

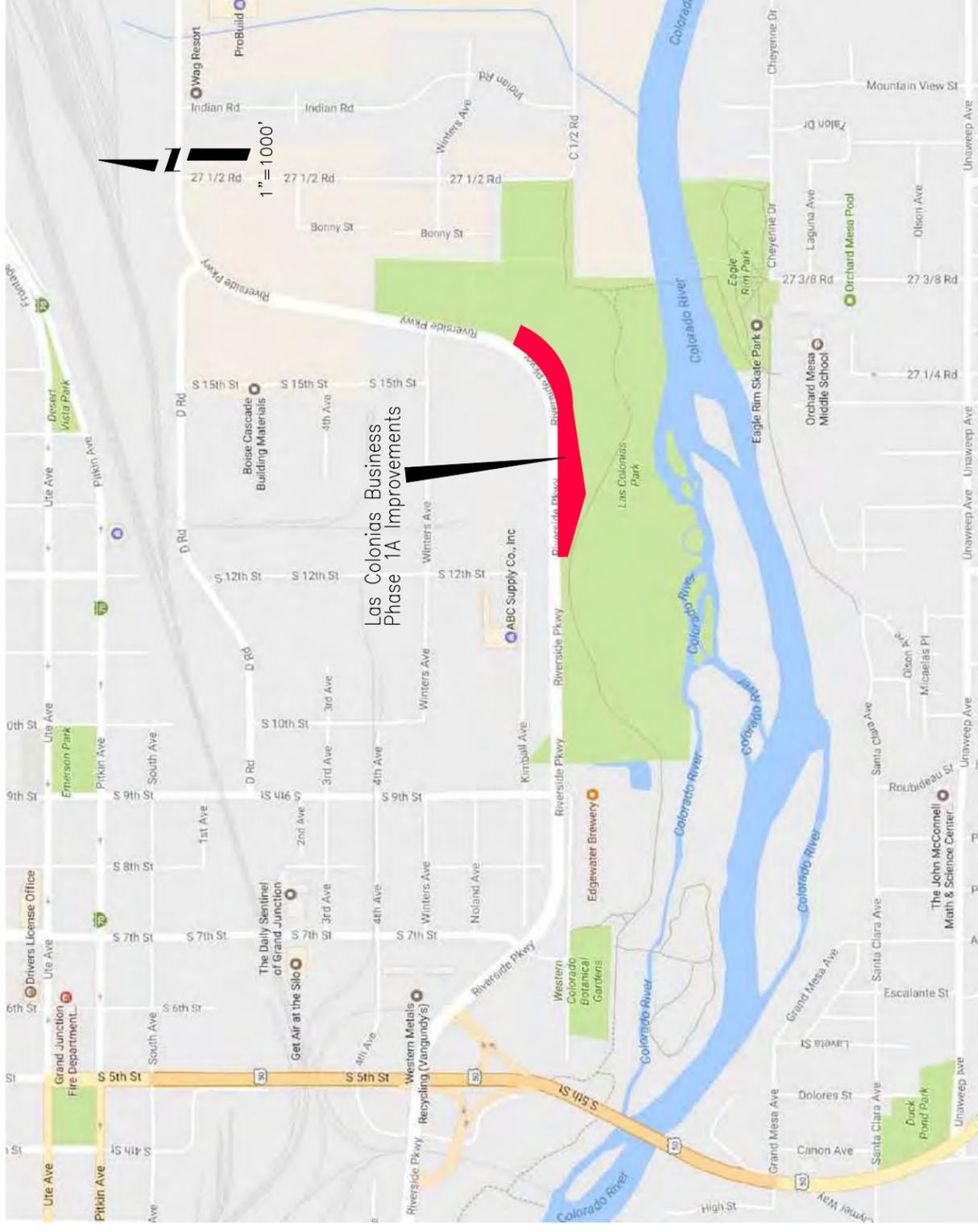
LAS COLONIAS BUSINESS PARK PHASE 1A IMPROVEMENTS FEBRUARY 2018

- 1 Cover Sheet
- 2 Project Overview
- 3 Typical Cross Sections
- 4-6 Utility Details
- 7-13 Utility Plan
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- 27-29 Roadway Plan
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- 33-36 Roadway Cross Sections
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- 47-56 20th Scale Tenth Foot Contour Plan
- 57-59 Striping Plan
- 60-63 Storm Water Management Plan



Know what's below.
Call before you dig.

NOTE: NOTIFY AFFECTED UTILITY VENDOR 48 HOURS PRIOR TO EXCAVATIONS THAT WILL EXPOSE UTILITY LINES. THE UTILITY PLAN WILL HAVE A LISTING OF UTILITY VENDORS AND TELEPHONE NUMBERS.



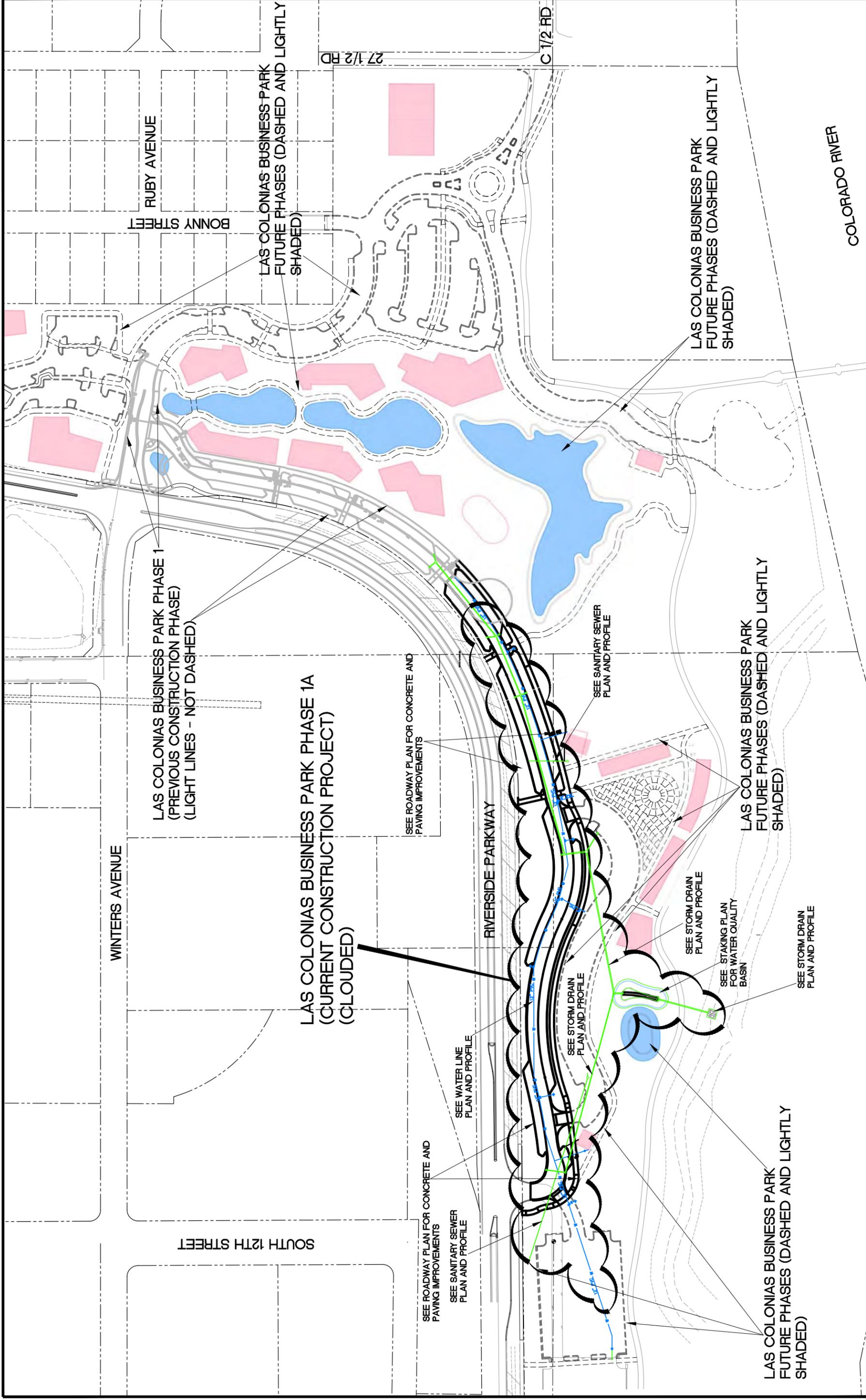
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SCALE:	PLAN & PROFILE
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DRAWN BY	JCS	DATE	2018
DESIGNED BY	JCS	DATE	2018
CHECKED BY	TOP	DATE	2018
APPROVED BY	TOP	DATE	2018



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REVISION	DATE	DESCRIPTION
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REVISION 2	DATE 2018	DESCRIPTION
REVISION 3	DATE 2018	DESCRIPTION
REVISION 4	DATE 2018	DESCRIPTION

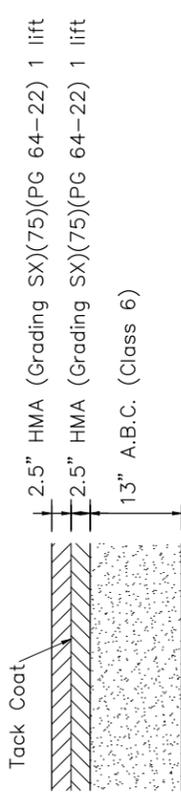
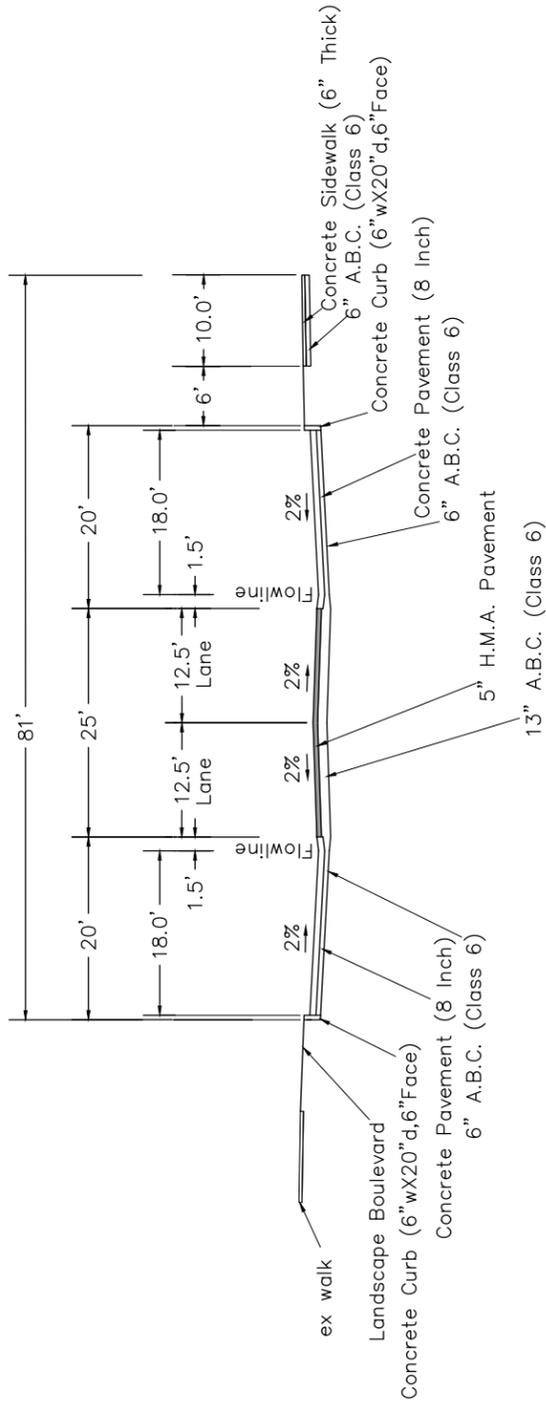
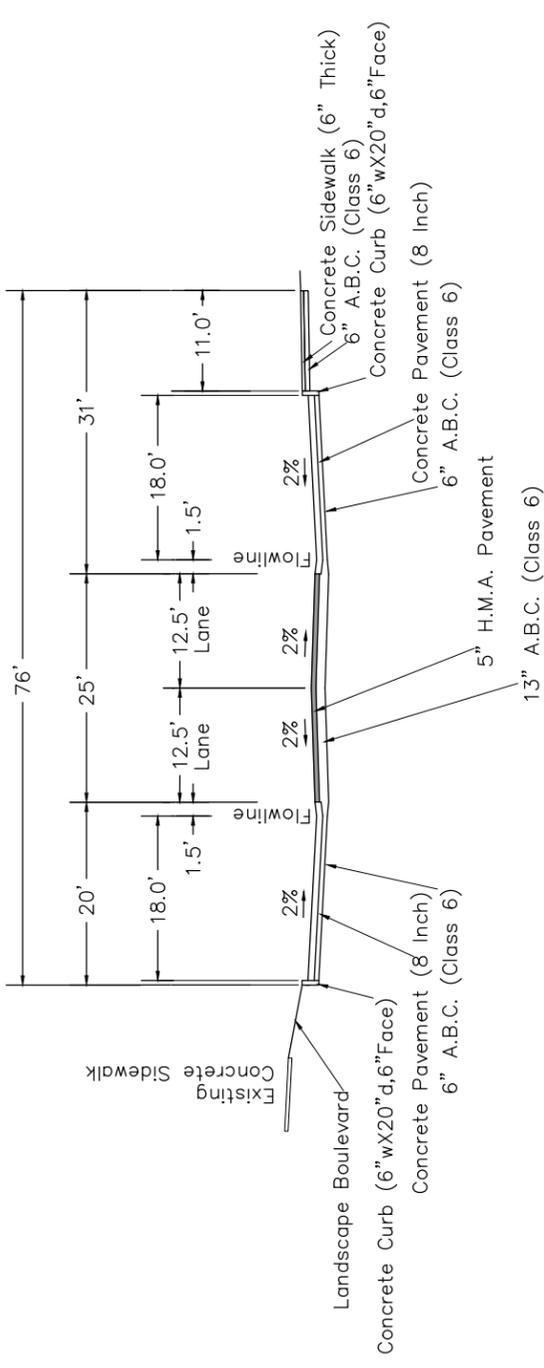
Grand Junction
CITY OF COLORADO

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ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
PROJECT OVERVIEW

Notes:

- Extend Full Pavement Base Section 6" Beyond Back Of Curbs (Typical)
- See Landscape Plans For Work Between Sidewalk and Back of Curb (Landscape Boulevard) and Medians

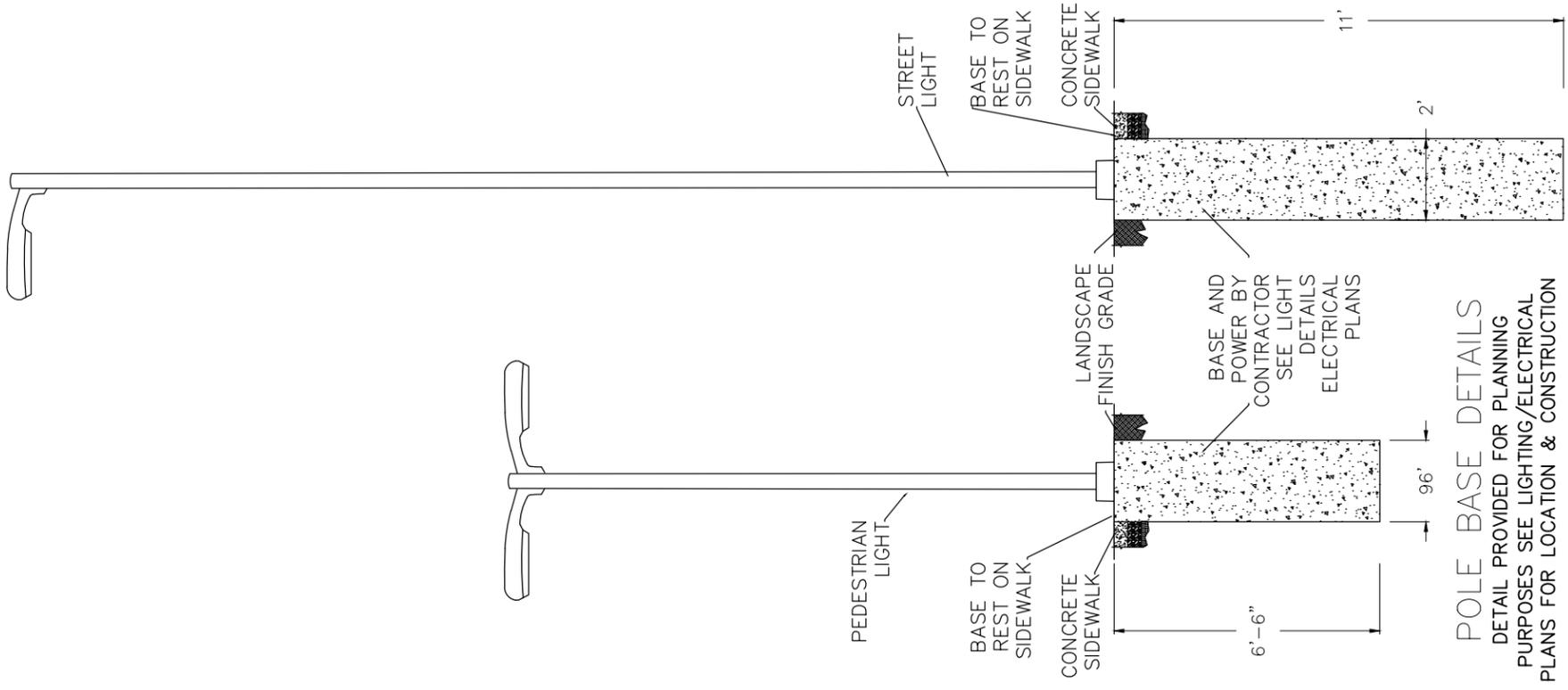


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2		2018	JCS	2018	HORIZONTAL
3		2018	TOP	2018	VERTICAL
4		2018	TOP	2018	VERTICAL



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Las Colonias Business Park
Typical Cross Sections



POLE BASE DETAILS
 DETAIL PROVIDED FOR PLANNING
 PURPOSES SEE LIGHTING/ELECTRICAL
 PLANS FOR LOCATION & CONSTRUCTION

REVISION	DESCRIPTION	DATE	DRAWN BY	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
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REVISION 2										
REVISION 3										
REVISION 4										

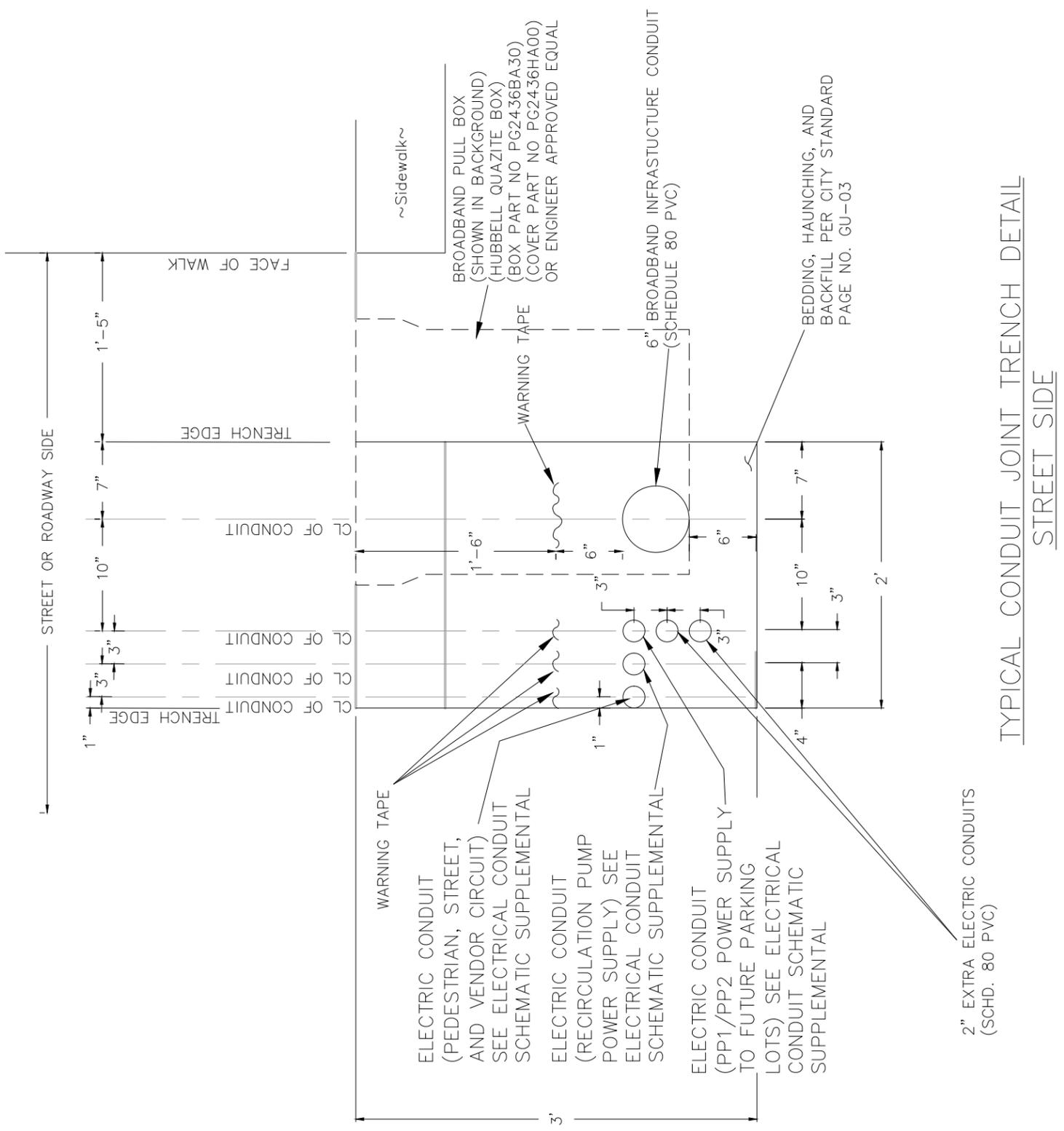
SCALES:

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VERTICAL	0 NA

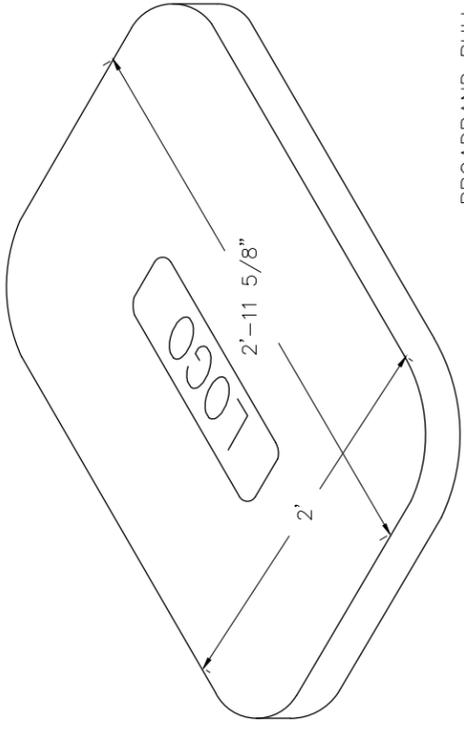


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 ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK
 UTILITY DETAILS

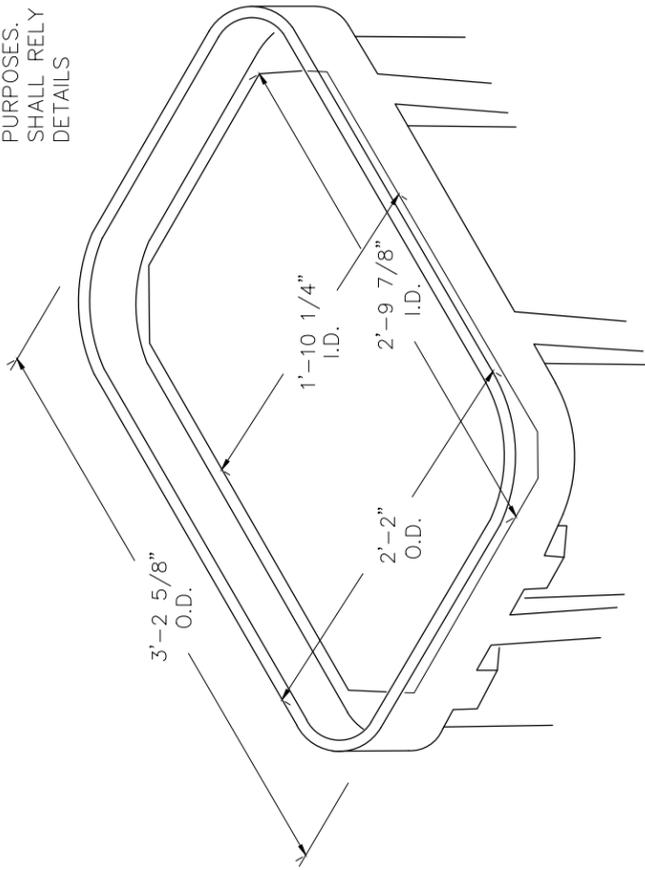


TYPICAL CONDUIT JOINT TRENCH DETAIL
 STREET SIDE



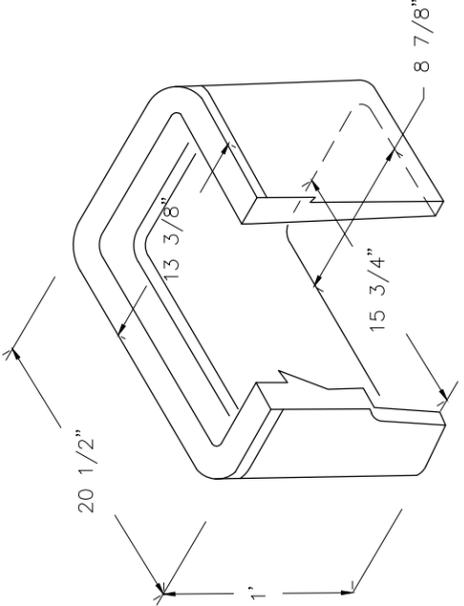
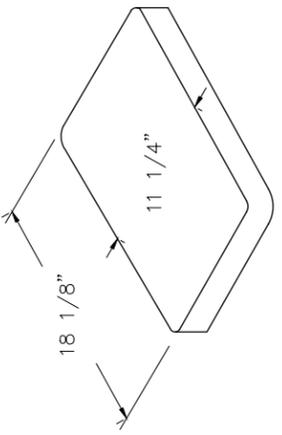
COVER

BROADBAND PULL BOX
(HUBBELL QUAZITE BOX) (BOX
PART NO PG2436BA30) (COVER
PART NO PG2436HA00) OR
ENGINEER APPROVED EQUAL
DIMENSIONS SHOWN HERE FOR
LAYOUT AND PLANNING
PURPOSES. CONTRACTOR
SHALL RELY ON MANUFACTURE
DETAILS



BOX

BROADBAND PULL BOX
DIMENSIONS SHOWN HERE FOR
LAYOUT AND PLANNING
PURPOSES. CONTRACTOR
SHALL RELY ON MANUFACTURE
DETAILS



STREET LIGHT AND PED LIGHT
PULL BOX

DIMENSIONS SHOWN HERE FOR
LAYOUT AND PLANNING
PURPOSES. CONTRACTOR
SHALL RELY ON MANUFACTURE
DETAILS

NOTES

1. PULL BOXES, PULL BOX COVERS AND EXTENSIONS SHALL BE MADE OF FIBERGLASS REINFORCED POLYMER CONCRETE. PULL BOXES SHALL BE VERIFIED BY 3RD PARTY NATIONALLY RECOGNIZED INDEPENDENT TESTING LABORATORY AS MEETING ALL TEST PROVISIONS OF THE LATEST ANSI/SCTE 77 SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY, TIER 22 RATING. CERTIFICATION DOCUMENTS SHALL BE SUBMITTED WITH MATERIALS SUBMITTALS. THE PULL BOX SHALL HAVE A DETACHABLE COVER WITH A SKID RESISTANT SURFACE AND HAVE THE WORDS ELECTRICAL CAST INTO THE SURFACE. FADING THE WORDS SHALL NOT BE ACCEPTED. MARKINGS SHOWING THE TIER 22 RATING MUST BE LABELED OR STENCILED ON THE INSIDE AND OUTSIDE OF THE BOX AND THE ON THE UNDER SIDE OF THE COVER. THE COVER SHALL BE ATTACHED TO THE PULL BOX BODY BY MEANS OF A MINIMUM 3/8- 7 UNIFIED NATIONAL COURSE (UNC) STAINLESS STEEL PENTA HEAD BOLTS AND SHALL HAVE TWO LIFT SLOTS TO AID IN THE REMOVAL OF THE LID.
2. PULL SLOTS SHALL BE RATED FOR A MINIMUM PULL OUT OF 3,000 POUNDS. MAGNESIUM CHLORIDE TESTS SHOULD BE PERFORMED IN ACCORDANCE WITH THE LATEST ANSI/SCTE 77 SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY, TIER 22 RATING.

