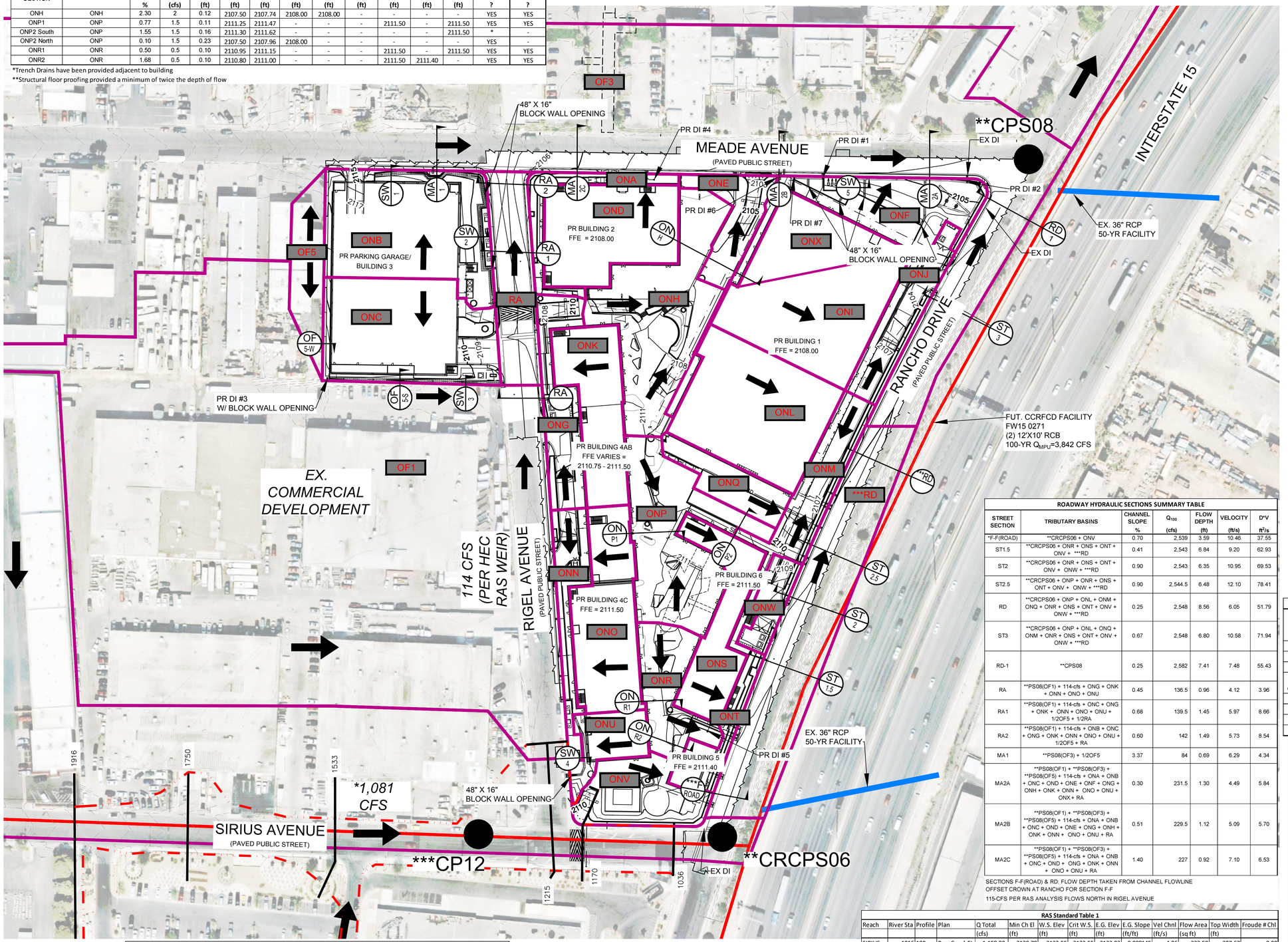
| ONSITE HYDRAULIC SECTIONS | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ONSITE SECTION | TRIBUTARY BASINS | SLOPE % | $Q_{100}$ (cfs) | FLOW DEPTH (ft) | FLOW LINE (ft) | FLOW LINE + 2D (ft) | FFE BLDG1 (ft) | FFE BLDG2 (ft) | FFE BLDG3 (ft) | FFE BLDG4 (ft) | FFE BLDG5 (ft) | FFE BLDG6 (ft) | BLDG PROTECTED ? | BLDG PROTECTED ? |
| ONH | ONH | 2.30 | 2 | 0.12 | 2107.50 | 2107.74 | 2108.00 | 2108.00 | - | - | - | - | YES | YES |
| ONP1 | ONP | 0.77 | 1.5 | 0.11 | 2111.25 | 2111.47 | - | - | - | 2111.50 | - | 2111.50 | YES | YES |
| ONP2 South | ONP | 1.55 | 1.5 | 0.16 | 2111.30 | 2111.62 | - | - | - | - | - | 2111.50 | * | - |
| ONP2 North | ONP | 0.10 | 1.5 | 0.23 | 2107.50 | 2107.96 | 2108.00 | - | - | - | - | - | YES | |
| ONR1 | ONR | 0.50 | 0.5 | 0.10 | 2110.95 | 2111.15 | - | - | - | 2111.50 | - | 2111.50 | YES | YES |
| ONR2 | ONR | 1.68 | 0.5 | 0.10 | 2110.80 | 2111.00 | - | - | - | 2111.50 | 2111.40 | - | YES | YES |

