TECHNICAL DRAINAGE STUDY ADDENDUM FOR
LINDELL LIVING 2
SECTION 01, TOWNSHIP 21 SOUTH, RANGE 60 EAST
CITY OF LAS VEGAS, NEVADA

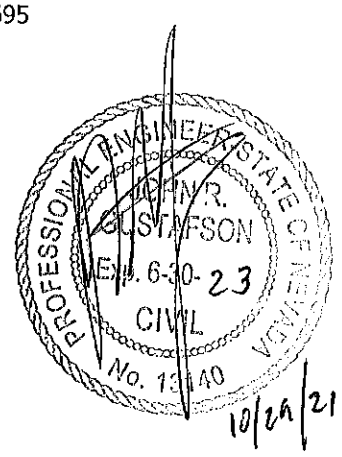
October 28, 2021

PREPARED FOR:

CENTURA DEVELOPMENT
1210 HINSON STREET
LAS VEGAS, NV 89102

PREPARED BY:

BAUGHMAN & TURNER, INC.
1210 HINSON STREET
LAS VEGAS, NEVADA 89102
TEL: (702) 870-8771/FAX: (702) 878-2695



HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Lindell Living 2 Date: October 28, 2021

Location of Development: a) Descriptive (Cross Streets) North/South: Lindell Road
East/West: Charleston Boulevard

b) Section: 01 Township: 21 S Range: 60 E

c) APN: 163-01-103-027 and 028

Name of Owner: Lindell Living II, LLC

Telephone No.: (702) 901-3183 Fax No.: 702-878-2695 E-Mail Address: rjordan@centuradev.com

Address 5055 W. Patrick Lane Las Vegas NV 89118

Contact Person-Name: Pamela Pitcher **Telephone No.:** 702-870-8771

***E-Mail Address:** pamp@baughman-turner.com **Fax No.:** 702-878-2695

Firm: Baughman & Turner, Inc.

Address: 1210 Hinson Street Las Vegas, NV 89102

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: 2.70 acres Being Developed/Disturbed: 2.70 acres
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ Yes** ☒ No
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☐ Yes** ☒ No
4. Proposed type of development (Residential, Commercial, Etc.): Residential apartments
5. Approximate upstream land area which drains to the subject site: 4 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:
   East to Lindell Road
8. Briefly describe your proposed schedule for the subject project: ASAP

PROFESSIONAL ENGINEER-STATE OF NEVADA
JOHN R. GUSTAFSON
Exp. 6-30-23
CIVIL
No. 13140
10/29/21

Engineer's Seal

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

***New Required Field**

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

Revision	Date

Local Entity File No.

REFERENCE:

STANDARD FORM 1

Updated 05/01/2008

Baughman & Turner, Inc.
Consulting Engineers & Land Surveyors

1210 Hinson Street
Las Vegas, Nevada 89102-1604

Phone (702) 870-8771
Fax (702) 878-2695

October 28, 2021

City of Las Vegas Flood Control
Attn.: Mr. Albert Sung, PE
2200 N. Rancho Drive
Las Vegas, Nevada 89103

Re: Technical Drainage Study for Lindell Living 2
Charleston and Lindell

Dear Mr. Sung,

This letter certifies that all items provided on the Technical Drainage Study for Lindell Living 2, Senior Apartment complex electronic submittal matches 100% the paper version bound into the study.

Respectfully submitted,
Baughman & Turner, Inc.

John Gustafson. PE

Baughman & Turner, Inc.
Consulting Engineers & Land Surveyors

1210 Hinson Street
Las Vegas, Nevada 89102-1604

Phone (702) 870-8771
Fax (702) 878-2695

October 28, 2021

City of Las Vegas Land Development Services
Attn: Albert Sung, P.E.
2200 N. Rancho Drive
Las Vegas, Nevada 89103

Re: Technical Drainage Study for Lindell Living II
Application No.: DS5495A

Dear Mr. Sung,

The following is our response to the comments and conditions of approval placed on the above-referenced project. In a memorandum dated September 30, 2021, City of Las Vegas expressed concern about the following items:

> **Comment No. 1: The subject site currently consists of two parcels which should be consolidated into one parcel for the proposed development. Address whether a map process has been initiated for the consolidation and proof of approval in the next submittal.**

Response: The map to consolidate the two parcels has been initiated and has been conditionally approved. Please find a copy of the conditional approval in Appendix A.

> **Comment No. 2: FIG 11 (Existing Onsite Basin Map): It is not clear how the area of the offsite basins (OFF1A, OFF1B, etc) are determined. Revise the map to show the entirety of the offsite basins. The reviewer cannot conclude that the offsite basins are limited to the stated areas and Q10/Q100 as shown in the drainage map. Clearly address the methodology of determining the offsite basin impacting the subject site.**

Response: Figure 11 is the Existing Onsite Basin Map is not intended to show the offsite basins in their entirety. Figure 10 is the Offsite Basin Map and shows the delineation of the offsite basins.

From the approved drainage study for The Lindell, it was determined that the offsite basin extended west to Westwind, therefore, the parcels between Westwind and Lindell become the area contributing flow toward the site and Lindell. However, an existing block wall lies along the majority of the west property line blocking flows from entering the site from the west (Basin OFF1A which has been removed, See Appendix B for revised calculations). A block wall also lies along the easterly 2/3 of the south property line. A gap in the block wall west of APN 163-01-103-010 may allow flows to enter the site here. It is assumed that all the flows associated with the offsite basins make their way to Lindell.

OFF1B is associated with APNs 163-01-103-007, 008, 010 and a portion of 009. Existing contours indicate that this basin drains due east toward Lindell.

All the offsite flows reach Lindell and travel north to Charleston Blvd. A pair of drop inlets at the entrance to The Lindell will collect about 5 cfs of the street flows. This existing storm drain system will carry the collected runoff in a 24-inch RCP through The Lindell site. This pipe discharges to an outlet structure along the north side of The Lindell property line to Charleston. This flow discharges via a series of existing sidewalk under drains.

Comment No. 3: FIG 11 (Existing Onsite Basin Map): Per the drainage map, the parcel to the northwest corner of the subject site does not drain into the proposed development. As a proof, label whether there is a property wall between the two sites in all drainage maps in the next submittal.

Response: The parcel to the NWC of the site has a 2-3 ft block wall which runs along it's east property line blocking flow from entering the site. The existing property walls have been labeled on all drainage maps.

Comment No. 4: FIG 11 (Existing Onsite Drainage Basin Map): Basin name "SITEX" is mis-labeled as "SITEDV".

Response: The existing onsite basin has been revised to correctly label as "SITEX".

Comment No. 5: FIG 12 (Developed Onsite Basin Map) and FIG 13 (Future Onsite Basin Map): Basin name "ONDV2" is mis-labeled as "SITEDV".

Response: The developed onsite basin has been revised to correctly label as "ONDV2".

Comment No. 6: Sheet C2.0: Consider the proposed wall opening at the southwest corner of the subject site under a worst-case scenario that the opening is totally clogged, the adjacent residence could be severely flooded without any emergency flow path. The engineer/developer may consider replacing with a wrought iron fence opening which will have a much lower probability of being totally clogged.

Response: The proposed wall opening at the southwest corner of the site has been replaced with a wrought iron fence.

Comment No. 7: The subject development accepts offsite from the adjacent parcel at the southwest corner. Provide a minimum 10'-wide public drainage easement (privately maintained by the apartment owner) across the site until discharging g at the public street. Delineate the easement on the grading plan and dedicate as such and record by separate document prior to the final approval of the drainage study.

Response: A 10'-wide public drainage easement (privately maintained) will be dedicated on the parcel map.

Comment No. 8: The proposed BMP at the southwest corner of the site is at an inadequate location. The purpose of the BMP swale is to treat the runoff from the parking lot of the subject site. The proposed location does not treat any on-site parking runoff at all. Relocate the BMP for the southern half of the parking lot and address accordingly in the next submittal.

