

ATTACHMENT F:
Infrastructure Needs Assessment



Technical Memorandum



WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

To: City of Sacramento

From: Adam Fischlin, PE *AF*
Mike Motroni, PE

CC: Vance Jones, Wood Rodgers
Tom Martens, EPS

Date: September 29, 2023

Subject: Meadowview 102 – Infrastructure Needs Assessment

Introduction

Wood Rodgers has prepared an infrastructure needs assessment review of the Meadowview 102 site based on four land use alternatives identified by the City of Sacramento. The focus of this analysis is to identify offsite infrastructure improvements and onsite backbone utility needs to serve the site development in each of the land use scenarios. Preliminary infrastructure cost estimates for each of the land use scenarios will be evaluated as part of a separate “Infrastructure Preliminary Opinion of Cost Memorandum”.

Background

In January 2022, the City of Sacramento purchased 102 acres of surplus federal land in the Meadowview area of south Sacramento. With input from City staff and the community, Wood Rodgers prepared four preliminary land use scenarios for the City’s consideration with the goal of exploring site development alternatives and feasibility. Each of these land use alternatives will be evaluated as part of this infrastructure needs assessment effort to identify offsite infrastructure and onsite backbone infrastructure needs for each land use.

Land Use Alternatives

Each of the conceptual land use plan alternatives that will be evaluated as part of this technical memorandum are described below:

- **City Alternative #1: Regional Sports Complex (Appendix A)**
This land use plan highlights a Regional Sports Complex for the entire 102-acre site.
- **City Alternative #2A: Sports Complex, Housing, and Open Space Preservation (Appendix B)**
This land use plan provides a 60.5-acre sports complex along with some medium-density and high-density residential uses. Additionally, this land use plan highlights ±15.3 acres of wetland preserve open space.
- **City Alternative #2B: Sports Complex and Housing (Appendix C)**
This land use alternative provides a 60-acre sports complex along with medium-density and high-density residential uses without the wetland preserve.
- **City Alternative #3: Residential Housing (Appendix D)**
Land use alternative #3 highlights a housing centered focus offering medium, medium-high, and high-density residential uses around a 10-acre neighborhood park and 7.8-acre storm drain facility open space.

In addition to the four land use alternatives, the City of Sacramento intends to use approximately 3.5 acres of the Meadowview 102 site for a Tiny Home Community as an interim use. For ease of connection to existing roadways and utility infrastructure, it is assumed that the Tiny Home Community would be constructed in the southwest corner of the Meadowview property. In each of the four land use scenarios, utility and roadway access infrastructure would be brought to the project site that could serve this interim project use.

Offsite Infrastructure Needs

For each of the four land use alternatives, the offsite infrastructure needs are largely the same. In this section, the infrastructure needs (roadway, water, sewer, and storm drainage) that are constant for each of the land use alternatives will be outlined. Any additional offsite needs that are particular to a specific land use alternative will be identified later in this memo as we evaluate the infrastructure needs of each land use alternative separately.

Roadway

The Meadowview 102 project site is currently landlocked with no vehicular access. For the project to be developed in any of the land use scenarios, there would need to be construction of offsite roadway infrastructure to provide the required two points of access. In each of the land use scenarios, access to the proposed project is provided from the west through the Delta Shores development and from the south through the Stone Beetland development.

It is anticipated that main point of access for the Meadowview 102 project is via the intersection of Cosumnes River Boulevard and 24th Street. Currently, roadway infrastructure for 24th Street ends at the northern curb returns of the intersection with Cosumnes River Boulevard. To provide the proposed access to the Project site, 24th Street would need to be constructed to the north for a length of about 2,400 feet. 24th Street has a 99-foot right-of-way width consisting of a four-lane road with a landscaped median and a class I paved trail east of the roadway. This roadway extension would serve as the primary point of entry to the proposed project for all the sports park centered land use plans and as a secondary point of access for the housing centered Land Use Plan City Alternative #3.

In addition to the 24th Street extension, a portion of “A Street” (as labeled in the Stone Beetland Tentative Subdivision Map) that runs along the south edge of the Meadowview project would need to be constructed to provide secondary access. It is anticipated that the Meadowview Project would be required to complete ‘A Street’ along the entire project frontage which equates to approximately 2,500 linear feet of roadway improvements. ‘A Street’ is identified as a minor two-lane collector street with parking along the south side of the road and a Class I trail that would run between the Meadowview 102 project site and the Stone Beetland development.

Because ‘A Street’ will branch off 24th Street and there will only be one connection to Cosumnes River Blvd, we expect that an emergency vehicle access road will be required through the Stone Beetland property until that project is developed. Once Stone Beetland provides a second roadway connection to Cosumnes River Boulevard, this emergency vehicle access would no longer be needed.

Roadway development as described above will also require that all proposed utilities beneath the road are installed as part of the construction efforts. We will describe the anticipated extents of the offsite utility needs in each of the sections below for water, sewer and storm drainage infrastructure.

Water

To serve the proposed Meadowview 102 project, offsite water infrastructure will be required to create a looped system that will provide domestic water for the project in each of the proposed land use alternatives. In addition to the domestic water beneath the proposed roadway extensions, an additional point of connection to the Cosumnes River Blvd water main will be required to complete the looped system.

Within the 24th Street roadway extension, construction of a 24-inch water transmission main and two 8-inch domestic water mains will be required for the complete length of the extension to the north (2,400 feet). These water main extensions will serve the proposed project from the west through the Delta Shores development. The construction of 'A Street' within the Stone Beetland development will include a 12-inch domestic water main (2,500 feet) that will serve the Meadowview 102 project from the south. Depending on construction phasing and the timeline for the Stone Beetland development, it may be required to provide a second point of connection to the Cosumnes River Boulevard domestic water main to create a looped water system to serve the proposed Project. It is likely that the second point of connection would occur at the intersection of 'B Street' (as labeled in the Stone Beetland Tentative Subdivision Map) and would require the construction of approximately 850 linear feet of 8-inch domestic water main.

An exhibit showing the required offsite water infrastructure is included as Appendix E. All required water appurtenances per City of Sacramento Department of Utilities standards and specifications would be installed at the time of water main construction. Refer to the separate "Infrastructure Preliminary Opinion of Cost Memorandum" for the estimate of offsite water infrastructure costs.

Sewer

The development of the proposed Meadowview 102 Project site with any of the proposed land use scenarios will likely trigger several significant sewer system upgrades and trunk sewer main extensions. In the existing condition, a 10-inch sewer line runs along the south edge of the Project site which serves the Detroit/Southgate subdivision. This 10-inch sewer terminates at the existing sewer pump 53 which is located at the future intersection of 24th Street and 'A Street'. This flow is pumped to the north via an existing 8-inch force main. Both the 10-inch sewer main and the 8-inch force main are to be abandoned after the relocation of sewer pump 53.

Per the Delta Shores Sewer Master Plan, sewer pump 53 is to be relocated south of Cosumnes River Boulevard once the existing pump station reaches 1.283 mgd combined. Due to the necessary roadway construction of 24th Street and 'A Street' to serve the Meadowview 102 site, it is assumed that the pump station relocation will be required if not already completed by Stone Beetland or Delta Shores prior to development. The pump station relocation also requires the construction of approximately 10,000 linear feet of 18-inch sewer force main within Cosumnes River Boulevard to the intersection with Franklin Boulevard where it will tie into an existing gravity sewer system.

