

# 1.0 INTRODUCTION

## 1.1 BACKGROUND

The purpose of this submittal is to provide an updated drainage report for the vacant property located in the southeast quadrant of the St. Joseph's and Atrisco Drive intersection. This vacant property is part of the Oxbow Center in Albuquerque, a planned 48-acre development. The northern portion is already partially developed and the southern portion, which is covered in this report, will be comprised of proposed commercial properties. There is no existing FEMA designated floodplain in the area according to FEMA FIRM 35001C0114H - see Appendix A.

Six documents help to provide background information and provide the drainage requirements for this site. For the northwest portion of the site, the relevant documents include: the Ladera Drive Improvements Drainage Analysis Memo and the Atrisco and St. Josephs As-Built Documents. For the southwestern portion of the site, the relevant documents include: the Master Drainage Plan for the Oxbow Center, Drainage Report for the Enclave and Oxbow and the Enclave at Oxbow Subdivision As Built. Additionally, the Ladera Storm Drainage Diversion and Detention Facility Right of Way Map As-Built drawing provides information as to how long the 60- inch storm drain in St. Joseph's Drive will flow at full capacity from the Ladera Dam system. All relevant background information is provided in Appendix A.



FIGURE 1: PROJECT LOCATION

## 2.0 DESIGN CRITERIA/ ASSUMPTIONS

The Ladera Drive Improvements Drainage Analysis Memo, by Parsons Brinckerhoff in 2015 was used as reference for the analysis and proposed improvements.

### Design criteria and assumptions from the Ladera Drive Improvements Drainage Analysis Memo:

- The existing pond to the east of Atrisco has approximately 2 acre-feet of volume. Any proposed basins will only be able to contribute volume that will match the existing pond capacity or include an increase in volume of this pond to accommodate additional runoff.
- This detention pond captures runoff from the eastbound lanes of St. Joseph's drive in the vicinity of the St. Joseph's drive and Atrisco Drive intersection in addition to the 1,050-foot segment of Atrisco Drive north of St. Joseph's Drive, the 950-foot segment of Atrisco Drive south of St. Joseph's Drive, as well as the remainder of the right of way. This pond also captures about 40% of the vacant property located in the southeast quadrant of the St. Joseph's Drive and Atrisco Drive intersection. These existing drainage basins are shown in Exhibit A, and the results from the report are detailed in Table 1.

TABLE 1: EXISTING LADERA DRIVE IMPROVEMENT BASINS

BASIN ID	AREA (ACRES)	100-YR PEAK DISCHARGE (CFS)	VOL 100- YR 24-HR (ACRE-FT)
1.1	0.76	3.32	0.15
1.2	1.61	6.71	0.30
1.3	1.49	6.29	0.28
8.1	0.49	1.61	0.06
8.2	1.47	4.65	0.16

- The main purpose of the detention pond is to temporarily retain flows reaching the existing St. Joseph's storm drain network, which conveys flow to the Coors Boulevard storm drain trunk line.
- This detention pond outfalls to the St. Josephs storm drain via a 18- inch reinforced concrete pipe. This pipe has a flap gate to prevent flows from the storm drain reentering the pond when the peak flow is occurring.

### Design criteria and assumptions from the Master Drainage Plan for the Oxbow Center:

- Per the approved Master Drainage Plan for Oxbow Town Center by GND LLC in 2007, all runoff from the developed site will be attenuated in onsite detention ponds and conveyed to the existing 36-inch storm outfall which runs under Coors Boulevard and discharges to the Enclave at Oxbow Subdivision system to the east of Coors Boulevard.
- Allowable discharge from the site cannot exceed 45.1 cfs.

### Design constraint from the Ladera Storm Drainage Diversion and Detention Facility Right of Way Map As-built Drawings and the Ladera Drive Improvements Phase 1 As-builts:

- Per the as-built drainage information sheet, Ladera Dam #15 takes 88 hours to drain. This means that the capacity of the 60-inch storm drain in St. Joseph's Drive is primarily utilized by the dam system for that window of time and is not available for the local street drainage and proposed Basin 12 of the Oxbow site until after the dam has drained.
- This is consistent with the Ladera Drive Improvements Phase 1 As-builts which shows a check valve in the 18-inch storm drain discharge line from the current temporary pond on the site as stated above. This check valve prevents water from the pressurized 60-inch storm drain from surging into the temporary pond and forces the temporary pond water to be retained until the pressure drops and the check valve opens.

#### Additional assumptions and design considerations include:

- The onsite drainage systems are designed using the 100-year 24-hour design storm.
- All proposed subbasins assume a 90% impervious surface.
- New construction shall incorporate on-site 'first flush' retention requirements per COA Development Process Manual, Chapter 6-2.
- Proposed conditions will continue to capture all offsite flow in inlets along Atrisco Drive and St. Joseph's Drive and discharges to a reconfigured "North Pond" which replaces the existing pond at the intersection of Atrisco Drive and St. Josephs Drive.
- Hydrology and Hydraulic calculations performed in accordance with the ABQ Drainage Process Manual Chapter 6.

## 3.0 HYDROLOGIC CONDITIONS

### 3.1 EXISTING CONDITIONS

The vacant property has a high point running from the northeast corner to the southwest corner. Flows northwest of this high point flow to the existing retention/detention pond along St. Joseph's Drive. Flows southeast of this line flow toward Coors Boulevard where they are picked up by a storm drain under Coors Boulevard. This storm drain was constructed with the Enclave at Oxbow Subdivision east of Coors Boulevard. The drainage report and as-built drawings for this storm drain are included in Appendix A. This site includes predominately undisturbed soils with slopes ranging from 0-2%. Therefore, land treatment Type A was used for modeling. Onsite and offsite subbasins were delineated for the southern portion of the Oxbow Town Center, all other offsite flows, as described east of Atrisco Drive were pulled from the Ladera Drive Improvements Drainage Analysis Memo. Table 1, pulled from this report, details the contributing drainage basins and areas. These areas are then added to the existing conditions model to account for the offsite volume in the existing pond – see Table 2. Exhibit A details model input and outputs for existing drainage basins.

**TABLE 2: EXISTING SUBBASIN SUMMARY**

SUBBASIN	AREA (AC)	Q100 (CFS)	V100 (AC-FT)	YIELD (CFS/AC)
EX1	10.0	11.4	0.32	1.1
EX2	16.7	19.9	0.56	1.2
OFF1	0.9	3.7	0.17	3.9
OFF2	0.8	3.2	0.15	4.0
EXISTING POND	11.5	6.8	0.64	0.6
EXISTING POND WITH LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO BASINS	17.3	29.4	1.6	N/A

### 3.2 PROPOSED CONDITIONS

The proposed southern portion of the Oxbow Center will include the addition of office buildings and commercial properties.

#### Southeast

The proposed hydrology calculations were performed by separating the lot and roads into individual subbasins. All southeastern subbasins discharge to the 36-inch existing storm drain under Coors Boulevard, which has a maximum allowable discharge rate of 45.1 cfs. To meet this downstream restraint each subbasin will be required to pond onsite having an allowable release rate of 1.84 cfs/acre, the specific allowable release per subbasin can be found in Table 3.

### Northeast

Subbasin P12, along with offsite subbasins 1 and 2 and the offsite basins detailed out in Table 1 from the Ladera Drive Improvements Drainage Analysis Memo, will discharge to the proposed North Pond. The proposed conditions mirror the existing conditions in that the northwest portion of the site goes to the North Pond which replaces the existing pond. Table 3 summarizes the proposed basin hydrology parameters. All proposed subbasins were modeled assuming 90% impervious surfaces, land treatment D and 10% Type C. See Exhibit B: Proposed Drainage Basins. Allowable release rates per subbasin are calculated based off of the acres per site, if the site design is to change, allowable release rates will need to be recalculated based off of the 1.84 cfs/acre.

**TABLE 3: PROPOSED SUBBASIN SUMMARY**

SUBBASIN	AREA (AC)	Q100 (CFS)	V100 (AC-FT)	YIELD (CFS/AC)	ALLOWABLE (CFS)
P1	2.0	7.6	0.3	3.8	3.7
P2	1.6	6.1	0.3	3.9	2.9
P3	0.6	2.2	0.1	3.8	1.1
P4	0.7	2.7	0.1	3.8	1.3
P5	0.9	3.5	0.2	3.8	1.7
P6	1.0	3.9	0.2	3.8	1.9
P7	1.3	4.9	0.2	3.8	2.4
P8	1.1	4.4	0.2	3.9	2.1
P9	0.8	3.2	0.1	3.9	1.5
P10	0.7	2.7	0.1	3.7	N/A
P11	0.6	2.2	0.1	4.0	1.0
P12	7.9	30.2	1.4	3.8	14.5
P13	6.0	22.8	1.0	3.8	11.0
P14	0.4	1.5	0.07	4.0	0.7
P15	0.3	1.2	0.06	4.3	N/A
OFF1	1.4	5.4	0.2	3.8	2.6
OFF2	0.8	3.2	0.1	4.0	1.5
NORTH POND	9.7	10.7	1.3	1.1	17.9
NORTH POND WITH LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO BASINS	15.5	33.3	2.3	N/A	N/A

Each subbasin, excluding subbasins P10 and P15, will be required to pond on site for both detention and water quality. See below for a description of each subbasin, discharge patterns and water quality requirements:

- Subbasin P1 will require detention ponding onsite to attenuate flows which include retention for water quality. This pond will connect to a proposed 24-inch storm drain along Coors Boulevard. Subbasin P1 will receive allowable discharge flows from Subbasin P13 and P14 making the allowable release rate for Subbasin P1 a combined 15.3 cfs.
- Subbasins P2, P3, P4, P6 and P7 will drain to the east towards Coors Boulevard. These subbasins will require detention ponding onsite to attenuate flows which include retention for water quality. The future P2 and P3 ponds will outfall to the proposed 30-inch storm drain whereas subbasins P4, P6 and P7 ponds will outfall to the proposed 18-inch storm drain along Coors Boulevard.

- Subbasins P5, P8 and P9 will be required to pond onsite and retain water quality volumes. These ponds will outfall to the southeast where they will discharge to the proposed road (Subbasin P10). This flow will then get picked up by inlets and discharge to a proposed 30-inch storm drain along Coors Boulevard.
- Subbasin P10 will not require ponding, this runoff will flow to the east and then south where it will get picked up by inlets and discharge to a proposed 30-inch storm drain along Coors Boulevard. The required water quality ponding for this subbasin is intended to be covered by "fee in lieu".
- Subbasin P11 will discharge to the northeast. This subbasin will require ponding onsite as well as retaining any water quality. This pond will then discharge into Subbasin P10.
- Subbasin P12 will require ponding. This subbasin will drain to the north where the runoff will enter the North Pond, which is located inside the subbasin. The North Pond is privately owned but will be covered by a public drainage easement due to the flows coming into the pond from Atrisco Drive and St. Josephs Drive. The North Pond is sized to temporarily retain all flows from P12 and the Offsite Subbasins 1 and 2 as well as the offsite subbasins detailed out from the Ladera Drive Improvements Drainage Analysis Memo and discharge through a check valve to the storm drain in St. Josephs which empties to the storm trunk line in Coors Boulevard.
- Subbasin P13 will discharge into the pond. This pond will be required to retain water quality volumes as well as provide attenuation of the peak flow rate. This pond will then discharge through the drainage easement on the southern side of the property entering subbasin P1 proposed pond.
- Subbasin P14 will discharge into Subbasin P13 proposed pond, making the combined allowable discharge from P13 11.7 cfs.
- Subbasin P15 will drain to the east towards Coors Boulevard. As this subbasin is along the road, it will not be required to retain any water quality volumes. The developer will pay "fee in lieu" for water quality. This subbasin runoff will get picked up by inlets along the road then discharge to a proposed 24-inch storm drain along Coors Boulevard.

See section 4, Table 6 for an in-depth look at water quality volume requirements.

### 3.3 DOT RIGHT OF WAY

The proposed project will have three driveway entrances into the property, two along St. Josephs Drive and one along Coors Boulevard. The drainage basin, as shown in Table 4, shows the offsite drainage basin along Coors Boulevard. This basin will continue to drain south along Coors Boulevard by passing the proposed property and entering an inlet to the south west of Coors Boulevard. Therefore, this offsite drainage basin will not enter the site and has not been incorporated into the onsite allowable release rates. The flow from these areas were calculated using a 20% type C and 80% type D.

**TABLE 4: DOT RIGHT OF WAY FLOW ANALYSIS**

NMDOT Right of Way Offsite Flow Area (Acres)	Q100 (CFS)	V100 (AC-FT)
1.95	7.12	0.32

According to the allowable discharge, the onsite subbasins are using 35.1 cfs of the allowable 45.1 cfs capacity of the existing 36-inch storm drain that is coming from the Enclave at Oxbow subdivision. From the AHYMO results, there is enough capacity in the storm drain to capture the flows coming from the NMDOT right of way if there is to be a change in the offsite flow directions. See Exhibit C- NMDOT Right of Way and Appendix A for the AHYMO NMDOT Right of Way Results.



### 3.4 NORTH POND REQUIREMENTS

RESPEC has provided a detailed analysis showing the existing and proposed site conditions above. RESPEC provided a general configuration for the North Pond but recognizes that the pond may undergo minor adjustments with the final design of the site by the northwest (Basin P12) design team. The intent of this report is to clearly spell out the required volume that is to be provided by this pond. The AHYMO model provides the following information:

**TABLE 5: PROPOSED NORTH POND AHYMO RESULTS**

Volume Stored (acre-feet)	Peak (Hours)	Time to Drain (Hours)
2.2	1.8	8

Although the rating curve allows for more volume, only 2 acre-feet of the pond is being used during a 100-Year 24-Hour storm. The Ladera Drive Improvement Gavin Road to Coors Boulevard Drainage Analysis Memo (2015) states that the replacement pond volume required is 2.11-acre feet. In both instances, the pond receives flow from the public roadway area coming to the pond as well as the onsite subbasin. From the Parsons Brinkerhoff record drawings from 2017, there is a note that states "Install inline storm drain check valve in 18" RCP". From this note, it is clear that the pond was not intended to act as a surge pond. The check valve prevents any water from the 60-inch storm drain from surging into the pond. Once the pressure drops in the storm drain the check valve will allow the water within the pond to enter the 60-inch storm drain. From Table 5 above, it can be seen that the AHYMO model indicates that the pond can and will drain in 8 hours or less. Even if the check valve doesn't open until after 88 hours due to the discharge from Ladera Dam #15, the pond will still drain within 96 hours. Thus, meeting the requirements of the NMOSE as spelled out in the COA DPM in Section 6-11.

Following the COA DPM procedure for 40- acre and smaller basins (DPM Section 6-2), a simplified approach can be utilized to size the pond. Utilizing a 100-year 4- day storm, which was deemed most appropriate due to the long hold times of the North Pond from the Ladera Dam outfall, a rainfall amount of 3.12 inches was used. Applying the excess runoff and 6-hour volume to Equation 6.4, a result of 3.04 acre- feet is needed for the proposed North Pond. See Appendix A.7 for more detailed calculations. Therefore, the North Pond will need to have a required volume of 3.04 acre-feet.

## 4.0 WATER QUALITY

Water quality calculations were performed for the entire project site per requirements set out in the City of Albuquerque DPM.

### 4.1 ANALYSIS

The calculations performed in this drainage management plan were to determine the volume (cu. ft) of detention storage needed to meet water quality requirements. The required volume calculations were based on impervious areas in that subbasin. See Table 6 for a summary of calculated retention volume for the site. Water quality calculations were proposed assuming a 90% impervious area for each lot and based off of 0.41 inches of runoff based on Albuquerque Drainage Process Manual. Detailed water quality calculations can be found in Appendix A.

