------------------------------|-----------------------|----|----|------|-------------|----|----|----|---------------|--------------|
|               |             |           |                 |                                      | A                     | B  | C  | D    | A           | B  | C  | D  |               |              |
| ON1           | LV          | 155       | 83.0%           | Residential (<6,000 sf)*             | 0%                    | 0% | 0% | 100% | 89          | 92 | 94 | 95 | 15.05         | 78.82        |
|               | LV          | 191       | 1.7%            | Residential (<6,000 sf)*             | 100%                  | 0% | 0% | 0%   | 89          | 92 | 94 | 95 | 0.30          | 1.47         |
|               | LV          | 400       | 15.4%           | Residential (<6,000 sf)*             | 0%                    | 0% | 0% | 100% | 89          | 92 | 94 | 95 | 2.79          | 14.61        |
| TOTAL PERCENT |             |           | 100.0%          | TOTAL AREA & COMPOSITE CURVE NUMBER: |                       |    |    |      |             |    |    |    | 18.14         | 94.9         |

**INTERIM CONDITION**

| BASIN ID      | SURVEY AREA | SOIL TYPE | SUBAREA PERCENT | LAND USE                             | HYDROLOGIC SOIL GROUP |    |    |      | LAND USE CN |    |    |    | SUBAREA ACRES | CURVE NUMBER |
|---------------|-------------|-----------|-----------------|--------------------------------------|-----------------------|----|----|------|-------------|----|----|----|---------------|--------------|
|               |             |           |                 |                                      | A                     | B  | C  | D    | A           | B  | C  | D  |               |              |
| INT           | LV          | 155       | 71.1%           | Newly Graded                         | 0%                    | 0% | 0% | 100% | 77          | 86 | 91 | 94 | 5.04          | 66.82        |
|               | LV          | 191       | 4.2%            | Newly Graded                         | 100%                  | 0% | 0% | 0%   | 77          | 86 | 91 | 94 | 0.30          | 3.26         |
|               | LV          | 400       | 24.7%           | Newly Graded                         | 0%                    | 0% | 0% | 100% | 77          | 86 | 91 | 94 | 1.75          | 23.20        |
| TOTAL PERCENT |             |           | 100.0%          | TOTAL AREA & COMPOSITE CURVE NUMBER: |                       |    |    |      |             |    |    |    | 7.09          | 93.3         |

| BASIN ID      | SURVEY AREA | SOIL TYPE | SUBAREA PERCENT | LAND USE                             | HYDROLOGIC SOIL GROUP |    |    |      | LAND USE CN |    |    |    | SUBAREA ACRES | CURVE NUMBER |
|---------------|-------------|-----------|-----------------|--------------------------------------|-----------------------|----|----|------|-------------|----|----|----|---------------|--------------|
|               |             |           |                 |                                      | A                     | B  | C  | D    | A           | B  | C  | D  |               |              |
| ON1           | LV          | 155       | 90.7%           | Residential (<6,000 sf)*             | 0%                    | 0% | 0% | 100% | 89          | 92 | 94 | 95 | 10.01         | 86.14        |
|               | LV          | 400       | 9.3%            | Residential (<6,000 sf)*             | 0%                    | 0% | 0% | 100% | 89          | 92 | 94 | 95 | 1.03          | 8.86         |
| TOTAL PERCENT |             |           | 100.0%          | TOTAL AREA & COMPOSITE CURVE NUMBER: |                       |    |    |      |             |    |    |    | 11.04         | 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**

**Description:**

By: ETM

Date: 8/5/2017

| SUB-BASIN DATA      |                                                   |      |       |         |           | INITIAL / OVERLAND TIME (Ti) |         | TRAVEL TIME (Tt)                                  |                    |         |              |                 | Tc                                                                                              | Tc Check           | Flag              |          |       |
|---------------------|---------------------------------------------------|------|-------|---------|-----------|------------------------------|---------|---------------------------------------------------|--------------------|---------|--------------|-----------------|-------------------------------------------------------------------------------------------------|--------------------|-------------------|----------|-------|
| 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 | V2 VELOCITY FPS | Tt Min                                                                                          | Tc Calc.           | Total Length Feet | Tc Check | Flag  |
|                     |                                                   |      | [1]   |         | [2]       |                              |         | [3]                                               |                    |         | [4]          | [5]             | [6]                                                                                             | [7]                | [8]               | [9]      | [10]  |
| DEVELOPED CONDITION |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
| ON1                 | D                                                 | 94.9 | 0.863 | 18.14   | 0.0283    | 115                          | 1.00    | 4.58                                              | 1850               | 1.30    | 2.30         | 3.49            | 10.07                                                                                           | 14.65              | 1965              | 20.917   | 0.146 |
|                     |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
| INTERIM CONDITION   |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
| INT                 | D                                                 | 93.3 | 0.842 | 7.09    | 0.0111    | 135                          | 3.70    | 3.49                                              | 410                | 3.20    | 3.61         | 5.47            | 1.89                                                                                            | 5.39               | 545               | 13.028   | 0.054 |
| ON1                 | D                                                 | 95.0 | 0.864 | 11.04   | 0.0173    | 115                          | 1.00    | 4.56                                              | 1850               | 1.30    | 2.30         | 3.49            | 10.07                                                                                           | 14.62              | 1965              | 20.917   | 0.146 |
|                     |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
|                     |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
|                     |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
|                     |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
|                     |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
| [1]                 | K = 0.0132 (CN) - 0.39                            |      |       |         |           |                              | [5]     | For Existing Conditions: V2 = 29.4 * (S/100)^0.5  |                    |         |              |                 | [9]                                                                                             | Tc = (L/180) + 10  |                   |          |       |
| [2]                 | A = Area/640                                      |      |       |         |           |                              |         | For Developed Conditions: V2 = 30.6 * (S/100)^0.5 |                    |         |              |                 | [10]                                                                                            | Tlag = (0.6*Tc)/60 |                   |          |       |
| [3]                 | Ti = (1.8 (1.1-K) L^0.5)/S^0.33                   |      |       |         |           |                              | [6]     | Tt = L/(60*V)                                     |                    |         |              |                 | [11]                                                                                            | Min Tlag =0.05     |                   |          |       |
| [4]                 | For Existing Conditions: V1 = 14.8 * (S/100)^0.5  |      |       |         |           |                              | [7]     | Tc = Ti + Tt                                      |                    |         |              |                 | Note: For Travel Time Calcs: V1 applies to first 500 feet and V2 applies to remaining distance. |                    |                   |          |       |
|                     | For Developed Conditions: V1 = 20.2 * (S/100)^0.5 |      |       |         |           |                              | [8]     | Total L = Initial L + Travel L                    |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
| REFERENCE :         |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |
| STANDARD FORM 4     |                                                   |      |       |         |           |                              |         |                                                   |                    |         |              |                 |                                                                                                 |                    |                   |          |       |

```

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
* JUN 1998
* VERSION 4.1
*
* RUN DATE 01AUG17 TIME 10:01:04
*
*****

```

INT

```

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

```

```

X X XXXXXXX XXXX X
X X X X X XX
X X X X X X
XXXXXX XXXX X XXXX X
X X X X X X
X X X X X X
X X XXXXXXX 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
2 ID SKYE CANYON PARCEL 2.27
3 ID INTERIM CONDITION
4 ID
5 ID RETURN PERIOD ----- 100-YR & 10-YR
6 ID DISTRIBUTION ----- 6-HOUR SDN3
7 ID PROJECT NO. ----- OLY1607.005
8 ID FILENAME ----- INT.H1
9 ID DATE ----- AUGUST 2017
10 ID MODELED BY ----- ETM
11 ID
12 ID PRECIPITATION STORM EVENT RATIOS
13 ID STORM EVENT RATIO
14 ID 10-YR 0.56
15 ID 100-YR 1.00
16 ID
17 IT 5 0 0 300
18 IO 5 0 0
19 IN 5 0 0
20 JR PREC 1.00 0.56
*
21 KK ON1
22 KM DEVELOPED PHASE 1 ONSITE
23 BA 0.0173
24 PB 3.00
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
33 LS 0 95.0.
34 UD 0.146
*
35 KK INT
36 KM ROUGH GRADED BASIN
37 BA .0111
38 LS 0 93.3
39 UD 0.504
*
40 ZZ

```

```

1 SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
LINE (V) ROUTING (--->) DIVERSION OR PUMP FLOW
NO. (.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW
21 ON1
.
.
35 INT

```

(\*\*\*) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
* JUN 1998
* VERSION 4.1
*
* RUN DATE 01AUG17 TIME 10:01:04
*
*****

```