In addition to the sewer pump station relocation, sewer pipe runs will need to be constructed to serve the Meadowview 102 offsite needs. A 24-inch trunk sewer main will be extended through 24th Street from the intersection with Cosumnes River Boulevard to the intersection with 'A Street'. A sewer main through 'A Street' of sizes varying from 10-inch to 15-inch will be constructed along the southern project boundary. This sewer main will intercept the existing flows from the Detroit/Southgate neighborhood as well as provide a new service to the proposed Meadowview 102 site. Lastly, a 10-inch sewer main will be constructed through 24th Street north of 'A Street' as a stub for future development for a length of about 1,400 linear feet.

An exhibit of the required offsite sewer infrastructure is included as Appendix F. Construction of all sewer infrastructure will follow City of Sacramento Department of Utilities standards and specifications. Refer to

the separate “Infrastructure Preliminary Opinion of Cost Memorandum” for the estimate of offsite sewer infrastructure costs.

Storm Drainage

While the Meadowview 102 site is mostly clear of existing utility infrastructure, there is storm drainage infrastructure that runs through the site that serves other properties. Depending on which land use alternative is selected, much of this existing storm drainage infrastructure will either remain in place or be rerouted through the site without serving the proposed project. For additional details of the existing storm drainage systems both on and offsite, please refer to the “Preliminary Storm Drainage Assessment Memorandum” dated September 8, 2023.

The proposed storm drain point of connection for the Meadowview 102 site is at the existing 24-inch drain that enters the site from the south and is part of the existing “Z-Line” storm drain system. Portions of the “Z-Line” system will be removed and replaced as part of the Stone Beetland development. Should the Meadowview 102 project be developed prior to Stone Beetland, a bypass drain line would need to be constructed through the future Stone Beetland roads as shown on the Stone Beetland Preliminary Grading and Drainage exhibits and connected to the remaining “Z-Line” system just north of Cosumnes River Boulevard.

The necessary offsite storm drainage infrastructure to serve the Meadowview 102 site consists of approximately 1,900 linear feet of 30-inch storm drain and 9 storm drain manholes. This new storm drain line would intercept flow from Meadowview 102 at the south boundary, run west through ‘A Street’, turn south down ‘B Street’, turn back east through the south end of Lot MDR-1, and connect to the remaining portion of the “Z-Line” that runs beneath Cosumnes River Boulevard and ultimately outfalls into Morrison Creek via the Sump 89 Pump Station.

An exhibit showing the required offsite storm drainage infrastructure is included as Appendix G. All storm drain construction shall follow applicable City of Sacramento standards and specifications. Refer to the separate “Infrastructure Preliminary Opinion of Cost Memorandum” for the estimate of offsite storm drainage infrastructure costs.

City Alternative #1: Regional Sports Complex

Included in Appendix A along with the City Alternative #1 Land Use Plan is a proposed layout of the regional sports complex. This preliminary layout has been used to evaluate the required onsite backbone infrastructure to serve the proposed land use. The backbone roads and utilities shown on the Sports Complex Land Use Plan 1 are detailed below. For cost estimate information related to the onsite backbone infrastructure, please refer to the separate “Infrastructure Preliminary Opinion of Cost Memorandum”.

Roadway

This preliminary layout of the regional sports complex shows a roadway that connects the two points of access to the project site and provides access to parking for all the sports fields as well as the indoor complex located in the northwest corner of the site. In total, there is approximately 3,800 linear feet of backbone roadway and one roundabout proposed.

Water

A backbone water loop following the roadway layout is required to provide domestic water service to the Project site. Two points of water connection are required to provide a looped system to maintain required water pressure throughout the system. A complete water study will be required to determine required pipe

sizing onsite but it is assumed that an 8-inch domestic water loop will be sufficient to serve this land use scenario. There is approximately 3,800 linear feet of backbone domestic water main required to complete the necessary water main loop onsite.

Sewer

As shown on the Sports Complex Land Use Plan 1, we have proposed a utility corridor between fields 17 and 18 that will provide a shortened path for sewer and storm drain connection to the offsite utilities. Backbone sewer will run north through the utility corridor and the backbone roadway all the way up to the indoor sports complex. A complete Sewer Study will be required during design to determine required sewer pipe sizing. It is assumed that an 8-inch backbone sewer will be adequate to serve this land use alternative. Approximately 2,150 linear feet of backbone sewer main will be required to serve the proposed Land Use Concept #1.

Storm Drain

Backbone storm drain infrastructure required for this land use scenario will run from the south end of the detention basin to the Stone Beetland bypass drain infrastructure offsite via the proposed utility corridor between sport fields 17 and 18. A drain study with the design efforts will determine the required storm drain pipe sizing for the basin outlet. For this exercise, it is assumed that 30-inch pipe will be used. Approximately 950 linear feet of 30-inch backbone storm drain will be required to provide connection from the detention basin to the offsite drainage system.

City Alternative #2A: Sports Complex, Housing, and Open Space Preservation

Included in Appendix B along with the City Alternative #2A Land Use Plan is a proposed layout of the 60.5-acre regional sports complex. This preliminary layout has been used to evaluate the required onsite backbone infrastructure to serve the proposed land use. The backbone roads and utilities shown on the Sports Complex Land Use Plan 2A are detailed below. For cost estimate information related to the onsite backbone infrastructure, please refer to the separate “Infrastructure Preliminary Opinion of Cost Memorandum”.

Roadway

This preliminary layout of the 60.5-acre regional sports complex and conceptual land use plan shows a roadway that connects the two points of access to the project site and provides access to the medium-density and high-density residential parcels and to parking for all the sports fields as well as the indoor complex located at the north end of the site. In total, there is approximately 2,250 linear feet of backbone roadway and one roundabout proposed.

Water

A backbone water loop following the roadway layout is required to provide domestic water service to the Project site. Two points of water connection are required to provide a looped system to maintain required water pressure throughout the system. A complete water study will be required to determine required pipe sizing onsite, but it is assumed that an 12-inch domestic water loop will be sufficient to serve this land use scenario. There is approximately 2,250 linear feet of backbone domestic water main required to complete the necessary water main loop onsite.

Sewer

As shown on the Sports Complex Land Use Plan 2A, the backbone sewer infrastructure will connect to the offsite sewer within 'A Street' and run north through the project site through the backbone roadway to serve each of the residential land uses and the sports complex. A complete Sewer Study will be required to determine required sewer pipe sizing. It is assumed that an 8-inch backbone sewer will be adequate to serve this land use alternative. Approximately 1,650 linear feet of backbone sewer main is proposed to serve the proposed Land Use Concept #2A.

Storm Drain

Backbone storm drain infrastructure required for this land use alternative will convey storm water from the storm drain facilities serving the 60.5-acre sports complex parking to the offsite bypass drain through Stone Beetland via the backbone onsite roadway. Additional drainage infrastructure will be required to convey storm water from the residential land uses to the larger storm drainage facility located at the southeast corner of the project site. The layout of those additional facilities are unknown at this time and are not included as part of this analysis.

A drainage study completed with the design efforts will determine the required pipe sizing. It is assumed that a 24-inch storm drain will serve as the backbone drain for this land uses alternative. Approximately 1,750 linear feet of 24-inch backbone storm drain will be required to provide connection from the sports complex storm drain facilities to the offsite drainage system.

City Alternative #2B: Sports Complex and Housing

Included in Appendix C along with the City Alternative #2B Land Use Plan is a proposed layout of the 60-acre regional sports complex. This preliminary layout has been used to evaluate the required onsite backbone infrastructure to serve the proposed land use. The backbone roads and utilities shown on the Sports Complex Land Use Plan 2B are detailed below. For cost estimate information related to the onsite backbone infrastructure, please refer to the separate "Infrastructure Preliminary Opinion of Cost Memorandum".

