

DS #: 5393

APN: 138-22-702-002

PROJECT: Highgate Senior Living - Update #3

SUBMITTAL: Cath

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		December 28, 2020
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:	
	Highgate Senior Living – Update #3	
Cross Streets:	SEQ of Lake Mead Blvd. & Rock Springs Dr.	COPIES TO:
File Number:	F:\Depot\DSMemos\DS5393A.doc	Civil 360 Planning & Engineering
Parcel Number:	138-22-702-002	Furon, LLC
Zoning Action:	SDR-65235; SUP-60376; ZON-60375	Bart Anderson, P.E., DevCo
FEMA Flood Zone	YES NO X	NDOT
Proposed Storm Drain	YES X NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	10/31/2016	11/18/2016	Not Approved	\$400.00	463379: \$400
2 nd Submittal	1/5/2017	1/24/2017	Not Approved	\$400.00	471084: \$400
3 rd Submittal	2/8/2017	2/23/2017	Approved	\$400.00	474934: \$400
4 th Submittal	4/25/2017	5/9/2017	Approved	\$100.00	482852: \$100
5 th Submittal	7/25/2018	8/8/2018	Approved	\$100.00	497651: \$100
6 th Submittal	12/11/2020	12/28/2020	See Comments Below	\$400.00	4098377: \$400
TOTAL FEES (LDDRS):				\$1,800.00	----

REMARKS:

6th Submittal: Update #3 prepared by a different engineer to revitalize the original approved project

5th Submittal: Update #2 for Minor Buildings Shift

4th Submittal: Update #1

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

X	is approved subject to conformance to all City standards and the following conditions:
	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 project proposes to construct facilities and/or increase flows within *Nevada Department of Transportation* (NDOT) right-of-way. The engineer must contact NDOT for encroachment permit for the proposed project.
2. Label Document Number or Book and Page Number for all existing easements on the grading plan.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a 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: T20S/R60E/22

AREA L-22

December 14, 2020

Mr. Albert Y. Sung
City Hall – City of Las Vegas
c/o Flood Control
495 S. Main Street
Las Vegas, NV 89101

RE: Drainage Study Update Letter for Highgate Senior Living

Dear Mr. Sung:

The above referenced Highgate Senior Living project is an older approved project that was put on hold by the developer and has recently been restarted. The previously approved drainage study DS4838 and Civil Improvement Plans (L17-00005) were prepared by Collins Engineers; and I was one of the licensed civil engineers involved with the project when it was prepared with Collins.

The project was put on a short hold and has recently started back up, however the previous TDS approval has expired (DS4838, August 2018 approval) and the project is now being handled under a different civil engineering firm, therefore we are submitting this update letter. I will continue to be the Civil Engineer of Record for this project and currently work for CIVIL 360 Planning & Engineering.

We recently submitted civil improvement plan for review with the City (L20-02645) thinking that since the design did not change that the previous TDS approval was still valid, however we did not realize that an update letter was necessary and so we are submitting this request now; I apologize for submitting civil plans prior to this request.

The project's site plan and design have not changed from the last set of civil plans submitted, reviewed, and approved by the City, we have simply "cleaned them up" and created them under CIVIL 360. The project intent and design remain the same, therefore the previously approved drainage study is still consistent with the project's drainage and civil design.

I respectfully request your review and approval of this drainage study update letter so we can proceed with the review and approval of a civil permit for the above project. If there are any questions or concerns during your review please contact me direct at (702) 940-6942 or via email at jescobedo@civil360lv.com.

Respectfully Submitted,

CIVIL 360 LLC



Jennifer L. Escobedo, P.E.
Principal

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: **Highgate Senior Living** Date: **12/3/2020**
 Location of Development: a) Descriptive (Cross Streets) North/South: **Rock Springs**
 East/West: **Lake Mead Boulevard**
 b) Section: **22** Township: **20 South** Range: **60 East**
 c) APN: **138-22-702-002**

Name of Owner : **Buron LLC**

Telephone Number: **604-687-2280** Fax No: Email Address:

Address: **1177 W Hastings Street, Suite 2133**
Vancouver, BC V6E 2K3

Contact Person Name: **Jennifer Escobedo** Telephone Number: **(702) 899-6068**

* Email Address jescobedo@civil360lv.com Fax Number:

Firm: **Civil 360 Planning & Engineering**

Address: **6490 W Desert Inn Road, LV, NV 89146**

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	☐	

- Total Owned Land Area: **At Site: ±5.62 Ac** Being Developed: **± 5.62 Ac**
 - Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ Yes** ☒ No
 - Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☐ Yes** ☒ No
 - Proposed type of development (Residential, Commercial, Etc.)? **Residential**
 - Approximate upstream land area which drains to the subject site? **0.0 ± Ac**
 - Has the site drainage been evaluated in the past? ☒ Yes ☐ No ☐
- IF Yes, Please identify documentation: TDS for Highgate Senior Living (DS4838C), Update #2 to the TDS Update #1, DS4838D and IN-N-OUT Burger Lake Mead and Rock Springs Dr, DS 1100
- If known, please briefly identify the proposed discharge point(s) of runoff from the site:
 Site drains towards east to the public Right-Of-Way (APN: 138-22-799-003).
 - Briefly describe your proposed schedule for the subject project: **As Soon As Possible**

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.**

Engineer's Seal

Local Entity File No.

Revision Date

REFERENCE: **Civil 360 Project No. 36-2001**

STANDARD FORM 1

updated 05/01/2008

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

		Map ID:	
Firm Name: <u>Civil 360</u>		Engineer: <u>JENNIFER ESCOBEDO</u>	
Address: <u>6490 W. DESERT INN ROAD</u>			
City: <u>Las Vegas</u>		State: <u>NV</u>	Zip: <u>89146</u>
Phone Number: <u>(702)</u>		Fax Number:	
Property Owner: <u>Buron Inc.</u>		Contact: <u>(604) 687-2280</u>	
1177 W Hastings Street Suite 2133.			
Vancouver		State: <u>BC</u>	Zip: <u>V6E 2K3</u>
		Date Received:	Date Accepted for Review:

The following checklist is intended as a guide for the engineer preparing a Technical Drainage Study to submit to the local entity and Clark County Regional flood Control District (if necessary). The listed items are the minimum information required prior to the entity performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the Clark County Regional Flood Control District (CCRFCD) Hydrologic Criteria and Drainage Design Manual (HC&DDM).

This document is intended as an aid in preparing Technical Drainage Studies. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use.

If items are not applicable for the subject site, provide N/A.

I. GENERAL REQUIREMENTS

<u>Yes</u>	<u>No</u>
X	Design Manual Standard Form 1 with the engineer's seal and signature.
X	Design Manual Standard Form 4 .
X	2 copies of the 24" x 36" Drainage Plan.
N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading or discharge.

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

II. MAPS AND EXHIBITS

YES

NO

- | | |
|---|--|
| X | A copy of a current Flood Insurance Rate Map (FIRM) with the site delineated. |
| X | A copy of the current CCRFCD Master Plan Update Figure, for Flood Control Facilities and Environmental areas with the site delineated. |
| X | Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs. |
| X | On-site drainage basin maps for existing and proposed conditions showing the existing topography, basin boundaries, concentration points, and on-site and off-site flows in cfs. |
| X | Vicinity Map with local and major cross streets identified and a north arrow. |

III. DRAINAGE PLAN

YES

NO

- | | |
|---|---|
| X | Sheet size: 24" x 36" sealed by a registered engineer in the State of Nevada |
| X | Minimum scale: 1"=100' |
| X | Project Name. |
| X | Vicinity Map with local and major cross streets. |
| X | Revision box. |
| X | North arrow and bar scale. |
| X | Engineer's /consultants address and phone number. |
| X | Elevation datum and benchmark. |
| X | Legend for symbols and abbreviations. |
| X | Cut/fill scarps, where applicable. |
| X | Street names, grades, widths. |
| X | Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street. |
| X | Existing contours encompassing the site and 100 feet beyond with spot elevations for important locations, where appropriate. |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

YES

NO

- | | |
|---|---|
| X | Minimum finished floor elevations with top-of-curb elevations at upstream end of lot. |
| X | Proposed typical street sections. |
| | N/A Streets with offset crowns. |
| X | Proposed contours or spot elevations in sufficient detail to exhibit intended drainage patterns and slopes. |
| X | Property lines. |
| X | Right-of-way lines and widths, existing and proposed. |
| X | Existing improvements and their elevations. |
| X | Delineation of proposed on-site drainage basins indicating area and 10-year and 100-year storm peak flows at basin concentration points. |
| X | Concentration points and drainage flow direction with Q_{100} and V_{100} and D_{100} in streets. |
| X | Cumulative flows, velocity, and direction of flow at upstream and downstream ends of site for the 10-year and 100-year flows. |
| X | Location and cross-section of street capacity calculations. |
| X | Cross-sectional detail for channels, including cutoff wall locations. |
| X | Existing and proposed drainage facilities, appurtenances, and connections (i.e., sidewalk, ditches, swales, storm drain systems, unimproved and improved channels, and culverts, etc.) stating size, material, shape, and slope with plan and profile and HGL calculations. |
| X | Existing and proposed drainage easements and widths shown with sufficient detail. A cross sectional detail must be provided that shows appropriate lining and reinforcement. |
| X | Location and detail of existing, proposed, and future block wall openings. Minimum size is 16" x 48". Wrought iron gate is required for flows > 10 cfs. |
| | N/A Location and detail of flood walls illustrating depth of flow, proposed grouting height, etc. |
| X | Perimeter retaining wall locations. All existing and proposed walls (retaining screen and flood) must be shown with adjacent ground elevations. Flood walls with 8-inch concrete masonry unit. |
| X | Building and/or lot numbers. |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

YES

NO

- | | |
|-----|--|
| N/A | Alignment of all existing, proposed, or future Regional Facilities adjacent to the site. |
| N/A | Limits of existing floodplain based on current FIRM or best available information; limits of proposed floodplains based on best available information. |
| N/A | For areas in Zone A, AE, AH, and AO, base flood elevations (BFEs) must be shown for each lot; BFEs may be listed on each lot, or in a table. Finish floor elevations must be a minimum of 18 inches above BFE. N/A |
| X | Appropriately elevated "humps" 6 inches above the 100 year water surface elevation at site accesses where the intent is to protect the site from the Q ₁₀₀ flows. |
| X | Street slopes for perimeters and interior streets. The minimum slope is 0.4 percent. |
| N/A | Location and detail of best management practice (BMP) for parking lots and low impact development (LID) (if required). |

IV. Hydrologic Analysis

- | | |
|-----|---|
| X | Appropriate soil information for existing and future conditions. |
| X | Input and output information for existing conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models. |
| X | Input and output information for future conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models. |
| X | Use of correct precipitation values in and around the McCarran Airport rainfall area. |
| X | A discussion in the text of the hydrologic analysis justifying sub-basin boundaries and cutoffs, supporting assumptions, and calculations. |
| X | A summary table of Stormwater flows showing basin area, Q ₁₀ and Q ₁₀₀ for both individual basins and combined basin flows, where applicable. |
| X | Copies of supporting technical information referenced from a previously approved study and a statement accepting these results. |
| X | On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent owners in accordance with current Nevada Drainage Law. |
| N/A | Calculations for impervious area for parking lots and LIDs (if required) |

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

YES

NO

N/A

Flow split calculations and supporting documentation or reference for the method of flow split calculations used.

X

Normal depth street flow calculations and cross section diagrams for all interior and perimeter street. Provide "d x v" products for the Q_{100} and Q_{10} flows representing the worst case for interior and all perimeter streets. $Q_{100} d \times v \leq 8$. $Q_{10} d \times v \leq 6$ and 12 foot dry lane for rights-of-way ≥ 80 feet. Calculations must be labeled by street name as indicated on the Grading Plan.

X

A summary table of interior and exterior street capacity calculations showing the street name, Q_{100} flow, slope, depth of flow, velocity and depth times velocity product and streets needing to meet 12 foot dry lane criteria.

X

Appropriate hydraulic calculations for block wall openings assuming a 50 percent vertical clogging factor. (Assume the lower half of the opening is plugged.)

N/A

Appropriate hydraulic calculations at drainage easement entrance and discharge locations to set finish floor elevations. Hydraulic calculations must include submerged weir, super elevation and tee intersection losses, where appropriate.

X

Provide necessary freeboard requirements to set the finished floor elevations of all proposed buildings, 2 x depth of flow or depth of flow plus 18 inches of freeboard, whichever is less. The minimum requirement is 6 inches above adjacent upstream top of curb. Buildings adjacent to drainage easements must always be provided with 18 inches of freeboard above the Q_{100} weir height or flow depth, whichever is greater.

N/A

A complete water surface profile analysis (HEC-2, HEC-RAS, etc.) for channel flows and FEMA Zone A flood zones. N/A

- Field survey data.
- Input and output information.
- Plotted cross-sections based on survey with proper encroachments.
- A map showing the location of the cross-sections.
- Analysis of both sub and super-critical flow segments.
- A summary table and a discussion of the results in the text of this report.

X

Provide a 50 percent clogging factor in the capacity calculations for drop inlets.

X

Hydraulic calculations for culverts and storm drains. D-load calculations must be provided for storm drain pipes in public right-of-way, including headwater pool inundation.

X

The mitigation of nuisance water, both during construction and in the fully developed condition, must be addressed.

N/A

Provide BMP type, size and supporting calculations for parking lots and LIDs (if required).

REFERENCE:

STANDARD FORM 2



CITY OF LAS VEGAS

MINIMUM DRAINAGE STUDY CRITERIA STANDARD FORM 2 CHECKLIST SUPPLEMENT

(Revised 5/18/11)

The following checklist is intended as a supplemental guide for the engineer preparing a Technical Drainage Study submittal to the City of Las Vegas. This supplement focuses on requirements specific to the City of Las Vegas. The requirements presented are in addition to the Clark County Regional Flood Control District (CCRFCD) Manual Standard Form 2. The listed items are the minimum information required prior to the City performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the CCRFCD Hydrologic Criteria and Drainage Design Manual (Design Manual).

An appointment must be made to preview this checklist in conjunction with CCRFCD Standard Form 2 prior to the City accepting a new drainage study for review. The engineer must contact the Flood Control Section at (702) 229-6541 to schedule a submittal appointment.