```

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

```

INT

SLATER HANIFAN GROUP  
SKYE CANYON PARCEL 2.27  
INTERIM CONDITION  
  
RETURN PERIOD ----- 100-YR & 10-YR  
DISTRIBUTION ----- 6-HOUR SDN3  
PROJECT NO. ----- OLY1607.005  
FILENAME ----- INT.H1  
DATE ----- AUGUST 2017  
MODELED BY ----- ETM

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

18 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     | .02  | 1 FLOW | 33.                             | 17.     |
|               |         |      | TIME   | 3.58                            | 3.58    |
| HYDROGRAPH AT |         |      |        |                                 |         |
| +             | INT     | .01  | 1 FLOW | 12.                             | 6.      |
|               |         |      | TIME   | 3.92                            | 3.92    |

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



---

## APPENDIX D

### Hydraulic Computations

## Street Section

---

## Section 3 (Min Slope)

### Worksheet for Irregular Channel

| Project Description |                       |
|---------------------|-----------------------|
| Worksheet           | Section 3 (Min Slope) |
| Flow Element        | Irregular Channel     |
| Method              | Manning's Formula     |
| Solve For           | Channel Depth         |

| Input Data    |           |
|---------------|-----------|
| Channel Slope | 0.60 %    |
| Discharge     | 42.00 cfs |

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

| Results                 |                      |
|-------------------------|----------------------|
| Mannings Coefficient    | 0.015                |
| Water Surface Elevation | 0.58 ft              |
| Elevation Range         | 0.00 to 0.48         |
| Flow Area               | 13.2 ft <sup>2</sup> |
| Wetted Perimeter        | 49.41 ft             |
| Top Width               | 49.00 ft             |
| Actual Depth            | 0.58 ft              |
| Critical Elevation      | 0.59 ft              |
| Critical Slope          | 0.51 %               |
| Velocity                | 3.17 ft/s            |
| Velocity Head           | 0.16 ft              |
| Specific Energy         | 0.73 ft              |
| Froude Number           | 1.08                 |
| Flow Type               | Supercritical        |

Calculation Messages:  
Water elevation exceeds lowest end station by 0.0954449 ft.

| Roughness Segments |             |                      |
|--------------------|-------------|----------------------|
| Start Station      | End Station | Mannings Coefficient |
| 0+00.00            | 0+07.50     | 0.013                |
| 0+07.50            | 0+41.50     | 0.016                |
| 0+41.50            | 0+49.00     | 0.013                |

| Natural Channel Points |                |
|------------------------|----------------|
| Station (ft)           | Elevation (ft) |
| 0+00.00                | 0.48           |
| 0+05.00                | 0.38           |
| 0+05.38                | 0.38           |
| 0+06.50                | 0.00           |
| 0+07.50                | 0.08           |
| 0+07.50                | 0.12           |
| 0+24.50                | 0.46           |
| 0+41.50                | 0.12           |
| 0+41.50                | 0.08           |

**Section 3 (Min Slope)**  
**Worksheet for Irregular Channel**

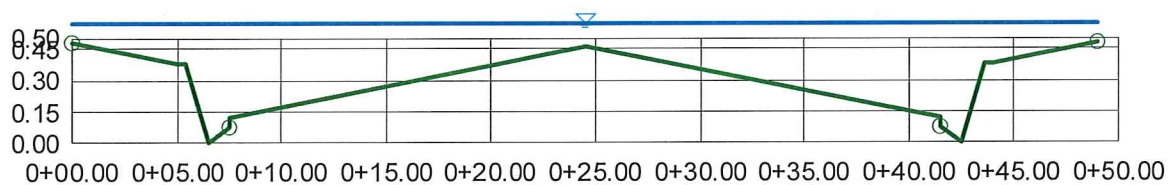
| Natural Channel Points |                   |
|------------------------|-------------------|
| Station<br>(ft)        | Elevation<br>(ft) |
| 0+42.50                | 0.00              |
| 0+43.62                | 0.38              |
| 0+44.00                | 0.38              |
| 0+49.00                | 0.48              |



## Section 3 (Min Slope) Cross Section for Irregular Channel

| Project Description |                       |
|---------------------|-----------------------|
| Worksheet           | Section 3 (Min Slope) |
| Flow Element        | Irregular Channel     |
| Method              | Manning's Formula     |
| Solve For           | Channel Depth         |

| Section Data            |              |
|-------------------------|--------------|
| Mannings Coefficient    | 0.015        |
| Channel Slope           | 0.60 %       |
| Water Surface Elevation | 0.58 ft      |
| Elevation Range         | 0.00 to 0.48 |
| Discharge               | 42.00 cfs    |



V:10.0  
H:1  
NTS

Interim Section

---

# Section INT1

## Worksheet for Triangular Channel

| Project Description |                    |
|---------------------|--------------------|
| Worksheet           | Section INT1       |
| Flow Element        | Triangular Channel |
| Method              | Manning's Formula  |
| Solve For           | Channel Depth      |

| Input Data           |            |
|----------------------|------------|
| Mannings Coefficient | 0.025      |
| Channel Slope        | 3.88 %     |
| Left Side Slope      | 3.00 H : V |
| Right Side Slope     | 3.00 H : V |
| Discharge            | 4.00 cfs   |

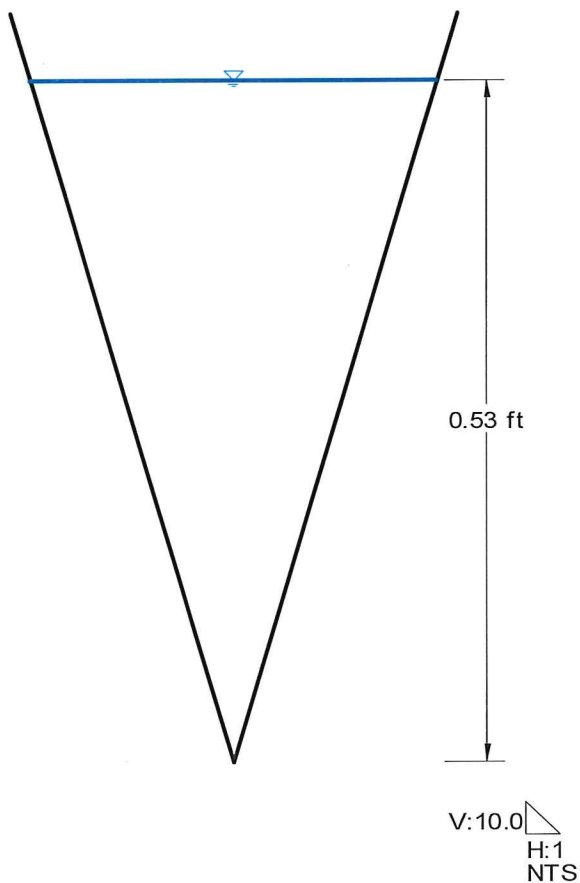
| Results          |                     |
|------------------|---------------------|
| Depth            | 0.53 ft             |
| Flow Area        | 0.9 ft <sup>2</sup> |
| Wetted Perimeter | 3.37 ft             |
| Top Width        | 3.20 ft             |
| Critical Depth   | 0.64 ft             |
| Critical Slope   | 1.43 %              |
| Velocity         | 4.68 ft/s           |
| Velocity Head    | 0.34 ft             |
| Specific Energy  | 0.87 ft             |
| Froude Number    | 1.60                |
| Flow Type        | Supercritical       |

# Section INT1

## Cross Section for Triangular Channel

| Project Description |                    |
|---------------------|--------------------|
| Worksheet           | Section INT1       |
| Flow Element        | Triangular Channel |
| Method              | Manning's Formula  |
| Solve For           | Channel Depth      |

| Section Data         |            |
|----------------------|------------|
| Mannings Coefficient | 0.025      |
| Channel Slope        | 3.88 %     |
| Depth                | 0.53 ft    |
| Left Side Slope      | 3.00 H : V |
| Right Side Slope     | 3.00 H : V |
| Discharge            | 4.00 cfs   |





## Emergency Overflow Computations

## Section EO1 (Normal Depth) Worksheet for Irregular Channel

| Project Description |                            |
|---------------------|----------------------------|
| Worksheet           | Section EO1 (Normal Depth) |
| Flow Element        | Irregular Channel          |
| Method              | Manning's Formula          |
| Solve For           | Channel Depth              |

| Input Data    |           |
|---------------|-----------|
| Channel Slope | 1.48 %    |
| Discharge     | 53.00 cfs |

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

| Results                 |                      |
|-------------------------|----------------------|
| Mannings Coefficient    | 0.025                |
| Water Surface Elevation | 0.97 ft              |
| Elevation Range         | 0.00 to 1.33         |
| Flow Area               | 10.2 ft <sup>2</sup> |
| Wetted Perimeter        | 16.87 ft             |
| Top Width               | 16.33 ft             |
| Actual Depth            | 0.97 ft              |
| Critical Elevation      | 1.04 ft              |
| Critical Slope          | 1.09 %               |
| Velocity                | 5.18 ft/s            |
| Velocity Head           | 0.42 ft              |
| Specific Energy         | 1.39 ft              |
| Froude Number           | 1.15                 |
| Flow Type               | Supercritical        |

Calculation Messages:  
Water elevation exceeds lowest end station by 0.43984892 ft.

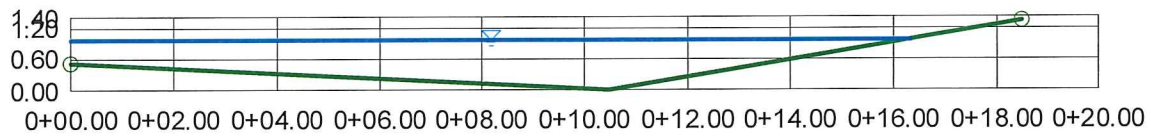
| Roughness Segments |             |                      |
|--------------------|-------------|----------------------|
| Start Station      | End Station | Mannings Coefficient |
| 0+00.00            | 0+18.50     | 0.025                |

| Natural Channel Points |                |
|------------------------|----------------|
| Station (ft)           | Elevation (ft) |
| 0+00.00                | 0.53           |
| 0+10.50                | 0.00           |
| 0+18.50                | 1.33           |

# **Section EO1 (Normal Depth)** **Cross Section for Irregular Channel**

| Project Description |                            |
|---------------------|----------------------------|
| Worksheet           | Section EO1 (Normal Depth) |
| Flow Element        | Irregular Channel          |
| Method              | Manning's Formula          |
| Solve For           | Channel Depth              |

| Section Data            |              |
|-------------------------|--------------|
| Mannings Coefficient    | 0.025        |
| Channel Slope           | 1.48 %       |
| Water Surface Elevation | 0.97 ft      |
| Elevation Range         | 0.00 to 1.33 |
| Discharge               | 53.00 cfs    |



V:1  
H:1  
NTS

# **Section EO1a (Weir Depth)** **Worksheet for Broad Crested Weir**

| Project Description |                           |
|---------------------|---------------------------|
| Worksheet           | Section EO1a (Weir Depth) |
| Type                | Broad Crested Weir        |
| Solve For           | Headwater Elevation       |

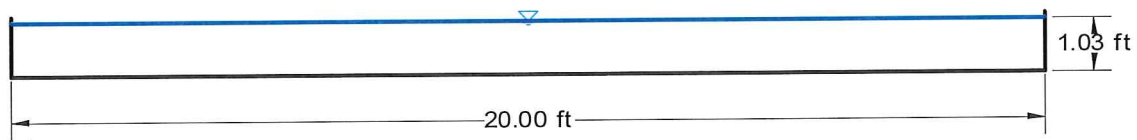
| Input Data          |           |
|---------------------|-----------|
| Discharge           | 53.00 cfs |
| Crest Elevation     | 0.00 ft   |
| Tailwater Elevation | 0.97 ft   |
| Crest Surface Type  | Paved     |
| Crest Breadth       | 5.00 ft   |
| Crest Length        | 20.00 ft  |

| Results                        |                      |
|--------------------------------|----------------------|
| Headwater Elevation            | 1.03 ft              |
| Headwater Height Above Crest   | 1.03 ft              |
| Tailwater Height Above Crest   | 0.97 ft              |
| Discharge Coefficient          | 3.07 US              |
| Submergence Factor             | 0.83                 |
| Adjusted Discharge Coefficient | 2.53 US              |
| Flow Area                      | 20.6 ft <sup>2</sup> |
| Velocity                       | 2.57 ft/s            |
| Wetted Perimeter               | 22.06 ft             |
| Top Width                      | 20.00 ft             |

# **Section EO1a (Weir Depth)** **Cross Section for Broad Crested Weir**

| Project Description |                           |
|---------------------|---------------------------|
| Worksheet           | Section EO1a (Weir Depth) |
| Type                | Broad Crested Weir        |
| Solve For           | Headwater Elevation       |

| Section Data        |           |
|---------------------|-----------|
| Discharge           | 53.00 cfs |
| Headwater Elevation | 1.03 ft   |
| Crest Elevation     | 0.00 ft   |
| Tailwater Elevation | 0.97 ft   |
| Crest Surface Type  | Paved     |
| Crest Breadth       | 5.00 ft   |
| Crest Length        | 20.00 ft  |



V:1  
H:1  
NTS



# **Section EO1b (Weir Depth)** **Worksheet for Broad Crested Weir**

| Project Description |                           |
|---------------------|---------------------------|
| Worksheet           | Section EO1b (Weir Depth) |
| Type                | Broad Crested Weir        |
| Solve For           | Headwater Elevation       |

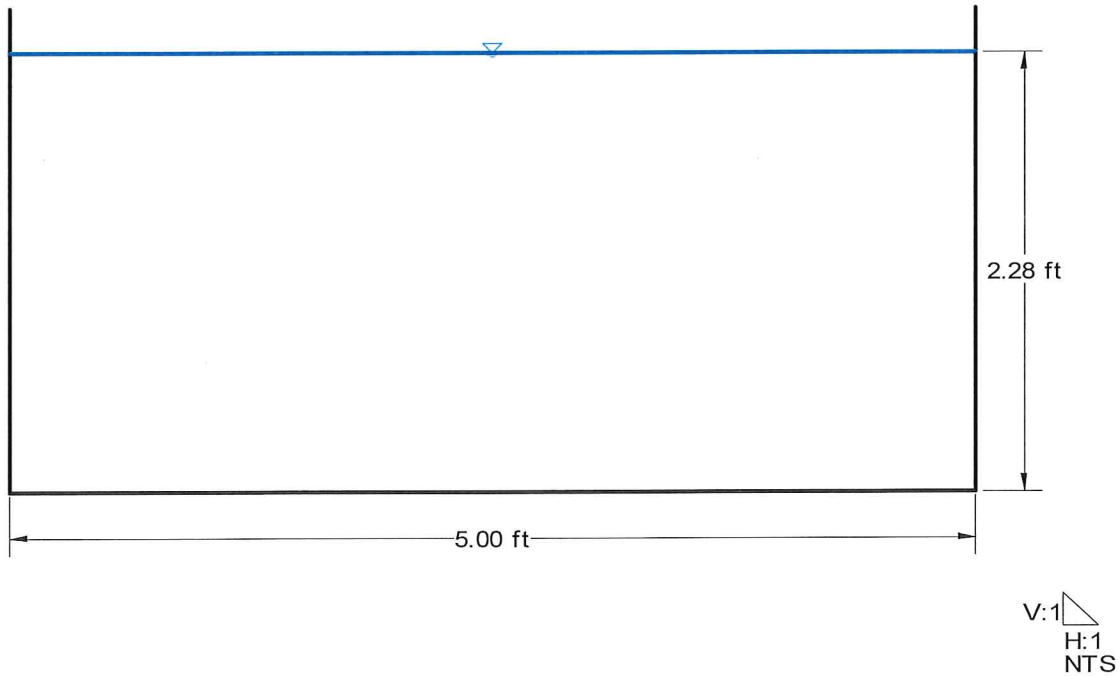
| Input Data          |           |
|---------------------|-----------|
| Discharge           | 53.00 cfs |
| Crest Elevation     | 0.00 ft   |
| Tailwater Elevation | 0.97 ft   |
| Crest Surface Type  | Paved     |
| Crest Breadth       | 5.00 ft   |
| Crest Length        | 5.00 ft   |

| Results                        |                      |
|--------------------------------|----------------------|
| Headwater Elevation            | 2.28 ft              |
| Headwater Height Above Crest   | 2.28 ft              |
| Tailwater Height Above Crest   | 0.97 ft              |
| Discharge Coefficient          | 3.09 US              |
| Submergence Factor             | 1.00                 |
| Adjusted Discharge Coefficient | 3.09 US              |
| Flow Area                      | 11.4 ft <sup>2</sup> |
| Velocity                       | 4.66 ft/s            |
| Wetted Perimeter               | 9.55 ft              |
| Top Width                      | 5.00 ft              |

**Section EO1b (Weir Depth)**  
**Cross Section for Broad Crested Weir**

| Project Description |                           |
|---------------------|---------------------------|
| Worksheet           | Section EO1b (Weir Depth) |
| Type                | Broad Crested Weir        |
| Solve For           | Headwater Elevation       |

| Section Data        |           |
|---------------------|-----------|
| Discharge           | 53.00 cfs |
| Headwater Elevation | 2.28 ft   |
| Crest Elevation     | 0.00 ft   |
| Tailwater Elevation | 0.97 ft   |
| Crest Surface Type  | Paved     |
| Crest Breadth       | 5.00 ft   |
| Crest Length        | 5.00 ft   |



## Drop Inlet Computations

| Curb Inlet Sizing Computation        |                                                                                                                          |                        | <br>SLATER HANIFAN GROUP<br>CONSULTING ENGINEERS & PLANNERS |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Name & Number:               | Skye Canyon Parcel 2.27                                                                                                  |                        |                                                                                                                                                |
| Date:                                | 8/5/2017                                                                                                                 |                        |                                                                                                                                                |
| By:                                  | ETM                                                                                                                      |                        |                                                                                                                                                |
| <b>Notes:</b>                        |                                                                                                                          |                        |                                                                                                                                                |
| Facility ID:                         | Facility P1                                                                                                              |                        |                                                                                                                                                |
| Drainage Condition                   | Interim Condition                                                                                                        |                        |                                                                                                                                                |
| Source of Flow                       | Q100 = Basin ON1b                                                                                                        |                        |                                                                                                                                                |
| Design Flow (cfs)                    | 11.0                                                                                                                     |                        |                                                                                                                                                |
| Inlet Type:                          | Type CM2 (Sump)                                                                                                          |                        |                                                                                                                                                |
| Inlet Length:                        | 5.-ft                                                                                                                    |                        |                                                                                                                                                |
| Number of Grates:                    | 1                                                                                                                        |                        |                                                                                                                                                |
| <b>Input:</b>                        | <b>Variable:</b>                                                                                                         | <b>Input:</b>          |                                                                                                                                                |
| Depth at Inlet (ft)                  | D                                                                                                                        | 0.83                   |                                                                                                                                                |
| Grate Width (ft)                     | W                                                                                                                        | 1.50                   |                                                                                                                                                |
| Length of Grate (ft)                 | $L_g$                                                                                                                    | 2.50                   |                                                                                                                                                |
| Length of Curb Opening (ft)          | $L_c$                                                                                                                    | 5.00                   |                                                                                                                                                |
| Height of Curb Opening (ft)          | H                                                                                                                        | 0.50                   |                                                                                                                                                |
| Weir Coef. - Curb Opening            | $W_c$                                                                                                                    | 2.3                    |                                                                                                                                                |
| Weir Coef. - Grate                   | $W_g$                                                                                                                    | 3.0                    |                                                                                                                                                |
| Orifice Coef.                        | $O_c$                                                                                                                    | 0.67                   |                                                                                                                                                |
| Grate Coef.                          | $G_c$                                                                                                                    | 0.60                   |                                                                                                                                                |
| Clogging Factor - Grate (%)          | $CF_g$                                                                                                                   | 50                     |                                                                                                                                                |
| Clogging Factor - Curb (%)           | $CF_c$                                                                                                                   | 50                     |                                                                                                                                                |
| <b>Output (Grate):</b>               | <b>Equation:</b>                                                                                                         | <b>Output (Grate):</b> |                                                                                                                                                |
| Effective Weir Length (ft)           | $2*W+L_g$                                                                                                                | 5.50                   |                                                                                                                                                |
| Adjusted Effective Weir Length (ft)  | $2*(1-CF_g/100)*W+(1-CF_g/100)*L_g$                                                                                      | 2.75                   |                                                                                                                                                |
| Grate Open Area (sf)                 | $W*L_g$                                                                                                                  | 3.75                   |                                                                                                                                                |
| Adjusted Grate Open Area (sf)        | Grate Open Area * $G_c*(1-CF_g/100)$                                                                                     | 1.13                   |                                                                                                                                                |
| Controlling Flow Type (weir/orifice) | If $D < 1.792*(Adj. \text{ Grate Open Area}/Adj. \text{ Eff. Length})$<br>use weir, else orifice                         | orifice                |                                                                                                                                                |
| Intercepted Flow (cfs)               | weir: $W_g*(Adj. \text{ Eff. Weir Length})*D^{1.5}$<br>orifice: $O_c*(Adj. \text{ Grate Open Area})*(64.4*D)^{0.5}$      | 5.5                    |                                                                                                                                                |
| <b>Output (Curb):</b>                | <b>Equation:</b>                                                                                                         | <b>Output (Curb):</b>  |                                                                                                                                                |
| Effective Weir Length (ft)           | $L+1.8*W$                                                                                                                | 7.70                   |                                                                                                                                                |
| Adjusted Effective Weir Length (ft)  | $L+1.8*(1-CF_c/100)*W$                                                                                                   | 6.41                   |                                                                                                                                                |
| Curb Open Area (sf)                  | $L*H$                                                                                                                    | 2.50                   |                                                                                                                                                |
| Adjusted Curb Open Area (sf)         | Curb Open Area * $(1-CF_c/100)$                                                                                          | 1.25                   |                                                                                                                                                |
| Controlling Flow Type (weir/orifice) | If $D < H$ , weir, else orifice                                                                                          | orifice                |                                                                                                                                                |
| Intercepted Flow (cfs)               | weir: $W_c*(Adj. \text{ Eff. Weir Length})*D^{1.5}$<br>orifice: $O_c*(Adj. \text{ Curb Open Area})*(64.4*(D-H/2))^{0.5}$ | 6.11                   |                                                                                                                                                |
| <b>Output (Total):</b>               | <b>Equation:</b>                                                                                                         | <b>Output (Total):</b> |                                                                                                                                                |
| Capacity Intercepted Flow (cfs)      | Intercepted (Grate) + Intercepted (Curb)                                                                                 | 11.6                   |                                                                                                                                                |

| Curb Inlet Sizing Computation        |                                                                                                                                                |                       | <br>SLATER HANIFAN GROUP<br>CONSULTING ENGINEERS & PLANNERS |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Name & Number:               | Skye Canyon Parcel 2.27                                                                                                                        |                       |                                                                                                                                                |
| Date:                                | 8/5/2017                                                                                                                                       |                       |                                                                                                                                                |
| By:                                  | ETM                                                                                                                                            |                       |                                                                                                                                                |