Response: Unfortunately, the Grading plan construction notes were labeled incorrectly. The southern half of the parking lot drains to a low point west of the driveway and through a curb cut into the landscaping. From there the runoff travels north in a landscape swale to the BMP. The south parking area that drains to the BMP is under a half-acre.

Comment No. 9: Explain how the runoff from the north half of the parking lot is directed to the proposed BMP at the northeast corner of the site and treated?

Response: Unfortunately, the Grading plan construction notes were labeled incorrectly. The north parking lot is discharged to the BMP in a similar manner. Runoff off drains to a low point west of the driveway, through a sidewalk under drain into the landscaping. From there the runoff travels north in a landscape swale to the BMP. The north parking area that drains to the BMP is under a half-acre.

Comment No. 10: Per *Detail Section F/C2.1*, a 6'-wide no-man strip of land will be created at the northeast corner of the site. Obtain approval from *City Planning* prior to the final approval of the drainage study.

Response: The 6-ft wide area is identified as Public Right-of-Way. City of Las Vegas Planning has provided clarification of the "no-man" strip of land west of the site. The wall separation meets the criteria as it exceeds 36" of separation. Access for maintenance can be obtained from the north where the wall is only 2-3 ft high. No additional access from this site is provided. See Appendix C for email from City Planning Dept.

Comment No. 11: *Detail Section B/C2.1* shows a 5'-concrete sidewalk adjacent to the proposed building. However, this doesn't match the grading plan. Review and revise in the next submittal.

Response: The 5' sidewalk has been removed from the Section B/C2.1. There is no sidewalk at this location.

Comment No. 12: *Detail Section A/C2.1* proposes a cross slope section instead of the normal crown section in Lindell Road. Coordinate with Mr. Victor Bolanos of *City Traffic Eng-Operations and Research Section* for direction or approval prior to the final approval of the subject drainage study.

Response: Mr. Bolanos has been contacted and he has no concerns with the cross-slope street as proposed. An email confirmation of our coordination and approval has been provided, See Appendix D.

Comment No. 13: In relation to the above Comment #12, the engineer should explore matching the profile of the west curb to the east curb of Lindell Road to establish a normal crown street section. Using this design will require drop inlets on the west curb of Lindell to convey flows at the low point of the street. Address all the options in next submittal.

Response: The cross-fall street has been approved by traffic; no additional drop inlets are required.

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

Response: A note for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (Stormwater Quality Management Stamp and Sign Detail) has been added to all pertinent sheets as requested above.

We trust that this letter addresses the comments and conditions raised with the Technical Drainage Study for The Lindell. If you have any further questions, please feel free to contact this office.

Sincerely,
Baughman & Turner, Inc.

Pamela Pitcher

Pp/ms

cc: The Lindell

Table 1. Peak Flow Summary - Revised

Existing Condition			
Source	**Basin Area (ac)**	**100-year Flow (cfs)**	**10-year Flow (cfs)**
OFF1B	2.34	6	2
SITEX	2.70	6	2
LINDEL	0.73	2	1
CP2 (CP1+SITEX+LINDEL) less 5 cfs in storm drain	--	8	1

Table 2. Peak Flow Summary - Revised

Developed Condition			
Source	**Basin Area (ac)**	**100-year Flow (cfs)**	**10-year Flow (cfs)**
ONDV1	1.14	4	2
OFF1B	2.34	6	2
CP1 (OFF1A+OFF1B+ONDV1)	--	10	4
ONDV2	1.56	5	2
LINDEL	0.73	2	1
CP2 (CP1+ONDV2+LINDEL) less 5 cfs in storm drain	--	11	2

Table 3. Peak Flow Summary - Revised

Future Condition			
Source	**Basin Area (ac)**	**100-year Flow (cfs)**	**10-year Flow (cfs)**
ONDV1	1.14	4	2
OFF1B	2.34	5	2
CP1 (OFF1A+OFF1B+ONDV1)	--	9	4
ONDV2	1.56	5	2
LINDEL	0.73	2	1
CP2 (CP1+ONDV2+LINDEL) less 5 cfs in stormn drain	--	11	2

Table 4.

Street Capacity Summary - Revised							
Section	**Location**	**Slope**	**Q (cfs)**	**D (ft)**	**V (fps)**	**V x D**	**Remarks**
10-Year Flow – Developed Conditions							
HS1	**Lindell Road**	0.19%	2	0.40	1.04	0.42	VxD <6 is met; D less than 1; dry lane is met
HS2	**Lindell Road**	0.19%	2	0.40	1.05	0.42	VxD <6 is met; D less than 1; dry lane is met
100-Year Flow – Developed Conditions							
HS1	**Lindell Road**	0.19%	6	0.55	1.29	0.71	VxD <8 is met; D less than 2
HS2	**Lindell Road**	0.19%	11	0.65	1.50	0.98	VxD <8 is met; D less than 2

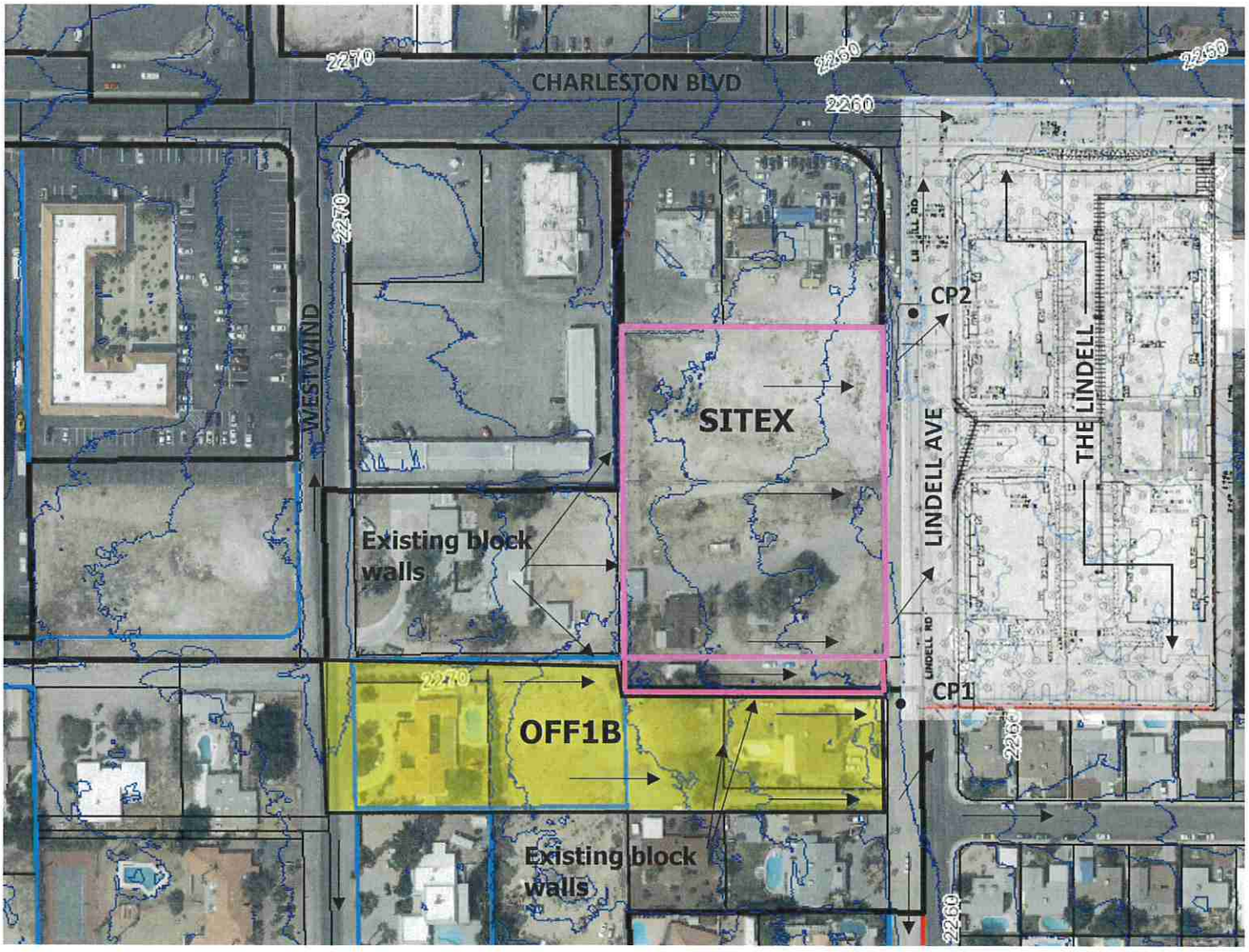
Table 5. Minimum Finished Floor Elevation Determination - Revised