Roadway

The preliminary layout of the 60-acre regional sports complex shows two points of access to the project site from the south and one from the west. These roadways provide access to the medium-density and high-density residential parcels as well as access to parking for all the sports fields and the indoor complex located at the center of the project. In total, there is approximately 3,300 linear feet of backbone roadway proposed in this land use alternative.

Water

A backbone water loop following the roadway layout is required to provide domestic water service to the Project site. Two points of water connection are required to provide a looped system to maintain required water pressure throughout the system. As shown, there will be two points of water connection to the south at 'A Street' and one to the west through Delta Shores. A complete water study will be required to determine required pipe sizing onsite, but it is assumed that a 12-inch domestic water loop will be required for this land use scenario due to the increased residential land uses. There is approximately 3,300 linear feet of backbone domestic water main required to complete the necessary water main loop onsite.

Sewer

As shown on the Sports Complex Land Use Plan 2B, the backbone sewer infrastructure will connect to the offsite sewer within 'A Street' at two separate locations and run north through the project site through the backbone roadway to serve each of the residential land uses and the sports complex. A complete Sewer Study will be required to determine required sewer pipe sizing. Because the total flow is split between the two separate pipe runs, it is assumed that an 8-inch backbone sewer will be adequate to serve this land use alternative. Approximately 1,500 linear feet of backbone sewer main is proposed to serve the proposed Land Use Concept #2B.

Storm Drain

Backbone storm drain infrastructure required for this land use alternative will convey storm water from the storm drain facilities serving the 60-acre sports complex parking to the offsite bypass drain through Stone Beetland via the backbone onsite roadway. Additional drainage infrastructure will be required to convey storm water from the residential land uses to the larger 5.5-acre storm drainage facility. The layout of those additional facilities are unknown at this time and are not included as part of this analysis.

A drainage study completed with the design efforts will determine the required pipe sizing. It is assumed that a 24-inch storm drain will serve as the backbone drain for this land uses alternative. Approximately 2,150 linear feet of 24-inch backbone storm drain will be required to provide connection from the sports complex storm drain facilities to the offsite drainage system.

City Alternative #3: Residential Housing

This preliminary Land Use Concept #3 layout in Appendix D has been used to evaluate the required onsite backbone infrastructure to serve this project alternative. The backbone roads and utilities shown on the Conceptual Land Use Plan – City Alternative #3 are detailed below. For cost estimate information related to the onsite backbone infrastructure, please refer to the separate "Infrastructure Preliminary Opinion of Cost Memorandum".

Roadway

Conceptual Land Use Plan – City Alternative #3 is a housing centric plan with a roadway circle through the site that loops around a 10-acre neighborhood park and the storm drain detention basin facility and provides two points of access to 'A Street' south of the project site. There is an additional backbone road that connects to the roadway circle and provides access to the site from the west through the Delta Shores development. In total, there is approximately 4,100 linear feet of backbone roadway proposed in this land use scenario.

Water

A backbone water loop following the roadway circle layout is required to provide domestic water service to the Project site. Two points of water connection are required to provide a looped system to maintain required water pressure throughout the system. As shown, there will be two points of water connection to the south at 'A Street' and one to the west through Delta Shores. A complete water study will be required to determine required pipe sizing onsite, but it is assumed that a 12-inch domestic water loop will be required for this land use scenario due to the increased residential land uses. There is approximately 4,100 linear feet of backbone domestic water main required to complete the necessary water main loop onsite.

Sewer

As shown on the Conceptual Land Use Plan in Appendix D, the backbone sewer infrastructure will connect to the offsite sewer within 'A Street' at two separate locations and run north through the project site through the backbone roadway circle to serve each of the residential land uses. An additional backbone sewer branch will be needed within the backbone road to the west to pick up flow from some of the medium-density residential land uses. A complete Sewer Study will be required to determine required sewer pipe sizing. Because this land use scenario is all residential uses and sewer flows will be larger than the other land use concepts, it is assumed that a 15-inch backbone sewer will be required to serve this land use alternative. Approximately 3,500 linear feet of backbone sewer main is proposed to serve the proposed Land Use Alternative #3.

Storm Drain

As shown on the Conceptual Land Use Plan – City Alternative #3, backbone storm drain infrastructure will be required to convey storm water from each of the residential land uses to the 7.8-acre storm drain facility centered at the south end of the Project site. The outfall of the storm drainage facility will connect directly into the offsite Stone Beetland bypass drain system via 'A Street'. The onsite backbone storm drain lines are split on either side of the neighborhood park and run through the roadway circle to the ultimate outfalls into the storm drainage detention basin facility.

A drainage study completed with the design efforts will determine the required pipe sizing. It is assumed that 36-inch storm drain pipe will serve as the backbone drain for this land uses alternative. Approximately 2,800 linear feet of 36-inch backbone storm drain will be required to provide connection from the sports complex storm drain facilities to the offsite drainage system.

Summary

The Meadowview 102 project will require both onsite and offsite infrastructure in each of the four land use alternatives for the Project to move forward. Those needs have been identified within this technical memorandum and as noted, additional analysis will be required in the design phase with the completion of water, sewer and drainage studies. All the infrastructure identified as part of this report is also included in the separate "Infrastructure Preliminary Opinion of Cost Memorandum" where some preliminary costs are associated to the infrastructure required offsite and onsite for each of the land use alternatives.