*Trench Drains have been provided adjacent to building
**Structural floor proofing provided a minimum of twice the depth of flow




GRAPHIC SCALE IN FEET 0 35 70 140

NORTH

## LEGEND

- XXX — BASIN ID
- BASIN BOUNDARY
- PRORATED BASIN BOUNDARY
- FUTURE CCRFCD REGIONAL FACILITY
- EXITING DRAINAGE FACILITY
- FLOW ARROW
- X* / XX — SECTION ID
- CPX — CONCENTRATION POINT
- XXXX — PRORATED BASIN ID
- 1036 — HEC-RAS CROSS SECTION & ID
- 2-FT CONTOURS
- 1-FT CONTOURS
- PROPOSED CONTOURS
- PROPOSED 100-YR INUNDATION LIMITS

* REFERENCED FROM AREA 15 STUDY (DS-4921)
** REFERENCED FROM CITY OF LAS VEGAS CENTRAL NEIGHBORHOOD STUDY
*** REFERENCED FROM AREA 15 EVENT PARKING LOT (DS-5288)

NOTE:
1,081-CFS REFERENCED FOR FLOWRATE AT INTERSECTION OF PRIVATE DRIVEWAY & SIRIUS AVENUE. REFER TO APPENDIX D FOR REFERENCE Q.

