DS #: 4921

APN: 162.08.418.002

PROJECT: Area 15

SUBMITTAL: Supplemental #2

SCANNED BY/DATE:

CHECKED BY/DATE:

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: March 8, 2018
TO: **Land Development Services** Department of Building & Safety				FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: **Area 15**			**COPIES TO:** Kimley Horn and Associates, Inc.
Cross Streets:	SWC of Rancho Drive & Sirius Avenue			Integral Partners Park Center Las Vegas, LLC
File Number:	F:\Depot\DSMemos\DS4921D.doc			Bart Anderson, P.E., DevCo
Parcel Number:	162-08-418-002			CCRFCD
Zoning Action:	SDR-70652			NDOT
FEMA Flood Zone	YES	NO	X	
Proposed Storm Drain	YES	NO	X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	9/27/2017 & 10/12/2017	10/17/2017	Not Approved	$400.00	490252: $400
2nd Submittal	11/14/2017	12/13/2017	Not Approved	$400.00	491208: $400
Supplement	12/20/2017	1/10/2018	Conditional Approval	N/C	N/C
CCRFCD	2/14/2018	2/14/2018	Regional Comments	N/C	N/C
Supplement #2	2/28/2018 & 3/8/2018	3/5/2018 & 3/8/2018	Conditional Approval	N/C	N/C
			TOTAL FEES (LDDRS):	**$800.00**	**----**

REMARKS:

Supplement #2: Verbal comments were given to the engineer on 3/5/2018 based on the 2/28/2018 package. Engineer resubmitted on 3/8/2018.

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

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

1. **This drainage study is acceptable in concept**; however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District* (CCRFCD) has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.
2. The proposed project accepts offsite flow from the adjacent properties to the west through an existing concrete channel along the western boundary. Provide a minimum 10'-wide public drainage easement (privately maintained by the property owner) containing the existing channel. The required drainage easement must be granted and to be recorded prior to the final approval of the improvement plans.
3. Identify and label the required 10'-min public drainage easement on the overall grading plan and Sheet C3.1.

4. The project proposes to construct facilities and/or increase flows adjacent to *Nevada Department of Transportation* (NDOT) right-of-way (the existing channel between *Rancho Road* and I-15). The engineer must contact NDOT for concurrence for the proposed project.

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

END OF REMARKS
AYS

T/R/S: T21S/R61E/S08
AREA R-08

Technical Drainage Study

Supplement 2 to Addendum 1

Area 15

Prepared for:

Integral Partners Park
Center Las Vegas, LLC
299 Park Avenue
New York, NY 10171

Prepared by:

Kimley-Horn and Associates, Inc.
6671 Las Vegas Boulevard South
Suite 320
Las Vegas, NV 89119

Kimley»Horn

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Area 15 Date: 2/27/18

Location of Development: a) Descriptive (Cross Streets) North/South: S Rancho Drive

East/West: Sirius Avenue and Desert Inn Road

b) Section: 8 Township: 21S Range: 61E

c) APN : 162-08-418-002

Name of Owner: Integral Partners Park Center Las Vegas, LLC

Telephone No.: 212.940.6262 Fax No.: N/A E-Mail Address: pbrohn@fisherbrothers.com

Address: 299 Park Avenue New York, NY 10171

Contact Person-Name: Laurie S. Marin, P.E. **Telephone No.:** 702-862-3600

* **E-Mail Address:** laurie.marin@kimley-horn.com **Fax No.:** None

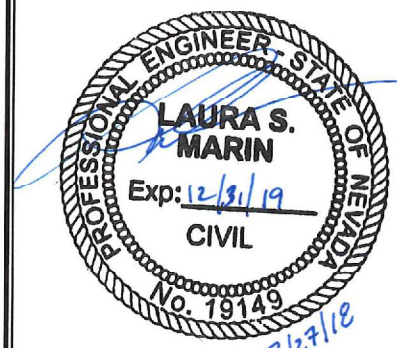
Firm: Kimley-Horn and Associates, Inc.

Address: 6671 Las Vegas Boulevard South, Suite 320, Las Vegas, NV 89119

Type of Land Development/Land Disturbance Process:

	Rezoning		Subdivision Map		Clearing and Grading Only
	Parcel Map		Planned Unit Development		Other (Please specify below)
	Large Parcel Map	✓	Building Permit		

1. Total Owned Land Area: At Site: 14.7 ac Being Developed/Disturbed: 14.7 ac
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ **Yes**** ☑ **No**
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☑ **Yes**** ☐ **No**
4. Proposed type of development (Residential, Commercial, Etc.): Commercial
5. Approximate upstream land area which drains to the subject site: 50 Acres
6. Has the site drainage been evaluated in the past? ☐ **YES** ☑ **NO** If yes, please identify documentation:
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Runoff will discharge at the same point as in existing conditions, through driveways, on S Rancho Drive and Sirius Avenue
8. Briefly describe your proposed schedule for the subject project: As soon as possible



Engineer's Seal 2/27/18

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

***New Required Field**

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

DS4921-C

Local Entity File No.

Revision	Date
TDS	9/27/2017
Addm 1	11/14/2017

REFERENCE: KHA Project # 092965000

STANDARD FORM 1

Updated 05/01/2008

Kimley»Horn

Technical Drainage Study

Supplement 2 to Addendum 1

Area 15

Prepared for:

Integral Partners Park
Center Las Vegas, LLC
299 Park Avenue
New York, NY 10171

Prepared by:

Kimley-Horn and Associates, Inc.
6671 Las Vegas Boulevard South
Suite 320
Las Vegas, NV 89119

February 2018
KH Project #092965000

This report is intended to serve as Supplemental Information to Addendum #1 for the Area 15 Project. The comments in a letter from the Clark County Regional Flood Control District dated February 14, 2018 (included as **Attachment A**) and comment responses are included below. The responses are provided in italics.

1. The project is proposing a 29" stem wall along Sirius Avenue that confines the flow to the right-of-way in order to protect the project site. However, this proposed improvement will potentially raise the water surface elevation on Sirius Avenue and may adversely impact the adjacent properties on the north side of the street and must be addressed. Per discussion with the City of Las Vegas, provide pre-development and post-project hydraulic analysis (HEC-RAS) for Sirius Avenue to ensure that the project does not impose a negative impact on adjacent properties.

   *See **Attachment B** for the HEC-RAS analysis. The analysis shows little to no increase in most of the cross sections. The maximum increase, 0.39 ft occurs in the downstream-most cross section 1036. See **Attachment C** for an exhibit with the existing and proposed conditions flood inundation limits shown.*

2. Label the existing Finished Floor elevations for the existing buildings on the north side of Sirius Avenue on Sheets C3.0, C3.1, and C3.3.

   The plans have been revised per the comment.

List of Attachments

Attachment A Clark County Regional Flood Control District Comment Letter
Attachment B HEC-RAS Analysis
Attachment C Sirius Avenue HEC-RAS Exhibit
Attachment D Grading Plans (under separate cover)

Attachment A
Clark County Regional Flood Control District
Comment Letter

REGIONAL FLOOD CONTROL DISTRICT

February 14, 2018

Mr. Oh Sang Kwon, P.E.
City of Las Vegas Department of Public Works
333 North Rancho Drive
Las Vegas, NV 89106

DISTRICT COMMENT(S): **AREA 15**
(DS4921C) (RFCD No. 18-9995)

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated September 27, 2017, Addendum No. 1 dated November 13, 2017, and Supplement No. 1 dated December 20, 2017 for above-mentioned project as submitted by KIMLEY-HORN AND ASSOCIATES, INC. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas Department of Public Works dated January 10, 2018.

District has the following comment(s):

1. The project is proposing a 29" stem wall along Sirius Avenue that confines the flow to the right-of-way in order to protect the project site. However, this proposed improvement will potentially raise the water surface elevation on Sirius Avenue and may adversely impact the adjacent properties on the north side of the street and must be addressed. Per discussion with the City of Las Vegas, provide pre-development and post-project hydraulic analysis (HEC-RAS) for Sirius Avenue to ensure that the project does not impose a negative impact on adjacent properties.

2. Label the existing Finished Floor elevations for the existing buildings on the north side of Sirius Avenue on Sheets C3.0, C3.1, and C3.3.

District's review of this project was limited to issues of Regional Flood Control Significance as defined in *Uniform Regulations for the Control of Drainage.*

The consultant must be advised to submit any revisions to the Technical Drainage Study and Improvement Plans to City of Las Vegas Department of Public Works for review/re-approval. District review of any such revisions will commence upon City of Las Vegas Department of Public Works' acceptance.

Please be aware that as additional information becomes available and/or restudies of Flood Insurance Studies are performed, information submitted by KIMLEY-HORN AND ASSOCIATES, INC. may be superseded. Compliance with regulatory elements and design standards specified in *Uniform Regulations for the Control of Drainage* does not imply a guarantee that properties will be free from flooding or flood damage.

The District, its officials, or employees assume no liability for information, data, or conclusions presented by consulting engineers. We, therefore, make no warranties, either expressed or implied, in conducting this review.

600 S. Grand Central Parkway, Suite 300 • Las Vegas, Nevada 89106-4511
(702) 685-0000 • FAX: (702) 685-0001
Website: http://www.regionalflood.org

REGIONAL FLOOD CONTROL DISTRICT

STEVEN C. PARRISH, P.E.
General Manager/Chief Engineer

BY:

Ching C. Wang, P.E.
Senior Civil Engineer

Todd Myers, P.E.
Engineering Director

CCW:dd

c: Laura S. Marin, P.E., Kimley-Horn And Associates, Inc.

P:\Letters and Memos\Local Drainage\Land Development & Drainage\2018\L-18-9995comment.doc

Attachment B
HEC-RAS Analysis

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X     X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X      X    X        X
X     X  X        X    X       X   X     X    X        X
X     X  XXXXXX    XXXX        X    X    X    X   XXXXX
```

PROJECT DATA
Project Title: Sirius Avenue
Project File : SiriusAve.prj
Run Date and Time: 2/26/2018 6:37:08 PM

Project in English units

PLAN DATA

Plan Title: Existing Conditions
Plan File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.p01

Geometry Title: Existing Conditions Geom
Geometry File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.g01

Flow Title : Sirius
Flow File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.f01

Plan Summary Information:
Number of: Cross Sections = 5 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Supercritical Flow

FLOW DATA

Flow Title: Sirius
Flow File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.f01

Flow Data (cfs)

River	Reach	RS	100-yr
SIRIUS AVE	SIRIUS	1916	1045

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
SIRIUS AVE	SIRIUS	100-yr	Critical	Critical

GEOMETRY DATA

Geometry Title: Existing Conditions Geom
Geometry File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.g01

CROSS SECTION

RIVER: SIRIUS AVE
REACH: SIRIUS RS: 1916

INPUT
Description:

```
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    2124   45.66    2124   47.74 2123.09   50.09    2122   52.26 2121.54
   58.04 2121.25    58.1 2120.75    59.6 2120.86    82.6    2121   105.6 2120.81
   107.1  2120.7   107.1  2121.2   112.1  2121.2  115.24 2121.48  115.44 2121.47
  116.39  2121.5  117.08 2121.52  124.01 2121.77  127.89  2121.9  128.11 2121.92
  128.26 2121.93  216.93    2122   219.4 2121.94  219.67 2121.94  226.29 2121.76
  229.79 2121.74  234.52 2121.87  234.72 2121.86   236.6 2121.87  236.67 2121.87
  240.82    2122  339.66 2122.04   339.8 2122.02  339.82 2122.02  343.87 2122.35
  344.04 2122.35  348.23 2122.68  350.49 2122.83  357.66  2122.9  363.61  2123.1
   364.9 2123.14  365.91 2123.19