If items are not applicable for the subject site, provide N/A.

I. GENERAL REQUIREMENT		
Yes	No	
	N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading. (A copy of the letter Must be received prior to final acceptance of the drainage study.)
	X	Copies of all conditions of approval for development related to this property. (E.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions.
X		An electronic copy of the complete submittal is required to be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output device replicating your submittal. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats. If figures are in color, they must be scanned in color and saved as a separate file. _____ <u>JE</u> by initial here, the engineer on record acknowledges that the electronic copy is an identical replicate of the original hard copy submitted to the City of Las Vegas.

II. GRADING PLAN INFORMATION		
Yes	No	
X		(1) 24" X 36" copy of the Grading Plan, (including all Detail Sheets) sealed by the engineer.
X		Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street. Note: Proposed top of curb elevations must be provided for both sides of roadways even if only half street construction is required.
X		Label existing topography at a minimum 5 foot elevation interval including adjacent developments, finished floor elevations of existing buildings and top of existing curbs extending 100 feet around the perimeter of the site. (*Measured from the centerline of the adjacent roadway.)

CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST

II. GRADING PLAN INFORMATION		
Yes	No	
	N/A	Proposed on-site and off-site storm drains and other flood control facilities with plan and profile sheets for public storm drains showing the class of pipe, (Class III, IV, V, etc.), design hydraulic grade line, (HGL) and 100 year storm flow. A public drainage easement must be provided over on-site storm drains conveying off-site flows. An overflow path must be provided over all storm drains.
X		All existing and "to be constructed" walls with cross-sections showing wall type, (e.g. block wall, retaining wall, flood wall, etc.), with limits clearly defined, adjacent ground elevations. Wall heights must meet current ordinances and in no case exceed 14 feet above the adjacent property.
X		Street slopes for both interior and perimeter streets. Note: The minimum slope for a roadway is 0.4 percent, a minimum 18-inch storm drain must be provided where minimum slopes cannot be met.
X		Back of lot elevations and lot drainage pattern for all lots including common lots.
	X	Sites with a grade difference two feet above or below existing ground are required to have approval from City of Las Vegas Current Planning. Current Planning approval is required prior to final approval of the drainage study.
X		On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners. (The project must pass flows through the site every 600 feet where the project is blocking flow paths.)
	N/A	This project uses a solid grouted stem wall (or approved alternate) at the back of sidewalk to provide erosion protection for landscaped areas where the depth of flow in the roadway exceeds the back of walk elevation. A corresponding cross-section detail is included.
	N/A	Commercial and Common Lot Landscape areas are not allowed to drain over the sidewalk. The grading plans show flow lines with grades and sidewalk under drains for all landscape areas draining to the public ROW.

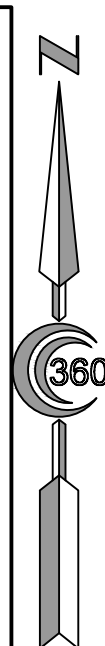
III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
X		Concrete valley gutters are required in parking lots with slopes less than 1 percent. Slopes through cul-de-sac must be at a 1 percent minimum where flow is drained through the cul-de-sac.
X		Ten-foot wide public drainage easements to be privately maintained are allowed for flow less than 20 cfs. The depth of flow entering the easement must be checked using the submerged weir Calculation.
	N/A	The limits of the flood zones and the base flood elevations (BFE) must be shown on all grading plans for all developments within a Special Flood Hazard Zone A, AO, AE, etc.
X		Minimum finish floor elevation is 6 inches above highest adjacent top of curb. Finish floor calculations must include allowances for super elevations on curves and velocity head for tee intersections.
X		Finished floor elevations for buildings adjacent to public drainage easements must be a minimum of 18 inches above the Q100 weir of submerged weir elevation, whichever is greater?

CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
N/A		Lots with "B and C Type Drainage" that drain from one lot to another through a drainage easement shall be required to install an underground nuisance drainage system or a 2-foot valley gutter. 16" x 24" minimum block wall openings are required for both options.
N/A		Bubblers are required across 80 foot and greater ROW streets. When flows exceed 10 cfs, bubblers larger than 18 inches will be required up to a maximum of 36". Inlets must be sized to match the pipe size provided.

- Contact the Flood Control Section regarding the drainage study review fee. These fees are payable at the time of submittal.
- The Drainage Study must be conditionally approved prior to submitting improvement plans to the Civil and Planning Development of the Department of Building and Safety for review.

This document is intended as an **aid** in preparing Technical Drainage Studies for the City of Las Vegas. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all-inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use.



12/03/20
DATE

SHEET 10 OF 25

1



20 0 10 2

SCALE: 1"=20'

NORTH 00°22'57" WEST, BEING THE BEARING OF THE WEST LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 22, TOWNSHIP 20 SOUTH, RANGE 60 EAST, M.D.M., AS SHOWN IN STATE OF NEVADA, DEPARTMENT OF HIGHWAYS RIGHT OF WAY PLAN, PROJECT RF-TQF-006-2(10). SHEET 8 OF 24.

CITY OF LAS VEGAS BENCHMARK 7LV0022SE6 BEING A RIVET AND PLATE IN TOP OF CURB NORTHWEST CORNER OF WALT LOTT DRIVE AND ROCK SPRINGS DRIVE.

ELEVATION = 722.55 (METERS) / 2370.57 (U.S. SURVEY FEET)
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD' 88)

NO.	ITEM	USDCCA: UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA.
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NOTE:
ALL ONSITE STORM DRAIN SYSTEMS AND THE ASSOCIATED FACILITIES AREA PRIVATELY OWNED AND TO BE PRIVATELY MAINTAINED BY THE PROPERTY OWNER.

 SIGHT VISIBILITY ZONE

SIGHT VISIBILITY ZONE NOTE:
NO WALLS, FENCES SHRUBS, UTILITY APPURTENANCES OR ANY OTHER OBJECT, OTHER THAN TRAFFIC CONTROL DEVICES, FIRE HYDRANTS, TREES, AND STREET LIGHTS, MAY BE LOCATED WITHIN THE SIGHT VISIBILITY ZONE. ANY OBJECT WITHIN THE SIGHT VISIBILITY ZONE MUST BE MAINTAINED AT A MAXIMUM HEIGHT OF 27 INCHES ABOVE THE GRADE UNLESS SAID OBJECT IS MAINTAINED AT LESS THAN 24 INCHES IN HEIGHT, MEASURED FROM TOP OF CURB, OR WHERE NO CURB EXIST, A HEIGHT OF 27 INCHES MEASURED FROM THE TOP OF ADJACENT ASPHALT, GRAVEL OR PAVEMENT SURFACE. THE RESTRICTION EXTENDS ALONG THE SIGHT VISIBILITY LINE THROUGH LANDSCAPED MEDIANS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FILE A NOTICE OF INTENT/REQUEST TO BE INCLUDED IN THE STORM WATER GENERAL PERMIT, AND SUBMIT THE ASSOCIATED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY FEDERAL, AND MONITORED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION.

PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES SUCH AS BUT NOT LIMITED TO THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF THE VEGETATION.

PER FIRM PANEL 32003C2165D REVISED SEPTEMBER 27, 2002, THE PROJECT SITE IS LOCATED WITHIN NON-SHADED FLOOD ZONE "X". NON-SHADED FLOOD ZONE "X" IS DEFINED BY FEMA AS AN AREA OUTSIDE THE 500-YEAR FLOOD PLAIN.

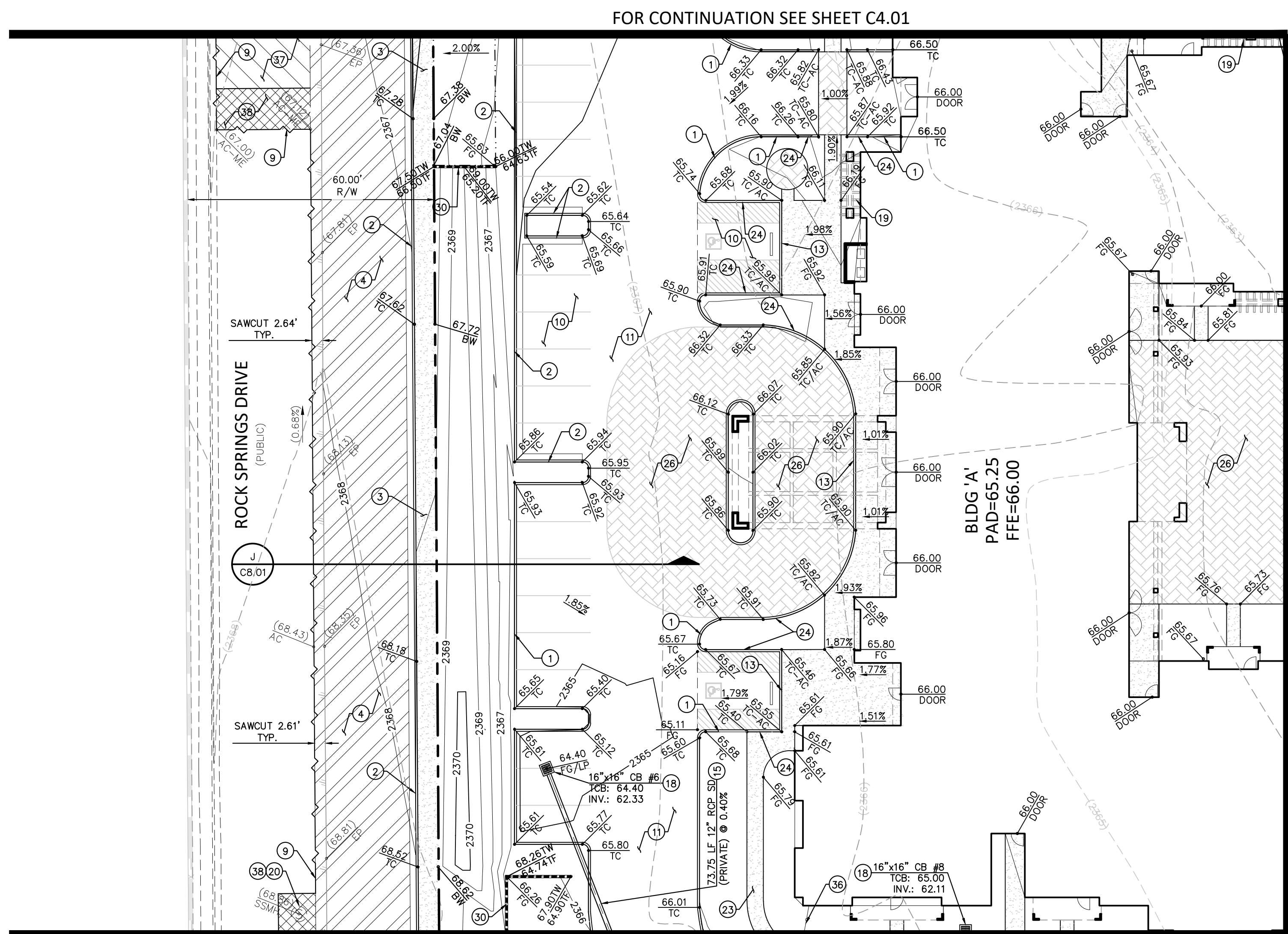
ALL GRADING WORK SHALL BE IN STRICT ACCORDANCE WITH THE SOILS REPORT
FOR THE SITE ENTITLED "HIGHGATE SENIOR LIVING FACILITY"
PROJECT NO.: 15000202, DATED: SEPTEMBER 17, 2020
PREPARED BY:

PREPARED BY: McGETTIGAN CONSULTING LLC
1551 DESERT CROSSING COURT
LAS VEGAS, NV 89144
PHONE NO. (702) 850-4137

ALL WORK SHALL BE PERFORMED UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL SOILS ENGINEER.

I CERTIFY THAT THIS GRADING PLAN CONFORMS TO THE APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE WITH CITY OF LAS VEGAS. DS# 4838A

Jennifer L Escobedo 12/03/20
JENNIFER L. ESCOBEDO - 24298 DAT



FOR CONTINUATION SEE SHEET C4.04

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

CALL BEFORE YOU DIG
AVOID CUTTING UNDERGROUND
UTILITY LINES. IT'S COSTLY.

Call
811
or
1-800-227-2600

AVOID HITTING OVERHEAD
POWER LINES. IT'S COSTLY.