**TABLE 6: WATER QUALITY SUMMARY**

Basin ID	Site Area	% Imp	Total Water Quality Volume Required:	Total Water Quality Volume Required:
	ac.		cu. Ft	ac. Ft.
P1	2.0	90%	2725.5	0.06
P2	1.6	90%	2173.8	0.05
P3	0.6	90%	792.4	0.02
P4	0.7	90%	981.7	0.02
P5	0.9	90%	1235.9	0.03
P6	1.0	90%	1427.0	0.03
P7	1.3	90%	1764.3	0.04
P8	1.1	90%	1566.3	0.04
P9	0.8	90%	1129.9	0.03
P10	fee in lieu			
P11	0.6	90%	765.6	0.02
P12	7.9	90%	10839.9	0.25
P13	6.0	90%	8178.0	0.19
P14	0.4	90%	511.1	0.01
P15	fee in lieu			

## 5.0 HYDRAULICS

The proposed storm drain network running along Coors Boulevard was analyzed using Hydraflow Storm Sewers. A summary of the results can be found in Appendix B. The storm drain construction plans are also included for reference in Appendix B. The plans display a profile of the hydraulic grade line along with the peak runoff and volume of each pipe.

## 6.0 CONCLUSION

The full analysis performed for this drainage report demonstrates that the capacity of the proposed drainage system will follow the allowable discharge requirements set for the 100-year storm event for the development of Oxbow Center as stated in the background reports, the Ladera Drive Improvements Drainage Analysis Memo, Master Drainage Plan for the Oxbow Center, Atrisco and St. Josephs As Built, Drainage Report for the Enclave and Oxbow as well as the as-built drawings. This report provides specific guidance to each proposed tract regarding the required water quality ponding volume and the allowable discharge from each tract, except for P12 which contains the North Pond, which also receives public water. From the analysis that is provided, a North Pond volume of 3.04 acre- feet is proposed. This pond provides the volume deemed necessary by guidance provided in the City of Albuquerque Drainage Process Manual.

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ADDITIONAL OFFSITE SUBBASINS FROM LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO SHOWN EAST OF ATRISCO DRIVE (1.1, 1.2, 1.3, 8.1 AND 8.2 FROM THE REPORT) SHOW AN ADDITIONAL 22.58 CFS (0.95 ACRE FEET) ENTERING THE EXISTING POND

### RESULTS FROM LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO

Table 3: Estimated Existing Runoff Volumes for Pond East of Atrisco Drive

Basin ID	Basin Area (acres)	Peak Discharge (100-yr)	Vol 100-yr, 24-hr (acre-ft)
5	12.19	35.43	1.04
1.1	0.76	3.32	0.15
1.2	1.61	6.71	0.30
1.3	1.49	6.29	0.28
8.1	0.49	1.61	0.06
8.2	1.47	4.65	0.16
Total			1.99

### EXISTING POND RATING CURVE

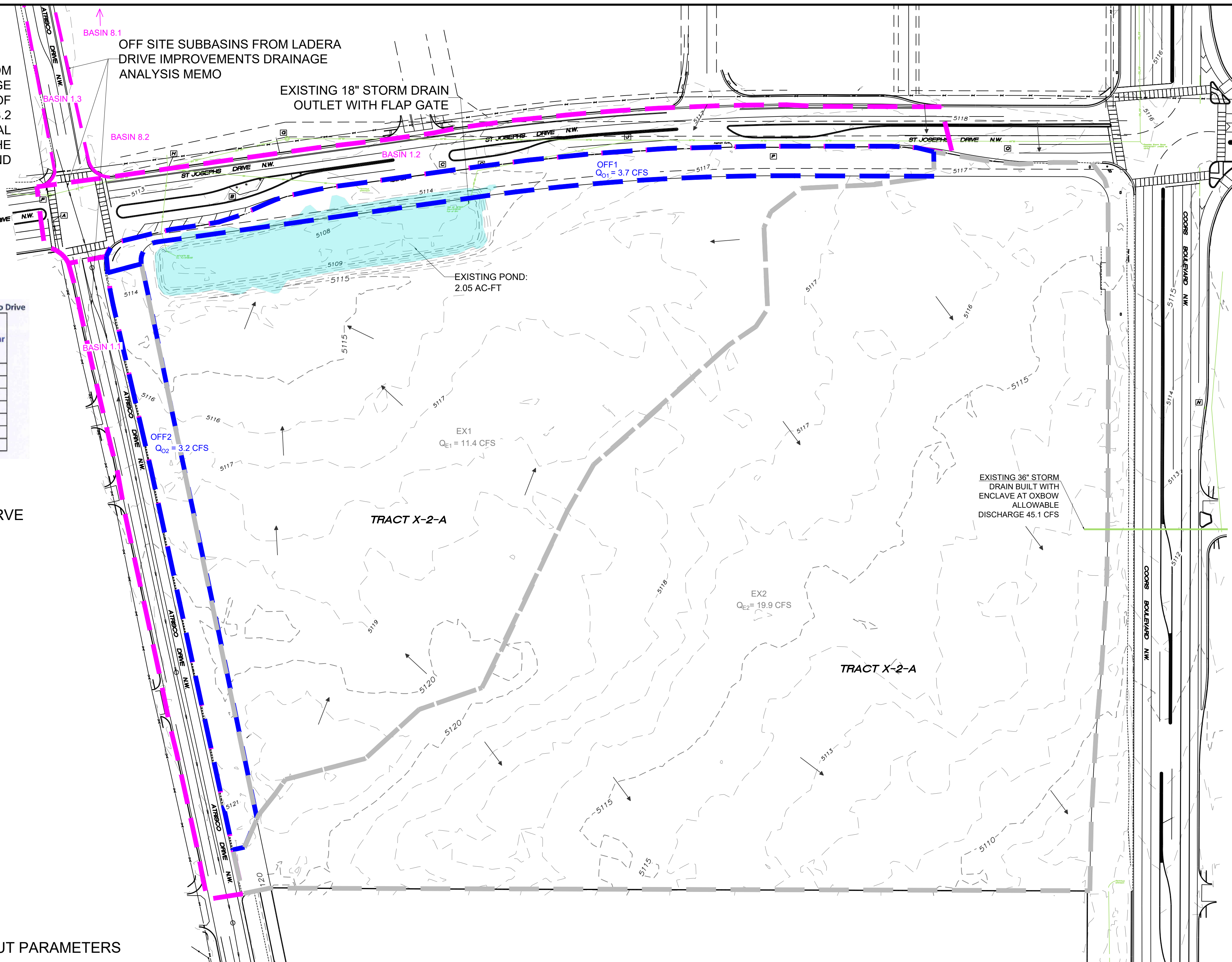
Existing Pond Rating Curve		
Q (cfs)	Storage (ac-ft)	Elev (ft)
0.00	0.00	5108
15.1	0.60	5109
21.4	1.28	5110
26.2	2.05	5111

### AHYMO INPUT PARAMETERS

Subbasin	Area (ac)	Treatment Type Area (ac)				Treatment Type Area (%)			
		A	B	C	D	A	B	C	D
EX1	10.0	10.0	0.0	0.0	0.0	100%	0%	0%	0%
EX2	16.7	16.1	0.0	0.7	0.0	96%	0%	4%	0%
OFF1	0.9	0.0	0.0	0.1	0.8	0%	0%	10%	90%
OFF2	0.8	0.0	0.0	0.1	0.7	0%	0%	10%	90%

### RESULTS

Subbasin	A (ac)	Q (cfs)	V (acft)	Q/A (cfs/ac)
EX1	10.0	11.4	0.32	1.1
EX2	16.7	19.9	0.56	1.2
OFF1	0.9	3.7	0.17	3.9
OFF2	0.8	3.2	0.15	4.0
EXISTING POND	11.5	6.8	0.64	0.6
EXISTING POND WITH LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO BASINS	17.3	29.4	1.6	N/A



### LEGEND

- EXISTING BASIN
- OFFSITE BASINS FROM THE LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO
- OFFSITE BASIN- REMAINING RIGHT OF WAY DRAINING TO NORTHERN POND
- EXISTING FLOW ARROW
- EXISTING POND
- EXISTING STORM DRAIN

## EXHIBIT A: EXISTING DRAINAGE BASINS OXBOW TOWN CENTER

JANUARY 2024



# RESPEC

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### RESULTS FROM LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO

Table 3: Estimated Existing Runoff Volumes for Pond East of Atrisco Drive

Basin ID	Basin Area (acres)	Peak Discharge (100-yr)	Vol 100-yr, 24-hr (acre-ft)
5	12.19	35.43	1.04
1.1	0.76	3.32	0.15
1.2	1.61	6.71	0.30
1.3	1.49	6.29	0.28
8.1	0.49	1.61	0.06
8.2	1.47	4.65	0.16
Total			1.99

### NORTHERN POND RATING CURVE

North Pond Rating Curve		
Q (cfs)	Storage (ac-ft)	Elev (ft)
0.00	0.00	5107.0
0.01	0.51	5108.0
15.1	1.05	5109.0
21.4	1.61	5110.0
26.2	2.21	5111.0
30.3	2.83	5112.0
33.8	3.48	5113.0

### AHYMO INPUT PARAMETERS

Subbasin	Area (ac)	Treatment Type Area (ac)				Treatment Type Area (%)			
		A	B	C	D	A	B	C	D
P1	2.0	0.0	0.0	0.2	1.8	0%	0%	10%	90%
P2	1.6	0.0	0.0	0.2	1.4	0%	0%	10%	90%
P3	0.6	0.0	0.0	0.1	0.5	0%	0%	10%	90%
P4	0.7	0.0	0.0	0.1	0.6	0%	0%	10%	90%
P5	0.9	0.0	0.0	0.1	0.8	0%	0%	10%	90%
P6	1.0	0.0	0.0	0.1	0.9	0%	0%	10%	90%
P7	1.3	0.0	0.0	0.1	1.2	0%	0%	10%	90%
P8	1.1	0.0	0.0	0.1	1.0	0%	0%	10%	90%
P9	0.8	0.0	0.0	0.1	0.7	0%	0%	10%	90%
P10	0.7	0.0	0.0	0.1	0.7	0%	0%	10%	90%
P11	0.6	0.0	0.0	0.1	0.5	0%	0%	10%	90%
P12	7.9	0.0	0.0	0.8	7.1	0%	0%	10%	90%
P13	6.0	0.0	0.0	0.6	5.4	0%	0%	10%	90%
P14	0.4	0.0	0.0	0.0	0.3	0%	0%	10%	90%
P15	0.3	0.0	0.0	0.0	0.3	0%	0%	10%	90%
OFF1	1.4	0.0	0.0	0.1	1.3	0%	0%	10%	90%
OFF2	0.8	0.0	0.0	0.1	0.7	0%	0%	10%	90%

### RESULTS

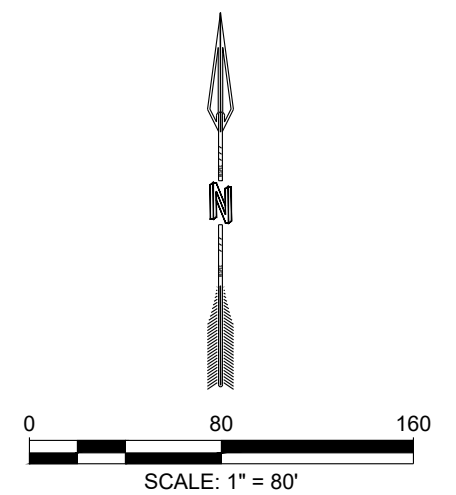
Subbasin	A (ac)	Q (cfs)	V (ac-ft)	YEILD (cfs/ac)	Allowable Discharge (cfs)
P1	2.0	7.6	0.3	3.8	3.7
P2	1.6	6.1	0.3	3.9	2.9
P3	0.6	2.2	0.1	3.8	1.1
P4	0.7	2.7	0.1	3.8	1.3
P5	0.9	3.5	0.2	3.8	1.7
P6	1.0	3.9	0.2	3.8	1.9
P7	1.3	4.9	0.2	3.8	2.4
P8	1.1	4.4	0.2	3.9	2.1
P9	0.8	3.2	0.1	3.9	1.5
P10	0.7	2.7	0.1	3.7	N/A
P11	0.6	2.2	0.1	4.0	1.0
P12	7.9	30.2	1.4	3.8	14.5
P13	6.0	22.8	1.0	3.8	11.0
P14	0.4	1.5	0.07	4.0	0.7
P15	0.3	1.2	0.06	4.3	N/A
OFF1	1.4	5.4	0.2	3.8	2.6
OFF2	0.8	3.2	0.1	4.0	1.5
NORTH POND	9.7	10.7	1.3	1.1	17.9
NORTH POND WITH LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO BASINS	15.5	33.3	2.3	N/A	N/A

### LEGEND

- PROPOSED STORM DRAIN @ 0.5%
- PROPOSED BASIN
- OFFSITE BASINS FROM THE LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO
- OFFSITE BASIN- REMAINING RIGHT OF WAY DRAINING TO NORTHERN POND
- PROPOSED FLOW ARROW
- PROPOSED PONDING LOCATIONS
- PROPOSED POND GRADING
- PROPERTY BOUNDARY
- EXISTING STORM DRAIN

### REQUIRED WATER QUALITY VOLUMES FOR EACH BASIN

Basin ID	Site Area ac.	% Imp	Total Water Quality Volume Required: cu. Ft.	Total Water Quality Volume Required: ac. Ft.
P1	2.0	90%	2725.5	0.06
P2	1.6	90%	2173.8	0.05
P3	0.6	90%	792.4	0.02
P4	0.7	90%	981.7	0.02
P5	0.9	90%	1235.9	0.03
P6	1.0	90%	1427.0	0.03
P7	1.3	90%	1764.3	0.04
P8	1.1	90%	1566.3	0.04
P9	0.8	90%	1129.9	0.03
P10			fee in lieu	
P11	0.6	90%	765.6	0.02
P12	7.9	90%	10839.9	0.25
P13	6.0	90%	8178.0	0.19
P14	0.4	90%	511.1	0.01
P15			fee in lieu	



## EXHIBIT B: PROPOSED DRAINAGE BASINS OXBOW TOWN CENTER

JANUARY 2024



# RESPEC

COMMUNITY DESIGN SOLUTIONS  
7770 JEFFERSON ST N.E. SUITE 200  
ALBUQUERQUE, NEW MEXICO 87109  
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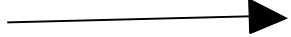


NAME: N:\Projects\W0007 Skarsgard\W0007 0004 Skarsgard Oxbow Center\3 CAD\Exhibits\W0007 4 NMDOT ROW.dwg PLOT DATE: Feb 16, 2023 11:55am

LEGEND

NMDOT OFFSITE COORS  
DRAINAGE BASIN

PROPOSED FLOW ARROW



AHYMO INPUT PARAMETERS

Subbasin	Area (ac)	Treatment Type Area (ac)				Treatment Type Area (%)			
		A	B	C	D	A	B	C	D
NMDOT 1	1.95	0.0	0.0	0.4	1.6	0%	0%	20%	80%

RESULTS

Subbasin	A (ac)	Q (cfs)	V (act)
NMDOT 1	1.95	7.12	0.32

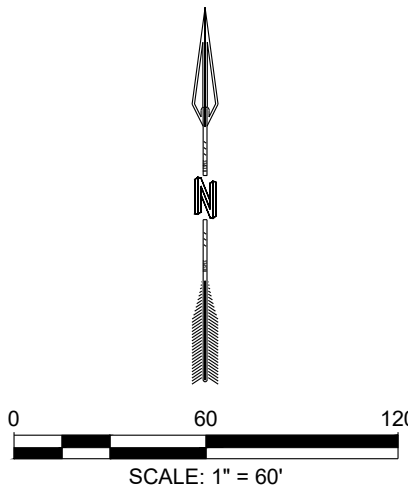


EXHIBIT C: NMDOT RIGHT OF  
WAY  
OXBOW TOWN CENTER  
JANUARY 2024



RESPEC

COMMUNITY DESIGN SOLUTIONS  
5971 JEFFERSON STREET SUITE 101  
ALBUQUERQUE, NEW MEXICO 87109  
WWW.RESPEC.COM PHONE: (505)253-9718