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .016   58.04    .013    59.6    .016   105.6    .013   112.1    .025
  339.82    .016

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0  365.91           166.86  166.86  166.86             .1       .3

CROSS SECTION


RIVER: SIRIUS AVE
REACH: SIRIUS             RS: 1750

INPUT
Description:
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  2120.4       0    2118      53    2117      53  2116.5    54.5 2116.61
    77.5  2117.2    90.5 2116.66      92 2116.55      92 2117.05    92.5 2117.05
      95    2117     100    2118     115  2118.2     130    2118

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .016      53    .013    54.5    .016    90.5    .013      95     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            53      92           216.84  216.84  216.84             .1       .3
Right Levee     Station=     115      Elevation=  2118.2

CROSS SECTION


RIVER: SIRIUS AVE
REACH: SIRIUS             RS: 1533

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  2114.3       0    2112      17  2111.7      34    2112      59  2113.2
      59    2116      59  2120.5    59.5  2120.5    59.5    2116    59.5  2113.2
    65.5  2112.5    65.5    2112      67 2112.11      90 2112.67     113 2112.11
   114.5    2112   114.5  2112.5   119.5  2112.7   124.5    2114

Manning's n Values        num=       8
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02       0    .016      59     .02    59.5    .016    65.5    .013
      67    .016     113    .013   119.5    .016

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          65.5   114.5           318.07  318.07  318.07             .1       .3
Left Levee      Station=    59.5      Elevation=    2116

CROSS SECTION


RIVER: SIRIUS AVE
REACH: SIRIUS             RS: 1215

INPUT
Description:
Station Elevation Data    num=      11
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    2111      93    2110     119  2109.5     123 2109.25     127  2109.5
     150    2110     173  2109.8   174.5 2109.69     177 2109.89   221.5  2110.6
   263.5  2110.8

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .016     119    .013     127    .016     173    .013     177    .016

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           119     177             179     179     179             .1       .3

CROSS SECTION


RIVER: SIRIUS AVE
REACH: SIRIUS             RS: 1036
```

INPUT
Description:
Station Elevation Data num= 19

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	2111	70	2110	164	2109	211	2110	225	2110
226.7	2110.3	227.4	2110.3	227.4	2108.8	232.4	2108.72	232.4	2108.22
233.9	2108.33	256.9	2108.3	279.9	2108.3	283.9	2108.2	283.9	2108.7
288.9	2108.8	297.9	2108.6	330.9	2109	530.9	2110		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	227.4	.013	233.9	.016	279.9	.013	283.9	.016

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
232.4	283.9	0	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:SIRIUS AVE

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7	n8
SIRIUS	1916	.016	.013	.016	.013	.025	.016		
SIRIUS	1750	.016	.013	.016	.013	.02			
SIRIUS	1533	.02	.016	.02	.016	.013	.016	.013	.016
SIRIUS	1215	.016	.013	.016	.013	.016			
SIRIUS	1036	.02	.013	.016	.013	.016			

SUMMARY OF REACH LENGTHS

River: SIRIUS AVE

Reach	River Sta.	Left	Channel	Right
SIRIUS	1916	166.86	166.86	166.86
SIRIUS	1750	216.84	216.84	216.84
SIRIUS	1533	318.07	318.07	318.07
SIRIUS	1215	179	179	179
SIRIUS	1036	0	0	0

ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : ExCond

River: SIRIUS AVE Reach: SIRIUS RS: 1916 Profile: 100-yr
Note: Manning's n values were composited to a single value in the main channel.
River: SIRIUS AVE Reach: SIRIUS RS: 1750 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
River: SIRIUS AVE Reach: SIRIUS RS: 1533 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: SIRIUS AVE Reach: SIRIUS RS: 1215 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
River: SIRIUS AVE Reach: SIRIUS RS: 1036 Profile: 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.

HEC-RAS HEC-RAS 5.0.3 September 2016
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X     X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X      X    X        X
X     X  X        X    X       X   X     X    X        X
X     X  XXXXXX    XXXX        X    X    X    X   XXXXX
```

PROJECT DATA
Project Title: Sirius Avenue
Project File : SiriusAve.prj
Run Date and Time: 2/26/2018 6:12:50 PM

Project in English units

PLAN DATA

Plan Title: Proposed Conditions
Plan File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.p02

Geometry Title: Proposed Conditions Geom
Geometry File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.g02

Flow Title : Sirius
Flow File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.f01

Plan Summary Information:
Number of: Cross Sections = 5 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Supercritical Flow

FLOW DATA

Flow Title: Sirius
Flow File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.f01

Flow Data (cfs)

River	Reach	RS	100-yr
SIRIUS AVE	SIRIUS	1916	1045

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
SIRIUS AVE	SIRIUS	100-yr	Critical	Critical

GEOMETRY DATA

Geometry Title: Proposed Conditions Geom
Geometry File : k:\EAV_WaterResources\Shift\092965000_Area 15\Reports\Supplement 2\Calculations\HEC-RAS\SiriusAve.g02

CROSS SECTION

RIVER: SIRIUS AVE
REACH: SIRIUS RS: 1916

INPUT
Description:

```
Station Elevation Data    num=      42
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    2124   45.66    2124   47.74 2123.09   50.09    2122   52.26 2121.54
   58.04 2121.25    58.1 2120.75    59.6 2120.86    82.6    2121   105.6 2120.81
   107.1  2120.7   107.1  2121.2   112.1  2121.2  115.24 2121.48  115.44 2121.47
  116.39  2121.5  117.08 2121.52  124.01 2121.77  127.89  2121.9  128.11 2121.92
  128.26 2121.93  216.93    2122   219.4 2121.94  219.67 2121.94  226.29 2121.76
  229.79 2121.74  234.52 2121.87  234.72 2121.86   236.6 2121.87  236.67 2121.87
  240.82    2122  339.66 2122.04   339.8 2122.02  339.82 2122.02  343.87 2122.35
  344.04 2122.35  348.23 2122.68  350.49 2122.83  357.66  2122.9  363.61  2123.1
   364.9 2123.14  365.91 2123.19

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .016   58.04    .013    59.6    .016   105.6    .013   112.1    .025
  339.82    .016

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
             0  365.91           166.86  166.86  166.86             .1       .3

CROSS SECTION


RIVER: SIRIUS AVE
REACH: SIRIUS             RS: 1750

INPUT
Description:
Station Elevation Data    num=      14
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  2120.4       0    2118      53    2117      53  2116.5    54.5 2116.61
    77.5  2117.2    90.5 2116.66      92 2116.55      92 2117.05      97 2117.58
      97    2120    97.5    2120    97.5 2117.58   100.5  2117.6

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .016      53    .013    54.5    .016    90.5    .013    97.5     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            53      92           216.84  216.84  216.84             .1       .3
Right Levee     Station=      97      Elevation=    2120

CROSS SECTION


RIVER: SIRIUS AVE
REACH: SIRIUS             RS: 1533

INPUT
Description:
Station Elevation Data    num=      19
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  2114.3       0    2112      17  2111.7      34    2112      59  2113.2
      59    2116      59  2120.5    59.5  2120.5    59.5    2116    59.5  2113.2
    65.5  2112.5    65.5    2112      67 2112.11      90 2112.67     113 2112.11
     118 2112.58     118 2113.08     124    2113     150    2114

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .016      59     .02    59.5    .016    65.5    .013      67    .016
     113    .013     124     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          65.5     118           318.07  318.07  318.07             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
     124     150 2115.42       F
Left Levee      Station=    59.5      Elevation=    2116

CROSS SECTION


RIVER: SIRIUS AVE
REACH: SIRIUS             RS: 1215

INPUT
Description:
Station Elevation Data    num=      15
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    2111      93    2110     119  2109.5     123 2109.25     127  2109.5
     150    2110     173  2109.8   174.5 2109.69   174.5 2110.11   179.5 2110.19
   184.5 2110.26   184.5 2112.68     185 2112.68     185 2110.26     203    2111

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0    .016     119    .013     127    .016     173    .013   179.5     .02
   184.5    .015

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          119   174.5             179     179     179             .1       .3
Right Levee     Station=   184.5      Elevation= 2112.68

CROSS SECTION
```

RIVER: SIRIUS AVE
REACH: SIRIUS RS: 1036

INPUT
Description:
Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	2111	70	2110	164	2109	211	2110	225	2110
226.7	2110.3	227.4	2110.3	227.4	2108.8	232.4	2108.72	232.4	2108.22
233.9	2108.33	256.9	2108.3	279.9	2108.3	283.9	2108.2	283.9	2108.7
288.9	2108.8	288.9	2111.22	289.4	2111.22	289.4	2108.8	295.4	2109

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.02	227.4	.013	233.9	.016	279.9	.013	283.9	.016

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
232.4 283.9 0 0 0 .1 .3
Right Levee Station= 288.9 Elevation= 2111.22

SUMMARY OF MANNING'S N VALUES

River:SIRIUS AVE

Reach	River Sta.	n1	n2	n3	n4	n5	n6	n7
SIRIUS	1916	.016	.013	.016	.013	.025	.016	
SIRIUS	1750	.016	.013	.016	.013	.02		
SIRIUS	1533	.016	.02	.016	.013	.016	.013	.02
SIRIUS	1215	.016	.013	.016	.013	.02	.015	
SIRIUS	1036	.02	.013	.016	.013	.016		

SUMMARY OF REACH LENGTHS

River: SIRIUS AVE

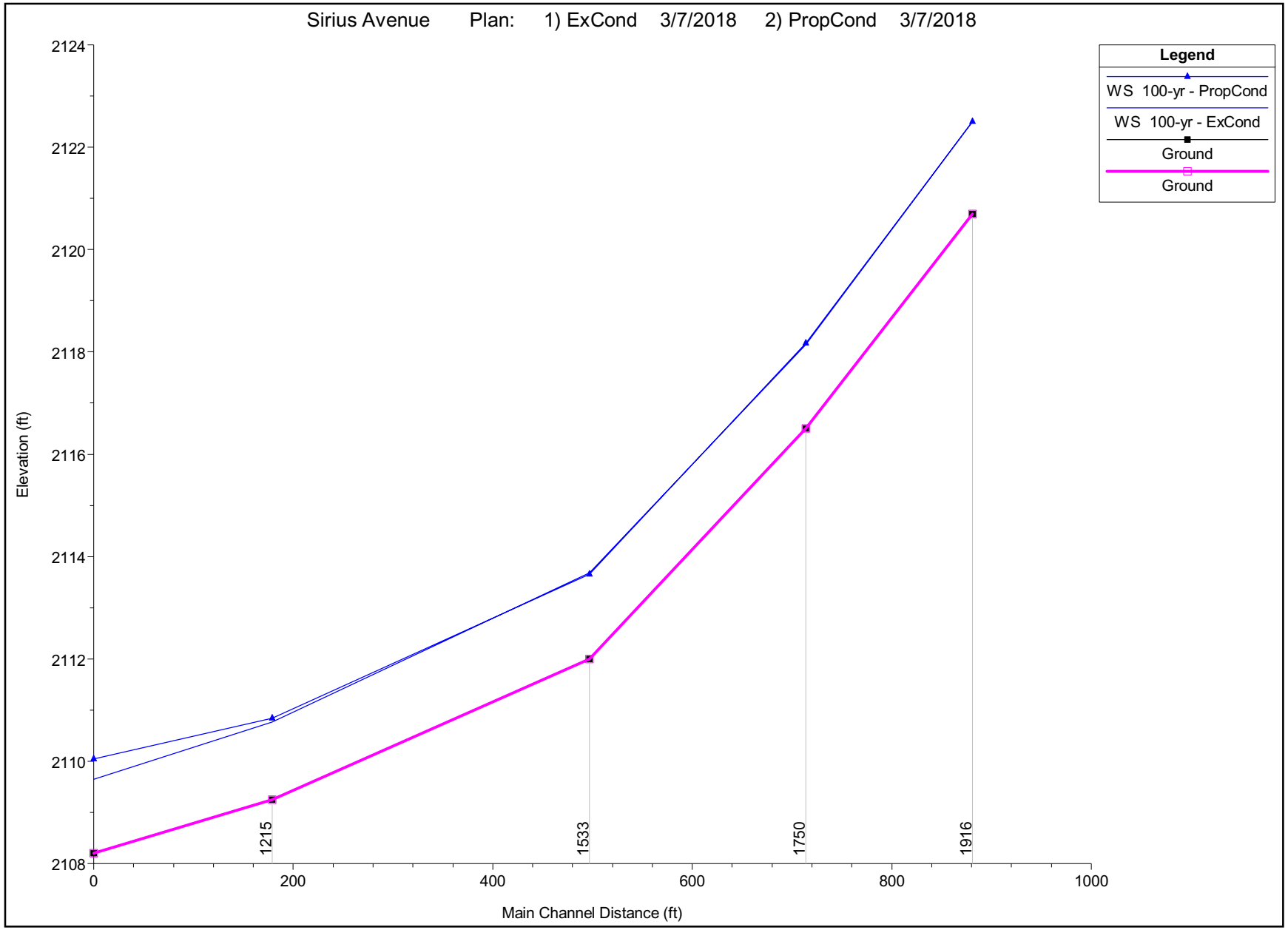
Reach	River Sta.	Left	Channel	Right
SIRIUS	1916	166.86	166.86	166.86
SIRIUS	1750	216.84	216.84	216.84
SIRIUS	1533	318.07	318.07	318.07
SIRIUS	1215	179	179	179
SIRIUS	1036	0	0	0