REVISION	DATE	DESCRIPTION

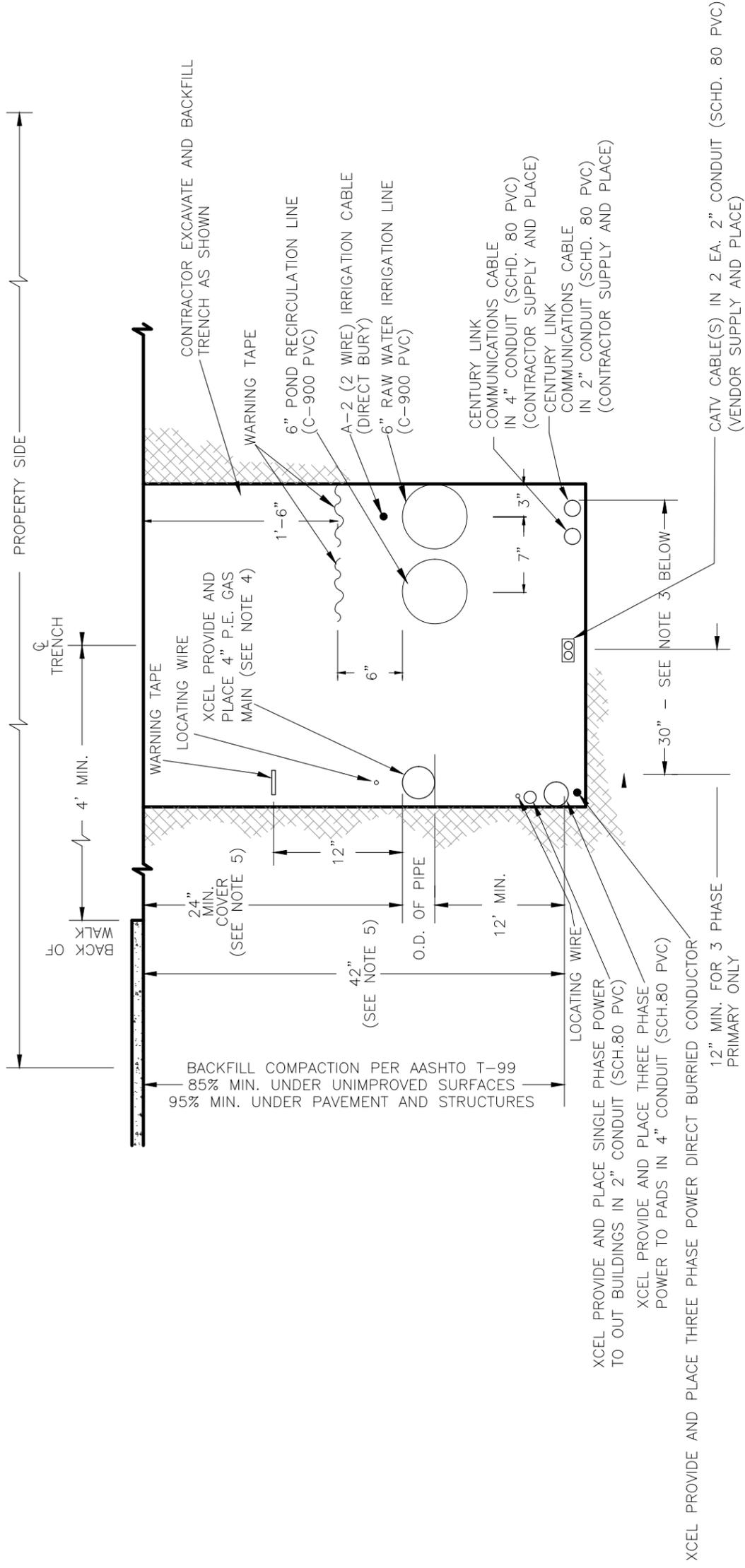
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PLAN & PROFILE	DATE



PUBLIC WORKS
ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK
UTILITY DETAILS



NOTES:

- FOR EASE OF CONSTRUCTION AND MAINTENANCE, PRIMARY CABLE SHOULD BE 12" TO 24" FROM COMMUNICATION CABLES. HOWEVER, NESC REQUIREMENTS PERMIT "SUPPLY AND COMMUNICATION SEE CABLES TO BE BURIED TOGETHER AT THE SAME DEPTH WITH NO DELIBERATE SEPARATION BETWEEN FACILITIES PROVIDED ALL PARTIES ARE IN AGREEMENT."
- ONLY SINGLE PHASE SUPPLY CABLES CAN BE BURIED AT THE SAME DEPTH WITH NO DELIBERATE SEPARATION WITH COMMUNICATION CABLES. THREE PHASE CABLES MUST BE SEPARATED BY A MINIMUM OF 1 FOOT (REFERENCE NESC 354.D.3A).
- 30" TRENCH WIDTH SHOULD BE USED WHEN ALL FOUR UTILITIES ARE INCLUDED.
- STEEL GAS PIPE OR STEEL DUCT IS NOT ALLOWED FOR JOINT TRENCH CONSTRUCTION.
- WHERE UNDERGROUND UTILITIES CROSS OR ENCR OACH INTO CITY STREETS THEY SHALL BE INSTALLED TO A DEPTH PROVIDING 3' MINIMUM COVER BELOW FINISHED GRADE.

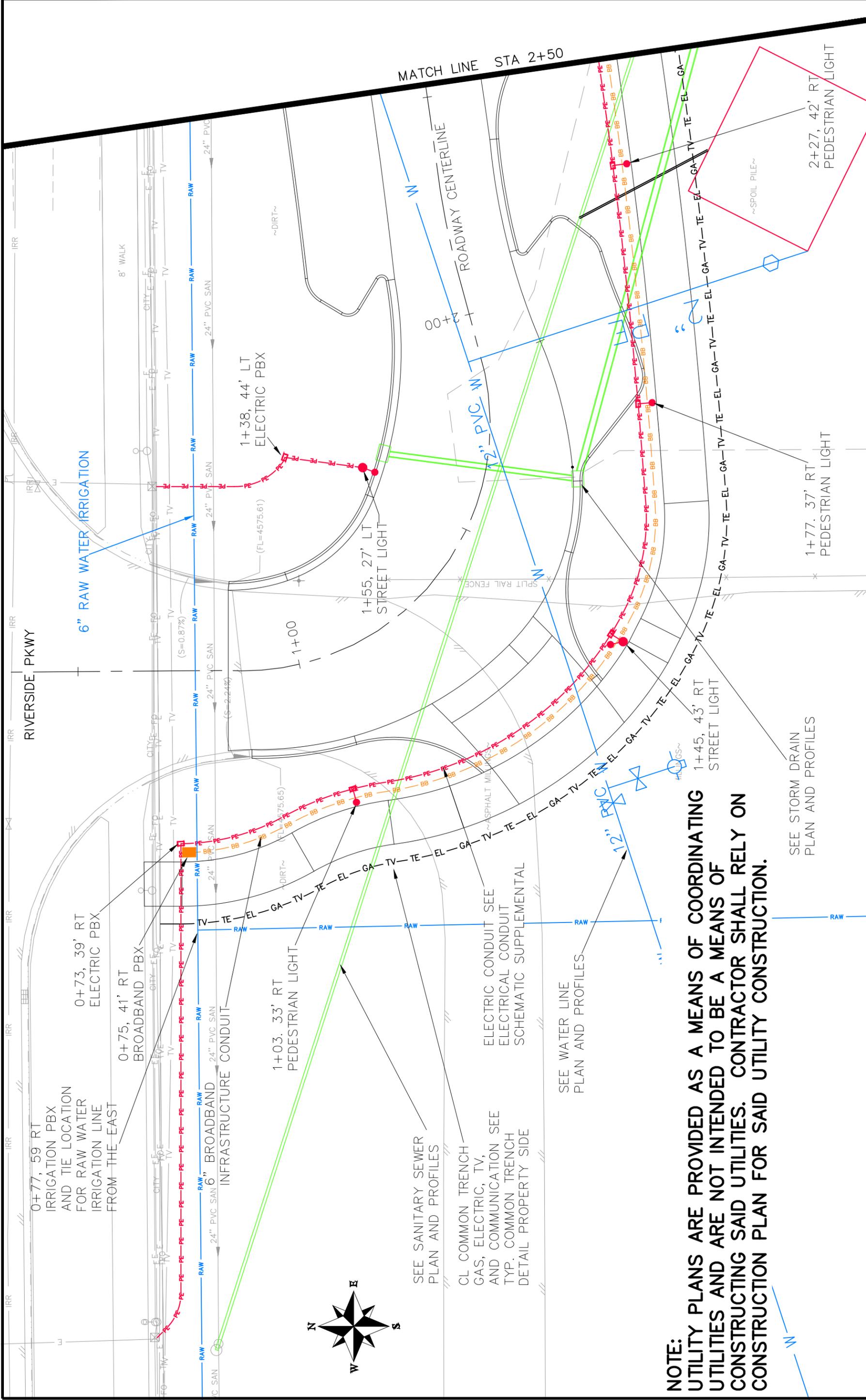
TYPICAL COMMON TRENCH DETAIL
PROPERTY SIDE

REVISION	DESCRIPTION	DATE	DRAWN BY	DATE	SCALE
1		2017	JCS	2017	PLAN & PROFILE
2		2017	JCS	2017	HORIZONTAL
3		2017	TOP	2017	VERTICAL
4		2017	TOP	2017	VERTICAL



PUBLIC WORKS
ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK
UTILITY DETAILS



NOTE:
 UTILITY PLANS ARE PROVIDED AS A MEANS OF COORDINATING UTILITIES AND ARE NOT INTENDED TO BE A MEANS OF CONSTRUCTING SAID UTILITIES. CONTRACTOR SHALL RELY ON CONSTRUCTION PLAN FOR SAID UTILITY CONSTRUCTION.

SEE STORM DRAIN PLAN AND PROFILES

SEE WATER LINE PLAN AND PROFILES

ELECTRIC CONDUIT SEE ELECTRICAL CONDUIT SCHEMATIC SUPPLEMENTAL

SEE SANITARY SEWER PLAN AND PROFILES
 CL COMMON TRENCH GAS, ELECTRIC, TV, AND COMMUNICATION SEE TYP. COMMON TRENCH DETAIL PROPERTY SIDE

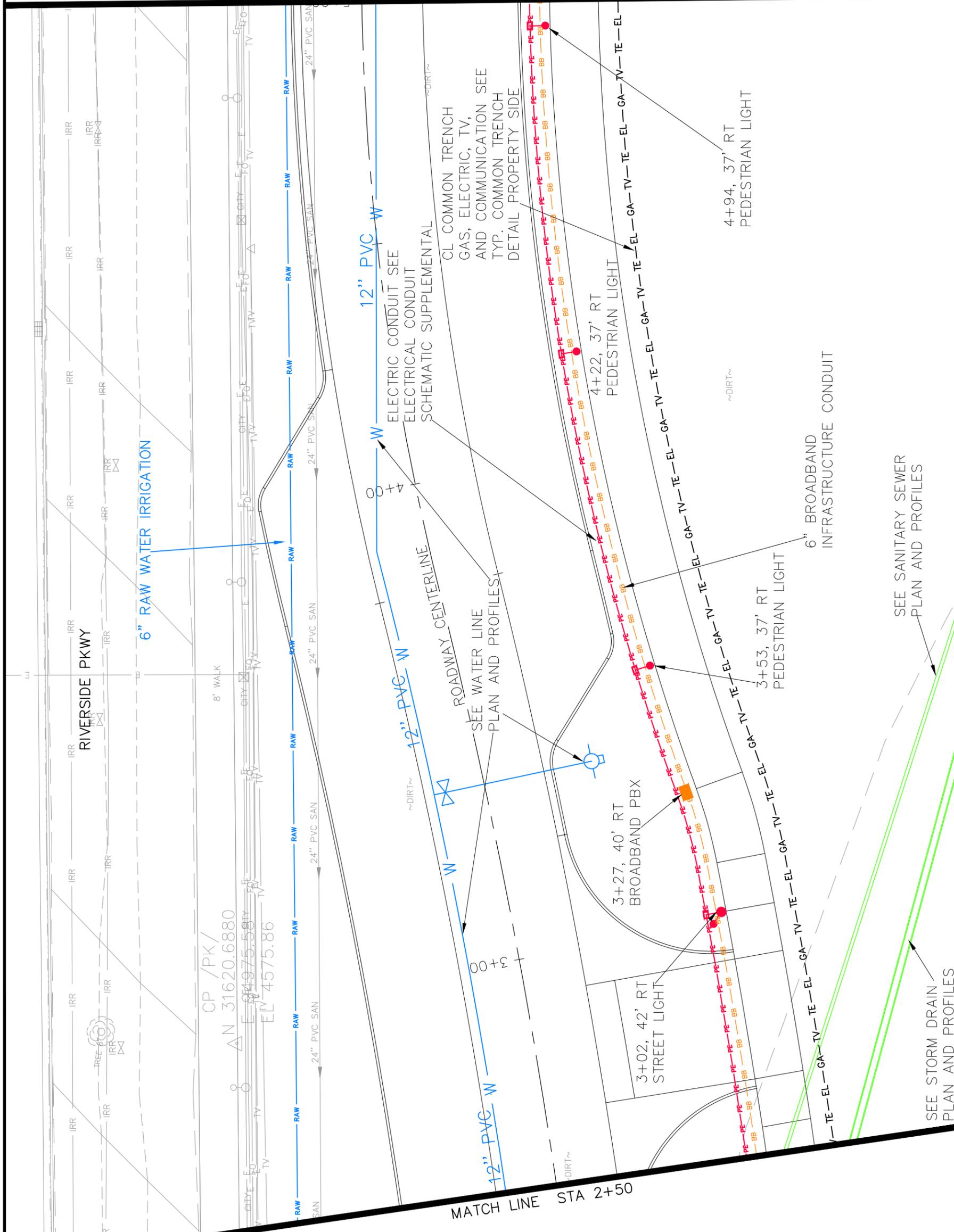
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2		JCS	2017	
3		TCP	2017	
4		TCP	2017	



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LAS COLONIAS BUSINESS PARK PHASE 1A COMPOSITE UTILITY PLAN

MATCH LINE STA 5+00



MATCH LINE STA 2+50

REVISION	DATE
△	
△	
△	
△	

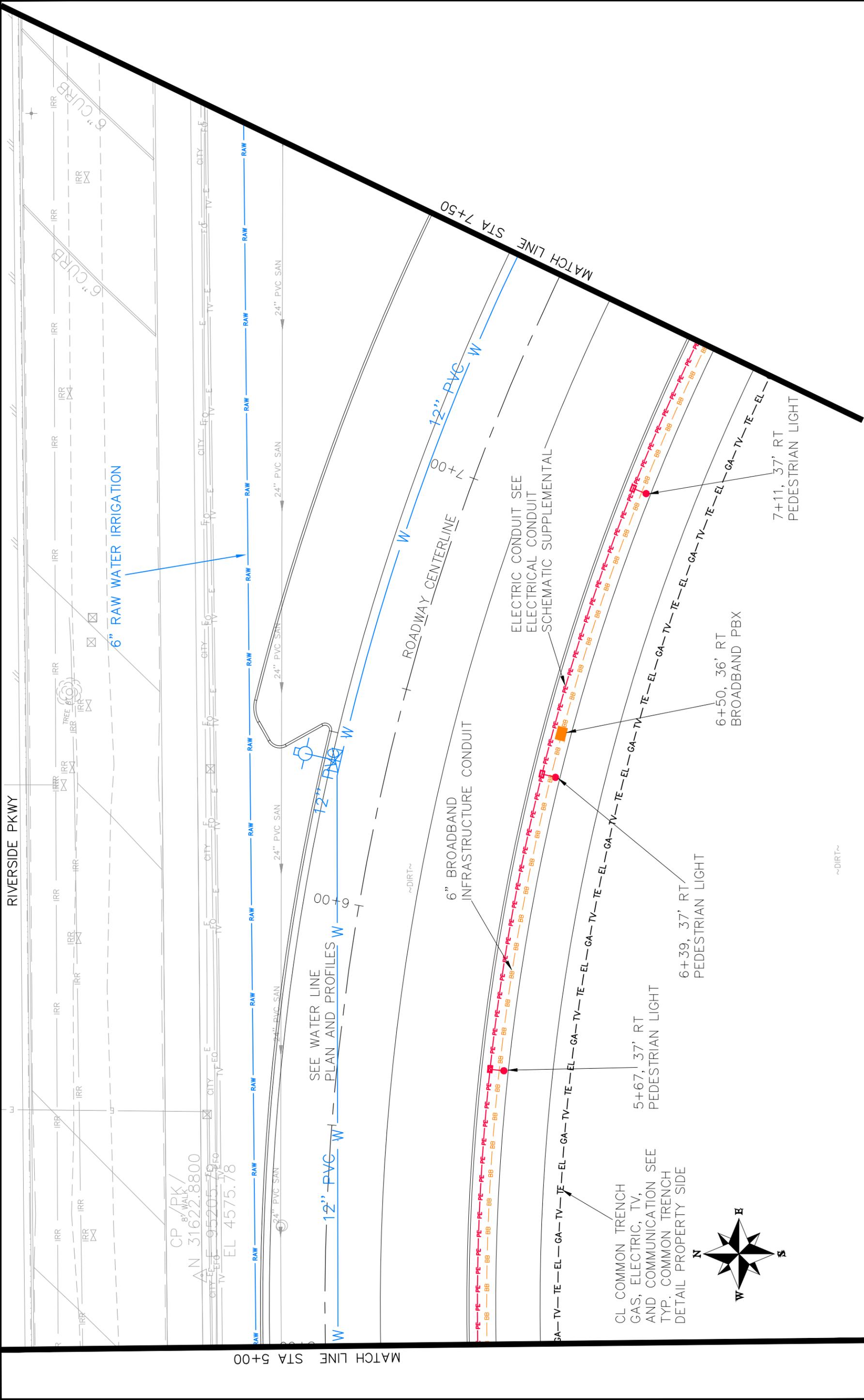
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DRAWN BY JCS	DATE 2017
DESIGNED BY JCS	DATE 2017
CHECKED BY TCP	DATE 2017
APPROVED BY TCP	DATE 2017

PLAN & PROFILE	SCALE
3 HORIZONTAL	1" = 30'
0 VERTICAL	1" = 10'



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ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
COMPOSITE UTILITY PLAN



MATCH LINE STA 5+00

MATCH LINE STA 7+50

REVISION	△	

DESCRIPTION	DATE

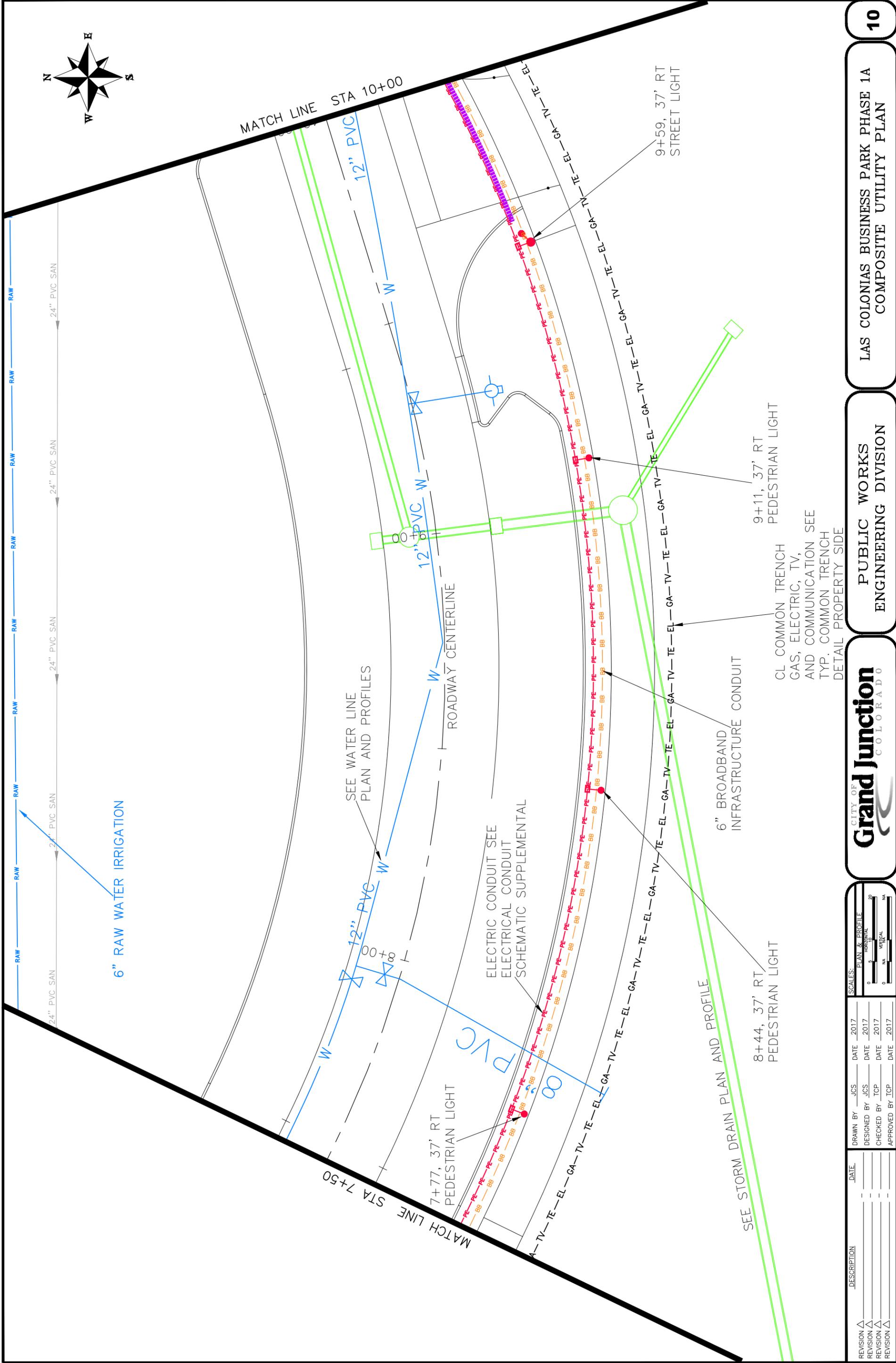
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DESIGNED BY	JCS	DATE	2017
CHECKED BY	TCP	DATE	2017
APPROVED BY	TCP	DATE	2017

SCALE:	PLAN & PROFILE
0	3 HORIZONTAL
0	1 VERTICAL
0	1/8" = 1' NA
0	1/4" = 1' NA



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ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
COMPOSITE UTILITY PLAN



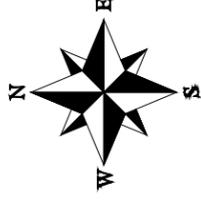
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CITY OF
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 ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
 COMPOSITE UTILITY PLAN

RIVERSIDE PKWY



MATCH LINE STA 12+50

MATCH LINE STA 10+00

6" RAW WATER IRRIGATION

6" IRRIGATION SLEEVING (TYPICAL AS SHOWN)