| <b>Notes:</b>                        |                                                                                                                                                |                       |                                                                                                                                                |
| Facility ID:                         | Facility P3                                                                                                                                    |                       |                                                                                                                                                |
| Drainage Condition                   | Developed Condition                                                                                                                            |                       |                                                                                                                                                |
| Source of Flow                       | Q100 = (Basin ON1a+c)/2                                                                                                                        |                       |                                                                                                                                                |
| Design Flow (cfs)                    | 21 cfs per Inlet                                                                                                                               |                       |                                                                                                                                                |
| Inlet Type:                          | Type CM2 (Sump)                                                                                                                                |                       |                                                                                                                                                |
| Inlet Length:                        | 10.-ft                                                                                                                                         |                       |                                                                                                                                                |
| Number of Grates:                    | 3                                                                                                                                              |                       |                                                                                                                                                |
| <b>Input:</b>                        |                                                                                                                                                |                       |                                                                                                                                                |
| Depth at Inlet (ft)                  | Variable: D                                                                                                                                    | Input: 0.83           |                                                                                                                                                |
| Grate Width (ft)                     | W                                                                                                                                              | 1.50                  |                                                                                                                                                |
| Length of Grate (ft)                 | L <sub>g</sub>                                                                                                                                 | 7.50                  |                                                                                                                                                |
| Length of Curb Opening (ft)          | L <sub>c</sub>                                                                                                                                 | 10.00                 |                                                                                                                                                |
| Height of Curb Opening (ft)          | H                                                                                                                                              | 0.50                  |                                                                                                                                                |
| Weir Coef. - Curb Opening            | W <sub>c</sub>                                                                                                                                 | 2.3                   |                                                                                                                                                |
| Weir Coef. - Grate                   | W <sub>g</sub>                                                                                                                                 | 3.0                   |                                                                                                                                                |
| Orifice Coef.                        | O <sub>c</sub>                                                                                                                                 | 0.67                  |                                                                                                                                                |
| Grate Coef.                          | G <sub>c</sub>                                                                                                                                 | 0.60                  |                                                                                                                                                |
| Clogging Factor - Grate (%)          | CF <sub>g</sub>                                                                                                                                | 50                    |                                                                                                                                                |
| Clogging Factor - Curb (%)           | CF <sub>c</sub>                                                                                                                                | 50                    |                                                                                                                                                |
| <b>Output (Grate):</b>               |                                                                                                                                                |                       |                                                                                                                                                |
| Effective Weir Length (ft)           | Equation: 2*W+L <sub>g</sub>                                                                                                                   | Output (Grate): 10.50 |                                                                                                                                                |
| Adjusted Effective Weir Length (ft)  | 2*(1-CF <sub>g</sub> /100)*W+(1-CF <sub>g</sub> /100)*L <sub>g</sub>                                                                           | 5.25                  |                                                                                                                                                |
| Grate Open Area (sf)                 | W*L <sub>g</sub>                                                                                                                               | 11.25                 |                                                                                                                                                |
| Adjusted Grate Open Area (sf)        | Grate Open Area * G <sub>c</sub> *(1-CF <sub>g</sub> /100)                                                                                     | 3.38                  |                                                                                                                                                |
| Controlling Flow Type (weir/orifice) | If D<1.792*(Adj. Grate Open Area/Adj. Eff. Length)<br>use weir, else orifice                                                                   | weir                  |                                                                                                                                                |
| Intercepted Flow (cfs)               | weir: W <sub>g</sub> *(Adj. Eff. Weir Length)*D <sup>1.5</sup><br>orifice: O <sub>c</sub> *(Adj. Grate Open Area)*(64.4*D) <sup>0.5</sup>      | 11.9                  |                                                                                                                                                |
| <b>Output (Curb):</b>                |                                                                                                                                                |                       |                                                                                                                                                |
| Effective Weir Length (ft)           | Equation: L+1.8*W                                                                                                                              | Output (Curb): 12.70  |                                                                                                                                                |
| Adjusted Effective Weir Length (ft)  | L+1.8(1-CF <sub>c</sub> /100)*W                                                                                                                | 11.41                 |                                                                                                                                                |
| Curb Open Area (sf)                  | L*H                                                                                                                                            | 5.00                  |                                                                                                                                                |
| Adjusted Curb Open Area (sf)         | Curb Open Area * (1-CF <sub>c</sub> /100)                                                                                                      | 2.50                  |                                                                                                                                                |
| Controlling Flow Type (weir/orifice) | If D<H, weir, else orifice                                                                                                                     | orifice               |                                                                                                                                                |
| Intercepted Flow (cfs)               | weir: W <sub>c</sub> *(Adj. Eff. Weir Length)*D <sup>1.5</sup><br>orifice: O <sub>c</sub> *(Adj. Curb Open Area)*(64.4*(D-H/2)) <sup>0.5</sup> | 12.22                 |                                                                                                                                                |
| <b>Output (Total):</b>               |                                                                                                                                                |                       |                                                                                                                                                |
| Capacity Intercepted Flow (cfs)      | Equation: Intercepted (Grate) + Intercepted (Curb)                                                                                             | Output (Total): 24.1  |                                                                                                                                                |



## Grate Inlet Sizing Computation

Project Name & Number: Skye Canyon Parcel 2.27  
Date: 8/5/2017  
By: ETM



### Notes:

Facility ID: Facility P6  
Drainage Condition: Developed  
Source of Flow: Q100= Entry Landscape  
Inlet Type: NDOT Type 2  
Inlet Size: 2'x4'

### Known Information:

|                             |      |
|-----------------------------|------|
| Q = Flow (cfs)              | 1.0  |
| W = Width of Grate (ft)     | 2.00 |
| L = Length of Grate (ft)    | 4.00 |
| D = Diameter of Circle (in) |      |
| Cf = Clogging Factor (%)    | 50   |

### Weir Conditions:

$$HW = (Q/(Cw * Pc))^{2/3}$$

|                                  |      |
|----------------------------------|------|
| Cw = Weir Coefficient            | 3.30 |
| P = Perimeter of grate (ft)      | 12.0 |
| Pc = Perimeter (w/clogging) (ft) | 6.0  |
| HW = Headwater depth (ft)        | 0.14 |

### Orifice Conditions:

$$HW = (Q/(Co * Ac))^2 / 2 * g$$

|                                                       |       |
|-------------------------------------------------------|-------|
| Co = Orifice Coefficient                              | 0.67  |
| Ag = Grate Area (ft <sup>2</sup> )                    | 8.00  |
| Gf = Grate Opening Factor                             | 0.67  |
| Ac = Grate Open Area (w/ clogging) (ft <sup>2</sup> ) | 2.68  |
| g = Gravity (fps)                                     | 32.20 |
| HW = Headwater depth (ft)                             | 0.00  |

### Output:

Worst Case Scenario Occurs Under Weir Conditions

Headwater Depth = 0.14 ft with grate

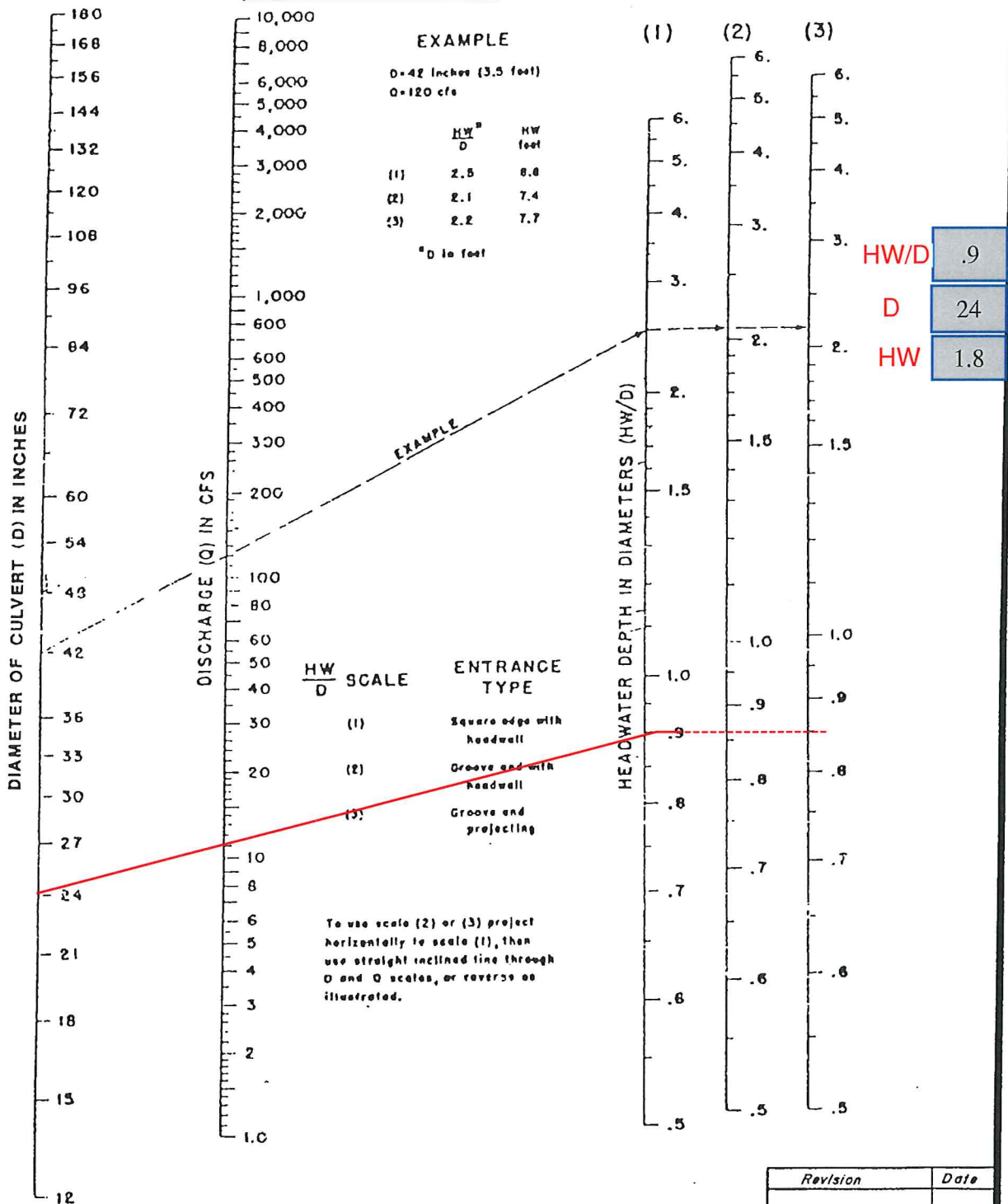
## Nomographs

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# HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

## NOMOGRAPH - INLET CONTROL RCP

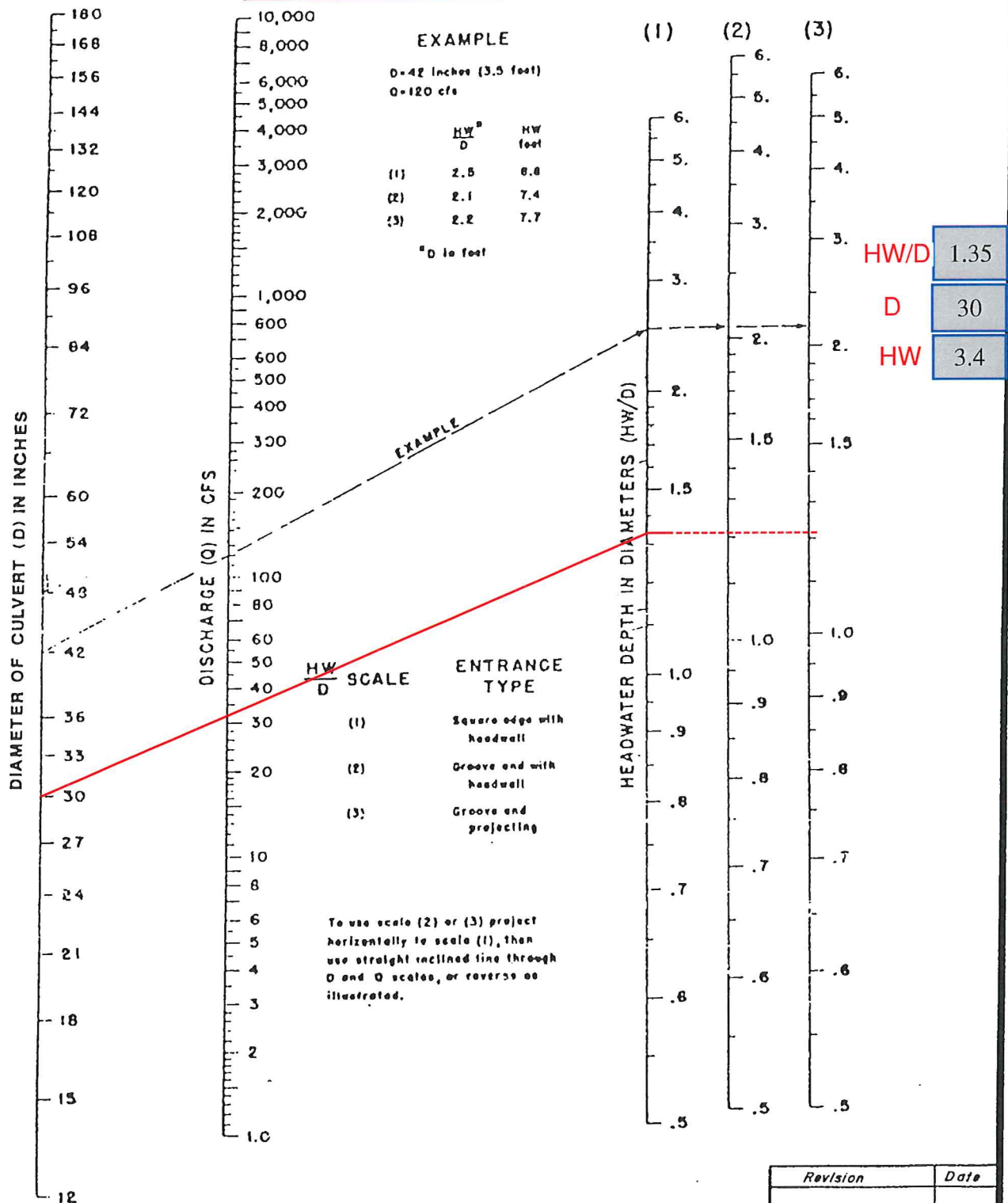
FacilityP1: Q=11 CFS



# HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

## NOMOGRAPH - INLET CONTROL RCP

Facility P3: Q=32 CFS

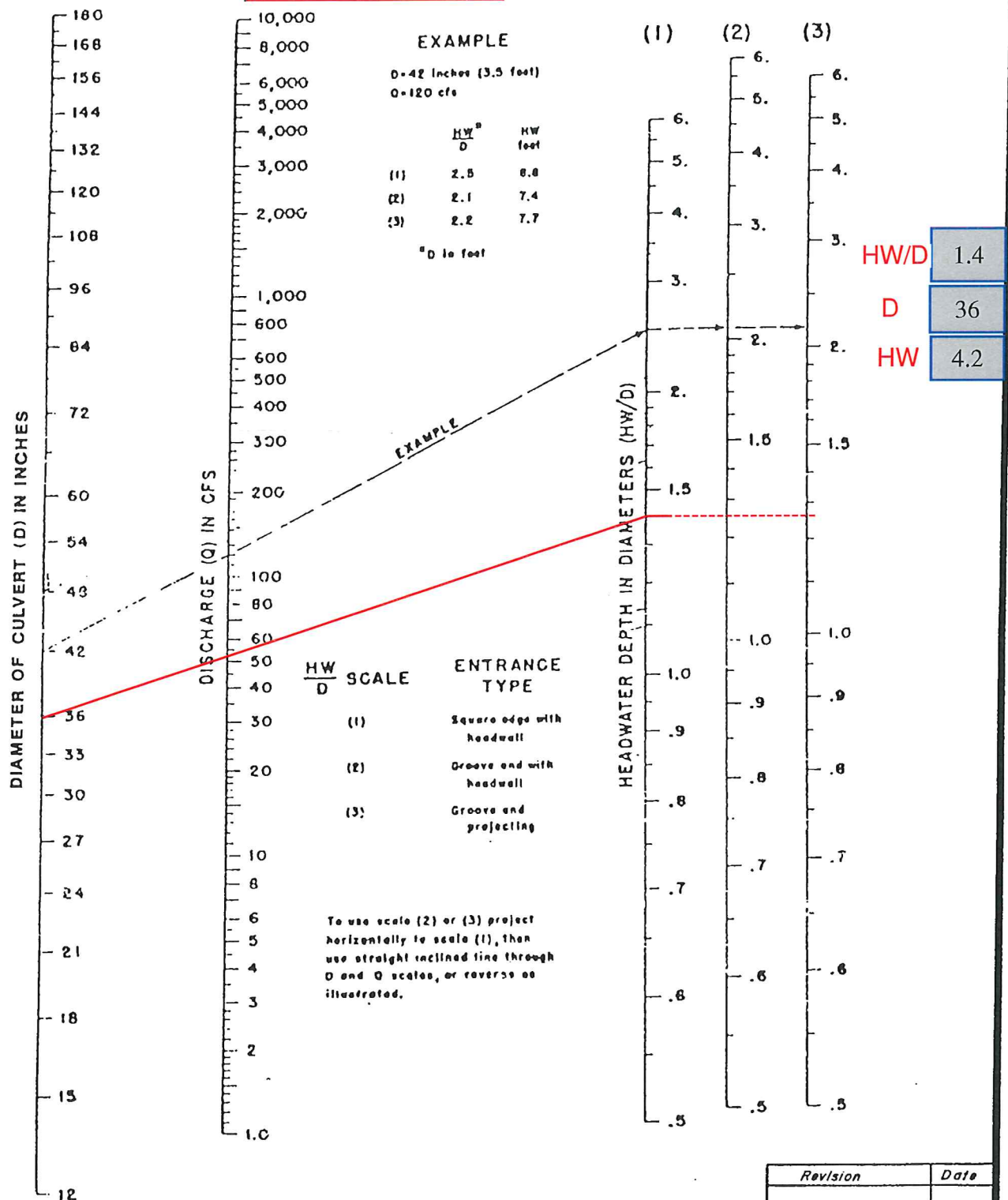


| Revision | Date |
|----------|------|
|          |      |
|          |      |
|          |      |
|          |      |

# HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

## NOMOGRAPH - INLET CONTROL RCP

Facility P3: Q=53 CFS



| Revision | Date |
|----------|------|
|          |      |
|          |      |
|          |      |
|          |      |



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## APPENDIX E

### Storm Drain Model



11.0

0 8 1

♀ DATE: 8/ 9/2017  
TIME: 15:11

PAGE 1

[illegible]

|            |    |   |      |
|------------|----|---|------|
| 0000000000 | 18 | 4 | 1.50 |
| 0000000000 | 20 | 4 | 2.00 |
| 0000000000 | 36 | 4 | 3.00 |
| 0000000000 | 42 | 4 | 3.50 |
| 0000000000 | 48 | 4 | 4.00 |
| 0000000000 | 54 | 4 | 4.50 |
| 0000000000 | 60 | 4 | 5.00 |
| 0000000000 | 66 | 4 | 5.50 |
| 0000000000 | 72 | 4 | 6.00 |
| 0000000000 | 78 | 4 | 6.50 |

PAGE NO 3

## WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON PARCEL 2.27 ADDENDUM NO.1

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS "

EAGLE CANYON LATERAL P4-L1 THRU PARCEL 2.27  
F 0 5 1 5 P

PAGE NO 2

## WATER SURFACE PROFILE - ELEMENT CARD LISTING

[illegible]

|                   | 44307.100                | 44307.101     | 44307.102    | 44307.103    | 44307.104   | 44307.105 | 44307.106 | 44307.107 | 44307.108 | 44307.109 | 44307.110 |
|-------------------|--------------------------|---------------|--------------|--------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 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 | 7 IS A REACH<br>U/S DATA    | STATION<br>117.41  | *<br>INVERT<br>2894.08 | *<br>SECT<br>36 | N<br>0.013       | RADIUS<br>0.00       | ANGLE<br>0.00            | ANG PT<br>45.00     | MAN H<br>1    |
| ELEMENT NO | 8 IS A REACH<br>U/S DATA    | STATION<br>1249.97 | *<br>INVERT<br>2894.87 | *<br>SECT<br>36 | N<br>0.013       | RADIUS<br>0.00       | ANGLE<br>0.00            | ANG PT<br>43.00     | MAN H<br>1    |
| ELEMENT NO | 9 IS A JUNCTION<br>U/S DATA | STATION<br>1249.97 | *<br>INVERT<br>2895.37 | *<br>SECT<br>30 | *<br>LAT-1<br>30 | *<br>INVERT-3<br>0.0 | *<br>INVERT-4<br>2895.37 | *<br>PHI 3<br>90.00 | PHI 4<br>0.00 |

Page 1  
2895.1

P4-L1

| ELEMENT NO                                   | 10 | IS A REACH            | U/S DATA | STATION | INVERT  | SECT | N           | 0.013 | RADIUS   | ANGLE    | ANG PT   | MAN H |
|----------------------------------------------|----|-----------------------|----------|---------|---------|------|-------------|-------|----------|----------|----------|-------|
|                                              |    |                       |          | 1291.79 | 2895.79 | 30   | F 0 5 1 5 P |       | 0.00     | 0.00     | 5.00     | 18    |
|                                              |    |                       |          |         |         |      |             |       |          |          | PAGE NO  | 3     |
| WATER SURFACE PROFILE - ELEMENT CARD LISTING |    |                       |          |         |         |      |             |       |          |          |          |       |
| ELEMENT NO                                   | 11 | IS A JUNCTION         | U/S DATA | STATION | INVERT  | SECT | N           | 0.013 | Q4       | INVERT-3 | INVERT-4 | PHI 3 |
|                                              |    |                       |          | 1291.79 | 2896.29 | 24   | 0           | 0.013 | 21.0     | 0.0      | 2896.29  | 90.00 |
|                                              |    |                       |          |         |         |      |             |       |          |          |          | PHI 4 |
|                                              |    |                       |          |         |         |      |             |       |          |          |          | 0.00  |
| ELEMENT NO                                   | 12 | IS A REACH            | U/S DATA | STATION | INVERT  | SECT | N           | 0.013 | RADIUS   | ANGLE    | ANG PT   | MAN H |
|                                              |    |                       |          | 1333.27 | 2896.72 | 24   |             |       | 0.00     | 0.00     | 0.00     | 0     |
| ELEMENT NO                                   | 13 | IS A SYSTEM HEADWORKS | U/S DATA | STATION | INVERT  | SECT | N           | 0.013 | W S ELEV |          |          |       |
|                                              |    |                       |          | 1333.27 | 2896.72 | 24   |             |       | 0.00     |          |          |       |

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING  
\*\* WARNING NO. 2 \*\* WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HDWKDS, W.S.ELEV = INV + DC 8  
LICENSEE: SLATER HANIFAN GROUP

SKYE CANYON PARCEL 2.27 ADDENDUM NO.1

BY OLYMPIA COMPANIES  
EAGLE CANYON LATERAL P4-L1 THRU PARCEL 2.27

| STATION                                         | INVERT  | DEPTH   | W.S.     | Q    | VEL   | VEL     | HEAD     | ENERGY   | SUPER | CRITICAL | HGT/ | BASE/  | ZL | NO   | AVBPR |
|-------------------------------------------------|---------|---------|----------|------|-------|---------|----------|----------|-------|----------|------|--------|----|------|-------|
| L/ELEM                                          | SO      | OF FLOW | ELEV     |      |       |         |          | GRD.ELEV | ELEV  | DEPTH    | DIA  | ID NO. |    | PIER |       |
| ***** SF AVE HF ***** NORM DEPTH ***** ZR ***** |         |         |          |      |       |         |          |          |       |          |      |        |    |      |       |
| 1000.00                                         | 2886.16 | 8.450   | 2894.610 | 56.0 | 7.92  | 0.974   | 2895.584 | 0.00     | 2.427 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 29.00                                           | 0.05517 |         |          |      |       | .007049 | 0.20     |          |       | 1.240    |      |        |    |      |       |
| 1029.00                                         | 2887.76 | 7.225   | 2894.985 | 56.0 | 7.92  | 0.974   | 2895.959 | 0.00     | 2.427 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| JUNCT STR                                       | 0.00000 |         |          |      |       | .006681 | 0.00     |          |       |          |      |        |    |      |       |
| 1029.00                                         | 2887.98 | 7.209   | 2895.189 | 53.0 | 7.50  | 0.873   | 2896.062 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 41.00                                           | 0.05512 |         |          |      |       | .006314 | 0.26     |          |       | 1.202    |      |        |    |      |       |
| 1070.00                                         | 2890.24 | 5.505   | 2895.745 | 53.0 | 7.50  | 0.873   | 2896.618 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 37.00                                           | 0.05432 |         |          |      |       | .006314 | 0.23     |          |       | 1.206    |      |        |    |      |       |
| JUNCT STR                                       | 0.00000 |         |          |      |       | .006314 | 0.00     |          |       |          |      |        |    |      |       |
| 1107.00                                         | 2892.25 | 3.881   | 2896.131 | 53.0 | 7.50  | 0.873   | 2897.004 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 47.10                                           | 0.02841 |         |          |      |       | .006314 | 0.30     |          |       | 1.450    |      |        |    |      |       |
| 1154.10                                         | 2893.59 | 3.000   | 2896.588 | 53.0 | 7.50  | 0.873   | 2897.461 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| HYDRAULIC JUMP                                  |         |         |          |      |       |         |          |          |       |          |      |        |    |      |       |
| 1154.10                                         | 2893.59 | 1.824   | 2895.412 | 53.0 | 11.79 | 2.157   | 2897.569 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 7.17                                            | 0.02841 |         |          |      |       | .012751 | 0.09     |          |       | 1.450    |      |        |    |      |       |
| 1161.27                                         | 2893.79 | 1.891   | 2895.683 | 53.0 | 11.29 | 1.979   | 2897.662 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 5.87                                            | 0.02841 |         |          |      |       | .011378 | 0.07     |          |       | 1.450    |      |        |    |      |       |
| 1167.14                                         | 2893.96 | 1.971   | 2895.930 | 53.0 | 10.76 | 1.799   | 2897.729 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 4.27                                            | 0.02841 |         |          |      |       | .010112 | 0.04     |          |       | 1.450    |      |        |    |      |       |
| 1171.41                                         | 2894.08 | 2.056   | 2896.136 | 53.0 | 10.26 | 1.635   | 2897.771 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.00  |
| 8.12                                            | 0.01006 |         |          |      |       | .009486 | 0.08     |          |       | 2.015    |      |        |    |      |       |
| 1179.53                                         | 2894.16 | 2.062   | 2896.224 | 53.0 | 10.23 | 1.625   | 2897.849 | 0.00     | 2.366 | 3.00     | 0.00 | 0.00   | 0  | 0    | 0.008 |

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F0515P  
WATER SURFACE PROFILE LISTING  
ADDENDUM NO.1

BY OLYMPIA COMPANIES  
EAGLE CANYON LATERAL P4-L1 THRU PARCEL 2.27

| STATION   | INVERT ELEV | DEPTH OF FLOW | W.S. ELEV | Q    | VEL  | VEL HEAD | ENERGY GRD. EL. | SUPER ELEV | CRITICAL DEPTH | NORM DEPTH | BASE/ ID NO. | ZL   | NO AVBPR PIER |
|-----------|-------------|---------------|-----------|------|------|----------|-----------------|------------|----------------|------------|--------------|------|---------------|
| L/ELEM    | SO          |               |           |      |      |          |                 |            |                |            |              |      |               |
| 49.93     | 0.01006     |               |           |      |      |          | 0.008940        | 0.45       |                | 2.015      |              | 0.00 |               |
| 1229.46   | 2894.66     | 2.154         | 2896.818  | 53.0 | 9.75 | 1.477    | 2898.295        | 0.00       | 2.366          | 3.00       | 0.00         | 0.00 | 0 0.00        |
| 16.62     | 0.01006     |               |           |      |      |          | 0.007993        | 0.13       |                | 2.015      |              | 0.00 |               |
| 1246.08   | 2894.83     | 2.254         | 2897.085  | 53.0 | 9.30 | 1.343    | 2898.428        | 0.00       | 2.366          | 3.00       | 0.00         | 0.00 | 0 0.00        |
| 3.89      | 0.01006     |               |           |      |      |          | 0.007177        | 0.03       |                | 2.015      |              | 0.00 |               |
| 1249.97   | 2894.87     | 2.366         | 2897.236  | 53.0 | 8.86 | 1.220    | 2898.456        | 0.00       | 2.366          | 3.00       | 0.00         | 0.00 | 0 0.00        |
| JUNCT STR | 0.00000     |               |           |      |      |          | 0.006444        | 0.00       |                |            |              | 0.00 |               |
| 1249.97   | 2895.37     | 3.356         | 2898.726  | 32.0 | 6.52 | 0.660    | 2899.386        | 0.00       | 1.927          | 2.50       | 0.00         | 0.00 | 0 0.00        |
| 41.82     | 0.01004     |               |           |      |      |          | 0.006087        | 0.25       |                | 1.660      |              | 0.00 |               |
| 1291.79   | 2895.79     | 3.234         | 2899.024  | 32.0 | 6.52 | 0.660    | 2899.684        | 0.00       | 1.927          | 2.50       | 0.00         | 0.00 | 0 0.00        |
| JUNCT STR | 0.00000     |               |           |      |      |          | 0.004226        | 0.00       |                |            |              | 0.00 |               |
| 1291.79   | 2896.29     | 4.046         | 2900.336  | 11.0 | 3.50 | 0.190    | 2900.526        | 0.00       | 1.189          | 2.00       | 0.00         | 0.00 | 0 0.00        |
| 43.48     | 0.00989     |               |           |      |      |          | 0.002364        | 0.10       |                | 0.984      |              | 0.00 |               |
| 1335.27   | 2896.72     | 3.719         | 2900.439  | 11.0 | 3.50 | 0.190    | 2900.629        | 0.00       | 1.189          | 2.00       | 0.00         | 0.00 | 0 0.00        |