CALL BEFORE
YOU DO
OVERHEAD
WORK



1-702-227-2929

**AVOID HITTING UNDERGROUND
TRAFFIC SIGNAL AND STREET
LIGHT SYSTEMS. IT'S COSTLY.**

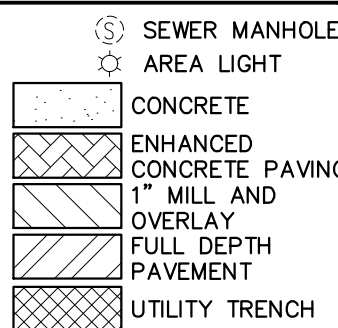
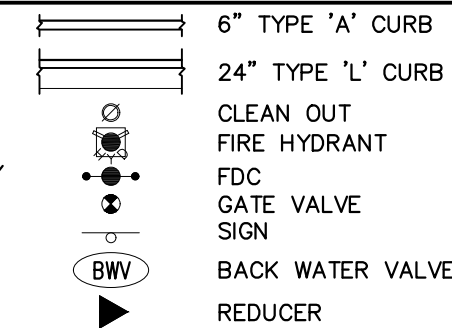


**CALL BEFORE
YOU DO
UNDERGROUND
WORK**

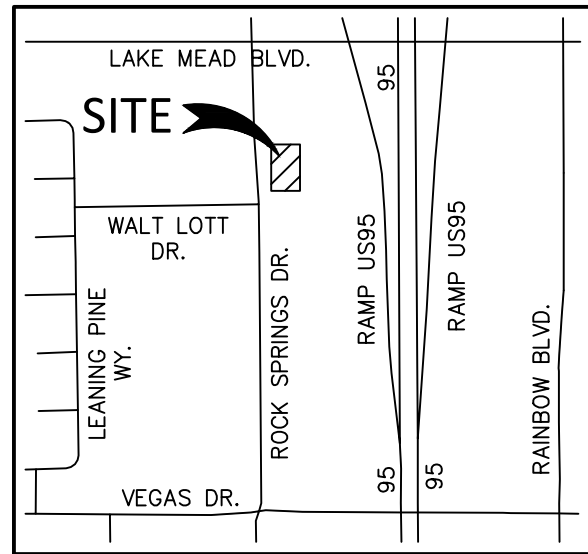
CALL 1-702-432-5300

FREeway AND ARTERIAL SYSTEM OF TRANSPORTATION

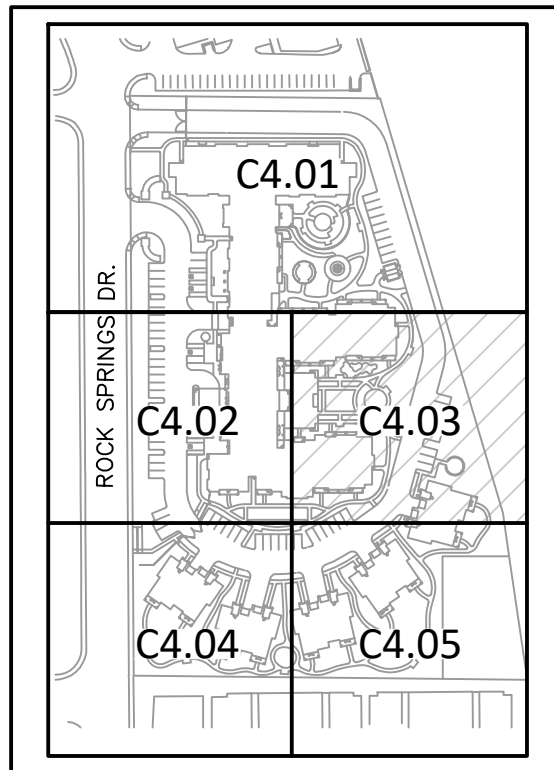
	SLOPE		SEWER LINE
	ELEVATION TAG		WATER LINE
	STORM MANHOLE		GAS LINE
	DROP INLET		FENCE
	CONTOUR		PL—RIGHT-OF-WAY
	RETAINING WALL		PL—ADJACENT CENTERLINE
	SCREEN WALL		EASEMENT LINE
			FLOW LINE
			SAWCUT LINE



P:\36-2001- HIGHGATE SENIOR LIVING\ENGINEERING\ DRAWINGS\ DWG\SHEETS\36-2001-C4-01-GRD.DWG 12/03/2020 01:16:24 PM

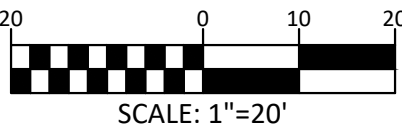


VICINITY MAP
NTS



KEY MAP
NTS

GRAPHIC SCALE



BASIS OF BEARING

NORTH 00°22'57" WEST, BEING THE BEARING OF THE WEST LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 22, TOWNSHIP 20 SOUTH, RANGE 60 EAST, M.D.M., AS SHOWN IN STATE OF NEVADA, DEPARTMENT OF HIGHWAYS RIGHT OF WAY PLAN, PROJECT RF-TGF-006-2(10), SHEET 8 OF 24.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 7LV0022SE6 BEING A RIVET AND PLATE IN TOP OF CURB NORTHWEST CORNER OF WALT LOTT DRIVE AND ROCK SPRINGS DRIVE.
ELEVATION = 722.55 (METERS) / 2370.57 (U.S. SURVEY FEET)
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD' 88)

CONSTRUCTION NOTES

1. CONSTRUCT "A" TYPE CURB PER DETAIL "A" SHEET C8.01.
2. CONSTRUCT "L" TYPE CURB PER USDCCA DWG. No. 216.
3. CONSTRUCT CONCRETE SIDEWALK PER USDCCA DWG. No. 234.
4. CONSTRUCT 4" AC PAVEMENT OVER 8" TYPE II AGGREGATE BASE PER GEOTECH SPECS. DATED SEPTEMBER 17, 2020 BY McGETTIGAN CONSULTING.
5. CONSTRUCT SIDEWALK DRAIN PER USDCCA DWG. No. 236.
6. CONSTRUCT 3" WIDE CONCRETE VALLEY GUTTER PER DETAIL "D" SHEET C8.01.
7. CONSTRUCT CURB OPENING PER DETAIL "E" SHEET C8.01.
8. CONSTRUCT COMMERCIAL DRIVEWAY PER USDCCA DWG. No. 222.1 AND 228.
9. SAWCUT AND MATCH EXISTING AC PAVEMENT.
10. CONSTRUCT 2" AC PAVING OVER 4" TYPE II AGGREGATE BASE.
11. CONSTRUCT 3" AC PAVING OVER 4" TYPE II AGGREGATE BASE.
12. CONSTRUCT GRADED SWALE.
13. CONSTRUCT "O" TALL TYPE "A" CURB PER DETAIL "C" SHEET C8.01.
14. EX. UTILITY ADJUST TO GRADE, RELOCATE AND/OR MODIFY AS NEEDED.
15. INSTALL STORM DRAIN PIPE (SIZE/TYPE PER PLAN) PER USDCCA DWG. No. 504.
16. 24"x24" JENSEN PRECAST CATCH BASIN PER USDCCA DWG. No. 421. (SEE DETAIL "N" SHEET C8.02).
17. INSTALL 48" TYPE II STORM DRAIN MANHOLE PER USDCCA DWG. No. 405.
18. INSTALL 12" NYLOPLAST DRAIN BASIN PER DETAIL "M" SHEET C8.02.
19. TRELLIS PER ARCHITECTURAL PLANS, SHEET A8.11.
20. ADJUST SANITARY SEWER MANHOLE TO FINISHED GRADE.
21. CONSTRUCT SIDEWALK ADA RAMP PER DETAIL "A-A" ON SHEET C8.02.
22. PRIVACY WALL BY OTHERS, REFER TO STRUCTURAL PLANS.
23. CONSTRUCT ON-SITE CONCRETE/SIDEWALK AREAS, REFER TO ARCHITECTURAL PLANS FOR COLOR, FINISH, SCORE AND JOINTS.
24. CONSTRUCT CURB TRANSITION FROM 0" TO 6" CURB SEE DETAIL "B" SHEET C8.01.
25. INSTALL WALL OPENING PER DETAIL "K" SHEET C8.01.
26. PAVERS AND/OR DECORATIVE PAVEMENT BY OTHERS, REFER TO LANDSCAPE PLANS.
27. INSTALL D50 (8") RIP RAP PER PLAN.
28. SITE FEATURES BY OTHERS, REFER TO LANDSCAPE PLANS.
29. LANDSCAPING BY OTHERS, REFER TO LANDSCAPE PLANS.
30. CONSTRUCT RETAINING WALL (H=4' MAX) PER B-100-2.
31. INSTALL 4" PVC PIPE.
32. CONSTRUCT PERIMETER WALL (MAX. 8' HIGH RETAINING + SCREEN) PER DETAILS ON SHEETS C8.03 & C8.04.
33. FENCE AND/OR GATE BY OTHERS.
34. INSTALL WALL OPENING PER DETAIL "L" SHEET C8.02.
35. INSTALL 7' HIGH BLOCK WALL, REFER TO LANDSCAPE PLANS.
36. PROPOSED 6' HIGH TUBULAR STEEL FENCE. REFER TO LANDSCAPE PLANS.
37. ROTOMILL 1" DEPTH OF PAVEMENT AND REPLACE WITH 1" OPEN GRADE PER UDACS DWG. No. 500.2.
38. SAWCUT AND REPLACE FULL DEPTH AC PAVEMENT. 1" OPEN GRADE, 4" AC OVER 6" TYPE II AGGREGATE BASE PER UDACS DWG. No. 503 & 500.2.

NOTE:

ALL ON-SITE STORM DRAIN SYSTEMS AND THE ASSOCIATED FACILITIES AREA PRIVATELY OWNED AND TO BE PRIVATELY MAINTAINED BY THE PROPERTY OWNER.

SIGHT VISIBILITY ZONE LEGEND

SIGHT VISIBILITY ZONE

SIGHT VISIBILITY ZONE NOTE:

NO WALLS, FENCES, SHRUBS, UTILITY APPURTENANCES OR ANY OTHER OBJECT, OTHER THAN TRAFFIC CONTROL DEVICES, FIRE HYDRANTS, TREES, AND STREET LIGHT POLES, MAY BE CONSTRUCTED OR INSTALLED WITHIN THE SIGHT VISIBILITY ZONE UNLESS SAID OBJECT IS MAINTAINED AT LESS THAN 24 INCHES IN HEIGHT, MEASURED FROM TOP OF CURB, OR WHERE NO CURB EXISTS, A HEIGHT OF 27 INCHES MEASURED FROM THE TOP OF ADJACENT ASPHALT, GRAVEL OR PAVEMENT STREET SURFACE. THIS RESTRICTION EXTENDS ALONG THE SIGHT VISIBILITY LINE THROUGH LANDSCAPED MEDIANS.

GENERAL NOTE:

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FILE A NOTICE OF INTENT/REQUEST TO BE INCLUDED IN THE STORM WATER GENERAL PERMIT, AND SUBMIT THE ASSOCIATED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY FEDERAL, AND MONITORED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION.

NOTE:

PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES SUCH AS BUT NOT LIMITED TO THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF THE VEGETATION.

FLOOD ZONE NOTE:

PER FIRM PANEL 32003C21650 REVISED SEPTEMBER 27, 2002, THE PROJECT SITE IS LOCATED WITHIN NON-SHADED FLOOD ZONE "X". NON-SHADED FLOOD ZONE "X" IS DEFINED BY FEMA AS AN AREA OUTSIDE THE 500-YEAR FLOOD PLAIN.

ALL GRADING WORK SHALL BE IN STRICT ACCORDANCE WITH THE SOILS REPORT FOR THE SITE ENTITLED "HIGHGATE SENIOR LIVING FACILITY" PROJECT NO.: 15000202, DATED: SEPTEMBER 17, 2020 PREPARED BY:

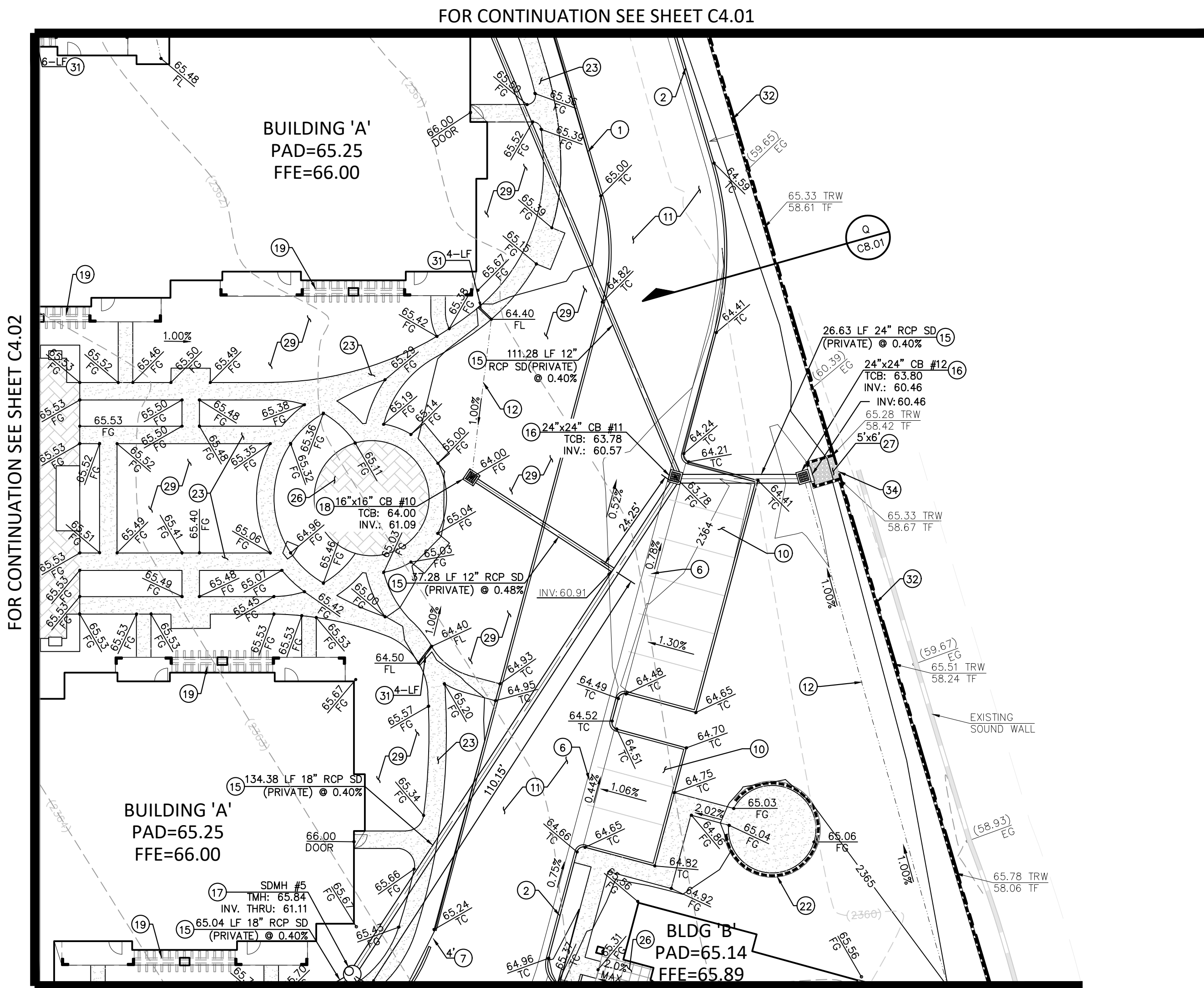
McGETTIGAN CONSULTING LLC
1551 DESERT CROSSING COURT, SUITE 150
LAS VEGAS, NV 89144
PHONE NO. (702) 850-4137

ALL WORK SHALL BE PERFORMED UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL SOILS ENGINEER.

I CERTIFY THAT THIS GRADING PLAN CONFORMS TO THE APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE WITH CITY OF LAS VEGAS. DS# 4838A

Jennifer L. Escobedo
JENNIFER L. ESCOBEDO - 24298

12/03/20
DATE



FOR CONTINUATION SEE SHEET C4.05

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

CALL BEFORE YOU DIG
AVOID CUTTING UNDERGROUND
UTILITY LINES. IT'S COSTLY.