SEE SANITARY SEWER PLAN AND PROFILES

SEE WATER LINE PLAN AND PROFILES

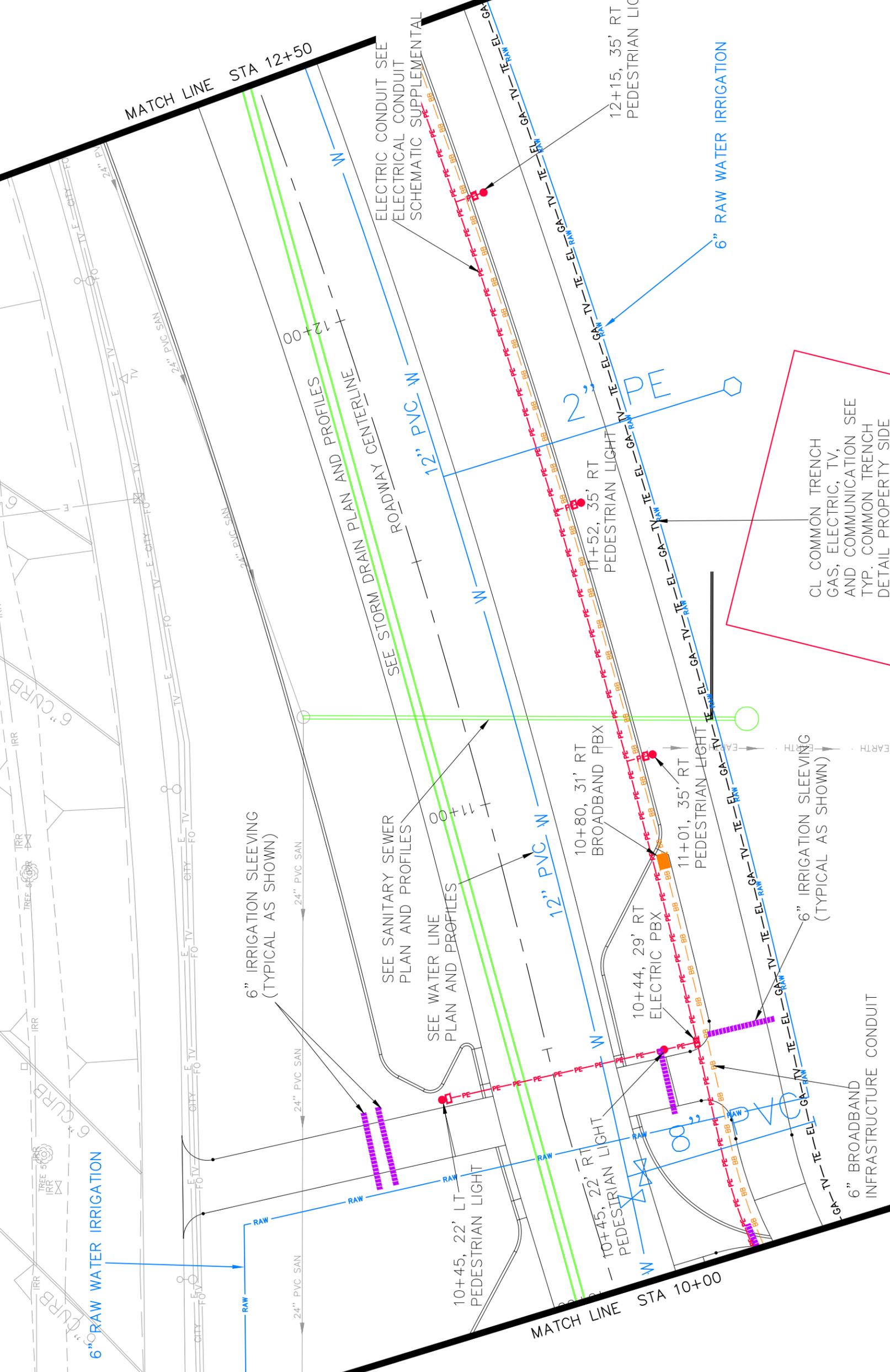
ELECTRIC CONDUIT SEE ELECTRICAL CONDUIT SCHEMATIC SUPPLEMENTAL

12+15, 35' RT PEDESTRIAN LIGHT

6" RAW WATER IRRIGATION

CL COMMON TRENCH GAS, ELECTRIC, TV, AND COMMUNICATION SEE TYP. COMMON TRENCH DETAIL PROPERTY SIDE

6" BROADBAND INFRASTRUCTURE CONDUIT



REVISION	Δ	DATE	2017
REVISION	Δ	DATE	2017
REVISION	Δ	DATE	2017
REVISION	Δ	DATE	2017

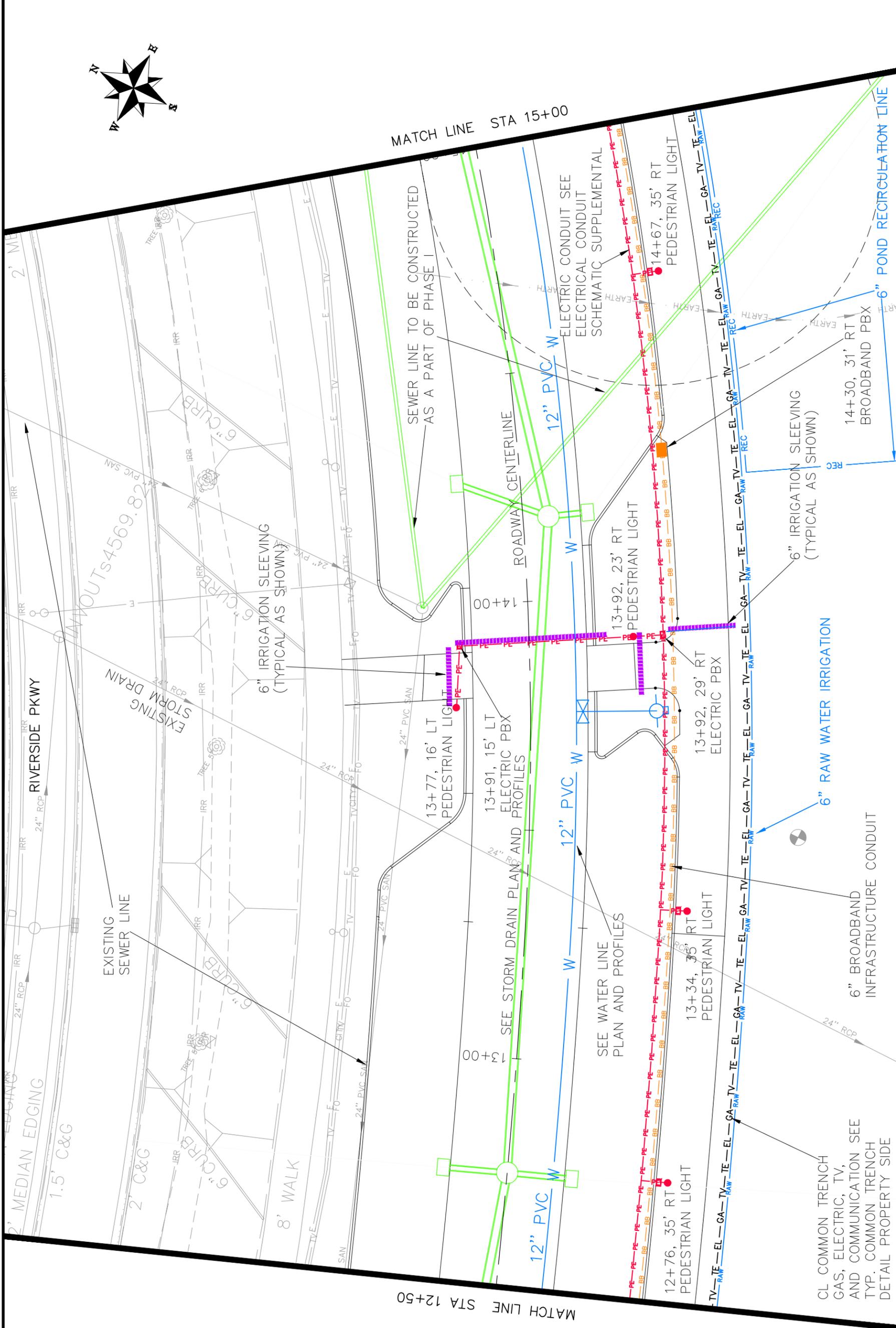
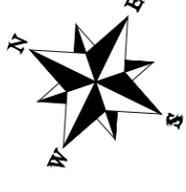
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DESIGNED BY JCS	DATE 2017
CHECKED BY TCP	DATE 2017
APPROVED BY TCP	DATE 2017

SCALE:	PLAN & PROFILE
0	3 HORIZONTAL
0	1 VERTICAL
0	1 INCH = 10 FEET



PUBLIC WORKS ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A COMPOSITE UTILITY PLAN



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REVISION Δ		

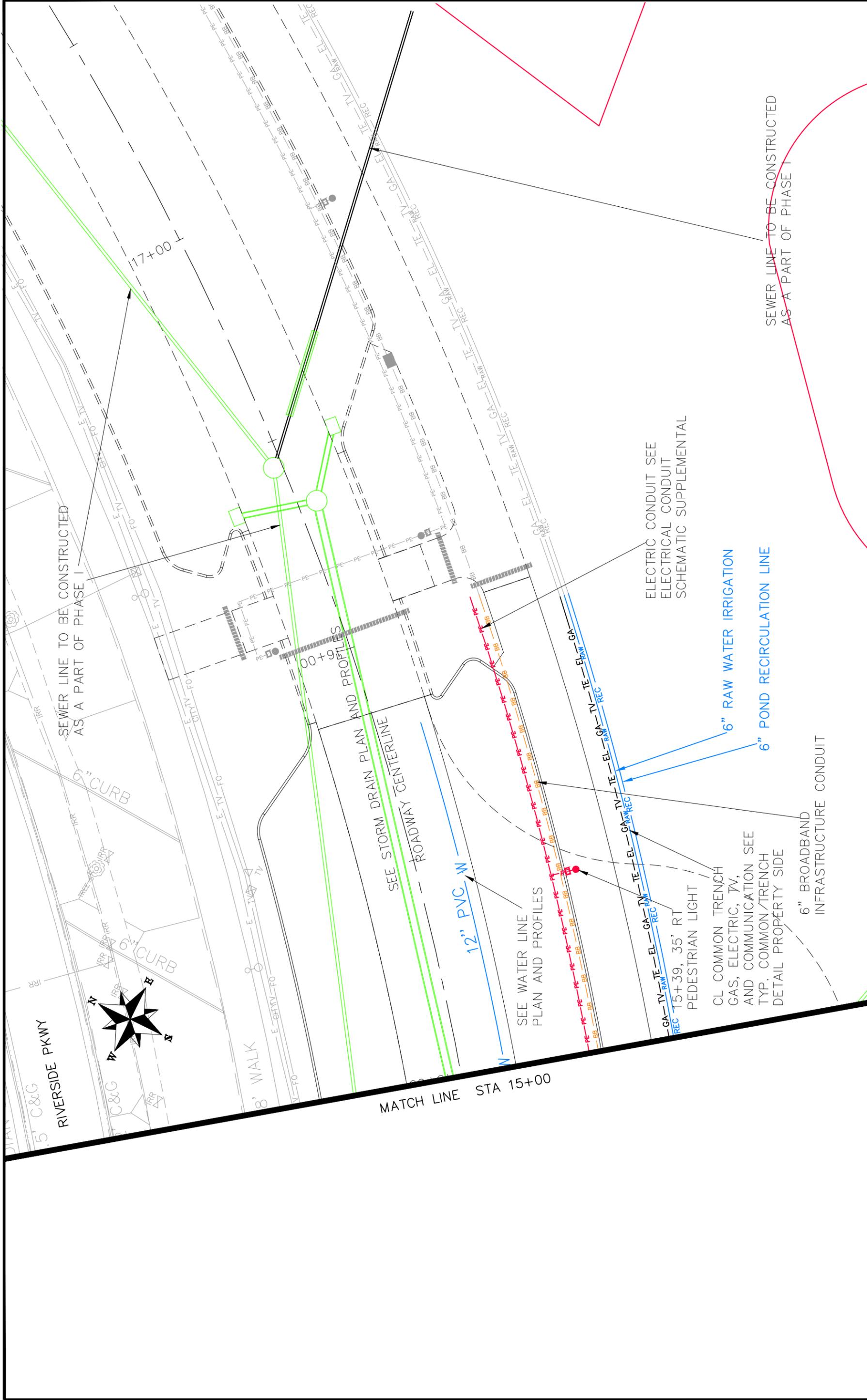
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HORIZONTAL	2017	2017
VERTICAL	2017	2017

SCALE	DATE	DATE
PLAN & PROFILE	2017	2017
HORIZONTAL	2017	2017
VERTICAL	2017	2017



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ENGINEERING DIVISION**

**LAS COLONIAS BUSINESS PARK PHASE 1A
COMPOSITE UTILITY PLAN**



SEWER LINE TO BE CONSTRUCTED AS A PART OF PHASE I

SEE WATER LINE PLAN AND PROFILES

SEE STORM DRAIN PLAN AND PROFILES

ROADWAY CENTERLINE

12" PVC W

SEE WATER LINE PLAN AND PROFILES

ELECTRIC CONDUIT SEE ELECTRICAL CONDUIT SCHEMATIC SUPPLEMENTAL

6" RAW WATER IRRIGATION

6" POND RECIRCULATION LINE

6" BROADBAND INFRASTRUCTURE CONDUIT

SEWER LINE TO BE CONSTRUCTED AS A PART OF PHASE I



MATCH LINE STA 15+00

REVISION	DATE	DESCRIPTION

SCALE	DATE	DATE
PLAN & PROFILE	2017	2017
HORIZONTAL	2017	2017
VERTICAL	2017	2017

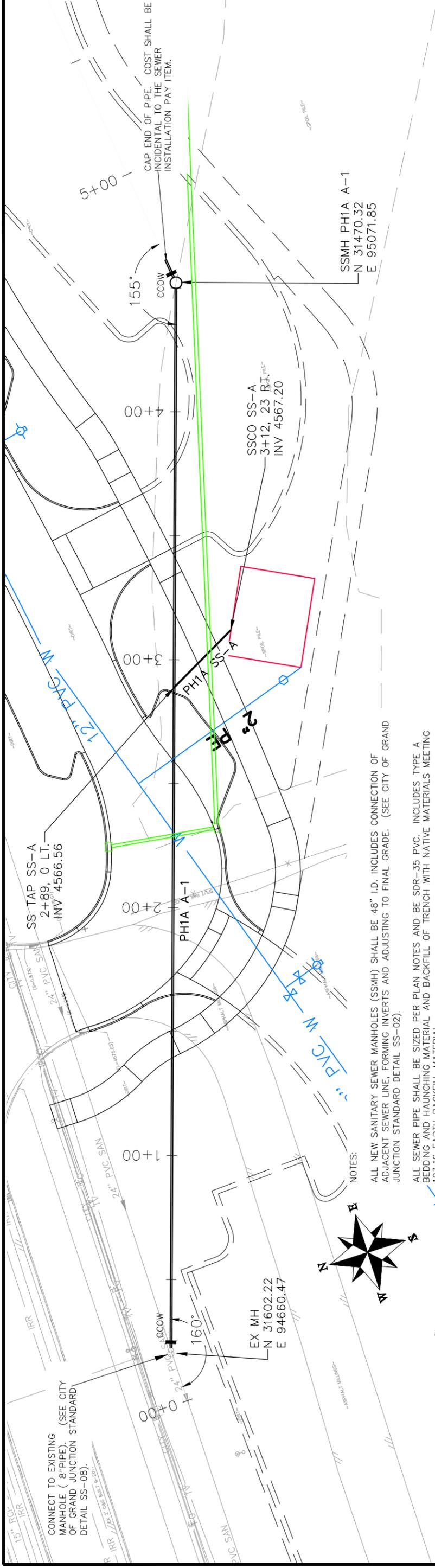
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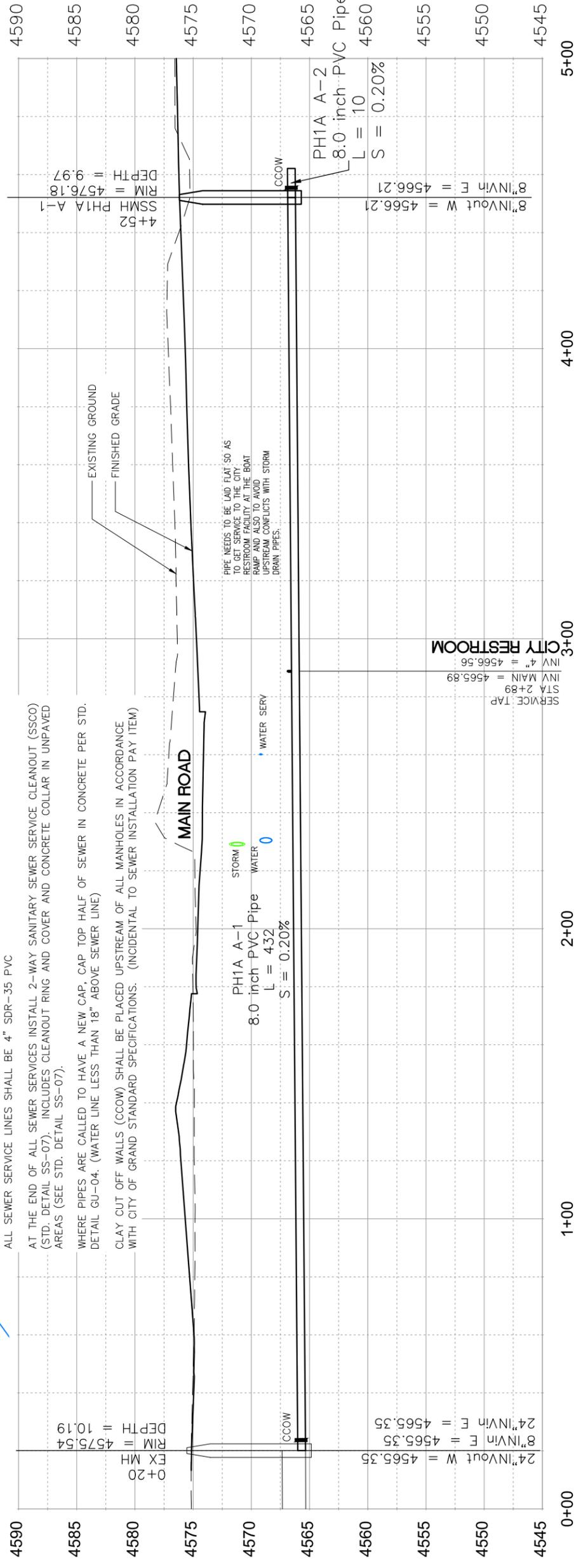


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ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
COMPOSITE UTILITY PLAN



LINE A



- NOTES:
- ALL NEW SANITARY SEWER MANHOLES (SSMH) SHALL BE 48" I.D. INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).
 - ALL SEWER PIPE SHALL BE SIZED PER PLAN NOTES AND BE SDR-35 PVC. INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
 - ALL SEWER TAPS SHALL BE FULL BODY WYES (SEE STD. DETAIL SS-06).
 - ALL SEWER SERVICE LINES SHALL BE 4" SDR-35 PVC
 - AT THE END OF ALL SEWER SERVICES INSTALL 2-WAY SANITARY SEWER SERVICE CLEANOUT (SSCO) (STD. DETAIL SS-07). INCLUDES CLEANOUT RING AND COVER AND CONCRETE COLLAR IN UNPAVED AREAS (SEE STD. DETAIL SS-07).
 - WHERE PIPES ARE CALLED TO HAVE A NEW CAP, CAP TOP HALF OF SEWER IN CONCRETE PER STD. DETAIL GU-04. (WATER LINE LESS THAN 18" ABOVE SEWER LINE)
 - CLAY CUT OFF WALLS (CCOW) SHALL BE PLACED UPSTREAM OF ALL MANHOLES IN ACCORDANCE WITH CITY OF GRAND STANDARD SPECIFICATIONS. (INCIDENTAL TO SEWER INSTALLATION PAY ITEM)

REVISION	DATE	DRAWN BY	JCS	DATE	2017
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REVISION	DATE	CHECKED BY	TOP	DATE	2017
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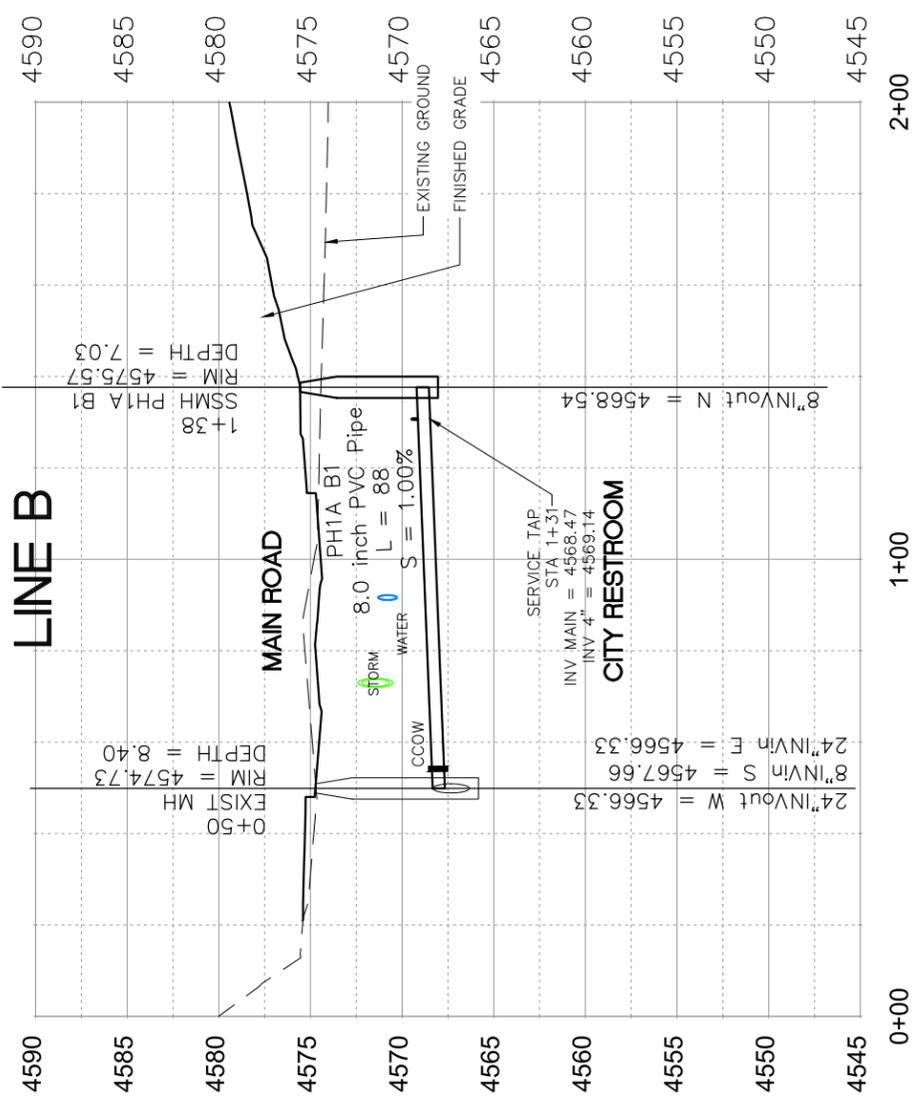
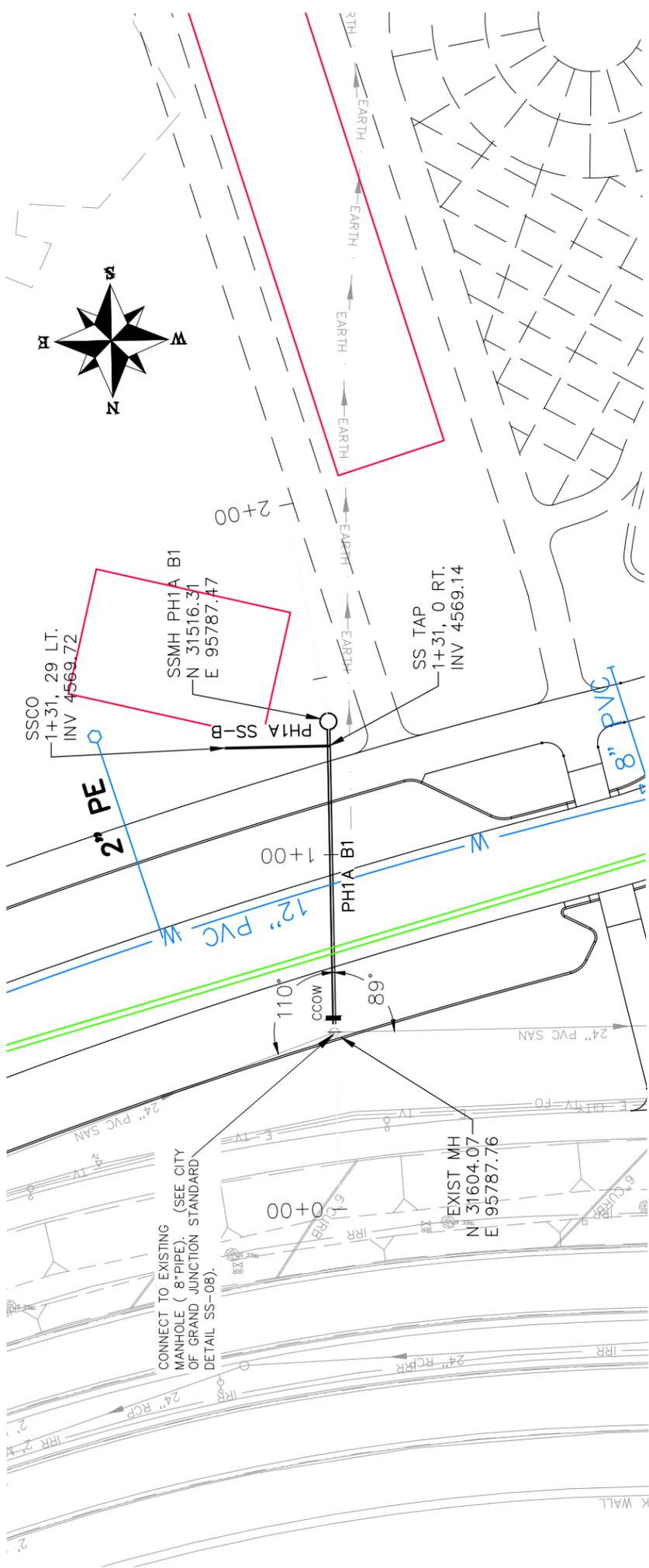
SCALES: PLAN & PROFILE 1" = 40' HORIZONTAL 1" = 2.5' VERTICAL

CITY OF **Grand Junction** COLORADO

PUBLIC WORKS ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A SANITARY SEWER LINE PLAN AND PROFILE

14

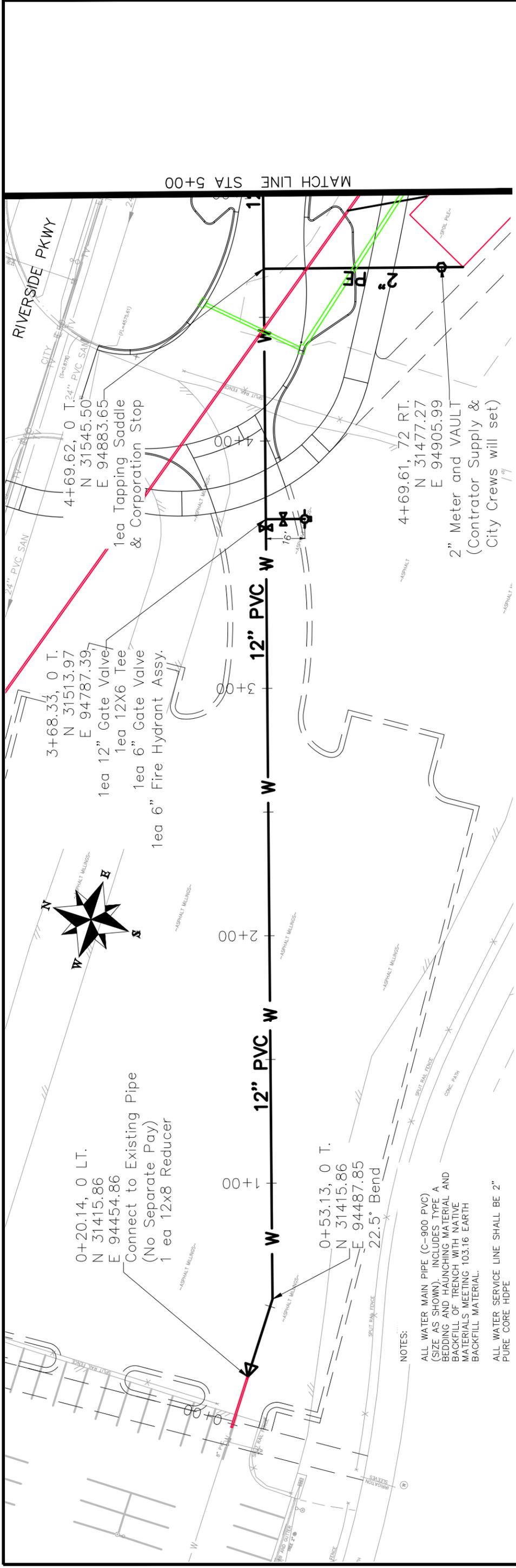


- NOTES:**
- ALL NEW SANITARY SEWER MANHOLES (SSMH) SHALL BE 48" I.D. INCLUDES CONNECTION OF ADJACENT SEWER LINE, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL SS-02).
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REVISION	DESCRIPTION	DATE	DRAWN BY	DATE	SCALE:
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10		2017	TOP	2017	VERTICAL