## A. APPENDIX A – HYDROLOGY

- A.1. Background Information
  - A.1.1. FEMA FIRM
  - A.1.2. Ladera Drive Improvements Drainage Analysis Memo
  - A.1.3. Master Drainage Plan for the Oxbow Town Center
  - A.1.4. Atrisco and St. Josephs As Built
  - A.1.5. Drainage Report for the Enclave and Oxbow
  - A.1.6. Enclave at Oxbow Subdivision As Built
  - A.1.7. Ladera Dam As Built
  - A.1.8. Ladera Phase I As Built
- A.2. Hydrology Calculations
- A.3. Pond Routing Calculations
- A.4. Existing AHYMO Results
- A.5. Proposed AHYMO Results
- A.6. Water Quality Calculations
- A.7. Initial abstraction Pond Volume
- A.8. NMDOT Right of Way AHYMO Results



Project Name: Oxbow Center  
Project No: W0007.0004  
Sheet Title: Hydrology Calculations  
Creation Date: 01/09/2024

HYDROLOGY CALCULATIONS

AHYMO INPUT: EXISTING CONDITIONS

Subbasin	Area (ac)	Treatment Type Area (ac)				Treatment Type Area (%)			
		A	B	C	D	A	B	C	D
EX1	10.0	10.0	0.0	0.0	0.0	100%	0%	0%	0%
EX2	16.7	16.1	0.0	0.7	0.0	96%	0%	4%	0%
OFF1	0.9	0.0	0.0	0.1	0.8	0%	0%	10%	90%
OFF2	0.8	0.0	0.0	0.1	0.7	0%	0%	10%	90%

AHYMO INPUT: PROPOSED CONDITIONS

Subbasin	Area (ac)	Treatment Type Area (ac)				Treatment Type Area (%)			
		A	B	C	D	A	B	C	D
P1	2.0	0.0	0.0	0.2	1.8	0%	0%	10%	90%
P2	1.6	0.0	0.0	0.2	1.4	0%	0%	10%	90%
P3	0.6	0.0	0.0	0.1	0.5	0%	0%	10%	90%
P4	0.7	0.0	0.0	0.1	0.6	0%	0%	10%	90%
P5	0.9	0.0	0.0	0.1	0.8	0%	0%	10%	90%
P6	1.0	0.0	0.0	0.1	0.9	0%	0%	10%	90%
P7	1.3	0.0	0.0	0.1	1.2	0%	0%	10%	90%
P8	1.1	0.0	0.0	0.1	1.0	0%	0%	10%	90%
P9	0.8	0.0	0.0	0.1	0.7	0%	0%	10%	90%
P10	0.7	0.0	0.0	0.1	0.7	0%	0%	10%	90%
P11	0.6	0.0	0.0	0.1	0.5	0%	0%	10%	90%
P12	7.9	0.0	0.0	0.8	7.1	0%	0%	10%	90%
P13	6.0	0.0	0.0	0.6	5.4	0%	0%	10%	90%
P14	0.4	0.0	0.0	0.0	0.3	0%	0%	10%	90%
P15	0.3	0.0	0.0	0.0	0.3	0%	0%	10%	90%
OFF1	1.4	0.0	0.0	0.1	1.3	0%	0%	10%	90%
OFF2	0.8	0.0	0.0	0.1	0.7	0%	0%	10%	90%

Precipitation From Table 6.2.8 from City of Albuquerque DPM 100-year

15-minute	1- Hour	6-Hour	24-Hour
1.02	1.69	2.17	2.49

AHYMO OUTPUT: EXISTING CONDITIONS

Subbasin	A (ac)	Q (cfs)	V (acft)	Q/A (cfs/ac)
EX1	10.0	11.4	0.32	1.1
EX2	16.7	19.9	0.56	1.2
OFF1	0.9	3.7	0.17	3.9
OFF2	0.8	3.2	0.15	4.0
EXISTING POND	11.5	6.8	0.64	0.6
EXISTING POND WITH LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO BASINS	17.3	29.4	1.6	N/A

AHYMO OUTPUT: PROPOSED CONDITIONS

Subbasin	A (ac)	Q (cfs)	V (acft)	YEILD (cfs/ac)	Allowable Discharge (cfs)
P1	2.0	7.6	0.3	3.8	3.7
P2	1.6	6.1	0.3	3.9	2.9
P3	0.6	2.2	0.1	3.8	1.1
P4	0.7	2.7	0.1	3.8	1.3
P5	0.9	3.5	0.2	3.8	1.7
P6	1.0	3.9	0.2	3.8	1.9
P7	1.3	4.9	0.2	3.8	2.4
P8	1.1	4.4	0.2	3.9	2.1
P9	0.8	3.2	0.1	3.9	1.5
P10	0.7	2.7	0.1	3.7	N/A
P11	0.6	2.2	0.1	4.0	1.0
P12	7.9	30.2	1.4	3.8	14.5
P13	6.0	22.8	1.0	3.8	11.0
P14	0.4	1.5	0.07	4.0	0.7
P15	0.3	1.2	0.06	4.3	N/A
OFF1	1.4	5.4	0.2	3.8	2.6
OFF2	0.8	3.2	0.1	4.0	1.5
NORTH POND	9.7	10.7	1.3	1.1	17.9
NORTH POND WITH LADERA DRIVE IMPROVEMENTS DRAINAGE ANALYSIS MEMO BASINS	15.5	33.3	2.3	N/A	N/A

AHYMO INPUT: NMDOT ROW

Subbasin	Area (ac)	Treatment Type Area (ac)				Treatment Type Area (%)			
		A	B	C	D	A	B	C	D
NMDOT 1	1.95	0.0	0.0	0.4	1.6	0%	0%	20%	80%

AHYMO OUTPUT: NMDOT ROW

Subbasin	A (ac)	Q (cfs)	V (acft)
NMDOT 1	1.95	7.12	0.32





**Project Name:** Oxbow Town Center  
**Project No:** W0007.0004  
**Sheet Title:** Pond Routing Calculations  
**Creation Date:** 02/13/2023  
**Comments:** Updated Site Plan

North Pond Pond Size								AHYMO Input Parameters		
Elev.	Area (Sq. Ft.)	Vol (Cu. Ft.)	Cum. (Cu. Ft.)	Incremental. (Ac. Ft.)	Cum. (Ac. Ft.)	Q (cfs) - 24"	Pipe Storage (ac-ft)	Elev (ft)	Depth (ft)	Comment
5107.0	21603.8	0	0	0.000	0	0.00	0.00	5107.0	0.0	Pond Bottom
5108.0	22793.0	22198	22198	0.510	0.510	0.01	0.51	5108.0	1.0	Invert of Pond
5109.0	24007.3	23400	45599	0.537	1.047	15.1	1.05	5109.0	2.0	
5110.0	25246.8	24627	70226	0.565	1.612	21.4	1.61	5110.0	3.0	
5111.0	26511.4	25879	96105	0.594	2.206	26.2	2.21	5111.0	4.0	
5112.0	27801.2	27156	123261	0.623	2.830	30.3	2.83	5112.0	5.0	
5113.0	29116.1	28459	151720	0.653	3.483	33.8	3.48	5113.0	6.0	Top of Pond

Existing Pond Size								AHYMO Input Parameters		
Elev.	Area (Sq. Ft.)	Vol (Cu. Ft.)	Cum. (Cu. Ft.)	Incremental. (Ac. Ft.)	Cum. (Ac. Ft.)	Q (cfs) - 24"	Pipe Storage (ac-ft)	Elev (ft)	Depth (ft)	Comment
5108.0	24048.8	0	0	0.000	0	0.00	0.00	5108.0	0.0	Pond Bottom
5109.0	27936.2	25992	25992.49	0.597	0.597	15.1	0.60	5109.0	1.0	Top of Pond
5110.0	31736.2	29836	55828.69	0.685	1.282	21.4	1.28	5110.0	2.0	
5111.0	35492.3	33614	89442.93	0.772	2.053	26.2	2.05	5111.0	3.0	



**Project Name:** Oxbow Center  
**Project No:** W0007.0004  
**Sheet Title:** Water Quality Calculations  
**Creation Date:** 01/09/2024

Table Interpolation:

Basin ID	Site Area	% Imp	Total Water Quality Volume Required:	Total Water Quality Volume Required:
	ac.		cu. Ft	ac. Ft.
P1	2.0	90%	2725.5	0.06
P2	1.6	90%	2173.8	0.05
P3	0.6	90%	792.4	0.02
P4	0.7	90%	981.7	0.02
P5	0.9	90%	1235.9	0.03
P6	1.0	90%	1427.0	0.03
P7	1.3	90%	1764.3	0.04
P8	1.1	90%	1566.3	0.04
P9	0.8	90%	1129.9	0.03
P10	fee in lieu			
P11	0.6	90%	765.6	0.02
P12	7.9	90%	10839.9	0.25
P13	6.0	90%	8178.0	0.19
P14	0.4	90%	511.1	0.01
P15	fee in lieu			



Table/Recurrace Interval	Zone
Excess100Year	1

Areas of Each Treatment		Excess Precipitation	
Areas	Acres	Land Treatment	E (inch)
Aa	0	A	0.55
Ab	0	B	0.73
Ac	0.9408	C	0.95
Ad	11.1472	D	2.24

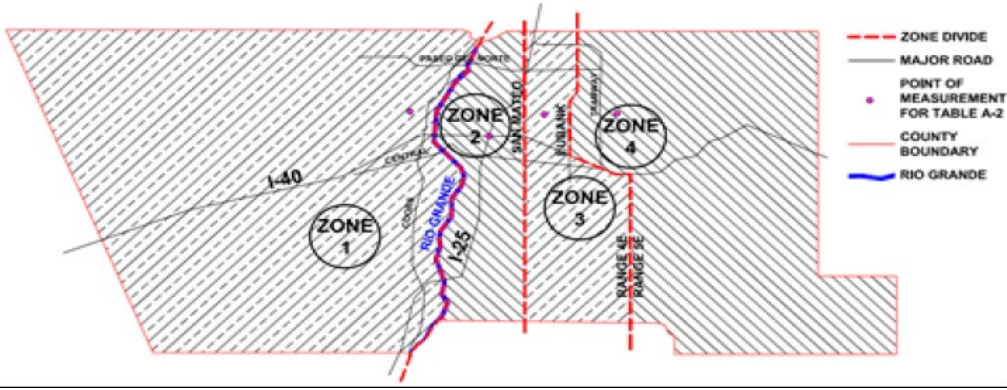
Weighted E (inches)	
Equation 6.1	2.14

Volume (acre- feet)	
Equation 6.2	2.16

EQUATION 6.1  $Weighted\ E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$

EQUATION 6.2  $V_{360} (as\ volume) = weighted\ E * (A_A + A_B + A_C + A_D)$

FIGURE 6.2.3 Precipitation Zones



Zone	Recurrance Interval (min)	Recurrance Interval (min)	Recurrance Interval (min)	Recurrance Interval (min)
PrecipZone1	360	1440	5760	14400

For 24 Hour Storms				
Precipitation (inches)	500- Year	100- Year	10- Year	2- Year
P (24 hours)	3.09	2.49	1.68	1.16
P (6 hours)	2.78	2.17	1.4	0.92
For 4 day Storms				
Precipitation (inches)	500- Year	100- Year	10- Year	2- Year
P (4 days)	3.78	3.12	2.19	1.56
P (6 hours)	2.78	2.17	1.4	0.92
For 10 Day Storms				
Precipitation (inches)	500- Year	100- Year	10- Year	2- Year
P (10 days)	4.68	3.9	2.76	1.97
P (6 hours)	2.78	2.17	1.4	0.92

Required Pond Volume (ac-ft)				
COA DPM	500 Year storm	100 Year storm	10 Year storm	2 Year storm
Equation 6.3	2.44	2.45	2.42	2.38
Equation 6.4	3.08	3.04	2.89	2.75
Equation 6.5	3.92	3.76	3.42	3.13

For 24-hour storms:  
EQUATION 6.3  $V_{1440} = V_{360} + A_D * (P_{1440} - P_{360}) / 12\ in/ft$

For 4-day storms:  
EQUATION 6.4  $V_{4DAYS} = V_{360} + A_D * (P_{4DAYS} - P_{360}) / 12\ in/ft$

For 10-day storms:  
EQUATION 6.5  $V_{10DAYS} = V_{360} + A_D * (P_{10DAYS} - P_{360}) / 12\ in/ft$

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1
										NOTATION
RAINFALL TYPE=13										RAIN24= 2.490
*S COMPUTE HYD BASIN P1										
COMPUTE NM HYD	101.00	-	1	0.00300	7.12	0.315	1.96892	1.500	3.706	PER IMP= 80.00
FINISH										



J90024

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# **Ladera Drive Improvements Gavin Road to Coors Boulevard**