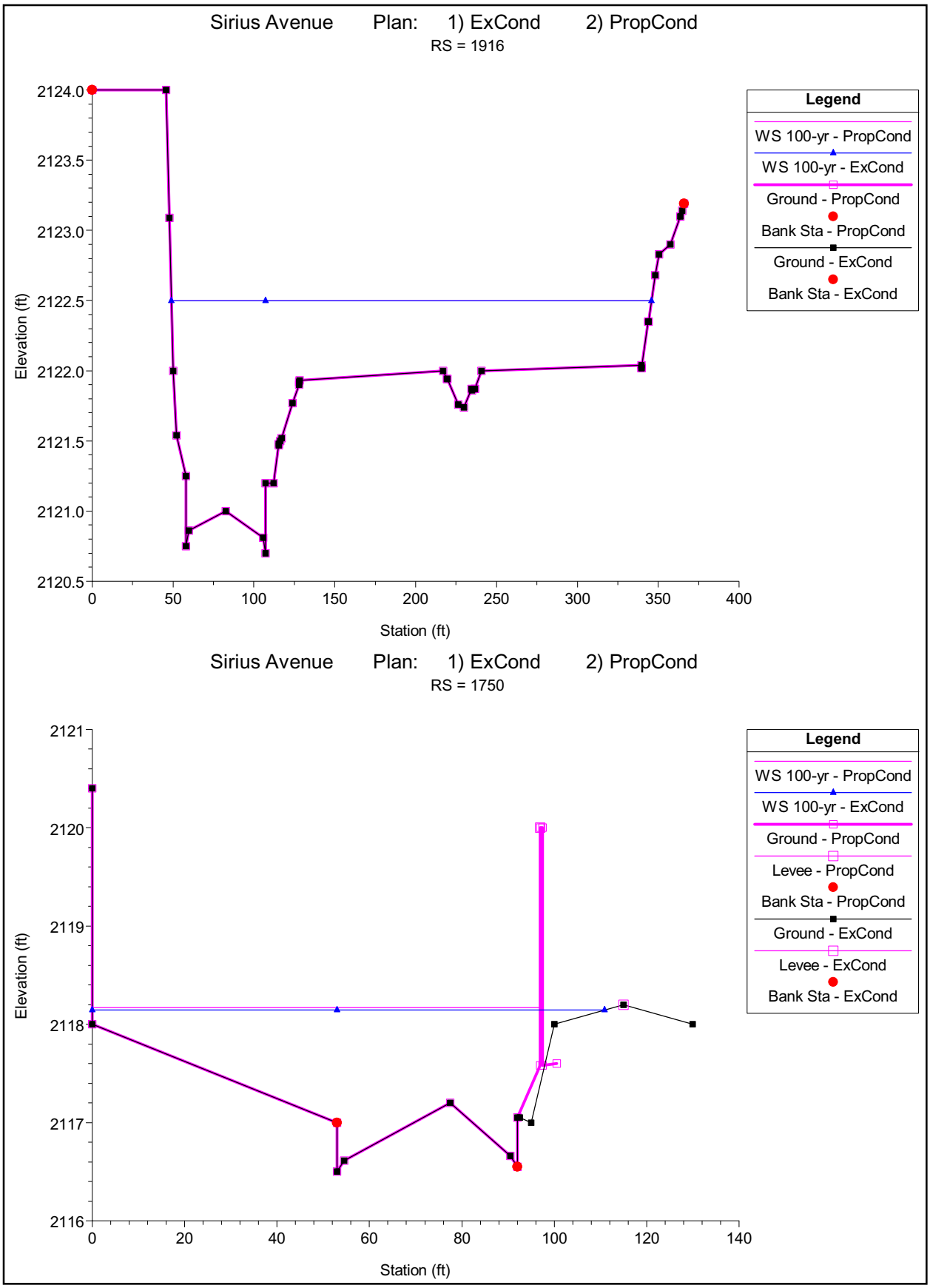
ERRORS WARNINGS AND NOTES
Errors Warnings and Notes for Plan : PropCond

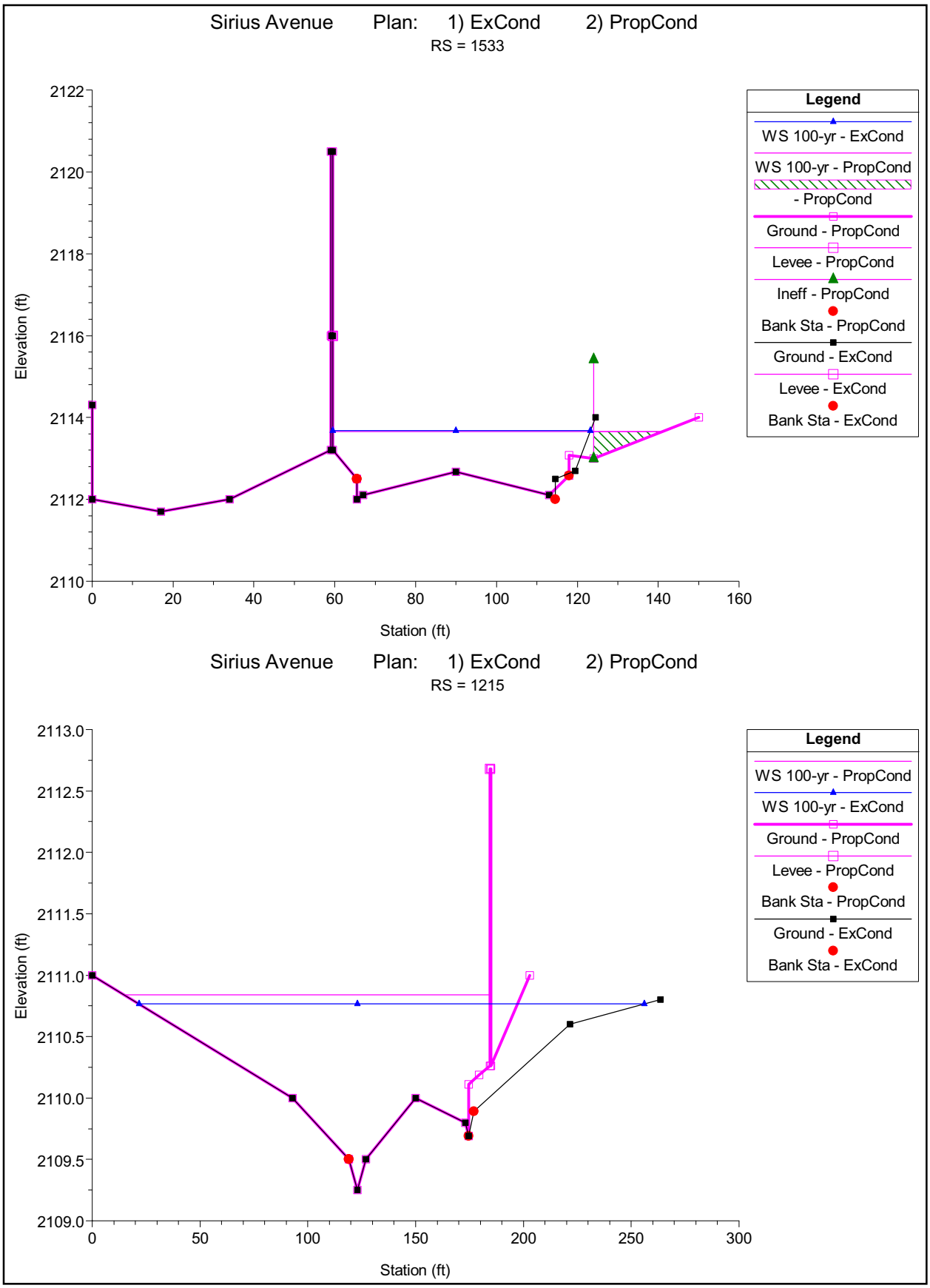
River: SIRIUS AVE Reach: SIRIUS RS: 1916 Profile: 100-yr
Note: Manning's n values were composited to a single value in the main channel.
River: SIRIUS AVE Reach: SIRIUS RS: 1750 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: SIRIUS AVE Reach: SIRIUS RS: 1533 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: SIRIUS AVE Reach: SIRIUS RS: 1215 Profile: 100-yr
Warning:The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.
River: SIRIUS AVE Reach: SIRIUS RS: 1036 Profile: 100-yr
Warning:Divided flow computed for this cross-section.
Warning:The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