	Top of Curb of Lindell	**Free-board**	**FF Based on TOC of Lindell**	**Flowline Elevation**	**Depth of Flow**	**Free-board**	**Finished Floor Based on Depth of Flow**	**Proposed Minimum Elevation**
Bldg 1	60.35	1.0	61.35	59.85	0.55	0.55	60.95	**2262.20**
Bldg 2	60.30	1.0	61.30	59.80	0.55	0.55	60.90	**2264.60**
Club-house	59.87	1.0	60.87	59.37	0.65	0.65	60.67	**2263.30**

N.T.S.

Existing Condition			
Source	**Basin Area (ac)**	**100-year Flow (cfs)**	**10-year Flow (cfs)**
OFF1B	2.34	6	2
SITEX	2.70	6	2
LINDEL	0.73	2	1
CP2 (CP1+SITEX+LINDEL) less 5 cfs in storm drain	--	8	1

NOTE: See Figures 11, 12 and 13 for Onsite Drainage Basins



OFFSITE BASIN MAP **FIGURE 10**

BAUGHMAN & TURNER, INC.
CIVIL ENGINEERS LAND PLANNERS
LAND SURVEYORS
1210 HINSON STREET LAS VEGAS, NEVADA
(702) 870-8771 89102

PREPARED FOR :

THE LINDELL 2

DATE: 3.2.21
DESIGN: PJP
DRAWN: PJP
JOB: 01-21-60

Memorandum

Department of Public Works
City Engineer Division
Survey Section
Phone (702) 229-6217
Fax (702) 804-8582
www.lasvegasnevada.gov

To: Baughman & Turner, Inc.-Lyle Yenglin, P.L.S.

From: Alan R Riekki, PLS - City Surveyor

Copy: Bart Anderson, P.E. - Department of Public Works
Steve Gebeke - Department of Planning
Baughman & Turner, Inc.-Josh Harney
Lindell Living II LLC-Rodman Jordan

Date: October 11, 2021

RE: **Parcel Map 100163-PMP - Lindell Living II**

Attached is a redlined drawing delineating comments for the above map.

1127374 Case Planning Status: Conditionally Approved October 7, 2021
If you have any questions regarding the following Planning comments please call (702) 229-6301.
100163-PMP

Department of Planning staff has conditionally approved your request for technical review of the blueline Parcel Map, subject to the changes, comments and corrections noted as follows:

1. The file number "100163-PMP" shall be placed above the Recorder's block in the lower right hand corner of the cover sheet.
2. The director's certification and signature box will need to be amended to add
SETH T. FLOYD, ESQ.
DIRECTOR OF COMMUNITY DEVELOPMENT
DEPARTMENT OF PLANNING
CITY OF LAS VEGAS, NEVADA

1127375 Development Coordination Review Status: Conditionally Approved October 4, 2021

If you have any questions regarding the following Development Coordination comments please call (702) 229-6327.

COMMENTS:

This one-lot Parcel Map is for the purpose of lot consolidation; therefore we have no objection to the recordation of this Parcel Map to combine government lots 5 and 20 also described as assessor parcel lots 163-01-103-027 and 163-01-103-028.

We note that patent easements are shown on this map and that a vacation application must be applied for before the City will consider relinquishing its interests in the existing patent easements.

This map appears to satisfy Condition #10 of 21-0197-SDR1.

CONDITIONS OF APPROVAL:

1. Prior to the recordation of this Parcel Map, construct half street improvements on Lindell Road or guarantee such improvements.

2. If the on-site sewer system is to be public, provide a minimum 20-foot wide Public Sewer Easement to be privately maintained centered on the proposed public sewer line.

3. Prior to the recordation of this Parcel Map, a Technical Drainage Study, such as DS05495, shall be approved. This Parcel Map shall conform to the approved Technical Drainage Study.

4. Prior to the recordation of this parcel map, all requirements must be complied with or such future compliance must be guaranteed by an approved performance security method(s) in accordance with Unified Development Code sections 19.02.130.C and 19.02.130.E.

1127383 Survey Review Status: Conditionally Approved September 28, 2021

If you have any questions regarding the following Survey comments please call (702) 229-6217.

Provide a Course Table. Revise the Planning Certificate to reflect correct signing authority.

Correct miscellaneous minor errors, typos or omissions as shown on the provided CLV Departmental "mark-up" file.

End of Comments

PARCEL MAP

BEING A PORTION OF GOVERNMENT LOTS 5 & 20 ALSO BEING A PORTION OF THE EAST HALF (E 1/2) OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 1, TOWNSHIP 21 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

OWNER'S CERTIFICATE

WE, LINDELL LIVING II, LLC, A NEVADA LIMITED LIABILITY COMPANY DO HEREBY CERTIFY THAT WE ARE THE OWNER OF THE PARCEL OF LAND WHICH IS SHOWN WITHIN THE BOUNDARY OF THIS MAP AND DO HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THIS PARCEL MAP, AND HAVE CAUSED THE LAND TO BE SURVEYED AND PLATTED INTO PARCELS AND DO HEREBY OFFER AND DEDICATE TO THE CITY OF LAS VEGAS ALL THE STREETS AND OTHER PUBLIC RIGHTS-OF-WAY AS INDICATED AND OUTLINED HEREON AND

GRANT AND CONVEY TO THE CITY OF LAS VEGAS, AND IT'S SUCCESSORS AND ASSIGNS, EASEMENTS, AS INDICATED AND OUTLINED HEREON, FOR THE USE OF THE PUBLIC.

FURTHER THE UNDERSIGNED OWNER HEREBY GRANTS AND CONVEYS TO THE CITY OF LAS VEGAS AND TO IT'S SUCCESSORS AND ASSIGNS A FIVE FOOT WIDE EASEMENT ADJACENT TO ALL PROPERTY LINES WHERE LOTS OR COMMON AREAS ABUT PUBLIC STREETS FOR PURPOSES OF PLACING PUBLIC FIRE HYDRANTS, PUBLIC DRAINAGE FACILITIES, PUBLIC STREET LIGHTS, CONDUITS, TRAFFIC SIGNALS AND APPURTENANCES; AND AN ADDITIONAL EASEMENT OF UP TO TWO FEET IN RADIUS FROM EACH FIRE HYDRANT, STREET LIGHT, CONDUIT, TRAFFIC SIGNAL AND APPURTENANCE, TO EXTEND BEYOND THE FIVE FOOT EASEMENT IF NECESSARY, TOGETHER WITH THE RIGHT OF INGRESS TO AND EGRESS FROM THESE EASEMENTS.

BY:
AS:
OF:

ACKNOWLEDGMENT

STATE OF NEVADA
(SS)
COUNTY OF CLARK

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON _____, 20___,
BY _____ AS _____
OF LINDELL LIVING II LLC, A NEVADA LIMITED LIABILITY COMPANY

NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE
MY COMMISSION EXPIRES:

CERTIFICATE OF DIRECTOR OF PLANNING

I CERTIFY THAT THIS PARCEL MAP WAS APPROVED AND THE PARCELS HEREIN WERE ACCEPTED FOR DEDICATION BY THE DIRECTOR OF PLANNING ON THE __ DAY OF _____, 20___.