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NOTES:

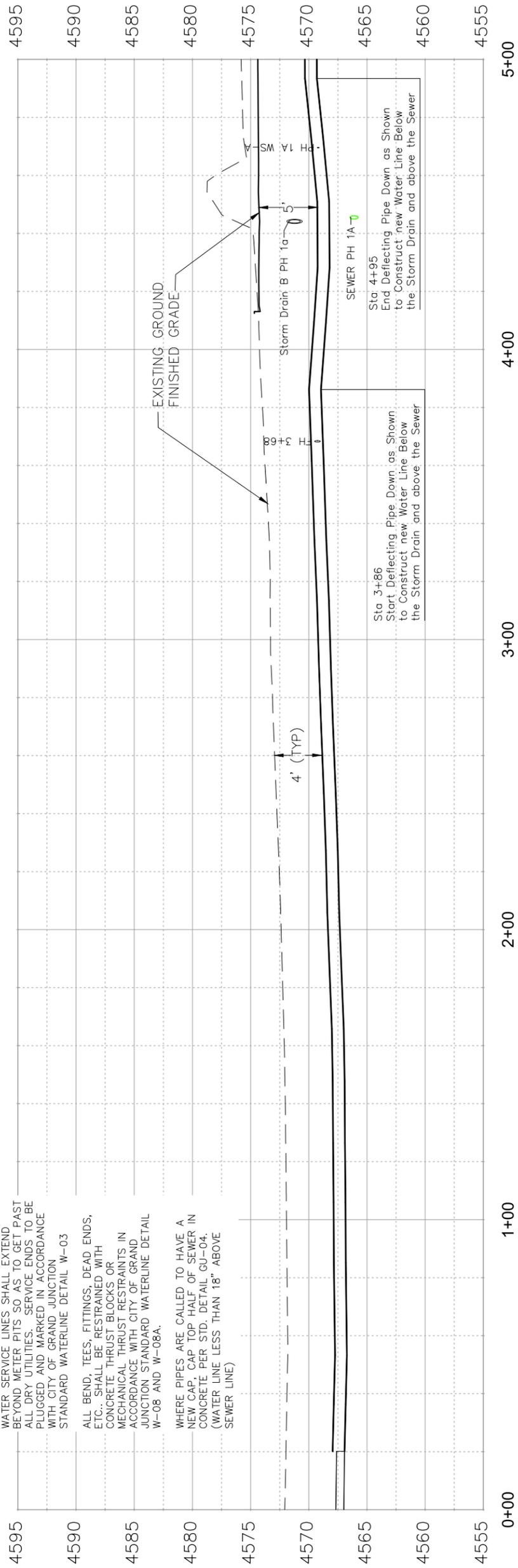
ALL WATER MAIN PIPE (C-900 PVC) (SIZE AS SHOWN). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

ALL WATER SERVICE LINE SHALL BE 2" PURE CORE HDPE

WATER SERVICE LINES SHALL EXTEND BEYOND METER PITS SO AS TO GET PAST ALL DRY UTILITIES. SERVICE ENDS TO BE PLUGGED AND MARKED IN ACCORDANCE WITH CITY OF GRAND JUNCTION STANDARD WATERLINE DETAIL W-03

ALL BEND, TEES, FITTINGS, DEAD ENDS, ETC., SHALL BE RESTRAINED WITH CONCRETE THRUST BLOCKS OR MECHANICAL THRUST RESTRAINTS IN ACCORDANCE WITH CITY OF GRAND JUNCTION STANDARD WATERLINE DETAIL W-08 AND W-08A.

WHERE PIPES ARE CALLED TO HAVE A NEW CAP, CAP TOP HALF OF SEWER IN CONCRETE PER STD. DETAIL GU-04. (WATER LINE LESS THAN 18" ABOVE SEWER LINE)



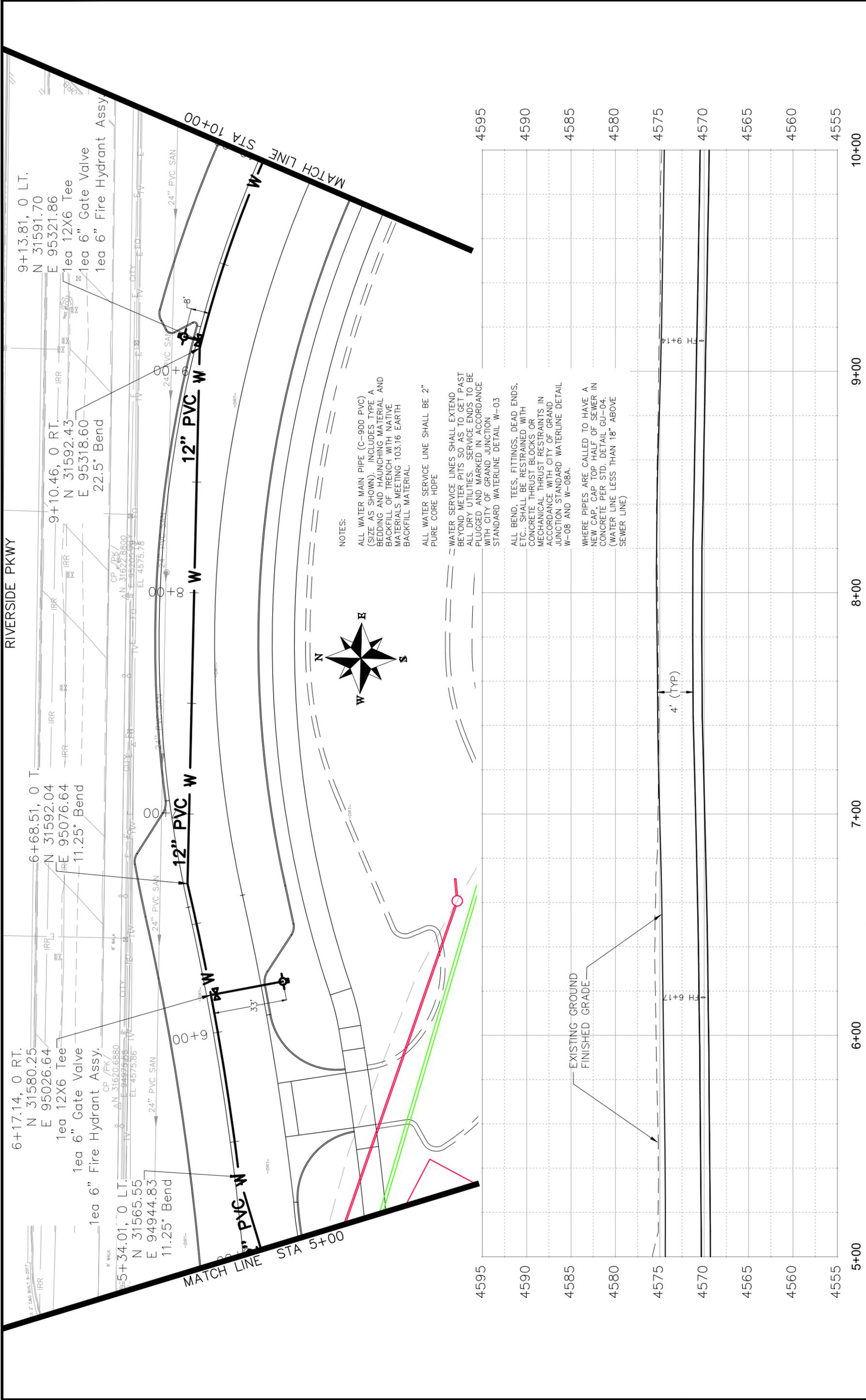
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REVISION		JCS	2017
REVISION		TOP	2017
REVISION		TOP	2017

SCALE	DATE
PLAN & PROFILE	2017
HORIZONTAL	2017
VERTICAL	2017



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**LAS COLONIAS BUSINESS PARK PHASE 1A
WATERLINE PLAN AND PROFILE**

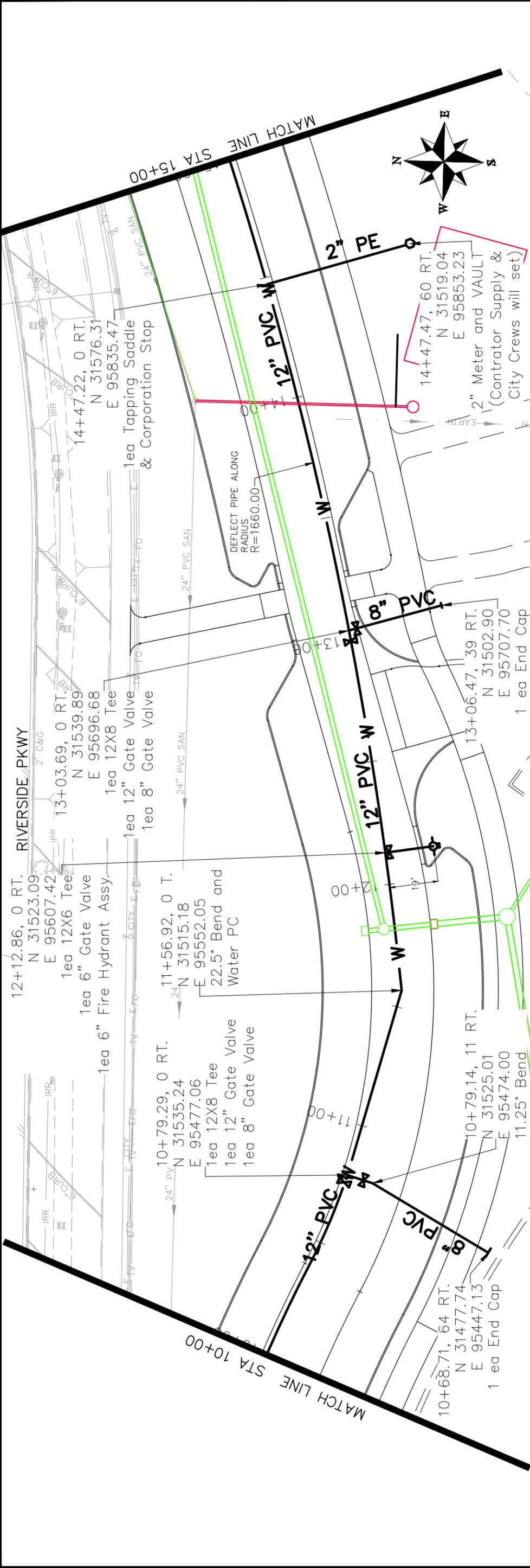


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REVISION	DATE	DESIGNED BY	DATE
REVISION	DATE	CHECKED BY	DATE
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SCALE:	PLAN & PROFILE
0	HORIZONTAL
10	VERTICAL
0	VERTICAL

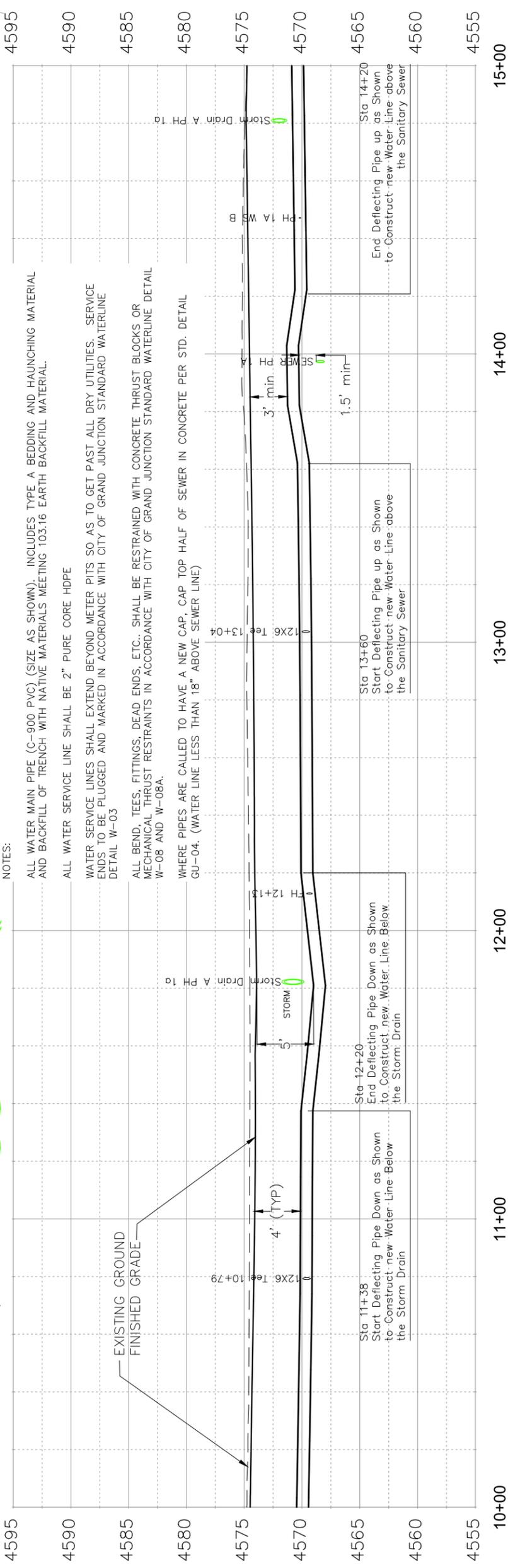


PUBLIC WORKS
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NOTES:

- ALL WATER MAIN PIPE (C-900 PVC) (SIZE AS SHOWN) INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- ALL WATER SERVICE LINE SHALL BE 2" PURE CORE HDPE
- WATER SERVICE LINES SHALL EXTEND BEYOND METER PITS SO AS TO GET PAST ALL DRY UTILITIES. SERVICE ENDS TO BE PLUGGED AND MARKED IN ACCORDANCE WITH CITY OF GRAND JUNCTION STANDARD WATERLINE DETAIL W-03
- ALL BEND, TEES, FITTINGS, DEAD ENDS, ETC., SHALL BE RESTRAINED WITH CONCRETE THRUST BLOCKS OR MECHANICAL THRUST RESTRAINTS IN ACCORDANCE WITH CITY OF GRAND JUNCTION STANDARD WATERLINE DETAIL W-08 AND W-08A.
- WHERE PIPES ARE CALLED TO HAVE A NEW CAP, CAP TOP HALF OF SEWER IN CONCRETE PER STD. DETAIL GU-04. (WATER LINE LESS THAN 18" ABOVE SEWER LINE)



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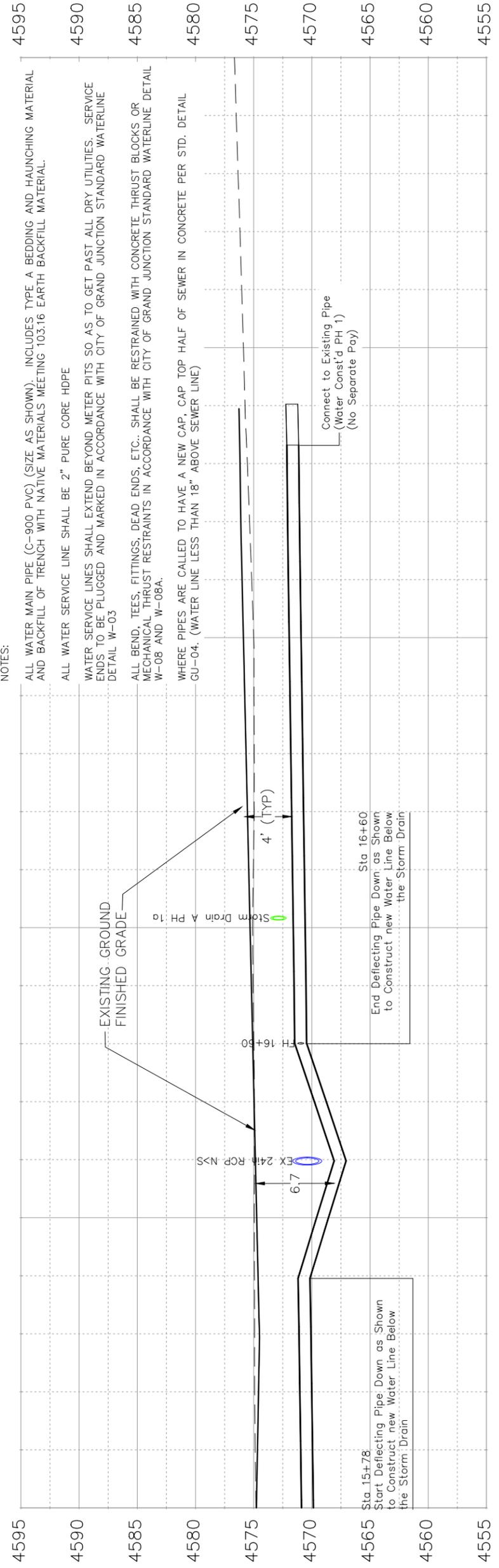
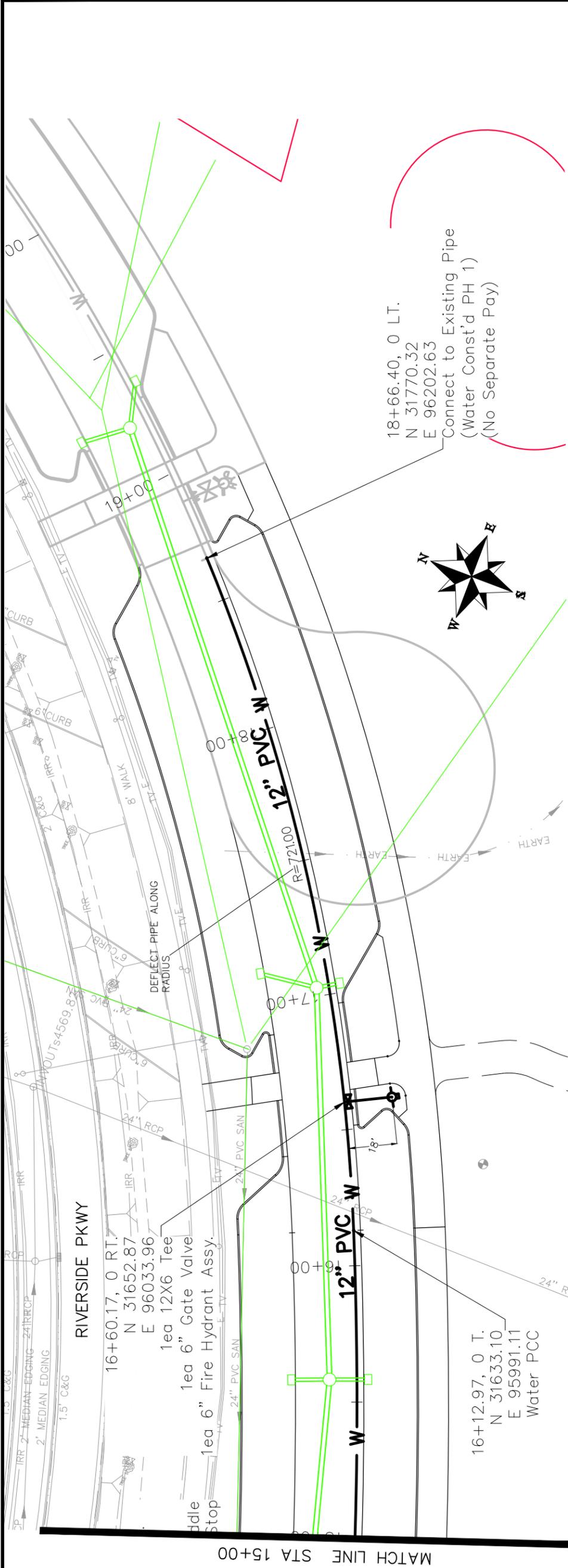
SCALE: PLAN & PROFILE
 HORIZONTAL: 1" = 40'
 VERTICAL: 1" = 10'

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 COLORADO

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LAS COLONIAS BUSINESS PARK PHASE 1A
 WATERLINE PLAN AND PROFILE

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NOTES:

ALL WATER MAIN PIPE (C-900 PVC) (SIZE AS SHOWN). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.

ALL WATER SERVICE LINE SHALL BE 2" PURE CORE HDPE

WATER SERVICE LINES SHALL EXTEND BEYOND METER PITS SO AS TO GET PAST ALL DRY UTILITIES. SERVICE ENDS TO BE PLUGGED AND MARKED IN ACCORDANCE WITH CITY OF GRAND JUNCTION STANDARD WATERLINE DETAIL W-03

ALL BEND, TEES, FITTINGS, DEAD ENDS, ETC., SHALL BE RESTRAINED WITH CONCRETE THRUST BLOCKS OR MECHANICAL THRUST RESTRAINTS IN ACCORDANCE WITH CITY OF GRAND JUNCTION STANDARD WATERLINE DETAIL W-08 AND W-08A.

WHERE PIPES ARE CALLED TO HAVE A NEW CAP, CAP TOP HALF OF SEWER IN CONCRETE PER STD. DETAIL GU-04. (WATER LINE LESS THAN 18" ABOVE SEWER LINE)

REVISION	DATE	DRAWN BY	DATE	SCALE	PLAN & PROFILE
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REVISION	DATE	CHECKED BY	DATE	0 2.5 5 10	VERTICAL
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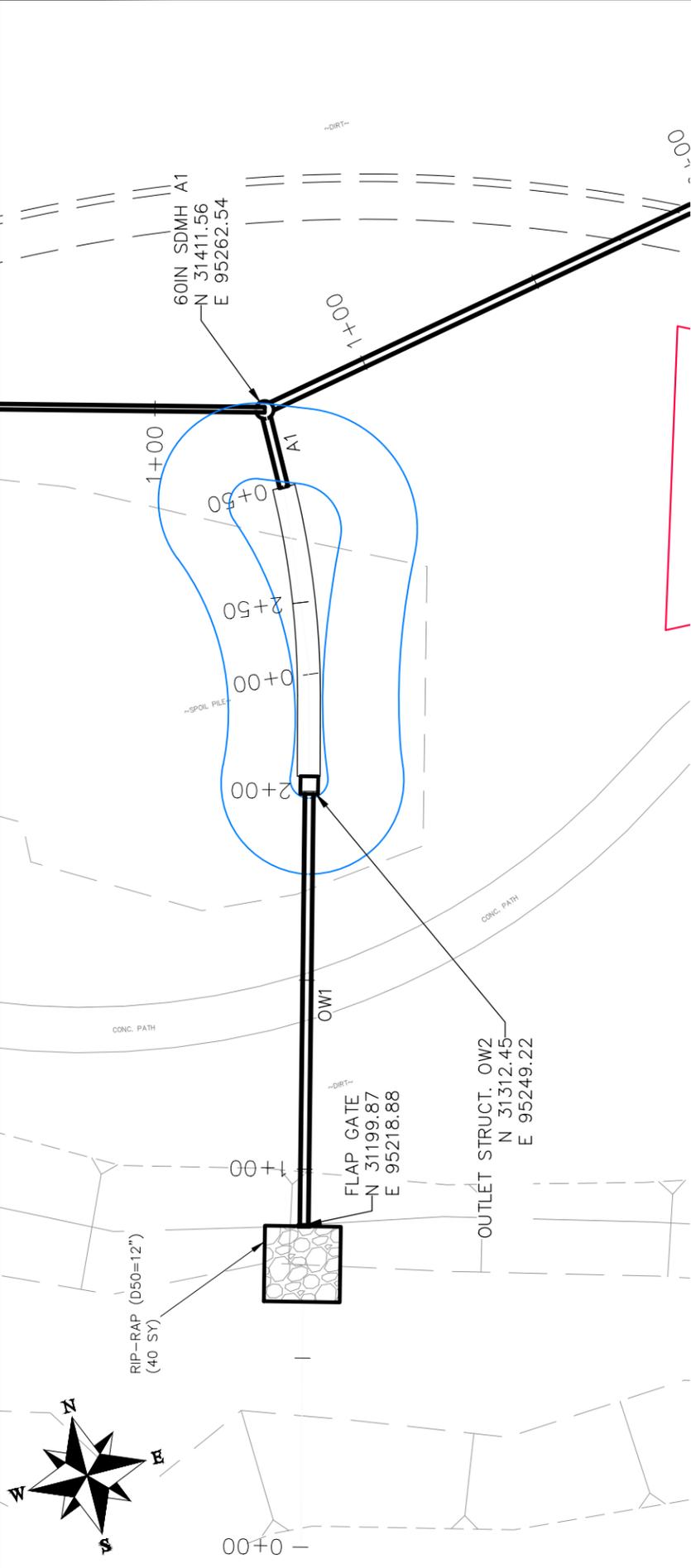
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Grand Junction
CITY OF COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

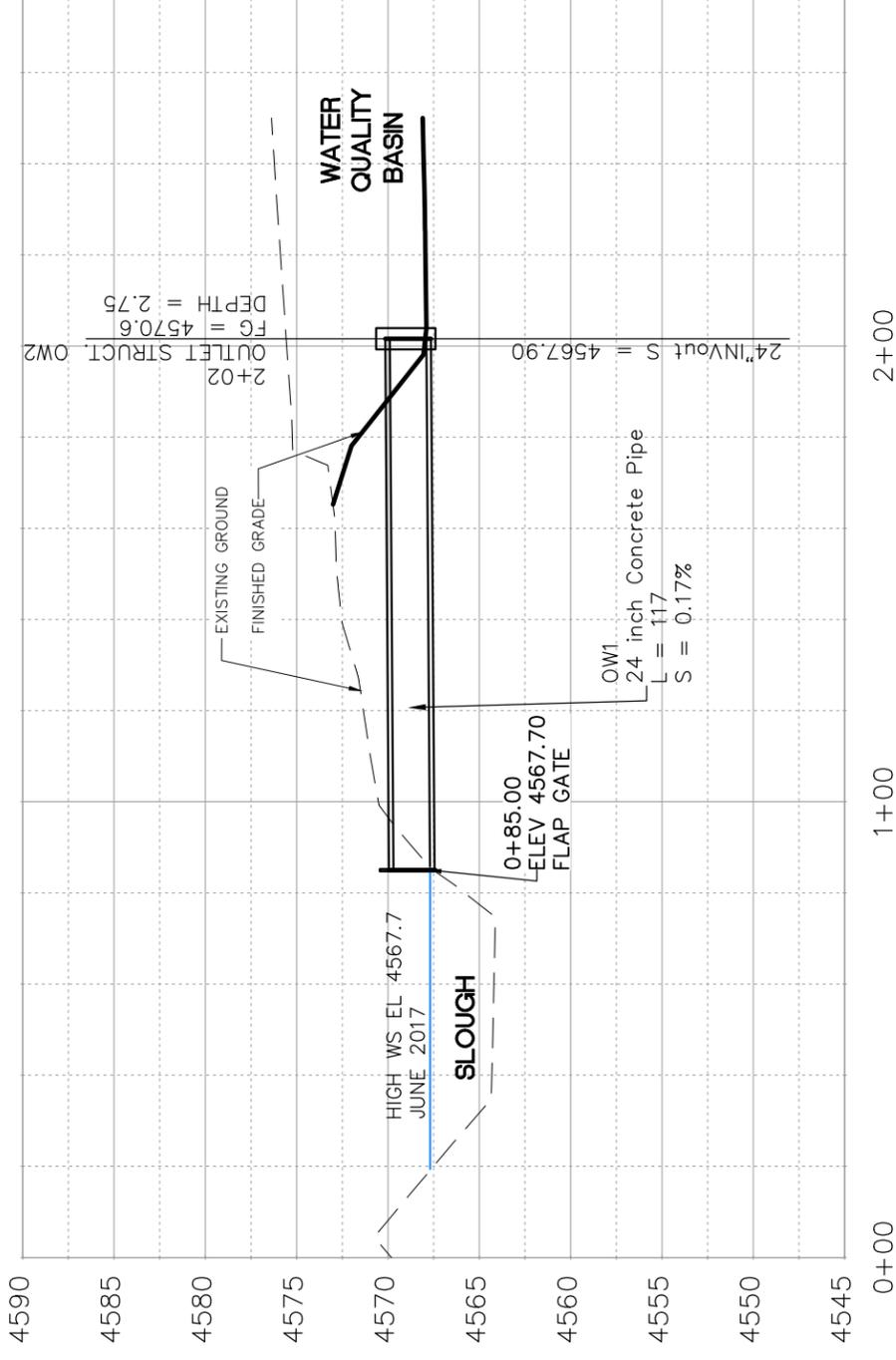
LAS COLONIAS BUSINESS PARK PHASE 1A
WATERLINE PLAN AND PROFILE

19



NOTES:

- ALL NEW STORM DRAIN MANHOLES (SDMH) SHALL BE SIZED AS NOTED AND INCLUDES CONNECTION OF ADJACENT STORM SEWER LINES, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL D-03).
- ALL INLETS SHALL BE EITHER VERTICAL CURB SINGLE STORM DRAIN INLETS (CURB INLET) OR SMALL AREA INLET (AREA INLET) PER CITY OF GRAND JUNCTION STANDARD DETAILS D-07 AND D-11 RESPECTIVELY.
- FLAP GATE SHALL BE A HYDRO gate MODEL 50C ROUND OPENING HEAVY DUTY FLAP GATE OR ENGINEER APPROVED EQUAL.
- OUTLET STRUCTURE SHALL BE BUILT PER DETAIL "WATER QUALITY OUTLET STRUCTURE POND 1" IN THE FINAL DRAINAGE REPORT FOR LAS COLONIAS BUSINESS PARK, APPENDIX J, WQCY PLATE AND OUTLET STRUCTURE DESIGN, AND INCLUDES CONNECTION OF ADJACENT STORM SEWER LINE.
- ALL STORM DRAIN PIPE SHALL BE SIZED PER PLAN NOTES AND BE REINFORCED CONCRETE PIPE. INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.