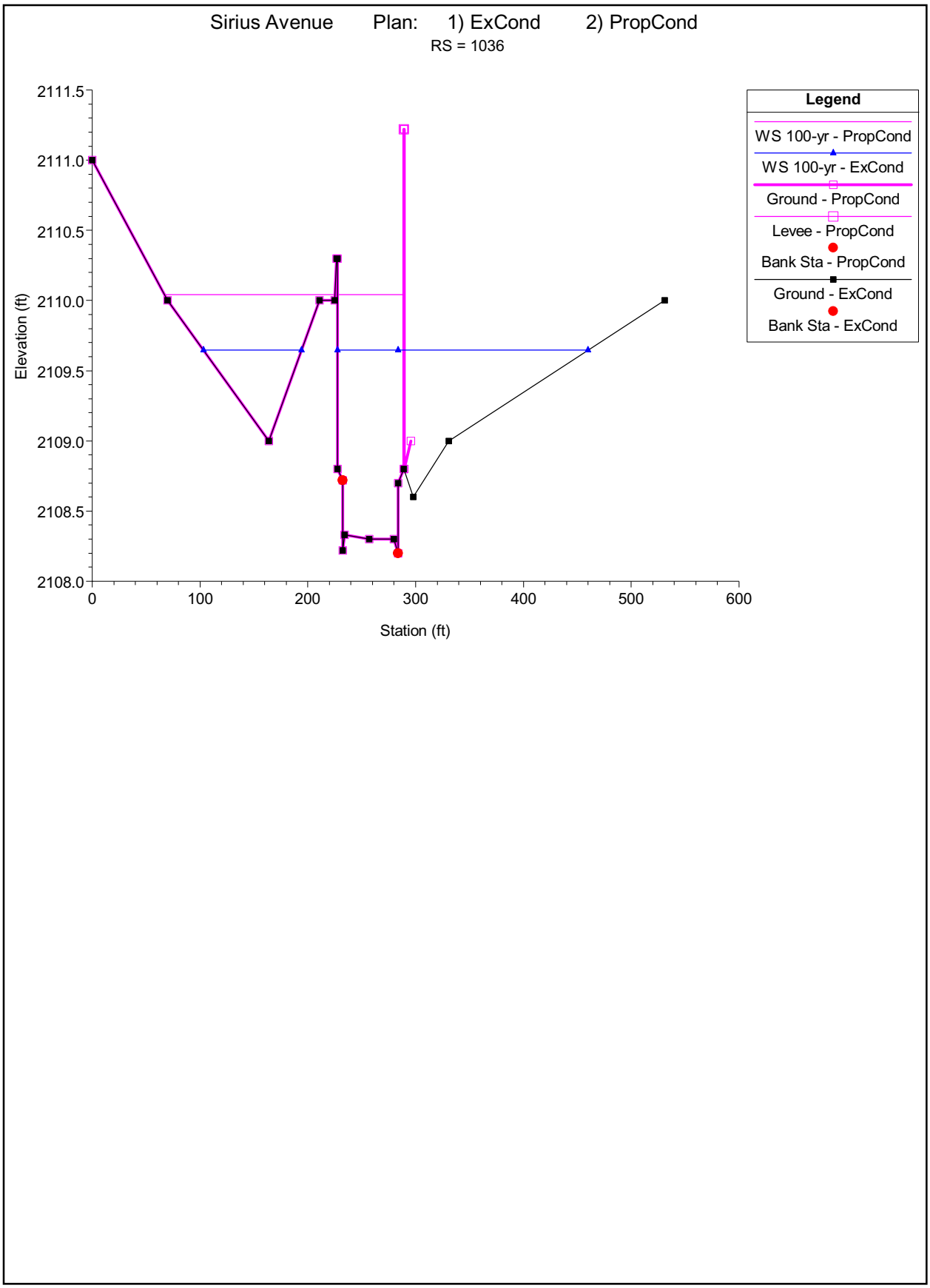
HEC-RAS River: SIRIUS AVE Reach: SIRIUS Profile: 100-yr

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
SIRIUS	1916	100-yr	ExCond	1081.00	2120.70	2122.50	2122.50	2122.88	0.008928	4.96	217.92	296.89	1.02
SIRIUS	1916	100-yr	PropCond	1081.00	2120.70	2122.50	2122.50	2122.88	0.008928	4.96	217.92	296.89	1.02
SIRIUS	1750	100-yr	ExCond	1081.00	2116.50	2118.15	2118.81	2120.65	0.017362	14.26	90.59	110.90	2.24
SIRIUS	1750	100-yr	PropCond	1081.00	2116.50	2118.17	2118.85	2120.69	0.016574	14.11	89.69	97.00	2.20
SIRIUS	1533	100-yr	ExCond	1081.00	2112.00	2113.68	2114.56	2116.85	0.017087	14.54	76.34	63.76	2.24
SIRIUS	1533	100-yr	PropCond	1081.00	2112.00	2113.66	2114.57	2116.90	0.017710	14.75	75.72	81.56	2.30
SIRIUS	1215	100-yr	ExCond	1081.00	2109.25	2110.77	2111.14	2111.99	0.010835	10.50	137.96	234.32	1.85
SIRIUS	1215	100-yr	PropCond	1081.00	2109.25	2110.84	2111.23	2112.13	0.010152	10.53	127.83	169.67	1.78
SIRIUS	1036	100-yr	ExCond	1081.00	2108.20	2109.65	2109.90	2110.44	0.005975	8.83	185.70	323.78	1.34
SIRIUS	1036	100-yr	PropCond	1081.00	2108.20	2110.04	2110.29	2110.92	0.004027	8.60	179.33	219.60	1.15


Sirius Avenue Plan: 1) ExCond 3/7/2018 2) PropCond 3/7/2018
Legend
WS 100-yr - PropCond
WS 100-yr - ExCond
Ground
Ground
Elevation (ft)
2124
2122
2120
2118
2116
2114
2112
2110
2108
0
200
400
600
800
1000
Main Channel Distance (ft)
1215
1533
1750
1916


Sirius Avenue Plan: 1) ExCond 2) PropCond
RS = 1916
Elevation (ft)
Station (ft)
2124.0
2123.5
2123.0
2122.5
2122.0
2121.5
2121.0
2120.5
0
50
100
150
200
250
300
350
400
Legend
WS 100-yr - PropCond
WS 100-yr - ExCond
Ground - PropCond
Bank Sta - PropCond
Ground - ExCond
Bank Sta - ExCond
Sirius Avenue Plan: 1) ExCond 2) PropCond
RS = 1750
Elevation (ft)
Station (ft)
2121
2120
2119
2118
2117
2116
0
20
40
60
80
100
120
140
Legend
WS 100-yr - PropCond
WS 100-yr - ExCond
Ground - PropCond
Levee - PropCond
Bank Sta - PropCond
Ground - ExCond
Levee - ExCond
Bank Sta - ExCond


Sirius Avenue Plan: 1) ExCond 2) PropCond
RS = 1533
Elevation (ft)
Station (ft)
2122
2120
2118
2116
2114
2112
2110
0
20
40
60
80
100
120
140
160
Legend
WS 100-yr - ExCond
WS 100-yr - PropCond
- PropCond
Ground - PropCond
Levee - PropCond
Ineff - PropCond
Bank Sta - PropCond
Ground - ExCond
Levee - ExCond
Bank Sta - ExCond
Sirius Avenue Plan: 1) ExCond 2) PropCond
RS = 1215
Elevation (ft)
Station (ft)
2113.0
2112.5
2112.0
2111.5
2111.0
2110.5
2110.0
2109.5
2109.0
0
50
100
150
200
250
300
Legend
WS 100-yr - PropCond
WS 100-yr - ExCond
Ground - PropCond
Levee - PropCond
Bank Sta - PropCond
Ground - ExCond
Bank Sta - ExCond


Sirius Avenue Plan: 1) ExCond 2) PropCond
RS = 1036
Legend
WS 100-yr - PropCond
WS 100-yr - ExCond
Ground - PropCond
Levee - PropCond
Bank Sta - PropCond
Ground - ExCond
Bank Sta - ExCond
Elevation (ft)
2111.5
2111.0
2110.5
2110.0
2109.5
2109.0
2108.5
2108.0
0
100
200
300
400
500
600
Station (ft)

Attachment C
Sirius Avenue HEC-RAS Exhibit

(NOT A PART)

1916

1750

1533

1215

1036

50.00' R/W

SUBJECT PROPERTY

APN 162-08-418-002

641,164 SF

(14.72 ACRES)

GRAPHIC SCALE IN FEET
0 20 40 80

NORTH

LEGEND

- HEC-RAS CROSS SECTION
- 2 FT CONTOUR FROM CLARK COUNTY
- SURVEYED CONTOURS
- PROPOSED CONTOURS
- EXISTING 100-YEAR INUNDATION LIMITS
- PROPOSED 100-YEAR INUNDATION LIMITS

SIRIUS AVENUE HEC-RAS EXHIBIT

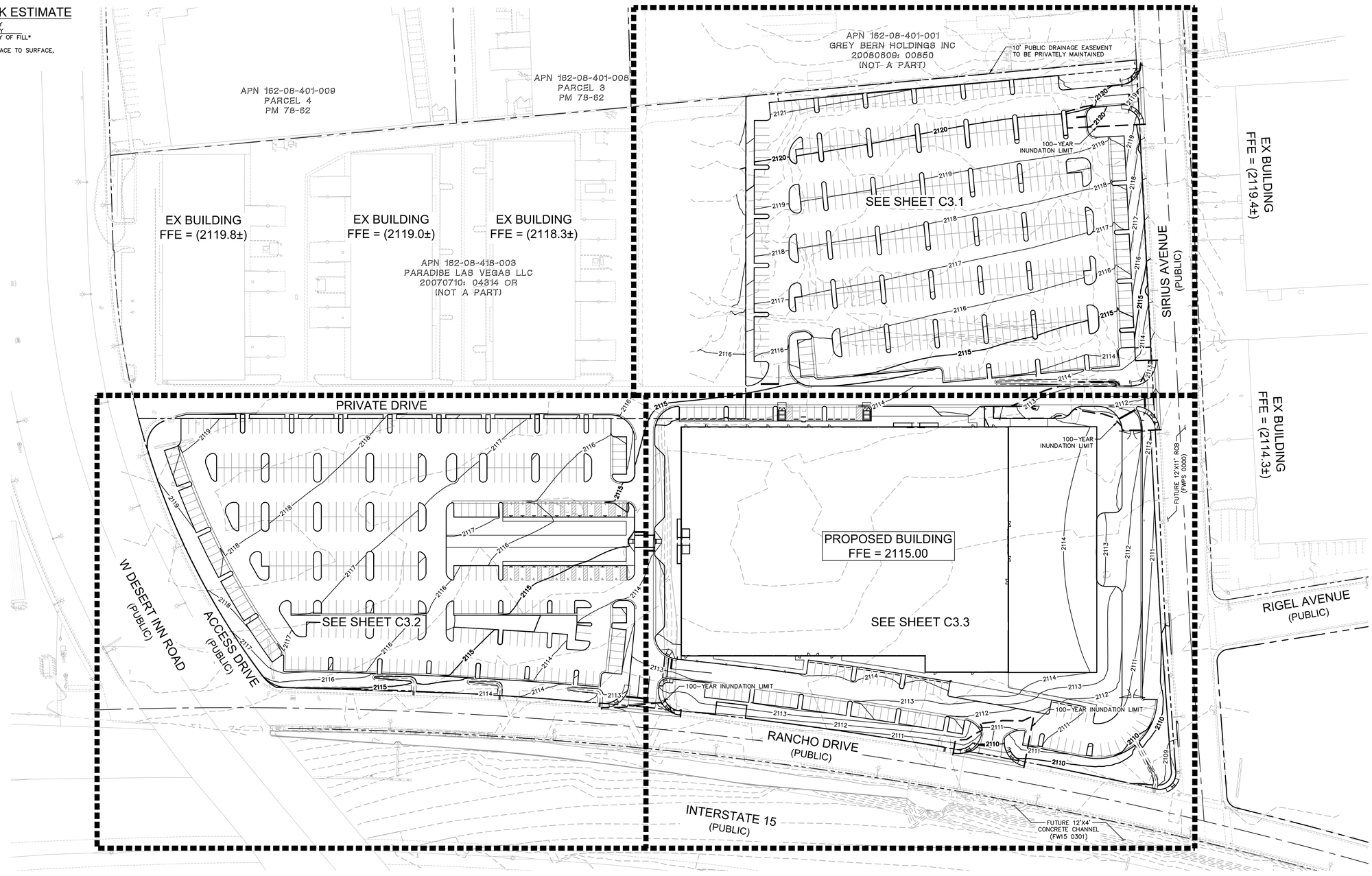
Kimley»Horn

Attachment D
Grading Plans (Under separate cover)

EARTHWORK ESTIMATE

CUT VOLUME: 3,000 CY
FILL VOLUME: 34,500 CY
NET VOLUME: 31,500 CY OF FILL*

* – BASED ON A SURFACE TO SURFACE, UNADJUSTED ANALYSIS



GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY THE EX. GRADES PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN THE FIELD CONDITION AND THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
2. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE IS MAINTAINED.
3. ALL PAVEMENT SECTIONS SHOWN HEREIN ARE BASED ON THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.
4. ADD 2100' TO ALL 2-DIGIT ELEVATIONS UNLESS OTHERWISE NOTED.
5. REFER TO SHEET C0.2 FOR LEGEND AND ABBREVIATIONS.