SETH T. FLOYD, EQS.
DIRECTOR OF COMMUNITY DEVELOPMENT
DEPARTMENT OF PLANNING
CITY OF LAS VEGAS

LEGEND

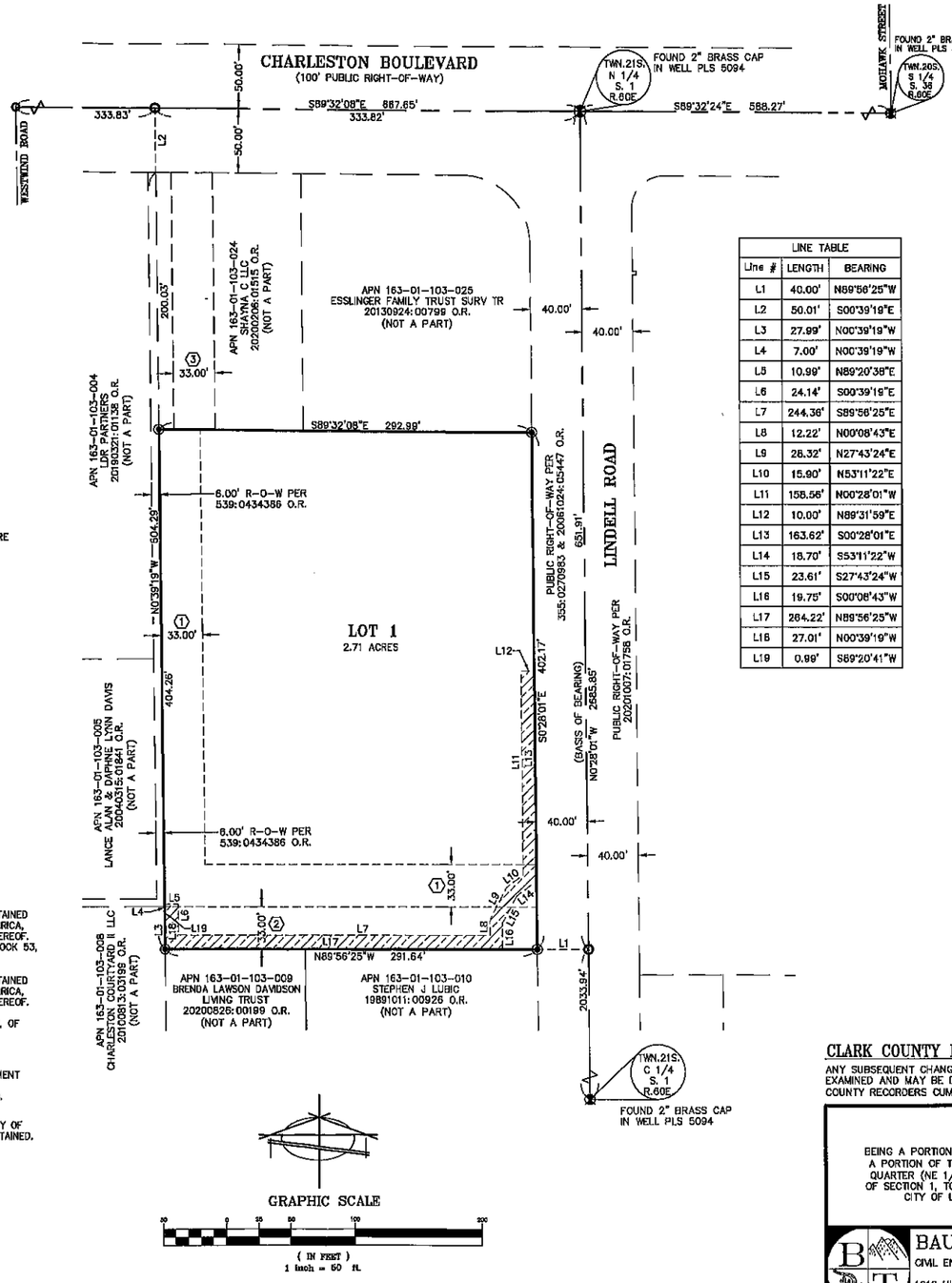
———	BOUNDARY LINE
——— – ———	CENTER LINE
———	LOT LINE
——— ——— ———	ADJACENT PROPERTY LINE
— — — — —	EASEMENT LINE
- - - - -	TIE LINE
⊠	FOUND MONUMENT AS DESCRIBED
◉	SET 5/8" REBAR WITH ALUMINUM CAP 17019 PER THIS MAP
○	NOTHING FOUND OR SET
SQ.FT.	SQUARE FEET
APN	ASSESSOR'S PARCEL NUMBER
O.R.	OFFICIAL RECORDS
①	RESERVATIONS, EXCEPTIONS AND PROVISIONS CONTAINED IN THE PATENT FROM THE UNITED STATES OF AMERICA, AND IN THE ACTS AUTHORIZING THE ISSUANCE THEREOF. RECORDING DATE: MAY 2, 1955 RECORDING NO: BOOK 53, INSTRUMENT NO. 45430, OF OFFICIAL RECORDS
②	RESERVATIONS, EXCEPTIONS AND PROVISIONS CONTAINED IN THE PATENT FROM THE UNITED STATES OF AMERICA, AND IN THE ACTS AUTHORIZING THE ISSUANCE THEREOF. RECORDING DATE: JANUARY 3, 1956 RECORDING NO: BOOK 76, INSTRUMENT NO. 65546, OF OFFICIAL RECORDS
③	TERMS, PROVISIONS, CONDITIONS, COVENANTS AND EASEMENTS AS CONTAINED IN AN INSTRUMENT ENTITLED: ACCESS EASEMENT AND SIGNAGE AGREEMENT RECORDING DATE: MARCH 5, 2007 RECORDING NO.: BOOK 20070305, INSTRUMENT NO. 04619, OF OFFICIAL RECORDS
▨	PUBLIC DRAINAGE EASEMENT GRANTED TO THE CITY OF LAS VEGAS PER THIS MAP TO BE PRIVATELY MAINTAINED.

BASIS OF BEARING

NORTH 00°28'01" WEST – BEING THE WEST LINE OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 1, TOWNSHIP 21 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA. AS SHOWN IN FILE 107, PAGE 34 OF PARCEL MAPS, CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

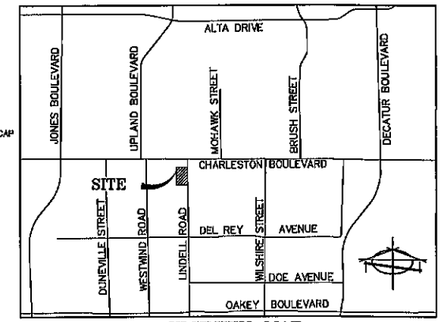
REFERENCES

R1 FILE 107 PAGE 54 OF PARCEL MAPS
R2 FILE 101 PAGE 36 OF PARCEL MAPS
R3 BOOK 7 PAGE 87 OF PLATS



GRAPHIC SCALE
20 0 35 80 100 200
(IN FEET)
1 inch = 50 ft.

LINE TABLE		
Line #	LENGTH	BEARING
L1	40.00'	N89°56'25"W
L2	50.01'	S00°39'19"E
L3	27.99'	N00°39'19"W
L4	7.00'	N00°39'19"W
L5	10.99'	N89°20'38"E
L6	24.14'	S00°39'19"E
L7	244.36'	S89°56'25"E
L8	12.22'	N00°08'43"E
L9	28.32'	N27°43'24"E
L10	15.90'	N53°11'22"E
L11	158.56'	N00°28'01"W
L12	10.00'	N89°31'59"E
L13	163.62'	S00°28'01"E
L14	18.70'	S53°11'22"W
L15	23.61'	S27°43'24"W
L16	19.75'	S00°08'43"W
L17	264.22'	N89°56'25"W
L18	27.01'	N00°39'19"W
L19	0.99'	S89°20'41"W



VICINITY MAP
NOT TO SCALE

CITY SURVEYOR'S CERTIFICATE

I, ALAN R. RIEKKI, CITY SURVEYOR FOR THE CITY OF LAS VEGAS, DO HEREBY CERTIFY THAT ON THIS ___ DAY OF _____, 20___, I HAVE EXAMINED THIS PARCEL MAP AND AM SATISFIED THAT THE MAP IS TECHNICALLY CORRECT.