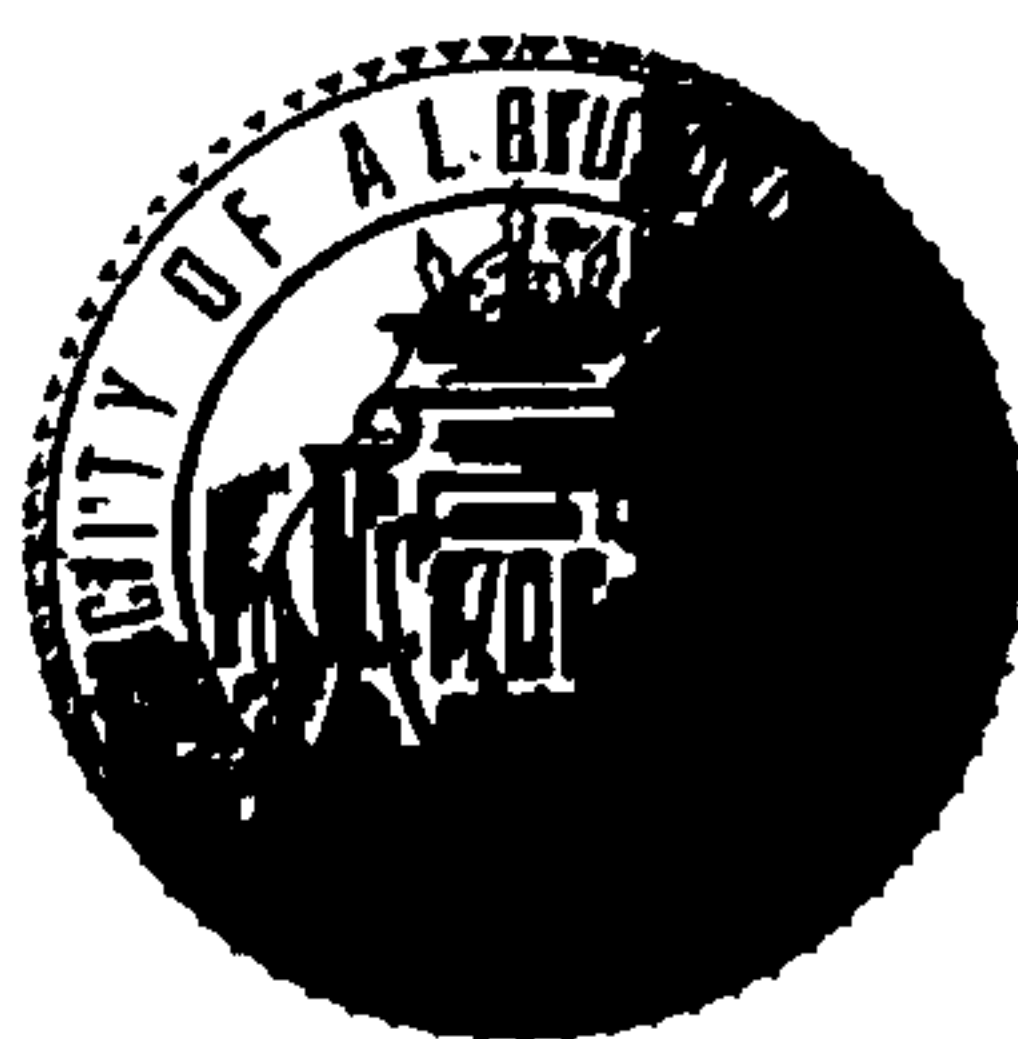
City of Albuquerque Project No. 6588.92

## **Drainage Analysis Memo**

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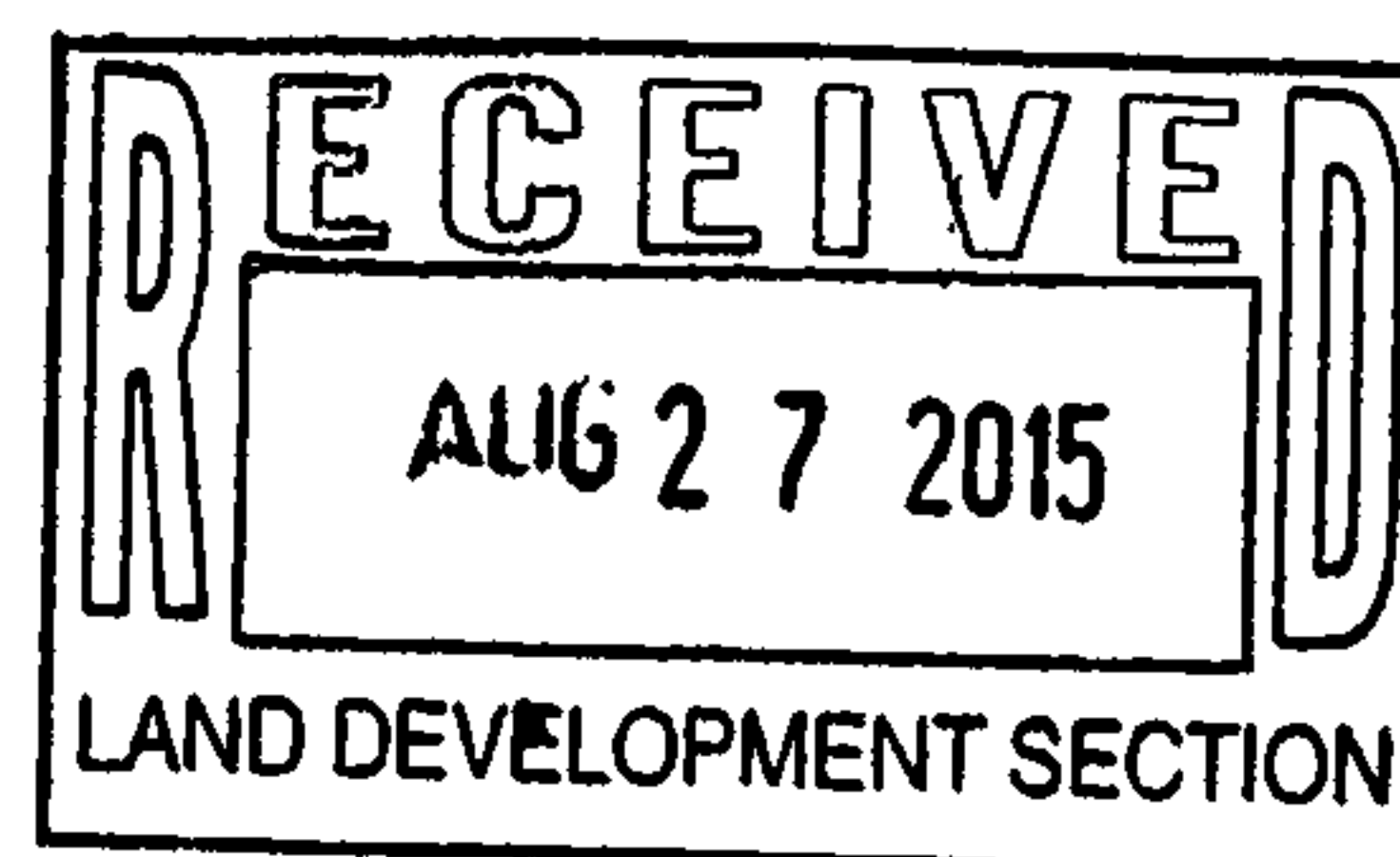
August 10, 2015

Prepared for:



Prepared by:

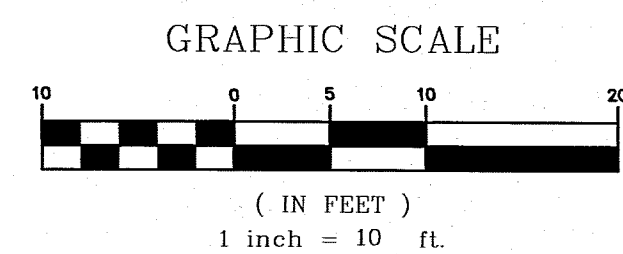
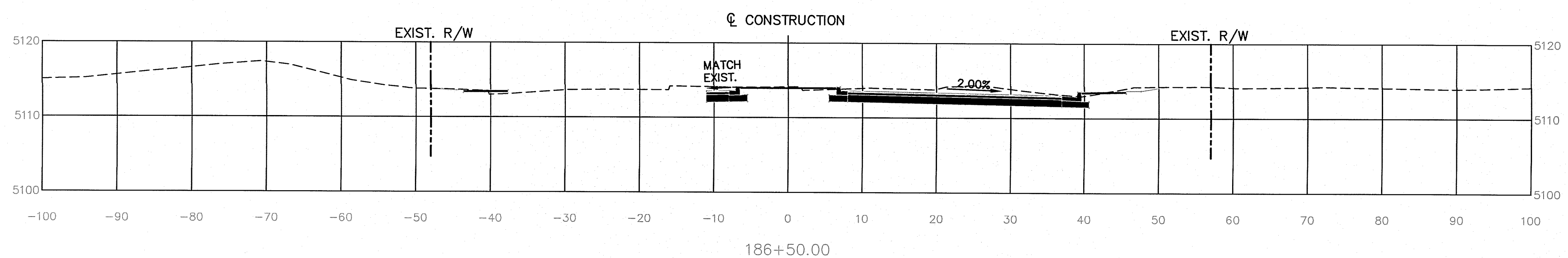
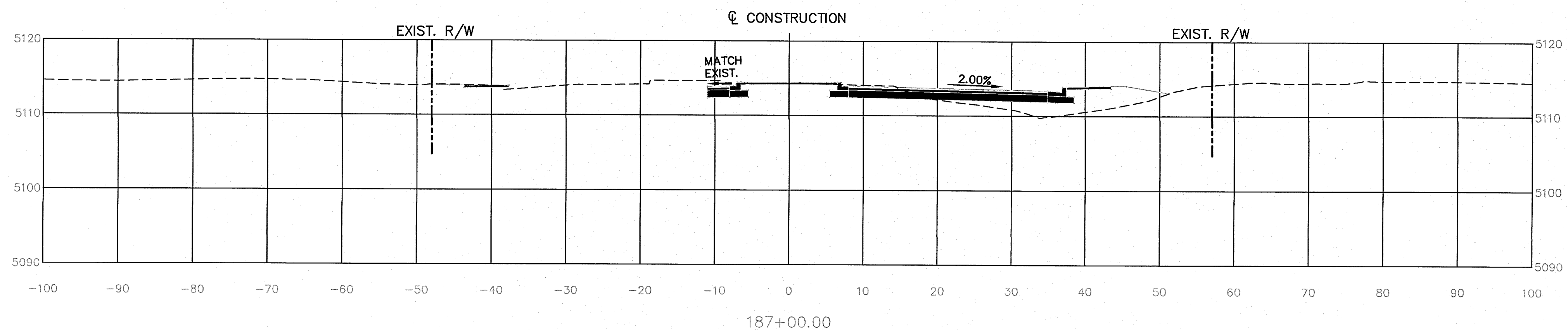
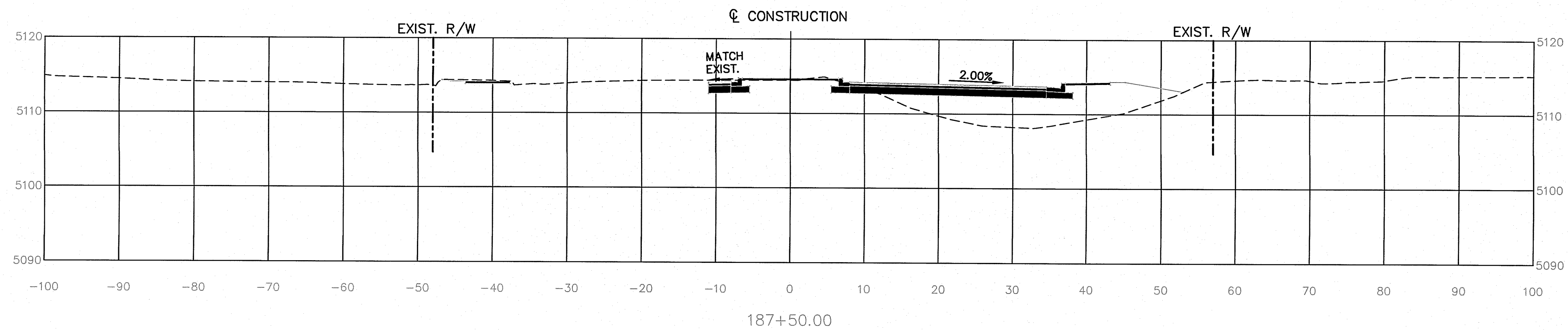
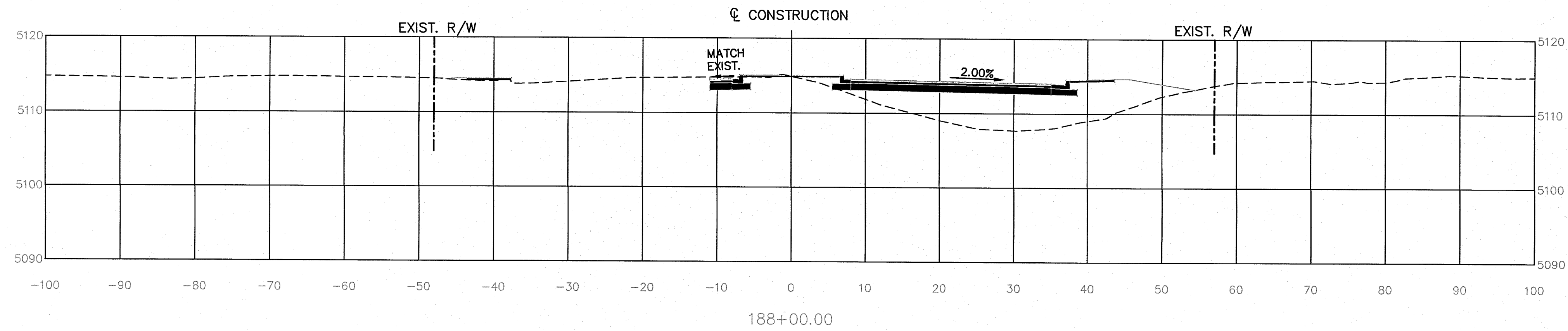
**PARSONS  
BRINCKERHOFF**





## **Table of Contents**

Table of Contents .....	ii
List of Tables .....	iii
List of Appendices .....	iii
Introduction .....	1
Literature Review .....	1
Existing Conditions .....	1
Gavin Road to Unser Boulevard .....	1
Unser Boulevard to Ouray Road .....	2
Ouray Road to Sequoia Road .....	2
Sequoia Road to Artrisco Drive .....	2
Atrisco Drive to Coors Boulevard .....	2
Off Site Drainage Facilities .....	3
Existing Drainage Issues .....	3
Hydrology .....	3
Criteria and Methodology .....	3
Drainage Basin and Land Use Maps .....	4
Results .....	5
Gavin Road to Atrisco Drive .....	5
Pond West of Gunnison Place .....	6
Pond East of Atrisco Drive .....	6
Hydraulics .....	8
Gavin Road to Atrisco Drive .....	8
Pond East of Atrisco Drive .....	8
Recommendations .....	8
Gavin Road to Atrisco Drive .....	8
Pond West of Gunnison Place .....	9
St. Joseph's Drive/Pond East of Atrisco Drive .....	9
Conclusion .....	10