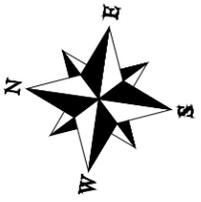
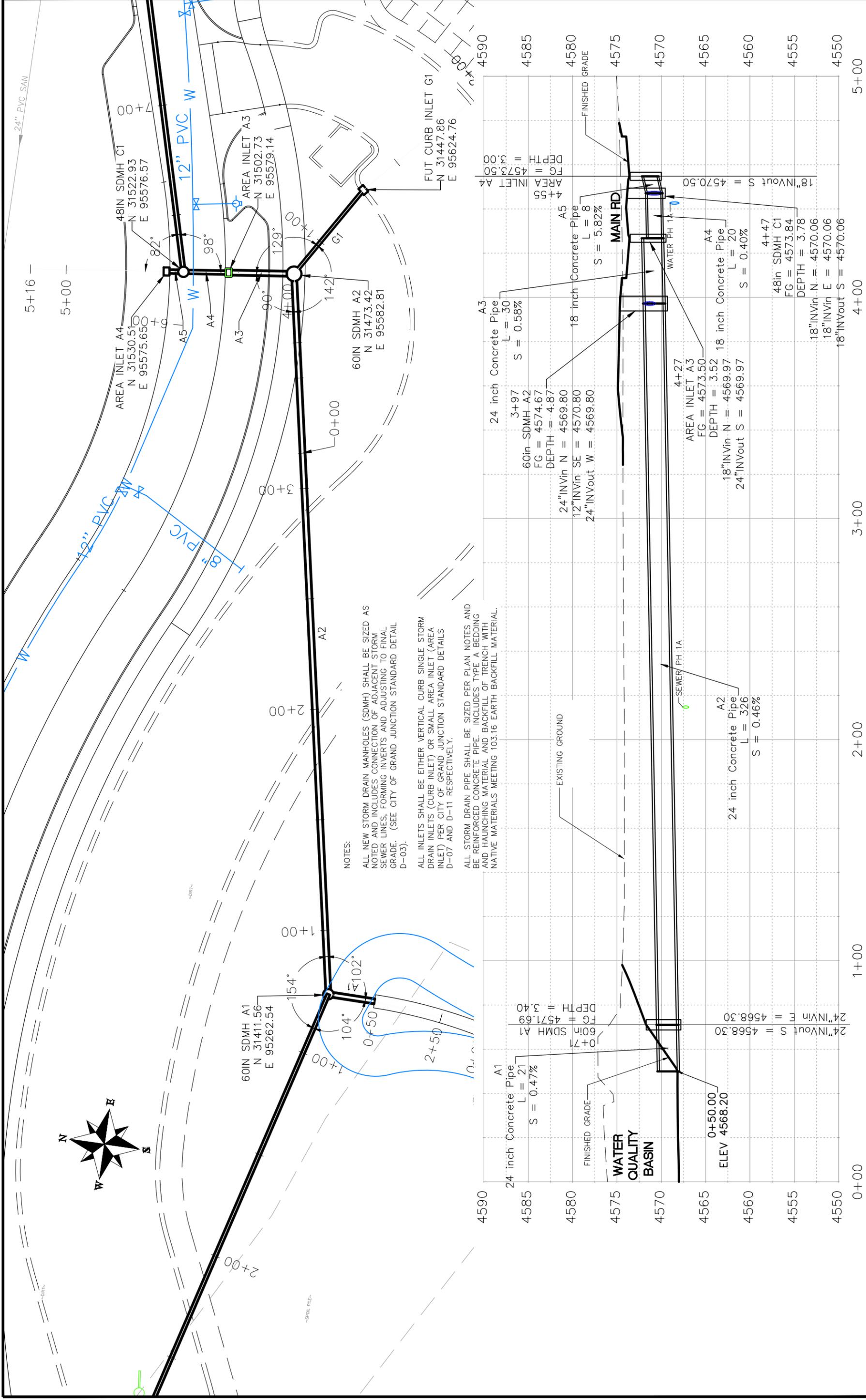
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PUBLIC WORKS
ENGINEERING DIVISION



REVISION	DATE	DESCRIPTION

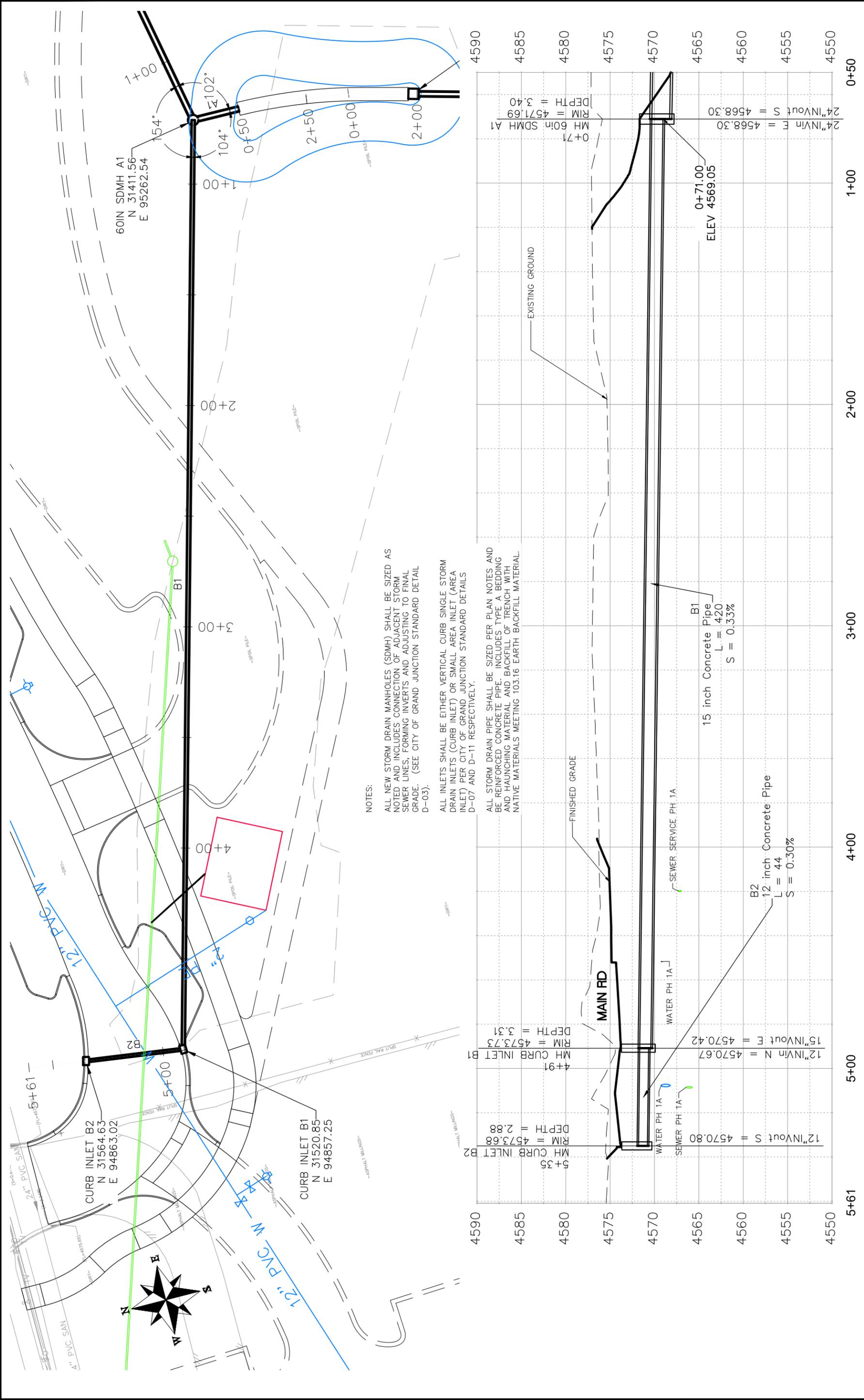
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ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
STORM DRAIN PLAN AND PROFILE



NOTES:

ALL NEW STORM DRAIN MANHOLES (SDMH) SHALL BE SIZED AS NOTED AND INCLUDES CONNECTION OF ADJACENT STORM SEWER LINES, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL D-03).

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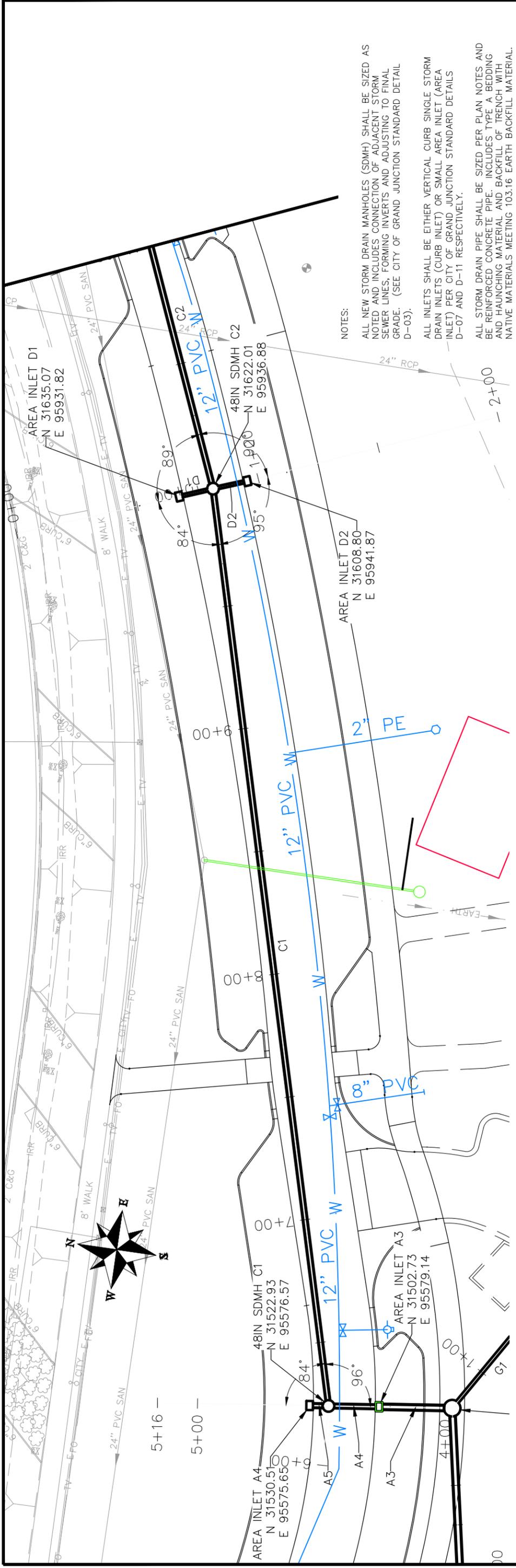
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**PUBLIC WORKS
ENGINEERING DIVISION**

**LAS COLONIAS BUSINESS PARK PHASE 1A
STORM DRAIN PLAN AND PROFILE**

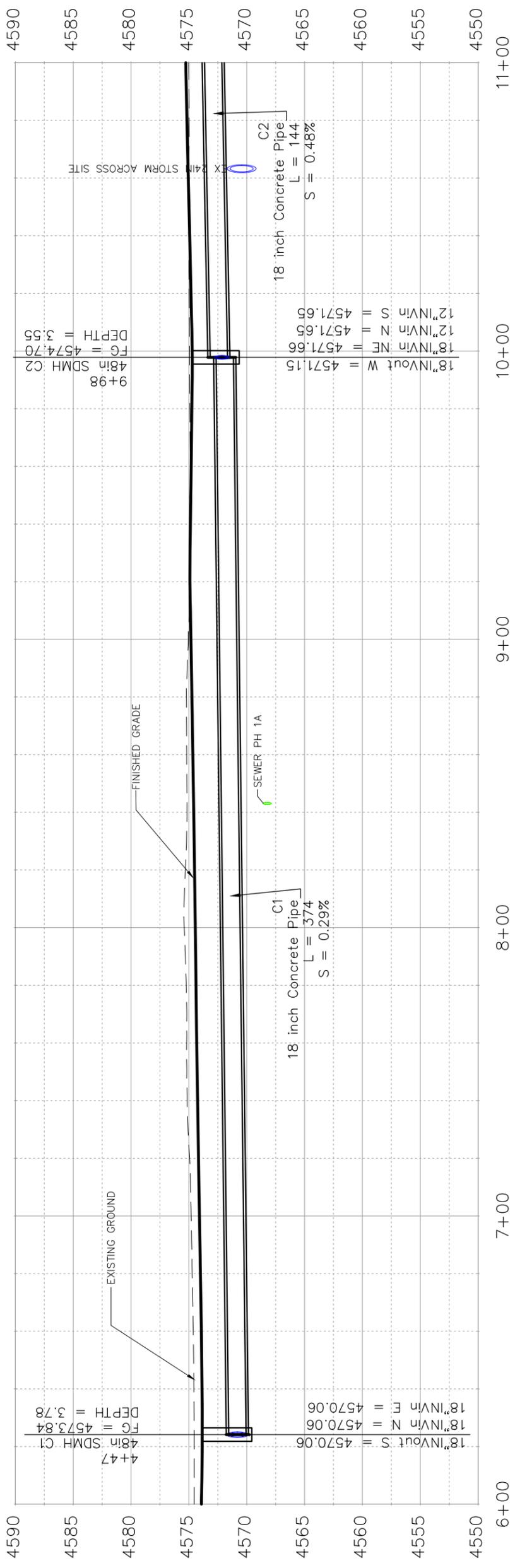


NOTES:

ALL NEW STORM DRAIN MANHOLES (SDMH) SHALL BE SIZED AS NOTED AND INCLUDES CONNECTION OF ADJACENT STORM SEWER LINES, FORMING INVERTS AND ADJUSTING TO FINAL GRADE. (SEE CITY OF GRAND JUNCTION STANDARD DETAIL D-03).

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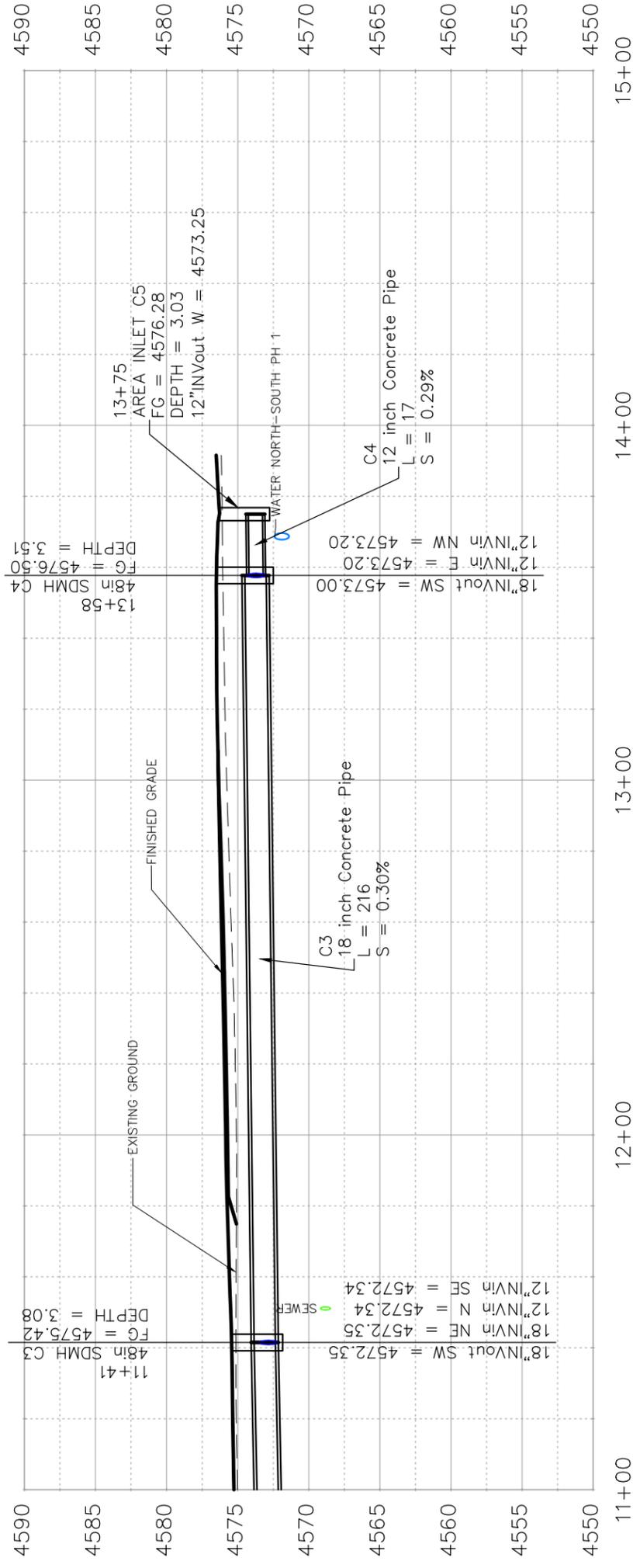
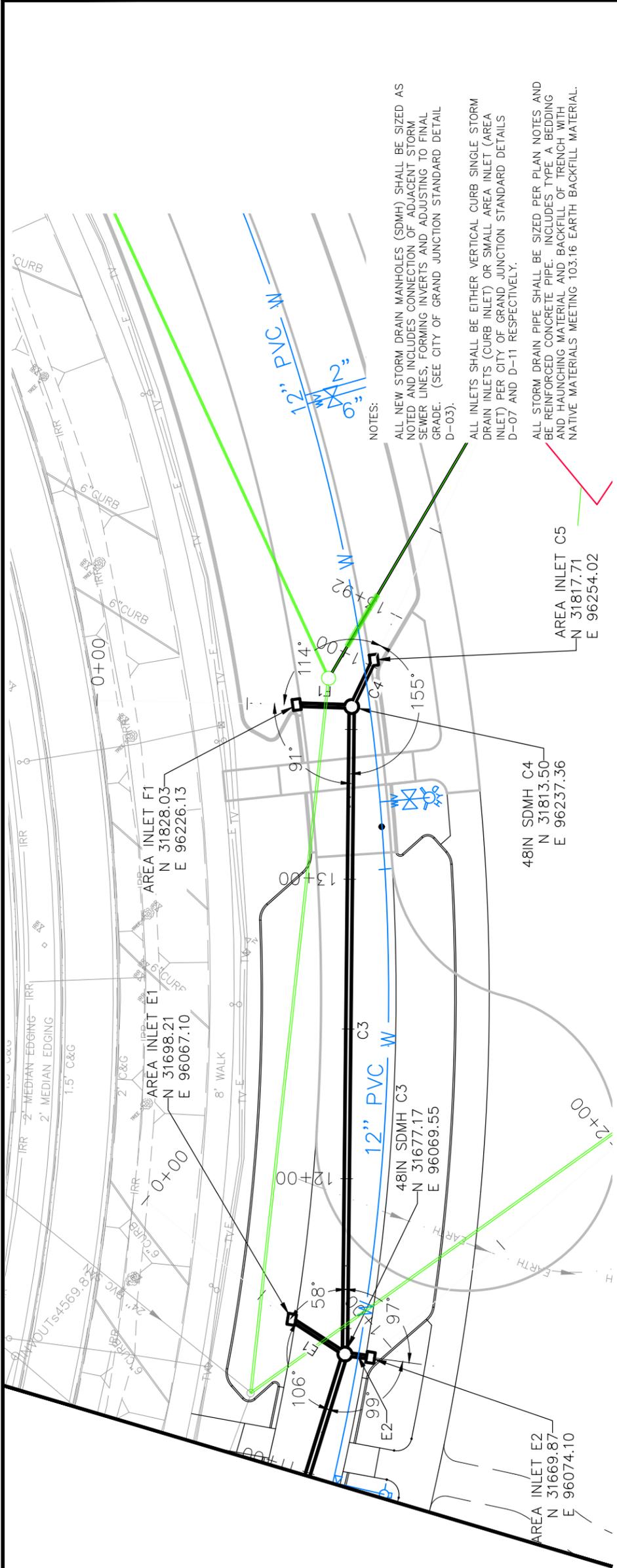
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CITY OF **Grand Junction** COLORADO

PUBLIC WORKS ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A STORM DRAIN PLAN AND PROFILE

23



REVISION	DESCRIPTION	DATE

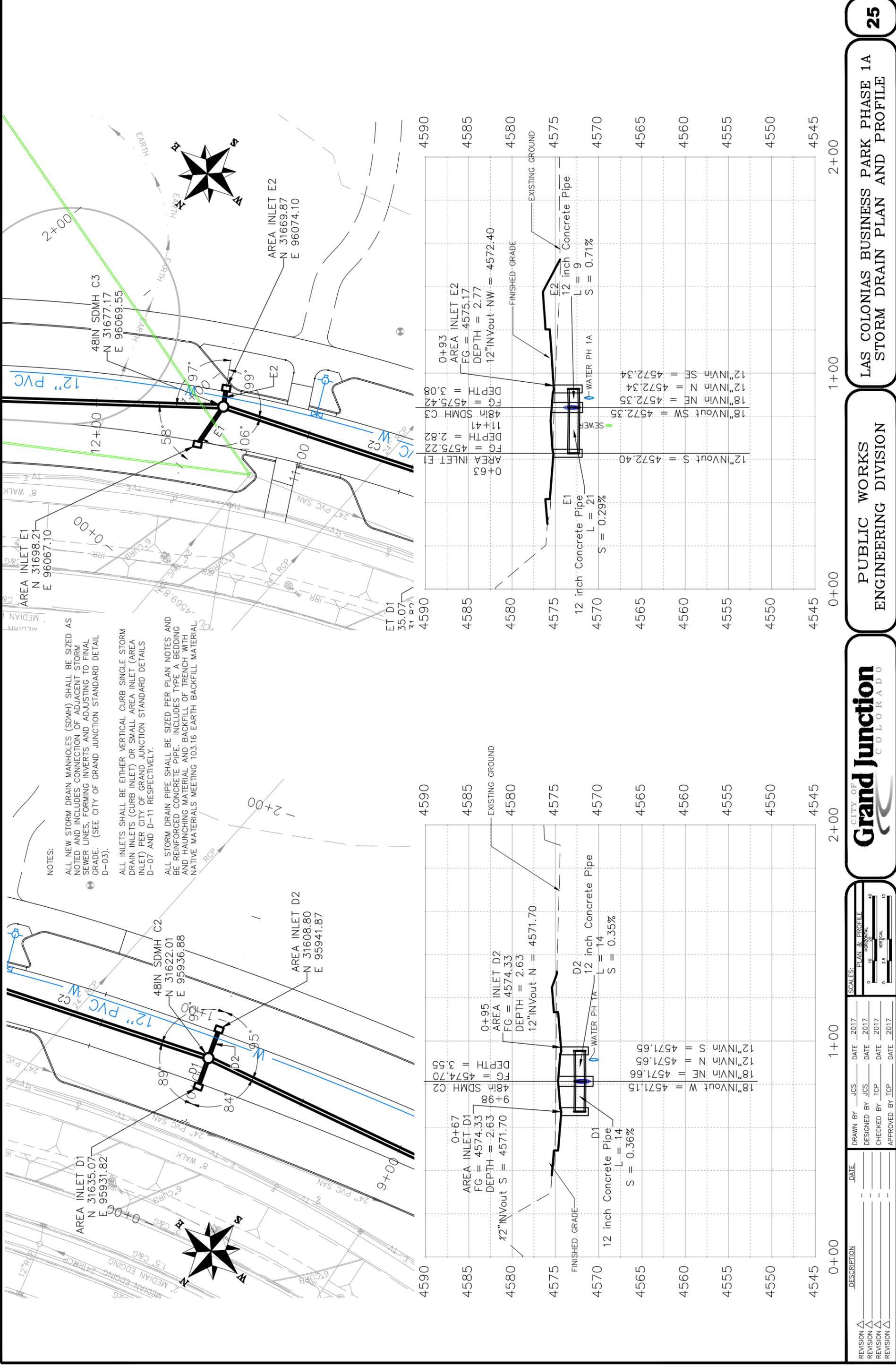
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0	2.5' VERTICAL