1-800-227-2600

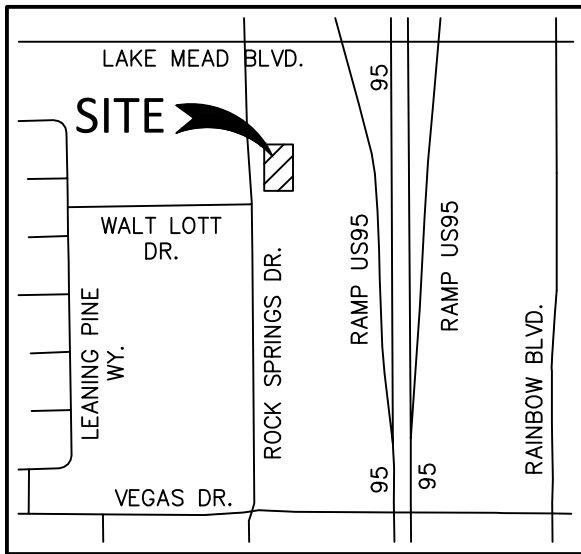
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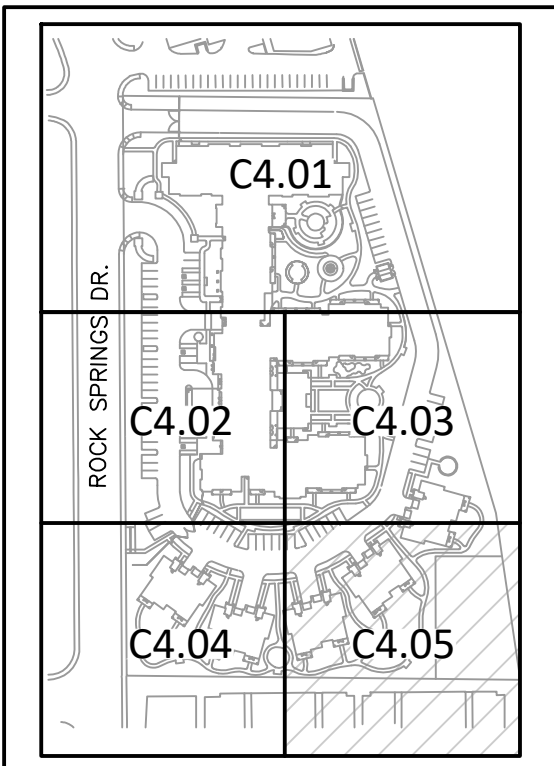
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WORK

CALL 1-702-432-5300
FREIGHT AND AIRPORT SYSTEM OF TRANSPORTATION

LEGEND			
00.00	SLOPE		STORM DRAIN
00.00	ELEVATION TAG		SEWER LINE
XX			GAS LINE
	STORM MANHOLE		FENCE
	DROP INLET		PL-RIGHT-OF-WAY
	CONTOUR		PL-ADJACENT CENTERLINE
	RETAINING WALL		EASEMENT LINE
	SCREEN WALL		FLOW LINE
			SAWCUT LINE
			6" TYPE "A" CURB
			24" TYPE "L" CURB
			CLEAN OUT
			FIRE HYDRANT
			FDC
			GATE VALVE
			SION
			BACK WATER VALVE
			REDUCER
			SEWER MANHOLE
			AREA LIGHT
			CONCRETE
			ENHANCED CONCRETE PAVING
			1" MILL AND OVERLAY
			FULL DEPTH PAVEMENT
			UTILITY TRENCH

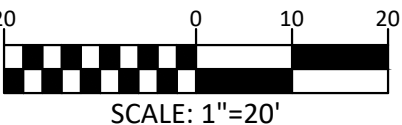


VICINITY MAP
NTS



KEY MAP
NTS

GRAPHIC SCALE



BASIS OF BEARING

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ELEVATION = 722.55 (METERS) / 2370.57 (U.S. SURVEY FEET)
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD' 88)

CONSTRUCTION NOTES

NO.	ITEM	USDOCA: UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA.
1	CONSTRUCT "A" TYPE CURB PER DETAIL "A" SHEET C8.01.	
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3	CONSTRUCT CONCRETE SIDEWALK PER USDOCA DWG. No. 234.	
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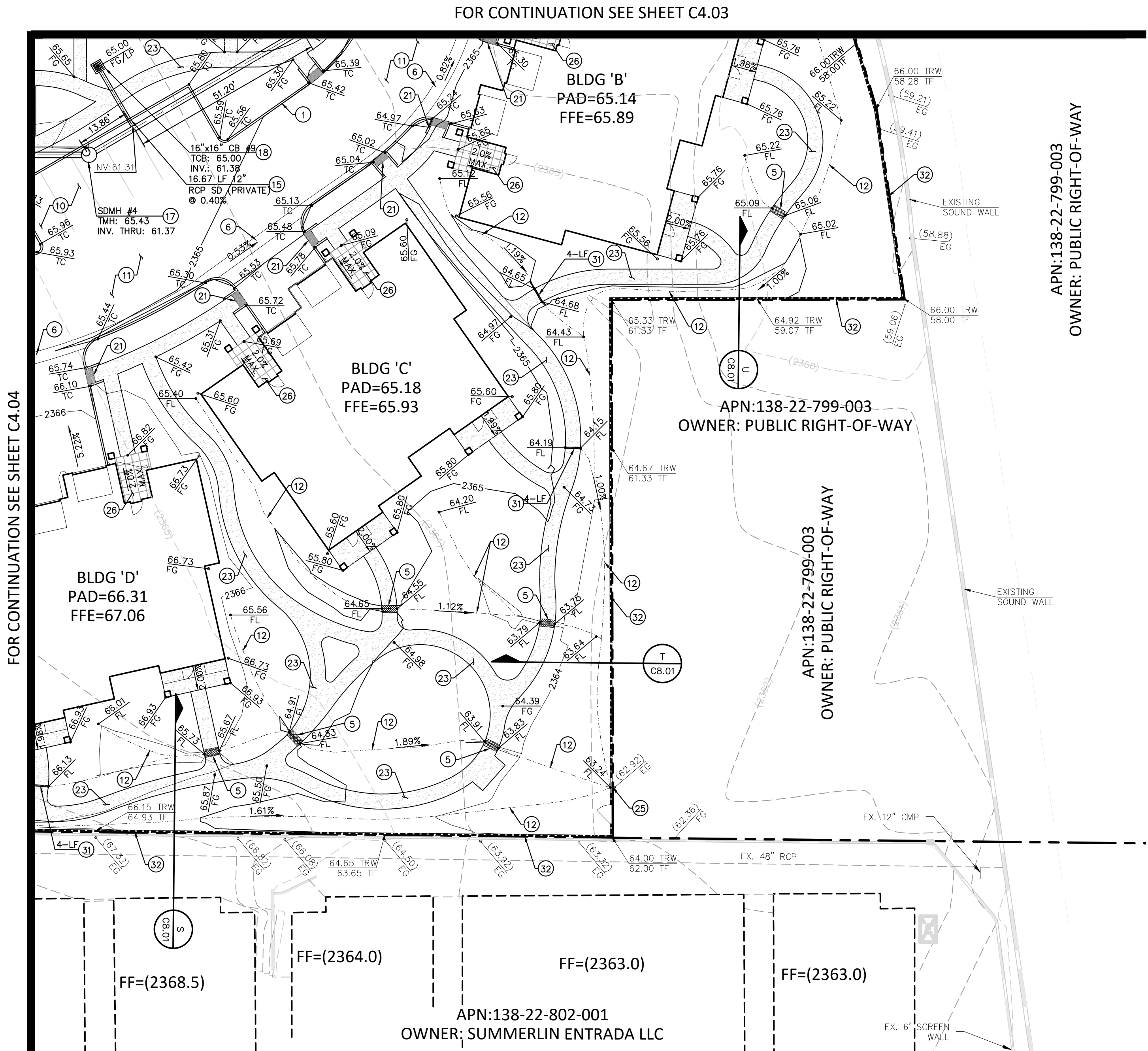
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JENNIFER L. ESCOBEDO - 24298