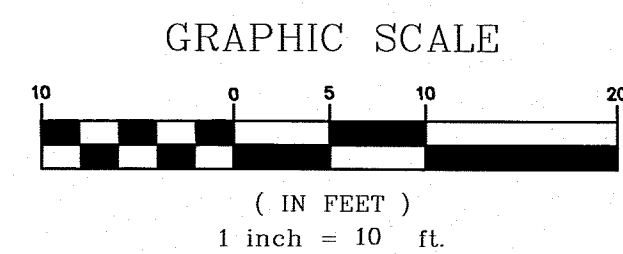
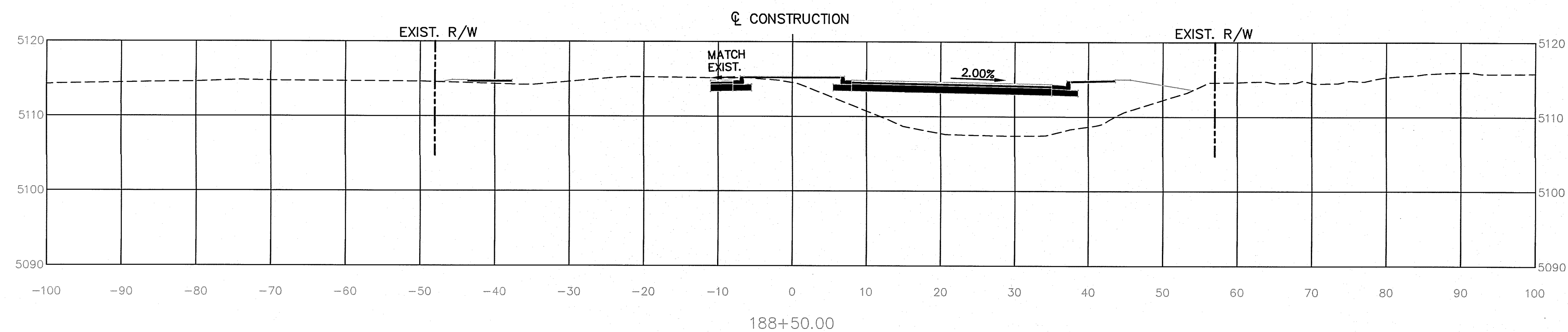
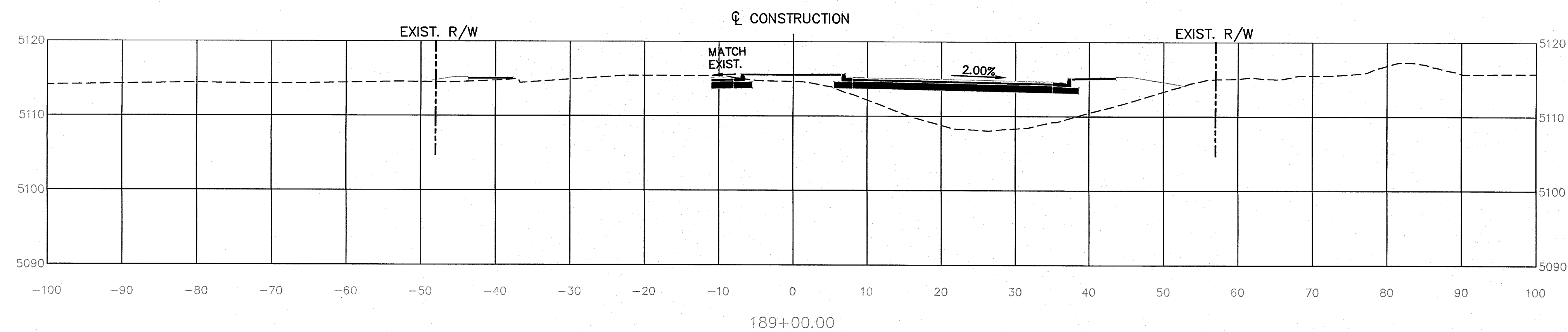
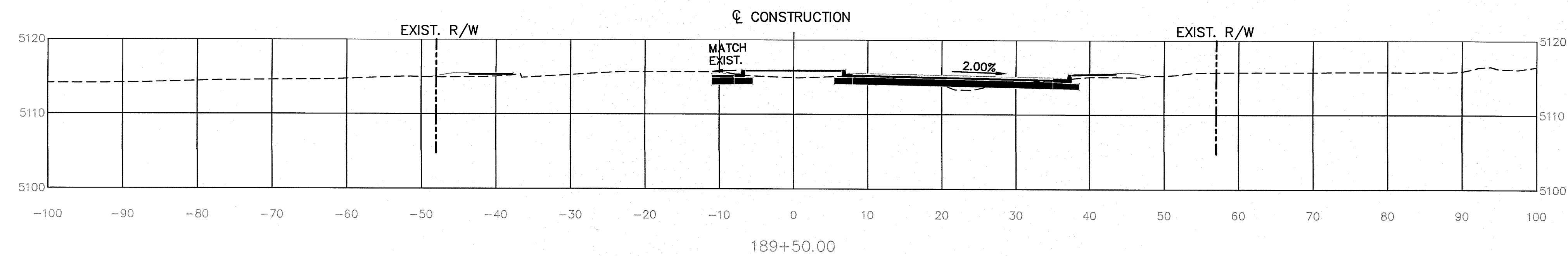
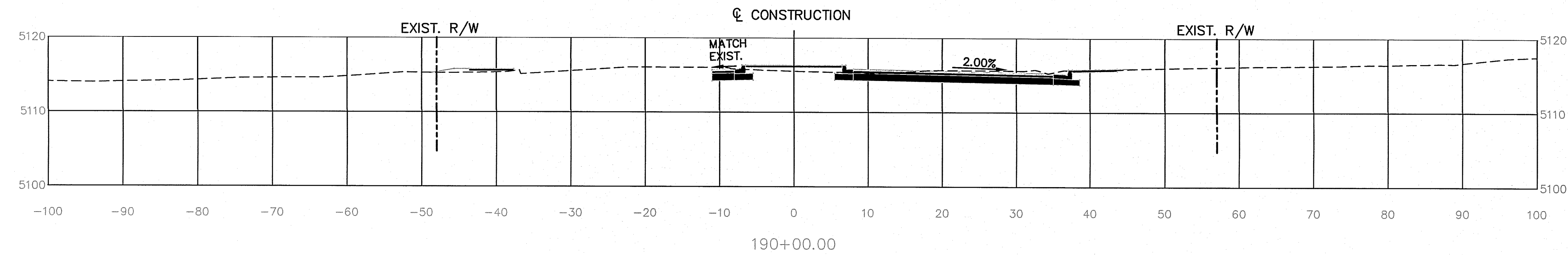
<b>PARSONS BRINCKERHOFF</b> CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION LADERA DRIVE IMPROVEMENTS LADERA DRIVE PHASE I CROSS SECTIONS - ATRISCO DR. TO COORS BLVD.	
DESIGN REVIEW COMMITTEE APPROVED APR 21 2016	CITY ENGINEER APPROVAL APPROVED APR 21 2016 CITY ENGINEER
City Project No. 6588.92	Zone Map No. G10,G11,H9-H11,J9
Sheet 115 of 119	MO./DAY/YR. MO./DAY/YR.

RECORD DRAWING

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RECORD DRAWING

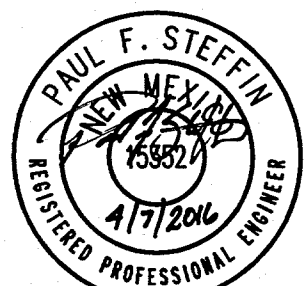




<b>PARSONS BRINCKERHOFF</b> 	
CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION LADERA DRIVE IMPROVEMENTS LADERA DRIVE PHASE I CROSS SECTIONS - ATRISCO DR. TO COORS BLVD.	
DESIGN REVIEW COMMITTEE APPROVED APR 21 2016 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APR 21 2016 CITY ENGINEER
City Project No. 6588.92	Zone Map No. G10,G11,H9-H11,J9
Sheet 116 of 119	MO./DAY/YR. MO./DAY/YR.

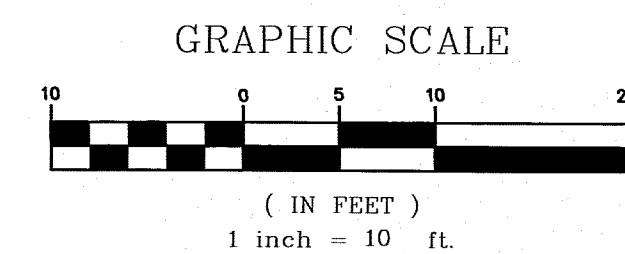
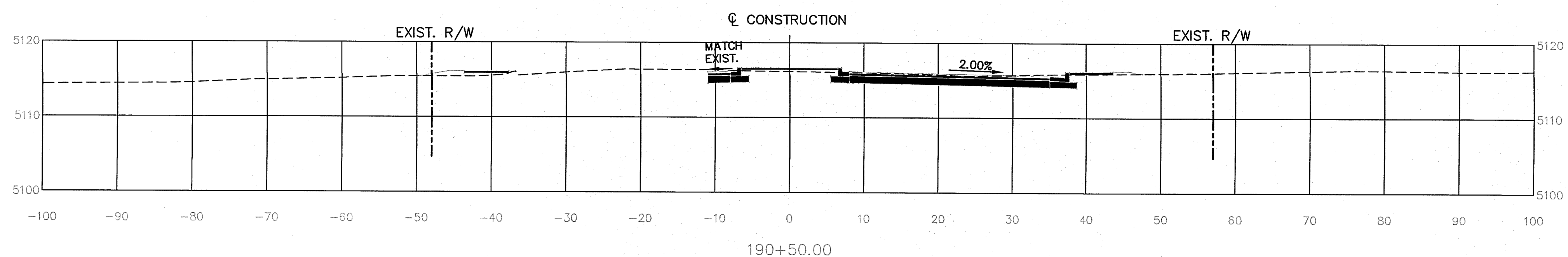
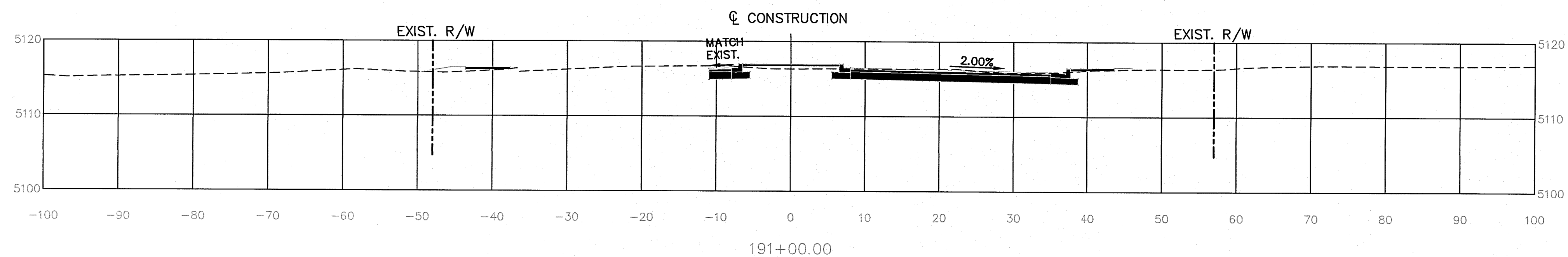
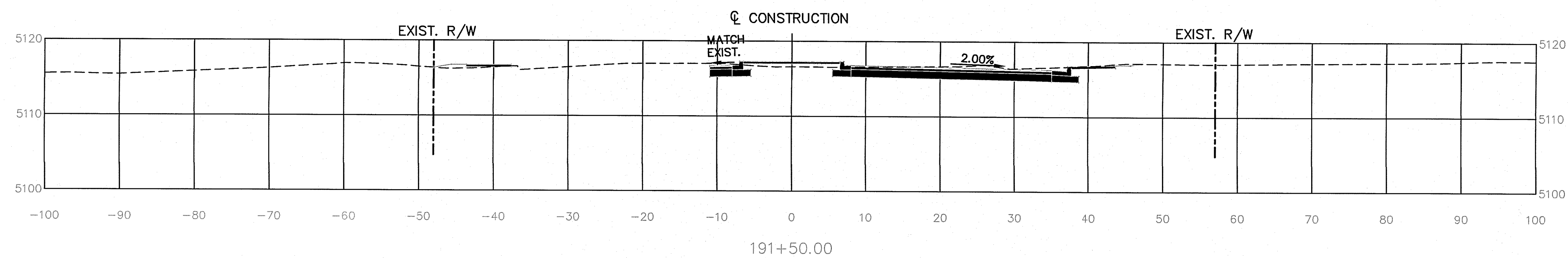
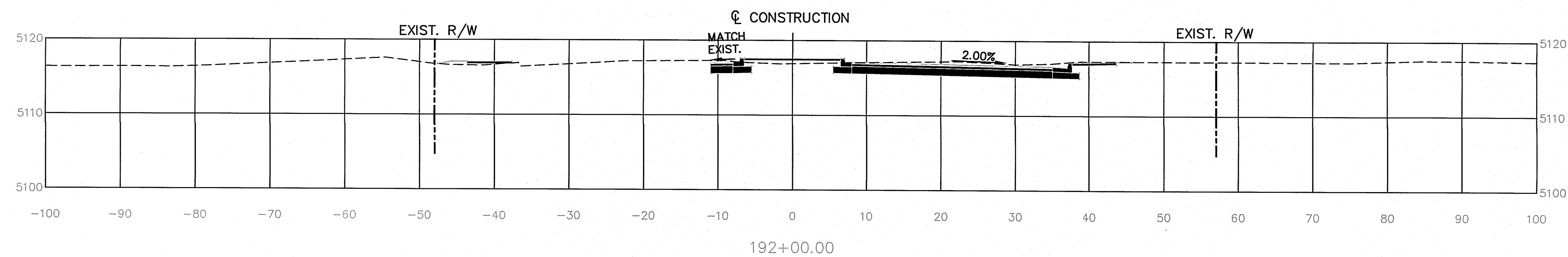
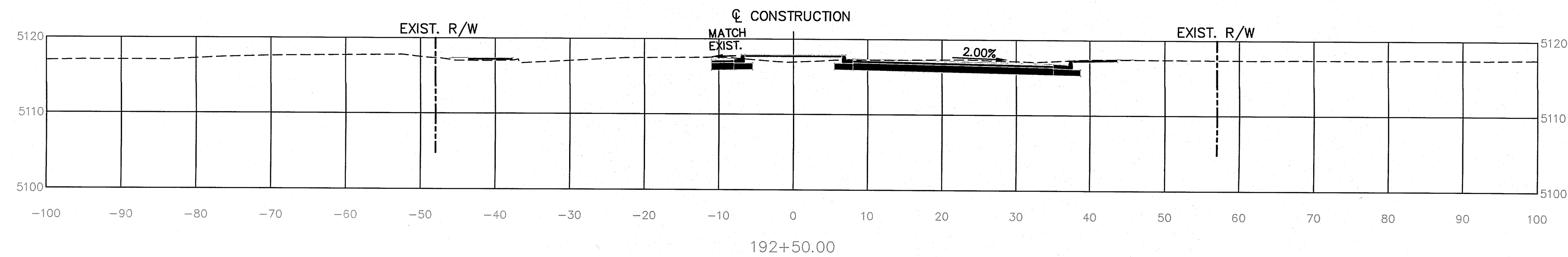
RECORD DRAWING


SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION	
NO.	BY	DATE	CONTRACTOR	WORK	DATE
			COA GEODETIC CONTROL STATION "3-H10"	CONTRACTOR	DATE
			BRASS DISC SET FLUSH IN CONCRETE AT THE	INSPECTOR'S	DATE
			INTERSECTION OF ON THE NORTHEAST OF THE	ACCEPTANCE BY	DATE
			UNSER BLVD. AND LADERA DR. INTERSECTION.	VERIFICATION BY	DATE
			NW STATE PLANE COORDS. (NAD 83)	DRAWN BY	DATE
			N=1493985.681	MICRO-FILM INFORMATION	
			E=1497135.488	RECORDED BY	DATE
			NAVD 88 ELEV. = 5196.151	NO.	