SKYE CANYON PARCEL 2.27 ADDENDUM NO.1

BY OLYMPIA COMPANIES

EAGLE CANYON LATERAL P4-L1 THRU PARCEL 2.27

[illegible]



## APPENDIX F

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### Revised Finished Floors

| SKYE CANYON PARCEL 2.27<br>FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION |                            |                       |                       |                       |                                 |                                 |                  |                |                |                              |
|--------------------------------------------------------------------------|----------------------------|-----------------------|-----------------------|-----------------------|---------------------------------|---------------------------------|------------------|----------------|----------------|------------------------------|
| INPUT INFORMATION                                                        |                            |                       |                       |                       | FINISHED FLOORS                 |                                 |                  |                |                | NOTES                        |
| Lot Number                                                               | Hydraulic Section Utilized | T/C <sup>1</sup> (ft) | F/L <sup>2</sup> (ft) | D <sub>100</sub> (ft) | Flowline F.F. <sup>3</sup> (ft) | T/C + 6" F.F. <sup>4</sup> (ft) | F.F.-Design (ft) | Flowline Check | T/C + 6" Check | See References on Last Sheet |
| 1                                                                        | 3                          | 2902.75               | 2902.37               | 0.58                  | 2903.53                         | 2903.25                         | 2904.3           | OK             | OK             |                              |
| 2                                                                        | 3                          | 2903.11               | 2902.73               | 0.58                  | 2903.89                         | 2903.61                         | 2904.7           | OK             | OK             |                              |
| 3                                                                        | 3                          | 2903.47               | 2903.09               | 0.58                  | 2904.25                         | 2903.97                         | 2905.1           | OK             | OK             |                              |
| 4                                                                        | 3                          | 2903.83               | 2903.45               | 0.58                  | 2904.61                         | 2904.33                         | 2905.4           | OK             | OK             |                              |
| 5                                                                        | 3                          | 2904.19               | 2903.81               | 0.58                  | 2904.97                         | 2904.69                         | 2905.8           | OK             | OK             |                              |
| 6                                                                        | 3                          | 2904.55               | 2904.17               | 0.58                  | 2905.33                         | 2905.05                         | 2906.2           | OK             | OK             |                              |
| 7                                                                        | 3                          | 2904.91               | 2904.53               | 0.58                  | 2905.69                         | 2905.41                         | 2906.6           | OK             | OK             |                              |
| 8                                                                        | 3                          | 2905.30               | 2904.92               | 0.58                  | 2906.08                         | 2905.80                         | 2906.9           | OK             | OK             |                              |
| 9                                                                        | 3                          | 2905.69               | 2905.31               | 0.58                  | 2906.47                         | 2906.19                         | 2907.3           | OK             | OK             |                              |
| 10                                                                       | 1                          | 2906.45               | 2906.07               | 0.49                  | 2907.05                         | 2906.95                         | 2907.9           | OK             | OK             |                              |
| 11                                                                       | 1                          | 2907.34               | 2906.96               | 0.49                  | 2907.94                         | 2907.84                         | 2908.8           | OK             | OK             |                              |
| 12                                                                       | 1                          | 2908.22               | 2907.84               | 0.49                  | 2908.82                         | 2908.72                         | 2909.7           | OK             | OK             |                              |
| 13                                                                       | 1                          | 2909.02               | 2908.64               | 0.49                  | 2909.62                         | 2909.52                         | 2910.5           | OK             | OK             |                              |
| 14                                                                       | 1                          | 2910.00               | 2909.62               | 0.49                  | 2910.60                         | 2910.50                         | 2911.5           | OK             | OK             |                              |
| 15                                                                       | 1                          | 2910.90               | 2910.52               | 0.49                  | 2911.50                         | 2911.40                         | 2912.4           | OK             | OK             |                              |
| 16                                                                       | 1                          | 2911.80               | 2911.42               | 0.49                  | 2912.40                         | 2912.30                         | 2913.3           | OK             | OK             |                              |
| 17                                                                       | 1                          | 2912.28               | 2911.90               | 0.49                  | 2912.88                         | 2912.78                         | 2913.8           | OK             | OK             |                              |
| 18                                                                       | 1                          | 2912.89               | 2912.51               | 0.49                  | 2913.49                         | 2913.39                         | 2915.5           | OK             | OK             |                              |
| 19                                                                       | 1                          | 2913.21               | 2912.83               | 0.49                  | 2913.81                         | 2913.71                         | 2915.1           | OK             | OK             |                              |
| 20                                                                       | 1                          | 2914.08               | 2913.70               | 0.49                  | 2914.68                         | 2914.58                         | 2915.5           | OK             | OK             |                              |
| 21                                                                       | 1                          | 2915.57               | 2915.19               | 0.49                  | 2916.17                         | 2916.07                         | 2917.0           | OK             | OK             |                              |
| 22                                                                       | 1                          | 2917.71               | 2917.33               | 0.49                  | 2918.31                         | 2918.21                         | 2919.2           | OK             | OK             |                              |
| 23                                                                       | 1                          | 2919.91               | 2919.53               | 0.49                  | 2920.51                         | 2920.41                         | 2921.4           | OK             | OK             |                              |
| 24                                                                       | 1                          | 2922.11               | 2921.73               | 0.49                  | 2922.71                         | 2922.61                         | 2923.6           | OK             | OK             |                              |
| 25                                                                       | 1                          | 2924.32               | 2923.94               | 0.49                  | 2924.92                         | 2924.82                         | 2925.8           | OK             | OK             |                              |
| 26                                                                       | 1                          | 2925.85               | 2925.47               | 0.49                  | 2926.45                         | 2926.35                         | 2927.3           | OK             | OK             |                              |
| 27                                                                       | 1                          | 2926.71               | 2926.33               | 0.49                  | 2927.31                         | 2927.21                         | 2928.4           | OK             | OK             |                              |
| 28                                                                       | 1                          | 2927.62               | 2927.24               | 0.49                  | 2928.22                         | 2928.12                         | 2929.9           | OK             | OK             |                              |
| 29                                                                       | 1                          | 2929.39               | 2929.01               | 0.49                  | 2929.99                         | 2929.89                         | 2930.9           | OK             | OK             |                              |
| 30                                                                       | 1                          | 2930.44               | 2930.06               | 0.49                  | 2931.04                         | 2930.94                         | 2931.9           | OK             | OK             |                              |
| 31                                                                       | 2                          | 2930.49               | 2930.11               | 0.4                   | 2930.91                         | 2930.99                         | 2931.9           | OK             | OK             |                              |
| 32                                                                       | 2                          | 2930.14               | 2929.76               | 0.4                   | 2930.56                         | 2930.64                         | 2931.6           | OK             | OK             |                              |
| 33                                                                       | 2                          | 2928.93               | 2928.55               | 0.4                   | 2929.35                         | 2929.43                         | 2930.4           | OK             | OK             |                              |
| 34                                                                       | 2                          | 2927.73               | 2927.35               | 0.4                   | 2928.15                         | 2928.23                         | 2929.2           | OK             | OK             |                              |
| 35                                                                       | 2                          | 2925.74               | 2925.36               | 0.4                   | 2926.16                         | 2926.24                         | 2927.2           | OK             | OK             |                              |
| 36                                                                       | 2                          | 2923.24               | 2922.86               | 0.4                   | 2923.66                         | 2923.74                         | 2924.7           | OK             | OK             |                              |
| 37                                                                       | 2                          | 2920.85               | 2920.47               | 0.4                   | 2921.27                         | 2921.35                         | 2922.3           | OK             | OK             |                              |
| 38                                                                       | 2                          | 2918.73               | 2918.35               | 0.4                   | 2919.15                         | 2919.23                         | 2920.2           | OK             | OK             |                              |
| 39                                                                       | 2                          | 2916.65               | 2916.27               | 0.4                   | 2917.07                         | 2917.15                         | 2918.1           | OK             | OK             |                              |
| 40                                                                       | 2                          | 2915.01               | 2914.63               | 0.4                   | 2915.43                         | 2915.51                         | 2916.5           | OK             | OK             |                              |
| 41                                                                       | 2                          | 2913.57               | 2913.19               | 0.4                   | 2913.99                         | 2914.07                         | 2915.0           | OK             | OK             |                              |
| 42                                                                       | 2                          | 2912.13               | 2911.75               | 0.4                   | 2912.55                         | 2912.63                         | 2913.6           | OK             | OK             |                              |
| 43                                                                       | 2                          | 2910.77               | 2910.39               | 0.4                   | 2911.19                         | 2911.27                         | 2912.2           | OK             | OK             |                              |
| 44                                                                       | 2                          | 2909.98               | 2909.60               | 0.4                   | 2910.40                         | 2910.48                         | 2911.6           | OK             | OK             |                              |
| 45                                                                       | 2                          | 2909.60               | 2909.22               | 0.4                   | 2910.02                         | 2910.10                         | 2911.2           | OK             | OK             |                              |
| 46                                                                       | 2                          | 2909.21               | 2908.83               | 0.4                   | 2909.63                         | 2909.71                         | 2910.7           | OK             | OK             |                              |
| 47                                                                       | 2                          | 2910.31               | 2909.93               | 0.4                   | 2910.73                         | 2910.81                         | 2912.3           | OK             | OK             |                              |
| 48                                                                       | 2                          | 2909.13               | 2908.75               | 0.4                   | 2909.55                         | 2909.63                         | 2910.6           | OK             | OK             |                              |
| 49                                                                       | 2                          | 2907.63               | 2907.25               | 0.4                   | 2908.05                         | 2908.13                         | 2909.1           | OK             | OK             |                              |
| 50                                                                       | 2                          | 2906.14               | 2905.76               | 0.4                   | 2906.56                         | 2906.64                         | 2907.6           | OK             | OK             |                              |
| 51                                                                       | 2                          | 2907.26               | 2906.88               | 0.4                   | 2907.68                         | 2907.76                         | 2909.6           | OK             | OK             |                              |
| 52                                                                       | 3                          | 2904.54               | 2904.16               | 0.58                  | 2905.32                         | 2905.04                         | 2906.0           | OK             | OK             |                              |
| 53                                                                       | 3                          | 2906.49               | 2906.11               | 0.58                  | 2907.27                         | 2906.99                         | 2907.9           | OK             | OK             |                              |
| 54                                                                       | 2                          | 2908.24               | 2907.86               | 0.4                   | 2908.66                         | 2908.74                         | 2909.7           | OK             | OK             |                              |
| 55                                                                       | 3                          | 2904.66               | 2904.28               | 0.58                  | 2905.44                         | 2905.16                         | 2906.1           | OK             | OK             |                              |
| 56                                                                       | 3                          | 2906.96               | 2906.58               | 0.58                  | 2907.74                         | 2907.46                         | 2908.4           | OK             | OK             |                              |
| 57                                                                       | 3                          | 2908.83               | 2908.45               | 0.58                  | 2909.61                         | 2909.33                         | 2910.4           | OK             | OK             |                              |
| 58                                                                       | 2                          | 2912.28               | 2911.90               | 0.4                   | 2912.70                         | 2912.78                         | 2913.7           | OK             | OK             |                              |
| 59                                                                       | 2                          | 2913.57               | 2913.19               | 0.4                   | 2913.99                         | 2914.07                         | 2915.0           | OK             | OK             |                              |
| 60                                                                       | 2                          | 2914.87               | 2914.49               | 0.4                   | 2915.29                         | 2915.37                         | 2916.3           | OK             | OK             |                              |
| 61                                                                       | 2                          | 2916.00               | 2915.62               | 0.4                   | 2916.42                         | 2916.50                         | 2917.5           | OK             | OK             |                              |
| 62                                                                       | 3                          | 2905.10               | 2904.72               | 0.58                  | 2905.88                         | 2905.60                         | 2906.6           | OK             | OK             |                              |
| 63                                                                       | 3                          | 2906.75               | 2906.37               | 0.58                  | 2907.53                         | 2907.25                         | 2908.2           | OK             | OK             |                              |

| SKYE CANYON PARCEL 2.27<br>FINISH FLOOR - CITY OF LAS VEGAS JURISDICTION |                            |                       |                       |                       |                                                |                                                |                             |                |                |                              |
|--------------------------------------------------------------------------|----------------------------|-----------------------|-----------------------|-----------------------|------------------------------------------------|------------------------------------------------|-----------------------------|----------------|----------------|------------------------------|
| INPUT INFORMATION                                                        |                            |                       |                       |                       | FINISHED FLOORS                                |                                                |                             |                |                | NOTES                        |
| Lot Number                                                               | Hydraulic Section Utilized | T/C <sup>1</sup> (ft) | F/L <sup>2</sup> (ft) | D <sub>100</sub> (ft) | Flowline F.F. <sub>min</sub> <sup>3</sup> (ft) | T/C + 6" F.F. <sub>min</sub> <sup>4</sup> (ft) | F.F. <sub>Design</sub> (ft) | Flowline Check | T/C + 6" Check | See References on Last Sheet |
| 64                                                                       | 3                          | 2907.64               | 2907.26               | 0.58                  | 2908.42                                        | 2908.14                                        | 2909.6                      | OK             | OK             |                              |
| 65                                                                       | 3                          | 2907.64               | 2907.26               | 0.58                  | 2908.42                                        | 2908.14                                        | 2909.7                      | OK             | OK             |                              |
| 66                                                                       | 3                          | 2906.75               | 2906.37               | 0.58                  | 2907.53                                        | 2907.25                                        | 2908.2                      | OK             | OK             |                              |
| 67                                                                       | 3                          | 2905.10               | 2904.72               | 0.58                  | 2905.88                                        | 2905.60                                        | 2906.6                      | OK             | OK             |                              |
| 68                                                                       | 3                          | 2906.86               | 2906.48               | 0.58                  | 2907.64                                        | 2907.36                                        | 2908.3                      | OK             | OK             |                              |
| 69                                                                       | 3                          | 2908.90               | 2908.52               | 0.58                  | 2909.68                                        | 2909.40                                        | 2910.4                      | OK             | OK             |                              |
| 70                                                                       | 3                          | 2910.93               | 2910.55               | 0.58                  | 2911.71                                        | 2911.43                                        | 2912.4                      | OK             | OK             |                              |
| 71                                                                       | 3                          | 2913.31               | 2912.93               | 0.58                  | 2914.09                                        | 2913.81                                        | 2914.8                      | OK             | OK             |                              |
| 72                                                                       | 1                          | 2906.86               | 2906.48               | 0.49                  | 2907.46                                        | 2907.36                                        | 2908.3                      | OK             | OK             |                              |
| 73                                                                       | 1                          | 2908.90               | 2908.52               | 0.49                  | 2909.50                                        | 2909.40                                        | 2910.4                      | OK             | OK             |                              |