ALAN R. RIEKKI, PLS
CITY SURVEYOR
CITY OF LAS VEGAS, NEVADA
NEVADA LICENSE NO. 12469

SURVEYORS CERTIFICATE

I, LYLE E. YENGLIN, A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF NEVADA, AS AGENT FOR "BAUGHMAN & TURNER, INC." CERTIFY THAT:

1. THIS PLAT REPRESENTS THE RESULTS OF A SURVEY CONDUCTED UNDER MY DIRECT SUPERVISION AT THE INSTANCE OF LINDELL LIVING II LLC, A NEVADA LIMITED LIABILITY COMPANY.
2. THE LANDS SURVEYED LIE WITHIN THE EAST HALF (E 1/2) OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 1, TOWNSHIP 21 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA. THE SURVEY WAS COMPLETED ON DECEMBER 4, 2020.
3. THIS PLAT COMPLIES WITH THE APPLICABLE STATE STATUTES AND ANY LOCAL ORDINANCES IN EFFECT ON THE DATE THAT THE LOCAL GOVERNMENT GAVE ITS FINAL APPROVAL.
4. THE MONUMENTS DEPICTED ON THIS MAP ARE OF THE CHARACTER SHOWN, OCCUPY THE POSITIONS INDICATED AND ARE OF SUFFICIENT NUMBER AND DURABILITY.

LYLE E. YENGLIN, PLS
PROFESSIONAL LAND SURVEYOR
NEVADA CERTIFICATE # 17019

PROFESSIONAL LAND SURVEYOR · STATE OF NEVADA · LYLE E. YENGLIN · No. 17019

NOTE

THE BOUNDARY LIMITS OF THIS PARCEL MAP CONTAINS A TOTAL OF 2.71 ACRES.

CLARK COUNTY RECORDERS NOTE:

ANY SUBSEQUENT CHANGES TO THIS MAP SHOULD BE EXAMINED AND MAY BE DETERMINED BY REFERENCE TO THE COUNTY RECORDERS CUMULATIVE MAP INDEX (NRS 278.5695)

PMP-100163

SHEET 1 OF 1

PARCEL MAP

BEING A PORTION OF GOVERNMENT LOTS 5 & 20 ALSO BEING A PORTION OF THE EAST HALF (E 1/2) OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 1, TOWNSHIP 21 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

BAUGHMAN & TURNER, INC.
CIVIL ENGINEERS LAND PLANNERS
LAND SURVEYORS
1210 HINSON STREET LAS VEGAS, NEVADA 89102
Ph. (702) 870-8771 Fax (702) 878-2695

NO. _____
Filed at the request of
BAUGHMAN & TURNER, INC.
Date _____ At _____
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of Parcel Maps
Official Records Book _____
Clark County, Nevada Records
Debbie Conway, Recorder
Fee: _____ Deputy _____

FILE _____ PAGE _____

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

BAUGHMAN & TURNER, INC.
CONSULTING ENGINEERS

PROJECT NO. : 26-19-61 **DEVELOPMENT : The Lindell**

FILE : Existing & Developed Condition **CALCULATED BY: pp** **DATE : 10/28/21**

Sub-Basin Data					Initial/Overland Time (T_i)			Travel Time (T_t)					T_c	T_c Check (Urbanized Basins)		Final T_c	T_{lag}	Remarks
DESIG	CN	K	AREA (acres)	AREA (mi^2)	LENGTH (ft)	SLOPE (%)	T_i (min)	LENGTH (ft)	SLOPE (%)	V_1 (fps)	V_2 (fps)	T_t (min)	$T_c=T_i+T_t$ (min)	TOTAL (ft)	T_c (min)	T_c (min)	T_{lag} (hrs)	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Existing Condition																		
OFF1B	86.5	0.752	2.34	0.0037	25	2.00	2.5	660	1.210	2.22	3.37	4.5	7.0	685.0	13.8	7.0	0.070	Dev.
SITEX	88	0.772	2.70	0.0042	170	0.50	9.7	330	2.120	2.15	N/A	2.6	12.3	N/A	N/A	12.3	0.123	Undev.
LINDEL	94.8	0.861	0.73	0.0011	33	2.00	2.0	400	0.16	0.81	N/A	8.3	10.2	433.0	12.4	10.2	0.102	Dev.
Developed Condition																		
ONDV1	93	0.838	1.14	0.0018	20	1.67	1.8	293	1.15	2.17	N/A	2.3	4.0	313.0	11.7	4.0	0.050	Dev.
ONDV2	93	0.838	1.56	0.0024	20	3.00	1.5	340	0.500	1.43	N/A	4.0	5.4	360.0	12.0	5.4	0.054	Dev.
LINDEL	98	0.904	0.73	0.0011	33	2.00	1.6	400	0.160	0.81	N/A	8.3	9.9	433.0	12.4	9.9	0.099	Dev.
Future Conditions																		
OFF1B	85	0.732	2.34	0.0037	25	2.00	2.6	660	1.21	2.22	3.37	4.5	7.2	685.0	13.8	7.2	0.072	Dev.

$T_i=(1.8(1.1-K)L^{(1/2)})/(S^{1/3})$

$T_c=T_i+T_t$

$K=0.0132(CN)-.39$

$T_{lag}=0.6T_c$

For the travel time (T_t) calculations,
V_1 applies to the first 500 feet of travel distance;
V_2 applies to the remaining travel distance.

Travel Time Velocity Formulas

Existing	Developed
$V_1 = 14.8*(S/100)^{1/2}$	$V_1 = 20.2*(S/100)^{1/2}$
$V_2 = 29.4*(S/100)^{1/2}$	$V_2 = 30.6*(S/100)^{1/2}$

All basins over one square mile are calculated by the equation $T_{lag}=20Kn(L*L_c/S^{0.5})^{0.33}$ and denoted by shaded gray (See Worksheet).

REFERENCE:

STANDARD FORM 4

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   27OCT21  TIME  16:24:15  *
*                                      *
****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         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
    2         ID   Centura Lindell Living II
    3         ID
    4         ID   Existing Condition
    5         ID
    6         ID    File  N:\Centura lindell living II\DOCS\HYDROLOGY\HEC1\lindlex.DAT
    7         ID
    8         ID
    9         IT       5                    300
   10         IO       5
   11         IN       5
   12         JR    PREC    0.57     1.0
              * **********************
              * Existing Conditions  *
              * **********************

   13         KK   OFF1B
   14         BA  0.0037
   15         PB    2.77
   16         PC    0.00       2     5.7       7     8.7    10.8    12.4      13      13      13
   17         PC      13      13      13    13.3      14    14.2    14.8    15.8    17.2    18.1
   18         PC      19    19.7    19.7    20.1    20.1    20.4    21.4    22.9    24.1    24.9
   19         PC    25.1    25.6      27    27.8    28.1    28.3    29.5    32.2    35.2    40.9
   20         PC    49.9      59      71    74.4    78.1    81.2    81.9    83.5    85.1    85.6
   21         PC      86    86.8    87.6    88.8      91    92.6    93.7      95      97    97.6
   22         PC    98.2    98.5    98.7    98.9      99    99.3    99.3    99.4    99.5    99.8
   23         PC    99.8    99.9     100
   24         LS            86.5
   25         UD   0.070

   26         KK       V
   27         KM   ROUTE NORTH
   28         RK     400  0.0016   0.017            TRAP      33       1