Sources

Delta Shores Development – Tentative Subdivision Map

Stone Beetland Development – Preliminary Sewer and Water Exhibits

Stone Beetland Development – Tentative Subdivision Map

Appendices

Appendix A – Land Use Concept #1 and Sports Complex Land Use Plan 1

Appendix B – Land Use Concept #2A and Sports Complex Land Use Plan 2A

Appendix C – Land Use Concept #2B and Sports Complex Land Use Plan 2B

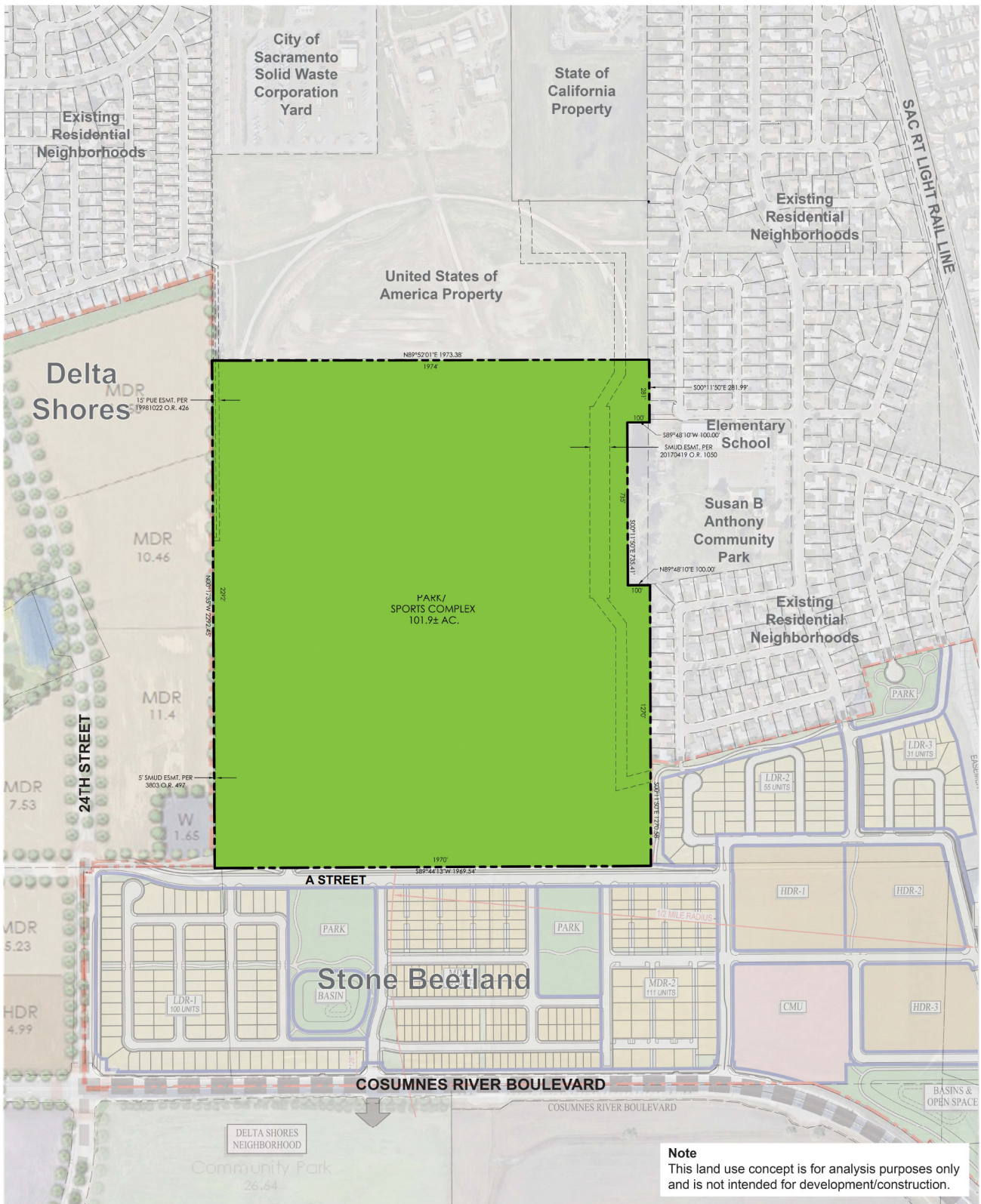
Appendix D – Land Use Concept #3

Appendix E – Offsite Water Infrastructure

Appendix F – Offsite Sewer Infrastructure

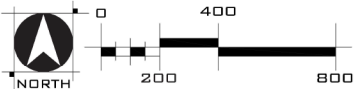
Appendix G – Offsite Storm Drainage Infrastructure

Appendix A – Land Use Concept #1 and Sports Complex Land Use Plan 1



LAND USE SUMMARY

LAND USE	ACRES
P PARK/SPORTS COMPLEX	101.9
TOTAL	101.9 ± AC.

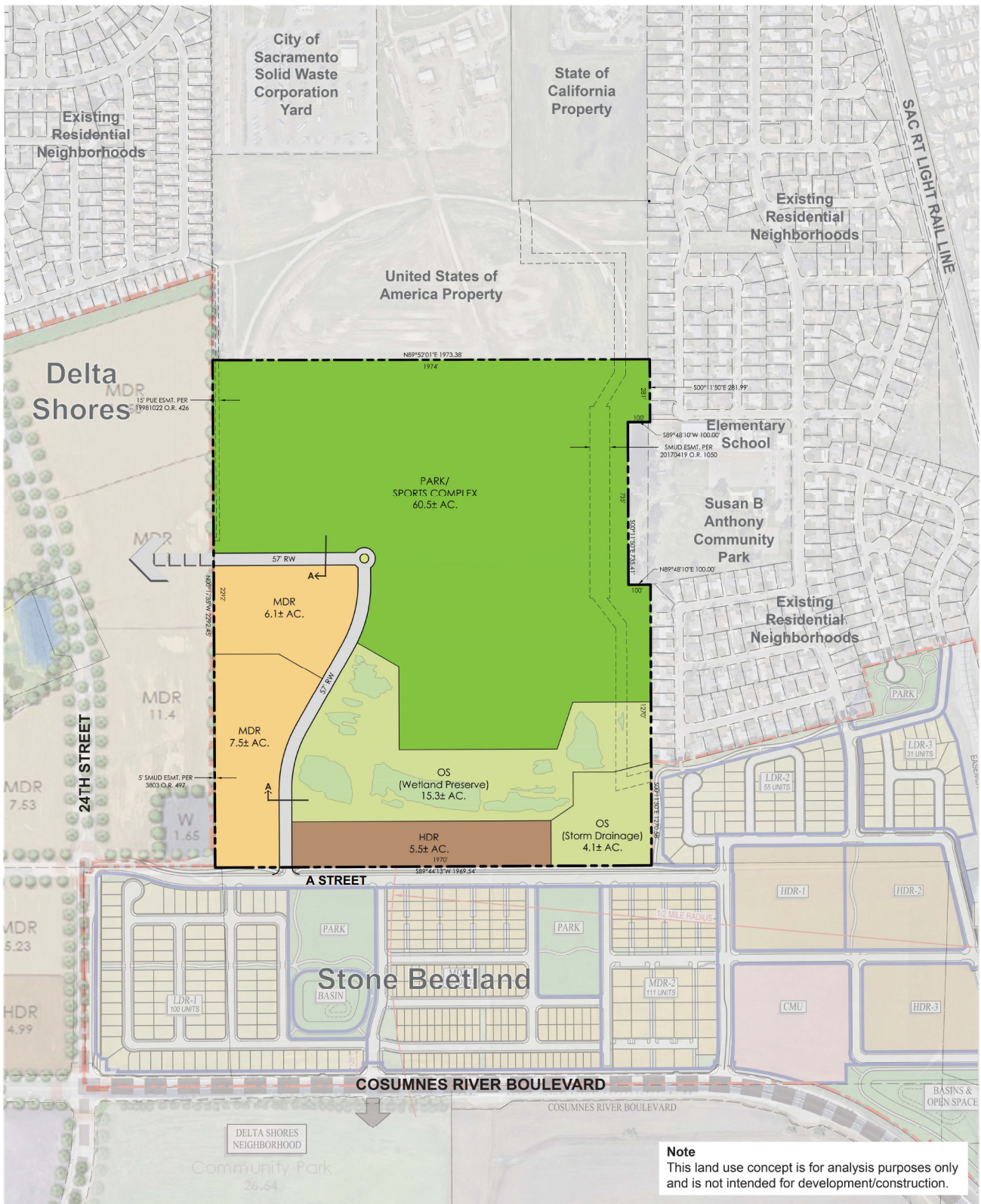


MEADOWVIEW 102
 Conceptual Land Use Plan - City Alternative #1
 September 1, 2023

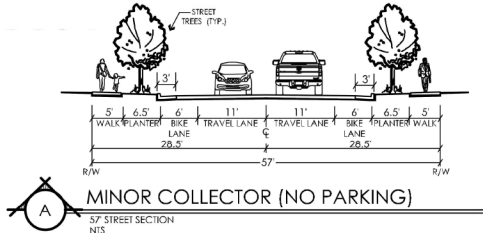
City of
SACRAMENTO

WOOD RODGERS
 BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

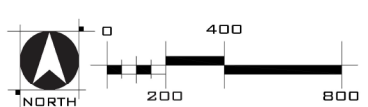
Appendix B – Land Use Concept #2A and Sports Complex Land Use Plan 2A



Note
This land use concept is for analysis purposes only and is not intended for development/construction.