**PUBLIC WORKS
ENGINEERING DIVISION**

**LAS COLONIAS BUSINESS PARK PHASE 1A
STORM DRAIN PLAN AND PROFILE**



REVISION	DATE	DESCRIPTION

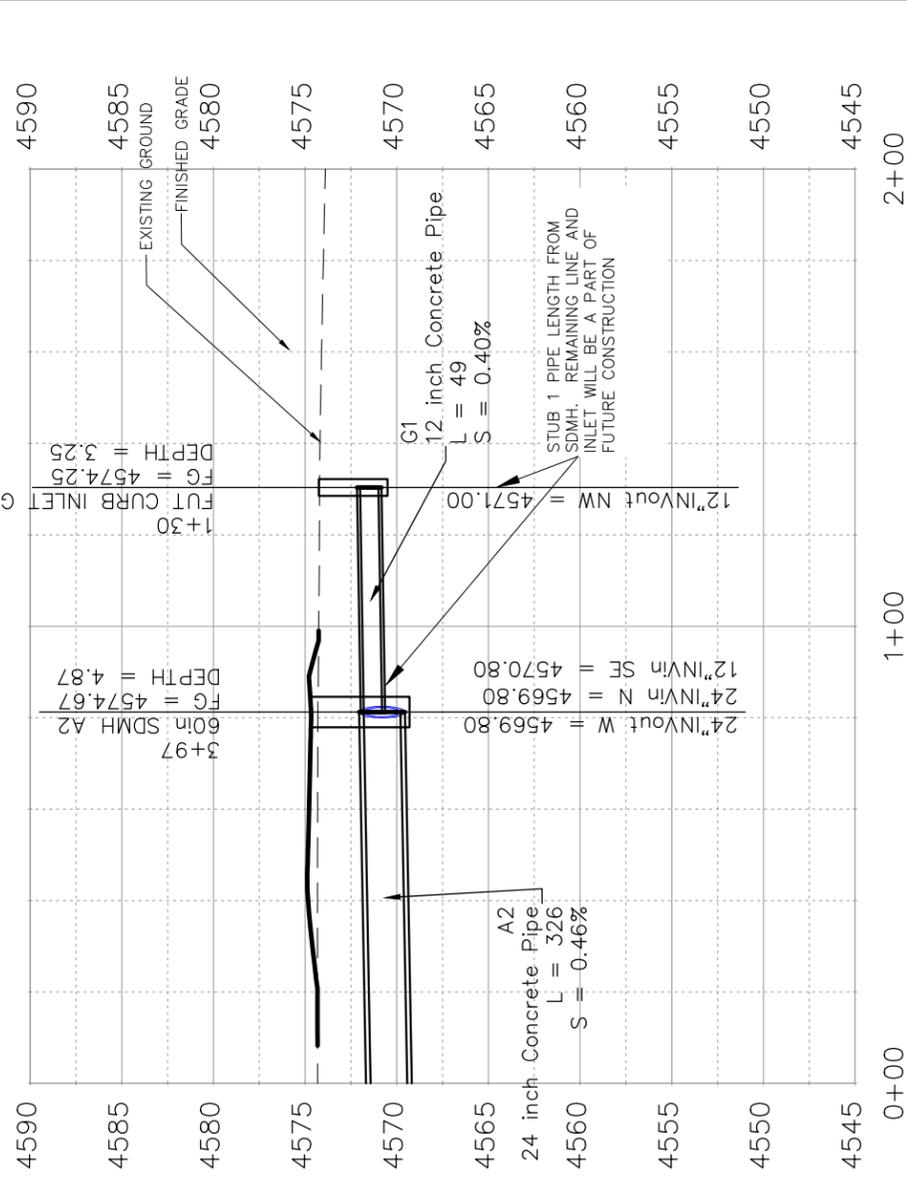
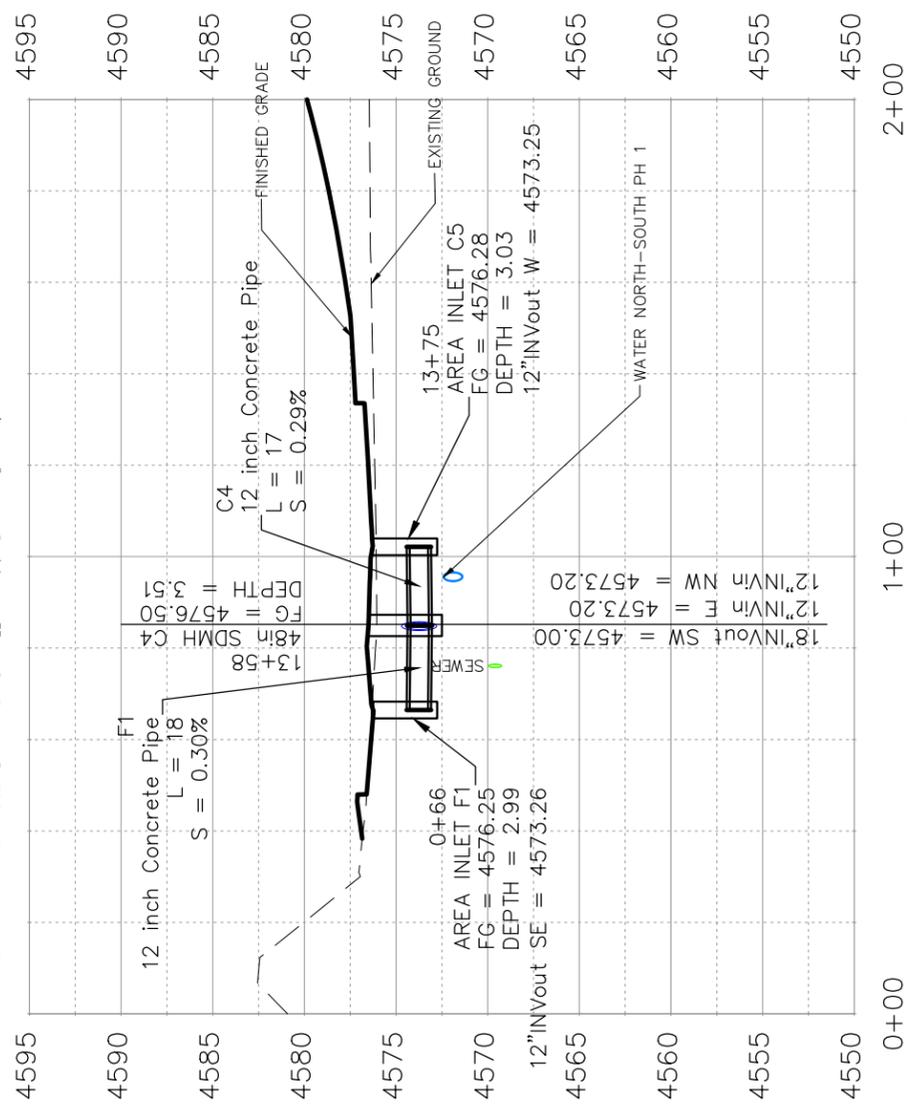
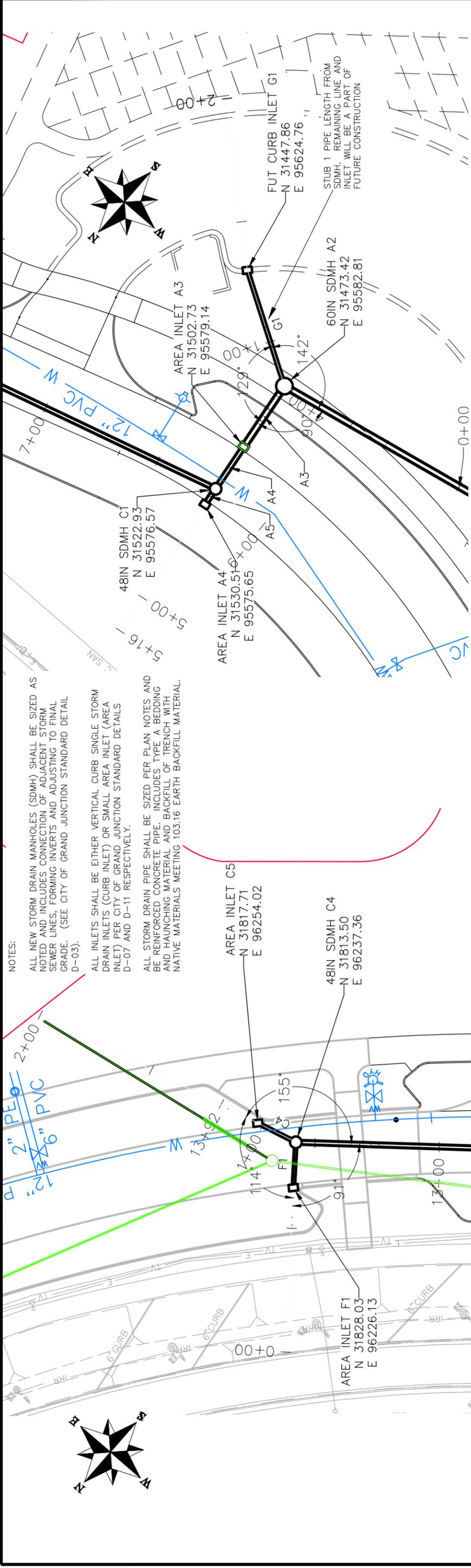
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SCALE:	PLAN & PROFILE
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**LAS COLONIAS BUSINESS PARK PHASE 1A
STORM DRAIN PLAN AND PROFILE**



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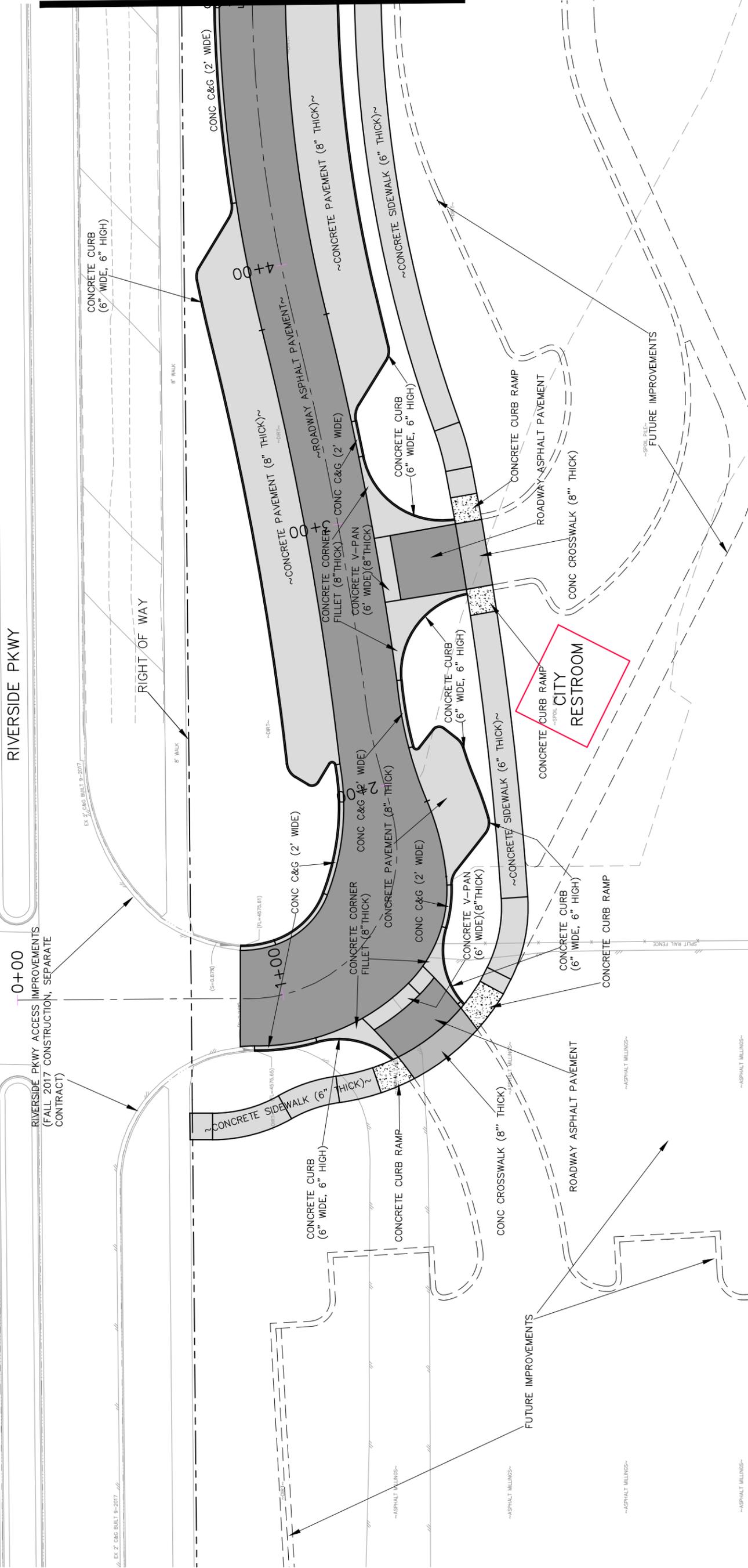
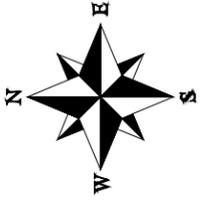
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ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
STORM DRAIN PLAN AND PROFILE

SEE STAKING PLANS FOR STAKING DATA



MATCH LINE STA 5+00

REVISION	DATE	DESCRIPTION
REVISION		
REVISION		
REVISION		

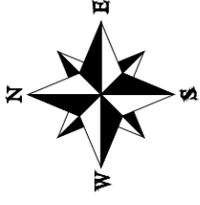
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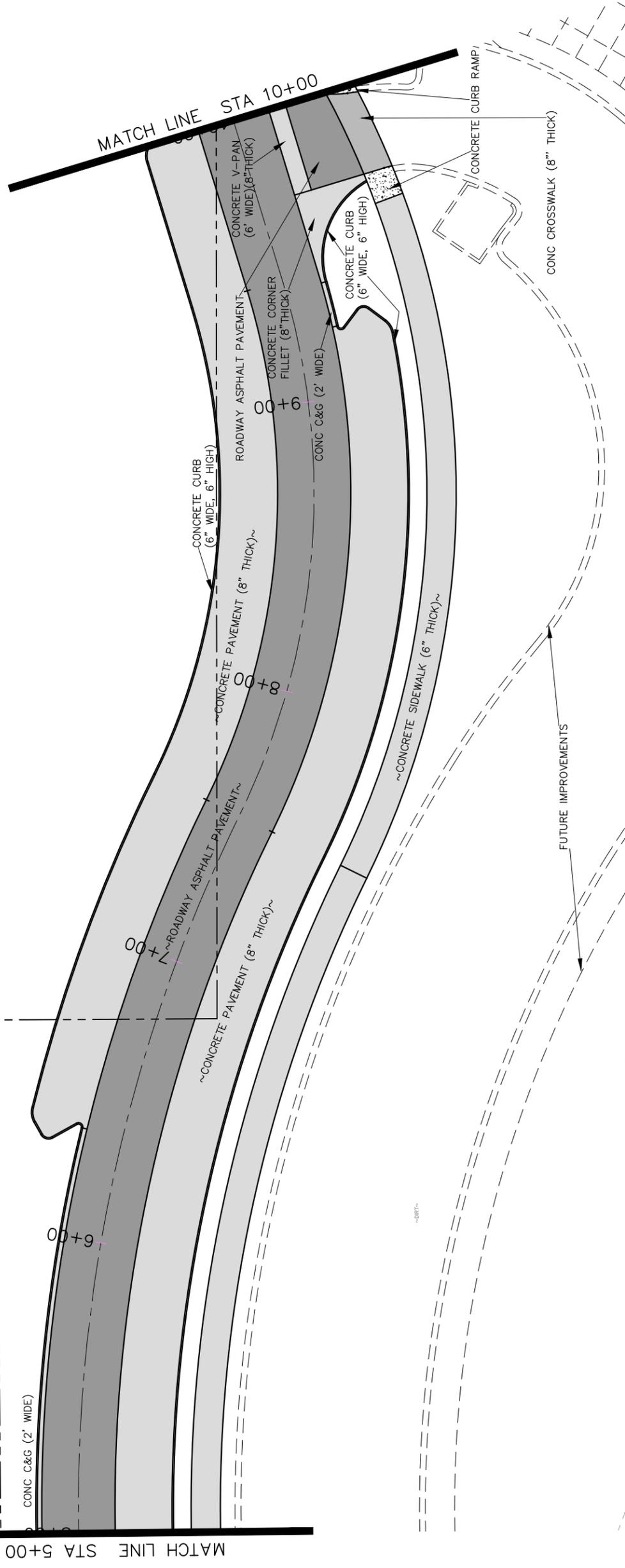


PUBLIC WORKS ENGINEERING DIVISION

Las Colonias Business Park Phase Ia Roadway Plan



SEE STAKING PLANS FOR STAKING DATA



REVISION	DATE	DESCRIPTION
REVISION		
REVISION		
REVISION		

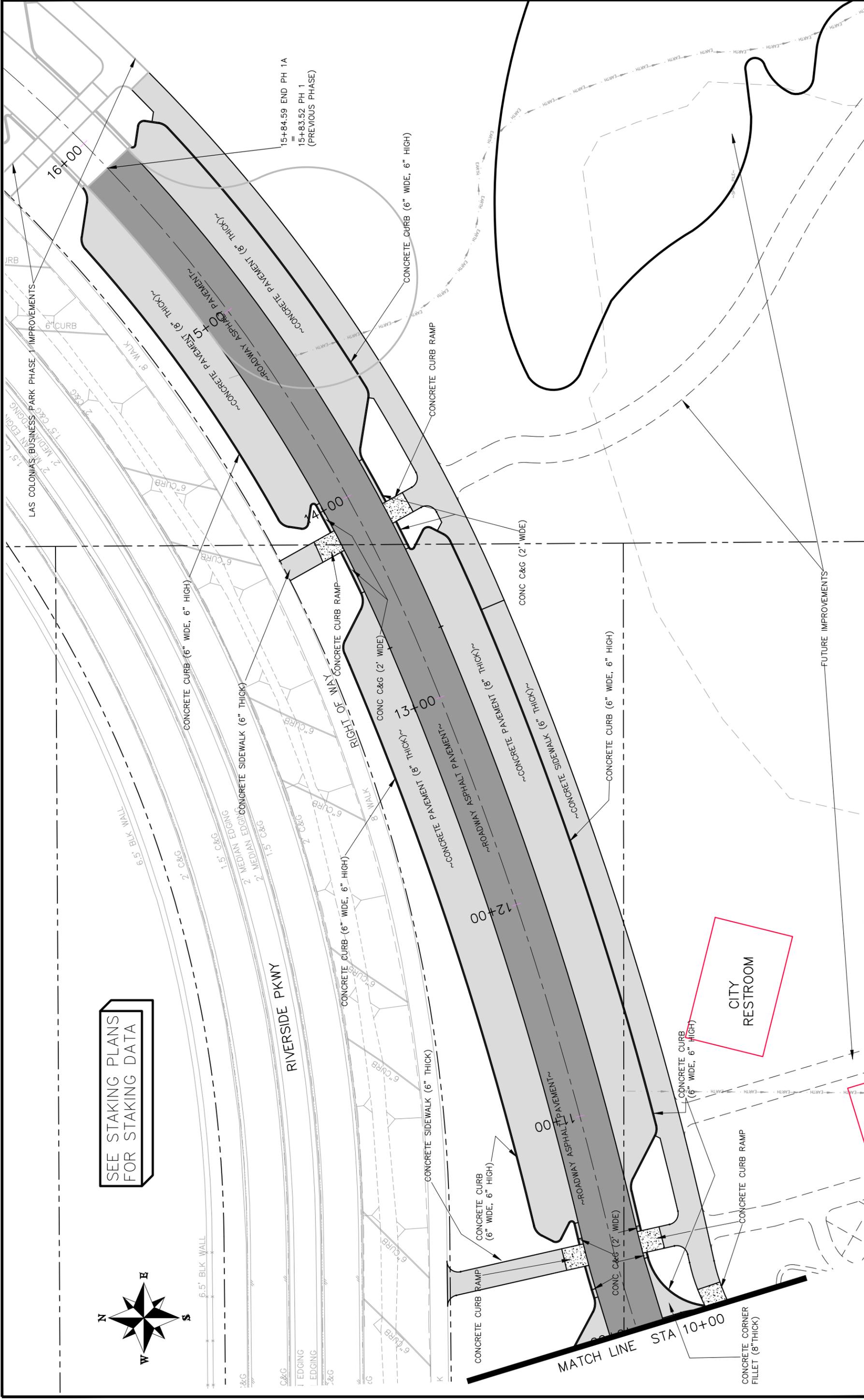
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TOP	2017

SCALE	PLAN & PROFILE
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PUBLIC WORKS
ENGINEERING DIVISION

Las Colonias Business Park Phase Ia
Roadway Plan



SEE STAKING PLANS FOR STAKING DATA



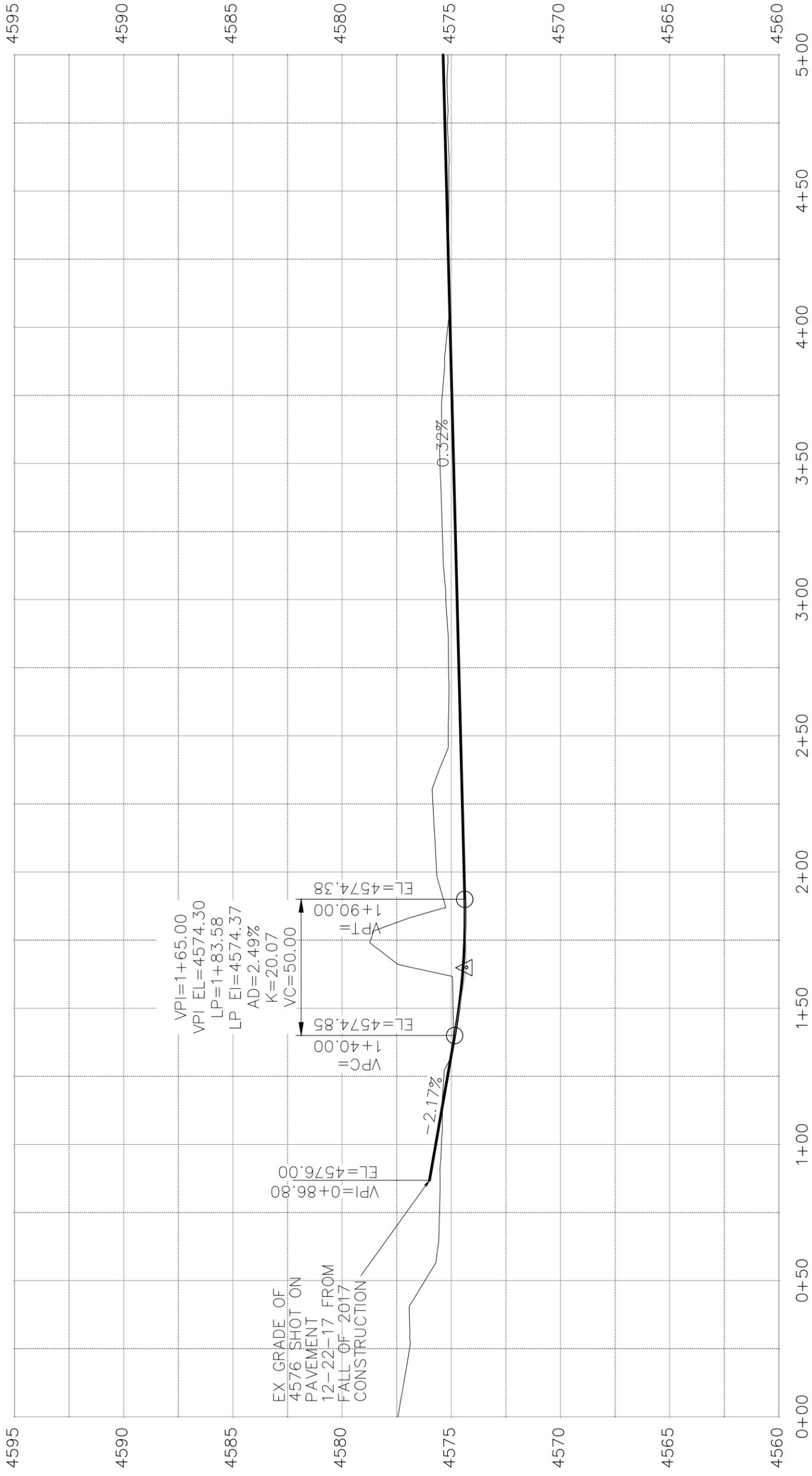
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REVISION		2017	TOP	2017	VERTICAL