RECORD DRAWING

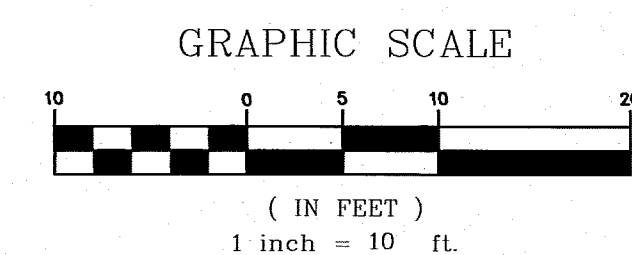
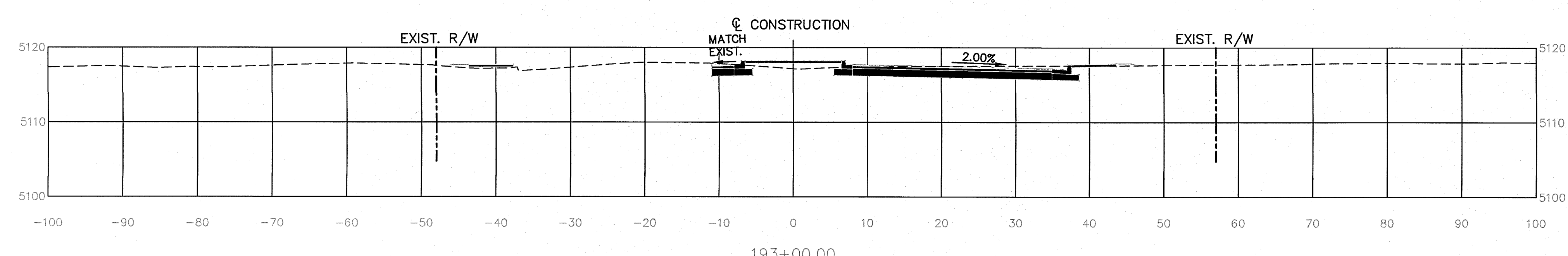
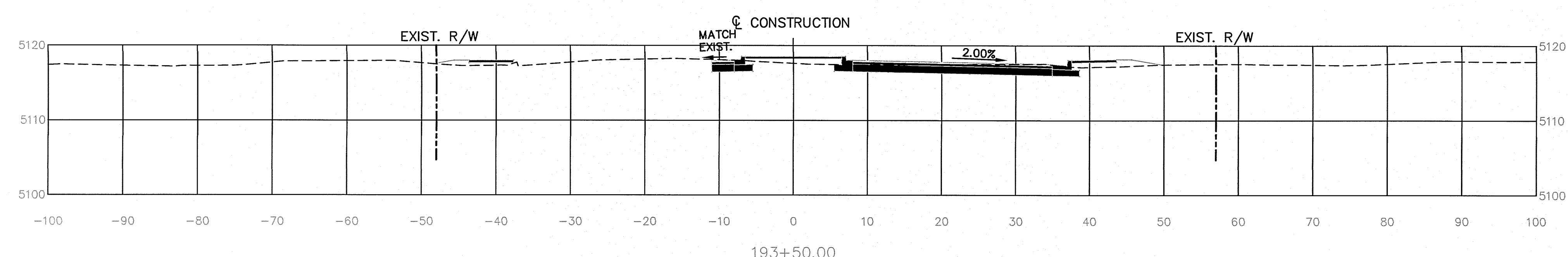
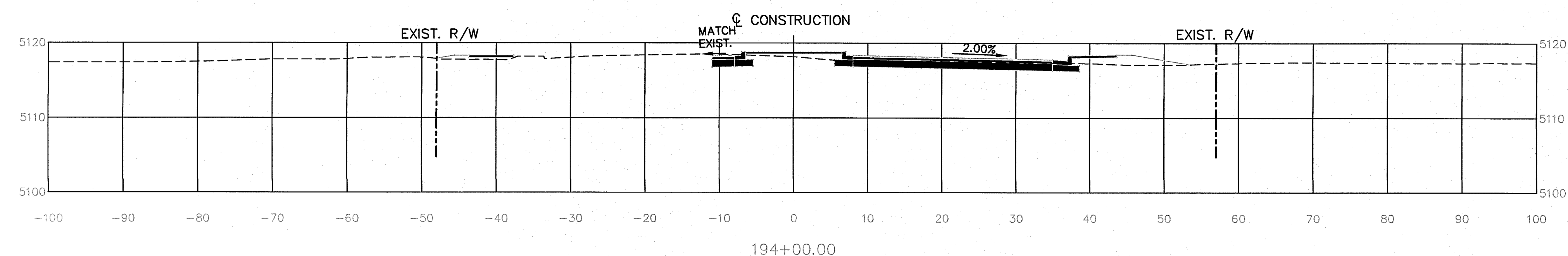
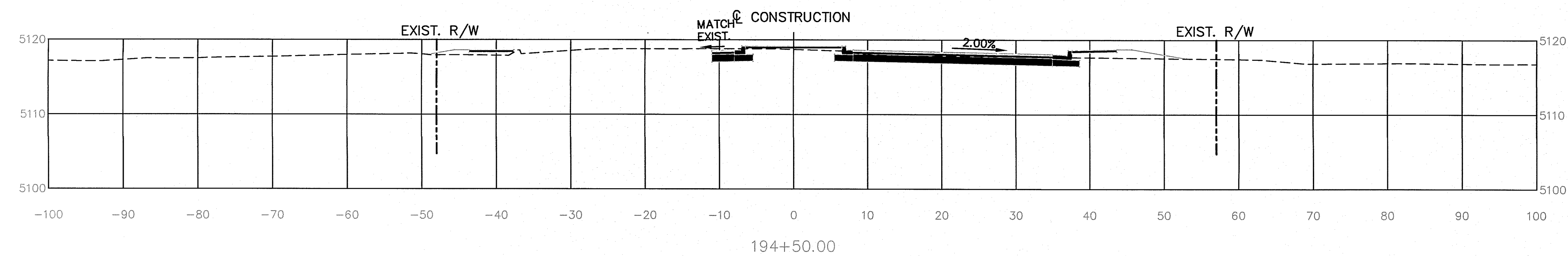
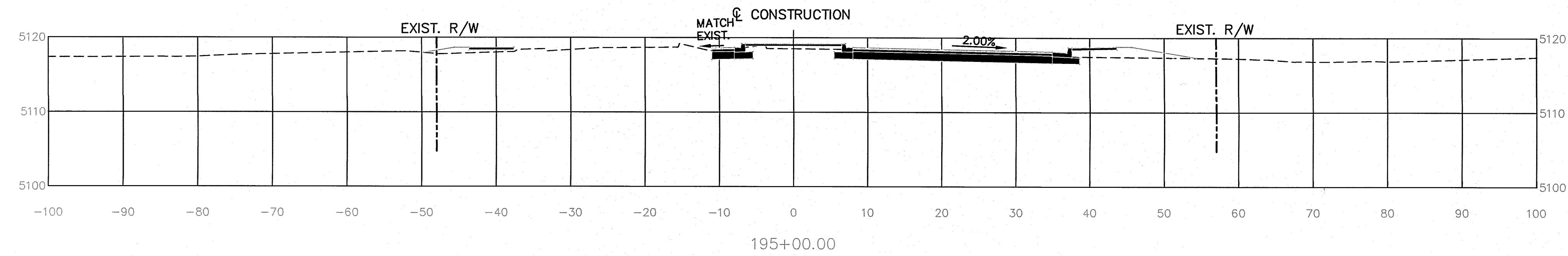


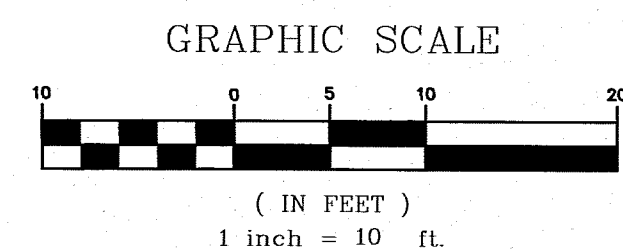
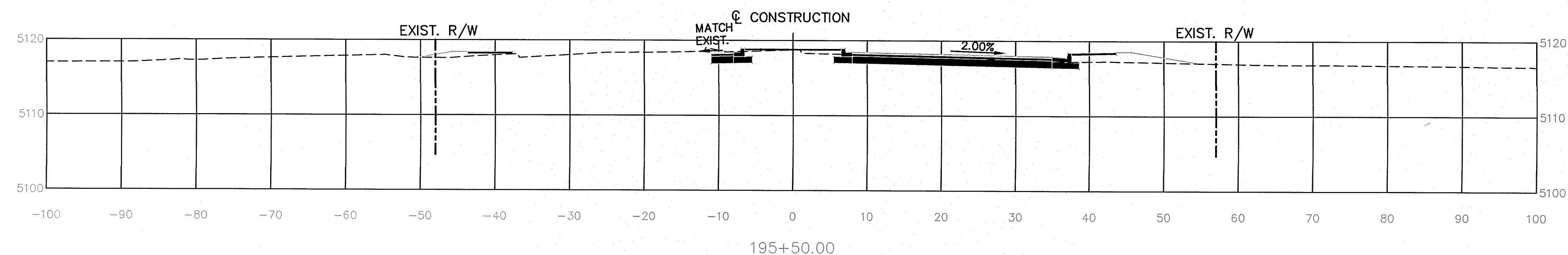
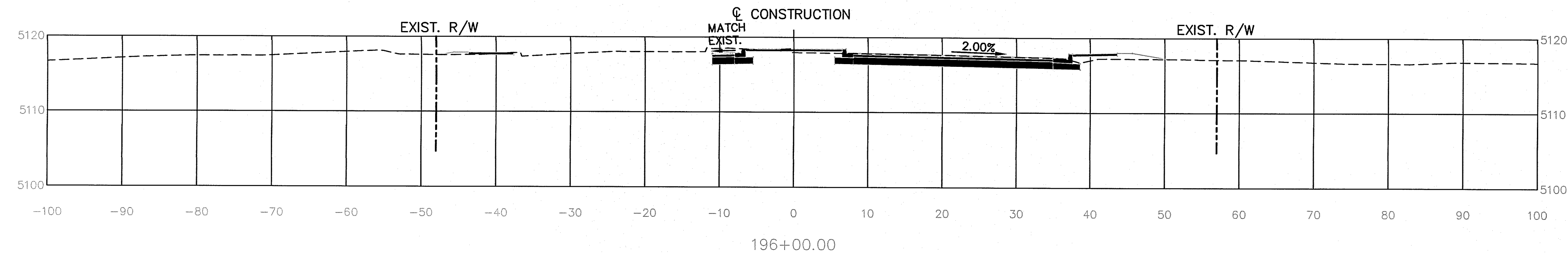


<b><i>PARSONS BRINCKERHOFF</i></b>											NO.	DESIGN	DRAWN	CHECKED	
	CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION LADERA DRIVE IMPROVEMENTS LADERA DRIVE PHASE I CROSS SECTIONS - ATRISCO DR. TO COORS BLVD.														
	DESIGN REVIEW COMMITTEE <b>APPROVED</b> APR 21 2016 DESIGN REVIEW COMMITTEE		CITY ENGINEER APPROVAL <b>APPROVED</b> APR 21 2016 CITY ENGINEER		MO./DAY/YR.			MO./DAY/YR.							
City Project No. 6588.92					Zone Map No. G10,G11,H9-H11,J9					Sheet 117 of 119					

RECORD DRAWING

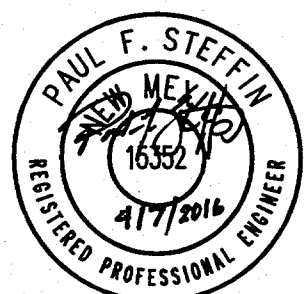






<b>PARSONS BRINCKERHOFF</b>	
CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION LADERA DRIVE IMPROVEMENTS LADERA DRIVE PHASE I CROSS SECTIONS - ATRISCO DR. TO COORS BLVD.	
DESIGN REVIEW COMMITTEE <b>APPROVED</b> APR 21 2016 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL <b>APPROVED</b> APR 21 2016 CITY ENGINEER
City Project No. 6588.92	Zone Map No. G10,G11,H9-H11,J9
Sheet 119 of 119	

RECORD DRAWING

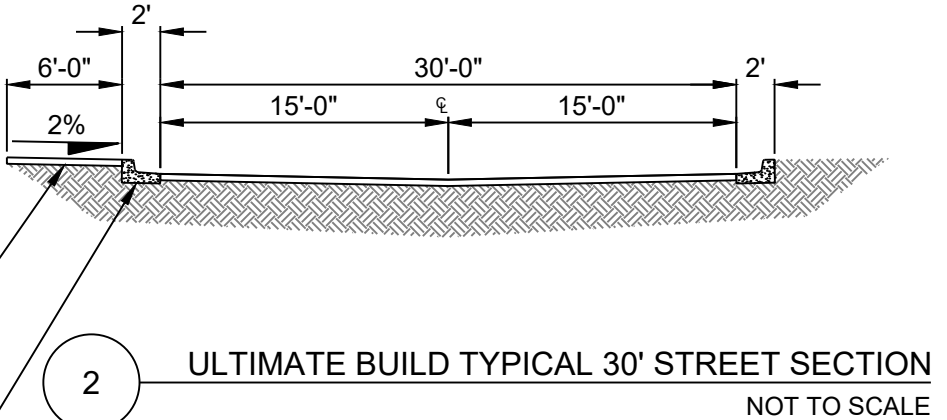
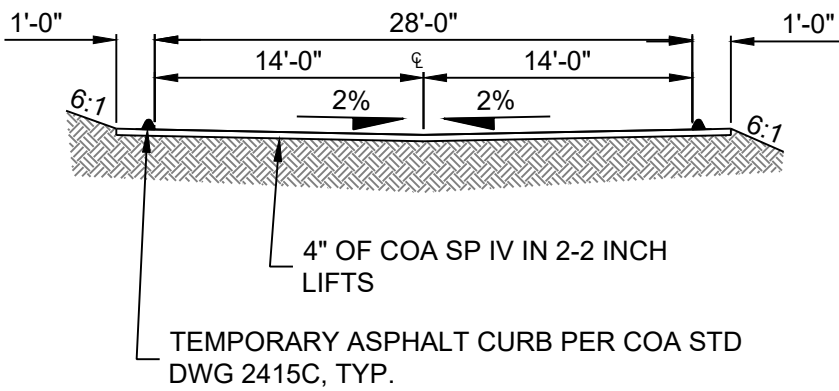


ENGINEER'S SEAL		SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION	
NO.	BY	DATE	FIELD NOTES	NO.	DATE	CONTRACTOR	DATE
						WORK DONE BY	DATE
						INSPECTOR'S ACCEPTANCE BY	DATE
						INTERSECTION OF ON THE NORTHEAST OF THE	DATE
						UNSER BLVD. AND LADERA DR. INTERSECTION.	DATE
						NW STATE PLANE COORDS. (NAD 83)	DATE
						N=1493985.681	DATE
						E=1497135.488	DATE
						NAVD 88 ELEV. = 5196.151	DATE

RECORD DRAWING



NAME: N:\Projects\W0007 Skarsgard\W0007 0004 Skarsgard\Oxbow Center\3 CAD\Onsite Design\Onsite Plans\W0007 0004 Onsite Overall Paving Plan.dwg Plotted: Jan 12, 2024 10:53am LSB: John Stapleton



DEFERRED CONCRETE SIDEWALKS WHERE SHOWN PER PLAN, TO BE INSTALLED BY END USERS OF EACH LOT.

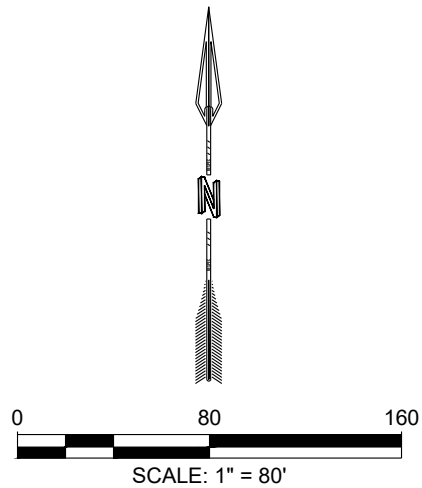
6" DEPRESSED CURB AND GUTTER PER COA STD DWG 2415A TO BE INSTALLED BY END USERS OF EACH LOT, TYP.

#### LEGEND

EXTENTS OF NEW PAVEMENT

CROWN HATCH TRANSITION

NOTE: OFFSITE IMPROVEMENTS ON ST JOSEPHS DRIVE AND COORS BLVD, WHERE SHOWN, ARE SHOWN CONCEPTUALLY. THE OFFSITE IMPROVEMENTS ARE TO BE DESIGNED AND CONSTRUCTED UNDER SEPARATE PLANS AND PERMIT.



City of Albuquerque  
Planning Department  
Development Review Services  
HYDROLOGY SECTION  
**APPROVED**  
DATE: 01/26/24  
BY: *Randy C. Brissett*  
HydroTrans #: G11D067

THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE  
CONSIDERED TO BE A GUARANTEE OF THE CITY OF  
ALBUQUERQUE. THE CITY OF ALBUQUERQUE SHALL NOT BE  
RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSONS OR  
PROPERTY, OR FOR ANY CONSTRUCTION, OR FOR ANY  
VIOLATION OF ANY LAW, OR FOR ANY OTHER  
CONSEQUENCES, OR FOR ANY OTHER  
REASON, ARISING OUT OF OR IN CONNECTION WITH  
THESE PLANS/REPORT.

APPROVAL OF GRADING & DRAINAGE PLAN(S) SHALL EXPIRE  
TWO (2) YEARS AFTER THE APPROVAL DATE BY THE CITY IF NO  
BUILDING PERMIT HAS BEEN PULLED ON THE DEVELOPMENT.