GEOTECHNICAL REPORT

ALL GRADING SHALL CONFORM TO THE GEOTECHNICAL REPORT:

ENGINEER: GEOTEK, INC.
DATED: JUNE 5, 2017
PROJECT No: 13493-LV

FLOOD ZONE NOTE

THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) INDICATES THAT THE SITE IS LOCATED IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP (FIRM) NO. 32003C2170F, REVISED NOVEMBER 16, 2011. ZONE "X" IS DEFINED BY FEMA AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

STORMWATER COMPLIANCE NOTES

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN THE CLARK COUNTY ORDINANCES AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED, SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPS WEEKLY, AND WITHIN 24 HOURS AFTER ANY RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED WITHIN SEVERAL 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.

BENCHMARK

CITY OF LAS VEGAS PIN AND PLATE IN TOP OF CURB, NORTHEAST CORNER OF DESERT INN RD., AND POLARIS AVE., (NOT STAMPED) NEAR THE PC OF DESERT INN RD.

ELEVATION: 2133.87 FEET
650.407 METERS

NORTH AMERICAN VERTICAL DATUM OF 1988

BASIS OF BEARING

SOUTH 02°04'14" EAST, BEING THE BEARING OF THE WEST LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 8, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M., BEARING SHOWN AS SOUTH 02°03'35" EAST ON A RECORD OF SURVEY, FILE 106, PAGE 29, CLARK COUNTY, NEVADA OFFICIAL RECORDS.

DRAINAGE CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY DS#4921

THOMAS E. ACKERET, P.E. #018592 DATE

NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEMS AND STREET LIGHT SYSTEM CONDUITS IT'S COSTLY
CALL BEFORE YOU DIG UNDERGROUND
Call before you UnderGround 1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION (FAST)

Call before you Dig
Avoid cutting underground utility lines. It's costly.
CALL 811 OR 1-800-227-2600

Avoid overhead power line contact. It's costly.
Call Before You Overhead 1-702-227-2929

Kimley»Horn
© 2018 KIMLEY-HORN AND ASSOCIATES, INC.
6671 LAS VEGAS BLVD S., SUITE 320, LAS VEGAS, NV 89119
PHONE: 702-382-3000
WWW.KIMLEY-HORN.COM

PROFESSIONAL ENGINEER-STATE OF NEVADA
THOMAS ACKERET
Exp. 12/31/18
CIVIL
No. 18592

No.	REVISIONS	DATE	BY

KHA PROJECT 092965000
DATE FEB 27, 2018
SCALE AS SHOWN
DESIGNED BY TJO
DRAWN BY KPN
CHECKED BY TEA

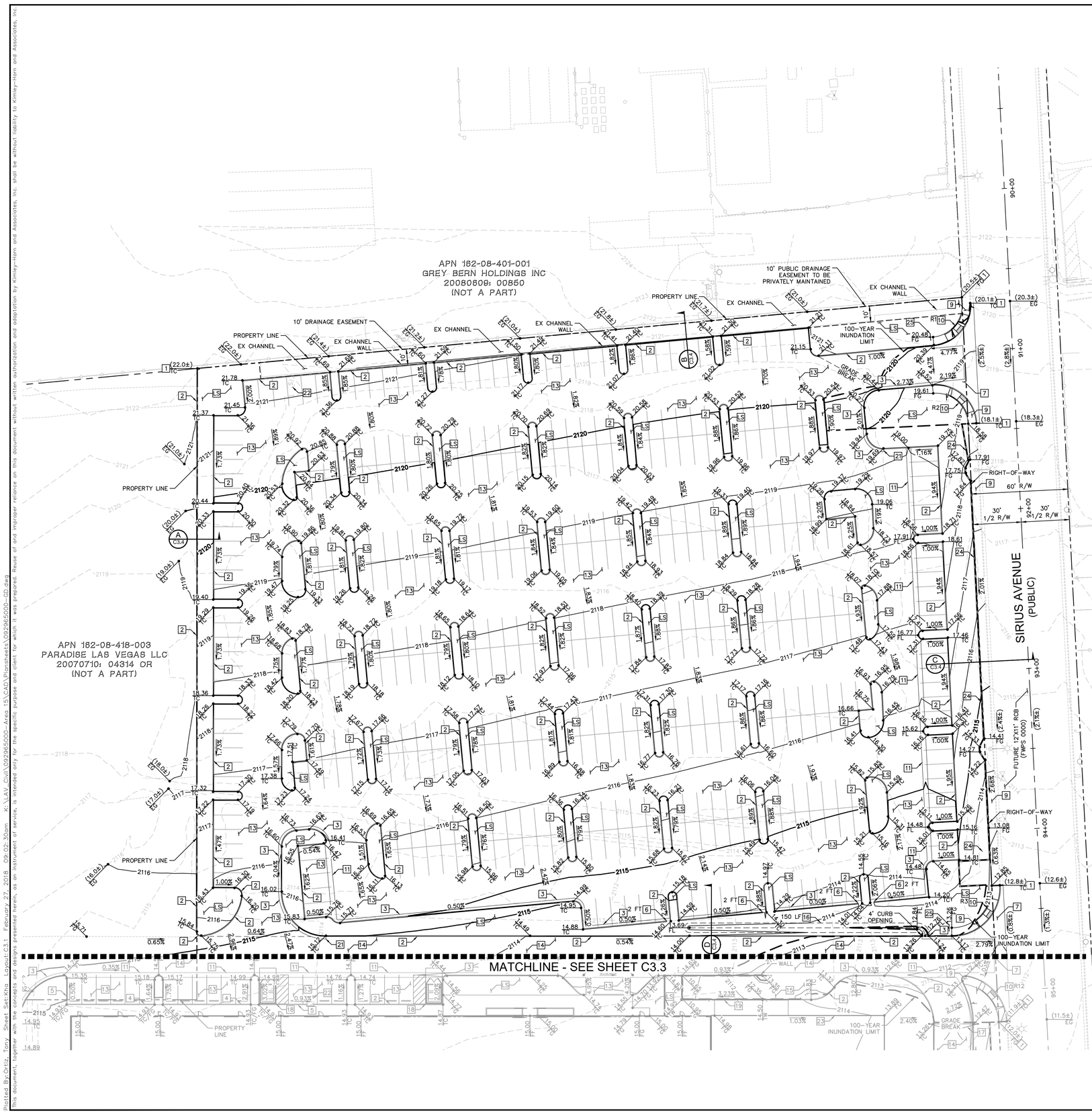
OVERALL GRADING PLAN

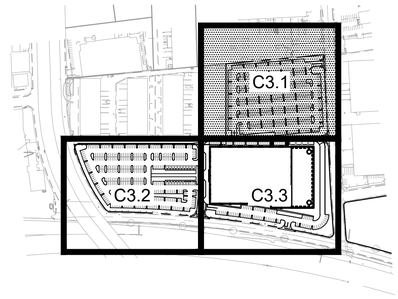
AREA 15

PREPARED FOR
THE FISHER BROTHERS

CITY OF LAS VEGAS NEVADA

SHEET NUMBER
C3.0





KEY MAP
NTS

GENERAL NOTES
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ALL GRADING SHALL CONFORM TO THE GEOTECHNICAL REPORT:

ENGINEER: GEOTEK, INC.
DATED: JUNE 5, 2017
PROJECT No: 13493-LV

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CONSTRUCTION NOTES
1. MATCH EXISTING
2. INSTALL MODIFIED TYPE 'A' CURB PER DETAIL A ON SHEET C5.0
3. INSTALL 'L' CURB AND GUTTER PER CCAUSD NO. 216
4. INSTALL MODIFIED 0" FACE CURB PER DETAIL B ON SHEET C5.0
5. INSTALL TRANSITION FROM MODIFIED TYPE 'A' CURB TO 0" FACE CURB PER DETAIL C ON SHEET C5.0
6. INSTALL 6" DEPTH CURB CUT PER DETAIL D ON SHEET C5.0, WIDTH PER PLAN
7. INSTALL COMMERCIAL DRIVEWAY (OPTION B) PER CCAUSD No. 225
9. INSTALL CONCRETE SIDEWALK PER CCAUSD NO. 234
10. INSTALL SIDEWALK RAMP PER CCAUSD NO. 235, CASE I, REFER TO DETAILS R1-R12 ON SHEET C3.5 FOR RAMP I.D. AND GRADES
11. INSTALL 3' WIDE VALLEY GUTTER PER DETAIL F ON SHEET C5.0
13. INSTALL 2.5" AC OVER 4.5" TYPE II BASE COURSE PER GEOTECHNICAL REPORT RECOMMENDATIONS
14. INSTALL 3.5" AC OVER 5" TYPE II BASE COURSE PER GEOTECHNICAL REPORT RECOMMENDATIONS
15. INSTALL 6" PCC OVER 6" TYPE II BASE COURSE PER GEOTECHNICAL REPORT RECOMMENDATIONS WITH #4 BARS 12" O.C. EACH WAY
16. INSTALL RIP-RAP LANDSCAPE SWALE PER SECTION J ON SHEET C3.4
17. BAR GATE LOCATION, SEE ARCHITECTURAL PLANS FOR GATE INSTALLATION REQUIREMENTS
18. TRASH ENCLOSURE PER ARCHITECTURAL PLANS
19. HANDRAIL PER ARCHITECTURAL PLANS
21. INSTALL SPILL GUTTER PER DETAIL E ON SHEET C5.0
22. ADJUST EXISTING MANHOLE RIM TO PROPOSED GRADE
23. FENCING PER ARCHITECTURAL PLANS
24. CONSTRUCT STEM WALL PER DETAIL J ON SHEET C5.0
25. INSTALL SIGN POST PER CCAUSD NO. 249.1 WITH "WARNING" SIGN PER CCRFCD DESIGN MANUAL, FIGURE 401; SIGN SHALL READ "WARNING: YOU ARE ENTERING AN AREA THAT IS SUBJECT TO FLASH FLOODS. PLEASE PROCEED WITH CAUTION DURING A STORM EVENT"

LS REFER TO LANDSCAPE PLAN

STORMWATER COMPLIANCE NOTES
REFER TO SHEET C3.0 FOR STORMWATER COMPLIANCE NOTES.

BENCHMARK
CITY OF LAS VEGAS PIN AND PLATE IN TOP OF CURB, NORTHEAST CORNER OF DESERT INN RD., AND POLARIS AVE., (NOT STAMPED) NEAR THE PC OF DESERT INN RD.

ELEVATION: 2133.87 FEET
650.407 METERS

NORTH AMERICAN VERTICAL DATUM OF 1988

BASIS OF BEARING
SOUTH 02°04'14" EAST, BEING THE BEARING OF THE WEST LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 8, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M.. BEARING SHOWN AS SOUTH 02°03'35" EAST ON A RECORD OF SURVEY, FILE 106, PAGE 29, CLARK COUNTY, NEVADA OFFICIAL RECORDS.