   29         KK   SITEX
   30         BA  0.0042
   31         LS              88
   32         UD   0.123

   33         KK  LINDEL
   34         BA  0.0011
   35         LS            94.8
   36         UD   0.102

   37         KK     CP2
   38         HC       3
   39         ZZ
```

1 SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    13       OFF1B
               V
               V
    26         V
               .
               .
    29         .       SITEX
```

```
                .          .
                .          .
    33          .          .       LINDEL
                .          .          .
                .          .          .
    37        CP2.........................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*               JUN  1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   27OCT21  TIME  16:24:15  *
*                                      *
****************************************

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

                        Centura Lindell Living II

                        Existing Condition

                         File  N:\Centura lindell living II\DOCS\HYDROLOGY\HEC1\lindlex.DAT


   10 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
                    .57      1.00
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


                                                                  RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION      AREA     PLAN                 RATIO 1  RATIO 2
                                                               .57      1.00

 HYDROGRAPH AT
+                  OFF1B        .00      1   FLOW              2.       6.
                                              TIME            3.50     3.50

 ROUTED TO
+                     V         .00      1   FLOW              2.       5.
                                              TIME            3.58     3.58

 HYDROGRAPH AT
+                  SITEX        .00      1   FLOW              2.       6.
                                              TIME            3.58     3.58

 HYDROGRAPH AT
+                  LINDEL       .00      1   FLOW              1.       2.
                                              TIME            3.50     3.50

  3 COMBINED AT
+                    CP2        .01      1   FLOW              6.      13.
                                              TIME            3.58     3.58
1

                                    SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                        (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                          INTERPOLATED TO
                                                                        COMPUTATION INTERVAL
          ISTAQ    ELEMENT       DT        PEAK    TIME TO     VOLUME      DT        PEAK    TIME TO     VOLUME
                                                      PEAK                                      PEAK
```

	(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .57								
V MANE	1.81	2.23	213.46	.57	5.00	2.11	215.00	.57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1120E+00 EXCESS= .0000E+00 OUTFLOW= .1128E+00 BASIN STORAGE= .1549E-05 PERCENT ERROR= -.7

FOR PLAN = 1 RATIO= 1.00								
V MANE	1.35	5.66	212.56	1.51	5.00	5.08	215.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2967E+00 EXCESS= .0000E+00 OUTFLOW= .2979E+00 BASIN STORAGE= .1969E-05 PERCENT ERROR= -.4

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

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN  1998                *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   27OCT21  TIME  16:29:46   *
*                                       *
*****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         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
    2         ID   Centura Lindell Living II
    3         ID
    4         ID   Developed Condition
    5         ID
    6         ID    File  N:\Centura lindell living II\DOCS\HYDROLOGY\HEC1\lindldv.DAT
    7         ID
    8         ID
    9         IT       5                    300
   10         IO       5
   11         IN       5
   12         JR    PREC    0.57     1.0
              * **********************
              * Developed Conditions *
              * **********************

   13         KK   OFF1B
   14         BA  0.0037
   15         PB    2.77
   16         PC    0.00       2     5.7       7     8.7    10.8    12.4      13      13      13
   17         PC      13      13      13    13.3      14    14.2    14.8    15.8    17.2    18.1
   18         PC      19    19.7    19.7    20.1    20.1    20.4    21.4    22.9    24.1    24.9
   19         PC    25.1    25.6      27    27.8    28.1    28.3    29.5    32.2    35.2    40.9
   20         PC    49.9      59      71    74.4    78.1    81.2    81.9    83.5    85.1    85.6
   21         PC      86    86.8    87.6    88.8      91    92.6    93.7      95      97    97.6
   22         PC    98.2    98.5    98.7    98.9      99    99.3    99.3    99.4    99.5    99.8
   23         PC    99.8    99.9     100
   24         LS            86.5
   25         UD   0.070

   26         KK   ONDV1
   27         BA  0.0018
   28         LS              93
   29         UD   0.050

   30         KK     CP1
   31         HC       2

   32         KK       V
   33         KM   ROUTE NORTH
   34         RK     175  0.0016   0.017           TRAP      33       1

   35         KK   ONDV2
   36         BA  0.0024
   37         LS              93
   38         UD   0.054

   39         KK  LINDEL
   40         BA  0.0011
   41         LS              98
   42         UD   0.099
```

1 HEC-1 INPUT PAGE 2

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

   43         KK     CP2
   44         HC       3
   45         ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    13       OFF1B
                .
                .
    26          .       ONDV1
                .          .
                .          .
    30          CP1.........
                V
                V
    32          V
                .
                .
    35          .       ONDV2
                .          .
                .          .
    39          .          .      LINDEL
                .          .          .
                .          .          .
    43          CP2.....................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   27OCT21  TIME  16:29:46  *
*                                      *
****************************************

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

Centura Lindell Living II

Developed Condition

File N:\Centura lindell living II\DOCS\HYDROLOGY\HEC1\lindldv.DAT

```
  10 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
                     .57      1.00
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


                                                                RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION      AREA     PLAN                 RATIO 1  RATIO 2
                                                               .57      1.00

 HYDROGRAPH AT
+                 OFF1B        .00      1    FLOW             2.       6.
                                              TIME           3.50     3.50

 HYDROGRAPH AT
+                 ONDV1        .00      1    FLOW             2.       4.
                                              TIME           3.50     3.50
```

```
  2 COMBINED AT
+              CP1        .01     1   FLOW          4.       10.
                                      TIME        3.50      3.50

 ROUTED TO
+                V        .01     1   FLOW          4.        9.
                                      TIME        3.50      3.50

 HYDROGRAPH AT
+            ONDV2        .00     1   FLOW          2.        5.
                                      TIME        3.50      3.50

 HYDROGRAPH AT
+           LINDEL        .00     1   FLOW          1.        2.
                                      TIME        3.50      3.50

  3 COMBINED AT
+              CP2        .01     1   FLOW          7.       16.
                                      TIME        3.50      3.50
1
                                      SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                          (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                             INTERPOLATED TO
                                                                          COMPUTATION INTERVAL
          ISTAQ    ELEMENT     DT        PEAK    TIME TO    VOLUME     DT      PEAK    TIME TO     VOLUME
                                                  PEAK                                   PEAK

                              (MIN)      (CFS)    (MIN)      (IN)     (MIN)    (CFS)    (MIN)       (IN)

         FOR PLAN = 1  RATIO=  .57
               V  MANE          .66      4.05    211.47       .69     5.00      3.79   210.00        .69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2018E+00 EXCESS= .0000E+00 OUTFLOW= .2025E+00 BASIN STORAGE= .1805E-06 PERCENT ERROR=   -.3

         FOR PLAN = 1  RATIO= 1.00
               V  MANE          .48      9.46    210.88      1.68     5.00      9.07   210.00       1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4920E+00 EXCESS= .0000E+00 OUTFLOW= .4930E+00 BASIN STORAGE= .1900E-06 PERCENT ERROR=   -.2


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

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN  1998                *
 *           VERSION 4.1                 *
 *                                       *
 *  RUN DATE   27OCT21  TIME  16:34:28   *
 *                                       *
 *****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         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


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

              *DIAGRAM
    1         ID
    2         ID   Centura Lindell Living II
    3         ID
    4         ID   Future Condition                                                ID
    5         ID
    6         ID    File  N:\Centura lindell living II\DOCS\HYDROLOGY\HEC1\lindlfu.DAT
    7         ID
    8         ID
    9         IT       5                    300
   10         IO       5
   11         IN       5
   12         JR    PREC    0.57     1.0
              * **********************
              * * Future  Conditions *
              * **********************