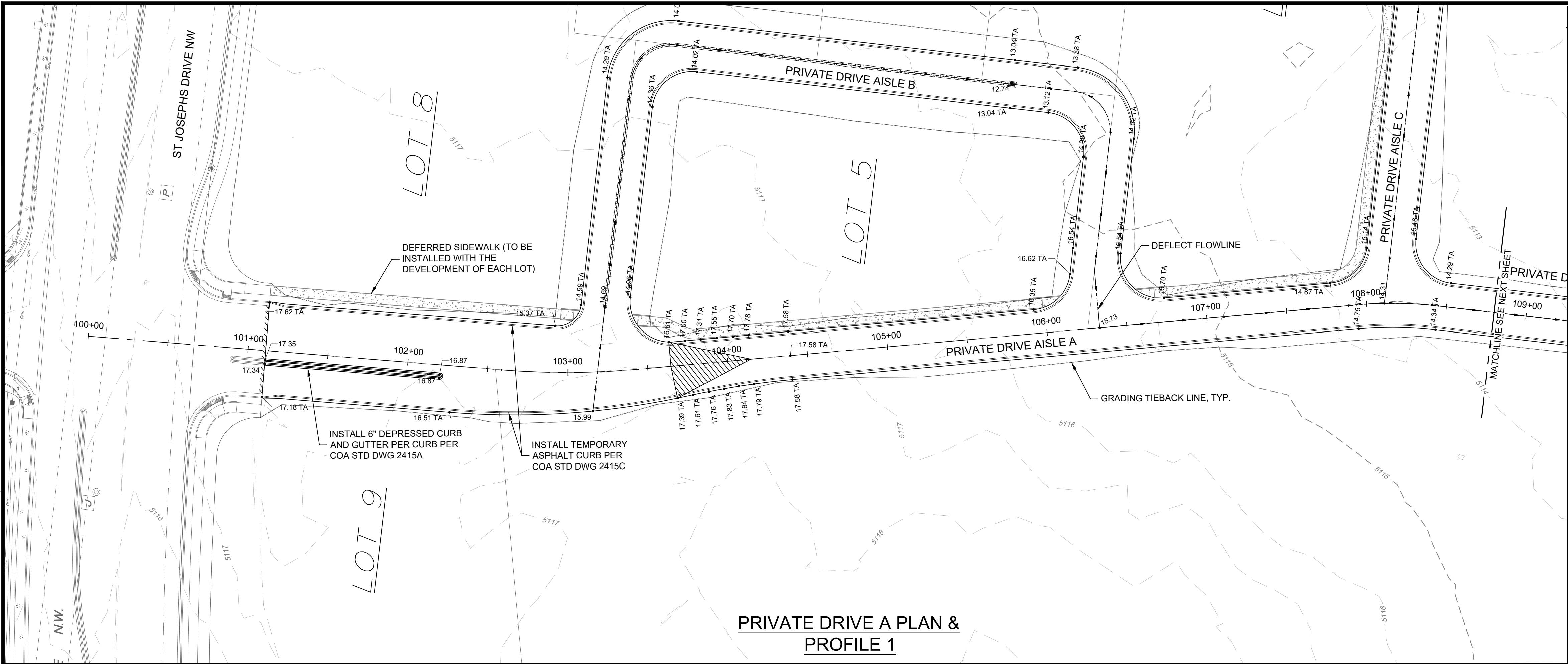
**RESPEC**  
COMMUNITY DESIGN SOLUTIONS  
7770 JEFFERSON STREET SUITE 200  
ALBUQUERQUE, NEW MEXICO 87109  
WWW.RESPEC.COM PHONE: (505)253-9718

CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION	
TITLE OVERALL PAVING AND GRADING PLAN	
Design Review Committee	City Engineer Approval
Last Design Update	
Project No. CPN: 622386	Zone Map No. G-11-Z
Sheet 6	of 23

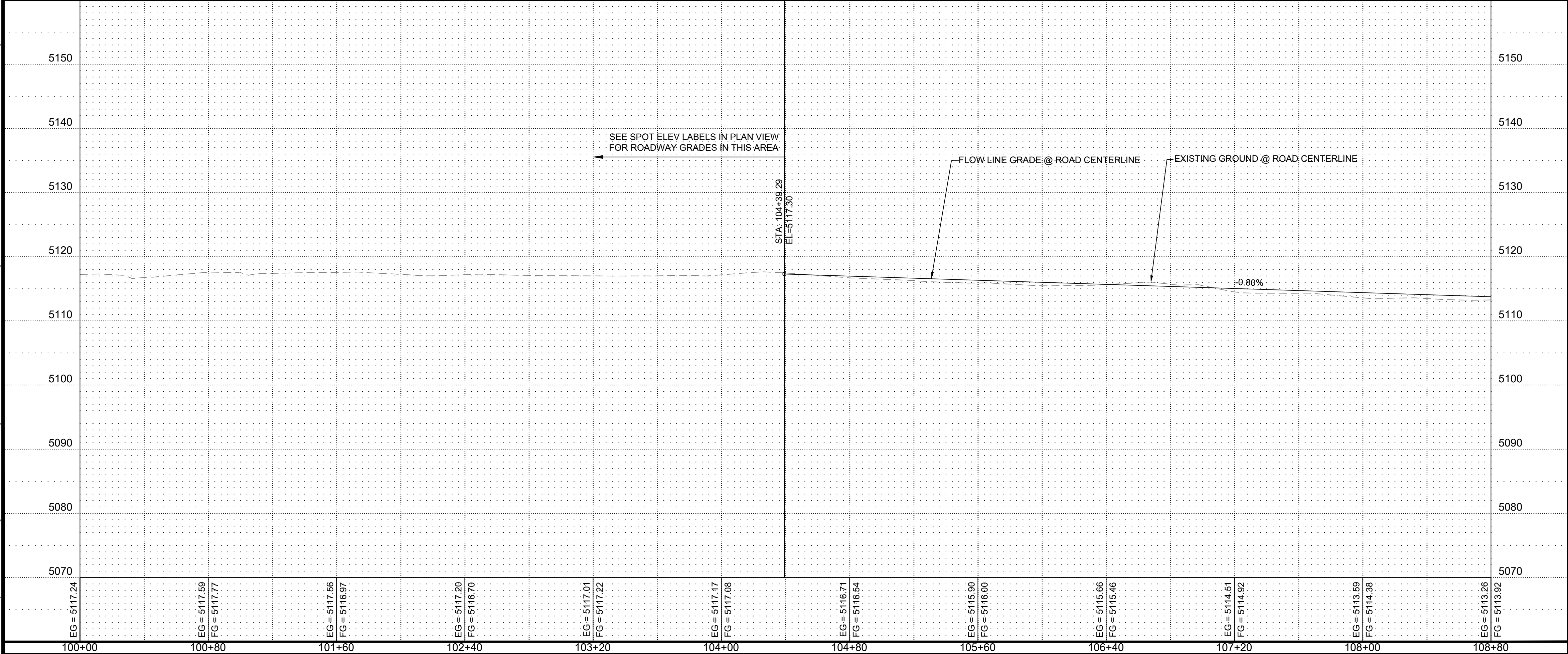
SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION	
NO.	DATE	ALBUQUERQUE CONTROL SURVEY	CONTRACTOR	DATE	DATE
		MONUMENT "8-G11" NEW MEXICO STATE	INSPECTORS	DATE	DATE
		PLANE COORDINATES (CENTRAL ZONE -	FIELD	DATE	DATE
		NAD 83)	REVISIONS	DATE	DATE
		NORTH= 1,502,236.625	REVISIONS	DATE	DATE
		EAST= 1,505,431.887	REVISIONS	DATE	DATE
		MAPPING ANGLE= -00°15'35.17"	REVISIONS	DATE	DATE
		GROUND TO GRID FACTOR= 0.99680082	REVISIONS	DATE	DATE
		ELEVATION= 5116.009' (NAVD83)	REVISIONS	DATE	DATE



NAME: N:\Projects\W0007 Skatsgard\W0007 0004 Skatsgard\Oxbow Center\3 CAD\Onsite Design\Onsite Plans\W0007 0004 Onsite Road P&P - 01.dwg PLOT DATE: Jan 12, 2024 10:53am LSB: John Stapleton



PRIVATE DRIVE A PLAN & PROFILE 1



GENERAL NOTES

1. FOR CENTERLINE ALIGNMENT AND CENTERLINE TABLES, SEE SHEET 7.

LEGEND

TOP OF ASPHALT ELEVATION 39.85 TA

FLOWLINE ELEVATION 39.85

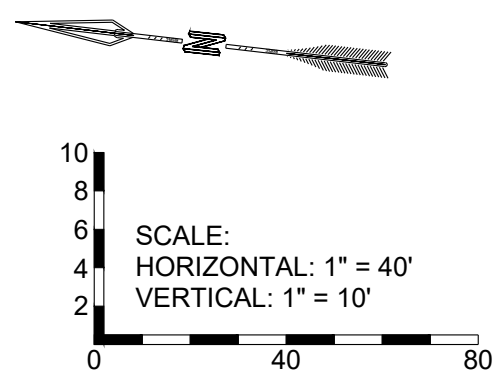
MATCH NEW ASPHALT PAVEMENT TO EXISTING ASPHALT PAVEMENT

CROWN TRANSITION


FLOWLINE OF INVERTED CROWN



APPROVAL OF GRADING & DRAINAGE PLAN(S) SHALL EXPIRE TWO (2) YEARS AFTER THE APPROVAL DATE BY THE CITY IF NO BUILDING PERMIT HAS BEEN PULLED ON THE DEVELOPMENT.



CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION	
TITLE PRIVATE DRIVE A PLAN & PROFILE 1	
Design Review Committee	City Engineer Approval
Last Design Update	
Project No. CPN: 622386	Zone Map No. G-11-Z
Sheet 8	of 23

ENGINEER'S SEAL			SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION			
<div></div>			FIELD NOTES							
			NO.	BY	DATE					
			REMARKS							
			BY							
			NO.		DATE					
			REVISIONS							
			RESPEC DESIGN							
			DESIGNED BY: XXX		DATE: Jan 2024					
			DRAWN BY: XXX		DATE: Jan 2024					
			CHECKED BY: XXX							
			DATE: Jan 2024							

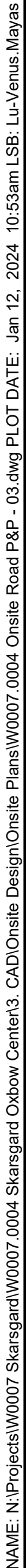


NAME: N:\Projects\W0007 Skarsgard\W0007.0004 Skarsgard Oxbow Center\3. CAD\Onsite Design\Onsite Plans\W0007.0004 Onsite Road P&P - 01.dwg PLOT DATE: Jan 12, 2024 10:53am LSB: John.Stapleton









*THE ENCLAVE AT OXBOW*

1. FOR CENTERLINE ALIGNMENT AND CENTERLINE TABLES, SEE SHEET 7.

TOP OF ASPHALT ELEVATION

FLOWLINE ELEVATION

MATCH NEW ASPHALT PAVEMENT TO EXISTING  
ASPHALT PAVEMENT

## CROWN TRANSITION

### FLOWLINE OF INVERTED CROWN

39.85 TA

39.85

---



---

BENCH N	ALBUQUERQUE CONTOUR MONUMENT "SMW-16" NE STATE PLANE COORDINATES (ZONE - NAD 83)	NORTH= 1,549,824.466 EAST= 1,523,348.161 MAPPING ANGLE= -00°10'10" GROUND TO GRID FACTOR/ELEVATION= 5454.721'
---------	--	---

INFORMATION  
NOTES

BY	DATE



— 100 —

City of Albuquerque  
Planning Department  
Development Review Services  
**APPROVED**  
DATE: 01/26/24  
BY: *Renee C Brissett*  
HydroTeam # G11D067

THE APPROVAL OF THESE PLANS/PERMIT SHALL NOT BE  
CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY  
ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT  
THE CITY OF ALBUQUERQUE FROM INITIATING  
COLLECTION, OR ENFORCE OR DEMONSTRATE IN ANY  
SPECIFIC ACTION, OR CONSIDERATION OF ANY APPROVED PLANS  
SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT  
AUTHORIZATION.

APPROVAL OF GRADING & DRAINAGE PLAN(S) SHALL EXPIRE TWO (2) YEARS AFTER THE APPROVAL DATE BY THE CITY IF NO BUILDING PERMIT HAS BEEN PULLED ON THE DEVELOPMENT.

SCALE:  
HORIZONTAL: 1" = 40'  
VERTICAL: 1" = 10'