DRAINAGE CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY DS#4921

THOMAS E. ACKERET, P.E. #018592 — DATE

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60
1" = 30'

AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEM AND STREET LIGHT SYSTEM CONDUITS IT'S COSTLY
CALL BEFORE YOU DO UNDERGROUND
Call before you UnderGround 1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION (FAST)

Call before you DIG
Avoid cutting underground utility lines. It's costly.
CALL 811 OR 1-800-227-2600

Avoid overhead power line contact. It's costly.
Call Before You Overhead 1-702-227-2929

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2018 KIMLEY-HORN AND ASSOCIATES, INC.
6671 LAS VEGAS BLVD S., SUITE 320, LAS VEGAS, NV 89119
PHONE: 702-589-3500
WWW.KIMLEY-HORN.COM

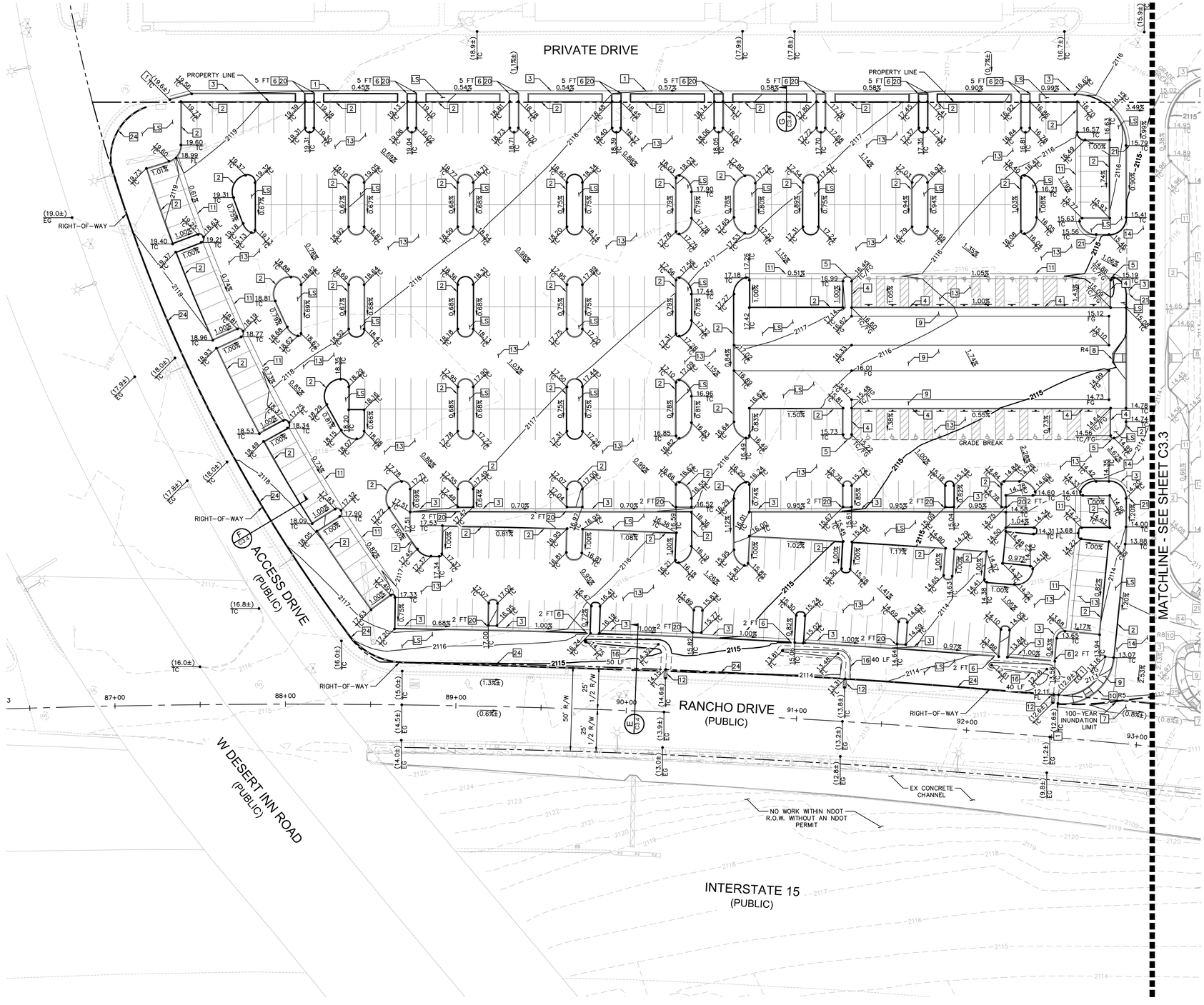
PROFESSIONAL ENGINEER-STATE OF NEVADA
THOMAS ACKERET
Exp. 12/31/18
CIVIL
No. 18592

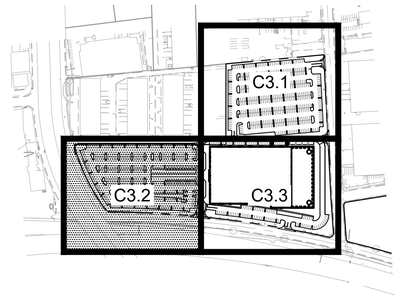
KHA PROJECT 092965000
DATE FEB 27, 2018
SCALE AS SHOWN
DESIGNED BY TJO
DRAWN BY KPN
CHECKED BY TEA

GRADING PLAN - SHEET 1

AREA 15
PREPARED FOR
THE FISHER BROTHERS
CITY OF LAS VEGAS NEVADA

SHEET NUMBER
C3.1





KEY MAP
NTS

GENERAL NOTES
1. THE CONTRACTOR SHALL VERIFY THE EX. GRADES PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN THE FIELD CONDITION AND THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
2. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE IS MAINTAINED.
3. ALL PAVEMENT SECTIONS SHOWN HEREIN ARE BASED ON THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.
4. ADD 2100' TO ALL 2-DIGIT ELEVATIONS UNLESS OTHERWISE NOTED.
5. REFER TO SHEET C0.2 FOR LEGEND AND ABBREVIATIONS.

GEOTECHNICAL REPORT
ALL GRADING SHALL CONFORM TO THE GEOTECHNICAL REPORT:

ENGINEER: GEOTEK, INC.
DATED: JUNE 5, 2017
PROJECT No: 13493-LV

FLOOD ZONE NOTE
THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) INDICATES THAT THE SITE IS LOCATED IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP (FIRM) NO. 32003C2170F, REVISED NOVEMBER 16, 2011. ZONE "X" IS DEFINED BY FEMA AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

CONSTRUCTION NOTES
1. MATCH EXISTING
2. INSTALL MODIFIED TYPE 'A' CURB PER DETAIL A ON SHEET C5.0
3. INSTALL 'L' CURB AND GUTTER PER CCAUSD NO. 216
4. INSTALL MODIFIED 0" FACE CURB PER DETAIL B ON SHEET C5.0
5. INSTALL TRANSITION FROM MODIFIED TYPE 'A' CURB TO 0" FACE CURB PER DETAIL C ON SHEET C5.0
6. INSTALL 6" DEPTH CURB CUT PER DETAIL D ON SHEET C5.0, WIDTH PER PLAN
7. INSTALL COMMERCIAL DRIVEWAY (OPTION B) PER CCAUSD No. 225
8. INSTALL SIDEWALK RAMP PER CCAUSD NO. 235, CASE II, REFER TO DETAILS R1-R12 ON SHEET C3.5 FOR RAMP I.D. AND GRADES
9. INSTALL CONCRETE SIDEWALK PER CCAUSD NO. 234
10. INSTALL SIDEWALK RAMP PER CCAUSD NO. 235, CASE I, REFER TO DETAILS R1-R12 ON SHEET C3.5 FOR RAMP I.D. AND GRADES
11. INSTALL 3' WIDE VALLEY GUTTER PER DETAIL F ON SHEET C5.0
12. INSTALL 2' SIDEWALK UNDERDRAIN PER CCAUSD NO. 236
13. INSTALL 2.5" AC OVER 4.5" TYPE II BASE COURSE PER GEOTECHNICAL REPORT RECOMMENDATIONS
14. INSTALL 3.5" AC OVER 5" TYPE II BASE COURSE PER GEOTECHNICAL REPORT RECOMMENDATIONS
16. INSTALL RIP-RAP LANDSCAPE SWALE PER SECTION J ON SHEET C3.4
20. INSTALL CHANNEL PER DETAIL I ON SHEET C5.0, WIDTH PER PLAN
21. INSTALL SPILL GUTTER PER DETAIL E ON SHEET C5.0
24. CONSTRUCT STEM WALL PER DETAIL J ON SHEET C5.0
25. INSTALL SIGN POST PER CCAUSD NO. 249.1 WITH "WARNING" SIGN PER CCRFCD DESIGN MANUAL, FIGURE 401; SIGN SHALL READ "WARNING: YOU ARE ENTERING AN AREA THAT IS SUBJECT TO FLASH FLOODS. PLEASE PROCEED WITH CAUTION DURING A STORM EVENT"

LS REFER TO LANDSCAPE PLAN

STORMWATER COMPLIANCE NOTES
REFER TO SHEET C3.0 FOR STORMWATER COMPLIANCE NOTES.

BENCHMARK
CITY OF LAS VEGAS PIN AND PLATE IN TOP OF CURB, NORTHEAST CORNER OF DESERT INN RD., AND POLARIS AVE., (NOT STAMPED) NEAR THE PC OF DESERT INN RD.

ELEVATION: 2133.87 FEET
650.407 METERS

NORTH AMERICAN VERTICAL DATUM OF 1988

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THOMAS E. ACKERET, P.E. #018592 DATE

NORTH

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No.	REVISIONS	DATE	BY

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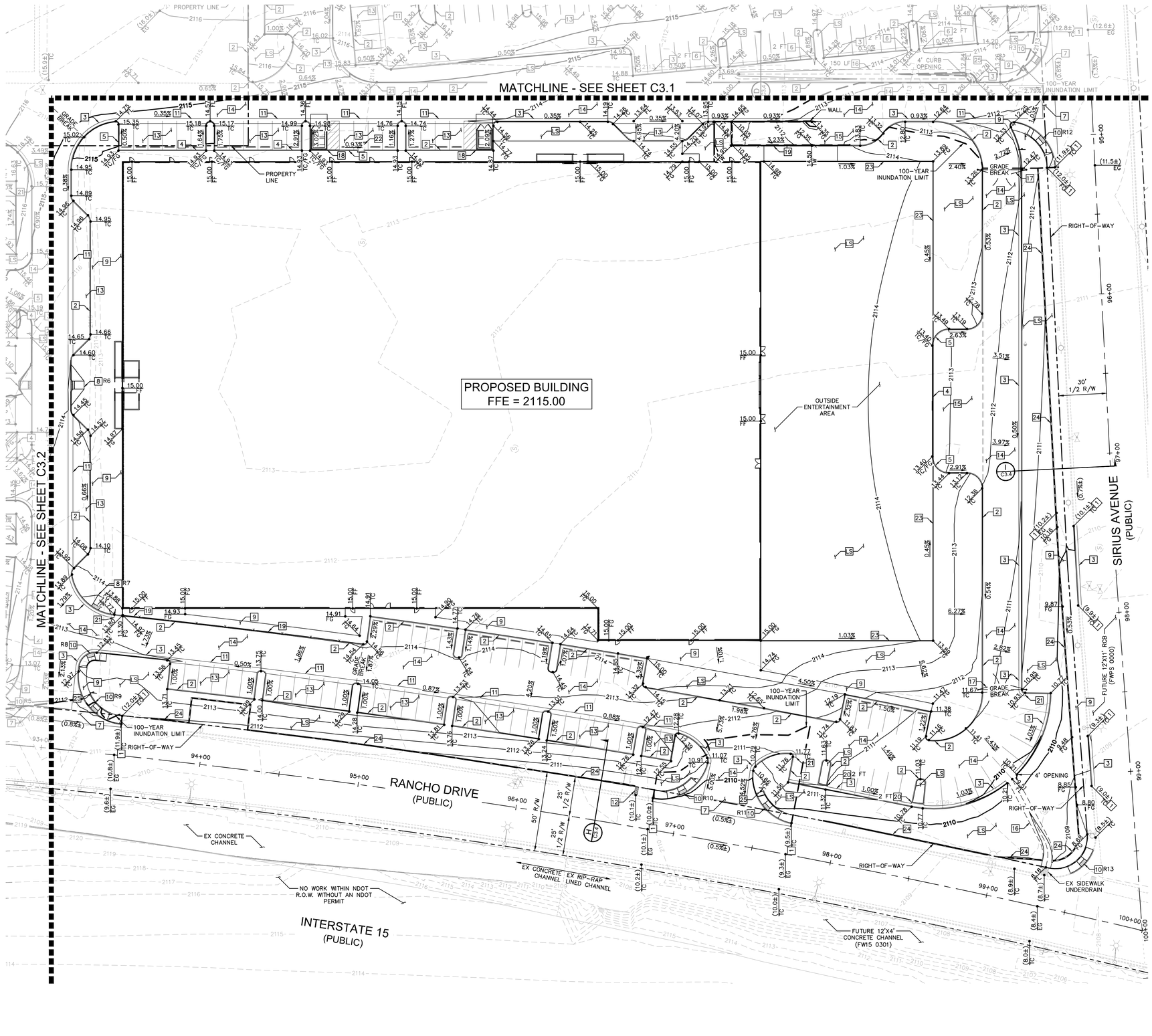
PROFESSIONAL ENGINEER-STATE OF NEVADA
THOMAS ACKERET
Exp. 12/31/18
CIVIL
No. 18592