12/03/20

DATE



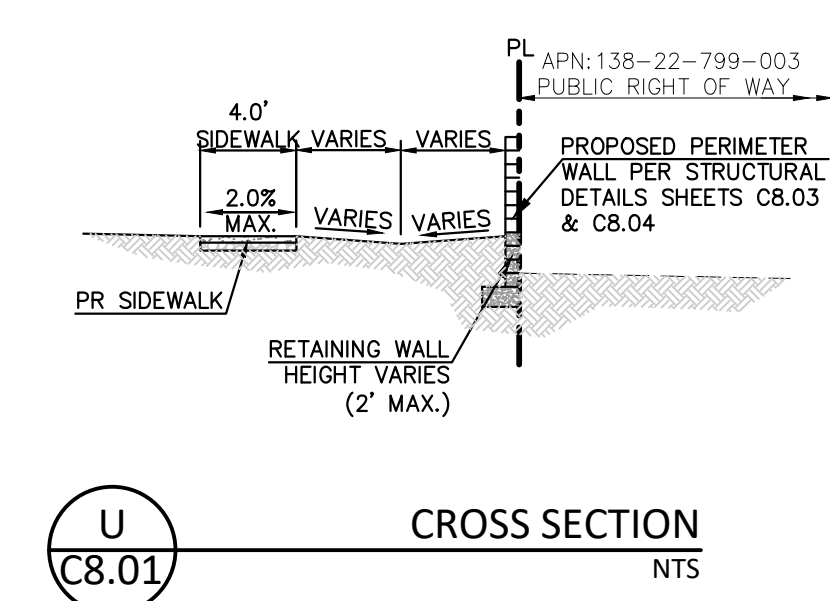
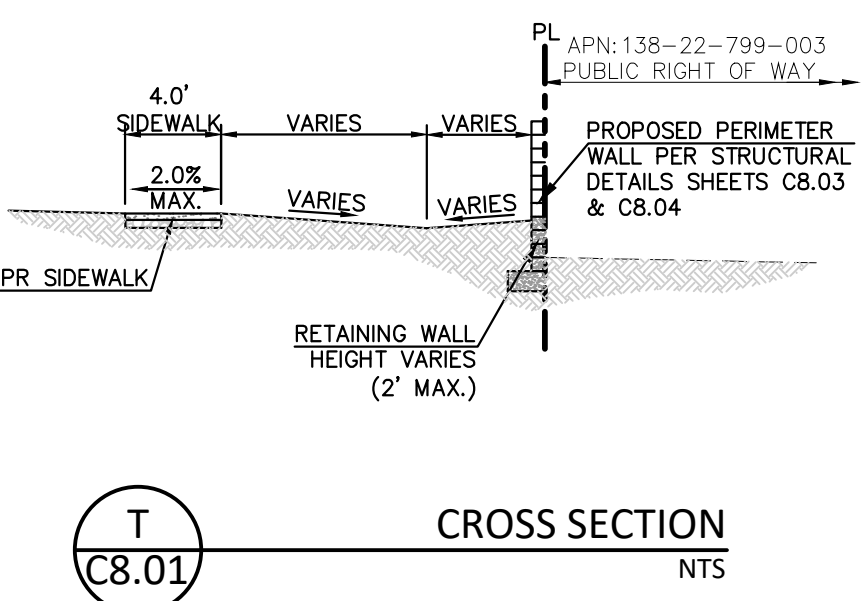
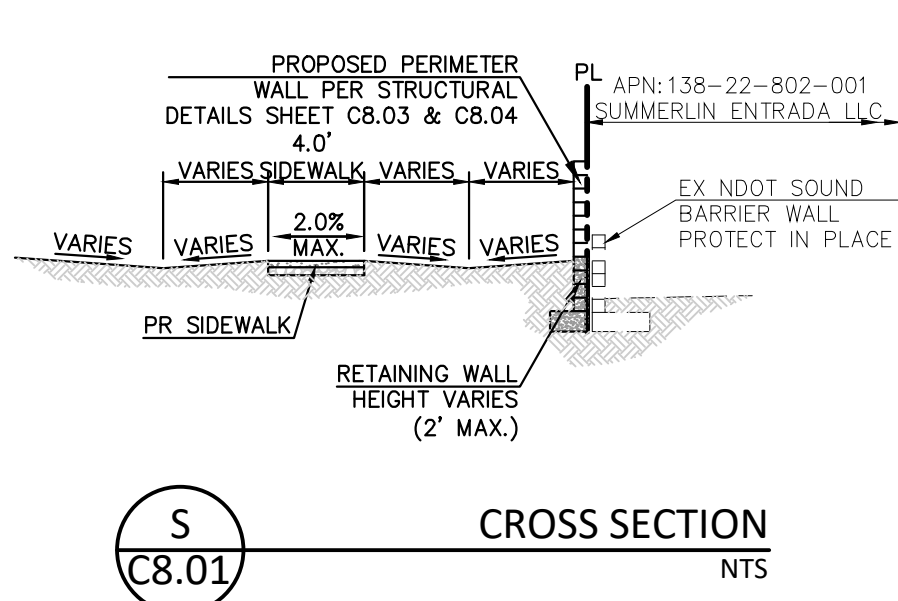
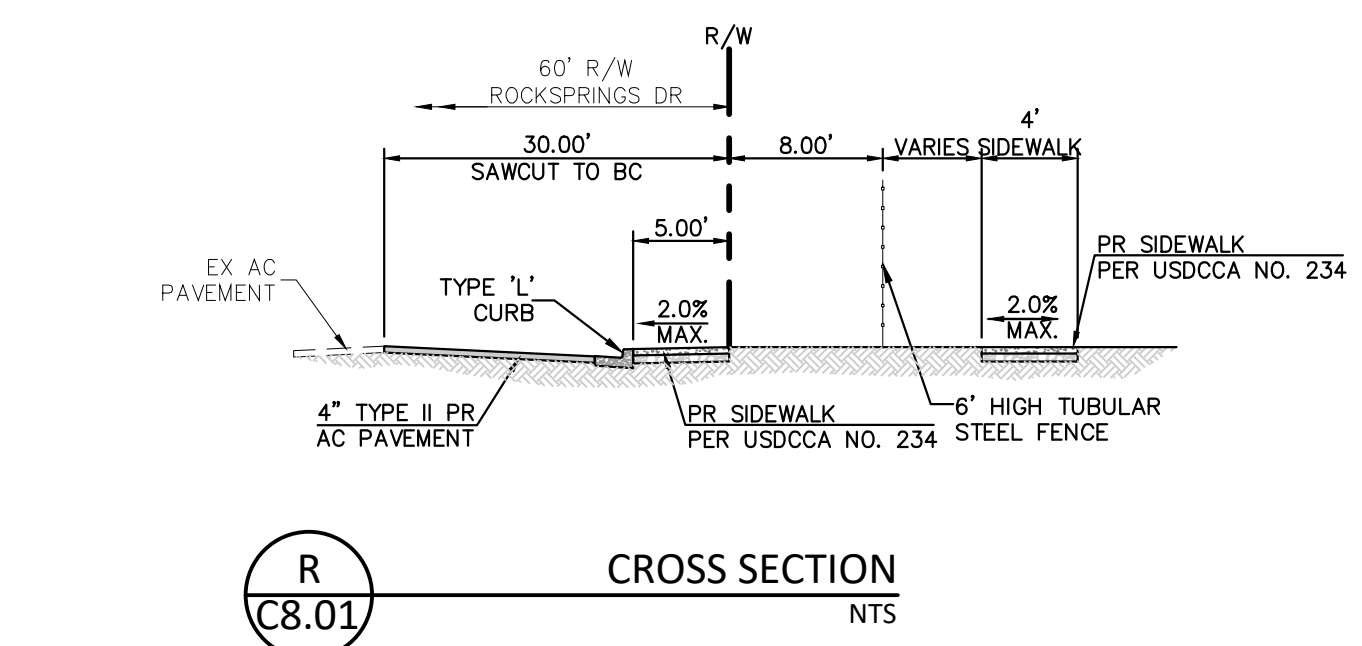
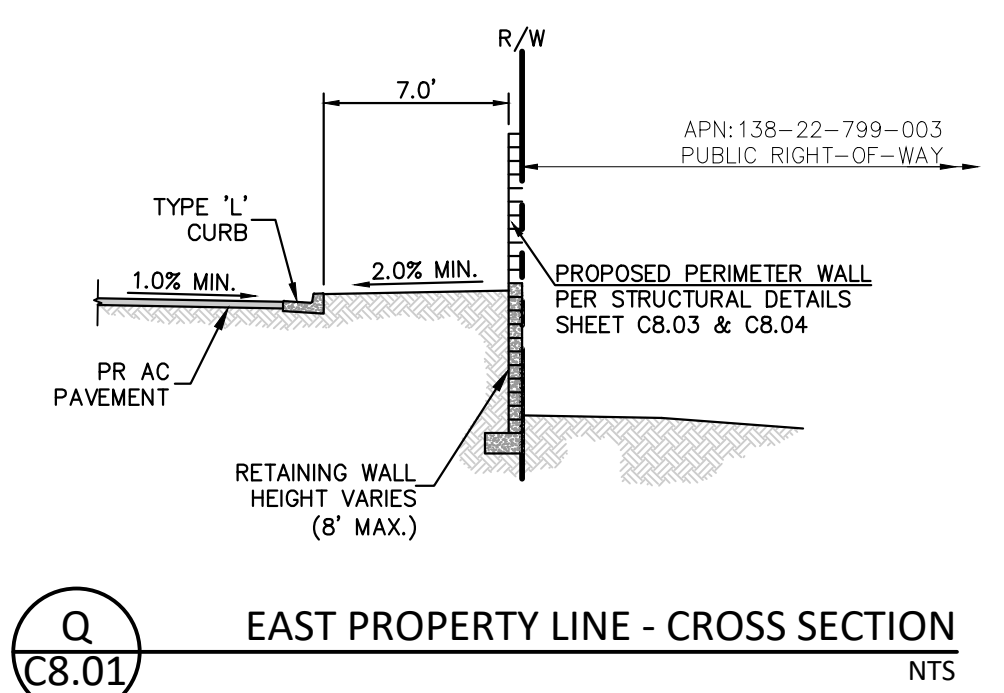
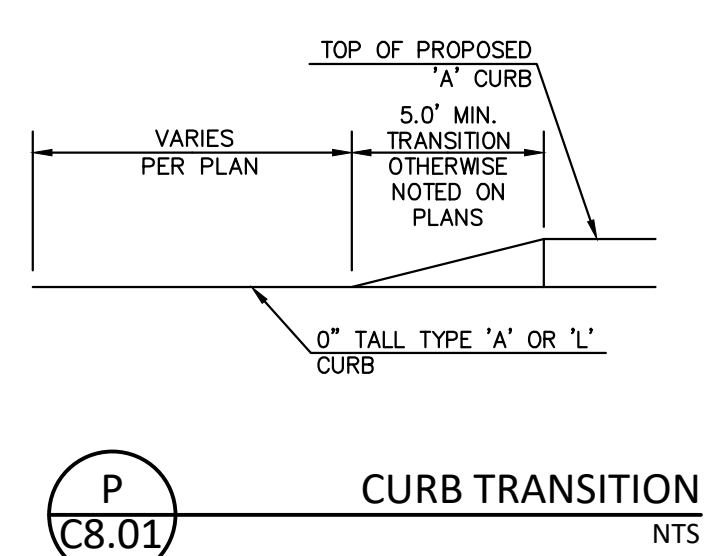