| 74                                                                       | 1                          | 2910.93               | 2910.55               | 0.49                  | 2911.53                                        | 2911.43                                        | 2912.4                      | OK             | OK             |                              |
| 75                                                                       | 1                          | 2912.96               | 2912.58               | 0.49                  | 2913.56                                        | 2913.46                                        | 2914.4                      | OK             | OK             |                              |
| 76                                                                       | 1                          | 2914.82               | 2914.44               | 0.49                  | 2915.42                                        | 2915.32                                        | 2916.3                      | OK             | OK             |                              |
| 77                                                                       | 2                          | 2921.30               | 2920.92               | 0.4                   | 2921.72                                        | 2921.80                                        | 2923.2                      | OK             | OK             |                              |
| 78                                                                       | 2                          | 2924.65               | 2924.27               | 0.4                   | 2925.07                                        | 2925.15                                        | 2926.1                      | OK             | OK             |                              |
| 79                                                                       | 2                          | 2927.18               | 2926.80               | 0.4                   | 2927.60                                        | 2927.68                                        | 2928.6                      | OK             | OK             |                              |
| 80                                                                       | 2                          | 2928.71               | 2928.33               | 0.4                   | 2929.13                                        | 2929.21                                        | 2930.2                      | OK             | OK             |                              |
| 81                                                                       | 2                          | 2929.94               | 2929.56               | 0.4                   | 2930.36                                        | 2930.44                                        | 2931.4                      | OK             | OK             |                              |
| 82                                                                       | 2                          | 2930.49               | 2930.11               | 0.4                   | 2930.91                                        | 2930.99                                        | 2931.9                      | OK             | OK             |                              |
| 83                                                                       | 1                          | 2930.49               | 2930.11               | 0.49                  | 2931.09                                        | 2930.99                                        | 2931.9                      | OK             | OK             |                              |
| 84                                                                       | 1                          | 2929.55               | 2929.17               | 0.49                  | 2930.15                                        | 2930.05                                        | 2931.0                      | OK             | OK             |                              |
| 85                                                                       | 1                          | 2923.80               | 2923.42               | 0.49                  | 2924.40                                        | 2924.30                                        | 2925.3                      | OK             | OK             |                              |
| 86                                                                       | 1                          | 2921.60               | 2921.22               | 0.49                  | 2922.20                                        | 2922.10                                        | 2923.1                      | OK             | OK             |                              |
| 87                                                                       | 1                          | 2919.40               | 2919.02               | 0.49                  | 2920.00                                        | 2919.90                                        | 2920.9                      | OK             | OK             |                              |
| 88                                                                       | 1                          | 2917.19               | 2916.81               | 0.49                  | 2917.79                                        | 2917.69                                        | 2918.6                      | OK             | OK             |                              |
| 89                                                                       | 1                          | 2915.15               | 2914.77               | 0.49                  | 2915.75                                        | 2915.65                                        | 2916.6                      | OK             | OK             |                              |
| 90                                                                       | 1                          | 2913.84               | 2913.46               | 0.49                  | 2914.44                                        | 2914.34                                        | 2915.3                      | OK             | OK             |                              |
| 91                                                                       | 1                          | 2912.64               | 2912.26               | 0.49                  | 2913.24                                        | 2913.14                                        | 2914.1                      | OK             | OK             |                              |
| 92                                                                       | 1                          | 2914.97               | 2914.59               | 0.49                  | 2915.57                                        | 2915.47                                        | 2916.4                      | OK             | OK             |                              |
| 93                                                                       | 1                          | 2917.30               | 2916.92               | 0.49                  | 2917.90                                        | 2917.80                                        | 2918.8                      | OK             | OK             |                              |
| 94                                                                       | 1                          | 2919.59               | 2919.21               | 0.49                  | 2920.19                                        | 2920.09                                        | 2921.0                      | OK             | OK             |                              |
| 95                                                                       | 1                          | 2921.82               | 2921.44               | 0.49                  | 2922.42                                        | 2922.32                                        | 2923.3                      | OK             | OK             |                              |
| 96                                                                       | 1                          | 2922.17               | 2921.79               | 0.49                  | 2922.77                                        | 2922.67                                        | 2924.1                      | OK             | OK             |                              |
| 97                                                                       | 1                          | 2919.28               | 2918.90               | 0.49                  | 2919.88                                        | 2919.78                                        | 2920.7                      | OK             | OK             |                              |
| 98                                                                       | 1                          | 2916.95               | 2916.57               | 0.49                  | 2917.55                                        | 2917.45                                        | 2918.4                      | OK             | OK             |                              |
| 99                                                                       | 1                          | 2914.62               | 2914.24               | 0.49                  | 2915.22                                        | 2915.12                                        | 2916.1                      | OK             | OK             |                              |
| 100                                                                      | 1                          | 2912.29               | 2911.91               | 0.49                  | 2912.89                                        | 2912.79                                        | 2913.7                      | OK             | OK             |                              |
| 101                                                                      | 1                          | 2909.37               | 2908.99               | 0.49                  | 2909.97                                        | 2909.87                                        | 2910.8                      | OK             | OK             |                              |
| 102                                                                      | 1                          | 2911.66               | 2911.28               | 0.49                  | 2912.26                                        | 2912.16                                        | 2913.1                      | OK             | OK             |                              |
| 103                                                                      | 1                          | 2913.96               | 2913.58               | 0.49                  | 2914.56                                        | 2914.46                                        | 2915.4                      | OK             | OK             |                              |
| 104                                                                      | 1                          | 2916.25               | 2915.87               | 0.49                  | 2916.85                                        | 2916.75                                        | 2917.7                      | OK             | OK             |                              |
| 105                                                                      | 1                          | 2918.35               | 2917.97               | 0.49                  | 2918.95                                        | 2918.85                                        | 2919.8                      | OK             | OK             |                              |
| 106                                                                      | 1                          | 2919.42               | 2919.04               | 0.49                  | 2920.02                                        | 2919.92                                        | 2921.4                      | OK             | OK             |                              |
| 107                                                                      | 1                          | 2916.25               | 2915.87               | 0.49                  | 2916.85                                        | 2916.75                                        | 2917.7                      | OK             | OK             |                              |
| 108                                                                      | 1                          | 2913.96               | 2913.58               | 0.49                  | 2914.56                                        | 2914.46                                        | 2915.4                      | OK             | OK             |                              |
| 109                                                                      | 1                          | 2911.66               | 2911.28               | 0.49                  | 2912.26                                        | 2912.16                                        | 2913.1                      | OK             | OK             |                              |
| 110                                                                      | 1                          | 2909.37               | 2908.99               | 0.49                  | 2909.97                                        | 2909.87                                        | 2910.8                      | 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<sub>100</sub>) + 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 <sup>1</sup> | High FL <sup>2</sup> | Section | Flow Depth <sup>3</sup> | Min FF <sup>4</sup> | Design FF | Check | Solid Grout |
| 18                              | Grand Teton      | 2904.10              | 2903.60              | GT7     | 0.27                    | 2904.14             | 2915.5    | OK    | No          |
| 19                              | Grand Teton      | 2906.95              | 2906.45              | GT7     | 0.27                    | 2906.99             | 2915.1    | OK    | No          |
| 20                              | Grand Teton      | 2911.40              | 2910.90              | GT7     | 0.27                    | 2911.44             | 2915.5    | OK    | No          |
| 21                              | Grand Teton      | 2914.60              | 2914.10              | GT7     | 0.27                    | 2914.64             | 2917.0    | OK    | No          |
| 22                              | Grand Teton      | 2917.69              | 2917.19              | GT7     | 0.27                    | 2917.73             | 2919.2    | OK    | No          |
| 23                              | Grand Teton      | 2920.55              | 2920.05              | GT7     | 0.27                    | 2920.59             | 2921.4    | OK    | No          |
| 24                              | Grand Teton      | 2923.69              | 2923.19              | GT7     | 0.27                    | 2923.73             | 2923.6    | CHECK | Yes         |
| 25                              | Grand Teton      | 2926.45              | 2925.95              | GT7     | 0.27                    | 2926.49             | 2925.8    | CHECK | Yes         |
| 26                              | Grand Teton      | 2928.41              | 2927.91              | GT7     | 0.27                    | 2928.45             | 2927.3    | CHECK | Yes         |
| 27                              | Grand Teton      | 2930.86              | 2930.36              | GT7     | 0.27                    | 2930.90             | 2928.4    | CHECK | Yes         |
| 28                              | Egan Crest       | 2934.70              | 2934.20              | EGN1a   | 0.29                    | 2934.78             | 2929.9    | CHECK | Yes         |
| 29                              | Egan Crest       | 2935.87              | 2935.37              | EGN1a   | 0.29                    | 2935.95             | 2930.9    | CHECK | Yes         |
| 30                              | Egan Crest       | 2935.91              | 2935.41              | EGN1a   | 0.29                    | 2935.99             | 2931.9    | CHECK | Yes         |
| 31                              | Egan Crest       | 2935.76              | 2935.26              | EGN1a   | 0.29                    | 2935.84             | 2931.9    | CHECK | Yes         |
| 32                              | Egan Crest       | 2935.43              | 2934.93              | EGN1a   | 0.29                    | 2935.51             | 2931.6    | CHECK | Yes         |
| 33                              | Egan Crest       | 2934.80              | 2934.30              | EGN1a   | 0.29                    | 2934.88             | 2930.4    | CHECK | Yes         |
| 34                              | Egan Crest       | 2933.71              | 2933.21              | EGN1a   | 0.29                    | 2933.79             | 2929.2    | CHECK | Yes         |
| 35                              | Egan Crest       | 2930.81              | 2930.31              | EGN1a   | 0.29                    | 2930.89             | 2927.2    | CHECK | Yes         |
| 36                              | Egan Crest       | 2929.45              | 2928.95              | EGN1a   | 0.29                    | 2929.53             | 2924.7    | CHECK | Yes         |
| 37                              | Egan Crest       | 2927.31              | 2926.81              | EGN1a   | 0.29                    | 2927.39             | 2922.3    | CHECK | Yes         |
| 38                              | Egan Crest       | 2925.65              | 2925.15              | EGN1b   | 0.38                    | 2925.91             | 2920.2    | CHECK | Yes         |
| 39                              | Egan Crest       | 2924.47              | 2923.97              | EGN1b   | 0.38                    | 2924.73             | 2918.1    | CHECK | Yes         |
| 40                              | Egan Crest       | 2923.10              | 2922.60              | EGN1b   | 0.38                    | 2923.36             | 2916.5    | CHECK | Yes         |
| 41                              | Egan Crest       | 2921.83              | 2921.33              | EGN1b   | 0.38                    | 2922.09             | 2915.0    | CHECK | Yes         |
| 42                              | Egan Crest       | 2920.83              | 2920.33              | EGN1b   | 0.38                    | 2921.09             | 2913.6    | CHECK | Yes         |
| 43                              | Egan Crest       | 2920.02              | 2919.52              | EGN1b   | 0.38                    | 2920.28             | 2912.2    | CHECK | Yes         |
| 44                              | Egan Crest       | 2919.39              | 2918.89              | EGN1b   | 0.38                    | 2919.65             | 2911.6    | CHECK | Yes         |
| 45                              | Egan Crest       | 2918.96              | 2918.46              | EGN1b   | 0.38                    | 2919.22             | 2911.2    | CHECK | Yes         |
| 46                              | Egan Crest       | 2918.50              | 2918.00              | EGN1b   | 0.38                    | 2918.76             | 2910.7    | CHECK | Yes         |
| 47                              | Egan Crest       | 2918.10              | 2917.60              | EGN1b   | 0.38                    | 2918.36             | 2912.3    | CHECK | Yes         |
| 47                              | Eagle Canyon     | 2917.07              | 2916.57              | ECA3a   | 0.38                    | 2917.33             | 2912.3    | CHECK | Yes         |
| 48                              | Eagle Canyon     | 2915.15              | 2914.65              | ECA3a   | 0.38                    | 2915.41             | 2910.6    | CHECK | Yes         |
| 49                              | Eagle Canyon     | 2913.29              | 2912.79              | ECA3a   | 0.38                    | 2913.55             | 2909.1    | CHECK | Yes         |
| 50                              | Eagle Canyon     | 2910.90              | 2910.40              | ECA3a   | 0.38                    | 2911.16             | 2907.6    | CHECK | Yes         |
| 51                              | California Pines | 2909.12              | 2908.74              | 2       | 0.40                    | 2909.54             | 2909.6    | OK    | No          |
| 52                              | Pinion Ridge     | 2902.69              | 2902.31              | 3       | 0.58                    | 2903.47             | 2906.0    | OK    | No          |
| 54                              | California Pines | 2909.45              | 2909.07              | 2       | 0.40                    | 2909.87             | 2909.7    | CHECK | Yes         |
| 55                              | Pinion Ridge     | 2903.60              | 2903.22              | 3       | 0.58                    | 2904.38             | 2906.1    | OK    | No          |
| 57                              | California Pines | 2910.74              | 2910.36              | 2       | 0.40                    | 2911.16             | 2910.4    | CHECK | Yes         |
| 61                              | Lodge Pine       | 2915.96              | 2915.58              | 3       | 0.58                    | 2916.74             | 2917.5    | OK    | No          |
| 62                              | Pinion Ridge     | 2903.93              | 2903.55              | 3       | 0.58                    | 2904.71             | 2906.6    | OK    | No          |
| 67                              | Pinion Ridge     | 2904.85              | 2904.47              | 3       | 0.58                    | 2905.63             | 2906.6    | OK    | No          |
| 68                              | Pinion Ridge     | 2905.21              | 2904.83              | 3       | 0.58                    | 2905.99             | 2908.3    | OK    | No          |
| 72                              | Lodge Pine       | 2906.52              | 2906.14              | 1       | 0.49                    | 2907.12             | 2908.3    | OK    | No          |
| 77                              | Lodge Pine       | 2916.21              | 2915.83              | 1       | 0.49                    | 2916.81             | 2923.2    | OK    | No          |
| 84                              | Western Pine     | 2925.27              | 2924.89              | 1       | 0.49                    | 2925.87             | 2931.0    | OK    | No          |
| 90                              | Pinion Ridge     | 2912.49              | 2912.11              | 1       | 0.49                    | 2913.09             | 2915.3    | OK    | No          |
| 91                              | Pinion Ridge     | 2912.09              | 2911.71              | 1       | 0.49                    | 2912.69             | 2914.1    | OK    | No          |
| 100                             | Pinion Ridge     | 2910.06              | 2909.68              | 1       | 0.49                    | 2910.66             | 2913.7    | OK    | No          |
| 101                             | Pinion Ridge     | 2909.31              | 2908.93              | 1       | 0.49                    | 2909.91             | 2910.8    | OK    | No          |
| 110                             | Pinion Ridge     | 2907.26              | 2906.88              | 1       | 0.49                    | 2907.86             | 2910.8    | 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.

## Emergency Overflow Finish Floor Checks

| Drainage Easements Check - Emergency Overflow |                         |         |                         |                     |           |             |
|-----------------------------------------------|-------------------------|---------|-------------------------|---------------------|-----------|-------------|
| Lot                                           | High TC/FL <sup>1</sup> | Section | Flow Depth <sup>2</sup> | Min FF <sup>3</sup> | Design FF | Solid Grout |
| 1                                             | 2899.73                 | EO1a    | 2.28                    | 2902.01             | 2904.30   | No          |
| 1                                             | 2902.41                 | EO1b    | 1.03                    | 2903.44             | 2904.30   | 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.

## APPENDIX G

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### Zoning/Planning Conditions

024 1607 05



July 12, 2017

**LAS VEGAS  
CITY COUNCIL**

Carolyn G. Goodman  
Mayor

Steven D. Ross  
Mayor Pro Tem

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

Elizabeth N. Fretwell  
City Manager

Mr. Ben Morris  
KAG Development West, LLC  
11411 Southern Highlands, Ste. 300  
Las Vegas, Nevada 89141

**RE: TMP-70716 [PRJ-70623] - TENTATIVE MAP  
PLANNING COMMISSION MEETING OF JULY 11, 2017**

Dear Applicant:

Your request for a Tentative Map FOR A 110-LOT SINGLE-FAMILY RESIDENTIAL SUBDIVISION on 19.53 acres at the southeast corner of Eagle Canyon Avenue and Egan Crest Drive (APN 126-12-810-003), T-D (Traditional Development) Zone [ML (Medium-Low Density Residential) Skye Canyon Land Use Designation], Ward 6 (Ross) [PRJ-70623], was considered by the Planning Commission on July 11, 2017.

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

**Planning**

1. Approval of the Tentative Map shall be for no more than four (4) years. If a Final Map is not recorded on all or a portion of the area embraced by the Tentative Map 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 future property owners. The DPMR is to include a listing of all privately owned and/or maintained infrastructure improvements, along with assignment of maintenance

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



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. 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.
7. If not already constructed or guaranteed by the master developer, construct half street improvements on Grand Teton Drive, Egan Crest Drive and Eagle Canyon Avenue 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.
8. Per condition of approval #14 of the Skye Canyon II Parent Tentative Map (TMP-65803), grant Pedestrian Access Easements for all sidewalks located outside of the public street right of way by adding a note within the Owner's Certificate on each Final Map to read, "A minimum 5-foot wide pedestrian walkway easement is hereby granted overlying all sidewalks located in common areas abutting public streets, where such sidewalks are not located within public street right of way, together with the right of ingress thereto and egress therefrom these easements."



9. 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 by the City Traffic Engineer.
10. The sewer alignments as shown on the Tentative Map will need to be modified so that public sewer is at least 10-feet away from the median islands where gates are proposed.
11. Prior to the submittal of any construction drawings, submit a revision to the Skye Canyon Wastewater Master Plan to account for the increased development of Parcel 2.27 and for the revised point of connection.
12. 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.