KHA PROJECT 092965000
DATE FEB 27, 2018
SCALE AS SHOWN
DESIGNED BY TJO
DRAWN BY KPN
CHECKED BY TEA

GRADING PLAN - SHEET 2

AREA 15
PREPARED FOR
THE FISHER BROTHERS
CITY OF LAS VEGAS NEVADA

SHEET NUMBER
C3.2



KEY MAP
NTS

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14. INSTALL 3.5" AC OVER 5" TYPE II BASE COURSE PER GEOTECHNICAL REPORT RECOMMENDATIONS
15. INSTALL 6" PCC OVER 6" TYPE II BASE COURSE PER GEOTECHNICAL REPORT RECOMMENDATIONS WITH #4 BARS 12" O.C. EACH WAY
16. INSTALL RIP-RAP LANDSCAPE SWALE PER SECTION J ON SHEET C3.4
17. BAR GATE LOCATION, SEE ARCHITECTURAL PLANS FOR GATE INSTALLATION REQUIREMENTS
18. TRASH ENCLOSURE PER ARCHITECTURAL PLANS
19. HANDRAIL PER ARCHITECTURAL PLANS
20. INSTALL CHANNEL PER DETAIL I ON SHEET C5.0, WIDTH PER PLAN
21. INSTALL SPILL GUTTER PER DETAIL E ON SHEET C5.0
22. ADJUST EXISTING MANHOLE RIM TO PROPOSED GRADE
23. FENCING PER ARCHITECTURAL PLANS
24. CONSTRUCT STEM WALL PER DETAIL J ON SHEET C5.0
25. INSTALL SIGN POST PER CCAUSD NO. 249.1 WITH "WARNING" SIGN PER CCRFCD DESIGN MANUAL, FIGURE 401; SIGN SHALL READ "WARNING: YOU ARE ENTERING AN AREA THAT IS SUBJECT TO FLASH FLOODS. PLEASE PROCEED WITH CAUTION DURING A STORM EVENT"

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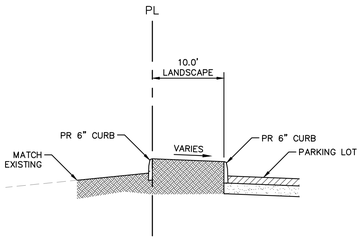
THOMAS ACKERET
Exp. 12/31/18
CIVIL
No. 18592

KHA PROJECT 092965000
DATE FEB 27, 2018
SCALE AS SHOWN
DESIGNED BY TJO
DRAWN BY KPN
CHECKED BY TEA

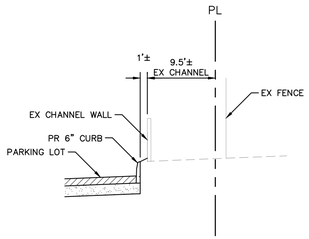
GRADING PLAN - SHEET 3

AREA 15
PREPARED FOR
THE FISHER BROTHERS
CITY OF LAS VEGAS NEVADA

SHEET NUMBER
C3.3



A SECTION A
NTS



B SECTION B
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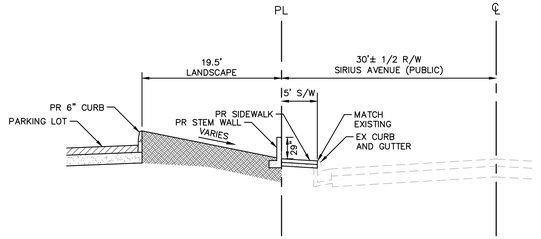

C SECTION C
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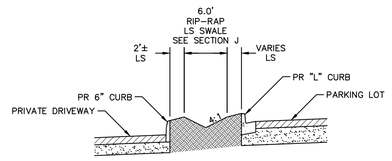

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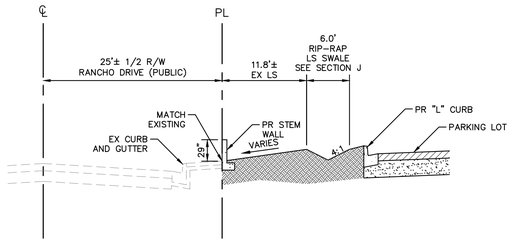

E SECTION E
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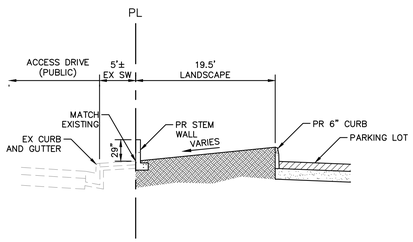

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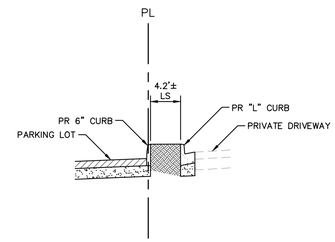

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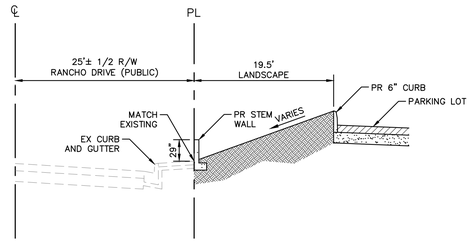

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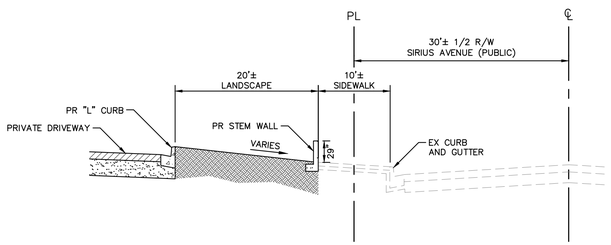
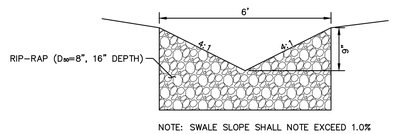
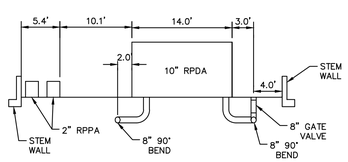


I SECTION I
NTS



NOTE: SWALE SLOPE SHALL NOTE EXCEED 1.0%

J SECTION J
NTS



K SECTION K
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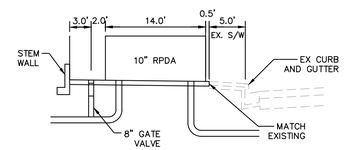

L SECTION L
NTS

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT No. 126128 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 3,625 GPM AT 20 PSI RESIDUAL

GEOTECHNICAL REPORT

ALL GRADING SHALL CONFORM TO THE GEOTECHNICAL REPORT:

ENGINEER: GEOTEK, INC.
DATED: JUNE 5, 2017
PROJECT No: 13493-LV

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No.	REVISIONS	DATE	BY

Kimley»Horn
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PROFESSIONAL ENGINEER-STATE OF NEVADA
THOMAS ACKERET
Exp. 12/31/18
CIVIL
No. 18592

KHA PROJECT 092965000	DATE FEB 27, 2018	SCALE AS SHOWN	DESIGNED BY TJO
		DRAWN BY KPN	CHECKED BY TEA

SECTIONS

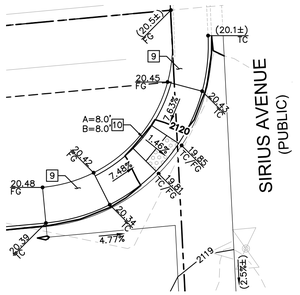
AREA 15

PREPARED FOR
THE FISHER BROTHERS

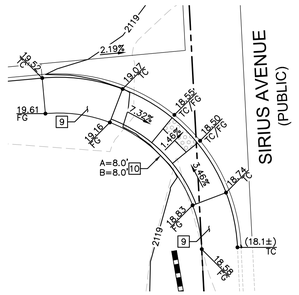
CITY OF LAS VEGAS NEVADA

SHEET NUMBER
C3.4

15 OF 22



R1 C3.1 RAMP DETAIL 1 (CASE I)
SCALE: 1"=10'



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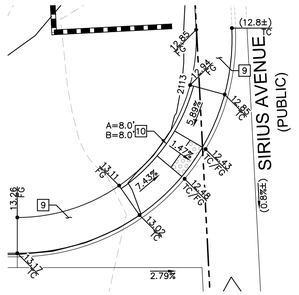

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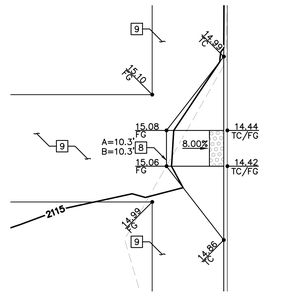

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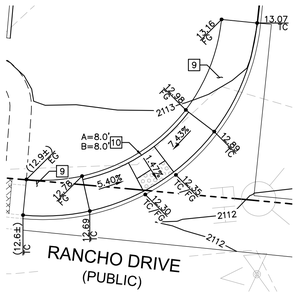

R5 C3.2 RAMP DETAIL 5 (CASE I)
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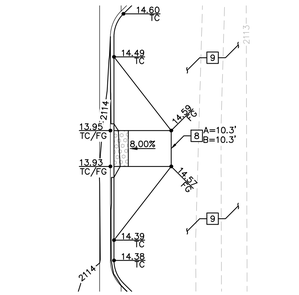

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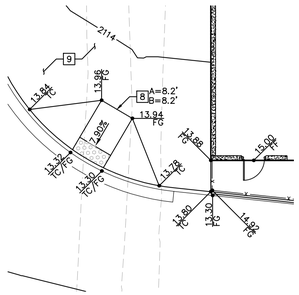
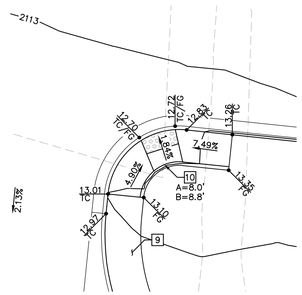
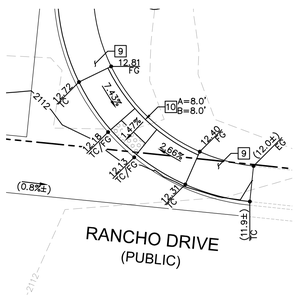