   13         KK   OFF1B
   14         BA  0.0037
   15         PB    2.77
   16         PC    0.00       2     5.7       7     8.7    10.8    12.4      13      13      13
   17         PC      13      13      13    13.3      14    14.2    14.8    15.8    17.2    18.1
   18         PC      19    19.7    19.7    20.1    20.1    20.4    21.4    22.9    24.1    24.9
   19         PC    25.1    25.6      27    27.8    28.1    28.3    29.5    32.2    35.2    40.9
   20         PC    49.9      59      71    74.4    78.1    81.2    81.9    83.5    85.1    85.6
   21         PC      86    86.8    87.6    88.8      91    92.6    93.7      95      97    97.6
   22         PC    98.2    98.5    98.7    98.9      99    99.3    99.3    99.4    99.5    99.8
   23         PC    99.8    99.9     100
   24         LS              85
   25         UD   0.072

   26         KK   ONDV1
   27         BA  0.0018
   28         LS              93
   29         UD   0.050

   30         KK     CP1
   31         HC       2

   32         KK       V
   33         KM   ROUTE NORTH
   34         RK     175  0.0016   0.017            TRAP      33       1

   35         KK   ONDV2
   36         BA  0.0024
   37         LS              93
   38         UD   0.054

   39         KK  LINDEL
   40         BA  0.0011
   41         LS              98
   42         UD   0.099
```



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

   43         KK     CP2
   44         HC       3
   45         ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

    13       OFF1B
                .
                .
    26          .        ONDV1
                .           .
                .           .
    30          .     CP1.....
                V
                V
    32          V
                .
                .
    35          .        ONDV2
                .           .
                .           .
    39          .           .      LINDEL
                .           .           .
                .           .           .
    43          .     CP2.....................

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   27OCT21  TIME  16:34:28  *
*                                      *
****************************************

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

                        Centura Lindell Living II

                        Future Condition                                        ID

                         File  N:\Centura lindell living II\DOCS\HYDROLOGY\HEC1\lindlfu.DAT


   10 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
                      .57      1.00
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


                                                                RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION      AREA     PLAN                 RATIO 1  RATIO 2
                                                               .57      1.00

 HYDROGRAPH AT
+                  OFF1B        .00      1   FLOW              2.       5.
                                              TIME            3.50     3.50

 HYDROGRAPH AT
+                  ONDV1        .00      1   FLOW              2.       4.
                                              TIME            3.50     3.50
```

```
 2 COMBINED AT
+                CP1      .01    1   FLOW        4.       9.
                                     TIME      3.50     3.50

ROUTED TO
+                  V      .01    1   FLOW        4.       9.
                                     TIME      3.50     3.50

HYDROGRAPH AT
+              ONDV2      .00    1   FLOW        2.       5.
                                     TIME      3.50     3.50

HYDROGRAPH AT
+             LINDEL      .00    1   FLOW        1.       2.
                                     TIME      3.50     3.50

 3 COMBINED AT
+                CP2      .01    1   FLOW        7.      16.
                                     TIME      3.50     3.50
1
```

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
						INTERPOLATED TO COMPUTATION INTERVAL			
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .57									
V	MANE	.75	3.72	211.01	.65	5.00	3.52	210.00	.65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1890E+00 EXCESS= .0000E+00 OUTFLOW= .1895E+00 BASIN STORAGE= .1845E-06 PERCENT ERROR= -.3

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
FOR PLAN = 1 RATIO= 1.00									
V	MANE	.63	8.93	210.76	1.61	5.00	8.67	210.00	1.61

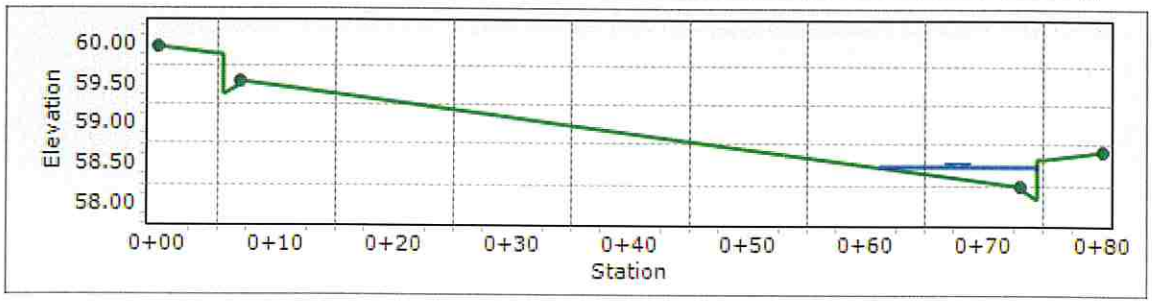
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4710E+00 EXCESS= .0000E+00 OUTFLOW= .4719E+00 BASIN STORAGE= .1465E-06 PERCENT ERROR= -.2

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

HS2 Lindell Q10

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.0019 ft/ft
Normal Depth	0.40 ft
Discharge	2.00 cfs



Worksheet for HS2 Lindell Q10

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.0019 ft/ft
Discharge	2.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	59.97
0+05.00	59.87
0+05.50	59.87
0+05.50	59.37
0+07.00	59.50
0+07.00	59.54
0+73.00	58.24
0+73.00	58.20
0+74.50	58.07
0+74.50	58.57
0+75.00	58.57
0+80.00	58.67

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 59.97)	(0+07.00, 59.54)	0.013
(0+07.00, 59.54)	(0+73.00, 58.24)	0.017
(0+73.00, 58.24)	(0+80.00, 58.67)	0.013

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

Results	
Normal Depth	0.40 ft
Roughness Coefficient	0.016
Elevation	58.47 ft
Elevation Range	58.07 to 59.97 ft
Flow Area	1.9 ft²
Wetted Perimeter	13.88 ft
Hydraulic Radius	0.14 ft

Worksheet for HS2 Lindell Q10

Results	
Top Width	13.43 ft
Normal Depth	0.40 ft
Critical Depth	0.33 ft
Critical Slope	0.0087 ft/ft
Velocity	1.05 ft/s
Velocity Head	0.02 ft
Specific Energy	0.42 ft
Froude Number	0.489
Flow Type	Subcritical

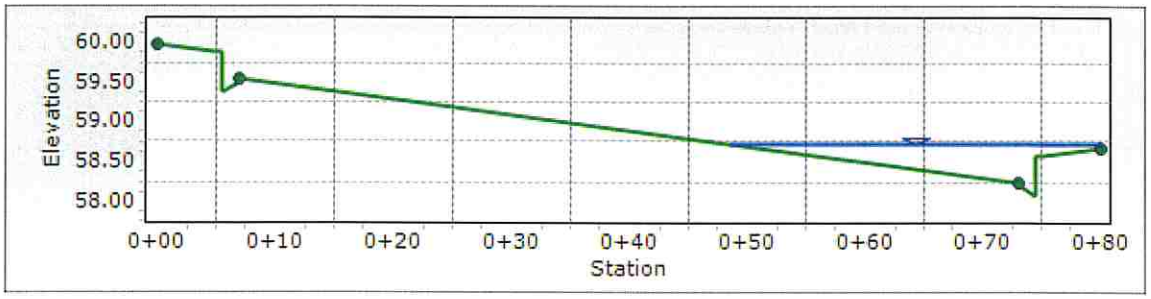
GVF Input Data	
Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.40 ft
Critical Depth	0.33 ft
Channel Slope	0.0019 ft/ft
Critical Slope	0.0087 ft/ft

HS2 Lindell Q100

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.0019 ft/ft
Normal Depth	0.65 ft
Discharge	11.00 cfs



Worksheet for HS2 Lindell Q100

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.0019 ft/ft
Discharge	11.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	59.97
0+05.00	59.87
0+05.50	59.87
0+05.50	59.37
0+07.00	59.50
0+07.00	59.54
0+73.00	58.24
0+73.00	58.20
0+74.50	58.07
0+74.50	58.57
0+75.00	58.57
0+80.00	58.67

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 59.97)	(0+07.00, 59.54)	0.013
(0+07.00, 59.54)	(0+73.00, 58.24)	0.017
(0+73.00, 58.24)	(0+80.00, 58.67)	0.013

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

Results	
Normal Depth	0.65 ft
Roughness Coefficient	0.016
Elevation	58.72 ft
Elevation Range	58.07 to 59.97 ft
Flow Area	7.3 ft^2
Wetted Perimeter	32.01 ft
Hydraulic Radius	0.23 ft

Worksheet for HS2 Lindell Q100

Results	
Top Width	31.41 ft
Normal Depth	0.65 ft
Critical Depth	0.55 ft
Critical Slope	0.0068 ft/ft
Velocity	1.50 ft/s
Velocity Head	0.04 ft
Specific Energy	0.69 ft
Froude Number	0.548
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.00 ft
Length	0.00 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.00 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.65 ft
Critical Depth	0.55 ft
Channel Slope	0.0019 ft/ft
Critical Slope	0.0068 ft/ft

pamp baughman-turner.com

From: Steve Swanton <sswanton@LasVegasNevada.GOV>
Sent: Thursday, November 4, 2021 7:42 AM
To: Albert Sung
Subject: RE: No man land between two walls

Hi Albert,

Title 19 has regulations for that situation.