| ROADWAY HYDRAULIC SECTIONS SUMMARY TABLE | | | | | |
|---|---|---|---|---|---|
| STREET SECTION | TRIBUTARY BASINS | CHANNEL SLOPE % | $Q_{100}$ (cfs) | FLOW DEPTH (ft) | VELOCITY (ft/s) | D*V $ft^2/s$ |
| *F-F(ROAD) | **CRCPS06 + ONV | 0.70 | 2,539 | 3.59 | 10.46 | 37.55 |
| ST1.5 | **CRCPS06 + ONR + ONS + ONT + ONV + ***RD | 0.41 | 2,543 | 6.84 | 9.20 | 62.93 |
| ST2 | **CRCPS06 + ONR + ONS + ONT + ONV + ONW + ***RD | 0.90 | 2,543 | 6.35 | 10.95 | 69.53 |
| ST2.5 | **CRCPS06 + ONP + ONR + ONS + ONT + ONV + ONW + ***RD | 0.90 | 2,544.5 | 6.48 | 12.10 | 78.41 |
| RD | **CRCPS06 + ONP + ONL + ONM + ONQ + ONR + ONS + ONT + ONV + ONW + ***RD | 0.25 | 2,548 | 8.56 | 6.05 | 51.79 |
| ST3 | **CRCPS06 + ONP + ONL + ONQ + ONM + ONR + ONS + ONT + ONV + ONW + ***RD | 0.67 | 2,548 | 6.80 | 10.58 | 71.94 |
| RD-1 | **CPS08 | 0.25 | 2,582 | 7.41 | 7.48 | 55.43 |
| RA | **PS08(OF1) + 114-cfs + ONG + ONK + ONN + ONO + ONU | 0.45 | 136.5 | 0.96 | 4.12 | 3.96 |
| RA1 | **PS08(OF1) + 114-cfs + ONC + ONG + ONK + ONN + ONO + ONU + 1/2OF5 + 1/2RA | 0.68 | 139.5 | 1.45 | 5.97 | 8.66 |
| RA2 | **PS08(OF1) + 114-cfs + ONB + ONC + ONG + ONK + ONN + ONO + ONU + 1/2OF5 + RA | 0.60 | 142 | 1.49 | 5.73 | 8.54 |
| MA1 | **PS08(OF3) + 1/2OF5 | 3.37 | 84 | 0.69 | 6.29 | 4.34 |
| MA2A | **PS08(OF1) + **PS08(OF3) + **PS08(OF5) + 114-cfs + ONA + ONB + ONC + OND + ONE + ONF + ONG + ONH + ONK + ONN + ONO + ONU + ONX + RA | 0.30 | 231.5 | 1.30 | 4.49 | 5.84 |
| MA2B | **PS08(OF1) + **PS08(OF3) + **PS08(OF5) + 114-cfs + ONA + ONB + ONC + OND + ONE + ONG + ONH + ONK + ONN + ONO + ONU + RA | 0.51 | 229.5 | 1.12 | 5.09 | 5.70 |
| MA2C | **PS08(OF1) + **PS08(OF3) + **PS08(OF5) + 114-cfs + ONA + ONB + ONC + OND + ONG + ONK + ONN + ONO + ONU + RA | 1.40 | 227 | 0.92 | 7.10 | 6.53 |

SECTIONS F-F(ROAD) & RD: FLOW DEPTH TAKEN FROM CHANNEL FLOWLINE OFFSET CROWN AT RANCHO FOR SECTION F-F
115-CFS PER RAS ANALYSIS FLOWS NORTH IN RIGEL AVENUE

| Existing / Proposed Condition Flow Summary | | | |
|---|---|---|---|
| Basin ID / Comb Pt | Area / Tributary Area (ac) | $Q_{100}$ (cfs) | $Q_{10}$ (cfs) |
| **CPS06 | N/A | 1045 | 405 |
| *CP05 | N/A | 31 | 18 |
| *EX10 | N/A | 7 | 4 |
| ***CP12 Q = 1081-CFS + **PS08(OF2) | N/A | 1158 | 459 |
| **CRCPS06 | N/A | 2538 | 873 |
| **PS08 | 114.56 | 235 | 100 |
| **CPS08 | N/A | 2582 | 917 |
| **CCPS08 | N/A | 3762 | 1226 |