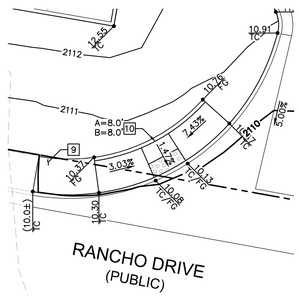
R7 C3.3 RAMP DETAIL 7 (CASE II)
SCALE: 1"=10'



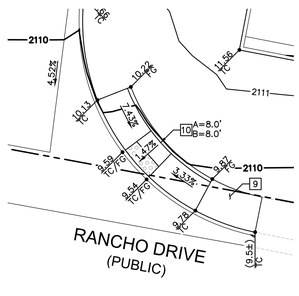
R8 C3.3 RAMP DETAIL 8 (CASE I)
SCALE: 1"=10'



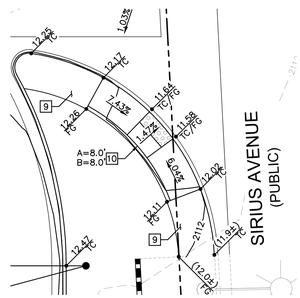
R9 C3.3 RAMP DETAIL 9 (CASE I)
SCALE: 1"=10'



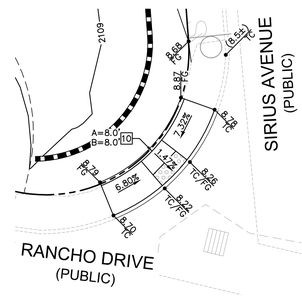
R10 C3.3 RAMP DETAIL 10 (CASE I)
SCALE: 1"=10'



R11 C3.3 RAMP DETAIL 11 (CASE I)
SCALE: 1"=10'



R12 C3.3 RAMP DETAIL 12 (CASE I)
SCALE: 1"=10'



R13 C3.3 RAMP DETAIL 12 (CASE I)
SCALE: 1"=10'

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY THE EX. GRADES PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN THE FIELD CONDITION AND THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
2. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE IS MAINTAINED.
3. ALL PAVEMENT SECTIONS SHOWN HEREIN ARE BASED ON THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.
4. ADD 2100' TO ALL 2-DIGIT ELEVATIONS UNLESS OTHERWISE NOTED.
5. REFER TO SHEET C0.2 FOR LEGEND AND ABBREVIATIONS.

GEOTECHNICAL REPORT

ALL GRADING SHALL CONFORM TO THE GEOTECHNICAL REPORT:

ENGINEER: GEOTEK, INC.
DATED: JUNE 5, 2017
PROJECT No: 13493-LV

FLOOD ZONE NOTE

THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) INDICATES THAT THE SITE IS LOCATED IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP (FIRM) NO. 32003C2170F, REVISED NOVEMBER 16, 2011. ZONE "X" IS DEFINED BY FEMA AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

CONSTRUCTION NOTES

8 INSTALL SIDEWALK RAMP PER CCAUSD NO. 235, CASE II, REFER TO DETAILS R1-R12 ON SHEET C3.5 FOR RAMP I.D. AND GRADES

9 INSTALL CONCRETE SIDEWALK PER CCAUSD NO. 234

10 INSTALL SIDEWALK RAMP PER CCAUSD NO. 235, CASE I, REFER TO DETAILS R1-R12 ON SHEET C3.5 FOR RAMP I.D. AND GRADES

STORMWATER COMPLIANCE NOTES

REFER TO SHEET C3.0 FOR STORMWATER COMPLIANCE NOTES.

BENCHMARK

CITY OF LAS VEGAS PIN AND PLATE IN TOP OF CURB, NORTHEAST CORNER OF DESERT INN RD., AND POLARIS AVE., (NOT STAMPED) NEAR THE PC OF DESERT INN RD.

ELEVATION: 2133.87 FEET
650.407 METERS

NORTH AMERICAN VERTICAL DATUM OF 1988

BASIS OF BEARING

SOUTH 02°04'14" EAST, BEING THE BEARING OF THE WEST LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 8, TOWNSHIP 21 SOUTH, RANGE 61 EAST, M.D.M.. BEARING SHOWN AS SOUTH 02°03'35" EAST ON A RECORD OF SURVEY, FILE 106, PAGE 29, CLARK COUNTY, NEVADA OFFICIAL RECORDS.

DRAINAGE CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY DS#4921

THOMAS E. ACKERET, P.E. #018592 DATE

NORTH

GRAPHIC SCALE IN FEET
0 5 10 20
1" = 10'

AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEMS AND STREET LIGHT SYSTEM CONDUITS ITS COSTLY
CALL BEFORE YOU DIG UNDERGROUND
Call before you UnderGround
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEMS OF TRANSPORTATION (FAST)

Call before you Dig
Avoid cutting underground utility lines. It's costly.
CALL 811 OR 1-800-227-2600

Avoid overhead power line contact. It's costly.
Call Before You Overhead
1-702-227-2929

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2018 KIMLEY-HORN AND ASSOCIATES, INC.
6671 LAS VEGAS BLVD S., SUITE 320, LAS VEGAS, NV 89119
PHONE: 702-382-3535
WWW.KIMLEY-HORN.COM

PROFESSIONAL ENGINEER-STATE OF NEVADA
THOMAS ACKERET
Exp. 12/31/18
CIVIL
No. 18592

KHA PROJECT	092965000
DATE	FEB 27, 2018
SCALE	AS SHOWN
DESIGNED BY	TJO
DRAWN BY	KPN
CHECKED BY	TEA

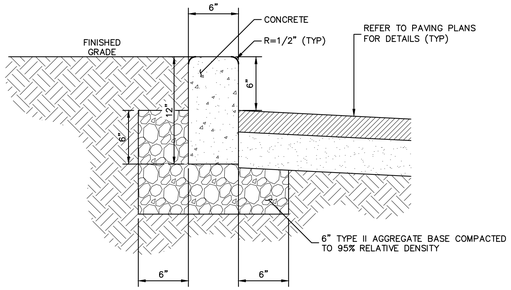
GRADING DETAILS

AREA 15

PREPARED FOR
THE FISHER BROTHERS

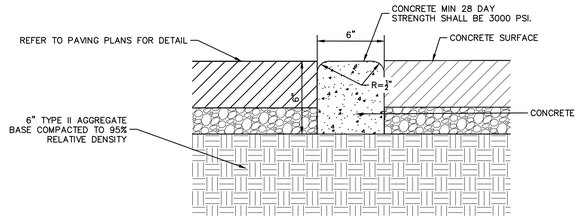
CITY OF LAS VEGAS NEVADA

SHEET NUMBER
C3.5



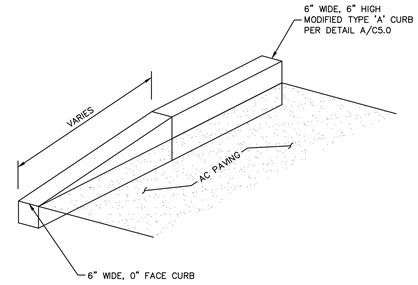
A — ONSITE MODIFIED TYPE "A" CURB DETAIL

NTS



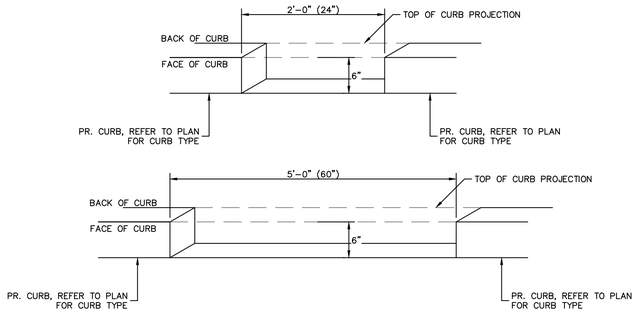
B — ONSITE MODIFIED FLUSH 0" CURB DETAIL

NTS



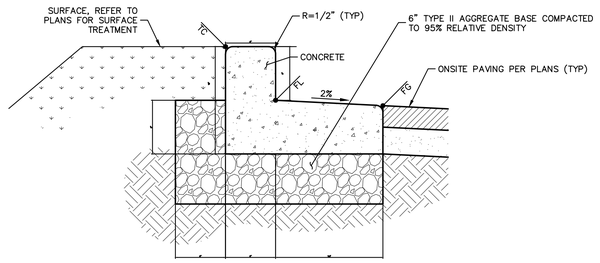
C — 0" FACE CURB TRANSITION TO TYPE 'A' CURB DETAIL

NTS



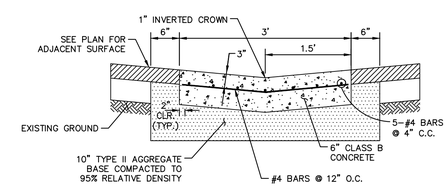
D — 2' AND 5' CURB CUT - 6" DEPTH DETAIL

NTS



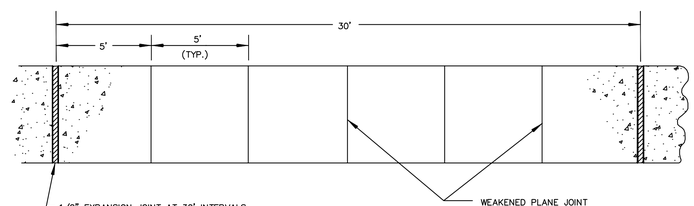
E — ONSITE MODIFIED TYPE "L" SPILL CURB DETAIL

NTS



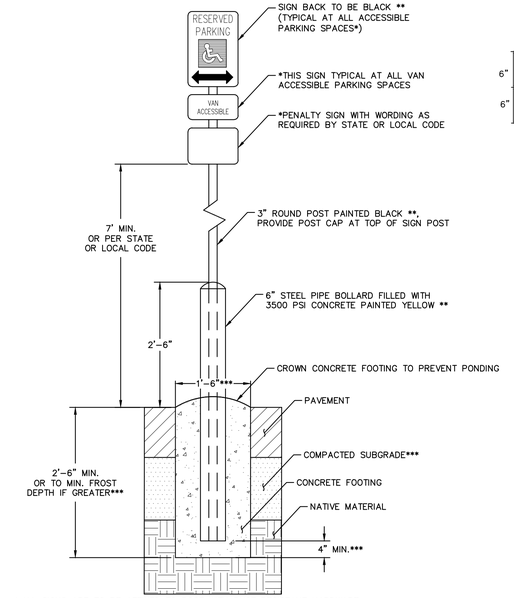
F — 3' VALLEY GUTTER DETAIL

NTS



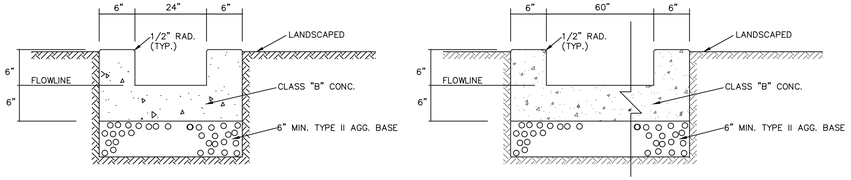
G — CONCRETE SIDEWALK DETAIL DETAIL

NTS



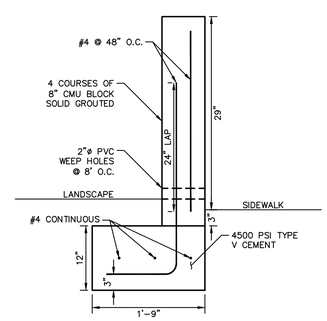
H — ACCESSIBLE PARKING BOLLARD SIGN ASSEMBLY DETAIL

NTS



I — 2' AND 5' CONCRETE CHANNEL DETAIL

NTS



J — STEM WALL DETAIL

NTS

No.	REVISIONS	DATE	BY

Kimley»Horn
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SHEET NUMBER
C5.0