LAND USE SUMMARY				
LAND USE		ASSUMED DENSITY	ACRES	EST. DU
MDR	MEDIUM DENSITY RESIDENTIAL	9.0 DU/AC.	13.6	122
HDR	HIGH DENSITY RESIDENTIAL	30.0 DU/AC.	5.5	165
P	PARK/SPORTS COMPLEX		60.5	
OS	OPEN SPACE		19.4	
RW	RIGHT-OF-WAY		2.9	
TOTAL			101.9 ± AC.	287 DU



MEADOWVIEW 102

Conceptual Land Use Plan - City Alternative #2A
September 1, 2023

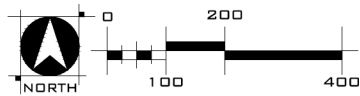
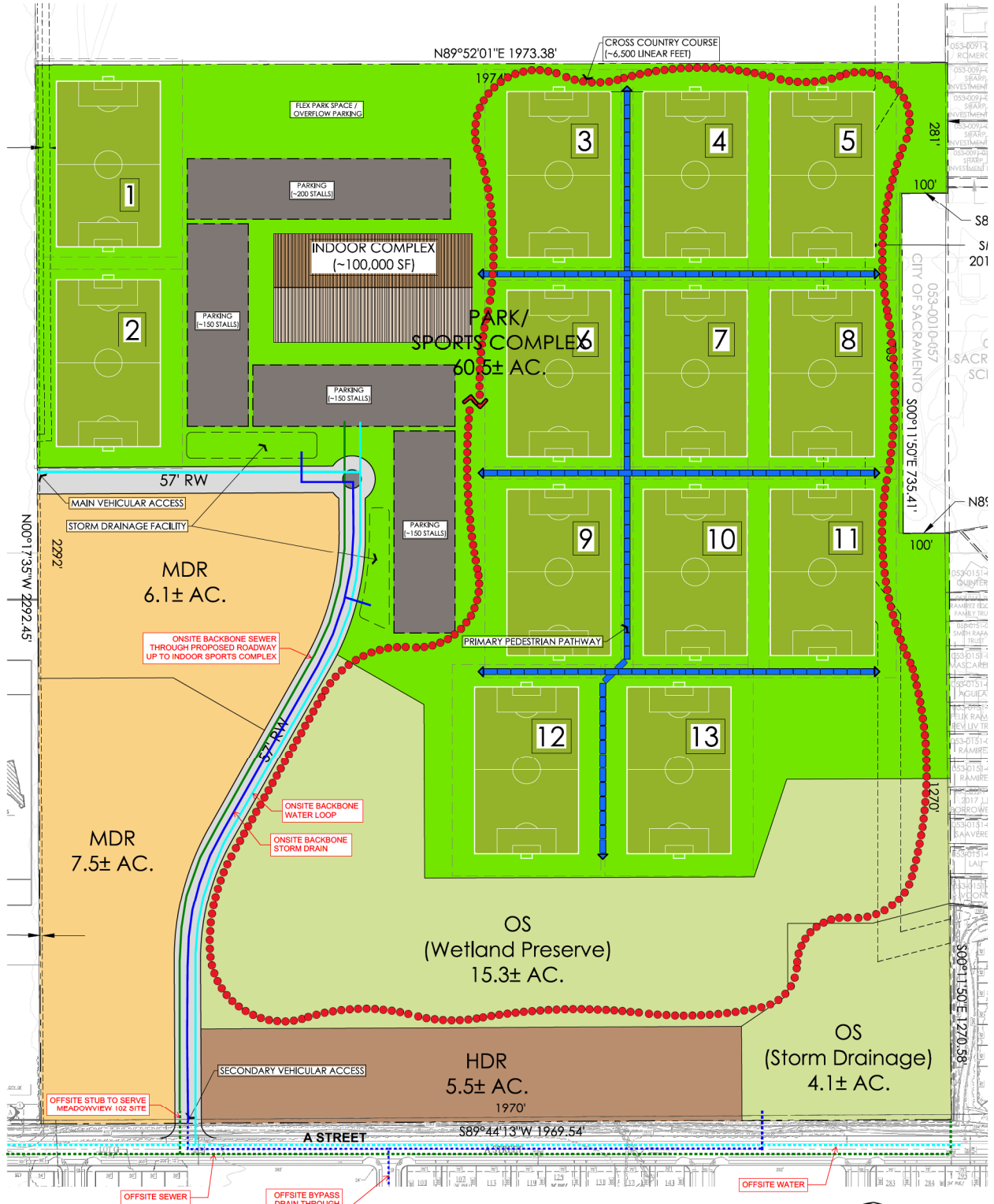
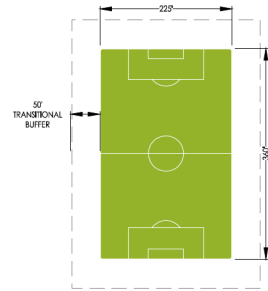
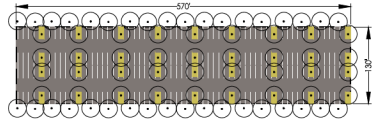
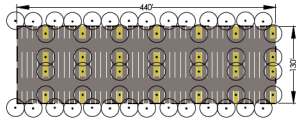
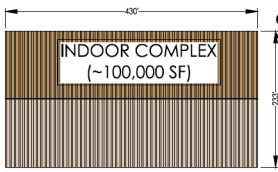