13. Prior to the release of a Final Map for recordation on this site, the property owner must contact the Special Improvement District Section of the Department of Public Works (702-229-2136) and sign a notarized affidavit acknowledging and agreeing to a per lot assessment of all lots that will be created through a Final Map for this site. The City shall prepare an apportionment report following recordation of the Final Map and this apportionment report must be signed by the property owner prior to the release of any building permits for this site.
14. 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 the approved Development Agreement.
15. An update to the previously approved Traffic Impact Analysis shall be approved prior to the recordation of a Final Map for this site.

16. A Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits, submittal of any construction drawings or the submittal of a Map subdividing this site, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage plan/study. The developer of this site shall be responsible to construct such neighborhood or local drainage facility improvements as are recommended by the City of Las Vegas Neighborhood Drainage Studies and approved Drainage Plan/Study concurrent with development of this site.
17. 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.
18. Comply with all applicable conditions of approval for the Sky Canyon II Parent Tentative Map (TMP-65803) and any other site related actions.

This action by the Planning Commission on July 11, 2017 is final unless a written appeal is filed with the City Clerk within seven days of the date of the Planning Commission's decision as allowed by code or there is a review action filed by the City Council within the same time period. For additional information on appeals or review requests submitted please access <http://www.lasvegasnevada.gov/CheckStatus/DevelopmentApp.htm>, or contact the Department of Planning and Development at 702.229.6301 after July 19, 2017. No building permits or business licenses related to these items shall be issued prior to the expiration of the required ten day waiting period, or until any filed appeal is resolved pursuant to LVMC Title 19.18.

Sincerely,



Steve Gebeke, AICP  
Planning Supervisor  
Case Planning Division

SG:nl

***TMP-70716 [PRJ-70623] - Page Five***  
***July 12, 2017***

cc:

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

## APPENDIX H

### Cd of Electronic Files & Revised Improvement Plans







## STORMWATER RUNOFF MANAGEMENT

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

1. THE OWNER, SITE DEVELOPER, CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATE IN, THE PUBLIC RIGHTS OF WAYS OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN TITLE 24.40 AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVRI00000, SECTION III.A.12.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER ANY ACTUAL RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVRI00000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

## 2.2 CITY OF LAS VEGAS SEWER NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS AND THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER PLANS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CITY ENGINEER.
3. CHISEL "S" OR "G" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
4. POLYVNYL (PVC) SEWER PIPE SHALL MEET ASTM D-3034 SDR 35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE II AGGREGATE BASE.
5. ALL MANHOLES PAVED IN STREETS EIGHTY (80') FOOT R/W AND LARGER SHALL HAVE CONCRETE COLLARS. STREETS LESS THAN EIGHTY (80') FOOT R/W WILL REQUIRE RETROFIT IF PAVING DOES NOT CONFORM TO CITY STANDARDS AT THE MANHOLE.
6. TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO TWELVE INCH (12") DIAMETER. CONNECTIONS TO FIFTEEN INCH (15") OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES. IN LINE "Y" IS SHALL BE USED ON LINES TWELVE INCHES (12") OR ABOVE.
7. WATER MAINS SHALL BE PROTECTED IN ACCORDANCE WITH LVVWD STANDARDS WHENEVER A SEWER MAIN CROSSES OVER A WATER MAIN OR THE SEWER IS LESS THAN EIGHTEEN INCH (18") UNDER A WATER MAIN.
8. ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CITY OF LAS VEGAS MUST BE STATE OF NEVADA CLASS "A" CONTRACTORS.
9. THE CITY OF LAS VEGAS WILL NOT ACCEPT ANY SEWER MAINS WHICH HAVE A VERTICAL DEFLECTION OF MORE THAN ONE TENTH (1/10) OF A FOOT FROM THE APPROVED CONSTRUCTION PLANS AT ANY LOCATION. SEWER MAINS FOUND TO EXCEED THIS TOLERANCE WILL HAVE TO BE REPAIRED OR REMOVED OR REPLACED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO ACCEPTANCE BY THE CITY OF LAS VEGAS.
10. INSTALLATION OF CURVED SEWER REQUIRES THE USE OF C-900 PIPE WHICH ALLOWS FOR PIPE DEFLECTION AT THE JOINTS.

## LAS VEGAS VALLEY WATER DISTRICT (LVVWD) STANDARD NOTES

LVVWD PROJECT # ##### (REVISED 01/09/2017)

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN APPROVED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPPORT CENTER (258-7771) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR FUTURE INSPECTIONS. NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO THE REQUESTED LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.
2. ALL WORK SHALL CONFORM TO LVVWD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2010 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS), THE LATEST EDITION OF UDACS SHALL SUPERSEDE ANY CONFLICTS CONTAINED IN THE APPROVED DRAWINGS AND/OR SPECIFICATIONS.
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD.
5. ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
6. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
7. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
8. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSEINGS SHALL CONFORM TO SECTION 2.22 OF THE 2010 EDITION OF THE UDACS.
9. ALL WATER FACILITIES SHALL BE FILLED, DISINPECTED, PRESSURE TESTED, FLUSHED, FILLED, AND AN ACCEPTABLE WATER SAMPLE OBTAINED, PRIOR TO CONNECTION TO THE LVVWD DISTRIBUTION SYSTEM.
10. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258-3152 OR 258-3802, TWO (2) WORKING DAYS PRIOR TO METER PICKUP.
11. ANY INTERRUPTION OF SERVICE MUST BE PERFORMED IN ACCORDANCE WITH UDACS SECTION 3.14.01, AND APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOWN. PROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
12. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD PRE-APPROVED MATERIALS AND MANUFACTURER'S LISTING FOR NEW FACILITIES. LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.
13. TELEPHONE "CALL BEFORE YOU DIG" AT "811" OR 1-800-227-2600.
14. THE INSTALLATION OF LAS VEGAS VALLEY WATER DISTRICT (LVVWD) MUNICIPAL WATER FACILITIES WITHIN ALL STREETS IS ASSUMED TO BE IN COMPLIANCE WITH THE UNIFORM STANDARDS, INCLUDING THE PLACEMENT OF ASPHALT PAVING STREET SURFACES. ANY REPAIR WORK DONE BY THE LVVWD TO THE MUNICIPAL WATER FACILITIES WILL INCLUDE THE PLACEMENT OF AN APPROPRIATELY SIZED ASPHALT REPAIR PATCH ON THE STREET SURFACE.

ANY DECORATIVE PAVING SURFACE WITHIN THE STREET IS THE RESPONSIBILITY OF THE OWNER'S ASSOCIATION, OR THE INDIVIDUAL PROPERTY OWNERS IF NO OWNER'S ASSOCIATION IS IN EXISTENCE, OR THE AGENCY HAVING JURISDICTION. DECORATIVE SURFACE MATERIALS PLACED WITHIN THE TEN FOOT EASEMENT ABUTTING A PUBLIC OR PRIVATE STREET, IF DISTURBED BY THE LVVWD DURING THE REPAIR OR OPERATION OF ITS FACILITIES, WILL BE REPLACED BY LVVWD WITH AN APPROPRIATELY SIZED PLAIN FINISH CONCRETE PATCH. THE LVVWD WILL NOT RESTORE, AND WILL NOT BE RESPONSIBLE FOR THE RESTORATION OF, ANY DECORATIVE PAVING SURFACE WITHIN THE STREET. THE LVVWD WILL NOT ATTEMPT TO MATCH COLOR OR FINISH OF ANY ADJACENT MATERIALS.

### 15. NO LEAD COMPLIANCE NOTE

TO COMPLY WITH THE FEDERAL SAFE DRINKING WATER ACT, ALL WATER WORKS BRASS PRODUCTS PROPOSED TO BE RELOCATED, OR INSTALLED AS NEW MUST BE INSTALLED WITH THE LEAD FREE APPROVED PRODUCT. THE OLD LEADED PRODUCT MAY NOT BE USED.

## GRADING NOTES

1. INDICATED GRADES OTHER THAN T.C., F.G. & GUTTER F.L. ARE ROUGH GRADES.
2. THE ROUGH GRADING PLANS SHALL BE ON THE JOB SITE AT ALL TIMES. THE ROUGH GRADING SHALL BE FINISHED IN CONFORMANCE WITH THE LINES AND GRADES SHOWN ON THE PLANS. THE GRADING QUANTITIES ARE BASED ON THE ELEVATION AND DETAILS SHOWN ON THE PLANS. ANY DEVIATIONS FROM THE PLANS WILL RESULT IN QUANTITY CHANGES.
3. CARE SHALL BE EXERCISED IN GRADING CORNER LOTS.
4. ROUGH PAD ELEVATIONS SHALL BE GRADED TO WITHIN 0.1' OF THE PAD ELEVATIONS SHOWN ON THE PLANS. WHEN GRADING IS COMPLETE PER THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE LOTS CAN BE INSPECTED. AT THAT TIME, THE ENGINEER SHALL ALSO DECIDE IF ANY ADDITIONAL DITCHES OR BERMS ARE REQUIRED. THE CONTRACTOR IS REQUESTED NOT TO REMOVE ANY OF HIS ROUGH GRADING EQUIPMENT UNTIL HE RECEIVES GRADING APPROVAL FROM THE ENGINEER.
5. SOILS REPORT PREPARED BY GEOTEK RESIDENTIAL, LLC, PROJECT NO. 12208-LVR, DATED MARCH 30, 2016.
6. EARTHWORK QUANTITIES (RAW):  
- CUT = 46,326 CUBIC YARDS  
- FILL = 149,786 CUBIC YARDS  
A) THE ABOVE QUANTITIES DO NOT REFLECT LOSSES DUE TO SUBSIDENCE OR SHRINKAGE.  
B) THE ABOVE QUANTITIES DO REFLECT USING NATIVE MATERIAL IN LIEU OF TYPE I GRAVEL BASE MATERIAL FOR STREET SECTIONS.  
C) THE ABOVE QUANTITIES DO NOT REFLECT ANY EARTHWORK WHICH MAY BE REQUIRED BY THE ENGINEER TO CONSTRUCT ADDITIONAL PROTECTIVE DITCHES OR BERMS NOT SHOWN ON THESE DRAWINGS.

## CITY OF LAS VEGAS FIRE AND RESCUE GENERAL NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LAS VEGAS FIRE AND RESCUE ADOPTED FIRE CODE ORDINANCE # 6306 FOR HYDRANT SPECIFICATIONS, AND HYDRANT INSTALLATION SPECIFICATIONS.
2. ONLY FIRE HYDRANTS THAT ARE ON THE LAS VEGAS VALLEY WATER DISTRICT'S - APPROVED PRODUCTS LIST ARE ALLOWED TO BE INSTALLED.
3. A PERMIT IS REQUIRED FROM LAS VEGAS FIRE AND RESCUE FOR ALL INSTALLATION OF ON-SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTORS MATERIAL TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK [FC 105.7.12]
4. ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS, FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW. [FC 3310, 3312]
5. TO IDENTIFY THE FIRE HYDRANT LOCATIONS, THE CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF THE STREET ADJACENT TO THE FIRE HYDRANTS. [FC 507.5.7.3]
6. ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CENTER LOADING IS ACCEPTABLE FOR THE HYDRO TESTS WITH PRIOR FIRE PREVENTION APPROVAL. [FC 106.3]
7. ALL ON-SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE U.L. LISTED, A.W.W.A. APPROVED AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE. [FC 507.2.1, NFPA 24]
8. PAINTING OF CURBS, FIRE HYDRANTS, PADS, PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, AND ALL OTHER WORK NECESSARY PER PLANS SHALL BE COMPLETED BEFORE APPROVAL BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION. [FC 507]
9. PRIVATE HYDRANTS SHALL BE PAINTED RED. [FC 507.5.7.1]
10. PRIOR TO THE FINAL OCCUPANCY, A FIRE FLOW TEST SHALL BE WITNESSED BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW. [FC 507]

11. FIRE HYDRANT SPACING SHALL BE AS FOLLOWS: [FC C102]  
• RESIDENTIAL - 500 FT UNSPRINKLERED; 600 FT SPRINKLERED.  
• COMMERCIAL - 300 FT UNSPRINKLERED, 400 FT SPRINKLERED.
12. WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS OR NEW STREETS ARE INSTALLED WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT A MAXIMUM OF 1,000 FT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS, WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS OR HAVE FOUR (4) OR MORE TRAFFIC LANES AND HAVE A TRAFFIC COUNT OF MORE THAN 30,000 PER DAY, HYDRANTS ARE REQUIRED ON EACH SIDE OF THE STREET SPACED AT 500 FT ON AN ALTERNATING BASIS. [FC C102.8]
13. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RADIUS OF A CUL-DE-SAC OR WITHIN 20 FEET OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
14. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FT OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREETLIGHT OR ANY OTHER OBSTRUCTION. [FC C102.12]
15. A MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A ONE-TWO FAMILY DWELLING SHALL NOT EXCEED 300 FT, AS MEASURED BY AN APPROVED ROUTE. [FC C102.4]
16. THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FT, AS MEASURED BY AN APPROVED ROUTE. [FC C102.7]
17. THE MAXIMUM DISTANCE FROM A HYDRANT TO THE END OF A DEAD-END STREET SHALL NOT EXCEED 200 FT. [FC C102.6]
18. TWO (2) SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE 4 OR MORE FIRE HYDRANTS/SPRINKLER LEAD-INS ARE INSTALLED ON A SINGLE SYSTEM. SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS CAN BE OUT OF SERVICE DUE TO A BREAK IN A WATER MAIN. [FC C104]
19. ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS. [FC 503.2.3]
20. THE GRADIENT FOR THE FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12% ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% PRIOR TO OR AFTER THE GRADE CHANGE. ADJACENT TO THE STRUCTURES GRADIENT SHALL NOT EXCEED 6%. [FC 503.2.7, 503.2.8]
21. THE TURNING RADIUS OF THE FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 52 FEET OUTSIDE AND 28 FEET INSIDE TURNING RADIUS. [FC 503.2.4]
22. VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL NOT BE LESS THAN 13 FT 6 INS. [FC 503.2.1]
23. FIRE DEPARTMENT ACCESS ROADS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 40 FT, FLOW LINE TO FLOW LINE WITH PARALLEL PARKING PERMITTED ON BOTH SIDES. NOT LESS THAN 32 FT WIDE, FLOW LINE TO FLOW LINE, WHERE PARKING IS PERMITTED ONLY ON ONE SIDE OF THE FIRE APPARATUS ACCESS ROAD. NOT LESS THAN 24 FT WIDE, FLOW LINE TO FLOW LINE, WHERE NO PARKING IS PERMITTED ON EITHER SIDE. FIRE LANES THROUGH PARKING LOTS SHALL BE NOT LESS THAN 24 FT. [FC 503.2.1.1]
24. A FIRE APPARATUS ACCESS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN 150 FT FROM A FIRE DEPARTMENT VEHICLE ACCESS. THE DISTANCE COULD BE INCREASED TO 250 FT IF THE BUILDING IS SPRINKLERED. [FC 503.1.1]
25. APPROVED SECONDARY FIRE APPARATUS ACCESS SHALL BE PROVIDED FOR 100 OR MORE DWELLING UNITS, ROAD(S) WITH DEAD-ENDS OR WITH A SINGLE POINT IN EXCESS OF 600 FT. COMMERCIAL AND INDUSTRIAL DEVELOPMENTS WHERE BUILDINGS EXCEED 2 STORIES OR 30 FEET IN HEIGHT, OR EXCEEDING 62,000 SQUARE FEET IN AREA. [FC 503.1.2]
26. ALL DEAD-END FIRE APPARATUS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FT IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND HAVING A MINIMUM DIAMETER OF 81 FT. [FC 503.1.5]
27. ALL FIRE APPARATUS ACCESS ROADS SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE, ONE SIGN AT THE END OF THE FIRE LANE AND WITH SIGNS AT INTERVALS OF 100 FEET ALONG THE DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING OR OTHER OBSTRUCTIONS TO THE FIRE LANE. SIGNS SHALL BE 18" HIGH, 18" WIDE, 1/8" THICK FROM THE ROADWAY LEVEL. THE CURB ALONG OR ON THE PAVEMENT OR CEMENT (IF NO CURB IS PROVIDED) SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS. [FC 503.3]
28. ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE FC 503.6 AND IFC APPENDIX M.

## 2.5 CITY OF LAS VEGAS GRADING NOTES

1. IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.
3. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL DICATION, ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.
4. THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.
6. CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:

|                           | HORIZONTAL | VERTICAL COMPACTION |                  |
|---------------------------|------------|---------------------|------------------|
| A. PAVEMENT AREA SUBGRADE | 0.1"+      | +0.0' TO -0.1'      | SEE SOILS REPORT |
| B. ENGINEERED FILL        | 0.5"+      | +0.1' TO -0.1'      | SEE SOILS REPORT |

COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.
7. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.
8. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.
9. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.
10. IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

## SOUTHWEST GAS CONSTRUCTION NOTES

1. IN THE EVENT OF NATURAL GAS EMERGENCIES CALL 911 AND 1-877-860-6020
2. THERE SHALL BE A MINIMUM HORIZONTAL AND VERTICAL CLEARANCE OF 12-INCHES BETWEEN NATURAL GAS FACILITIES AND ANY UNDERGROUND FACILITIES AND/OR STRUCTURES, INCLUDING BUT NOT LIMITED TO WATER, SEWER, STORM DRAIN, COMMUNICATIONS, AND ELECTRIC
3. FOR VALVE ADJUSTMENT CONTACT 702-668-6107 48 HOURS PRIOR TO CONSTRUCTION.
4. IN THE EVENT OF NATURAL GAS CONFLICT WITH PROPOSED UTILITIES AND/OR STRUCTURES CONTACT 702-365-2099

### CAUTION: HIGH PRESSURE GAS

CALL SOUTHWEST GAS AT 702-400-1789 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES 48 HOURS PRIOR TO CONSTRUCTION

## 2.1 CITY OF LAS VEGAS GENERAL NOTES

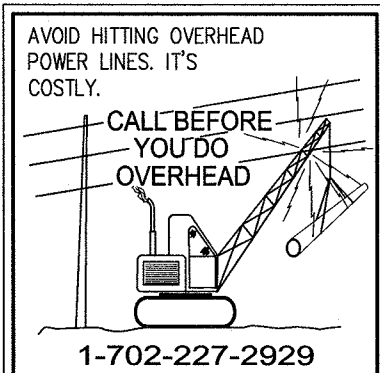
1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA", LATEST ISSUE, THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY, THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".
2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS, EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE AND UNDERGROUND AND STANDARDS INTERFERENCES WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL, AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORILY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.
4. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.
5. TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK, CONCRETE TO BE 3000 PSI MINIMUM @ 28 DAYS, MAX DESIGNS TO BE APPROVED BY THE CITY, PRIOR TO THE USE ON THE PROJECT.
6. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.
7. EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.
8. AC PAVEMENT TO BE ONE-HALF INCH (1/2") ABOVE UP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMP AND CROSS GUTTERS.
9. CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER STANDARD DRAWING 216.
10. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.
11. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF THE TRANSITIONS TO BE AS SHOWN ON PLANS.
12. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY GEOTEK RESIDENTIAL, LLC, REPORT #12208-LVR, MARCH 30, 2016 APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.
13. EXACT LOCATION OF ALL SAWMUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD BY A CITY OF LAS VEGAS ENGINEER IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.
14. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH N.R.S. STATUTE NO. 625.380 & CITY OF LAS VEGAS TITLE 18, APPENDIX D.
15. UTILITY COMPANY METER BOXES, MANHOLE LIDS, VALVE COVERS, ETC., SHALL BE LOCATED OUT OF DRIVEWAYS, DRIVEWAY APRONS, FLOWLINES, AND CROSS GUTTERS UNLESS WRITTEN APPROVAL IS GRANTED BY THE UTILITY COMPANY AND THE CITY ENGINEER.

### WALL NOTES:

16. ALL WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL, AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.
17. ASPHALT MIX DESIGN MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER PRIOR TO THE PLACEMENT OF ASPHALT WITHIN CITY RIGHT OF WAY.
18. CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.
19. MATERIALS, HANDLING AND PLACEMENT OF PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF NDOT OR THE CLARK COUNTY AREA SPECIFICATIONS (AS APPLICABLE) AND THE PLANS AND DETAILS SHOWN HEREON.
20. WHEN INSTALLING UNDERGROUND FACILITIES THAT REQUIRE UNDERGROUND LOCATING DEVICES SUCH AS MARKER BALLS, LOCATING RIBBON, ETC., THE CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO OFFSITE INSPECTION AND TESTING CERTIFYING THAT ALL DEVICES HAVE BEEN PLACED AND VERIFIED TO BE IN GOOD WORKING CONDITION PRIOR TO THE CONSTRUCTION OF ANY ROAD BASE.
21. SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S) SHALL BE PROVIDED TO THE CITY AND APPROVED PRIOR TO ACCEPTANCE OF FACILITY VIDEO INSPECTION. THE MAP(S) SHALL INCLUDE THE HORIZONTAL AND VERTICAL (INVERT) LOCATION OF PUBLIC SEWER MANHOLES, STORM DRAIN MANHOLES AND TRANSITION STRUCTURES, STORM DRAIN LATERALS AT THE CONNECTION TO THE STORM DRAIN MAIN AND AT THE CONNECTION TO A DROP INLET, THE CONNECTION OF SEWER SERVICE LATERALS AT THE SEWER MAIN AND WHERE THE SEWER SERVICE LATERALS EXIT THE PUBLIC RIGHT-OF-WAY, AND STORM DRAIN MAIN ALIGNMENT, INCLUDING DEFLECTION POINTS. THE LOCATION SHALL BE DESCRIBED BY COORDINATES WHICH SHALL BE BASED ON THE OFFICIAL HORIZONTAL AND VERTICAL CONTROL NETWORKS OF THE CITY OF LAS VEGAS. FINAL LOCATION MAPS MUST BE SEALED AND CERTIFIED BY A NEVADA PROFESSIONAL LAND SURVEYOR TO HAVE POSITIONAL CERTANTIES OF ±0.09 METERS (±0.3 FEET) HORIZONTALLY AND VERTICALLY. A SEPARATE ELECTRONIC COMMA DELIMITED FILE FOR THE SANITARY SEWER AND STORM DRAIN COORDINATES SHALL ALSO ACCOMPANY THE SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S).
22. CCTV VIDEO INSPECTION IS REQUIRED FOR ALL SEWER AND STORM DRAINS. THE CCTV VIDEO INSPECTIONS NEED TO BE PERFORMED PER THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS LATEST EDITION.
23. A SEPARATE BORING PERMIT IS REQUIRED FOR ALL BORING ACTIVITIES.

## UTILITY LOCATION NOTE TO CONTRACTOR

EXISTING UTILITY LOCATIONS SHOWN HEREIN 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 OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS. CALL BEFORE YOU DIG 1 (800) 227-2600; SOUTHWEST GAS CORPORATION: 702-400-1789 (STANDBY CONTACT NUMBER)



## 2.3 CITY OF LAS VEGAS TRAFFIC NOTES

1. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.
2. THE STREET SIGN CONTRACTOR SHALL OBTAIN STREET NAMES AND BLOCK NUMBERING FROM THE PLANNING DEPARTMENT PRIOR TO CONSTRUCTION.
3. BEFORE ANY WORK IS STARTED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE. THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING CITY STREETS, WHERE WARRANTED IMMEDIATELY AFTER FIRST GRADING WORK IS ACCOMPLISHED, AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED.
4. WHEN A DESIGNATED "SAFE ROUTE TO SCHOOL" IS ENCROACHED UPON BY A CONSTRUCTION WORK ZONE AND PUBLIC WORKS STAFF DETERMINE A NEED FOR STUDENTS TO BE ASSISTED IN THE SAFE CROSSING THROUGH THAT WORK ZONE, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE A QUALIFIED "CROSSING GUARD". THE GUARD SHALL BE PRESENT FOR THE FULL DURATION OF TIME THAT CHILDREN ARE LIKELY TO BE PRESENT.
5. IF THE IMPROVEMENTS NECESSITATE THE OBSTRUCTION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PERMANENT SIGNS SHOWN ON THE PLANS. ALL NEW TRAFFIC SIGNS SHALL BE FABRICATED WITH DIAMOND GRAIN VIB CLASS 6 REFLECTIVE SHEETING OR APPROVED EQUAL. ALL NEW TRAFFIC SIGNS, EXCEPT STREET NAME AND SCHOOL SPEED LIMIT SIGNS, SHALL HAVE 3M SERIES 1160 OR APPROVED EQUIVALENT ANTI-GRAFFITI PROTECTIVE OVERLAY FILM. SCHOOL ZONE SIGNS SHALL HAVE 3M SERIES 1150 ANTI-GRAFFITI PROTECTIVE OVERLAY FILM. STREET NAME SIGNS SHALL CONFORM IN THEIR ENTIRETY TO CURRENT CITY STANDARDS. ALL OTHER SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL SIGN POSTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY STANDARDS.
7. WHEN A PROPOSED STREET LIGHT STANDARD IS LOCATED WITHIN FIVE (5') FEET OF ANY PROPOSED SIGN SHOWN ON THE PLANS TO BE MOUNTED ON A SIGNPOST, THE SIGN SHALL BE MOUNTED ON THE STREET LIGHT STANDARD AND THE SIGNPOST SHALL BE ELIMINATED.
8. ALL PERMANENT TRAFFIC CONTROL DEVICES CALLED FOR HEREON SHALL BE IN PLACE AND IN FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HERE UNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF-SITE IMPROVEMENTS CALLED FOR BY THESE PLANS.
9. STREET SIGNS AND STOP SIGNS SHALL BE INSTALLED PER CITY STANDARD SPECIFICATIONS FOR PLACEMENT OF STREET NAME SIGNS.
10. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES AND FLAGGERS TO INSURE THE SAFETY OF THE PUBLIC IN OR AROUND THE WORK AREA. THE CONTRACTOR SHALL HAVE A CERTIFIED ATSSA TRAFFIC CONTROL TECHNICIAN OR NUSA WORK ZONE SAFETY SPECIALIST SET UP, MAINTAIN AND/OR REMOVE ALL TRAFFIC CONTROL DEVICES IN THE CITY OF LAS VEGAS RIGHT OF WAY.
11. WORK IN PUBLIC STREETS, ONCE BEGIN, SHALL BE EXPEDITED TO COMPLETION SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING CITIZENS AREA TRANSIT (C.A.T.) IF THE CONSTRUCTION INTERRUPTS OR RELOCATES A BUS STOP OR HAS AN ADVERSE EFFECT ON BUS SERVICE ON THAT STREET TO ARRANGE FOR TEMPORARY RELOCATION OF STOP.
13. GUARDS SHALL BE OBTAINED BY CONTACTING THE METROPOLITAN POLICE DEPARTMENT SPECIAL EVENTS UNIT (PHONE # 829-1442) WHO WILL PROVIDE OFFICERS PROPERLY TRAINED IN TRAFFIC CONTROL. FEES FOR THE USE OF THESE OFFICERS SHALL BE SET BY THE METRO AND WILL BE PAID BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ALL ARRANGEMENTS WITH METRO.
14. ANY WORK WITHIN 300' OF A SIGNALIZED INTERSECTION WILL BE NIGHT WORK, UNLESS OTHERWISE DIRECTED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEER.
15. THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEERING DIVISION (TRANSPORTATION SECTION) THROUGH THE PROJECT'S OFFSITE INSPECTOR PRIOR TO INITIATING PAVING TO RECEIVE DIRECTION FOR ANY PERMANENT MODIFICATIONS TO THE APPROVED DRAWINGS REGARDING FINAL PAVEMENT TRANSITIONS, MARKINGS AND SIGNING THAT ARE REQUIRED TO MATCH ADJACENT ROADWAY SEGMENTS. THE CONTRACTOR SHALL PROVIDE A DRAWING FOR APPROVAL BY THE TRAFFIC ENGINEERING DIVISION DEPICTING ANY ADJUSTMENTS TO THE FINAL PAVEMENT MARKINGS AND SIGNAGE, WHICH MAY INCLUDE OMITTING, ADDING OR MODIFYING PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNS SUCH AS LOCATING TRANSITIONS AND LANE TERMINATIONS BETWEEN ADJACENT ROADWAY SEGMENTS ARE CONSTRUCTED.

## 2.4 CITY OF LAS VEGAS STREETLIGHT NOTES

1. ALL STREET LIGHTING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE STREET LIGHTING PLANS, THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST REVISION, AND THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST REVISION, AND ANY ADOPTED SPECIAL AREA STANDARDS.
2. NO DEVIATION OF STREET LIGHT, PULL BOX, CONDUITS (ETC.) LOCATIONS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF TRAFFIC ENGINEERING AND THE CITY ENGINEER.
3. ALL EXISTING STREET LIGHTING SHALL REMAIN OPERATIONAL DURING CONSTRUCTION.
4. ALL STREET LIGHTING CONDUITS STUB SHALL HAVE AT LEAST ONE GREEN #8 THW WIRE INSTALLED, AS TRACER WIRE. WHEN "EMPTY" CONDUIT IS COMPLETELY INSTALLED FROM PS TO PB, IT SHALL HAVE MINIMUM OF 2 #4 AND 1 #8 THW WIRE WITH THE ENDS TAPED OR "SAFE OFF" PRIOR TO FINAL INSPECTION.
5. ANY STRUCTURE SUCH AS BLOCK WALLS, CHAIN LINK FENCES, RETAINING WALLS, ETC., SHALL LEAVE A MINIMUM CLEARANCE IN ACCORDANCE WITH THE US DOW 302A.
6. AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE TETO PRIOR TO ANY PRE-FINAL INSPECTION. THE AS-BUILT DRAWING NEEDS TO BE STAMPED, AS-BUILT AND SIGNED BY THE PREPARED.
7. SERVICE POINT SHALL BE COORDINATED WITH NV ENERGY COMPANY, AND WHENEVER POSSIBLE, BE LOCATED NEAR THE CENTER OF THE CIRCUIT. SERVICE POINTS SHALL BE SHOWN ON THE CIVIL PLANS.
8. IT SHALL BE ASSUMED THAT IN THE ABSENCE OF AN EXISTING, WORKABLE CIRCUIT TO ATTACH TO, ALL INSTALLATIONS SHALL REQUIRE A NEW SERVICE FOR OPERATION OF THE CIRCUIT.
9. WHEREVER THERE IS AN OVERHEAD UTILITY THAT MAY CONFLICT WITH THE INSTALLATION OF STREET LIGHTING CIRCUITS AND/OR POLES, THESE CONFLICTS MUST BE RESOLVED BETWEEN THE DEVELOPER AND THE UTILITIES INVOLVED, AT NO EXPENSE TO THE CITY OF LAS VEGAS, BEFORE STREETLIGHT BASES ARE INSTALLED.
10. THE CONTRACTOR SHALL FURNISH COMPLETE SERVICE TO TRANSFORMERS AND CONTROL SYSTEMS IF REQUIRED ON PLANS.
11. THE DEVELOPER/OWNER WILL BE REQUIRED TO SUPPLY POWER TO ALL NEW PUBLIC STREET LIGHTS INSTALLED UNDER THIS DESIGN PRIOR TO BOND RELEASE OR PROJECT COMPLETION. THE DEVELOPER/OWNER WILL BE RESPONSIBLE FOR ALL ITEMS ASSOCIATED WITH THE INSTALLATION, CONSTRUCTION, ENERGIZING, MAINTENANCE AND OPERATIONAL COST OF SAID STREET LIGHTS PRIOR TO PROJECT COMPLETION. REFER TO THE CITY OF LAS VEGAS FOR ANY NEW SERVICE REQUIREMENTS. THE TRANSFER OF OWNERSHIP/OWNER TO THE CITY OF LAS VEGAS FOR ALL NEW PUBLIC STREET LIGHT(S) AND/OR SERVICE(S) INSTALLED UNDER THIS PLAN DESIGN WILL BE IN CONJUNCTION WITH THIS PROJECT COMPLETION. COORDINATE ALL MAINTENANCE AND OPERATIONAL TRANSFERS WITH THE CITY OF LAS VEGAS TRAFFIC ENGINEERING DEPARTMENT (TETO) AT (702) 229-6331.

## APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER  
DATE PROJECT NO. #####  
LVVWD APPROVED FIRE FLOW XXXX GPM AT 20 PSI RESIDUAL

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

CITY OF LAS VEGAS, NV

913  
919  
811  
P-R

DATE: 8/10/17

DRAFTER: JM

DESIGNER: MAK

CHECKED: TM

PROJECT NO.  
OLY1607-005

TIMOTHY M. MULROONEY  
CIVIL  
No. 22938  
8/10/17

C-2  
SHEET 2 OF 18



I:\1607-005\skye canyon parcel 2.27.dwg (temp) Job: 1607-005 created: 8/9/2017 4:33 PM Jesse McSpadden

## ABBREVIATIONS

|             |                                                           |           |                                       |           |                                 |
|-------------|-----------------------------------------------------------|-----------|---------------------------------------|-----------|---------------------------------|
| AC          | ASPHALTIC CONCRETE OR ACRE                                | FUT       | FUTURE                                | QTY       | QUANTITY                        |
| AGG         | AGGREGATE BASE                                            | GRD       | GRADE OR GROUND                       | R         | RADIUS                          |
| APN         | ASSESSORS PARCEL NUMBER                                   | GB        | GRADE BREAK OR GRADE CHANGE           | RCA       | REINFORCED CONCRETE ARCH        |
| APPROX OR ~ | APPROXIMATE                                               | GV        | GATE VALVE                            | RCB       | REINFORCED CONCRETE BOX         |
| AVE         | AVENUE                                                    | HDP       | HIGH DENSITY POLYETHYLENE             | RCP       | REINFORCED CONCRETE PIPE        |
| Ø           | AT                                                        | HOA       | HOME OWNERS ASSOCIATION               | RD        | ROAD                            |
| BC          | BEGIN CURVE OR BACK OF CURB                               | HORIZ     | HORIZONTAL                            | RDWY ESMT | ROADWAY EASEMENT                |
| BCR         | BEGINNING OF CURB RETURN                                  | HP        | HIGH POINT                            | REQD      | REQUIRED                        |
| BHW         | BOTTOM OF HEADWALL                                        | HWL       | HIGH WATER LEVEL                      | REV       | REVISION                        |
| BLDG        | BUILDING                                                  | HWL OR HW | HEADWALL                              | RG        | ROUGH GRADE                     |
| BLVD        | BOULEVARD                                                 | HYD       | HYDRAULIC OR HYDRANT                  | RT OR R   | RIGHT                           |
| BM          | BENCHMARK                                                 | ID        | INSIDE DIAMETER                       | R/W, ROW  | RIGHT OF WAY                    |
| BVC         | BEGIN VERTICAL CURVE                                      | IN        | INCH                                  | S         | SLOPE                           |
| BWV         | BACK WATER VALVE                                          | INT       | INTERSECTION                          | SCH       | SCHEDULE                        |
| CC          | CLARK COUNTY                                              | INV       | INVERT ELEVATION                      | SD        | STORM DRAIN                     |
| CCAU        | CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS               | IP        | IRON PIPE                             | SDI       | STORM DRAIN DROP INLET          |
| CCPW        | CLARK COUNTY PUBLIC WORKS                                 | IRRG      | IRRIGATION                            | SDMH      | STORM DRAIN MANHOLE             |
| CCRFCD      | CLARK COUNTY REGIONAL FLOOD DISTRICT                      | LF        | LINEAR FEET                           | SEC       | SECTION                         |
| CCWRD       | CLARK COUNTY WATER RECLAMATION DISTRICT                   | LP        | LOW POINT                             | SF        | SQUARE FEET                     |
| CE          | COMMON ELEMENT                                            | LT OR L   | LEFT                                  | SHT       | SHEET                           |
| CLC/LC      | CENTERLINE                                                | LVWD      | LAS VEGAS VALLEY WATER DISTRICT       | SNWA      | SOUTHERN NEVADA WATER AUTHORITY |
| CLR         | CLEAR OR CLEARANCE                                        | LWL       | LOW WATER LEVEL                       | SPCS      | SPECIFICATIONS                  |
| CLSM        | CONTROLLED LOW STRENGTH MATERIAL                          | MAX       | MAXIMUM                               | ST        | STREET                          |
| CM&C        | CEMENT MORTAR LINED AND COATED                            | MECH      | MECHANICAL                            | SSMH      | SANITARY SEWER MANHOLE          |
| CMU         | CONCRETE MASONRY UNIT                                     | MH        | MANHOLE                               | STA       | STATION                         |
| CONC        | CONCRETE                                                  | MIN       | MINIMUM                               | STD       | STANDARD                        |
| CT          | COURT                                                     | MISC      | MISCELLANEOUS                         | STL       | STEEL OR STREET LIGHT           |
| CY OR CU YD | CUBIC YARD                                                | MUE       | MUNICIPAL UTILITY EASEMENT            | SW        | SIDEWALK                        |
| DCWCS       | DESIGN AND CONSTRUCTION FOR WASTEWATER COLLECTION SYSTEMS | NDOT      | NEVADA DEPARTMENT OF TRANSPORTATION   | SWG       | SOUTHWEST GAS                   |
| DET         | DETAIL                                                    | NPC       | NEVADA POWER COMPANY                  | SWR OR SS | SANITARY SEWER                  |
| DI          | DUCTILE IRON OR DRAIN INLET                               | NTS       | NOT TO SCALE                          | SY        | SQUARE YARD                     |
| DIA, Ø      | DIAMETER                                                  | NUE       | NONEXCLUSIVE UTILITY EASEMENT         | TAN       | TANGENT                         |
| DIP         | DUCTILE IRON PIPE                                         | OC        | ON CENTER                             | TC        | TOP OF CURB                     |
| DR          | DRIVE                                                     | OD        | OUTSIDE DIAMETER OR OVERALL DIMENSION | TCO       | TRAFFIC CONTROL DEVICE          |
| DWS(S)      | DRAWING                                                   | OFF       | OFFSET                                | TF        | TOP OF FLOOR OR TOP OF FOOTING  |
| DWY         | DRIVEWAY                                                  | ORIG      | ORIGINAL                              | TG        | TOP OF GRATE                    |
| EA          | EACH                                                      | PAE       | PUBLIC OR PEDESTRIAN ACCESS EASEMENT  | THRU      | THROUGH                         |
| ECR         | END CURB RETURN                                           | PB        | PULL BOX                              | THW       | TOP OF HEADWALL                 |
| EG          | EXISTING GROUND                                           | PC        | POINT OF CURVE                        | TP        | TOP OF PIPE                     |
| EL          | ELEVATION                                                 | PCC       | POINT OF COMPOUND CURVE               | TW        | TOP OF WALL                     |
| ESMT        | EASEMENT                                                  | PDE       | PUBLIC DRAINAGE EASEMENT              | TRW       | TOP OF RETAINING WALL           |
| EP          | EDGE OF PAVEMENT                                          | P OR PL   | PROPERTY LINE                         | TSW       | TOP OF SCREEN WALL              |
| EVC         | END VERTICAL CURVE                                        | PBE       | POINT OF BEGINNING                    | TYP       | TYPICAL                         |
| EX OR EXIST | EXISTING                                                  | POC       | POINT OF CURVATURE                    | UDACS     | UNIFORM DESIGN AND CONSTRUCTION |
| FC          | FACE OF CURB                                              | POE       | POINT OF ENDING                       | VC        | VERTICAL                        |
| FF          | FINISHED FLOOR                                            | PRC       | POINT OF REVERSE CURVATURE            | VERT      | VERTICAL                        |
| FG          | FINISHED GRADE                                            | PRELIM    | PRELIMINARY                           | VG        | VALLEY GUTTER                   |
| FGH         | FINISHED GRADE, HIGH SIDE                                 | PROP      | PROPOSED                              | WI        | WROUGHT IRON                    |
| FGL         | FINISHED GRADE, LOW SIDE                                  | PRV       | PRESSURE REDUCING VALVE               | WL        | WATER LINE                      |
| FI          | FIRE HYDRANT                                              | PUE       | PUBLIC UTILITY EASEMENT               | WPZ       | WATER PRESSURE ZONE             |
| FL          | FLOWLINE                                                  | PT        | POINT OF TANGENT OR POINT             | WT        | WEIGHT                          |
| FT          | FEET OR FOOT                                              | PVC       | POLYVINYL CHLORIDE                    | WTR       | WATER LINE                      |
|             |                                                           | PVI       | POINT OF VERTICAL INTERSECTION        |           |                                 |

## SPECIAL NOTE

IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED WHICH IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CLARK COUNTY DEPT. OF PUBLIC WORKS. TEMPORARY CONSTRUCTION ITEMS INCLUDE: PAVEMENT TRANSITIONS, PROTECTIVE DITCHES AND BERMS, ROAD SIGNS AND BARRICADES, ETC.

## NOTICE TO CONTRACTOR

-QUANTITIES SHOWN ARE ESTIMATES ONLY AND ARE INTENDED TO ILLUSTRATE SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT QUANTITIES INVOLVED.

-EXISTING UTILITY LOCATIONS SHOWN HEREIN 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 OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS. CALL BEFORE YOU DIG. (800) 227-2600

## LEGEND

| EXISTING | PROPOSED | DESCRIPTION                                                |
|----------|----------|------------------------------------------------------------|
|          |          | 5' CONTOUR                                                 |
|          |          | 1' CONTOUR                                                 |
|          |          | STRIPING                                                   |
|          |          | SEWER MANHOLE                                              |
|          |          | CURB AND GUTTER                                            |
|          |          | SANITARY SEWER PIPE AND FLOW ARROW                         |
|          |          | WATER PIPE                                                 |
|          |          | WATER GATE VALVE                                           |
|          |          | FIRE HYDRANT                                               |
|          |          | WATER BLOW-OFF                                             |
|          |          | WATER LATERAL W/ METER                                     |
|          |          | SANITARY SEWER LATERAL                                     |
|          |          | STREETLIGHT                                                |
|          |          | EDGE OF PAVEMENT                                           |
|          |          | TRAFFIC SIGN                                               |
|          |          | PAD ELEVATION                                              |
|          |          | FINISHED FLOOR ELEVATION                                   |
|          |          | ELEVATION                                                  |
|          |          | RETAINING WALL                                             |
|          |          | STORM DRAIN W/ MANHOLE                                     |
|          |          | EXISTING GAS GATE VALVE                                    |
|          |          | EXISTING UNKNOWN MANHOLE                                   |
|          |          | EXISTING GAS, SIZE PER PLAN                                |
|          |          | EXISTING POWER POLE                                        |
|          |          | EXISTING TRAFFIC SIGNAL                                    |
|          |          | EXISTING WALL                                              |
|          |          | WATER PIPE FITTING                                         |
|          |          | WATER POINT OF CONNECTION                                  |
|          |          | SEWER POINT OF CONNECTION                                  |
|          |          | DAYLIGHT LINE                                              |
|          |          | STREET CENTERLINE                                          |
|          |          | RIGHT-OF-WAY                                               |
|          |          | MATCHLINE                                                  |
|          |          | BOUNDARY LINE                                              |
|          |          | PHASE LINE                                                 |
|          |          | PROPERTY LINE                                              |
|          |          | FLOWLINE                                                   |
|          |          | SAWCUT                                                     |
|          |          | CUT/FILL TRANSITION LINE                                   |
|          |          | SIDEWALK                                                   |
|          |          | EX STRIPING TO BE OBLITERATED                              |
|          |          | GRADE BREAK LINE                                           |
|          |          | REFLECTIVE RAISED PAVEMENT MARKERS                         |
|          |          | BACK WATER VALVE                                           |
|          |          | WROUGHT IRON FENCE                                         |
|          |          | PONY WALL                                                  |
|          |          | DECORATIVE PERIMETER WALL                                  |
|          |          | DECORATIVE PERIMETER RETAINING WALL                        |
|          |          | PROPOSED CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB |
|          |          | EXISTING CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB |
|          |          | FUTURE CURB AND GUTTER WITH RIGHT-OF-WAY AT BACK OF CURB   |
|          |          | PROPOSED SCARP AREA                                        |
|          |          | DRIVEWAY                                                   |
|          |          | PROPOSED RIP RAP                                           |
|          |          | SIGHT VISIBILITY ZONE PER STD DWG NO. 201.2                |
|          |          | HANDICAP RAMP                                              |

## QUANTITIES

|                                                               | PRIVATE  | PUBLIC |
|---------------------------------------------------------------|----------|--------|
| <b>DRAINAGE</b>                                               |          |        |
| 1. 60" TYPE III STORM DRAIN MANHOLE                           | EA 1     | -      |
| 2. 5.0' TYPE "CM2" DROP INLET                                 | EA 1     | -      |
| 3. 10.0' TYPE "CM2" DROP INLET                                | EA 2     | -      |
| 4. 24" RCP CLASS IV STORM DRAIN                               | LF 44    | -      |
| 5. 30" RCP CLASS IV STORM DRAIN                               | LF 42    | -      |
| 6. 36" RCP CLASS IV STORM DRAIN                               | LF 144   | -      |
| 7. 8' WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE | SF 5,120 | -      |
| 8.                                                            |          |        |
| <b>SEWER SYSTEM</b>                                           |          |        |
| 1.                                                            |          |        |
| 2.                                                            |          |        |
| 3.                                                            |          |        |
| 4.                                                            |          |        |
| 5.                                                            |          |        |
| 6.                                                            |          |        |
| 7.                                                            |          |        |
| <b>WATER SYSTEM</b>                                           |          |        |
| 1.                                                            |          |        |
| 2.                                                            |          |        |
| 3.                                                            |          |        |
| 4.                                                            |          |        |
| 5.                                                            |          |        |
| 6.                                                            |          |        |
| 7.                                                            |          |        |
| 8.                                                            |          |        |
| 9.                                                            |          |        |
| 10.                                                           |          |        |
| 11.                                                           |          |        |
| 12.                                                           |          |        |
| 13.                                                           |          |        |
| 14.                                                           |          |        |
| 15.                                                           |          |        |
| 16.                                                           |          |        |
| <b>STREET IMPROVEMENTS</b>                                    |          |        |
| 1.                                                            |          |        |
| 2.                                                            |          |        |
| 3.                                                            |          |        |
| 4.                                                            |          |        |
| 5.                                                            |          |        |
| 6.                                                            |          |        |
| 7.                                                            |          |        |
| <b>TRAFFIC SIGNALS</b>                                        |          |        |
| 1.                                                            |          |        |
| 2.                                                            |          |        |
| 3.                                                            |          |        |
| 4.                                                            |          |        |
| 5.                                                            |          |        |
| 6.                                                            |          |        |
| 7.                                                            |          |        |
| 8.                                                            |          |        |
| <b>DRY UTILITIES</b>                                          |          |        |
| 1.                                                            |          |        |
| 2.                                                            |          |        |
| 3.                                                            |          |        |
| 4.                                                            |          |        |
| 5.                                                            |          |        |

## APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER

DATE PROJECT No. ADD FIELD  
LVVWD APPROVED FIRE FLOW FIELD GPM AT 20 PSI RESIDUAL



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

CITY OF LAS VEGAS, NV  
NINETY FIVE MANAGEMENT LLC  
SKYE CANYON II PARCEL 2.27  
LEGEND, ABBREVIATIONS, AND QUANTITIES

S12  
S19  
R39

DATE: 8/10/17  
DRAFTER: JM  
DESIGNER: MAK  
CHECKED: TM  
PROJECT NO.  
OLY1607-005

TIMOTHY M. MULROONEY  
CIVIL  
Exp. 12/31/2017  
No. 22938

C-3  
SHEET 3 OF 18



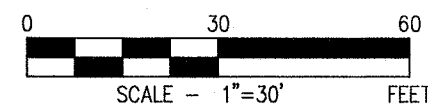
1-161607-005 skye canyon parcel 2.27 (unshaded) 1607-005 grading 8/10/2017 4:34 PM Jesse McQuinn



MATCHLINE - SEE SHEET G-2

MATCHLINE - SEE SHEET G-3

MATCHLINE - SEE SHEET G-4



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 OBSOLETE 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 2801.00)

#### SOILS REPORT

SOILS REPORT BY GEOTECH RESIDENTIAL, LLC  
PROJECT NO. 12208-LVR DATED March 30, 2016

#### EARTHWORKS

EARTHWORK QUANTITIES (RAW):  
CUT = 46,306 CU YDS  
FILL = 149,766 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 SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED UP 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

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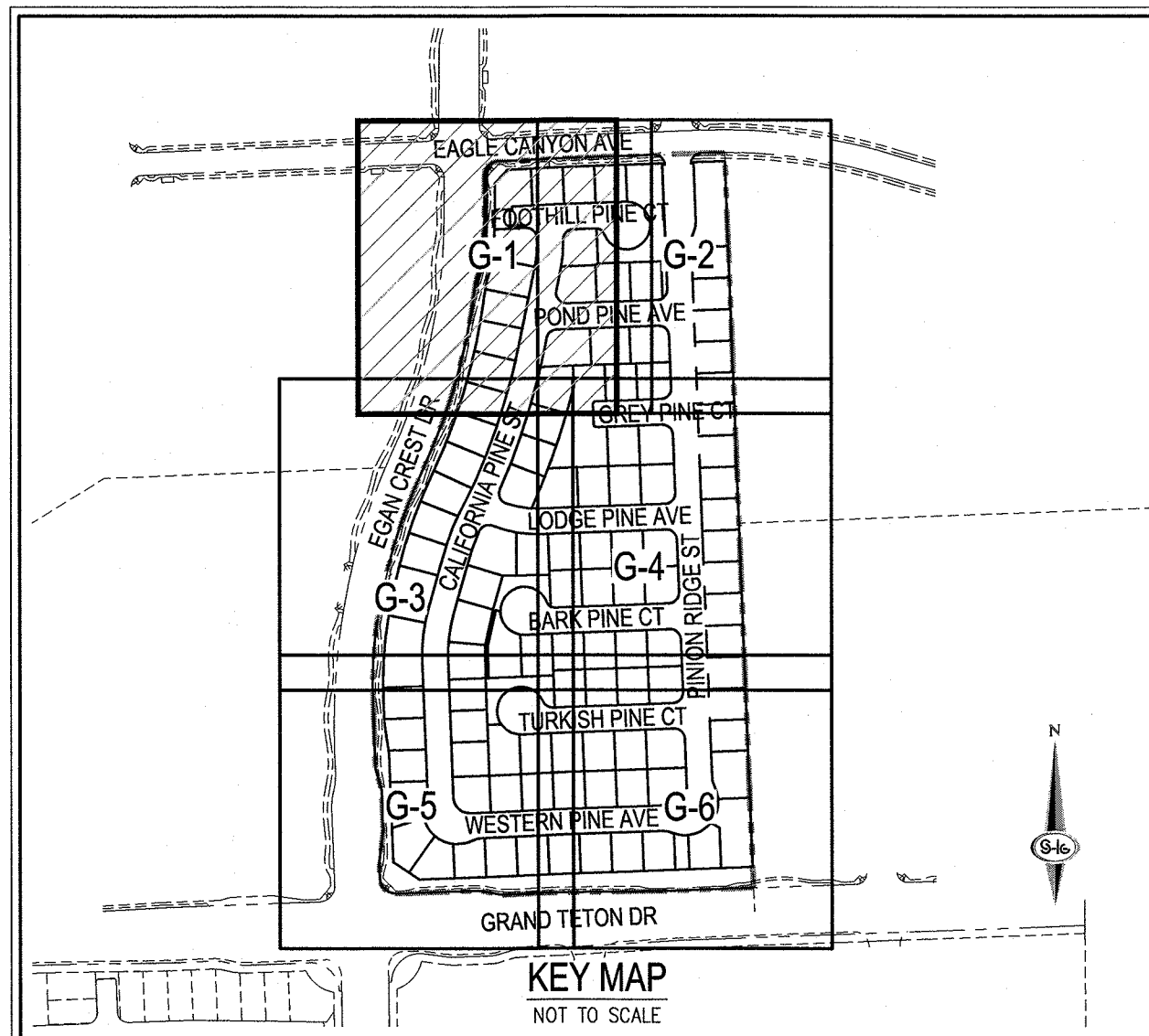
#### LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(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 NV100000, 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 NV100000, SECTION III.A.12.
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THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DERIVED FROM FLOOD INSURANCE RATE MAP (FIRM) PANEL 23003C1750E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.



#### GRADING NOTES

- FIELD VERIFY AND CONNECT TO EXISTING CURB, GUTTER AND/OR SIDEWALK
- CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.51. CURB FLOW LINES LESS THAN 0.80% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT PASS SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY.
- CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD NO. 216
- CONSTRUCT "A" TYPE ISLAND CURB PER CCAUSD NO. 219
- CONSTRUCT 10" ROLL CURB TO L CURB TRANSITION PER DETAIL 21 ON SHEET G-2
- CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
- CONSTRUCT 8' WIDE CROSS GUTTER PER DETAIL 20 ON SHEET D-2
- INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235, CASE 1 & 2.35.1
- INSTALL 5.0' TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
- INSTALL 10.0' TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
- INSTALL 48" TYPE III STORM DRAIN MANHOLE PER CCAUSD #406
- PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
- INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
- INSTALL WROUGHT IRON FENCE, DESIGN BY OTHERS
- INSTALL WROUGHT IRON GATES PER DETAIL 37 ON SHEET D-3
- CONSTRUCT 24" WIDE COMMERCIAL DRIVEWAY PER CCAUSD NO. 224
- CONSTRUCT 2' X 4' NDOT TYPE II INLET AND CONCRETE APRON PER NDOT STD. R-4.2.1 AND R-4.2.7. SEE DETAILS ON SHEET D-3

SEE SHEET C-3 FOR ABBREVIATIONS, LEGEND, AND QUANTITIES

#### BONDABLE DRAINAGE QUANTITIES (PRIVATE)

|                                                            |    |       |
|------------------------------------------------------------|----|-------|
| 8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE | SF | 5,120 |
| 60" TYPE III STORM DRAIN MANHOLE                           | EA | 1     |
| 5.0' TYPE "CM2" DROP INLET                                 | EA | 1     |
| 10.0' TYPE "CM2" DROP INLET                                | EA | 2     |
| 24" ROP CLASS IV STORM DRAIN                               | LF | 44    |
| 30" ROP CLASS IV STORM DRAIN                               | LF | 42    |
| 36" ROP CLASS IV STORM DRAIN                               | SF | 144   |

#### DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS PRIVATELY MAINTAINED BY THE H.O.A.

#### FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY #2548929 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

*Timothy J. Mulrooney*  
TIMOTHY J. MULROONEY P.E. 22938

8/10/17  
DATE



| DATE | BY | APP. | DATE |
|------|----|------|------|
|      |    |      |      |

| DESCRIPTION | NO. |
|-------------|-----|
|             |     |

CITY OF LAS VEGAS, NV

**NINETY FIVE MANAGEMENT LLC**  
**SKYE CANYON II PARCEL 2.27**  
**GRADING PLAN I**

DATE: 8/10/17  
DRAFTER: JM  
DESIGNER: MAK  
CHECKED: TM  
PROJECT NO.  
**OLY1607-005**

12/28/2016  
R-89

ENGINEER  
TIMOTHY J. MULROONEY  
Exp. 12/31/2017  
CIVIL  
Professional No. 22938

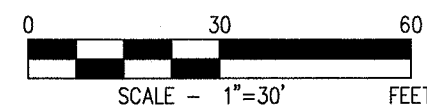
**G-1**  
SHEET 4 OF 18







MATCHLINE - SEE SHEET G-1



#### SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBLISCURED 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 2801.00)

#### SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC  
PROJECT NO. 12208-LVR DATED March 30, 2016

#### EARTHWORKS

EARTHWORK QUANTITIES (RAW):  
CUT= 46,326 CU YDS  
FILL= 149,766 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

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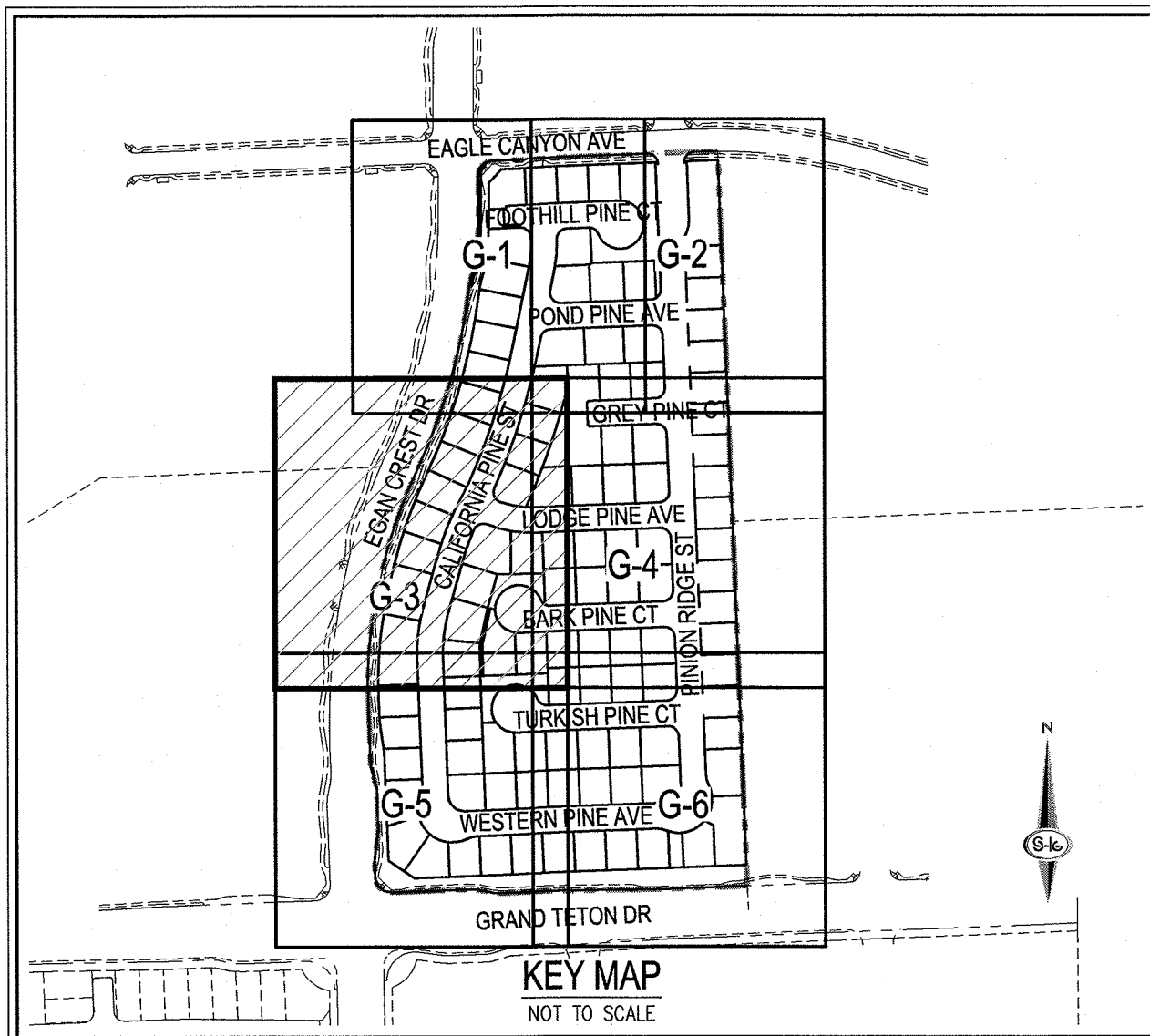
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SEE SHEET C-3 FOR ABBREVIATIONS, LEGEND, AND QUANTITIES

#### BONDABLE DRAINAGE QUANTITIES (PRIVATE)

|                                                            |    |       |
|------------------------------------------------------------|----|-------|
| 8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE | SF | 5,120 |
| 60" TYPE III STORM DRAIN MANHOLE                           | EA | 1     |
| 5.0" TYPE "CM2" DROP INLET                                 | EA | 1     |
| 10.0" TYPE "CM2" DROP INLET                                | EA | 2     |
| 24" RCP CLASS IV STORM DRAIN                               | LF | 44    |
| 30" RCP CLASS IV STORM DRAIN                               | LF | 42    |
| 36" RCP CLASS IV STORM DRAIN                               | SF | 144   |

#### DRAINAGE EASEMENT NOTE

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#### FLOOD CERTIFICATION

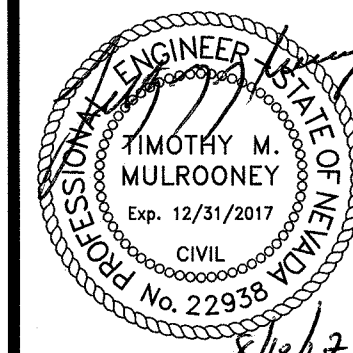
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY #0548992 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

*Timothy M. Mulrooney* 8/10/17  
TIMOTHY M. MULROONEY, P.E. 22938 DATE

| DATE | BY | APP. | DATE |
|------|----|------|------|
|      |    |      |      |

| DESCRIPTION | NO. |
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| NO. | DESCRIPTION |
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K A G DEVELOPMENT WEST LLC  
SKYE CANYON PARCEL 2.21A  
APN: 126-12-80-001  
ZONING CLASSIFICATION: I-D (I-D)  
D:\4201\1509\150901645

MATCHLINE - SEE SHEET G-3

MATCHLINE - SEE SHEET G-4

0 30 60  
SCALE = 1"=30' FEET

#### SURVEY NOTE

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#### SOILS REPORT