19.08.040.G.3c **Wall Separation.** Where a screen or perimeter walls abuts another screen or perimeter wall, the separation shall either be:
i. A minimum of three feet from face of wall to face of wall, with access provided to the area between the walls for maintenance; or
ii. A maximum of eight inches, with the resulting gap between the walls to be filled and capped with a cementitious material that:
A) Will not increase the load on the walls; and
B) Has been approved by the Department and the Department of Building and Safety.

If the gap is 3 feet wide or greater, it's probably a good idea to provide a wrought iron gate for security.

If the code cannot be met, a variance would be required. In that case, the engineer needs to talk to Planning.

Thanks.

Steve Swanton, AICP
Senior Planner
Department of Planning | Long Range & Sustainability Division
702-229-4714 | voice
495 S. Main St. | Las Vegas, NV 89101

lasvegasnevada.gov

From: Albert Sung <YSung@LasVegasNevada.GOV>
Sent: Wednesday, November 3, 2021 3:49 PM
To: Steve Swanton <sswanton@LasVegasNevada.GOV>
Subject: No man land between two walls

Hi Steve,

Occasionally we encounter a situation that the developer/engineer propose a wall that is not touching an existing wall and may create a strip of land a few feet wide that we nicknamed "No man land".

Can you tell me who is the right person whom I shall inform the engineer to contact and get permission or direction?

Thank you for the help!

pamp baughman-turner.com

From: Victor Bolanos <vbolanos@LasVegasNevada.GOV>
Sent: Thursday, October 21, 2021 4:43 PM
To: pamp baughman-turner.com
Cc: davidt baughman-turner.com; mattj baughman-turner.com; Albert Sung
Subject: RE: Lindell Living II street improvements

Pam,

Traffic has no issues with the grading as proposed.

Thanks
Victor

From: pamp baughman-turner.com <pamp@baughman-turner.com>
Sent: Thursday, October 14, 2021 10:53 AM
To: Victor Bolanos <vbolanos@LasVegasNevada.GOV>
Cc: davidt baughman-turner.com <davidt@baughman-turner.com>; mattj baughman-turner.com <mattj@baughman-turner.com>; Albert Sung <YSung@LasVegasNevada.GOV>
Subject: Lindell Living II street improvements

Good morning Victor - Please find attached our proposed improvement plans for a project on Lindell just south of Charleston, The street improvements for Lindell propose a cross fall street to the east which will be similar to the existing street north and south of the site. This proposed street section was proposed previously and approved for the project directly east which has included a storm drain system to collect flow from the west side of the street. We are matching these approved grades and grading concept.

We have received our first set of comments from Albert Sung on this new project and he has asked that we contact you regarding this street section. As you review our plans you will see that trying to make a standard crown street will be nearly impossible as the existing street grade is at 0.19% and creating the crowned street will put our proposed grades below the existing grades we have to tie into.

If you have any questions, please feel free to contact me or Matt Jaramillo at the phone number below. Also, we are meeting with Albert today at 4 via Zoom if you would like to join.

Thank you for your time and input.

Thanks
Pam

Pamela Pitcher
Senior Vice President

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: September 30, 2021
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: **Lindell Living 2**			**COPIES TO:** Baughman &Turner, Inc.
Cross Streets:	SEC of Charleston Boulevard & Lindell Road			Lindell Living II, LLC
File Number:	F:\Depot\DSMemos\DS5495A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	163-01-103-027 & 163-01-103-028			
Zoning Action:	21-0197-GPA1; 21-0197-SDR1; 21-0197-VAR1 & VAR2; 21-0197-ZON1 & 100163-PMP			
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	9/14/2021	9/30/2021	See Comments Below	$400.00	4448821: $400
			TOTAL FEES (LDDRS):	**$400.00**	----

REMARKS:

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

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

1. The subject site currently consists of two parcels which should be consolidated into one parcel for the proposed development. Address whether a map process has been initiated for the consolidation and proof of approval in the next submittal.

2. **FIG 11 (Existing Onsite Basin Map)**: It is not clear how the area of the offsite basins (OFF1A, OFF1B etc.) are determined. Revise the map to show the entirety of the offsite basins. The reviewer cannot conclude that the offsite basins are limited to the stated areas and Q_{10}/Q_{100} as shown in the drainage map. Clearly address the methodology of determining the offsite basin impacting the subject site.

3. **FIG 11 (Existing Onsite Basin Map)**: Per the drainage map, the parcel to the northwest corner of the subject site does not drain into the proposed development. As a proof, label whether there is a property wall between the two sites in all drainage maps in the next submittal.

4. **FIG 11 (Existing Onsite Basin Map)**: Basin name "SITEX" is mis-labeled as "SITEDV".

5. **FIG 12 (Developed Onsite Basin Map) and FIG 13 (Future Onsite Basin Map)**: Basin name "ONDV2" is mis-labeled as "SITEDV".

6. **Sheet C2.0**: Consider the proposed wall opening at the southwest corner of the subject site under a worst case scenario that the opening is totally clogged, the adjacent residence could be severely flooded without any emergency flow path. The engineer/developer may consider replacing with a wrought iron fence opening which will have a much lower probability of being totally clogged.

7. The subject development accepts offsite from the adjacent parcel at the southwest corner. Provide a minimum 10'-wide public drainage easement (privately maintained by the apartment owner) across the site until discharging at the public street. Delineate the easement on the grading plan and dedicate as such and record by separate document prior to the final approval of the drainage study.

8. The proposed BMP at the southwest corner of the site is at an inadequate location. The purpose of the BMP swale is to treat the runoff from the parking lot of the subject site. The proposed location does not treat any onsite parking runoff at all. Relocate the BMP for the southern half of the parking lot and address accordingly in the next submittal.

9. Explain how the runoff from the northern half of the parking lot is directed to the proposed BMP at the northeast corner of the site and be treated?

10. Per *Detail Section F/C2.1*, a 6'-wide no-man strip of land will be created at the northwest corner of the site. Obtain approval from *City Planning* prior to the final approval of the drainage study.

11. *Detail Section B/C2.1* shows a 5'-concrete sidewalk adjacent to the proposed building. However, this doesn't match the grading plan. Review and revise in the next submittal.

12. *Detail Section A/C2.1* proposes a cross slope section instead of the normal crown section in *Lindell Road*. Coordinate with Mr. Victor Bolanos of *City Traffic Eng-Operations and Research Section* for direction or approval prior to the final approval of the subject drainage study.

13. In relation to the above Comment #12, the engineer should explore matching the profile of the west curb to the east curb of *Lindell Road* to establish a normal crown street section. Using this design will require drop inlets on the west curb of *Lindell* to convey flows at the low point of the street. Address all the options in the next submittal.

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

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/R60E/01
AREA Q-01