PUBLIC WORKS
ENGINEERING DIVISION

Las Colonias Business Park Phase Ia
Roadway Plan
29

SEE STAKING PLANS
FOR STAKING DATA



REVISION	DESCRIPTION	DATE

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DESIGNED BY	DATE
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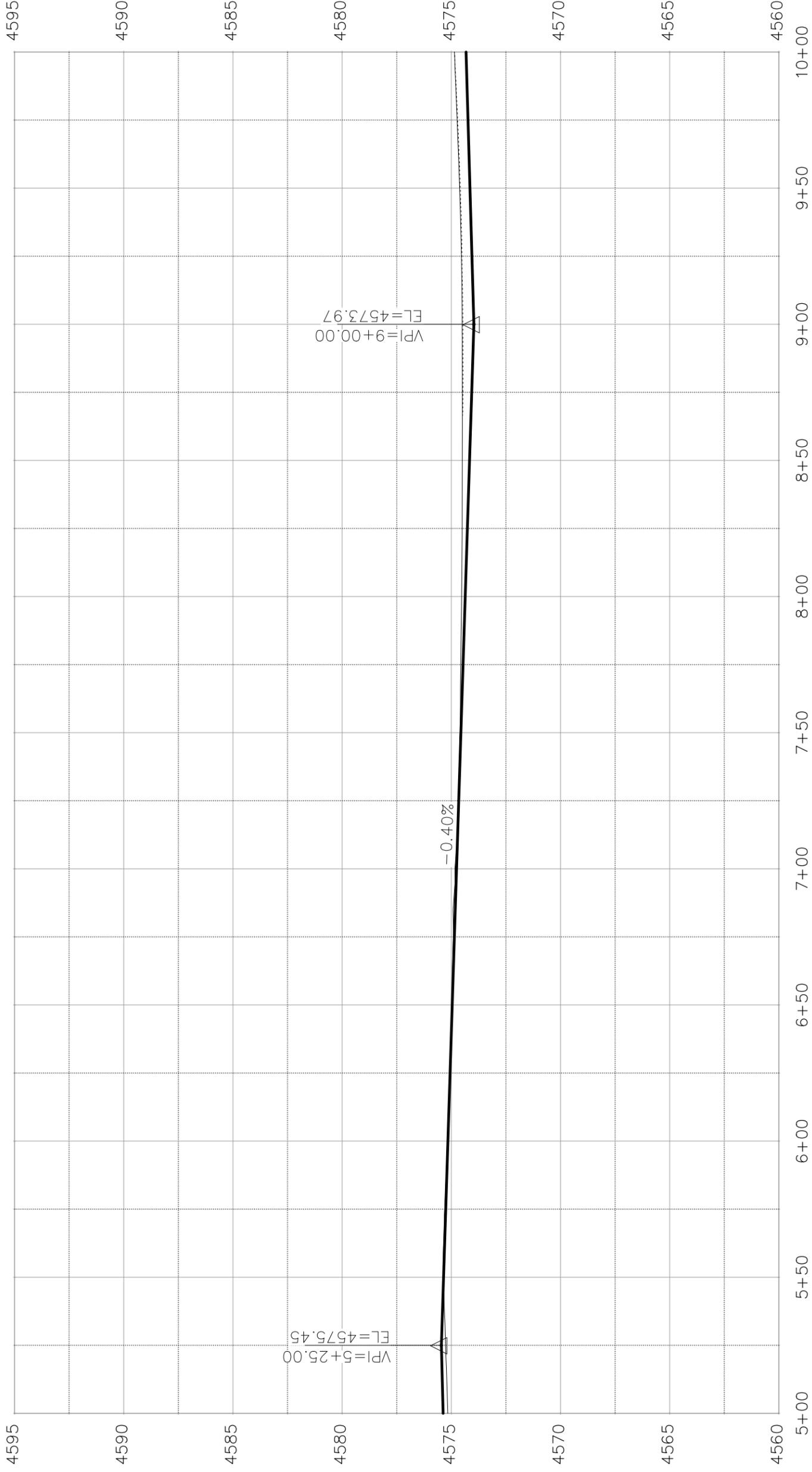
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HORIZONTAL	1" = 100'
VERTICAL	1" = 5'



PUBLIC WORKS
ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
ROADWAY PROFILE

SEE STAKING PLANS
FOR STAKING DATA



REVISION	△	DATE

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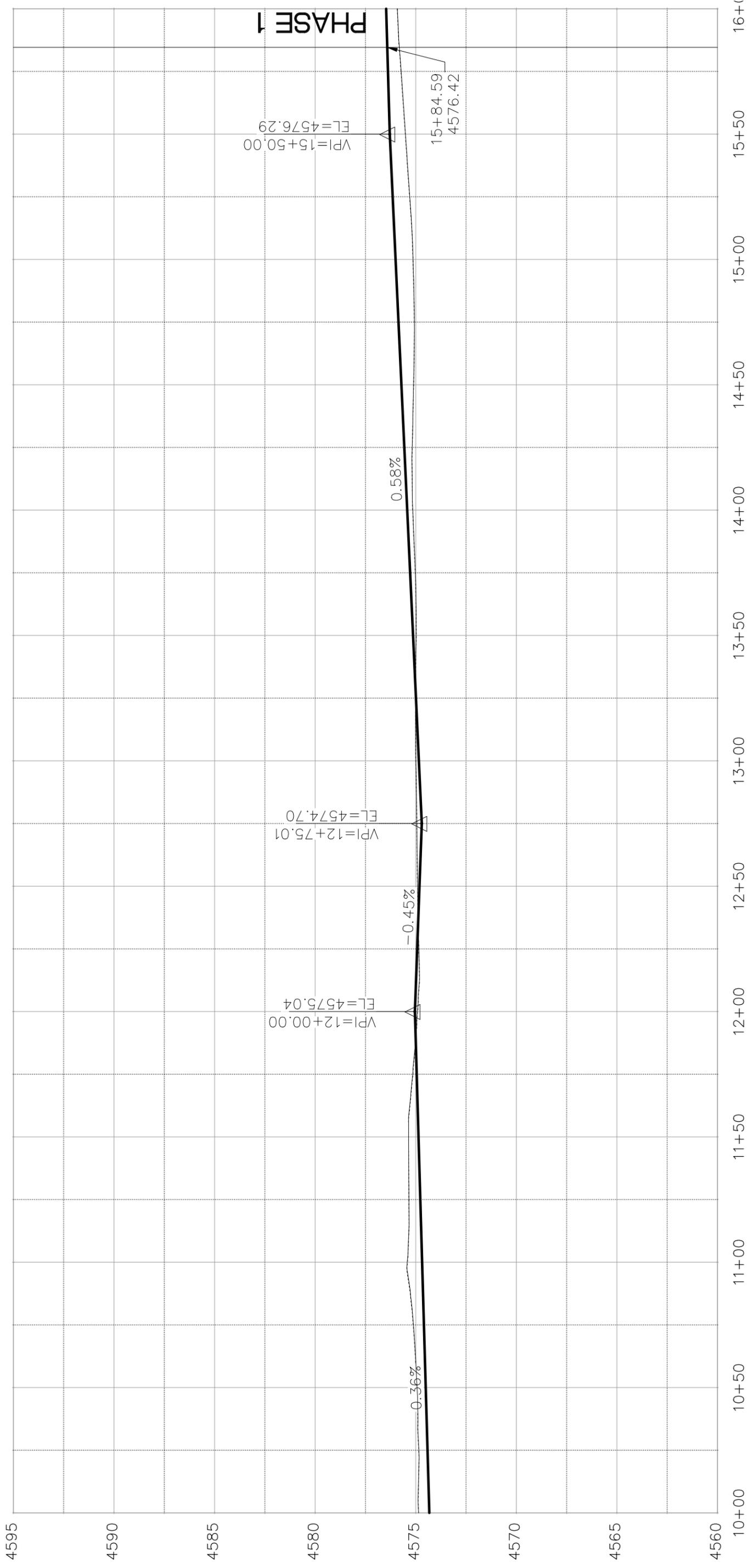
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PUBLIC WORKS
ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
ROADWAY PROFILE

SEE STAKING PLANS
FOR STAKING DATA



REVISION	DESCRIPTION	DATE

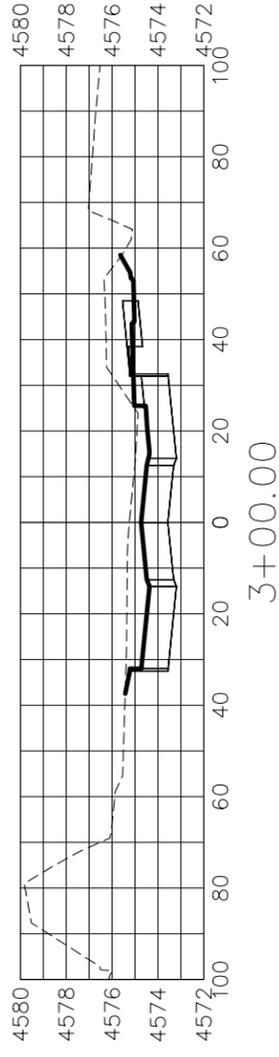
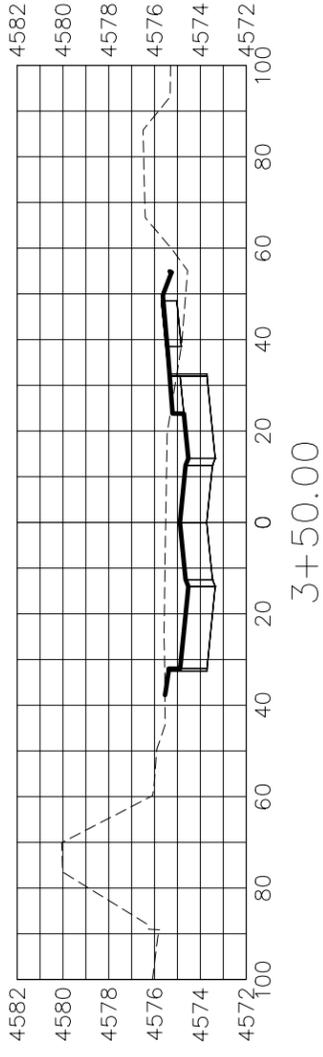
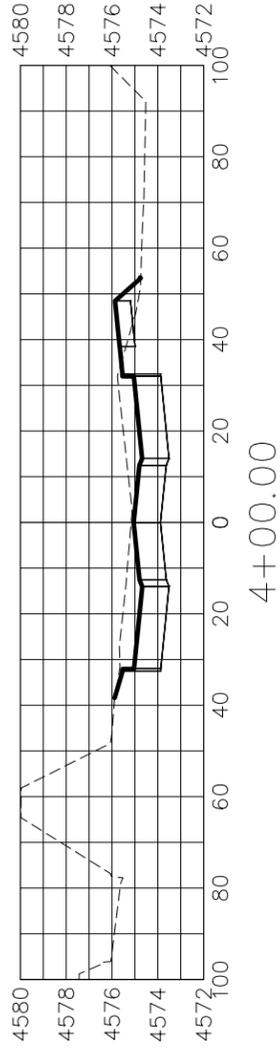
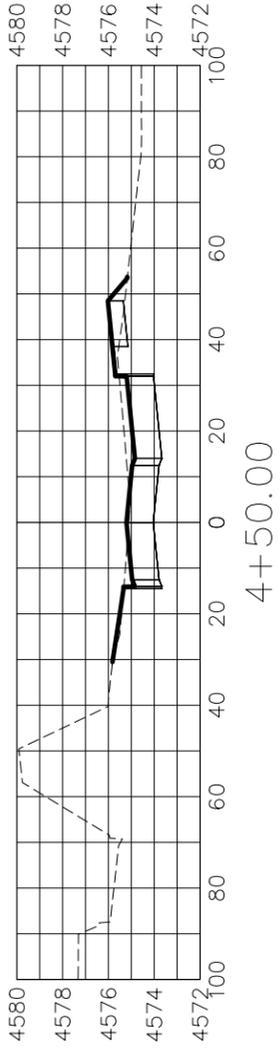
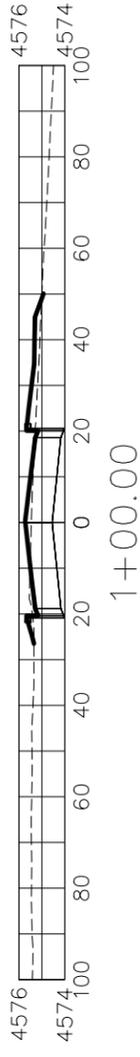
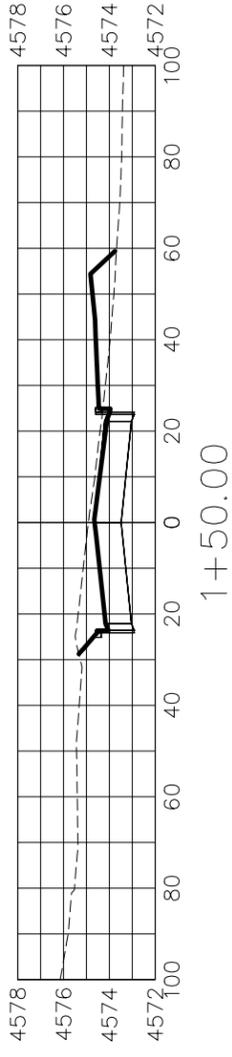
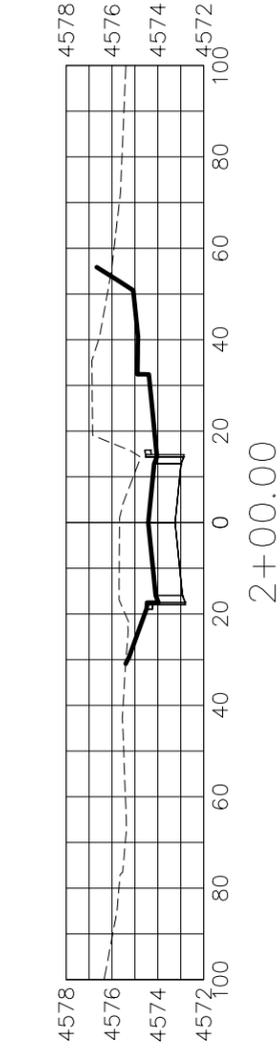
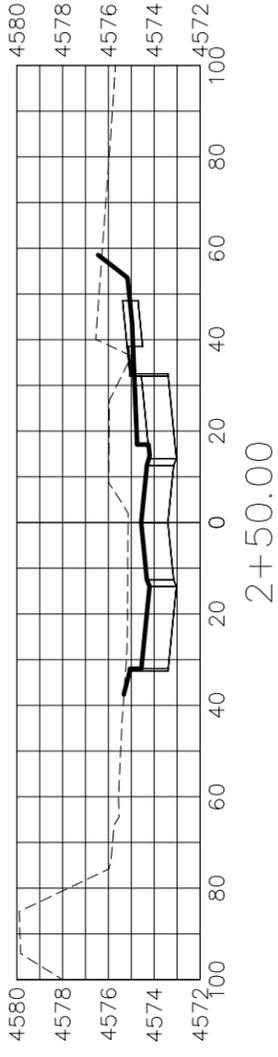
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HORIZONTAL	1" = 100'
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ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
ROADWAY PROFILE



REVISION	DATE

DESCRIPTION	DATE

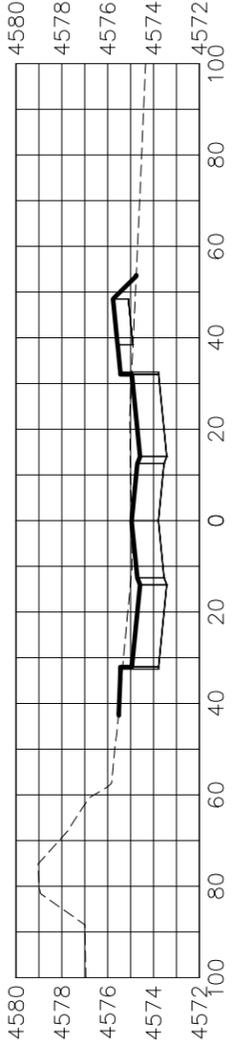
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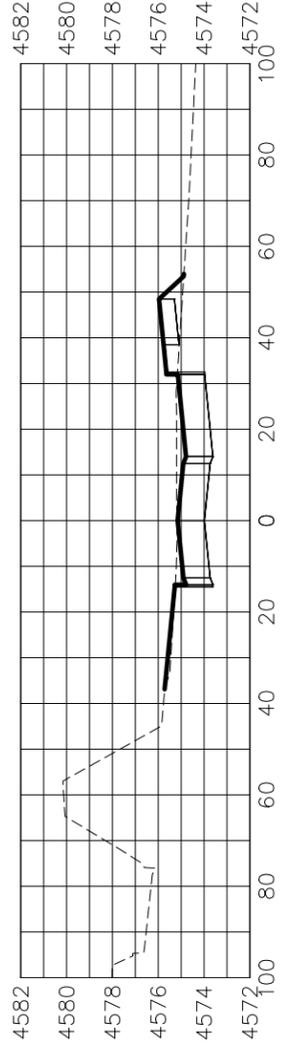
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Grand Junction
 COLORADO

PUBLIC WORKS
 ENGINEERING DIVISION

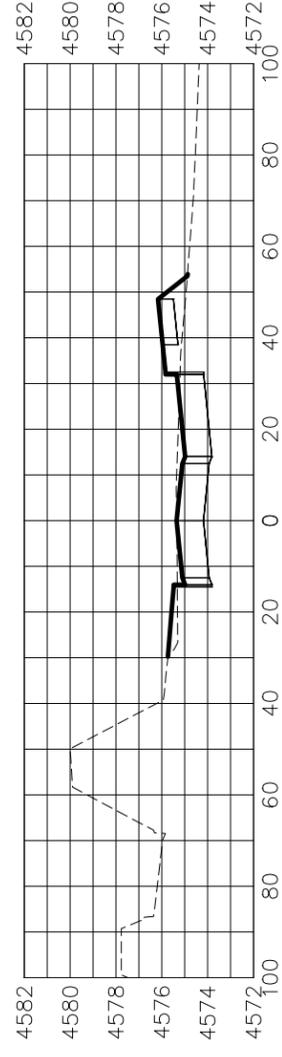
LAS COLONIAS BUSINESS PARK PHASE 1A
 ROADWAY CROSS SECTIONS



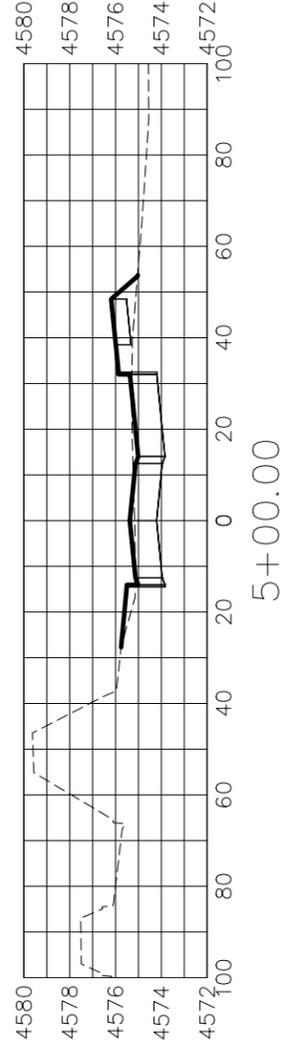
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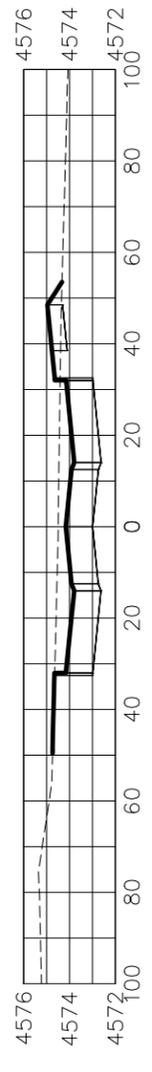
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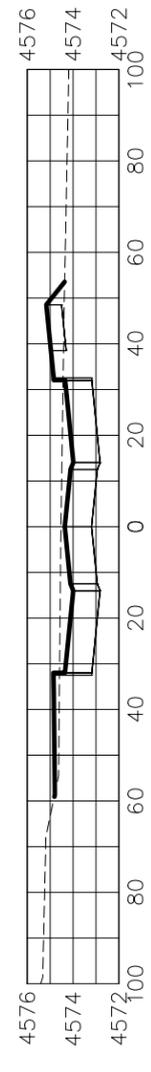
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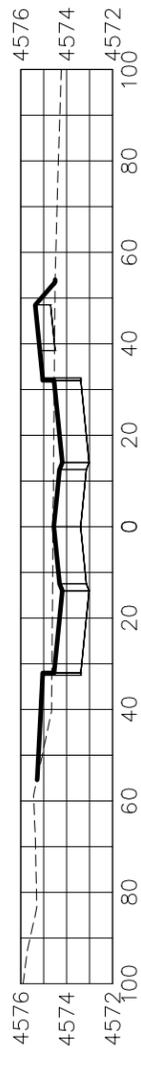
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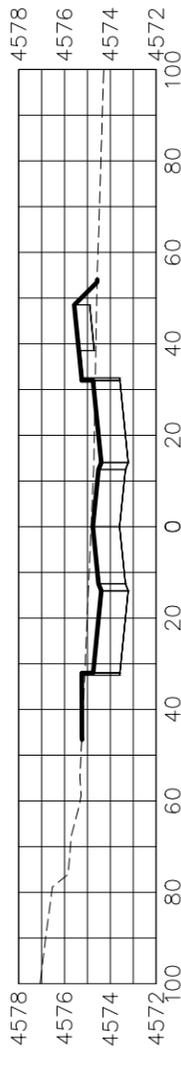
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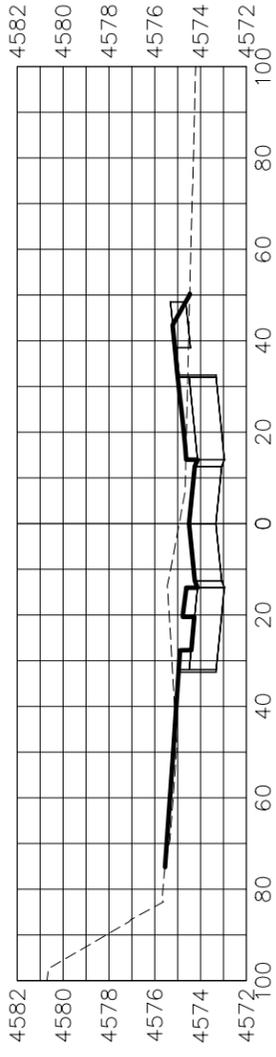
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SCALES:	PLAN & PROFILE	1" = 40'
	HORIZONTAL	1" = 20'
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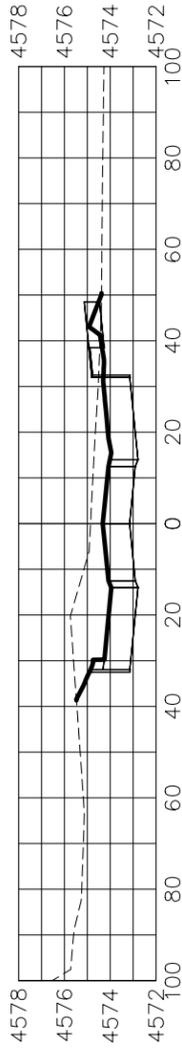


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ENGINEERING DIVISION

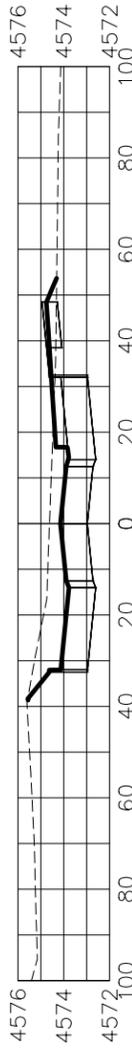
LAS COLONIAS BUSINESS PARK PHASE 1A
ROADWAY CROSS SECTIONS



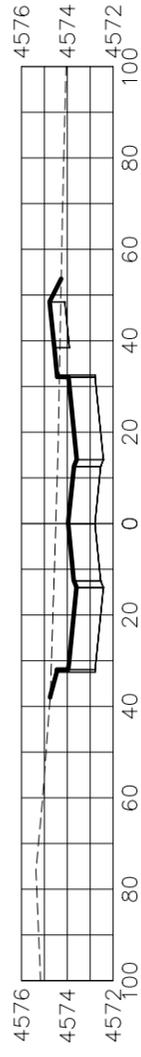
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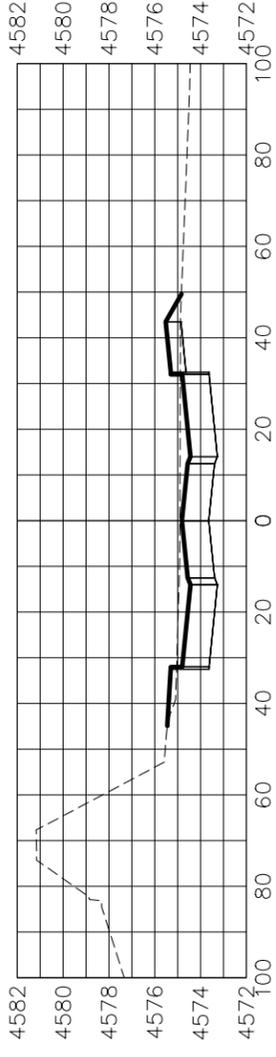
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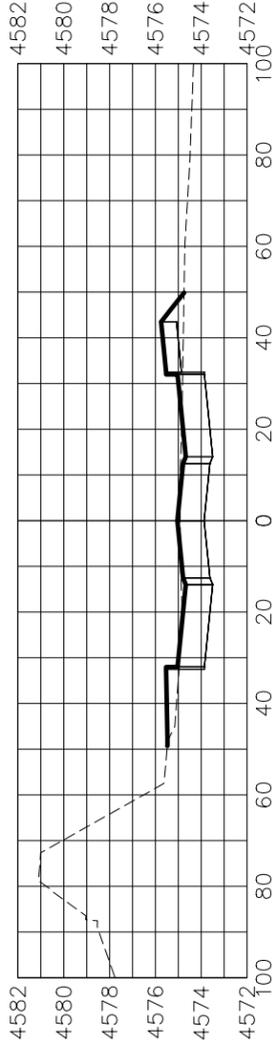
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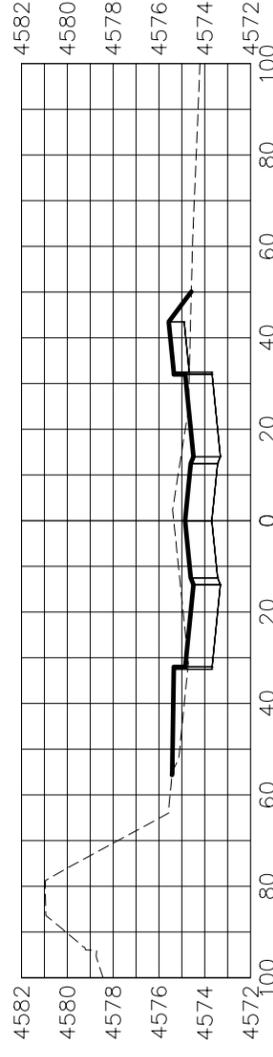
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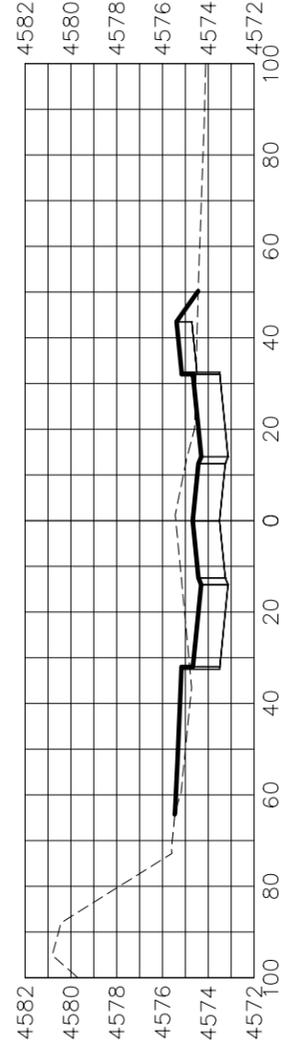
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11+00.00