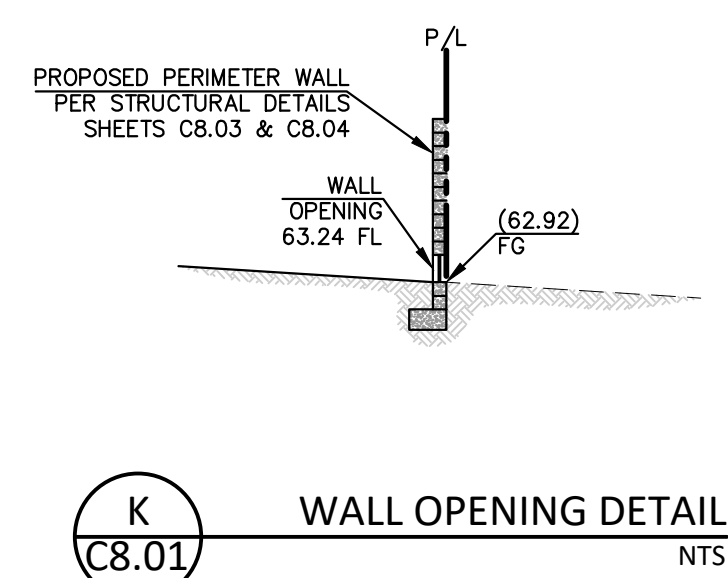
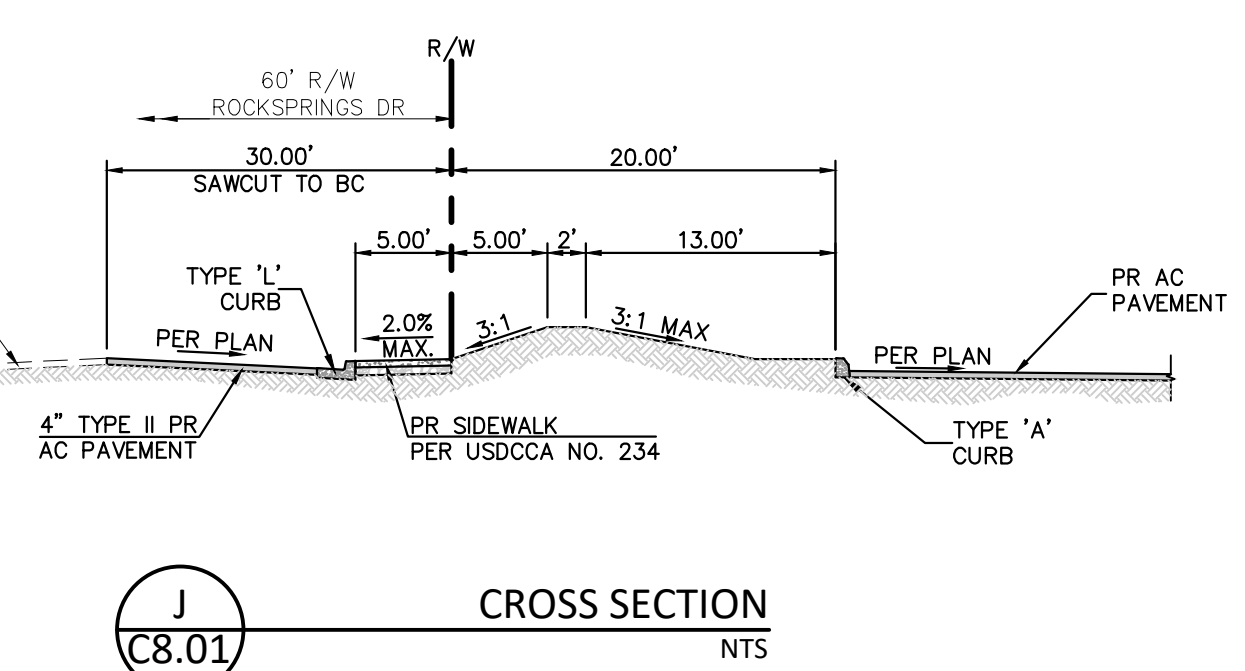
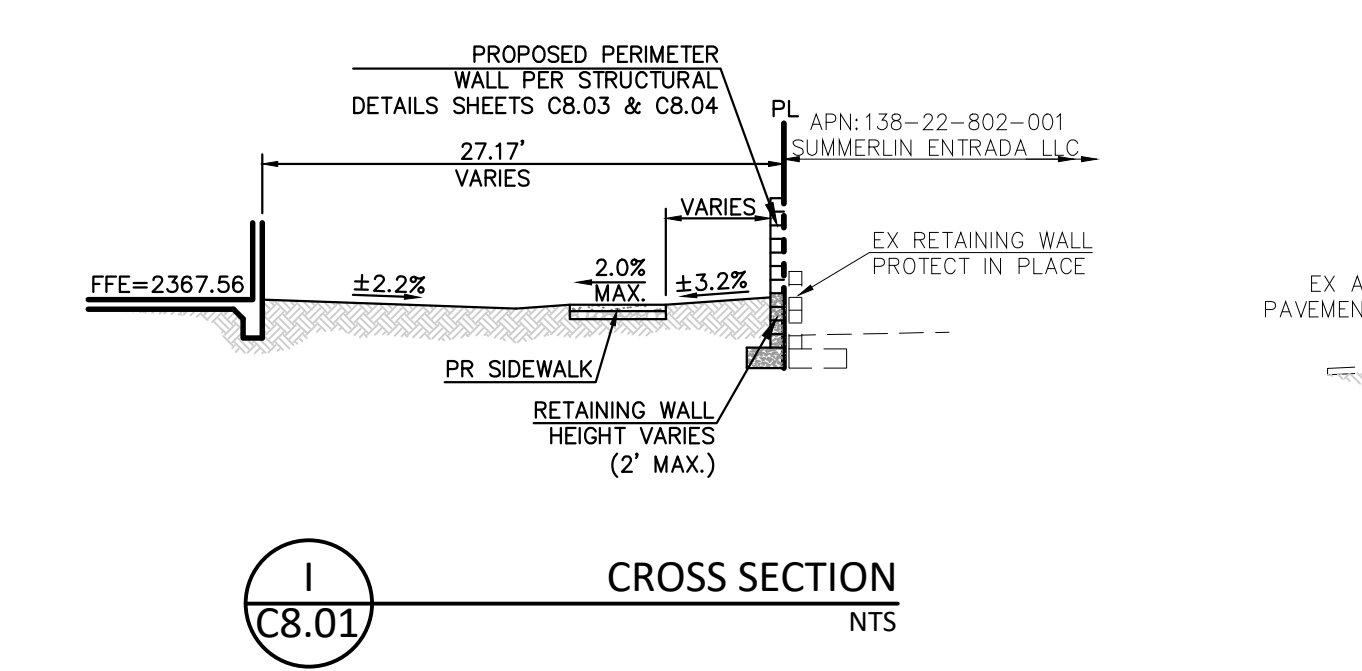
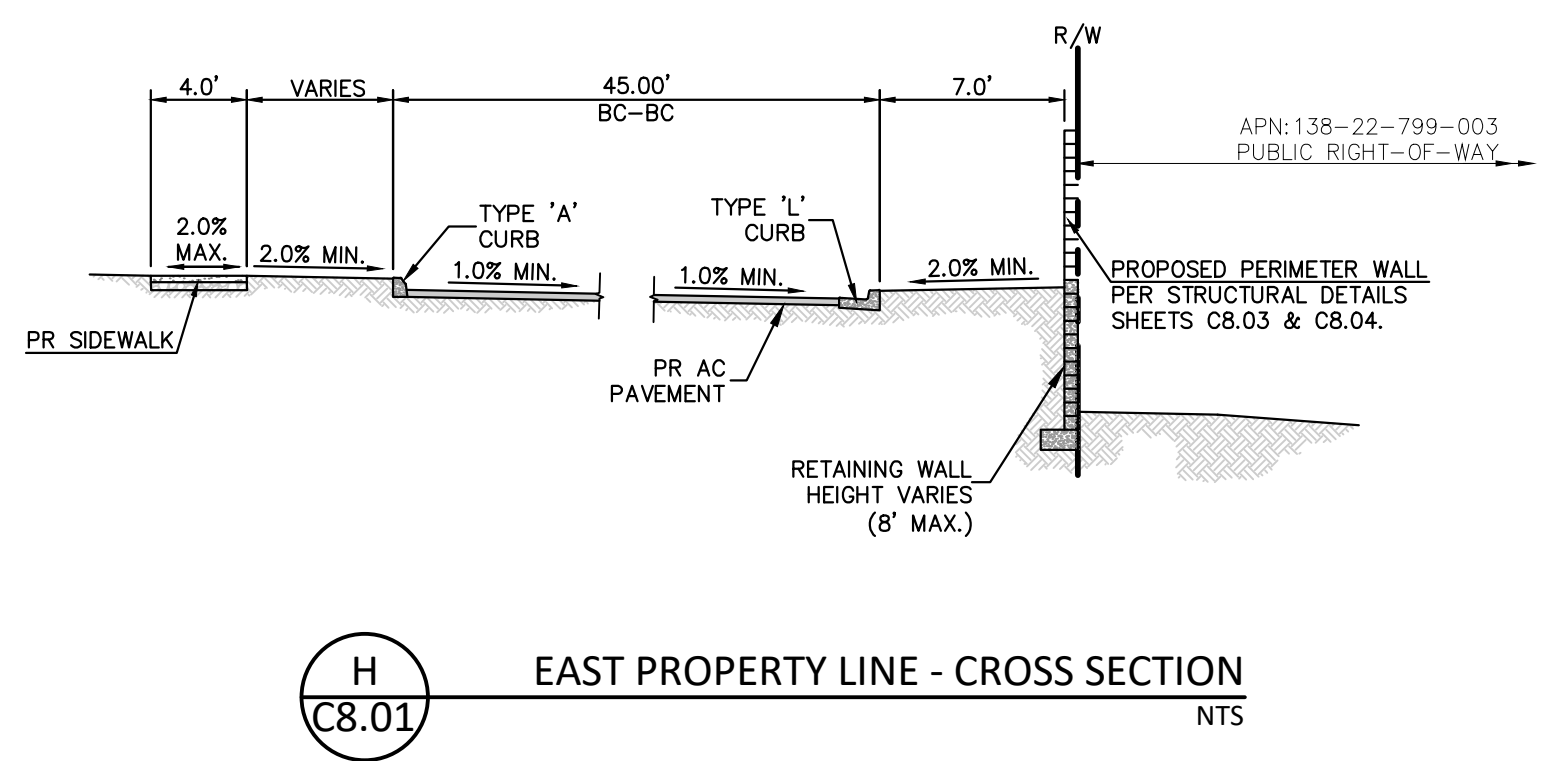
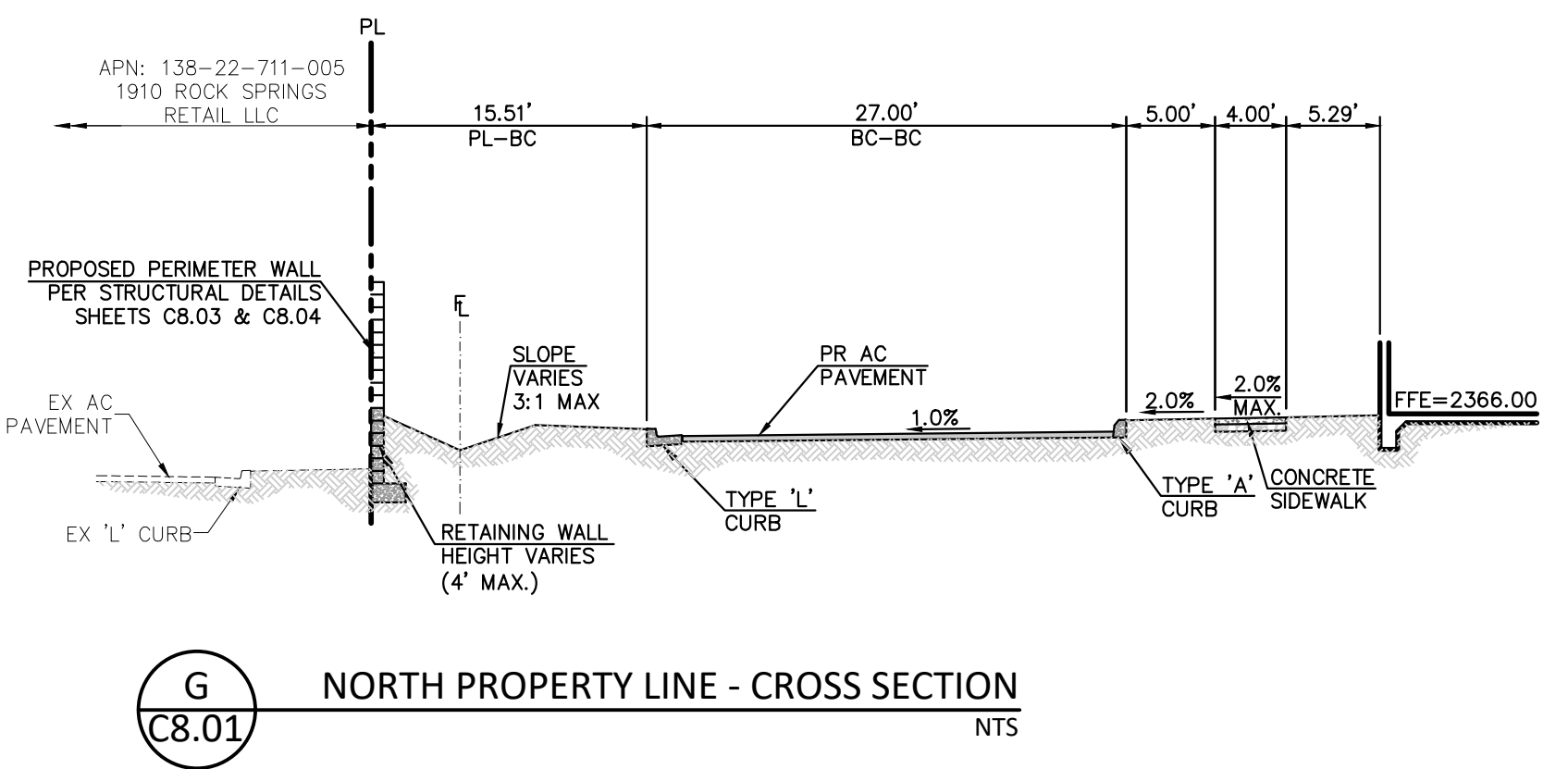
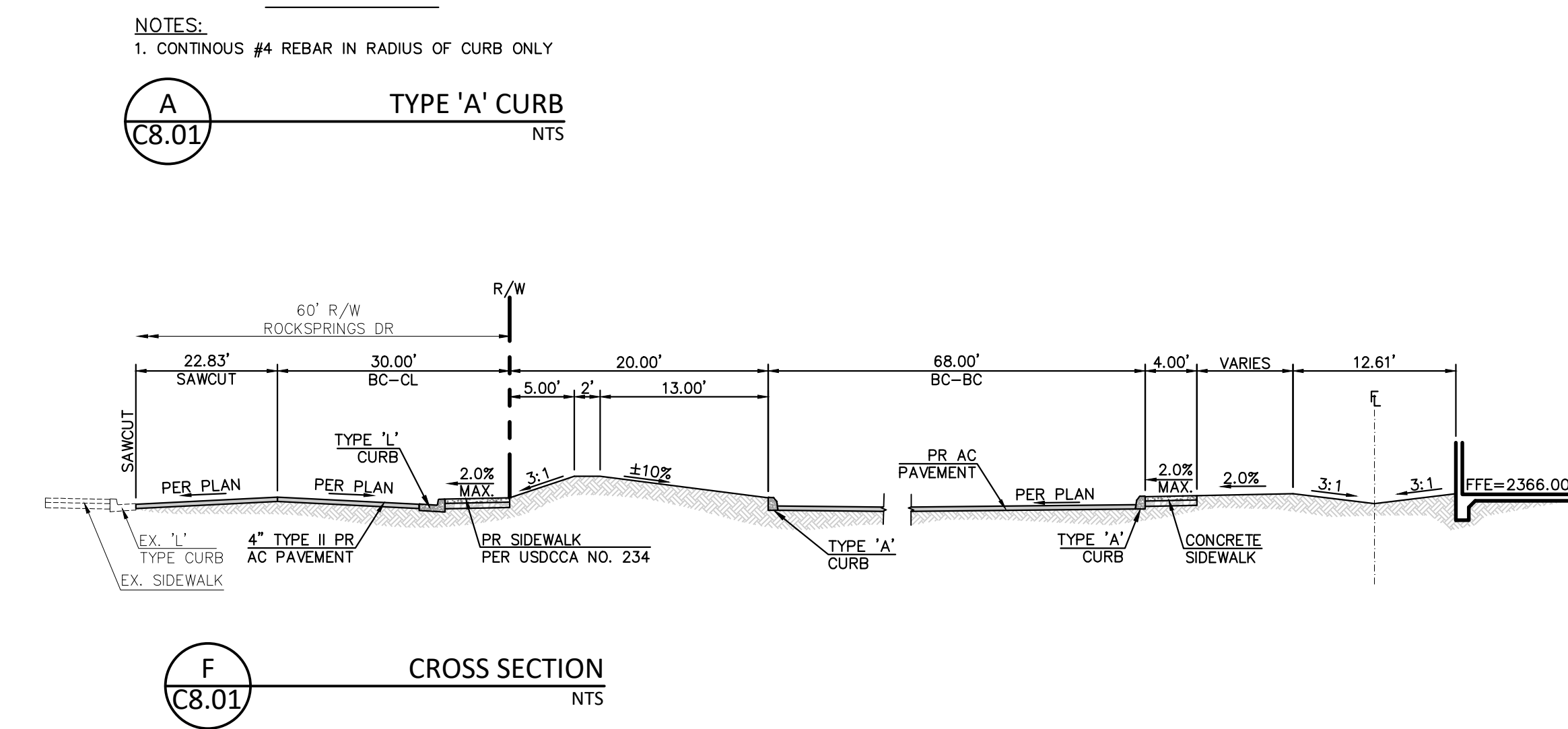
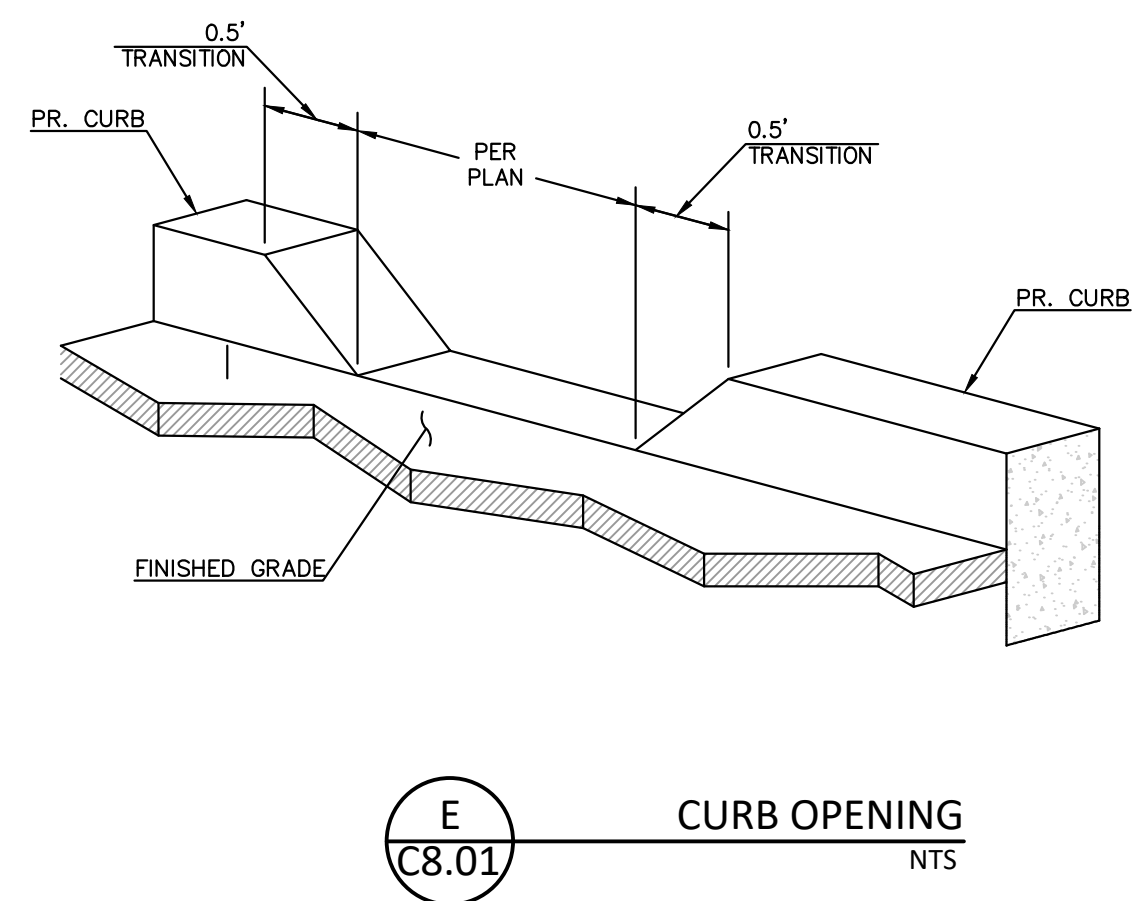