**RESPEC**  
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ALBUQUE  
RQUE**

CITY OF ALBUQUERQUE  
DEPARTMENT OF MUNICIPAL DEVELOPMENT  
ENGINEERING DIVISION

TITLE  
PRIVATE DRIVE C PLAN & PROFILE

Design Review Committee

City Engineer Approval

## Last Design Update

Mo./Day/Y

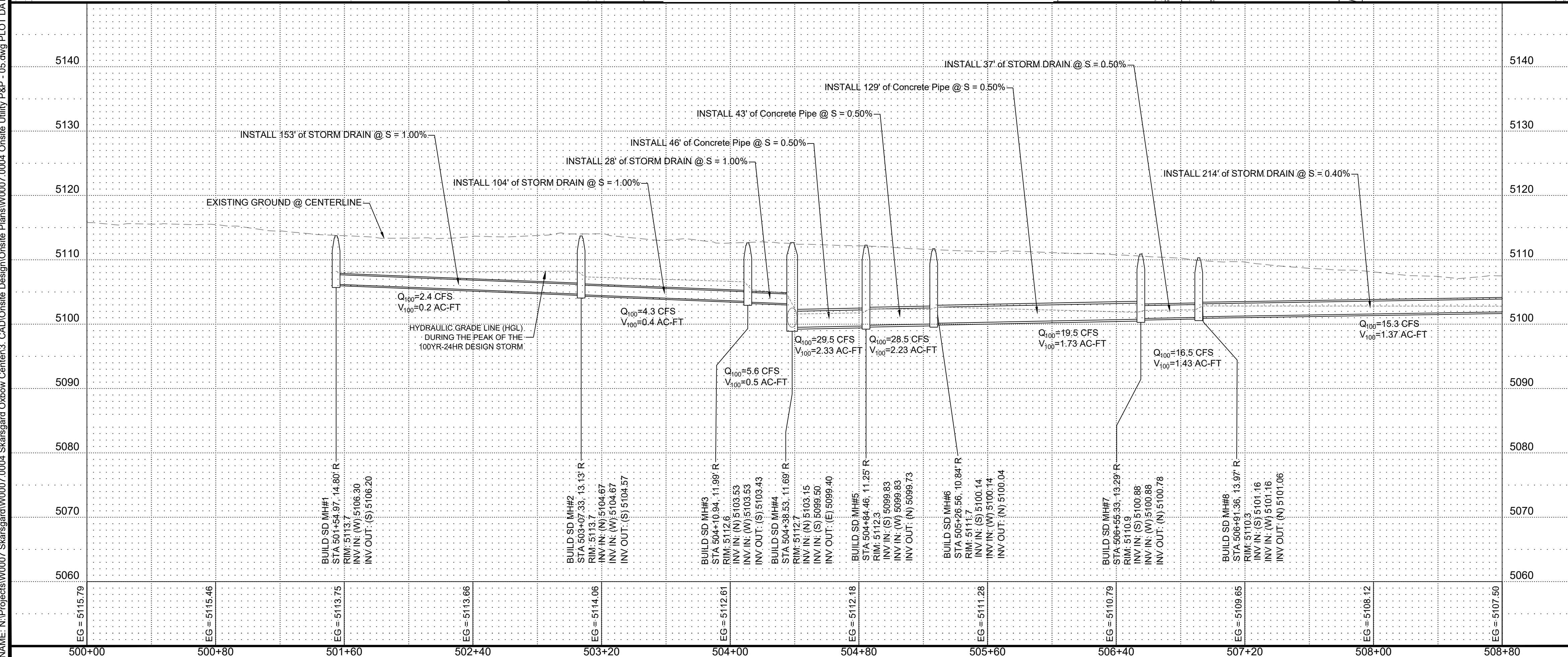
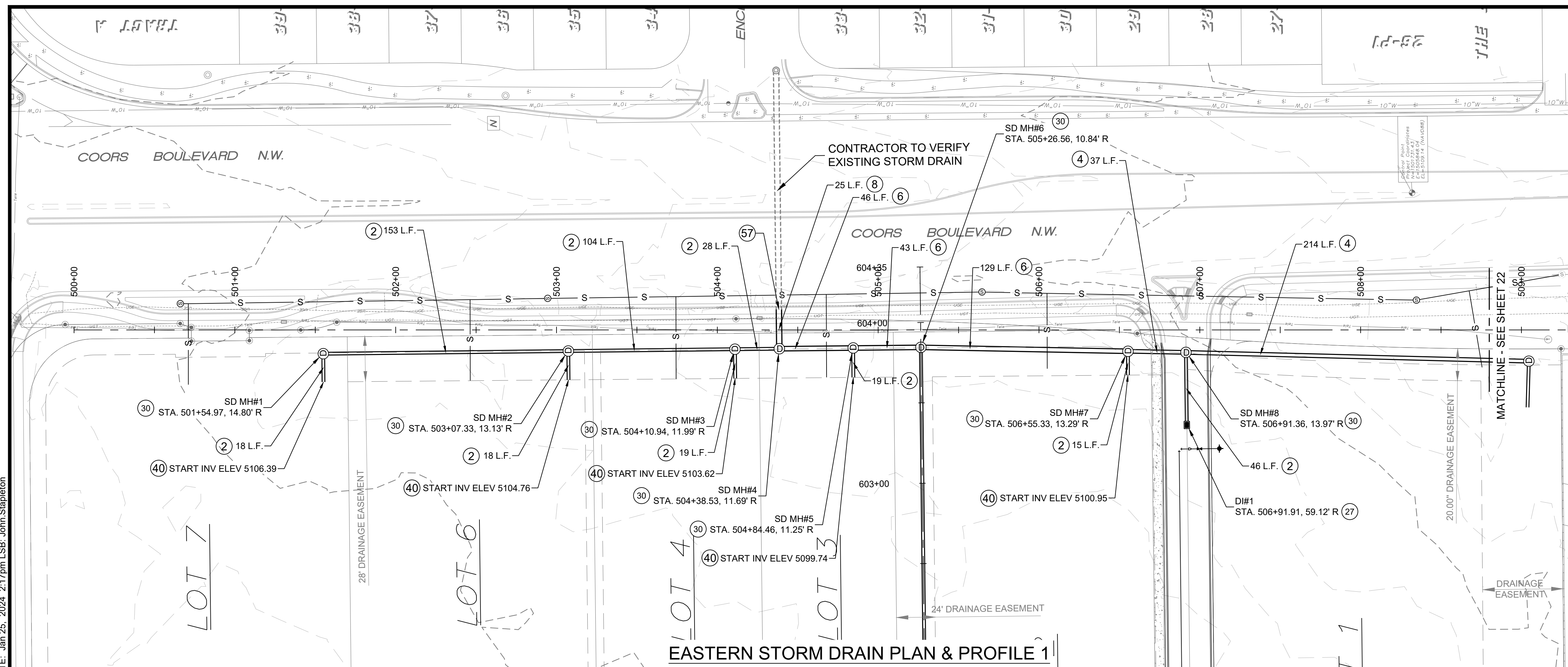
Mo./Day/Yr

Project No. CPN: 622386

Zone Map No.  
G-11-7












Sheet 11 of 23





City of Albuquerque Planning Department Development Review Services <b>HYDROLOGY SECTION</b>	
<b>APPROVED</b>	
DATE:	01/26/24
BY:	<i>Renee A. Brizzotti</i>
HydroTrans #	G11D067
<p>THE APPROVAL OF THESE PLANS/PERMIT SHALL NOT BE CONSIDERED AN ENDORSEMENT OR GUARANTEE OF ANY CITY OF ALBUQUERQUE PROJECT OR THE ACCURACY OF ANY CITY OF ALBUQUERQUE DATA OR INFORMATION. THE CITY OF ALBUQUERQUE DOES NOT WARRANT OR REPRESENT THAT ANY DETERMINATION OR ENDORSEMENT OF ANY CITY OF ALBUQUERQUE PROJECT OR DATA OR INFORMATION SHALL NOT BE CHANGED WITHOUT AN ALTERED WRITTEN AUTHORIZATION.</p>	
<p>APPROVAL OF GRADING &amp; DRAINAGE PLANS SHALL EXPIRE TWO (2) YEARS AFTER THE APPROVAL DATE BY THE CITY IF NO BUILDING PERMIT HAS BEEN PULED ON THE DEVELOPMENT.</p>	

LEGEND

WATERLINE		W	
SANITARY SEWER LINE		S	
STORM DRAIN LINE			
WATER VALVE			
REDUCER			
FIRE HYDRANT			
SAS MANHOLE			
SD MANHOLE			

SCALE:  
HORIZONTAL: 1" = 40'  
VERTICAL: 1" = 10'

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CITY OF ALBUQUERQUE

DEPARTMENT OF MUNICIPAL DEVELOPMENT

ENGINEERING DIVISION

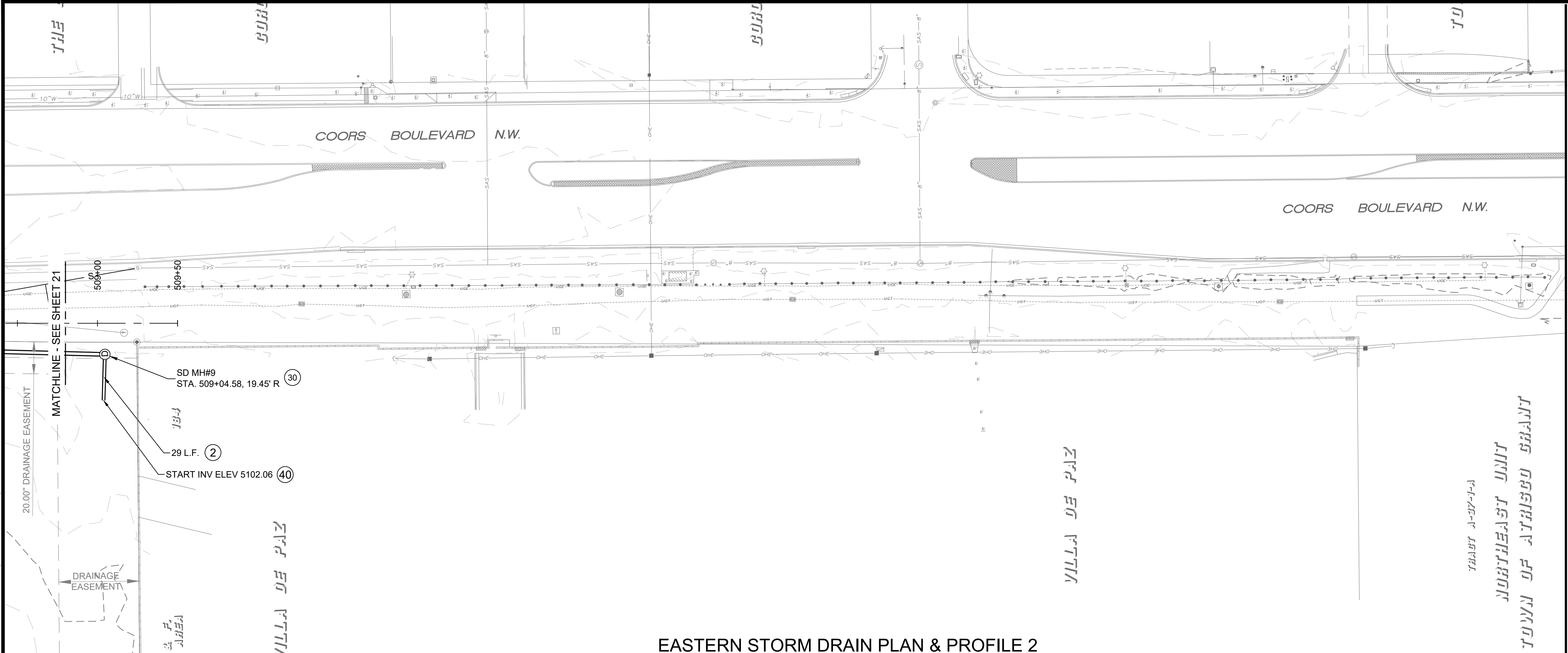
Page 1 of 1

TITLE  
EASTERN STORM DRAIN PLAN & PROFILE 1

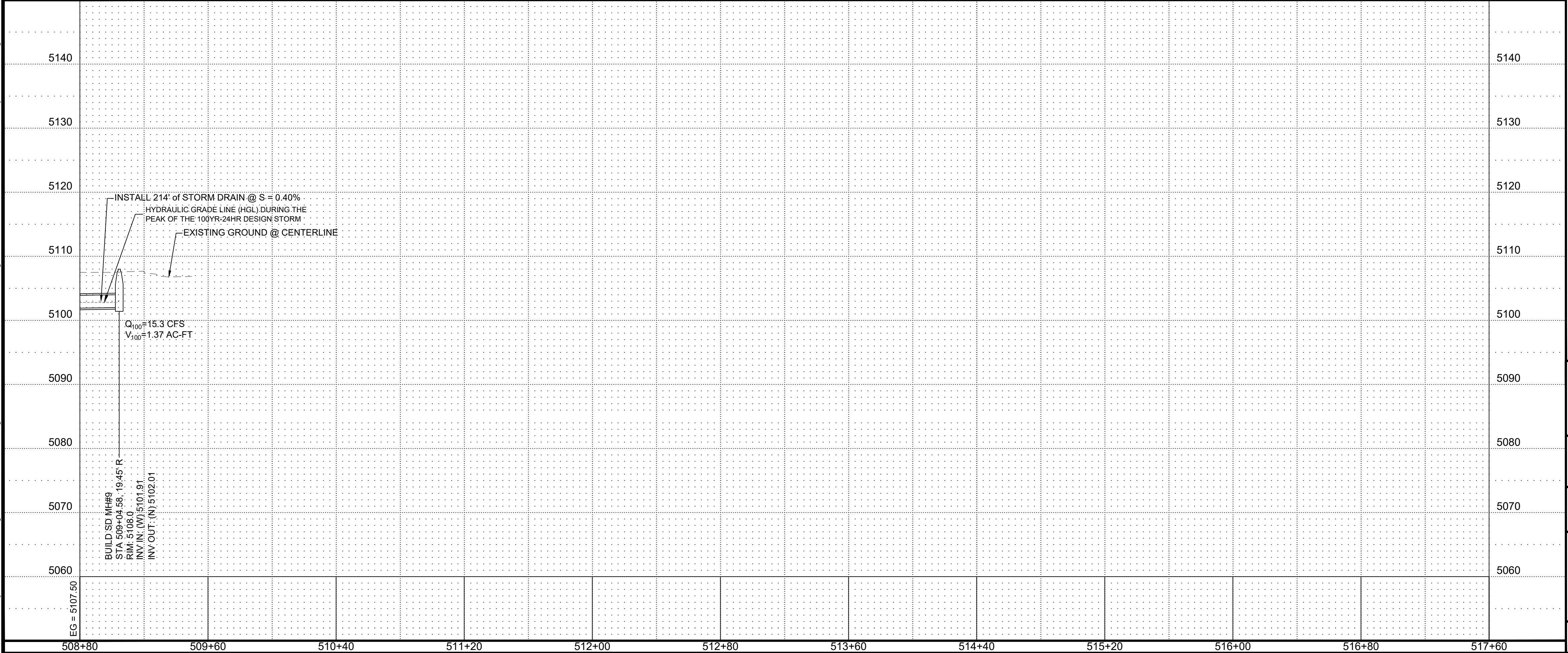
Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
Project No. CPN: 622386		Zone Map No. G-11-Z	Sheet 21 of 23	



NAME: N:\Projects\W007 Skatsgard\W007 0004 Skatsgard Oxbow Center\3 CAD\Onsite Design\Onsite Plans\W007 0004 Onsite Utility P&P - 05.dwg PLOT DATE: Jan 25, 2024 2:17pm LSB: John Stapleton



EASTERN STORM DRAIN PLAN & PROFILE 2



STORM DRAIN CONSTRUCTION NOTES

I.D.#	DESCRIPTION
2	INSTALL 18" HDPE STORM DRAIN PIPE
30	INSTALL 4' DIA. MANHOLE PER NM APWA STD. DTL. 2101
40	INSTALL 18" STORM DRAIN PLUG

City of Albuquerque  
Planning Department  
Development Review Services  
**HYDROLOGY SECTION**  
**APPROVED**  
DATE: 01/26/24  
BY: *Rene E. Bruneau*  
HydroTrans # G11D067

THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE  
CONSIDERED TO BE A GUARANTEE OF THE ACCURACY OF THE  
INFORMATION OR DATA PROVIDED HEREON. THE CITY OF ALBUQUERQUE  
SPECIFICATIONS OR CONSTRUCTION SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT  
AUTHORIZATION.

APPROVAL OF GRADING & DRAINAGE PLAN(S) SHALL EXPIRE  
TWO (2) YEARS AFTER THE APPROVAL DATE BY THE CITY IF NO  
BUILDING PERMIT HAS BEEN PULLED ON THE DEVELOPMENT.

LEGEND

WATERLINE	— W —
SANITARY SEWER LINE	— S —
STORM DRAIN LINE	— —
WATER VALVE	⋈
REDUCER	▽
FIRE HYDRANT	⬢
SAS MANHOLE	⊙
SD MANHOLE	⊙

SCALE:  
HORIZONTAL: 1" = 40'  
VERTICAL: 1" = 10'

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CITY OF ALBUQUERQUE  
DEPARTMENT OF MUNICIPAL DEVELOPMENT  
ENGINEERING DIVISION

TITLE

EASTERN STORM DRAIN PLAN & PROFILE 2

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

Project No.	CPN: 622386	Zone Map No.	G-11-Z	Sheet	22 of 23
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AS BUILT INFORMATION

CONTRACTOR	DATE
ALBUQUERQUE CONTROL SURVEY <td></td>	
STAKED BY <td></td>	
INSPECTED BY <td></td>	
FIELD CHANGE BY <td></td>	
REVISIONS BY <td></td>	
CORRECTED BY <td></td>	

BENCH MARKS

ALBUQUERQUE CONTROL SURVEY	DATE
MONUMENT "SMW-16" NEW MEXICO <td></td>	
STATE PLANE COORDINATES (CENTRAL <td></td>	
ZONE - NAD 83) <td></td>	
NORTH= 1549 624.466 <td></td>	
EAST= 1 523 348.161 <td></td>	
MAPPING ANGLE= -00°10'28.98" <td></td>	
GROUND TO GRID FACTOR= 0.99852348 <td></td>	
ELEVATION= 5454.721' <td></td>	

SURVEY INFORMATION

FIELD NOTES	DATE
NO.	BY

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	
		RESPEC DESIGN	
		DESIGNED BY: XXX	DATE: Jan 2024
		DRAWN BY: XXX	DATE: Jan 2024
		CHECKED BY: XXX	DATE: Jan 2024