SPORTS COMPLEX LAND USE PLAN 2A

MEADOWVIEW 102

SACRAMENTO, CALIFORNIA

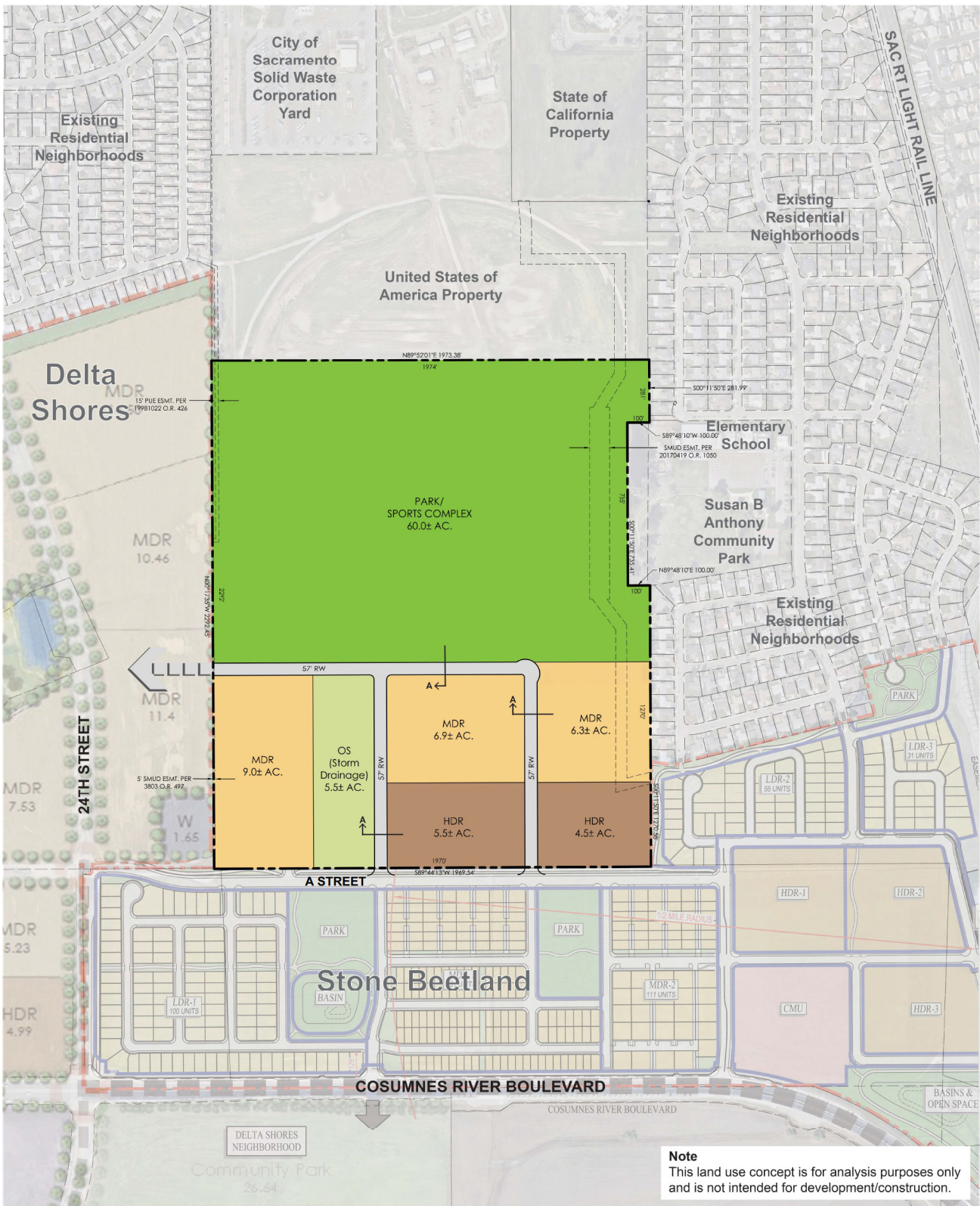
SEPTEMBER 1, 2023



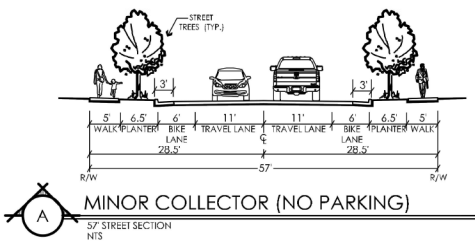
NOTE:
THIS PARK CONCEPT IS FOR ANALYSIS PURPOSES ONLY AND IS NOT INTENDED FOR DEVELOPMENT/CONSTRUCTION.

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 SHEET OF

Appendix C – Land Use Concept #2B and Sports Complex Land Use Plan 2B



Note
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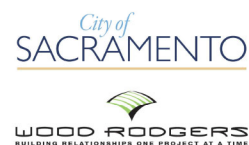


LAND USE SUMMARY				
LAND USE		ASSUMED DENSITY	ACRES	EST. DU
MDR	MEDIUM DENSITY RESIDENTIAL	9.0 DU/AC.	22.2	200
HDR	HIGH DENSITY RESIDENTIAL	30.0 DU/AC.	10.0	300
P	PARK/SPORTS COMPLEX		60.0	
OS	OPEN SPACE		5.5	
RW	RIGHT-OF-WAY		4.2	
TOTAL			101.9 ± AC.	500 DU



MEADOWVIEW 102

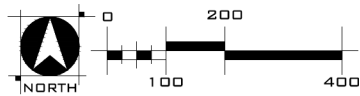
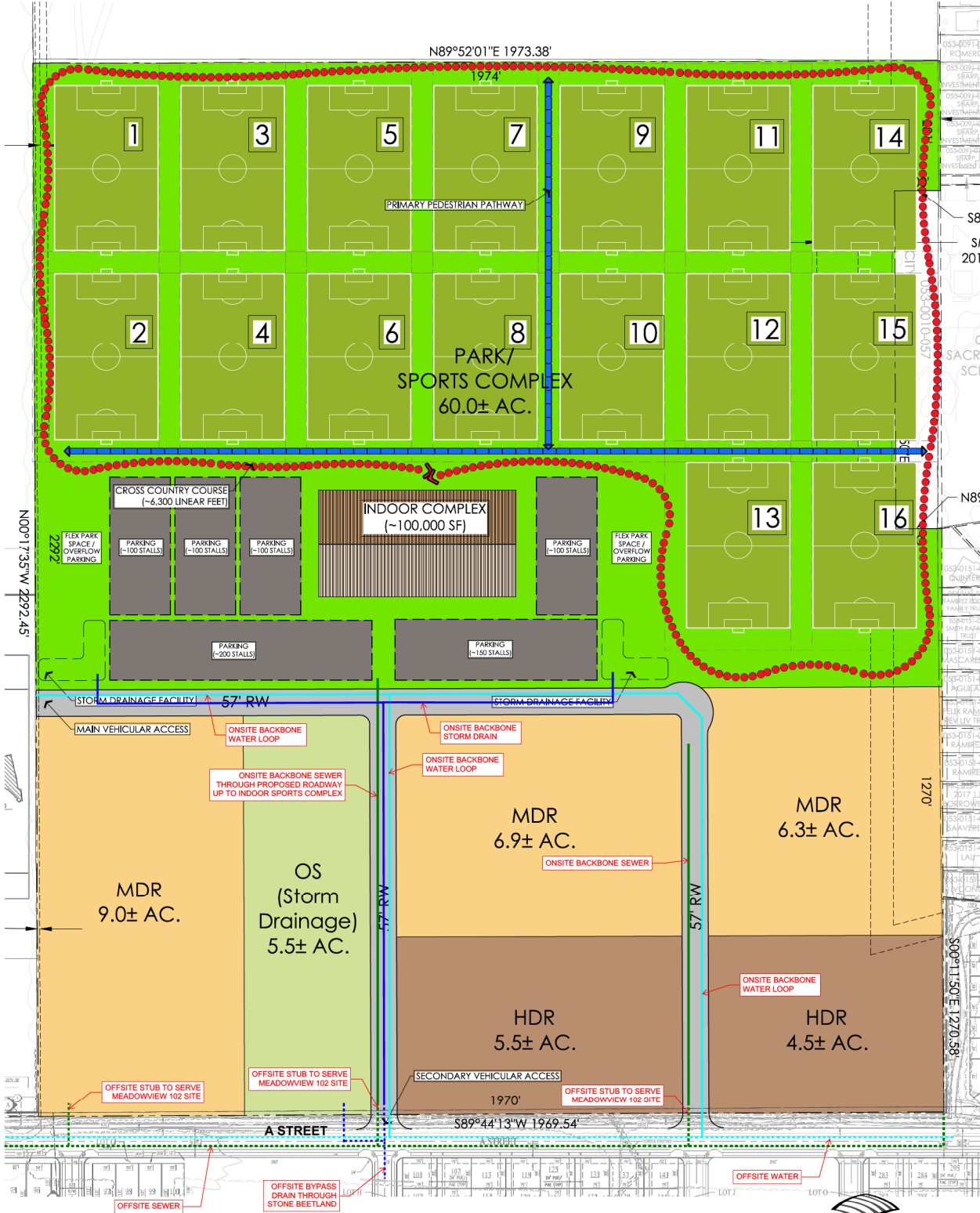
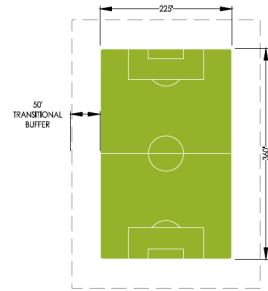
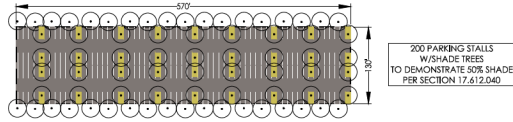
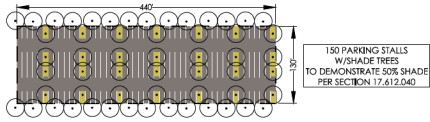
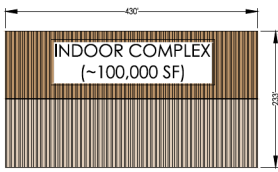
Conceptual Land Use Plan - City Alternative #2B
September 1, 2023