SOILS REPORT BY GEOTEK RESIDENTIAL, LLC  
PROJECT NO. 12208-LVR DATED March 30, 2016

#### EARTHWORKS

EARTHWORK QUANTITIES (RAW):  
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FILL= 149,766 CU YDS

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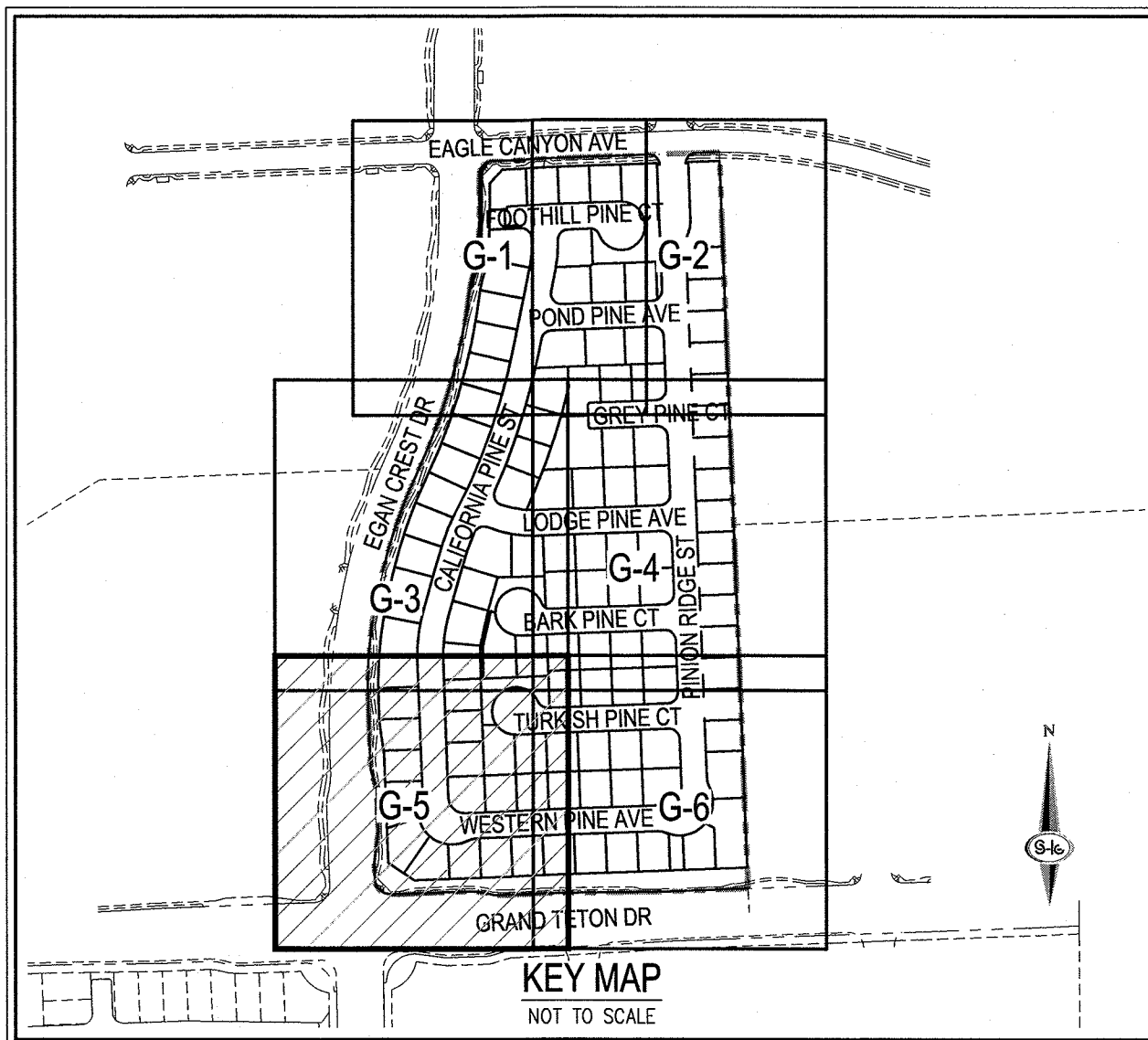
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- INSTALL WROUGHT IRON GATES PER DETAIL 37 ON SHEET D-3
- CONSTRUCT 24' WIDE COMMERCIAL DRIVEWAY PER CCAUSD NO. 224
- CONSTRUCT 2' X 4' NDOT TYPE II INLET AND CONCRETE APRON PER NDOT STD. R-4.2.1 AND R-4.2.2. SEE DETAILS ON SHEET D-3

SEE SHEET C-3 FOR ABBREVIATIONS, LEGEND, AND QUANTITIES

#### BONDABLE DRAINAGE QUANTITIES (PRIVATE)

|                                                            |    |       |
|------------------------------------------------------------|----|-------|
| 8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE | SF | 5,120 |
| 60" TYPE III STORM DRAIN MANHOLE                           | EA | 1     |
| 5.0' TYPE "CM2" DROP INLET                                 | EA | 1     |
| 10.0' TYPE "CM2" DROP INLET                                | EA | 2     |
| 24" RCP CLASS IV STORM DRAIN                               | LF | 44    |
| 30" RCP CLASS IV STORM DRAIN                               | LF | 42    |
| 36" RCP CLASS IV STORM DRAIN                               | SF | 144   |

#### DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS PRIVATELY MAINTAINED BY THE H.O.A.

#### FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY #0345892 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

8/1/17  
DATE

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

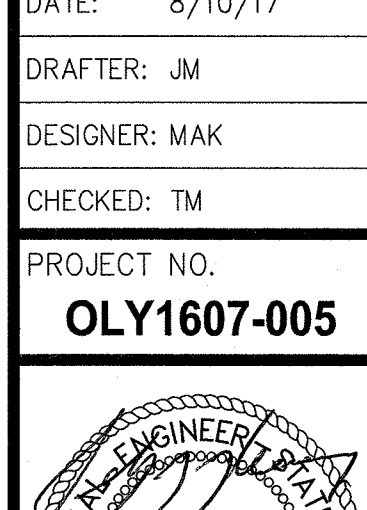
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|      |    |      |

| DESCRIPTION | NO. |
|-------------|-----|
|             |     |

CITY OF LAS VEGAS, NV

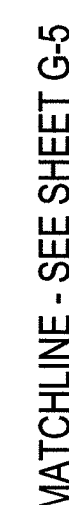
NINETY FIVE MANAGEMENT LLC  
SKYE CANYON II PARCEL 2.27  
GRADING PLAN V

DATE: 8/10/17  
DRAFTER: JM  
DESIGNER: MAK  
CHECKED: TM  
PROJECT NO.  
OLY1607-005

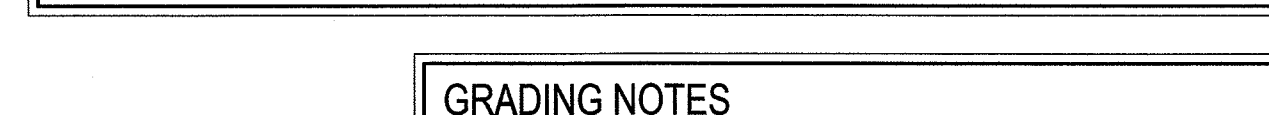


G-5  
SHEET 8 OF 18





\_\_\_\_\_



\_\_\_\_\_

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY #DS4899 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

**Call before you Dig**  
AVOID CUTTING UNDERGROUND

UTILITY LINES. IT'S COSTLY.  
Call

81

OR  
1-800-227-2600

\_\_\_\_\_











J:\01607-005 skye canyon parcel 2.27\dwg\interim\01607-005 grad-int.dwg, 8/9/2017 4:36 PM, Jesse McSpadden

K A G DEVELOPMENT WEST LLC  
SKYE CANYON PARCEL 2.27A  
APR 126-12-80-001 (1-4)  
ZONING: DC420103070000045

K A G DEVELOPMENT WEST LLC  
SKYE CANYON PARCEL 2.27 PHASE 2

MATCHLINE - SEE SHEET G-7

MATCHLINE - SEE SHEET G-8

9-16

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

#### SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS  
SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED,  
DISTURBED, DESTROYED, OR OBLISCURED 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 2801.00)

#### SOILS REPORT

SOILS REPORT BY GEOTECH RESIDENTIAL, LLC  
PROJECT NO. 12208-LVR DATED March 30, 2016  
UPDATED SOILS REPORT BY ADD FIELD  
PROJECT NO. 12208-LVR DATED ADD FIELD

#### EARTHWORKS

EARTHWORK QUANTITIES (RAW):  
CUT= 46,326 CU YDS  
FILL= 149,766 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 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 PRIOR 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 COMMENCEMENTS.
- 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 ZONES.

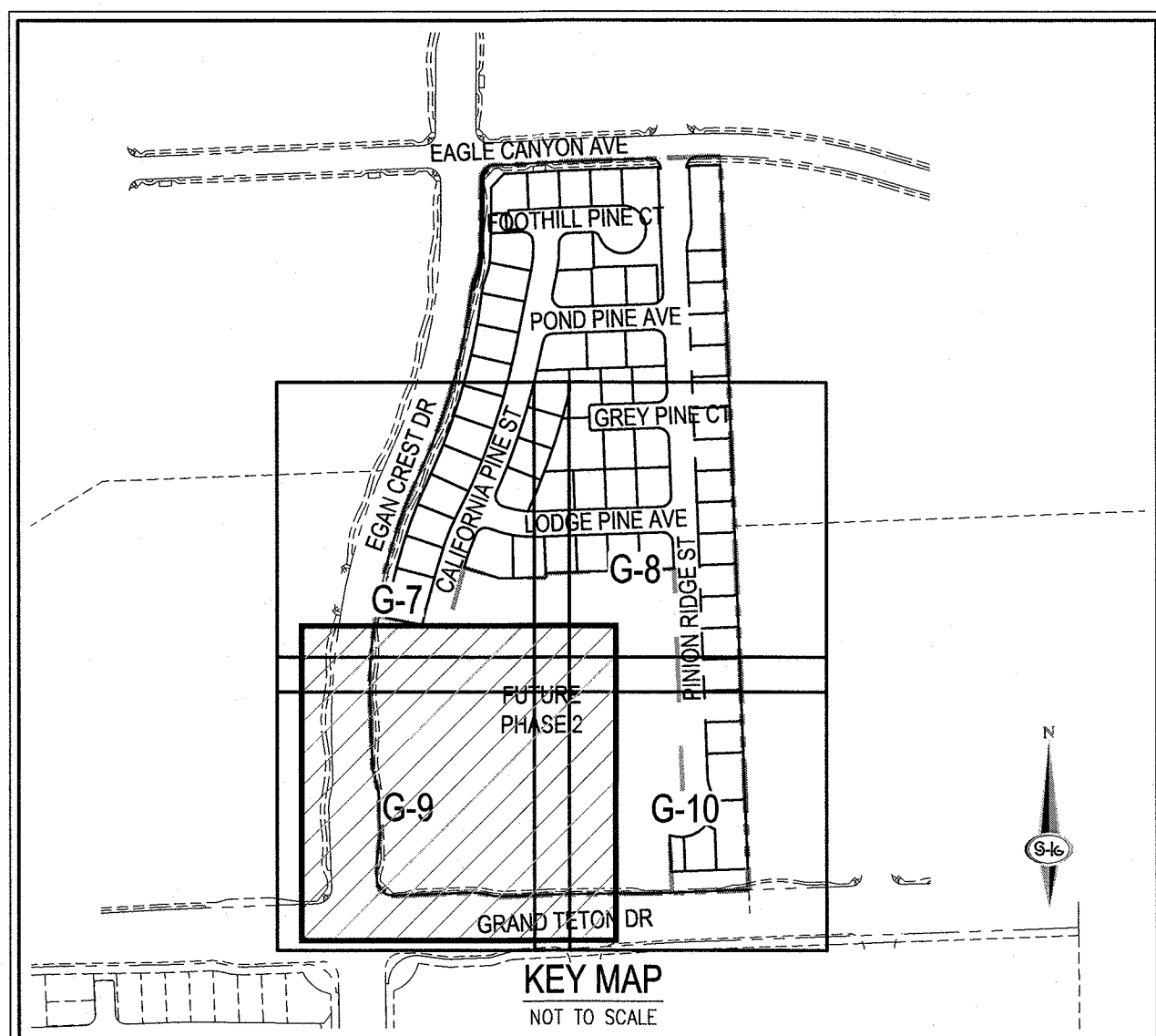
#### LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(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.

#### FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 23003C1750E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.



#### GRADING NOTES

- FIELD VERIFY AND CONNECT TO EXISTING CURB, GUTTER AND/OR SIDEWALK
- CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.51. CURB FLOW LINES LESS THAN 0.60% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY.
- CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD NO. 216
- CONSTRUCT "A" TYPE ISLAND CURB PER CCAUSD NO. 219
- CONSTRUCT 10" ROLL CURB TO L CURB TRANSITION PER DETAIL 21 ON SHEET D-2
- CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
- CONSTRUCT 8" WIDE CROSS GUTTER PER DETAIL 20 ON SHEET D-2
- INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- CONSTRUCT SIDEWALK RAMP USING ARMOR TIF, TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235, CASE 1 & 2.35.1
- INSTALL 5.0' TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
- INSTALL 10.0' TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
- INSTALL 48" TYPE III STORM DRAIN MANHOLE PER CCAUSD #406
- PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
- INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
- INSTALL WROUGHT IRON FENCE, DESIGN BY OTHERS
- INSTALL WROUGHT IRON GATES PER DETAIL 37 ON SHEET D-3
- CONSTRUCT 24" WIDE COMMERCIAL DRIVEWAY PER CCAUSD NO. 224
- CONSTRUCT 2' X 4' NOOD TYPE III INLET AND CONCRETE APRON PER NDOT STD. 4-2.1 AND R-4.2.7. SEE DETAILS ON SHEET D-3
- INSTALL RIP-RAP D50=8", THICKNESS=16" W/6" FINE AGGREGATE BASE (PER SPEC 706.0303) COMPACTED TO 90% OVER FILTER FABRIC

SEE SHEET C-3 FOR ABBREVIATIONS, LEGEND, AND QUANTITIES

#### BONDABLE DRAINAGE QUANTITIES (PRIVATE)

|                                                            | SF | 4,818 |
|------------------------------------------------------------|----|-------|
| 8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE | EA | 1     |
| 60" TYPE III STORM DRAIN MANHOLE                           | EA | 1     |
| 5.0' TYPE "CM2" DROP INLET                                 | EA | 1     |
| 10.0' TYPE "CM2" DROP INLET                                | EA | 2     |
| 24" RCP CLASS IV STORM DRAIN                               | LF | 86    |
| 36" RCP CLASS IV STORM DRAIN                               | LF | 144   |
| RIPRAP D50=8", THK=16"                                     | SF | 611   |

#### DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS PRIVATELY MAINTAINED BY THE H.O.A.

#### FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY #054899 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

*Timothy M. Mulrooney* 8/10/17  
TIMOTHY M. MULROONEY, P.E. 22938 DATE

SLATER HANIFAN GROUP  
CONSULTING ENGINEERS & PLANNERS  
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118  
PHONE (702) 284-5300 FAX (702) 284-5398

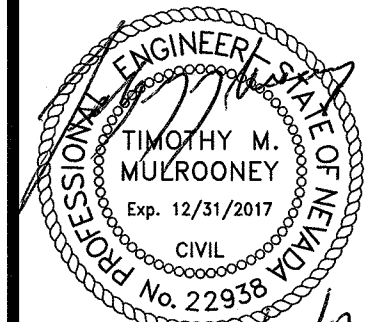
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| DESCRIPTION | NO. |
|-------------|-----|
|             |     |

CITY OF LAS VEGAS, NV

NINETY FIVE MANAGEMENT LLC  
SKYE CANYON II PARCEL 2.27  
PHASE 1 INTERIM GRADING PLAN IX

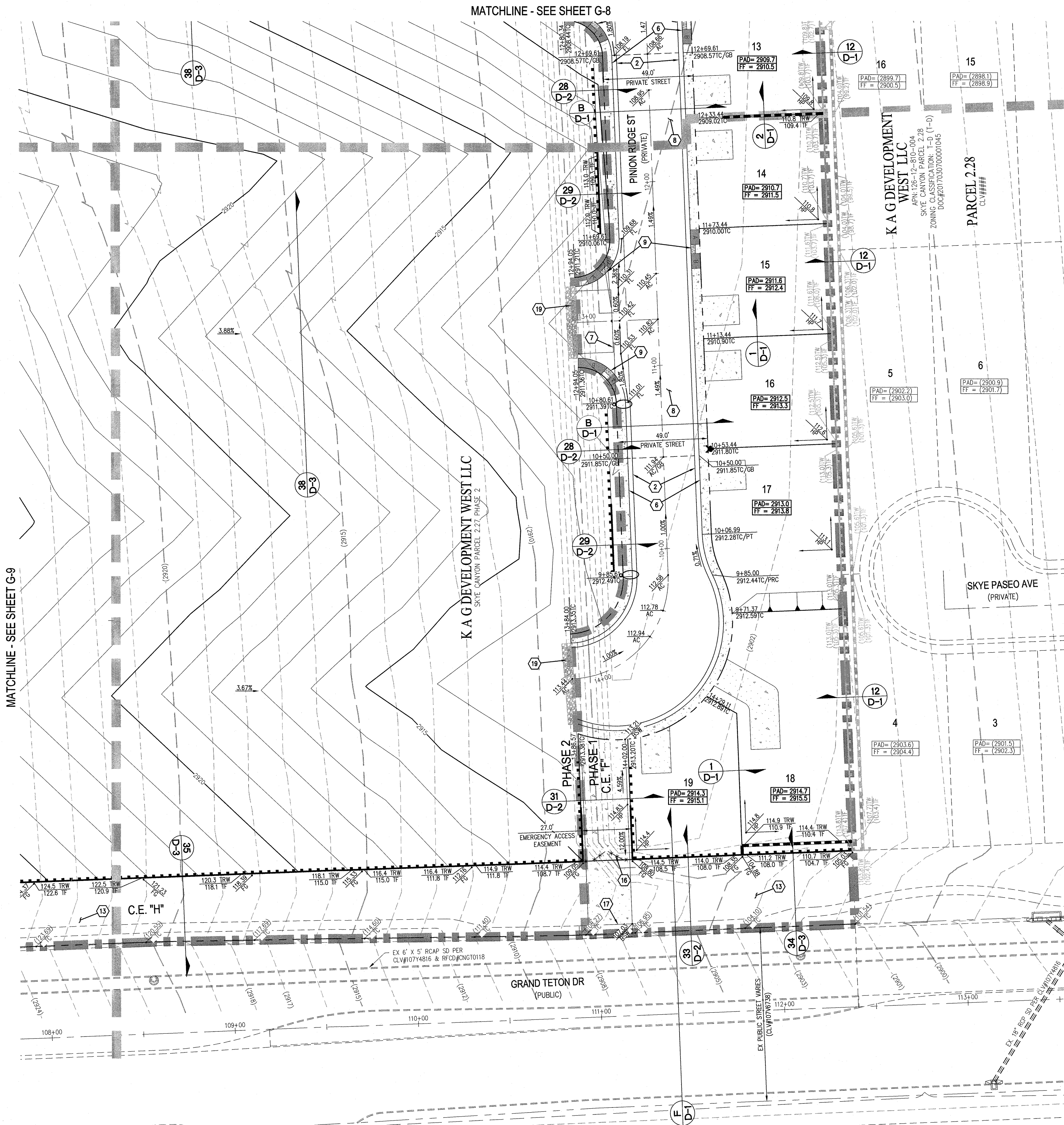
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DRAFTER: JM  
DESIGNER: MAK  
CHECKED: TM  
PROJECT NO. OLY1607-005



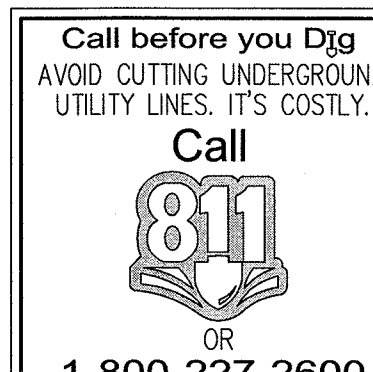
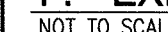
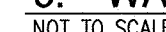
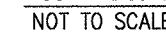
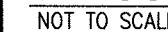
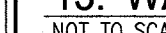
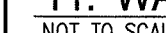
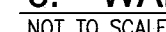
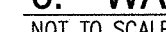
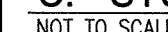
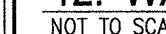
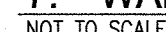
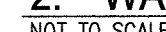
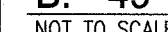
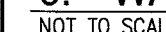
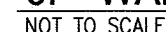
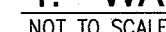
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SHEET 12 OF 18



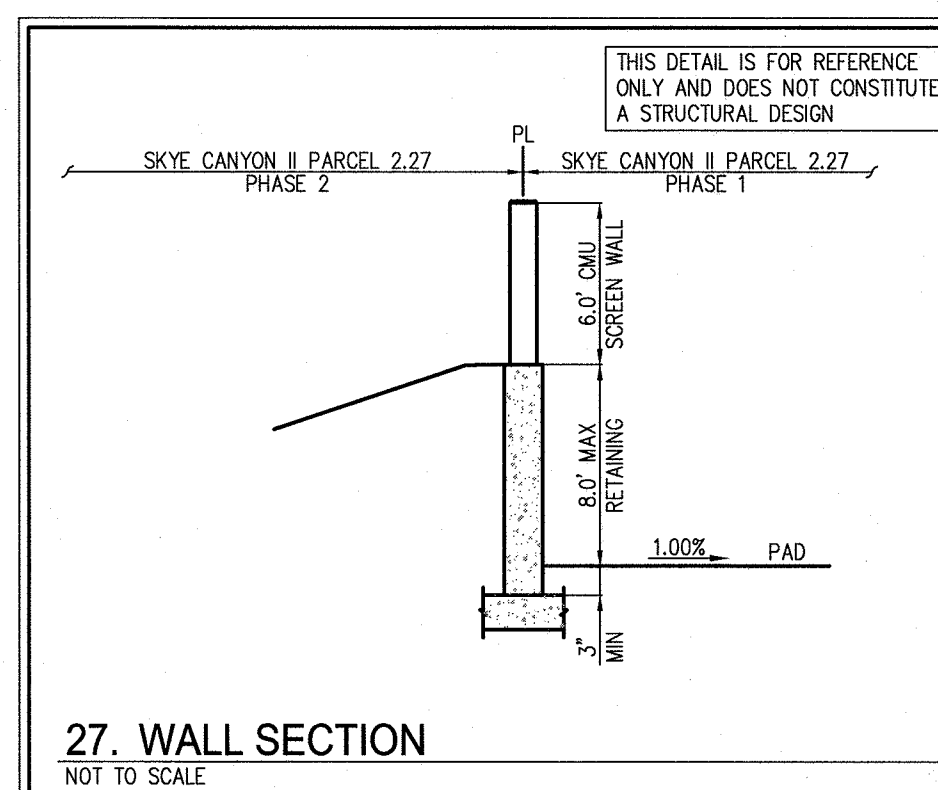
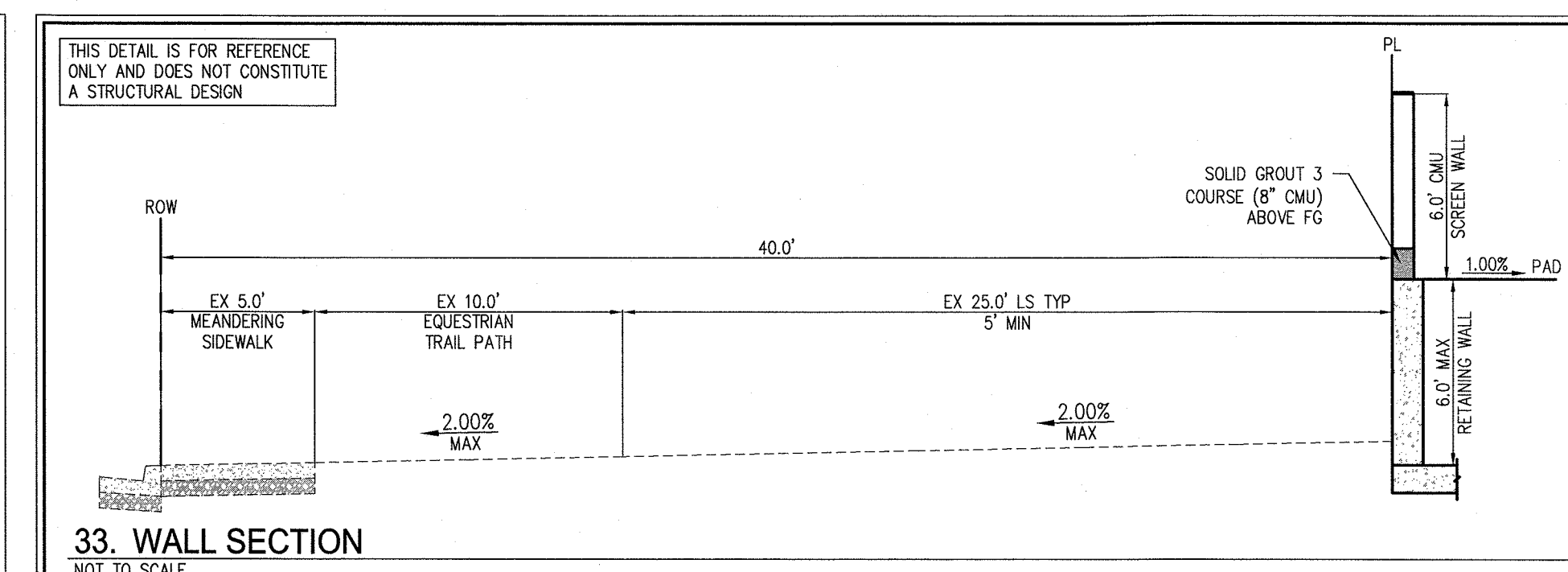
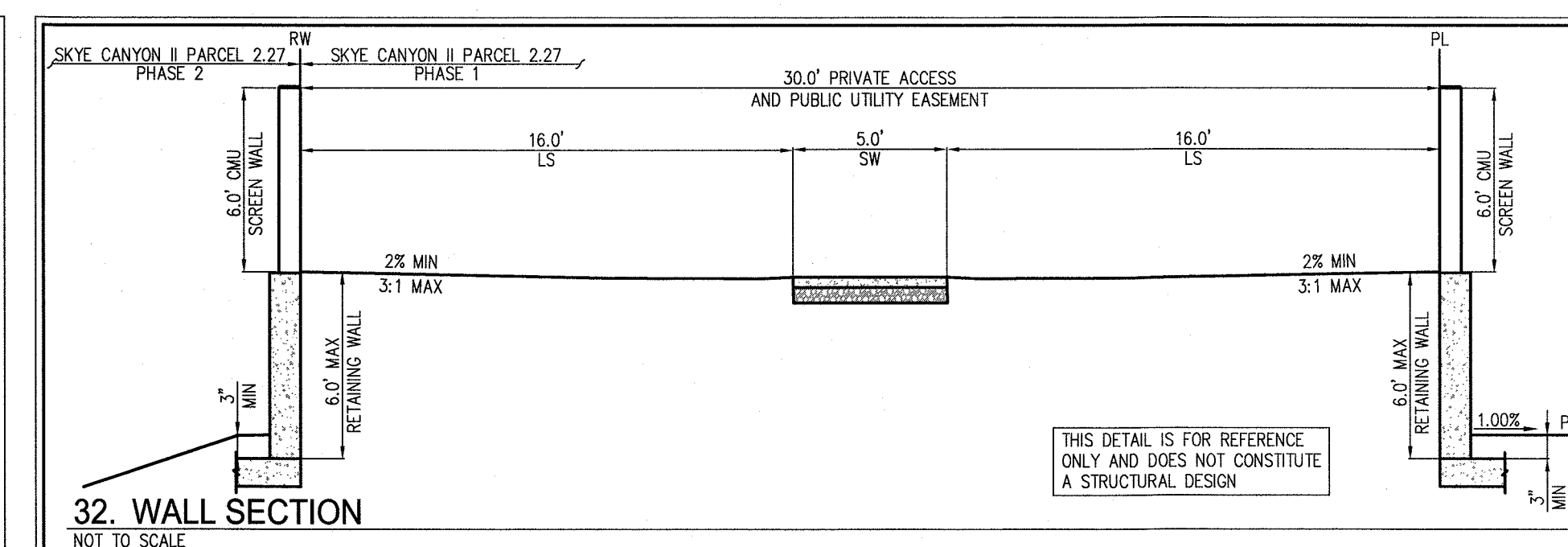
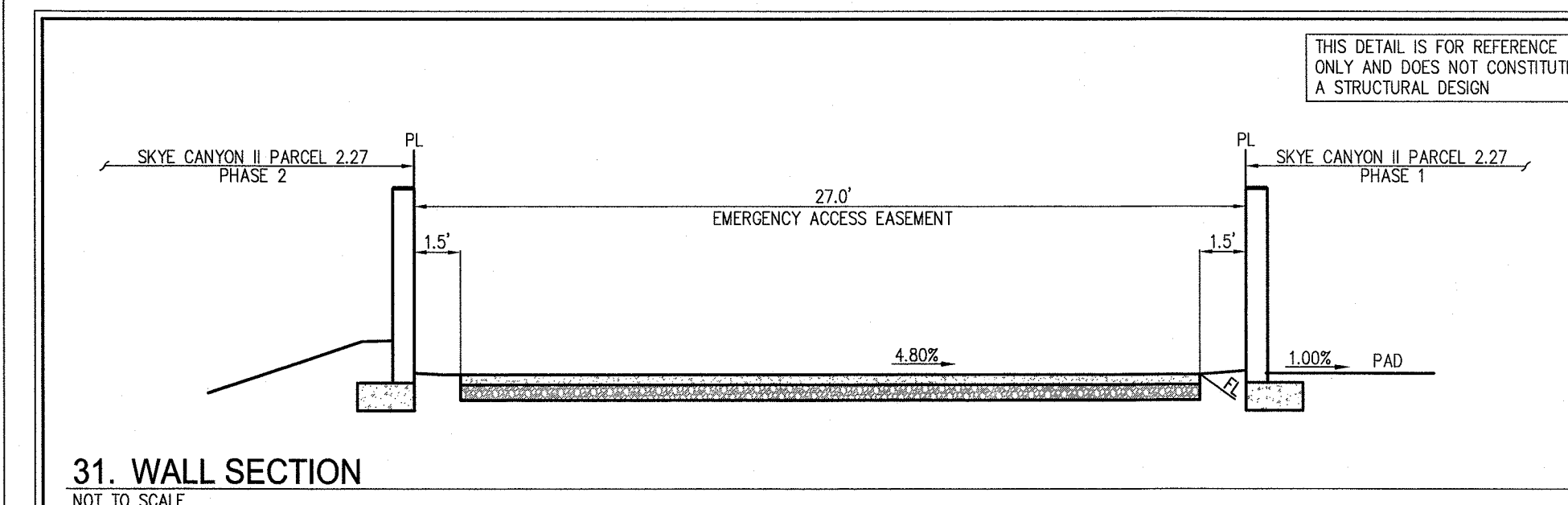
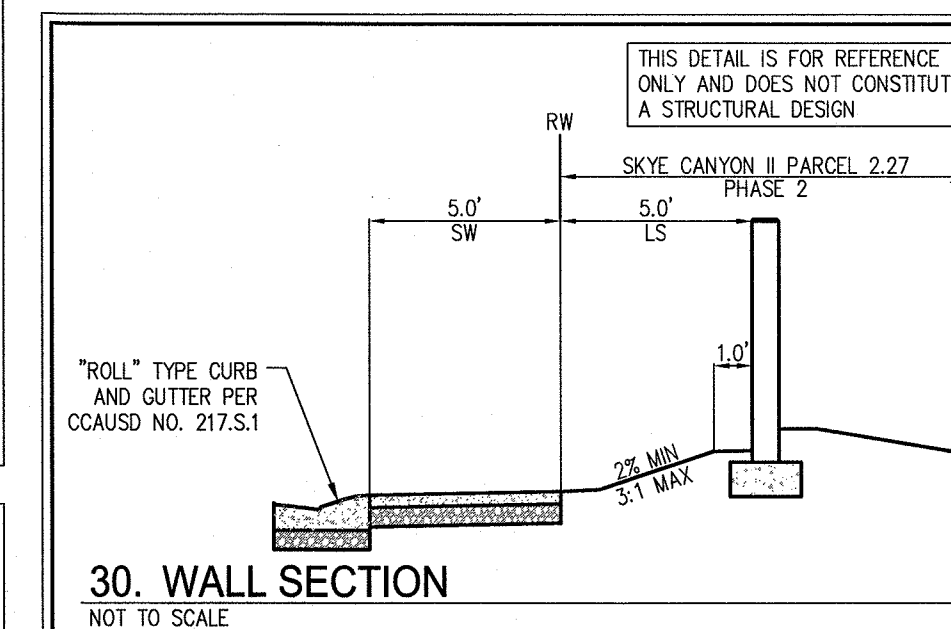
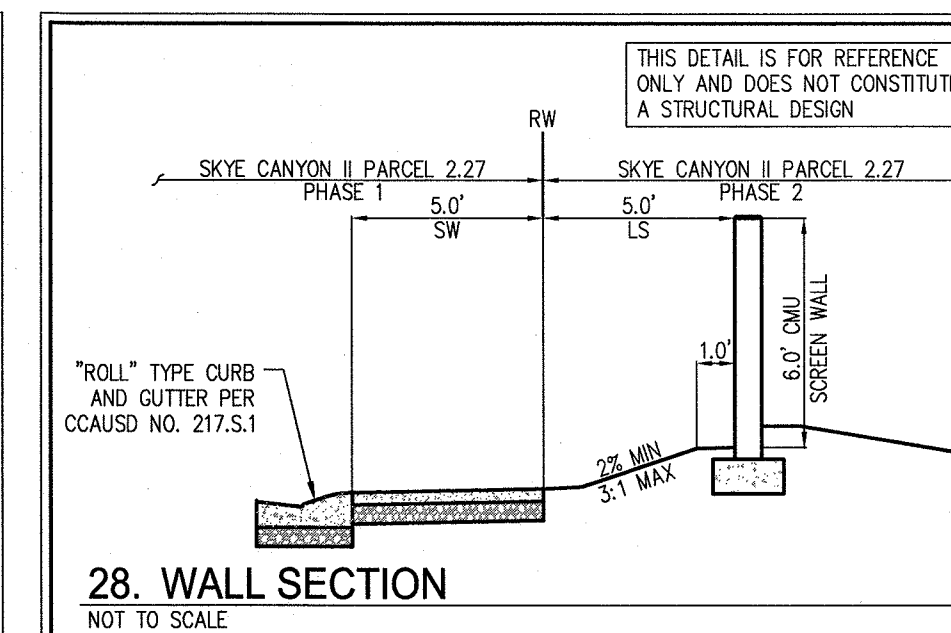
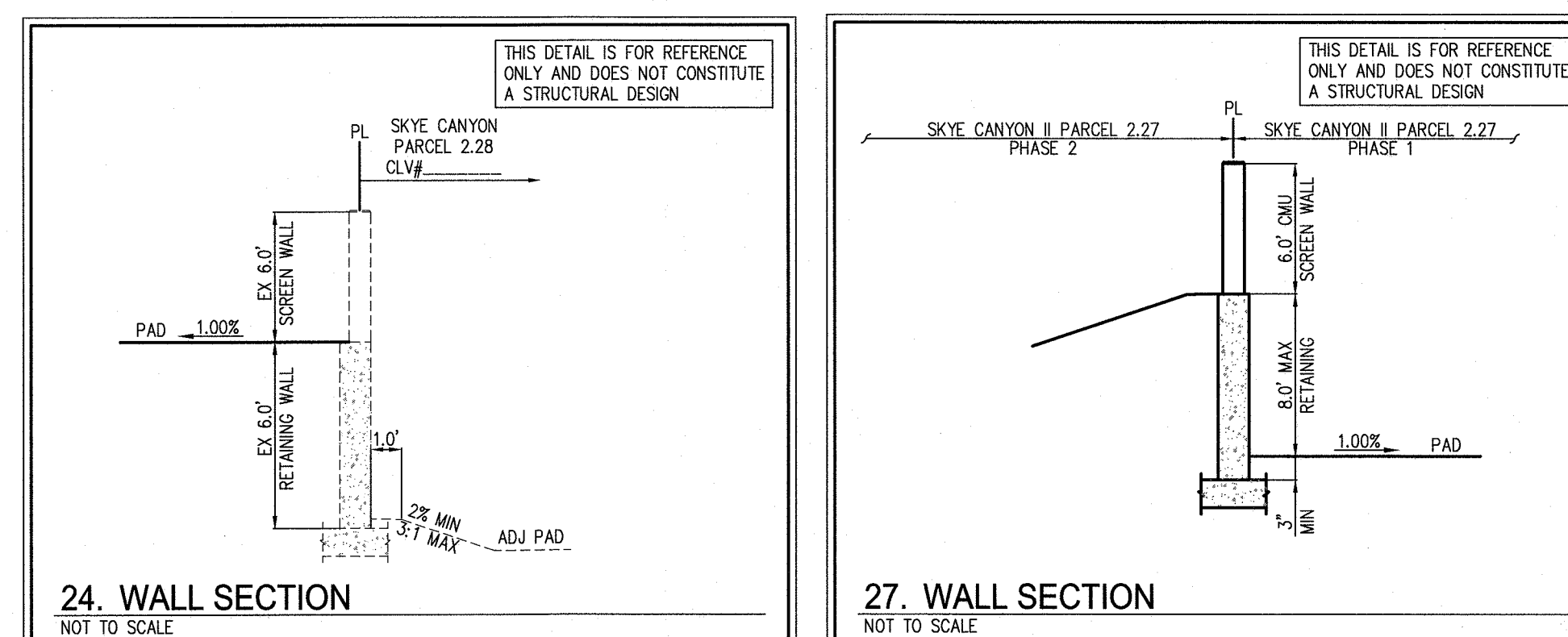
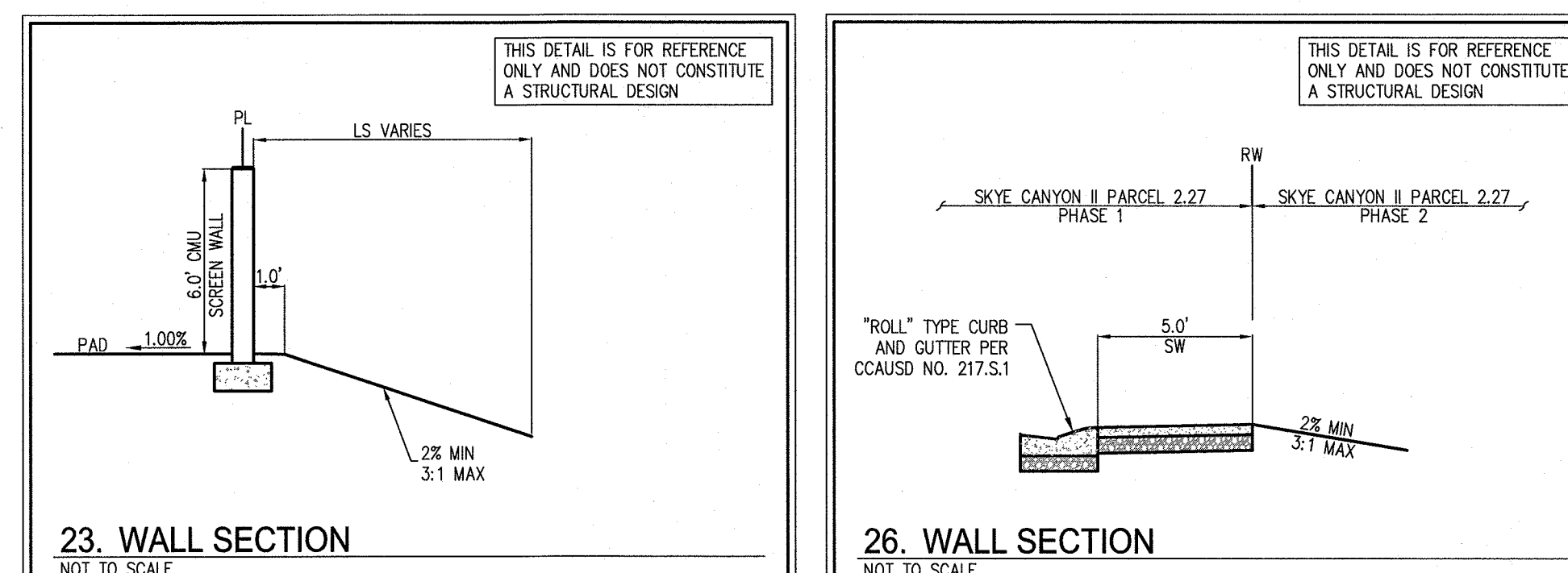
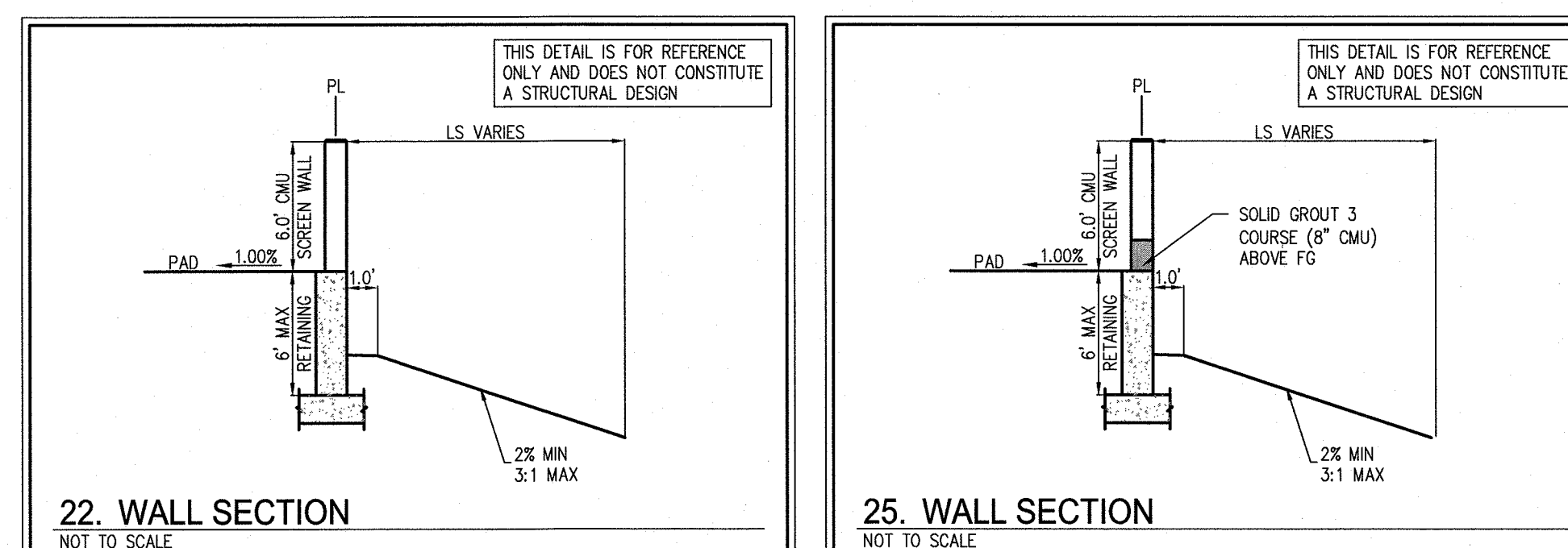
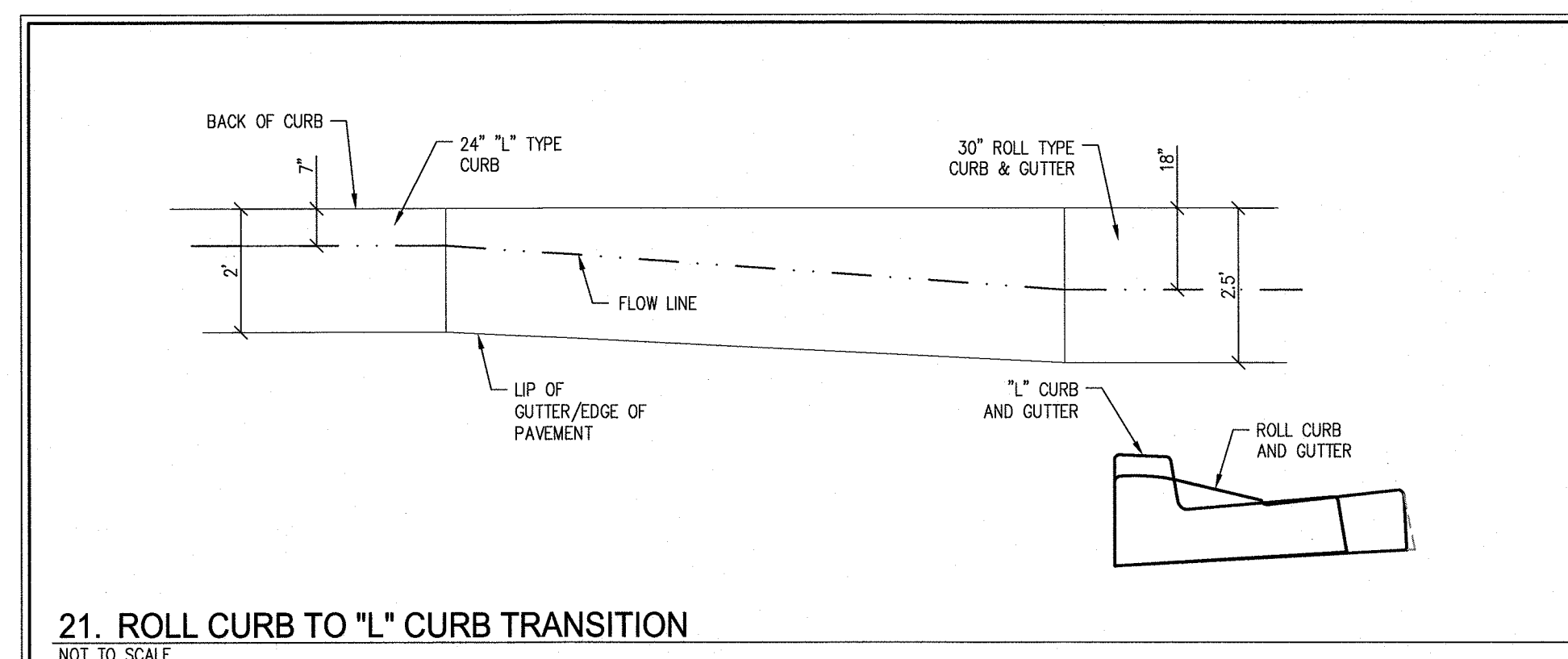
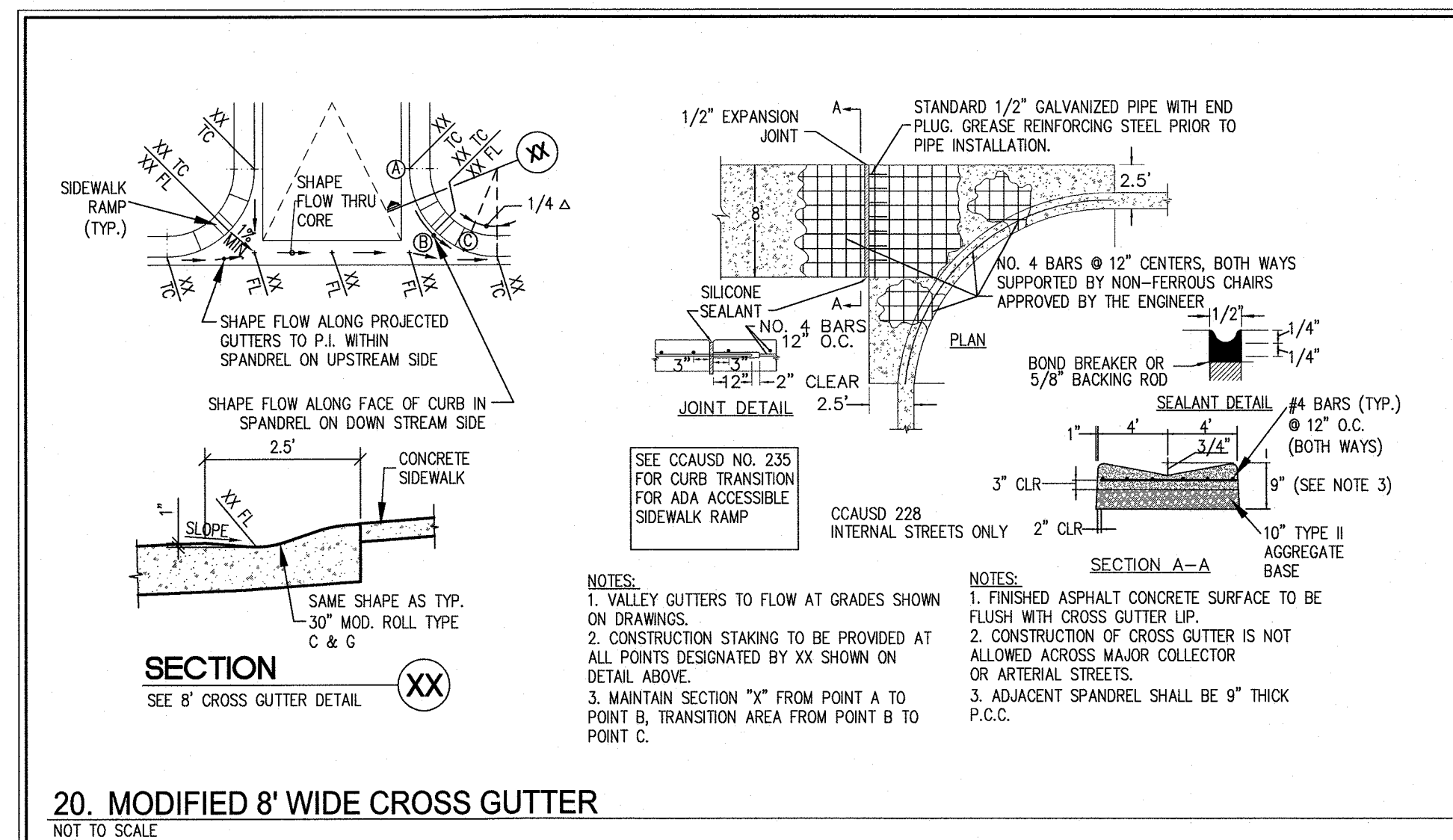
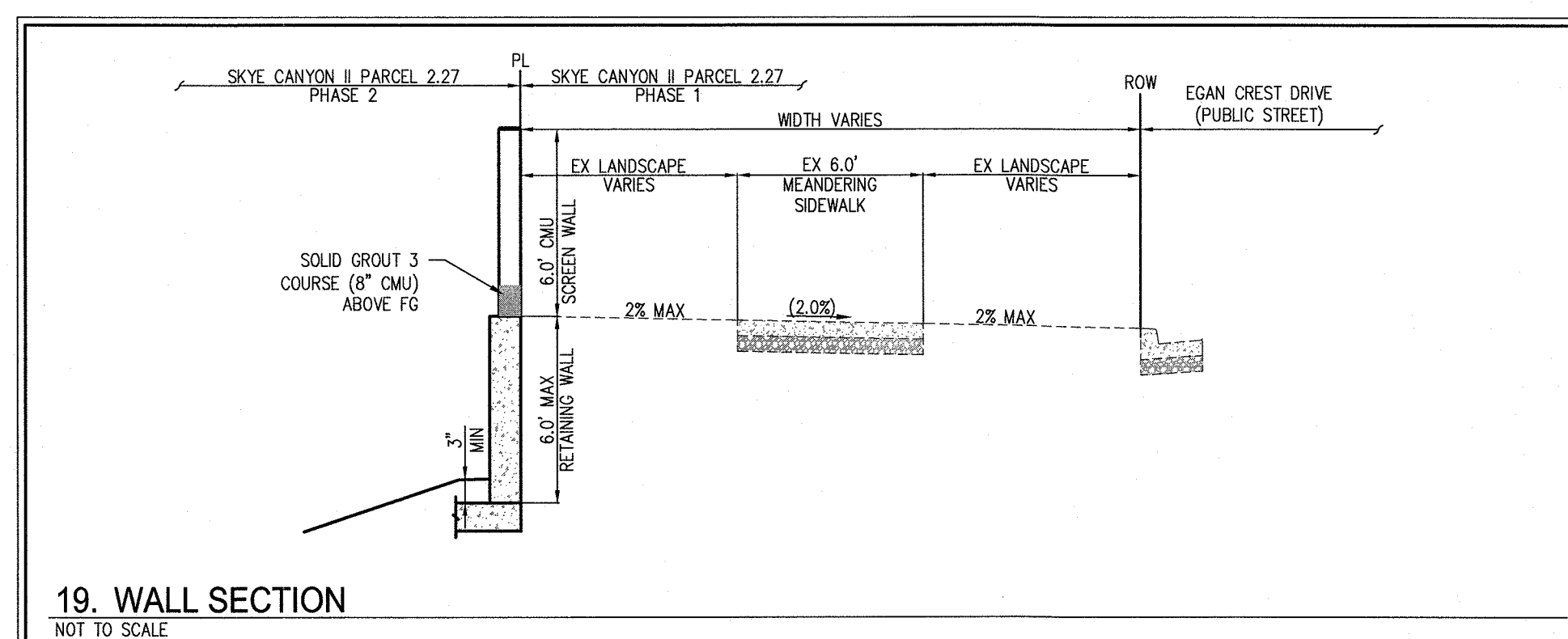
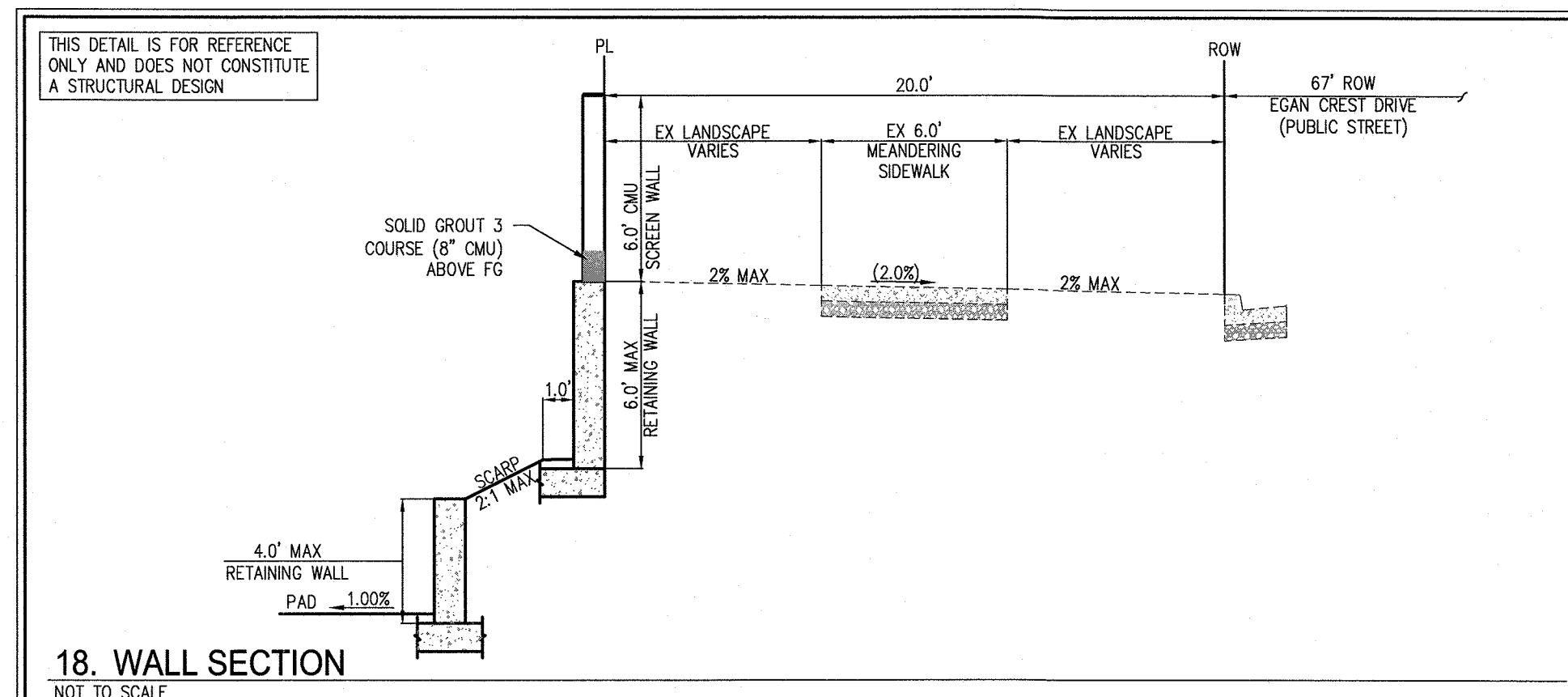
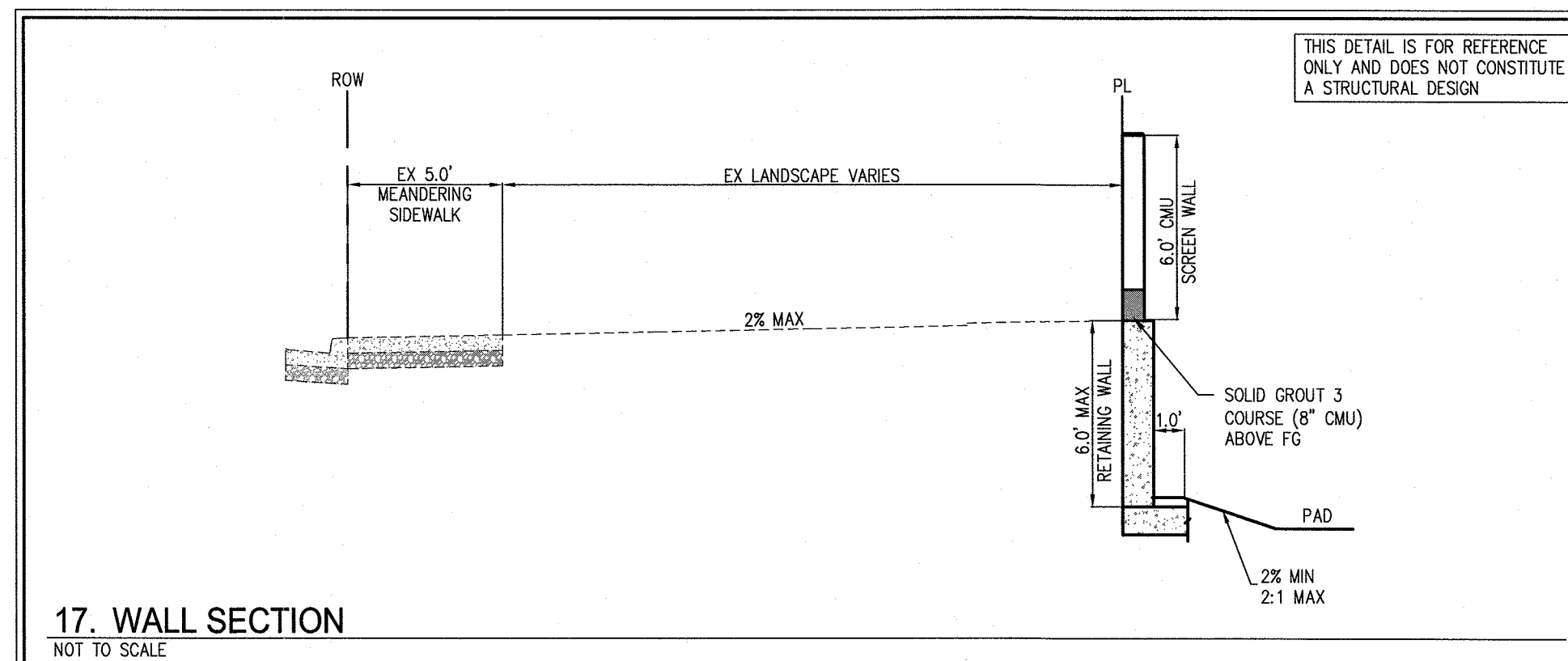
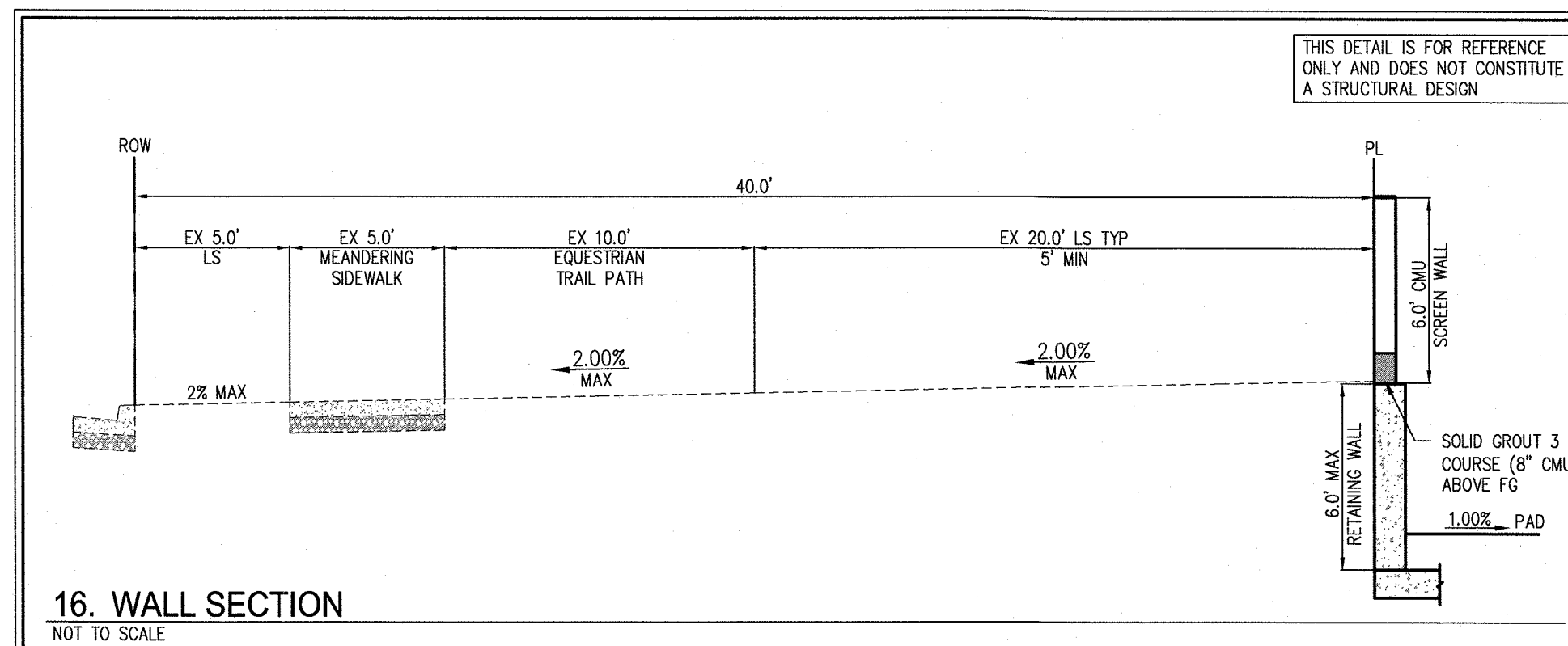
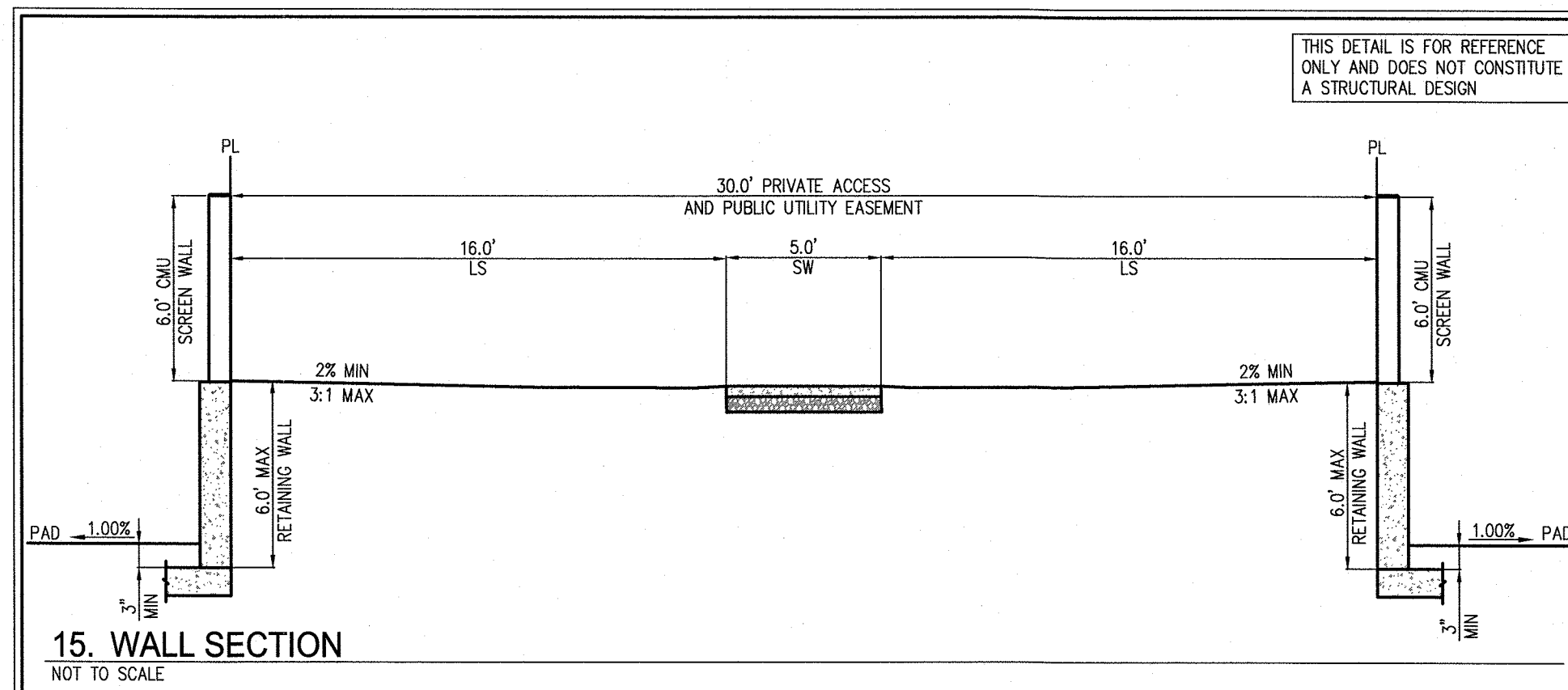
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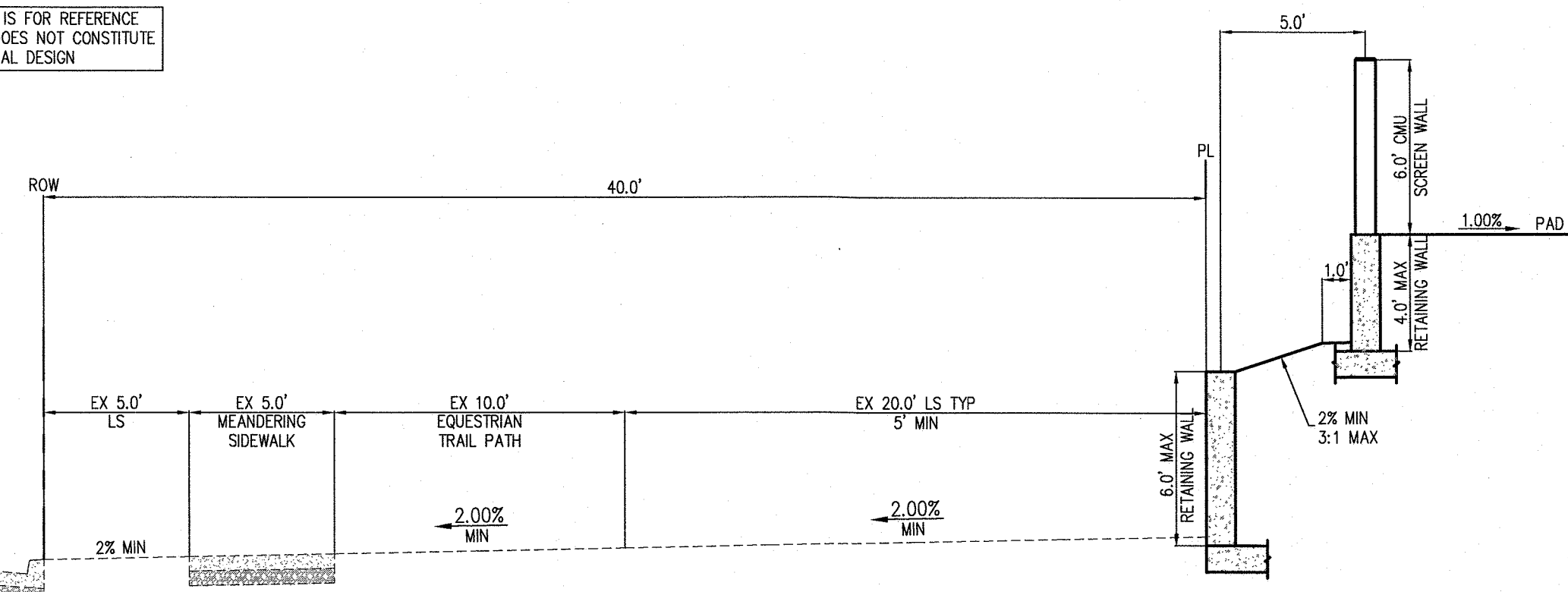


**FAST**  
Call before you  
Underground  
1-702-432-5300  
FREEWAY & ARTERIAL SYSTEMS  
OF TRANSPORTATION (F.A.S.T.)

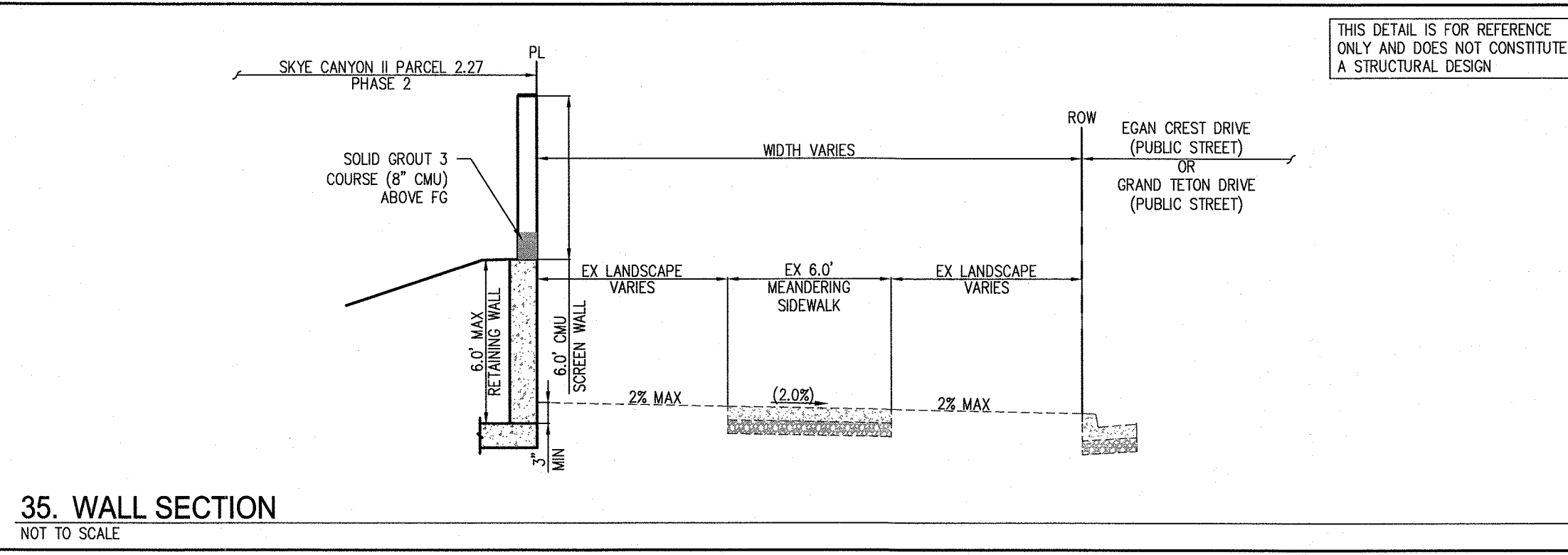
**Call before you Dig**  
 AVOID CUTTING UNDERGROUND  
 UTILITY LINES. IT'S COSTLY.  
**Call**  
  
 OR  
 1-800-227-2600



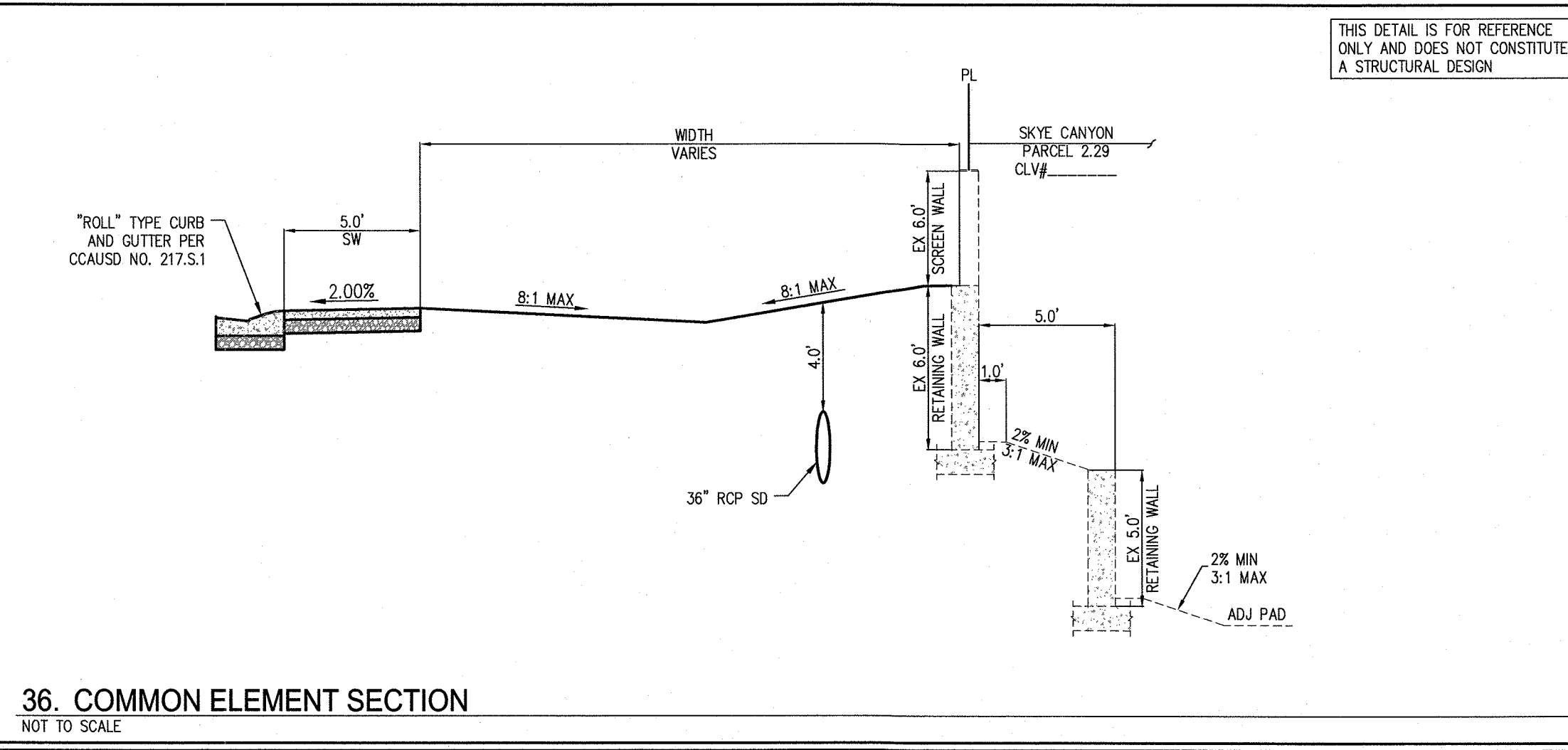
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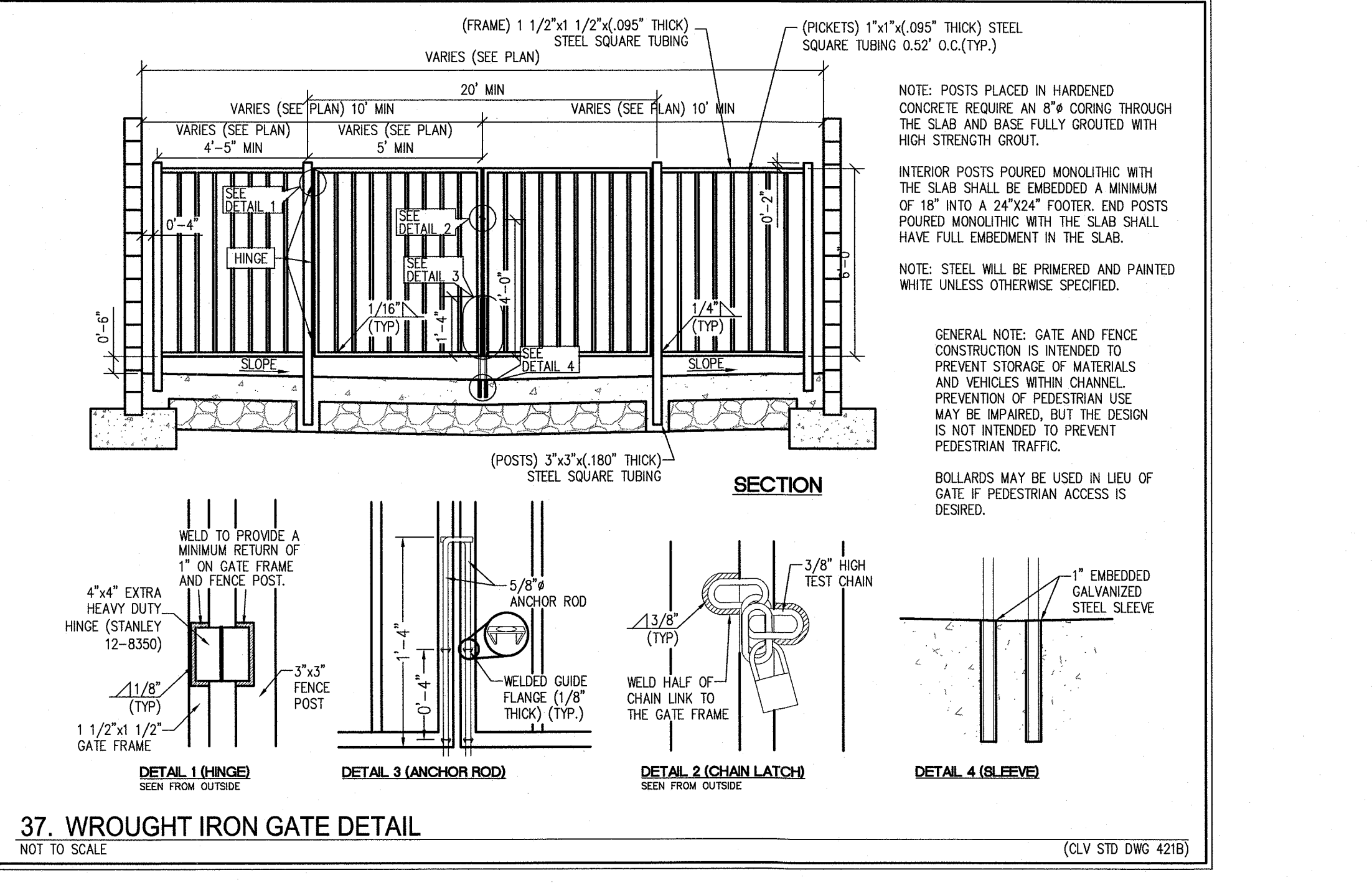
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NOT TO SCALE



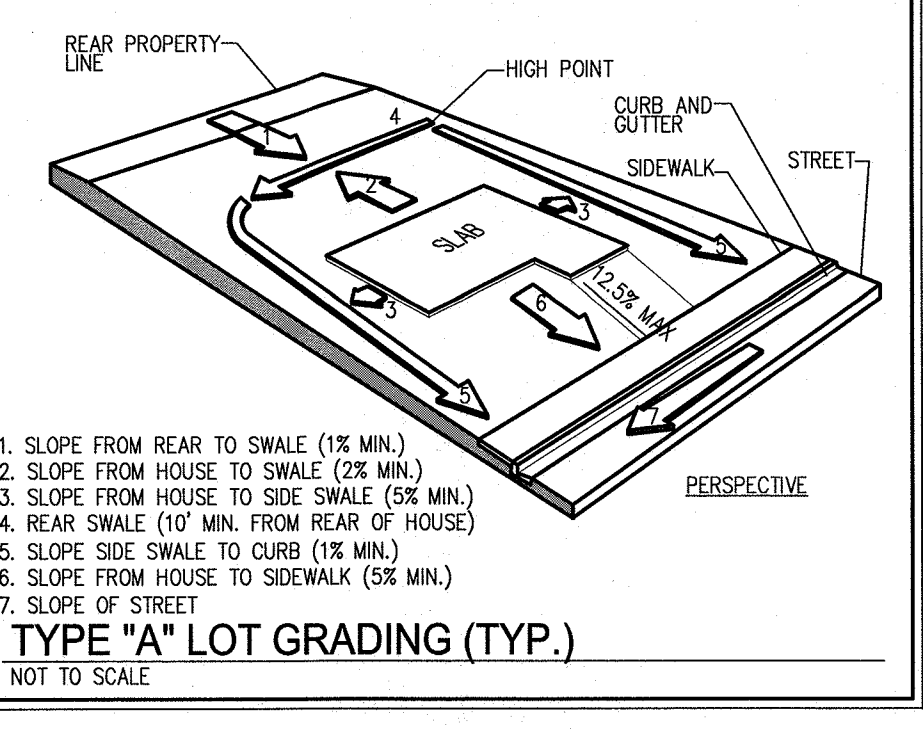
35. WALL SECTION  
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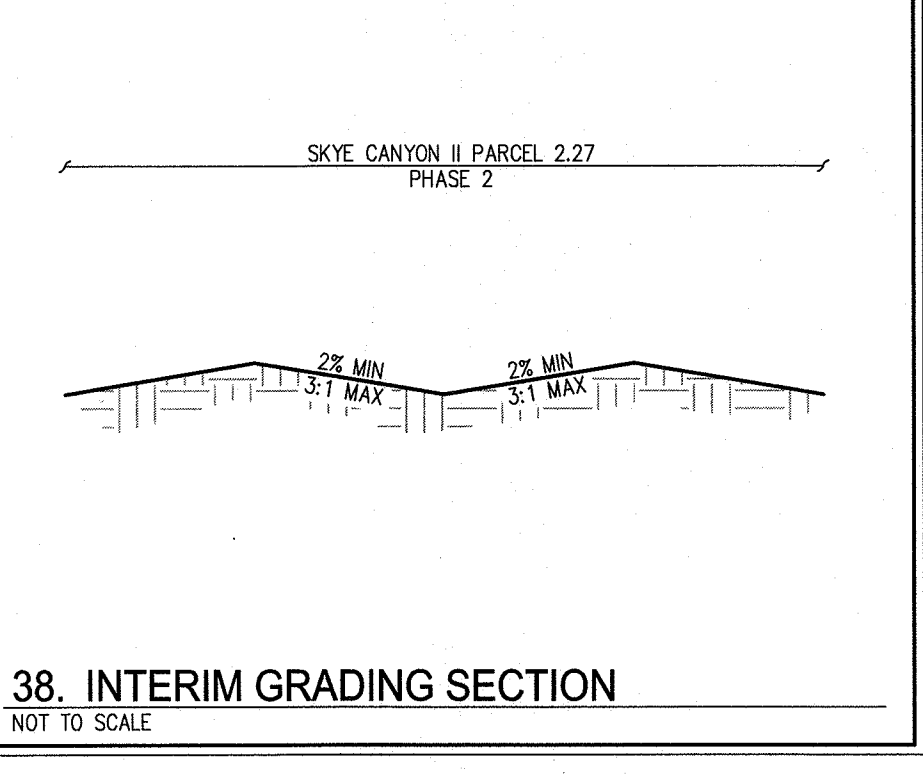
36. COMMON ELEMENT SECTION  
NOT TO SCALE



37. WROUGHT IRON GATE DETAIL  
NOT TO SCALE



TYPE \"A\" LOT GRADING (TYP.)  
NOT TO SCALE

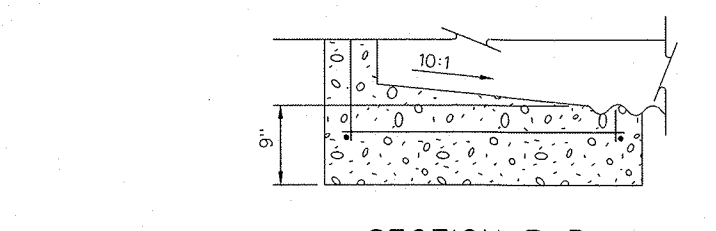


38. INTERIM GRADING SECTION  
NOT TO SCALE

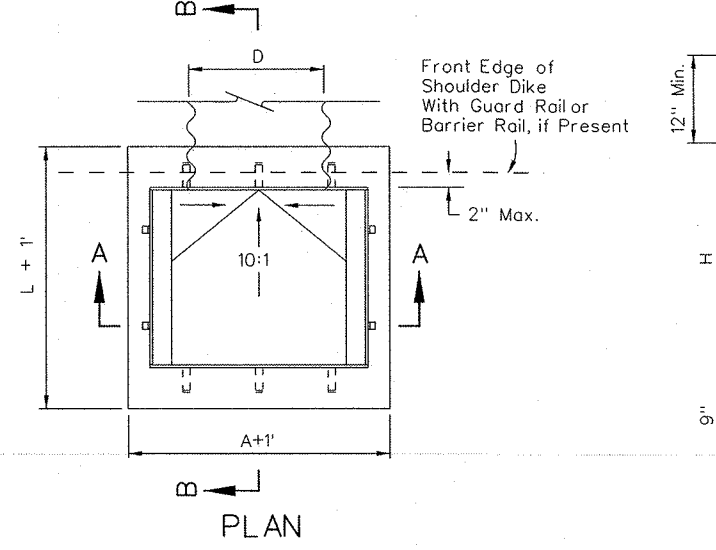
| BILL OF MATERIALS (RCP HDPE CMP) |                    |                     |                   |                           |                     |                   |                     |                   |                           |                     |                   |                     |                   |                           |
|----------------------------------|--------------------|---------------------|-------------------|---------------------------|---------------------|-------------------|---------------------|-------------------|---------------------------|---------------------|-------------------|---------------------|-------------------|---------------------------|
| PIPE SIZE (INCH)                 | SINGLE (ONE GRATE) |                     |                   |                           | DOUBLE (TWO GRATES) |                   |                     |                   | TRIPLE (THREE GRATES)     |                     |                   |                     |                   |                           |
|                                  | * CONCRETE (CY)    | * REIN. (LB.)       | * CONCRETE (CY)   | * REIN. (LB.)             | * CONCRETE (CY)     | * REIN. (LB.)     | * CONCRETE (CY)     | * REIN. (LB.)     | * CONCRETE (CY)           | * REIN. (LB.)       | * CONCRETE (CY)   | * REIN. (LB.)       | STR. STEEL (LB.)  | STR. STEEL (LB.)          |
| BASE QUAN. (H MIN.)              | ADD. RATE (CY/FT)  | BASE QUAN. (H MIN.) | ADD. RATE (CY/FT) | STR. STEEL QUAN. (H MIN.) | BASE QUAN. (H MIN.) | ADD. RATE (CY/FT) | BASE QUAN. (H MIN.) | ADD. RATE (CY/FT) | STR. STEEL QUAN. (H MIN.) | BASE QUAN. (H MIN.) | ADD. RATE (CY/FT) | BASE QUAN. (H MIN.) | ADD. RATE (CY/FT) | STR. STEEL QUAN. (H MIN.) |
| 15                               | 0.71               | 0.19                | 36                | 10                        | 211                 | 1.06              | 0.26                | 50                | 13                        | 397                 | 1.41              | 0.33                | 70                | 17                        |
| 18                               | 0.89               | 0.20                | 40                | 10                        | 306                 | 1.31              | 0.28                | 56                | 13                        | 574                 | 1.72              | 0.35                | 77                | 18                        |
| 24                               | 1.08               | 0.22                | 58                | 12                        | 349                 | 1.56              | 0.30                | 80                | 15                        | 652                 | 2.04              | 0.37                | 105               | 20                        |
| 30                               | 1.28               | 0.24                | 63                | 12                        | 390                 | 1.83              | 0.31                | 86                | 16                        | 729                 | 2.38              | 0.39                | 113               | 20                        |
| 36                               | 1.50               | 0.26                | 67                | 13                        | 524                 | 2.11              | 0.33                | 92                | 18                        | 980                 | 2.72              | 0.41                | 120               | 21                        |
| 42                               | 1.71               | 0.28                | 90                | 15                        | 575                 | 2.39              | 0.35                | 120               | 18                        | 1073                | 3.07              | 0.43                | 154               | 22                        |
| 48                               | 1.94               | 0.30                | 95                | 15                        | 707                 | 2.68              | 0.37                | 127               | 18                        | 1329                | 3.42              | 0.44                | 163               | 23                        |

\*The Concrete And Reinforcing Quantities Are Based On The H Min. Shown. Increase The Concrete And Reinforcing Base Quantity By The Corresponding Add Rate (Per Foot Of Increased H) If The H Specified Is Larger Than H Min.

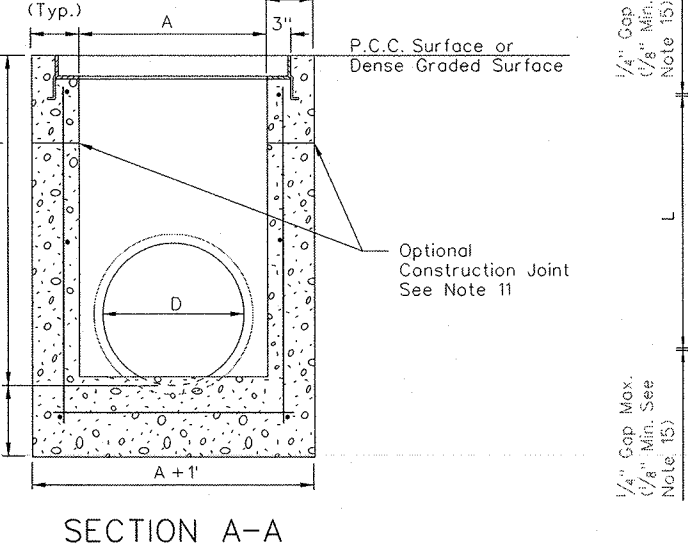
| TABLE OF DIMENSIONS (RCP HDPE CMP) |    |                |                        |                           |                         |                     |                           |                         |                     |                           |                         |                     |                           |
|------------------------------------|----|----------------|------------------------|---------------------------|-------------------------|---------------------|---------------------------|-------------------------|---------------------|---------------------------|-------------------------|---------------------|---------------------------|
| PIPE SIZE<br>(INCH)                | A  | H<br>Min. (FT) | MAIN<br>BARS<br>(INCH) | FRAME<br>ANGLES<br>(INCH) | FRAME<br>BARS<br>(INCH) | SINGLE<br>GRATE     |                           |                         | DOUBLE<br>GRATE     |                           | TRIPLE<br>GRATE         |                     |                           |
|                                    |    |                |                        |                           |                         | MIN. BARS<br>(INCH) | FRAME<br>ANGLES<br>(INCH) | FRAME<br>BARS<br>(INCH) | MIN. BARS<br>(INCH) | FRAME<br>ANGLES<br>(INCH) | FRAME<br>BARS<br>(INCH) | MIN. BARS<br>(INCH) | FRAME<br>ANGLES<br>(INCH) |
| 15                                 | 2' | 2.50           | 3/2                    | 4                         | 4                       | 4                   | 4                         | 4                       | 4                   | 4                         | 4                       | 4                   | 4                         |
| 18                                 | 2' | 3.00           | 4/2                    | 4                         | 5                       | 4                   | 4                         | 4                       | 5                   | 4                         | 4                       | 4                   | 4                         |
| 24                                 | 3' | 3.50           | 4/2                    | 4                         | 5                       | 4                   | 4                         | 4                       | 5                   | 4                         | 4                       | 4                   | 4                         |
| 30                                 | 3' | 4.00           | 4/2                    | 4                         | 5                       | 4                   | 4                         | 4                       | 5                   | 4                         | 4                       | 4                   | 4                         |
| 36                                 | 4' | 4.50           | 4/2                    | 4                         | 6                       | 4                   | 4                         | 4                       | 6                   | 4                         | 4                       | 4                   | 4                         |
| 42                                 | 4' | 5.00           | 5/2                    | 4                         | 6                       | 4                   | 4                         | 4                       | 6                   | 4                         | 4                       | 4                   | 4                         |
| 48                                 | 5' | 5.50           | 5/2                    | 4                         | 6                       | 4                   | 4                         | 4                       | 6                   | 4                         | 4                       | 4                   | 4                         |



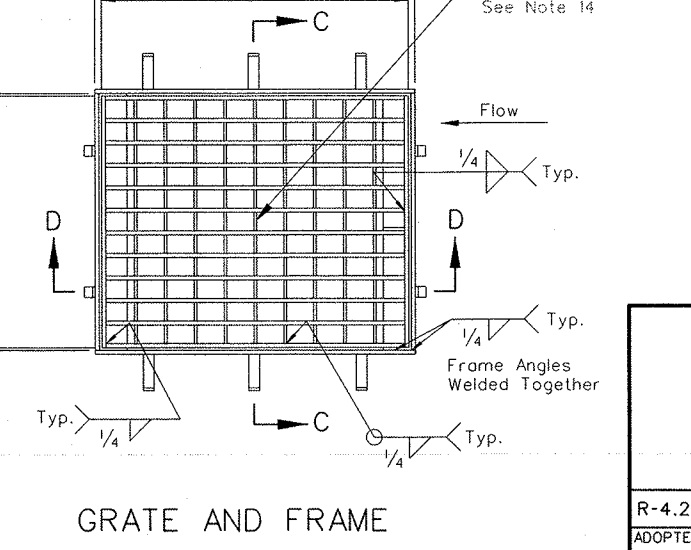
SECTION B-B



PLAN



SECTION A-A

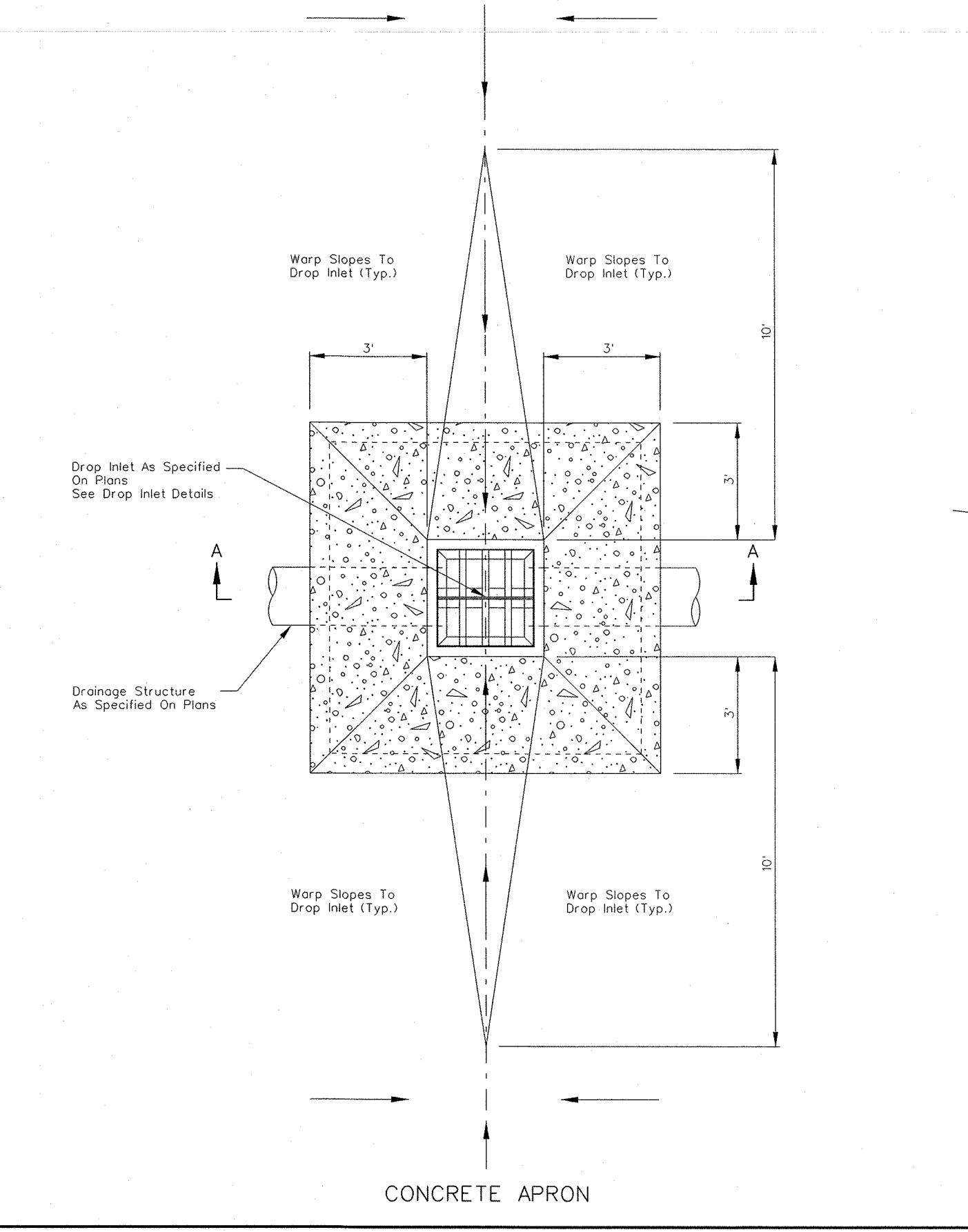


GRATE AND FRAME

NOTES:

1. All concrete shall be class A or AA.
2. Reinforcing steel shall be No. 4 bars with maximum spacing of 18 inches centers, wired tightly at all intersections and embedded 2 inches clear of all concrete surfaces.
3. Exposed edges of concrete shall be chamfered 1 inch.
4. Dimensions may be varied to fit local conditions if ordered by the engineer.
5. Commercial prefabricated gratings approved by the bridge division may be used in lieu of the field-welded grating shown.
6. Extreme low cover situations to be reviewed by hydraulics engineer.
7. Slope catch basin floors 10:1 from all directions toward outlet pipe. If basin is used as a junction, slope flow lines to outlet pipe and provide a 10:1 slope to flow lines.
8. See sheet R-2.9.1 for details if connecting HDPE pipe.
9. A single Type 2 drop inlet shall be constructed unless a double or triple is specified.
10. Single grate configuration shown for clarity. Outside dimensions of each grate shall measure 2 feet by A+4\"/>
11. Run rebar continuous thru construction joint. Joint must be a minimum of 3 inches from horizontal bars.
12. Weld one tab on 6 of grate and remaining two tabs 6 inches from edge of frame. Six tabs per inlet, three tabs on each side.
13. Weld tabs 6 inches from edge of frame. Four tabs per grate, two on each side.
14. For multiple grate installations, the station/offset is to the center of all the concrete drop inlet structure.
15. Grate is to fit in the frame and be easily removed. If the gap between the grate and frame is greater than 1/4\"/>
16. Additional pipe penetrations may be placed in any wall. Pipe penetrations are to be to the center of the structure wall unless specified otherwise.

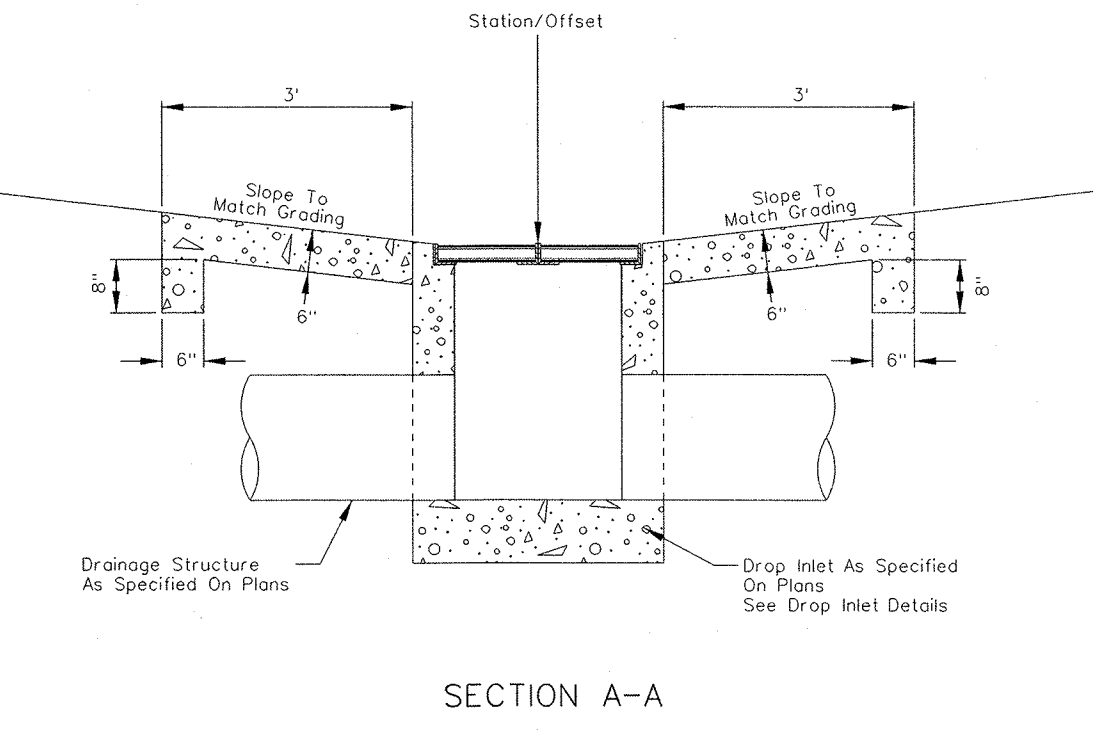
STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
DROP INLET  
TYPE 2  
R-4.2.1 (609) Signed Original On File  
ADOPTED 7/02 REVISOR 9/02 CHIEF HYDRAULICS ENGR.



CONCRETE APRON

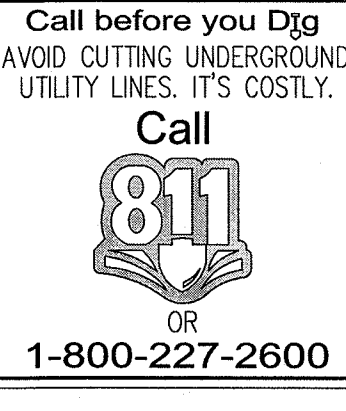
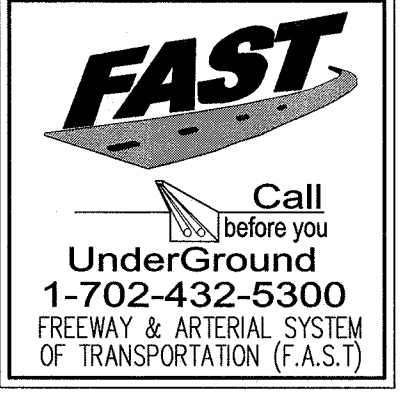
NOTES:

1. Concrete shall be class A or AA.



SECTION A-A

STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
DROP INLET  
CONCRETE APRON  
R-4.2.7 (609) Signed Original On File  
ADOPTED 5/02 REVISOR 5/02 CHIEF HYDRAULICS ENGR.



SLATER  
HANIFAN  
GROUP  
CONSULTING ENGINEERS & PLANNERS  
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118  
PHONE (702) 284-5300  
FAX (702) 284-5390

NINETY FIVE MANAGEMENT LLC  
SKYE CANYON II PARCEL 2.27  
GRADING DETAILS III

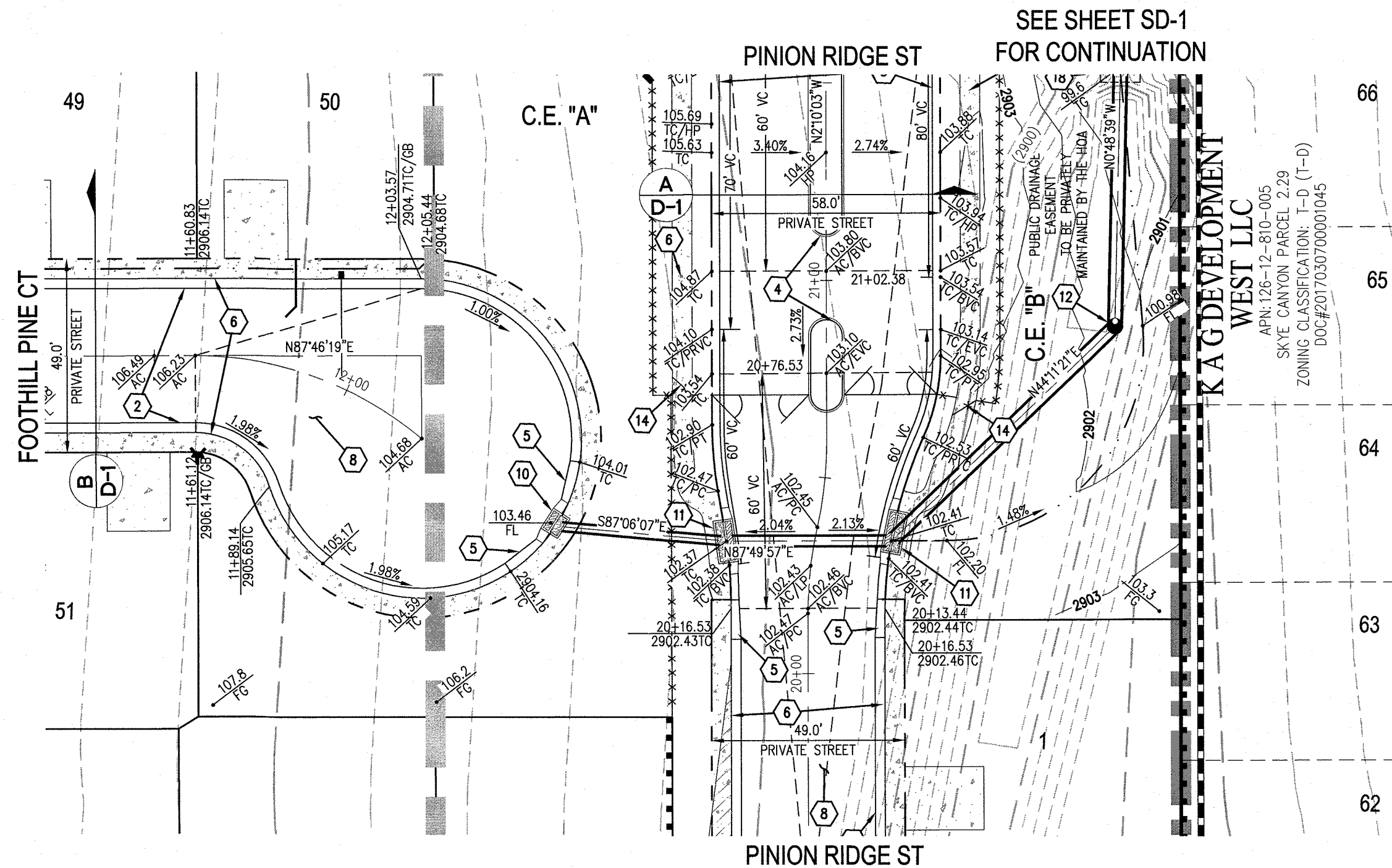
DATE: 8/10/17  
DRAFTER: JM  
DESIGNER: MAK  
CHECKED: TM  
PROJECT NO.  
OLY1607-005

STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
TIMOTHY M. MULROONEY  
CIVIL  
Exp. 12/31/2017  
D-3  
SHEET 16 OF 18

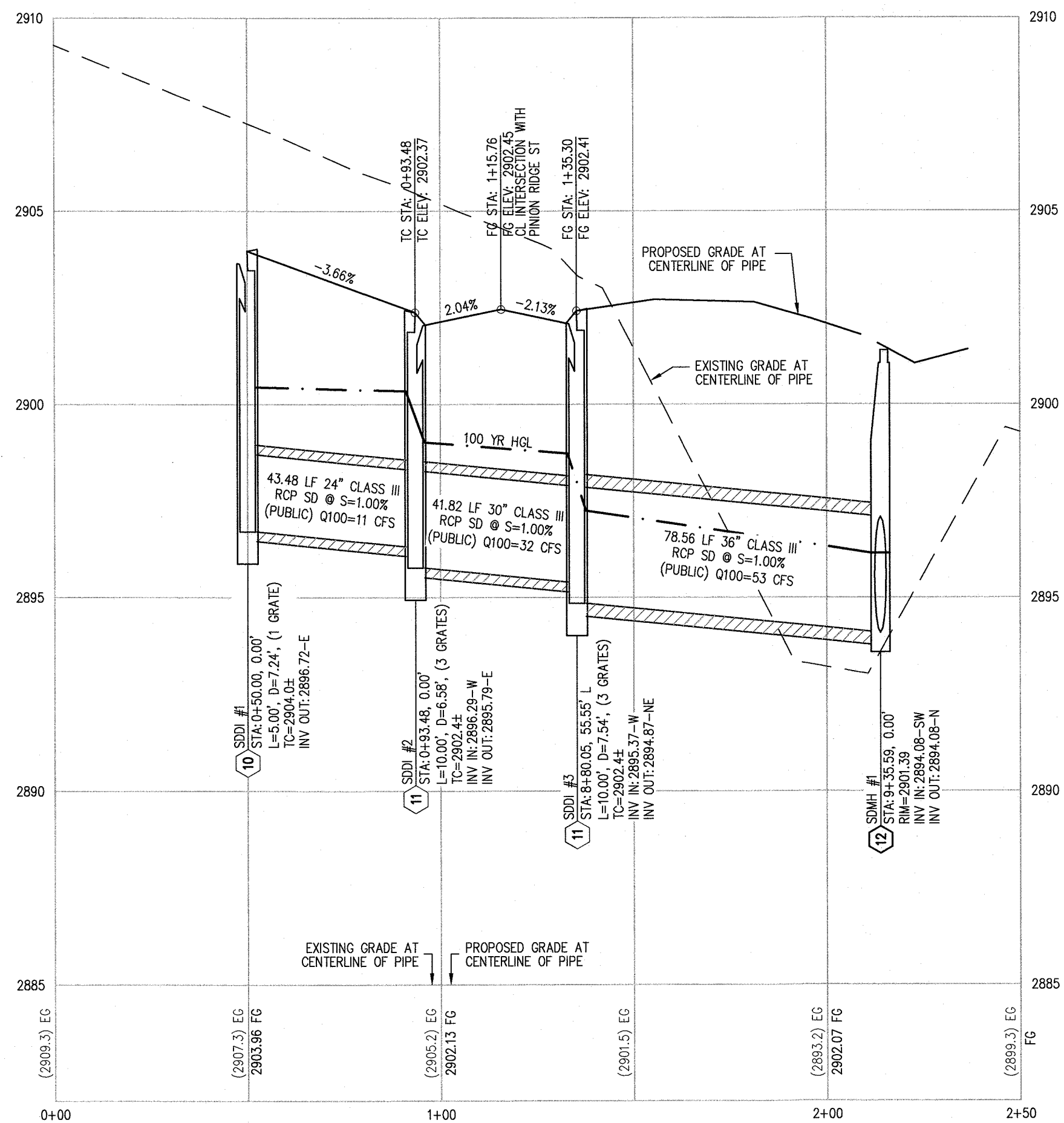






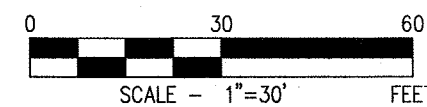


DROP INLETS 1, 2 & 3 - PLAN VIEW



DROP INLETS 1, 2 & 3 - PROFILE VIEW

HORIZ: 1" = 30'  
VERT: 1" = 3'



CALL SOUTHWEST GAS AT 702-651-2111 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 OBLISCURED 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 2801.00)

#### SOILS REPORT

SOILS REPORT BY GEOTECH RESIDENTIAL, LLC  
PROJECT NO. 12208-LVR DATED March 30, 2016

#### EARTHWORKS

EARTHWORK QUANTITIES (RAW):  
CUT= 46,326 CU YDS  
FILL= 149,766 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 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 PRIOR 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 EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

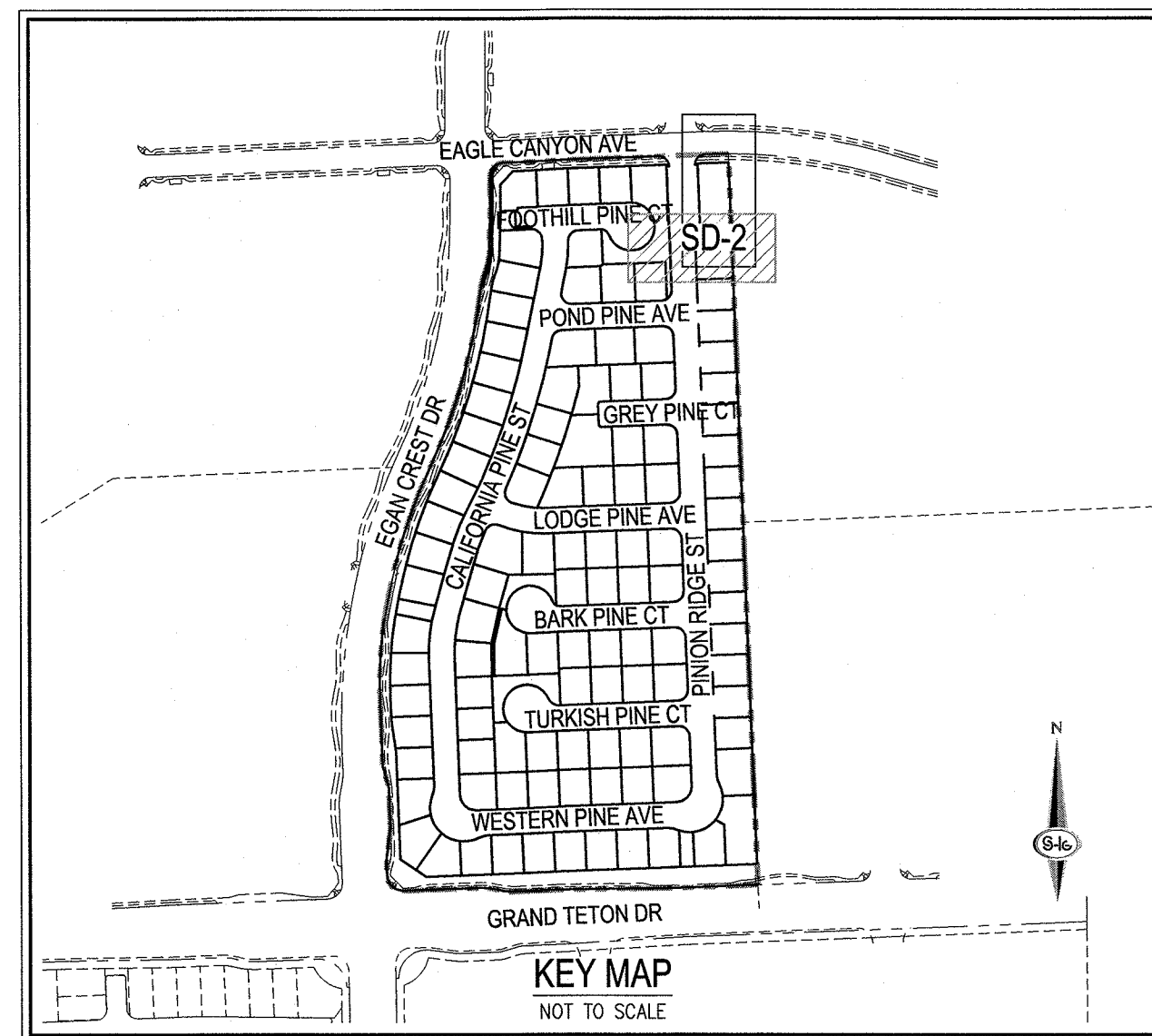
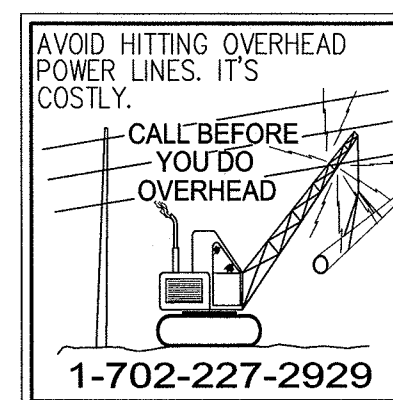
#### LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES

(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 NV100000, 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 NV100000, 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, WHOEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

#### FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 23003C1750E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.



#### GRADING NOTES

- FIELD VERIFY AND CONNECT TO EXISTING CURB, GUTTER AND/OR SIDEWALK
- CONSTRUCT 30" ROLL CURB AND GUTTER PER CCAUSD NO. 217.51. CURB FLOW SHALL BE TOWARD THE STREET. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY.
- CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD NO. 216
- CONSTRUCT "A" TYPE ISLAND CURB PER CCAUSD NO. 219
- CONSTRUCT 10" ROLL CURB TO L CURB TRANSITION PER DETAIL 21 ON SHEET D-2
- CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
- CONSTRUCT 8' WIDE CROSS GUTTER PER DETAIL 20 ON SHEET D-2
- INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235, CASE 1 & 235.1
- INSTALL 5.0' TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
- INSTALL 10.0' TYPE "CM2" DROP INLET PER CCAUSD #412.1 AND #421
- INSTALL 48" TYPE III STORM DRAIN MANHOLE PER CCAUSD #406
- PERIMETER LANDSCAPE TO BE CONSTRUCTED BY MASTER DEVELOPER
- INSTALL WROUGHT IRON FENCE W/ACCESS GATES, DESIGN BY OTHERS
- INSTALL WROUGHT IRON FENCE, DESIGN BY OTHERS
- INSTALL WROUGHT IRON GATES PER DETAIL 37 ON SHEET D-3
- CONSTRUCT 24" WIDE COMMERCIAL DRIVEWAY PER CCAUSD NO. 224
- CONSTRUCT 2' X 4' INLET TYPE II INLET AND CONCRETE APRON PER NDOT STD. R-4.2.1 AND R-4.2.7. SEE DETAILS ON SHEET D-3

SEE SHEET C-3 FOR ABBREVIATIONS, LEGEND, AND QUANTITIES

#### BONDABLE DRAINAGE QUANTITIES (PRIVATE)

|                                                            |    |       |
|------------------------------------------------------------|----|-------|
| 8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE | SF | 5,120 |
| 60" TYPE III STORM DRAIN MANHOLE                           | EA | 1     |
| 5.0' TYPE "CM2" DROP INLET                                 | EA | 1     |
| 10.0' TYPE "CM2" DROP INLET                                | EA | 2     |
| 24" RCP CLASS IV STORM DRAIN                               | LF | 44    |
| 30" RCP CLASS IV STORM DRAIN                               | LF | 42    |
| 36" RCP CLASS IV STORM DRAIN                               | SF | 144   |

#### DRAINAGE EASEMENT NOTE

ALL PRIVATE STREETS, DRAINAGE EASEMENTS AND COMMON LOTS ARE PUBLIC DRAINAGE EASEMENTS PRIVATELY MAINTAINED BY THE H.O.A.

#### FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY #2546899 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

*Timothy M. Mulrooney* 8/10/17 DATE

| DATE | BY | APP. | DATE |
|------|----|------|------|
|      |    |      |      |

| DESCRIPTION | NO. |
|-------------|-----|
|             |     |

CITY OF LAS VEGAS, NV

NINETY FIVE MANAGEMENT LLC

SKYE CANYON II PARCEL 2.27

PLAN AND PROFILE - DROP INLETS 1, 2 & 3

DATE: 8/10/17

DRAFTER: JM

DESIGNER: MAK

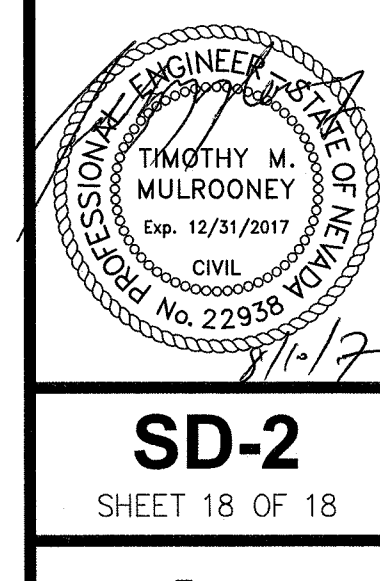
CHECKED: TM

PROJECT NO.

OLY1607-005

SD-2

SHEET 18 OF 18

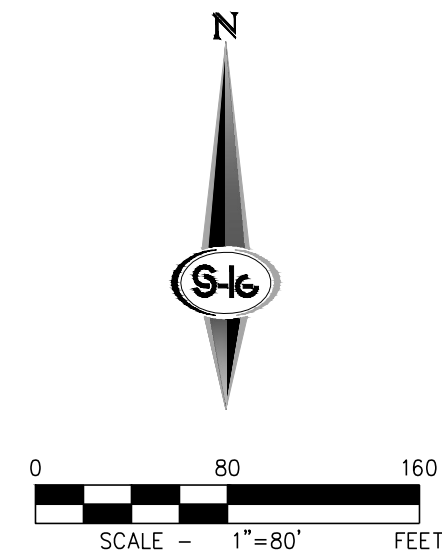
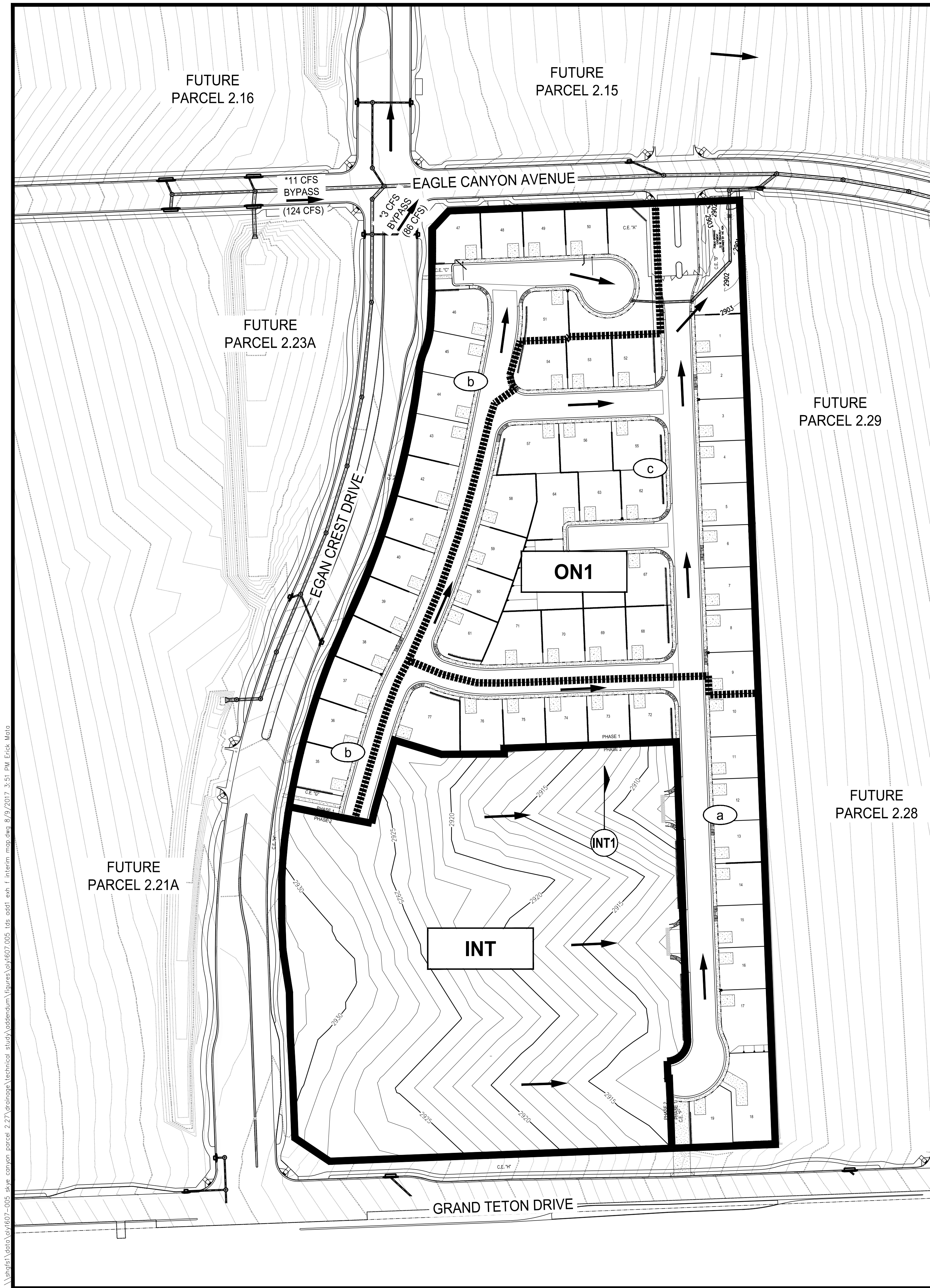








\\slater\data\oly1607-005\skye canyon parcel 2.27\drainage\technical study\addendum\figures\oly1607.005\_tds\_add1\_sch 1 interim map.dwg 8/9/2017 3:51 PM Ericka Motta



| LEGEND |                             |
|--------|-----------------------------|
|        | BASIN BOUNDARY              |
|        | BASIN ID                    |
|        | PRO-RATED SUBBASIN BOUNDARY |
|        | PRO-RATED SUBBASIN ID       |
|        | FLOW DIRECTION              |

| Interim Condition Flow Rate Summary |           |                        |                       |
|-------------------------------------|-----------|------------------------|-----------------------|
| Basin/Concentration Point ID        | Area (ac) | Q <sub>100</sub> (cfs) | Q <sub>10</sub> (cfs) |
| ON1                                 | 11.0      | 33                     | 17                    |
| INT                                 | 7.1       | 12                     | 6                     |

| Interim Prorated Flow Summary |                        |              |                             |
|-------------------------------|------------------------|--------------|-----------------------------|
| Basin ID                      | Q <sub>100</sub> (cfs) | Area (acres) | 100-yr Unit Flow (cfs/acre) |
| ON1                           | 33                     | 11.0         | 3.0                         |
| Subbasin ID                   | Q <sub>100</sub> (cfs) | Area (acres) | 100-yr Unit Flow (cfs/acre) |
| ON1 (a)                       | 9                      | 2.9          | 3.0                         |
| ON1 (b)                       | 9                      | 3.1          | 3.0                         |
| ON1 (c)                       | 15                     | 5.1          | 3.0                         |
| TOTAL                         | 33                     | 11.0         |                             |

| Interim Condition Onsite Hydraulic Section Summary |                           |                        |           |            |                |
|----------------------------------------------------|---------------------------|------------------------|-----------|------------|----------------|
| Section ID                                         | Section Description       | Q <sub>100</sub> (cfs) | Slope (%) | Depth (ft) | Velocity (fps) |
| Section INT1<br>(Q = INT/3)                        | Earthen V-Ditch w/ 3:1 SS | 4.0                    | 3.88      | 0.53       | 4.68           |

| NO. | DESCRIPTION | DATE | BY | APP. | DATE |
|-----|-------------|------|----|------|------|
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |
|     |             |      |    |      |      |

NINETY-FIVE MANAGEMENT, LLC.  
SKYE CANYON - PARCEL 2.27  
INTERIM CONDITION DRAINAGE MAP

|             |             |
|-------------|-------------|
| DATE:       | AUGUST 2017 |
| DRAFTER:    | ETM         |
| DESIGNER:   | ETM         |
| CHECKED:    | SOA         |
| PROJECT NO. | OLY1607.005 |