| Prorated Flow Summary | | | | | |
|---|---|---|---|---|---|
| BASIN ID | $Q_{100}$ (cfs) | $Q_{10}$ (cfs) | AREA (ac) | $Q_{100}$ (cfs/ac) | $Q_{10}$ (cfs/ac) |
| PS08 | 235 | 100 | 114.6 | 2.05 | 0.87 |
| SUBBASIN ID | $Q_{100}$ (cfs) | $Q_{10}$ (cfs) | AREA (ac) | $Q_{100}$ (cfs/ac) | $Q_{10}$ (cfs/ac) |
| PS08(OF1) | 19 | 8 | 9.2 | 2.05 | 0.87 |
| PS08(OF2) | 77 | 33 | 37.5 | 2.05 | 0.87 |
| PS08(OF3) | 83.5 | 36 | 40.9 | 2.05 | 0.87 |
| PS08(OF4) | 29 | 12 | 14.2 | 2.05 | 0.87 |
| PS08(OF5) | 0.5 | <1 | 0.3 | 2.05 | 0.87 |
| PS08(ONA) | 0.5 | <1 | 0.2 | 2.05 | 0.87 |
| PS08(ONB) | 2 | 1.5 | 0.9 | 2.05 | 0.87 |
| PS08(ONC) | 2 | 1 | 0.8 | 2.05 | 0.87 |
| PS08(OND) | 1 | 0.5 | 0.6 | 2.05 | 0.87 |
| PS08(ONE) | 0.5 | <1 | 0.3 | 2.05 | 0.87 |
| PS08(ONF) | 1 | 0.5 | 0.6 | 2.05 | 0.87 |
| PS08(ONG) | 0.5 | <1 | 0.3 | 2.05 | 0.87 |
| PS08(ONH) | 2.0 | 1 | 0.85 | 2.05 | 0.87 |
| PS08(ONI) | 1 | 0.5 | 0.7 | 2.05 | 0.87 |
| PS08(ONJ) | 0.5 | <1 | 0.3 | 2.05 | 0.87 |
| PS08(ONK) | 1 | <1 | 0.4 | 2.05 | 0.87 |
| PS08(ONL) | 2 | 1 | 0.8 | 2.05 | 0.87 |
| PS08(ONM) | 1 | 0.5 | 0.4 | 2.05 | 0.87 |
| PS08(ONN) | 0.5 | <1 | 0.2 | 2.05 | 0.87 |
| PS08(ONO) | 1 | 0.5 | 0.6 | 2.05 | 0.87 |
| PS08(ONP) | 1.5 | 1 | 0.75 | 2.05 | 0.87 |
| PS08(ONQ) | 0.5 | <1 | 0.2 | 2.05 | 0.87 |
| PS08(ONR) | 0.5 | <1 | 0.3 | 2.05 | 0.87 |
| PS08(ONS) | 1 | 0.5 | 0.4 | 2.05 | 0.87 |
| PS08(ONT) | 0.5 | <1 | 0.2 | 2.05 | 0.87 |
| PS08(ONU) | 0.5 | <1 | 0.2 | 2.05 | 0.87 |
| PS08(ONV) | 1 | 0.5 | 0.4 | 2.05 | 0.87 |
| PS08(ONW) | <1 | <1 | 0.1 | 2.05 | 0.87 |
| PS08(ONX) | 1 | 0.5 | 0.4 | 2.05 | 0.87 |
| PS08(RD) | 2 | 1.5 | 1.2 | 2.05 | 0.87 |
| PS08(RA) | 1 | <1 | 0.4 | 2.05 | 0.87 |
| SUBTOTAL | 235 | 100 | 114.6 | - | - |

| DROP INLET SUMMARY TABLE | | | | | | | |
|---|---|---|---|---|---|---|---|
| DROP INLET ID | Tributary Basins | $Q_{100}$ (cfs) | SLOPE (%) | FLOW DEPTH (ft) | $Q_{INT}$ (cfs) | $Q_{BYP}$ (cfs) | DI TYPE |
| DI#1 | NUISANCE FLOW | <1 | SUMP | 0.00 | 0.0 | 0.0 | JENSEN DI2'X2' |
| DI#2 | ONF | 1.0 | SUMP | 0.20 | 1.0 | 0.0 | JENSEN DI2'X2' |
| DI#3 | 1/2OF5 | 0.5 | SUMP | 0.13 | 0.5 | 0.0 | JENSEN DI2'X2' |
| DI#4 | NUISANCE FLOW | <1 | SUMP | 0.00 | 0.0 | 0.0 | JENSEN DI2'X2' |
| DI#5 | NUISANCE FLOW | <1 | SUMP | 0.00 | 0.0 | 0.0 | JENSEN DI2'X2' |
| DI#6 | NUISANCE FLOW | <1 | SUMP | 0.00 | 0.0 | 0.0 | ZURN 6" x 6" |
| DI#7 | NUISANCE FLOW | <1 | SUMP | 0.00 | 0.0 | 0.0 | ZURN 6" x 6" |