SPORTS COMPLEX LAND USE PLAN 2B MEADOWVIEW 102

SACRAMENTO, CALIFORNIA

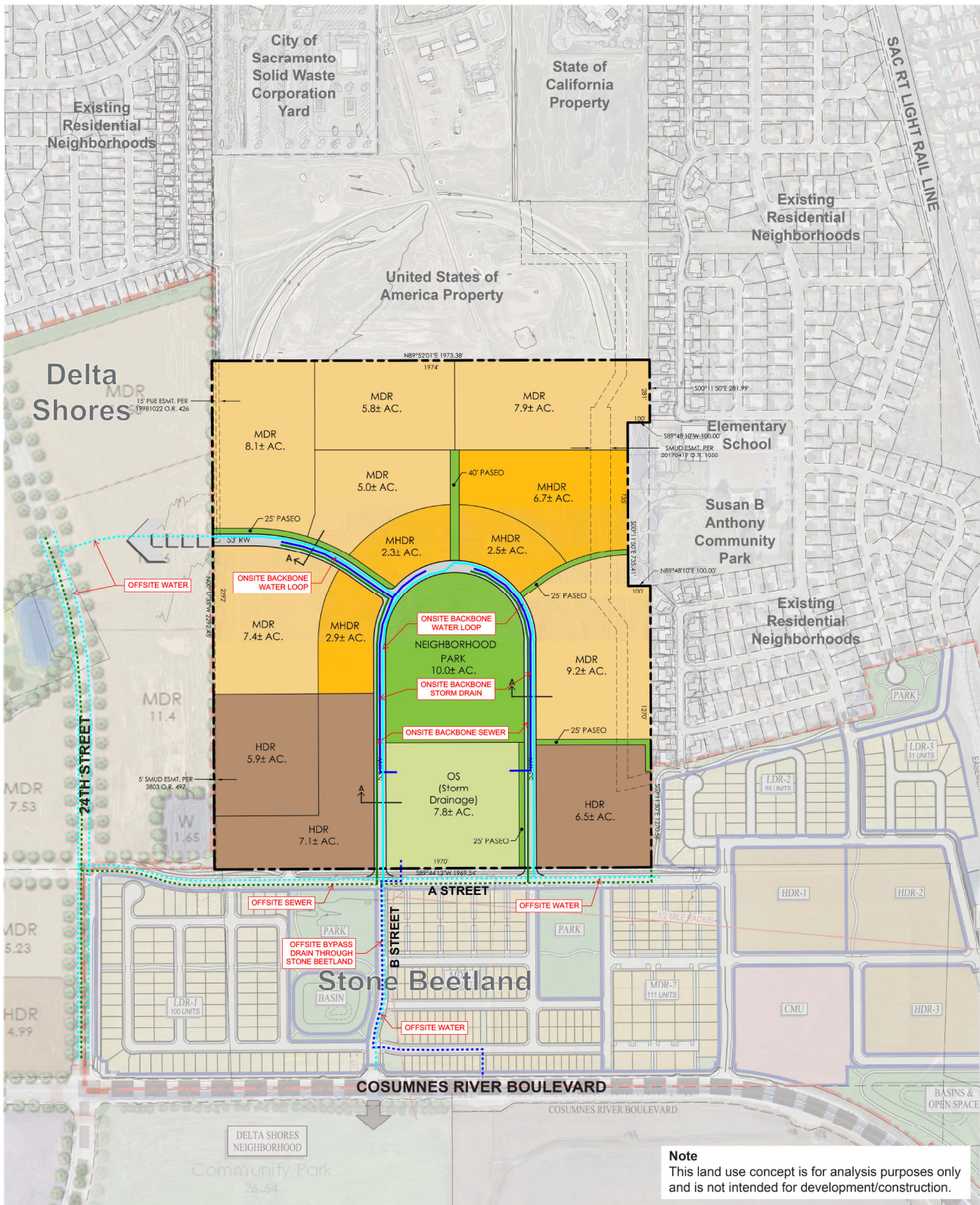
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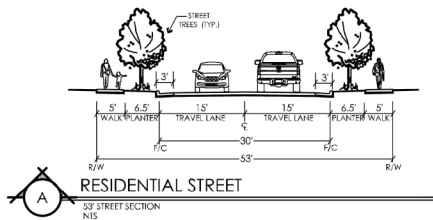
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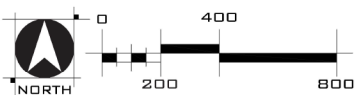
Appendix D – Land Use Concept #3



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LAND USE SUMMARY				
LAND USE		ASSUMED DENSITY	ACRES	EST. DU
MDR	MEDIUM DENSITY RESIDENTIAL	9.0 DU/AC.	43.4	392
MHDR	MEDIUM HIGH DENSITY RESIDENTIAL	16.0 DU/AC.	14.4	230
HDR	HIGH DENSITY RESIDENTIAL	30.0 DU/AC.	19.5	591
P	NEIGHBORHOOD PARK		10.0	
OS	OPEN SPACE		7.8	
LDRSP	LANDSCAPE CORRIDOR/PASEO		2.0	
RW	RIGHT-OF-WAY		4.8	
TOTAL			101.9 ± AC.	1,213 DU