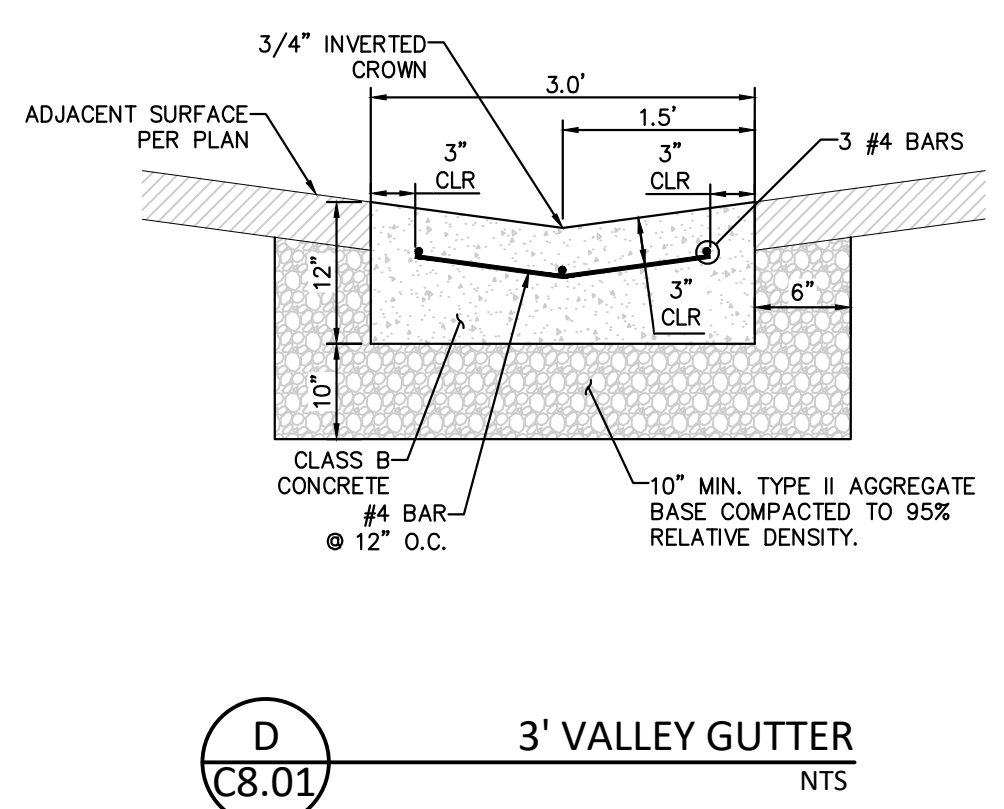
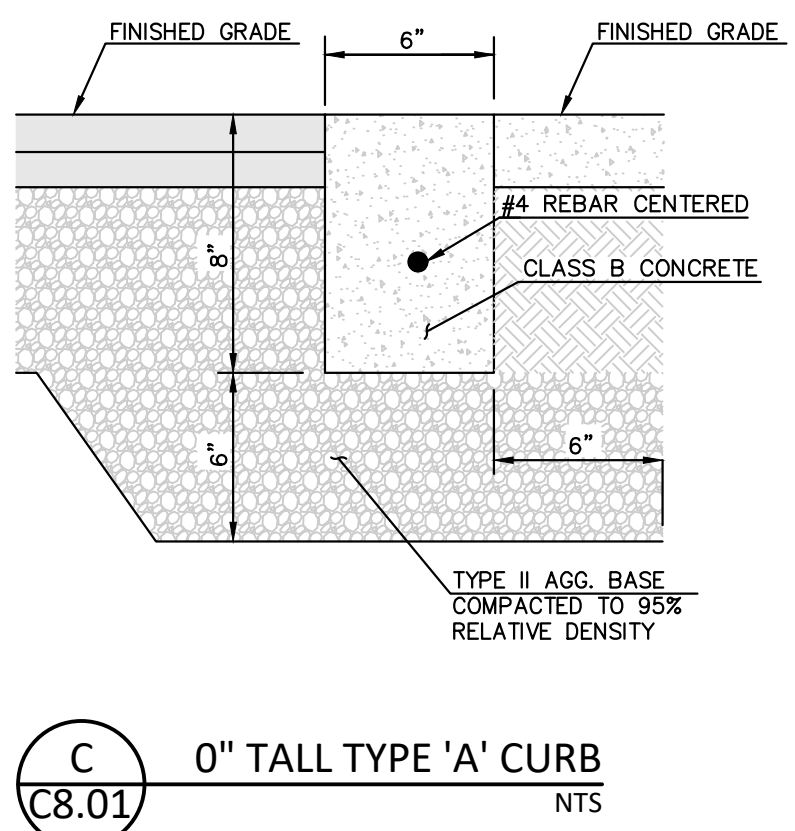
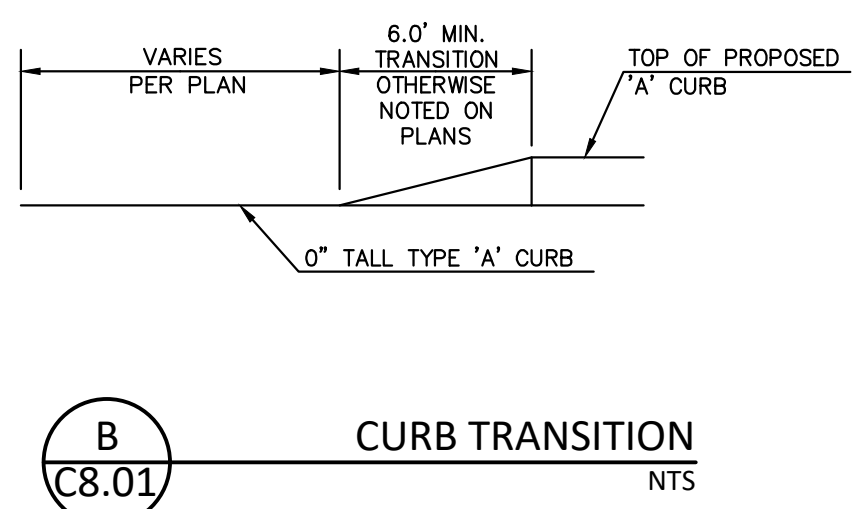
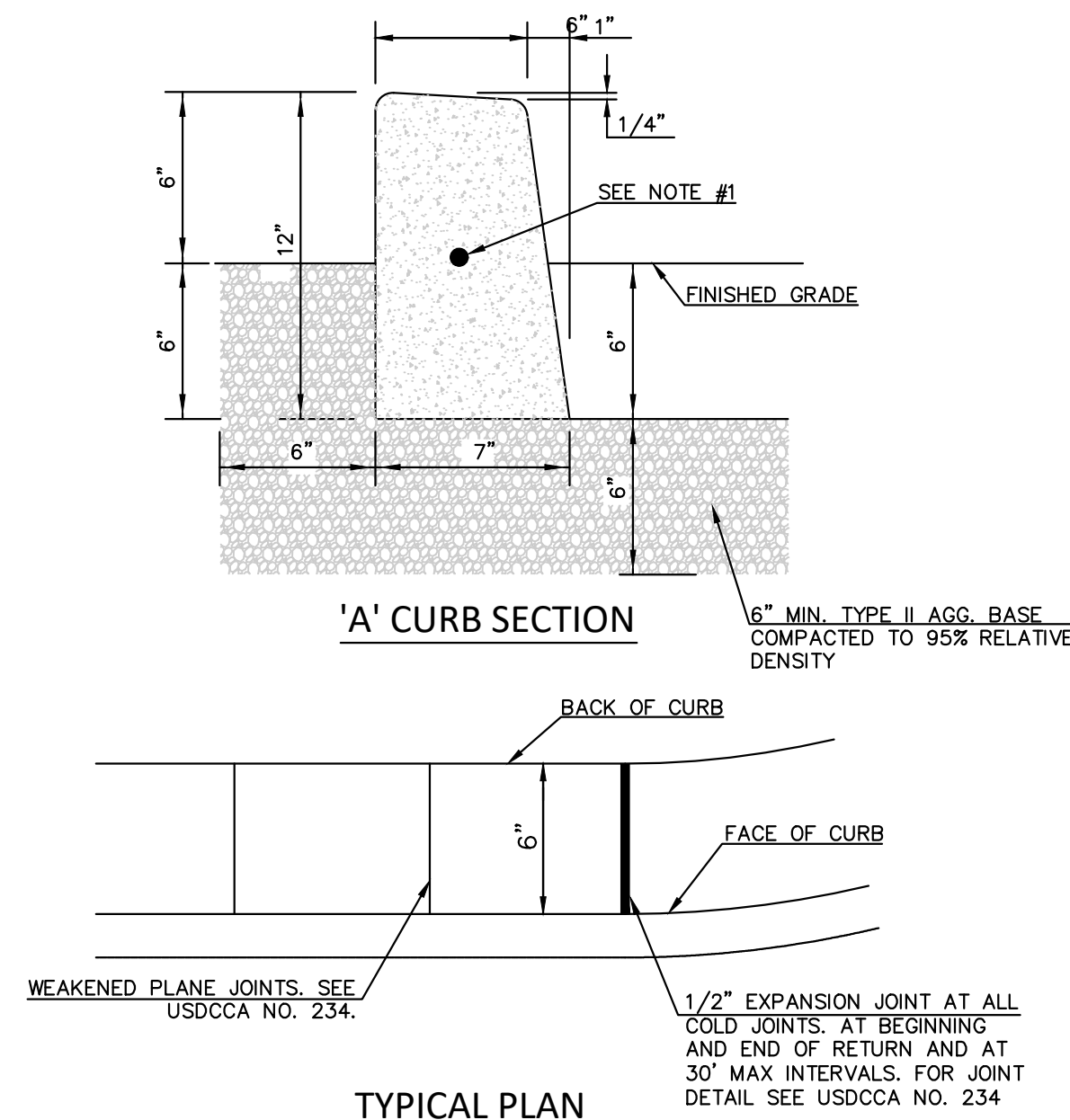
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METRO AND ARTIST SYSTEM OF TRANSPORTATION