| CHANNEL HYDRAULIC SECTIONS SUMMARY TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ID | TRIBUTARY BASINS | CHANNEL SLOPE % | $Q_{100}$ (cfs) | FLOW DEPTH (ft) | VELOCITY (ft/s) | D*V $ft^2/s$ | TYPE | SIDE SLOPES | BOTTOM WIDTH (ft) | Req'd $d_{50}$ (in) |
| *F-F(CHNL) | Channel Capacity | 0.70 | 270.1 | 3.00 | 6.43 | 19.29 | TRAP | 4:1 | 7 | N/A |
| SW1 | ONA | 1.00 | 2 | 0.54 | 1.73 | 0.93 | V - Ditch | 4:1 | N/A | 6" |
| SW2 | ONA | 0.33 | 2 | 0.66 | 3.09 | 2.04 | V - Ditch | 4:1 | N/A | 6" |
| SW3 | ONB+ 1/2OF5 | 1.00 | 2.5 | 0.58 | 1.83 | 1.06 | V - Ditch | 4:1 | N/A | 6" |
| SW4 | ONU | 1.11 | 0.5 | 0.31 | 1.27 | 0.39 | V - Ditch | 4:1 | N/A | N/A |
| SW5 (MIN) | ONF | 2.61 | 1.0 | 0.35 | 2.09 | 0.73 | V - Ditch | 4:1 | N/A | N/A |
| SW5 (MAX) | ONF | 6.44 | 1.0 | 0.29 | 2.93 | 0.85 | V - Ditch | 4:1 | N/A | N/A |
| OF5W | 1/2OF5 | 2.74 | 0.5 | 0.06 | 2.81 | 0.17 | Concrete Flume | 0:1 | 3 | N/A |
| OF5S | ONB+ 1/2OF5 | 1.01 | 2.5 | 0.40 | 3.87 | 1.55 | V - Ditch | 4:1 | N/A | N/A |

| RAS Standard Table 1 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Reach | River Sta | Profile | Plan | Q Total (cfs) | Min Ch El (ft) | W.S. Elev (ft) | Crit W.S. (ft) | E.G. Elev (ft) | E.G. Slope (ft/ft) | Vel Chnl (ft/s) | Flow Area (sq ft) | Top Width (ft) | Froude # Chl |
| SIRIUS | 1916 | 100-yr | PropCond-EL | 1,158.00 | 2120.70 | 2122.55 | 2122.55 | 2122.93 | 0.008145 | 4.96 | 233.59 | 297.67 | 0.99 |
| SIRIUS | 1750 | 100-yr | PropCond-EL | 1,158.00 | 2116.50 | 2118.23 | 2118.93 | 2120.74 | 0.015487 | 14.09 | 95.80 | 97.00 | 2.14 |
| SIRIUS | 1533 | 100-yr | PropCond-EL | 1,158.00 | 2112.00 | 2113.71 | 2114.66 | 2117.09 | 0.017377 | 15.05 | 79.46 | 83.06 | 2.29 |
| SIRIUS | 1245 | | | | | Lat Struct | | | | | | | |
| SIRIUS | 1215 | 100-yr | PropCond-EL | 1,095.58 | 2109.25 | 2110.68 | 2111.05 | 2111.89 | 0.011744 | 10.27 | 129.87 | 184.50 | 1.88 |
| SIRIUS | 1170 | 100-yr | PropCond-EL | 1,045.32 | 2108.90 | 2110.95 | 2110.95 | 2111.62 | 0.003495 | 6.53 | 159.90 | 120.60 | 1.01 |
| SIRIUS | 1036 | 100-yr | PropCond-EL | 1,045.32 | 2108.00 | 2110.21 | 2110.22 | 2111.16 | 0.003246 | 7.96 | 134.10 | 71.50 | 1.01 |


Plotted By:Schofield, Sean Street Set:Kha Layout:PRO-2 September 10, 2024 01:48:02pm K:\AV-Civil\092965012 Area 15 District 2 (Fisher Brothers)\Reports\DRAINAGE\06-(JP2)\Figures\CAD\PRO_JP2.dwg
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| No. | REVISIONS | DATE | BY |
|---|---|---|---|
| | | | |

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6671 LAS VEGAS BOULEVARD S., SUITE 320, LAS VEGAS, NV 89119
PHONE: 702-862-3600
WWW.KIMLEY-HORN.COM


05/17/2023

| | |
|---|---|
| KHA PROJECT | 092965011 |
| DATE | 05/17/2023 |
| SCALE | AS SHOWN |
| DESIGNED BY | TEA |
| DRAWN BY | SS |
| CHECKED BY | RD |

ONSITE
PROPOSED CONDITION
DRAINAGE MAP

AREA 15
DISTRICT 2
PREPARED FOR
NEW VEGAS HOLDING COMPANY, LLC
CITY OF LAS VEGAS NEVADA

PRO-2