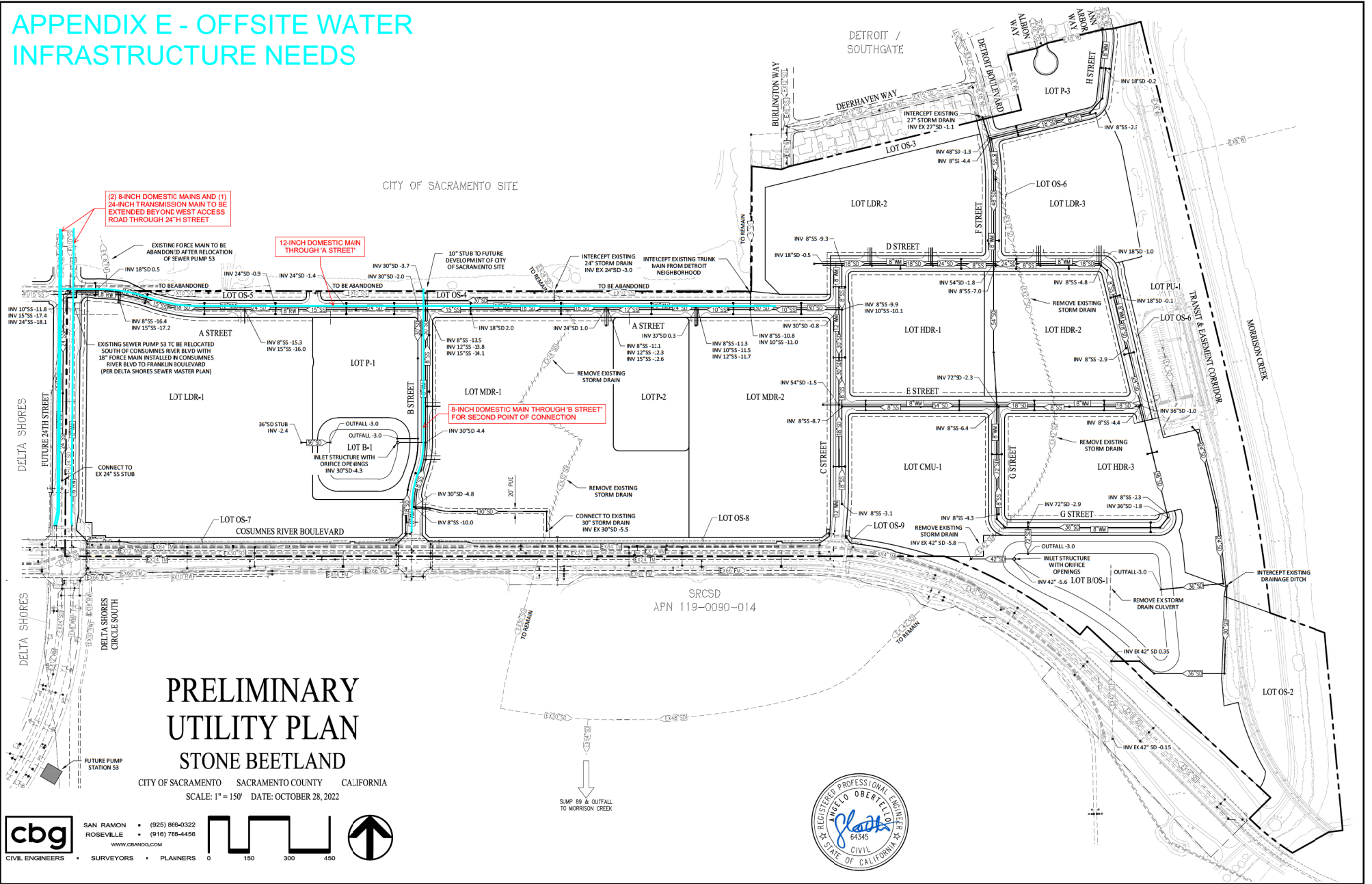
MEADOWVIEW 102

Conceptual Land Use Plan - City Alternative #3

September 1, 2023

Appendix E – Offsite Water Infrastructure

APPENDIX E - OFFSITE WATER INFRASTRUCTURE NEEDS



PRELIMINARY UTILITY PLAN

STONE BEETLAND

CITY OF SACRAMENTO SACRAMENTO COUNTY CALIFORNIA
 SCALE: 1" = 150' DATE: OCTOBER 28, 2022

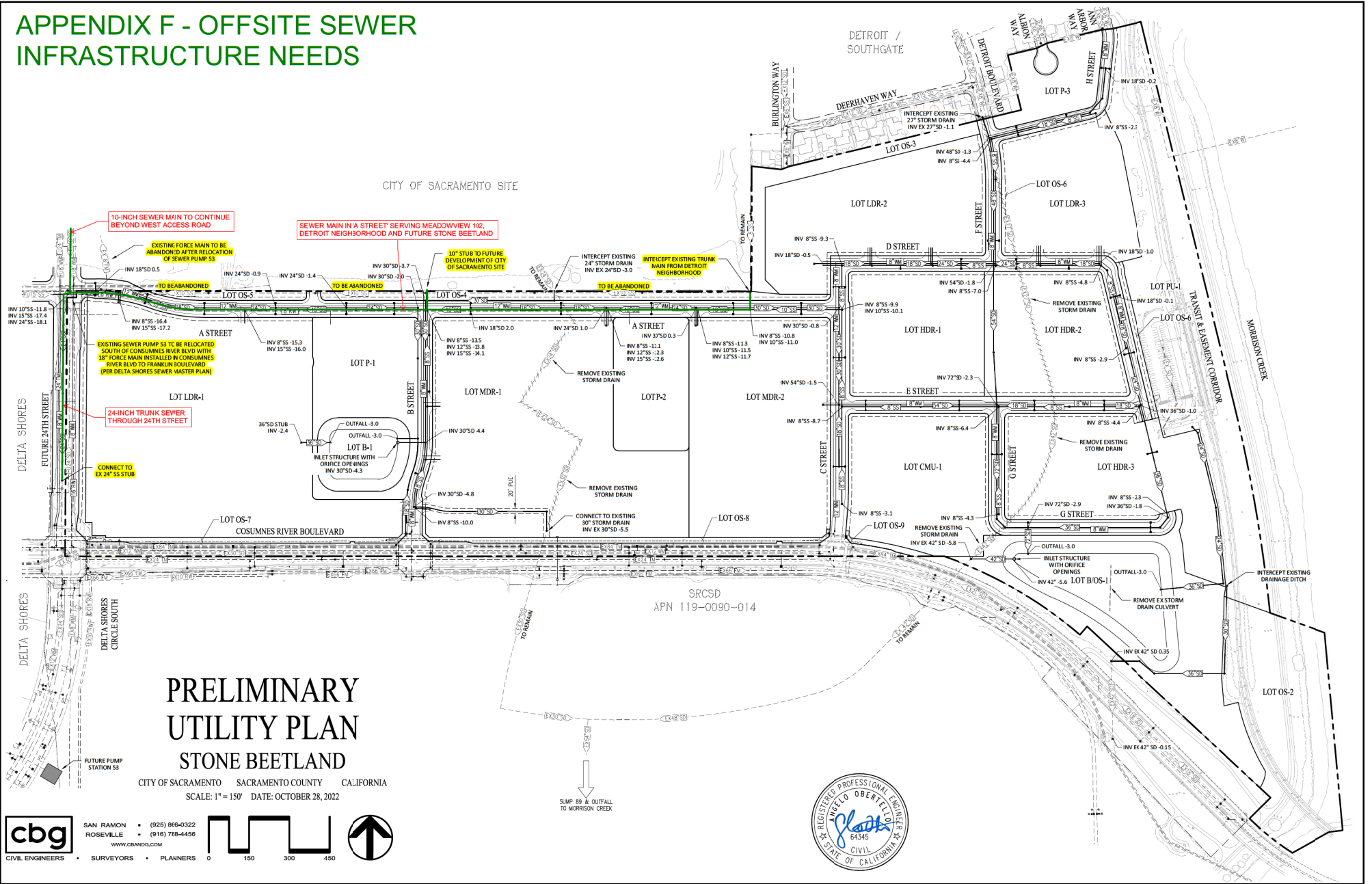
cbg CIVIL ENGINEERS • SURVEYORS • PLANNERS

SAN RAMON • (925) 866-0322
 ROSEVILLE • (916) 788-4456
 WWW.CBANDSG.COM



Appendix F – Offsite Sewer Infrastructure

APPENDIX F - OFFSITE SEWER INFRASTRUCTURE NEEDS



PRELIMINARY UTILITY PLAN STONE BEETLAND

CITY OF SACRAMENTO SACRAMENTO COUNTY CALIFORNIA
SCALE: 1" = 150' DATE: OCTOBER 28, 2022

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Appendix G – Offsite Storm Drainage Infrastructure

APPENDIX G - OFFSITE STORM DRAIN INFRASTRUCTURE NEEDS