LEGEND					
00.00% SLOPE	STORM DRAIN	6" TYPE "A" CURB	SEWER MANHOLE		
00.00 ELEVATION TAG	SEWER LINE	24" TYPE "L" CURB	AREA LIGHT		
XX STORM MANHOLE	WATER LINE	CLEAN OUT	CONCRETE		
STORM MANHOLE	GAS LINE	FIRE HYDRANT	ENHANCED CONCRETE PAVING		
DROP INLET	FENCE	FDC	1" MILL AND OVERLAY		
CONTOUR	PL-RIGHT-OF-WAY	GATE VALVE	FULL DEPTH PAVEMENT		
RETAINING WALL	CENTERLINE	BACK WATER VALVE	UTILITY TRENCH		
SCREEN WALL	EASEMENT LINE	REDUCER			
	FLOW LINE				
	SAWCUT LINE				



REVISIONS	
NO.	DESCRIPTION

DESIGNED	T. INTERIANO
DRAWN	T. INTERIANO
CHECKED	T. INTERIANO
APPROVED	J. ESCOBEDO
DATE	12/3/2020
SCALE	N.T.S.

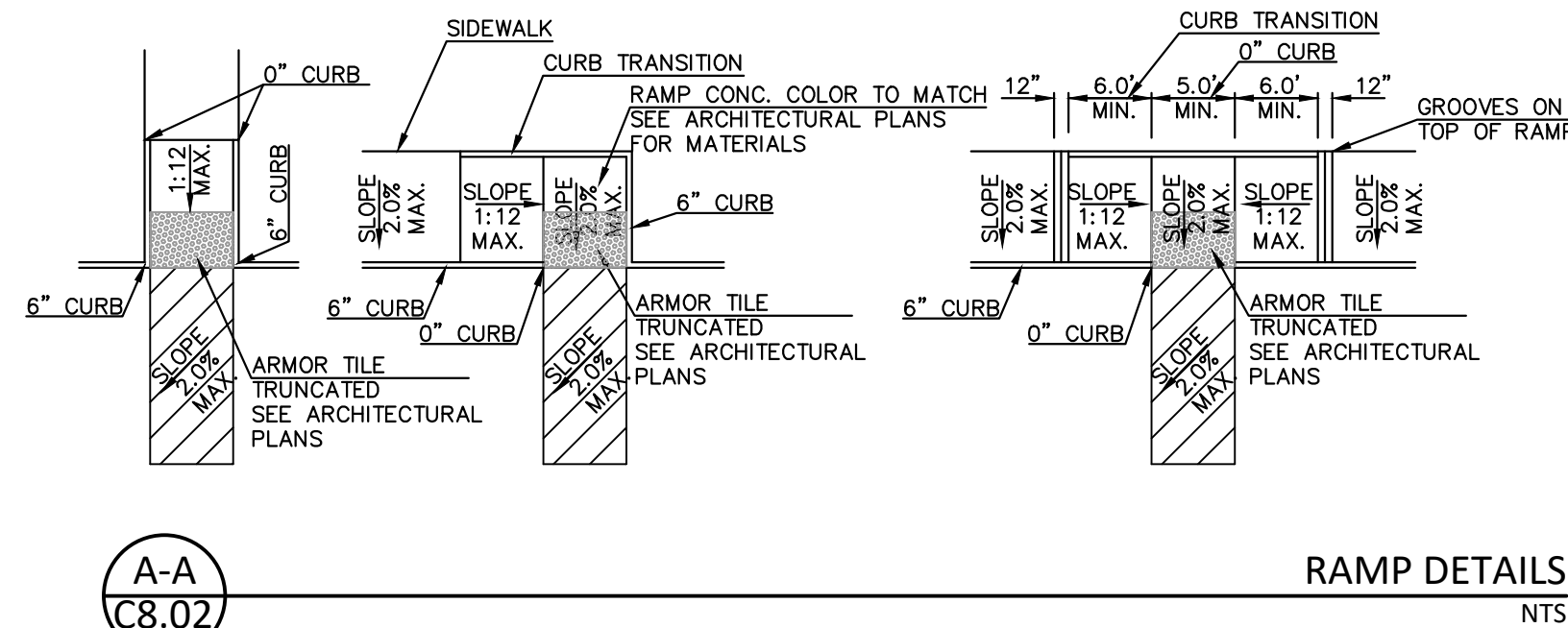
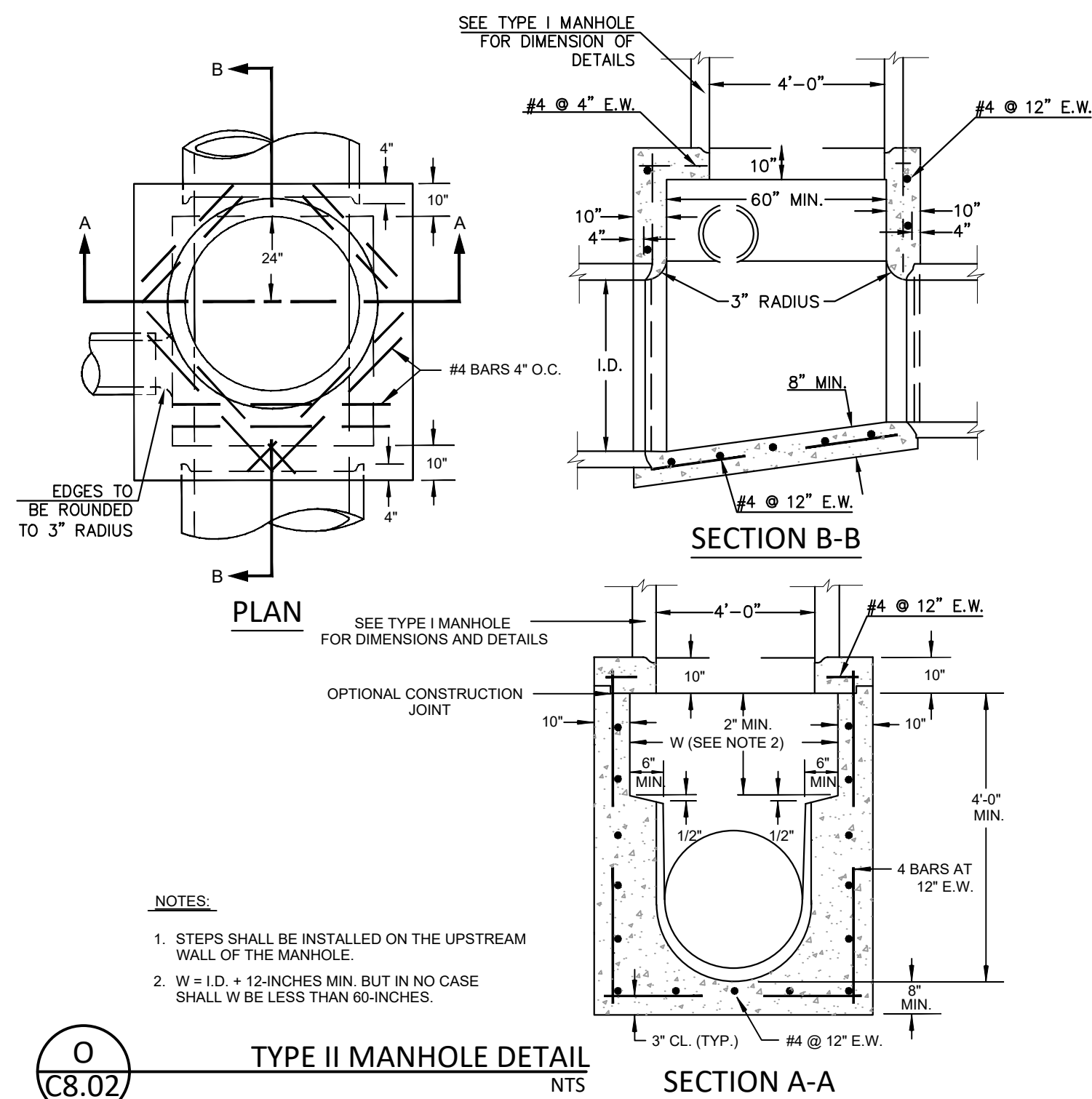
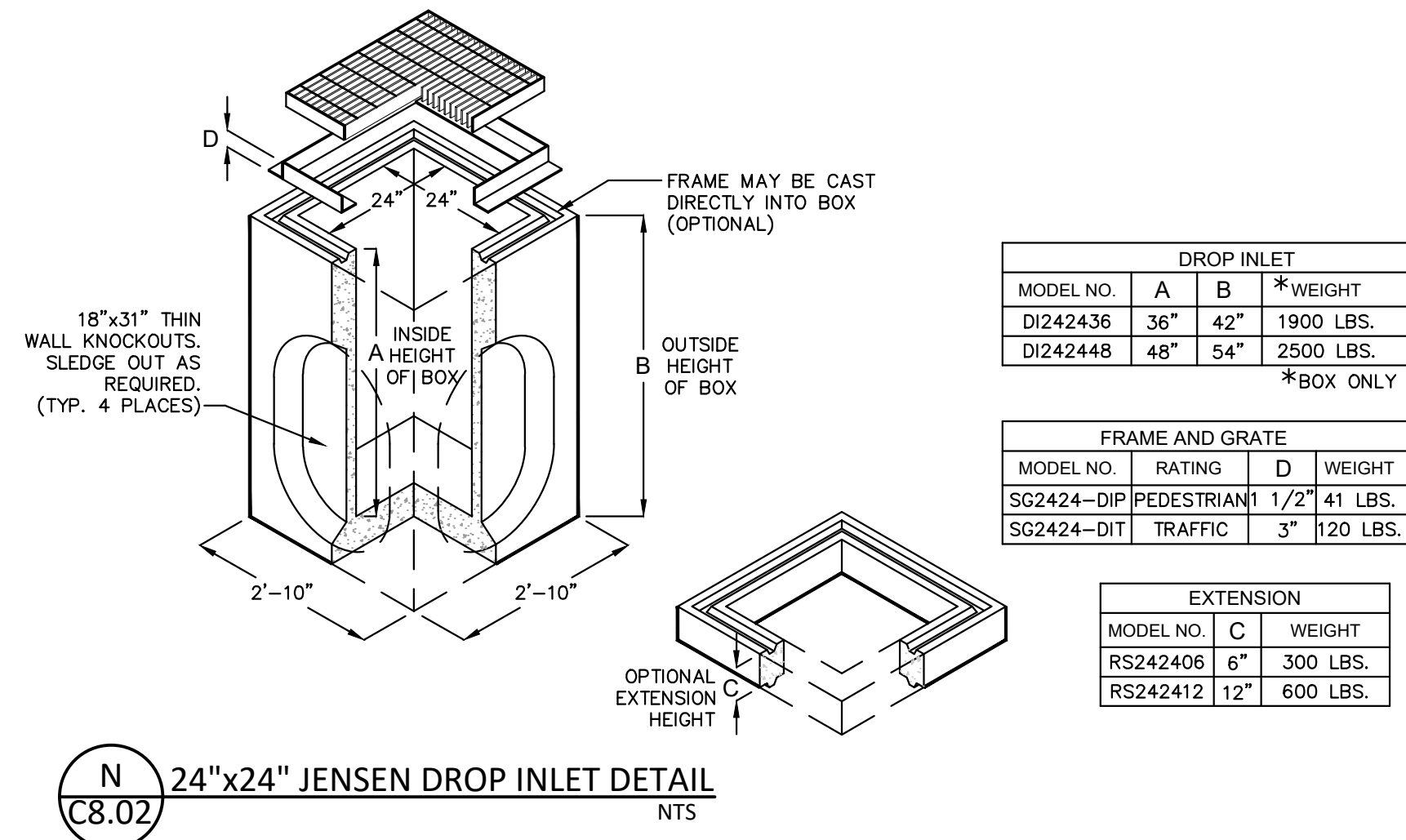
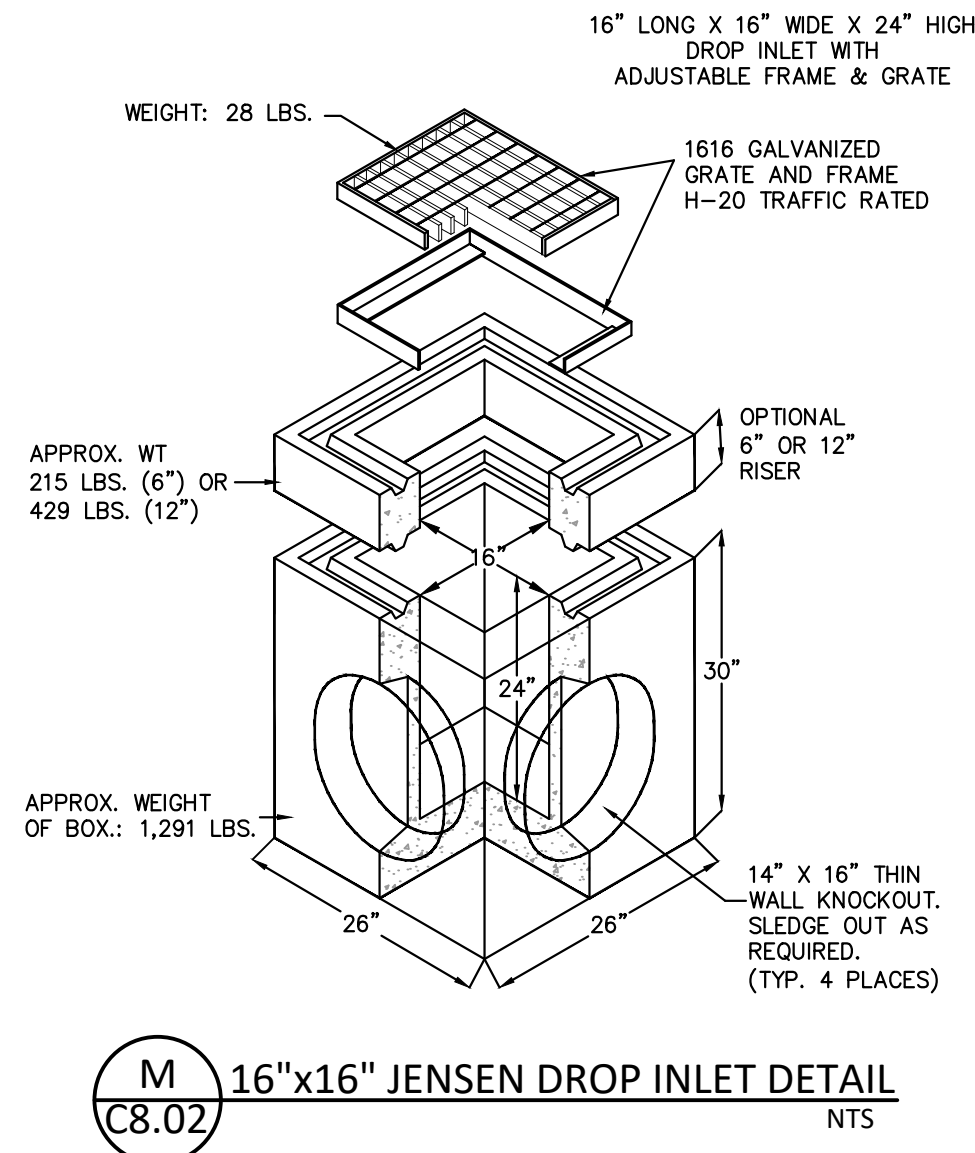
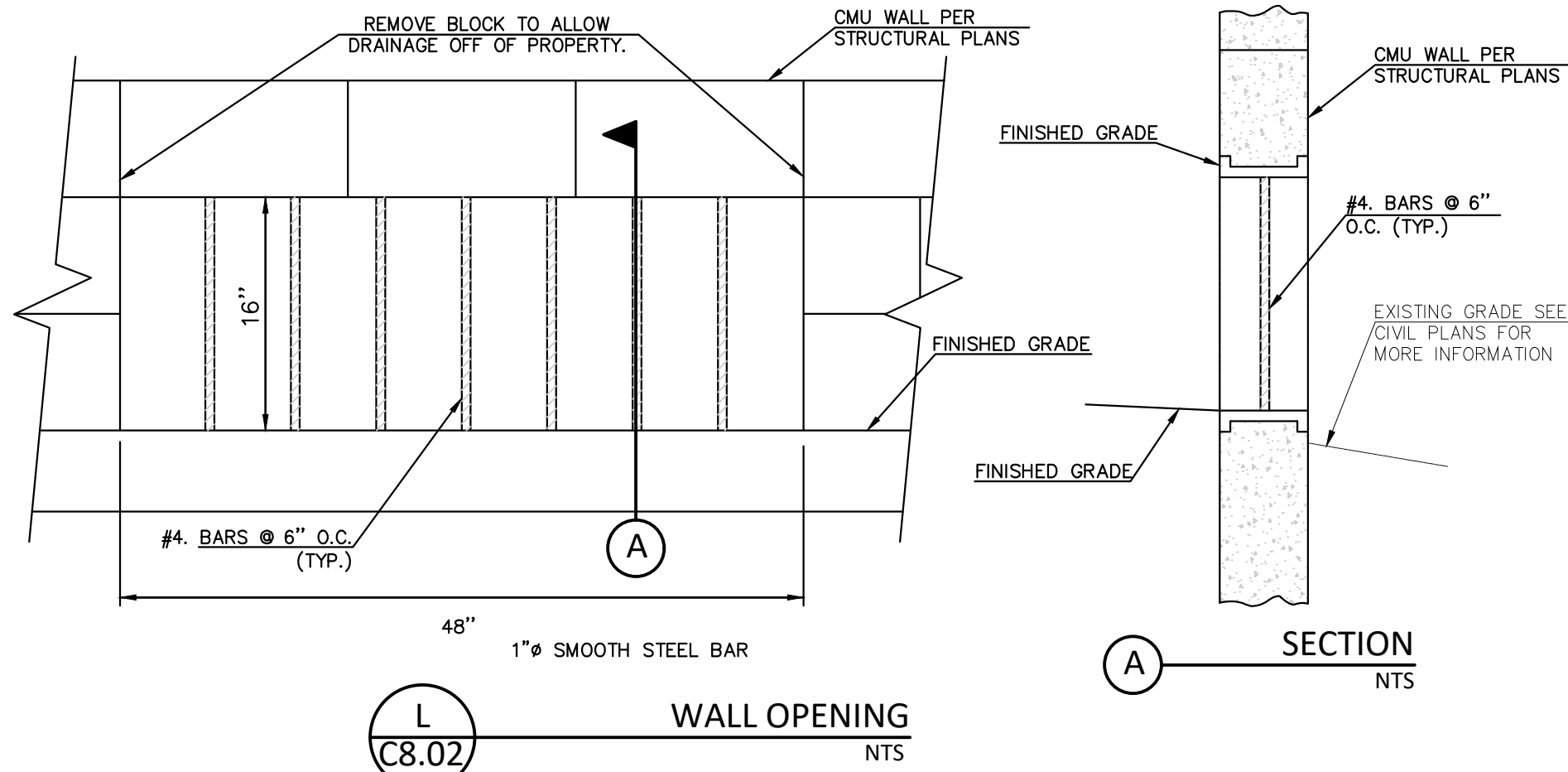
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12/3/2020

CIVIL DETAIL SHEET 1
IMPROVEMENT PLANS FOR
HIGHGATE SENIOR LIVING
APN: 138-22-702-002

ROCK SPRINGS DR. & WALT LOTT DR., LAS VEGAS, NEVADA

SHEET NUMBER
C8.01
SHEET 22 OF 25
DRAWING NUMBER



REVISIONS		DESIGN		INTERIANO		DATE		BY	
NO.	DESCRIPTION	DESIGNED	DRAWN	CHECKED	APPROVED	DATE	SCALE	DATE	BY

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12/3/2020

CIVIL DETAIL SHEET 2
IMPROVEMENT PLANS FOR
HIGHGATE SENIOR LIVING
APN: 138-22-702-002
ROCK SPRINGS DR. & WALT LOTT DR., LAS VEGAS, NEVADA

SHEET NUMBER
C8.02

SHEET 23 OF 25

DRAWING NUMBER