REVISION	DATE

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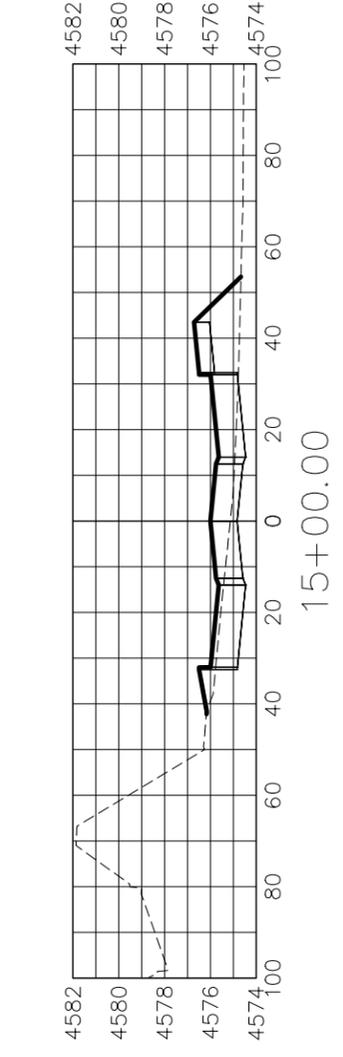
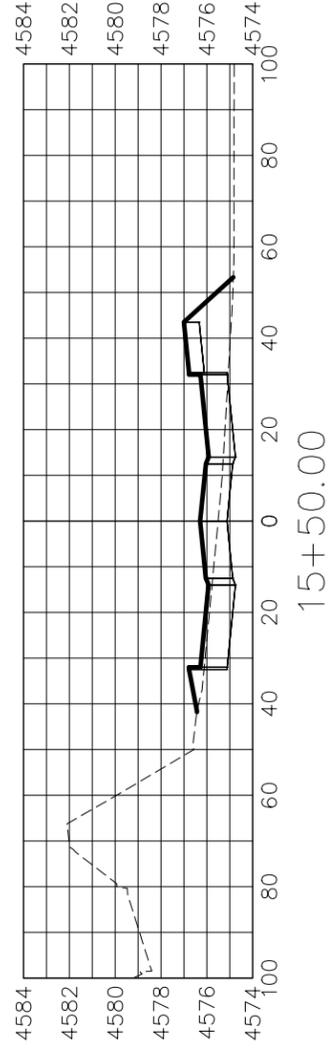
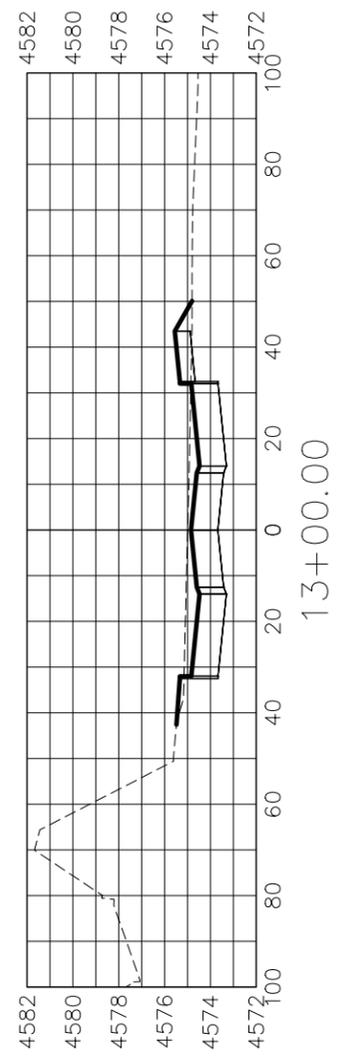
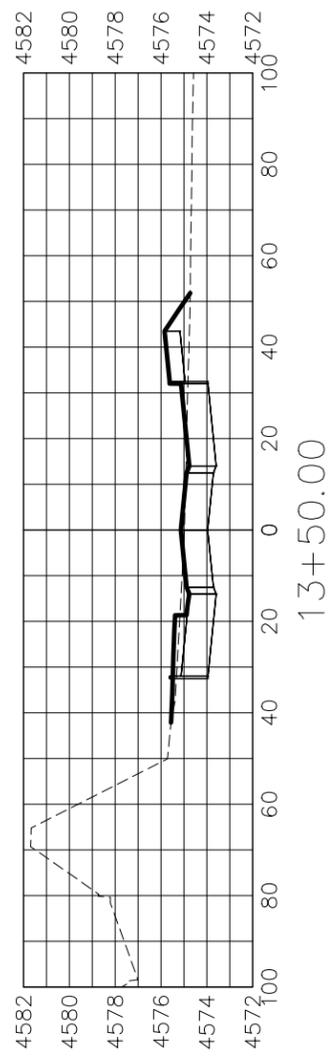
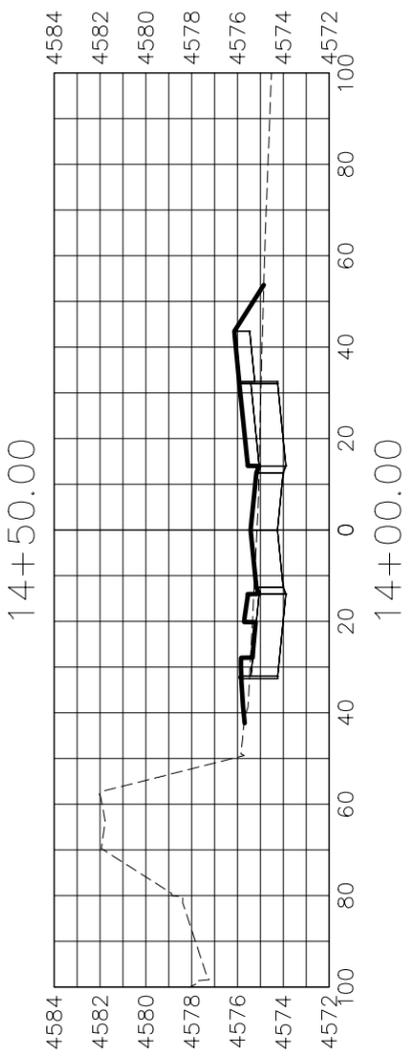
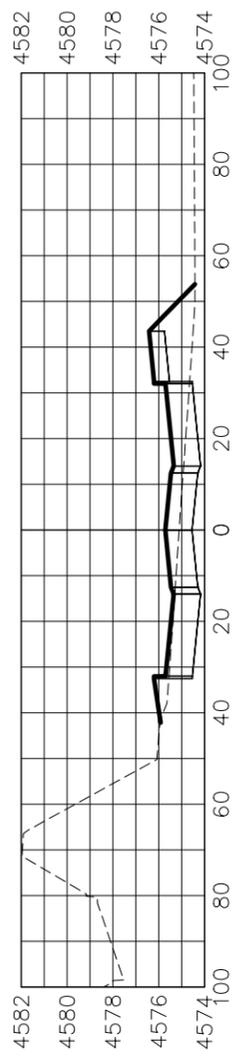
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SCALES:	PLAN & PROFILE
0	HORIZONTAL
0	VERTICAL



PUBLIC WORKS
ENGINEERING DIVISION

LAS COLONIAS BUSINESS PARK PHASE 1A
ROADWAY CROSS SECTIONS



REVISION	DESCRIPTION	DATE
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2		
3		

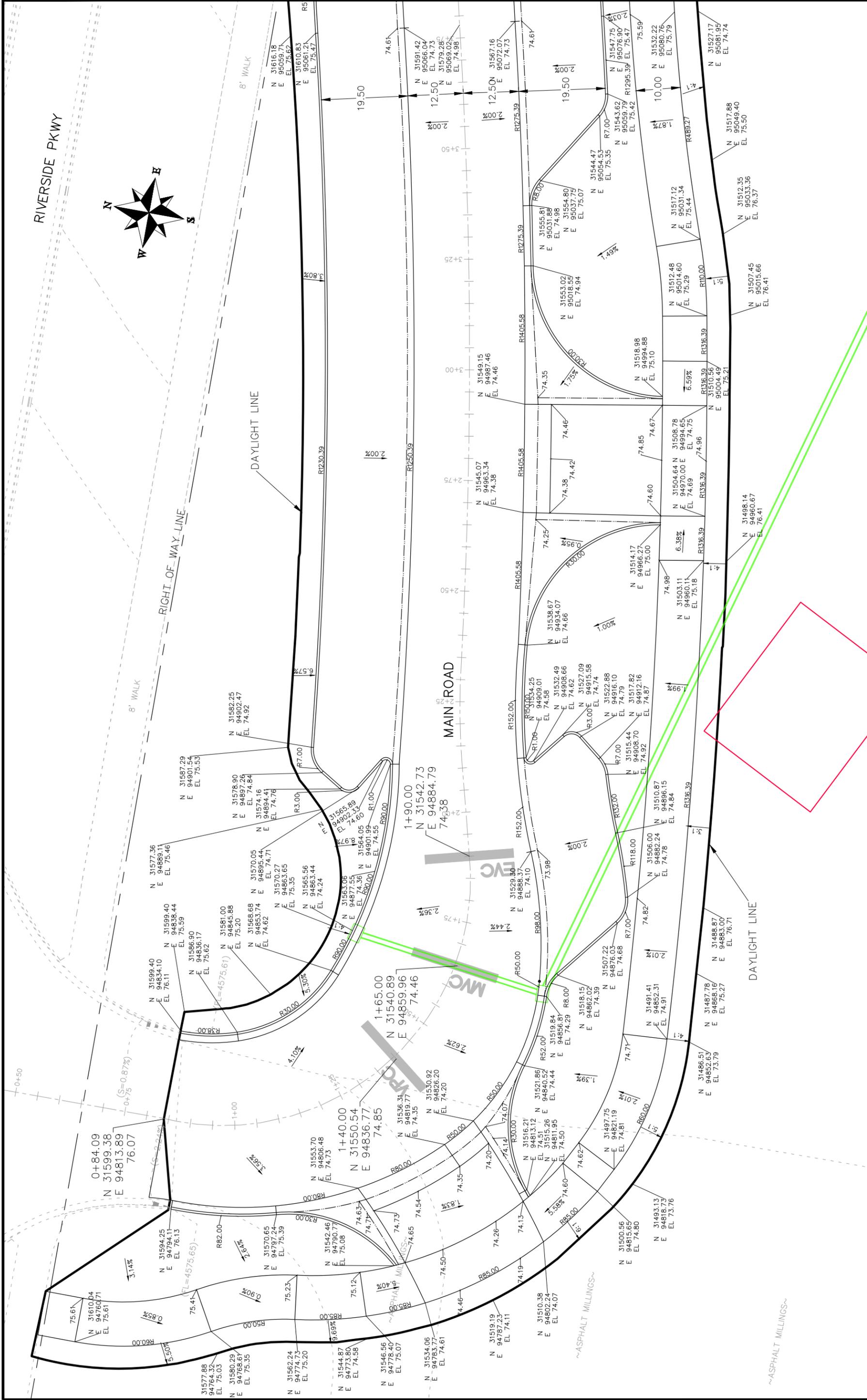
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SCALES:	
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HORIZONTAL	1" = 20'
VERTICAL	1" = 4'



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LAS COLONIAS BUSINESS PARK PHASE 1A
ROADWAY CROSS SECTIONS



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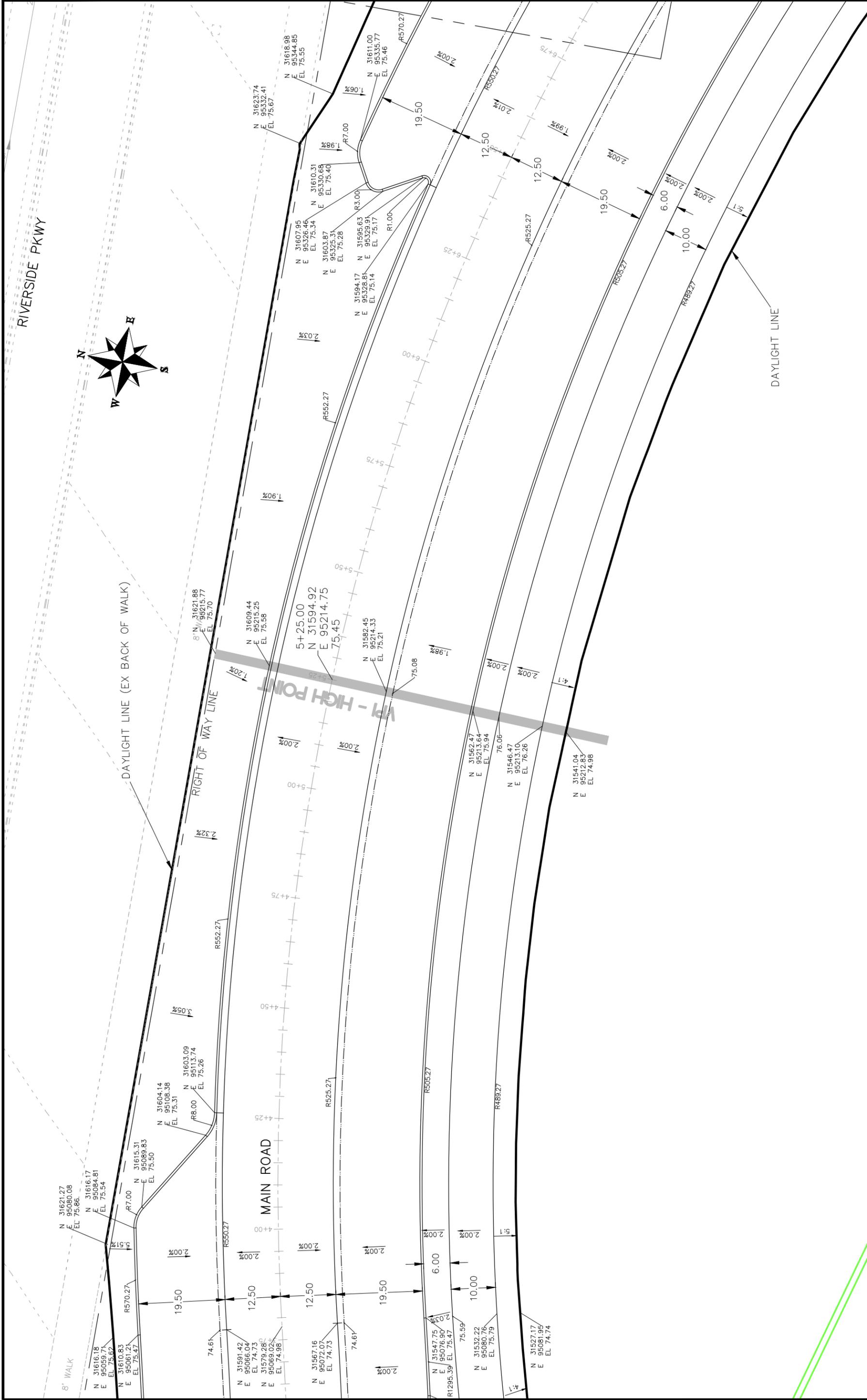
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REVISION Δ REV3_INT	2017	JCS	2017	
REVISION Δ REV4_INT	2017	JCS	2017	

DATE	DATE	DATE	DATE
2017	2017	2017	2017



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ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
20th Scale Staking Plan



8' WALK

DAYLIGHT LINE (EX BACK OF WALK)

RIGHT OF WAY LINE

DAYLIGHT LINE

MAIN ROAD

VP - HIGH POINT

REVISION	DATE	DESCRIPTION
Δ	REV1_DATE	REV1_DESCRIPTION
Δ	REV2_DATE	REV2_DESCRIPTION
Δ	REV3_DATE	REV3_DESCRIPTION
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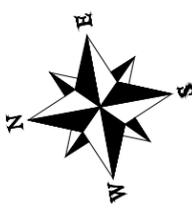
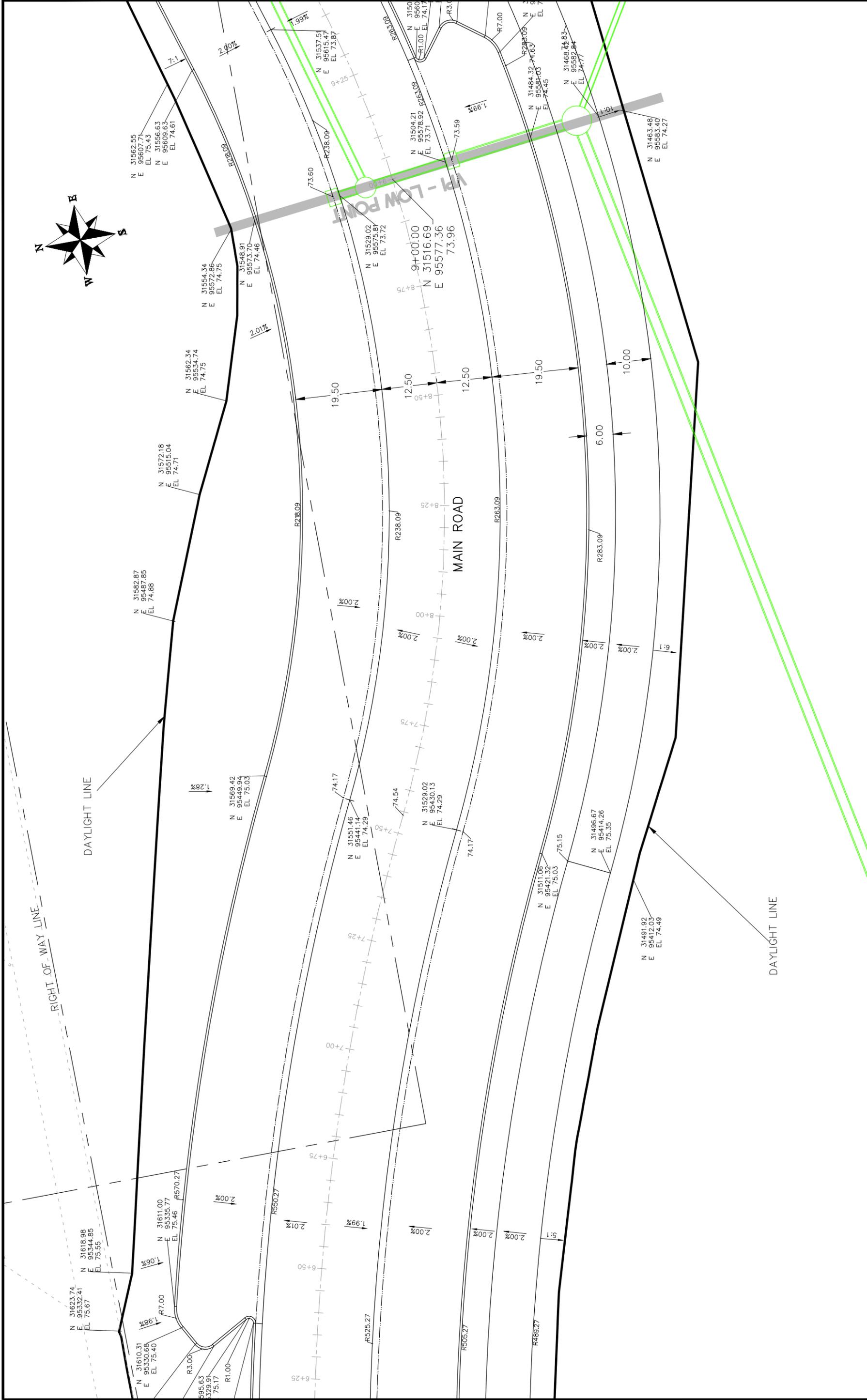
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PLAN & PROFILE	SCALE
HORIZONTAL	1" = 40'
VERTICAL	1" = 10'



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Las Colonias Business Park Phase 1a
20th Scale Staking Plan



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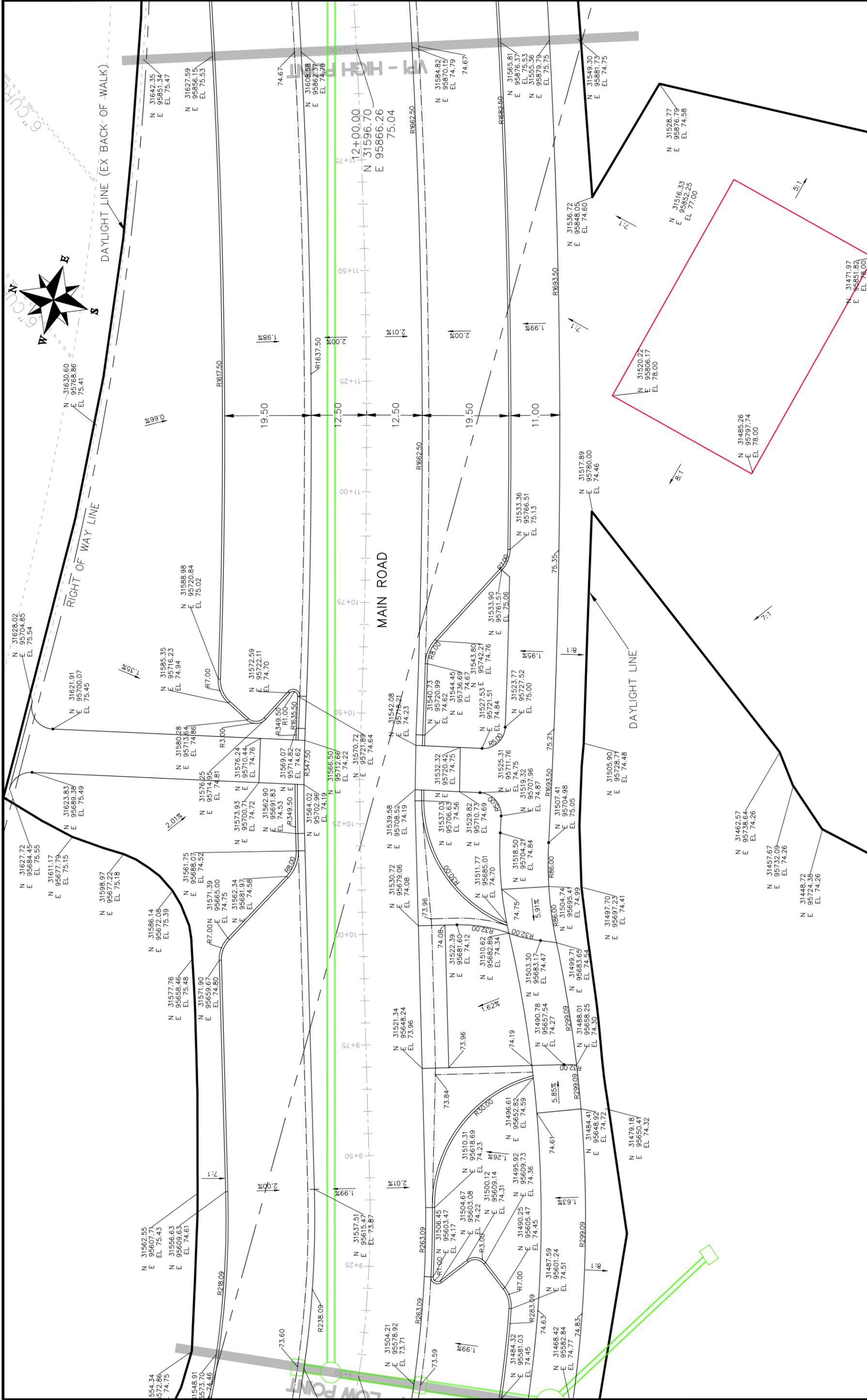
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SCALES:	
PLAN & PROFILE	
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VERTICAL	1" = 10'

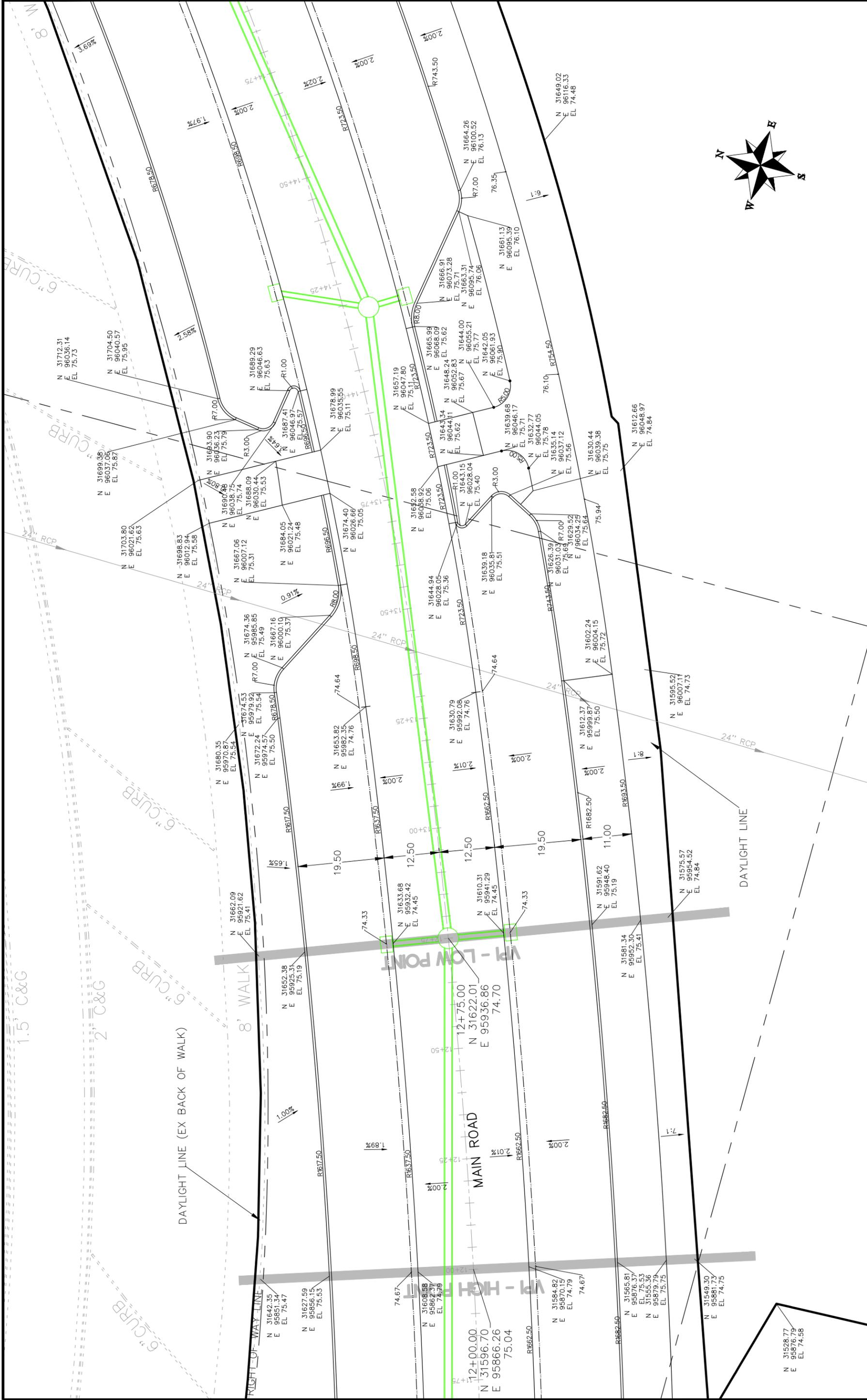


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ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
20th Scale Staking Plan

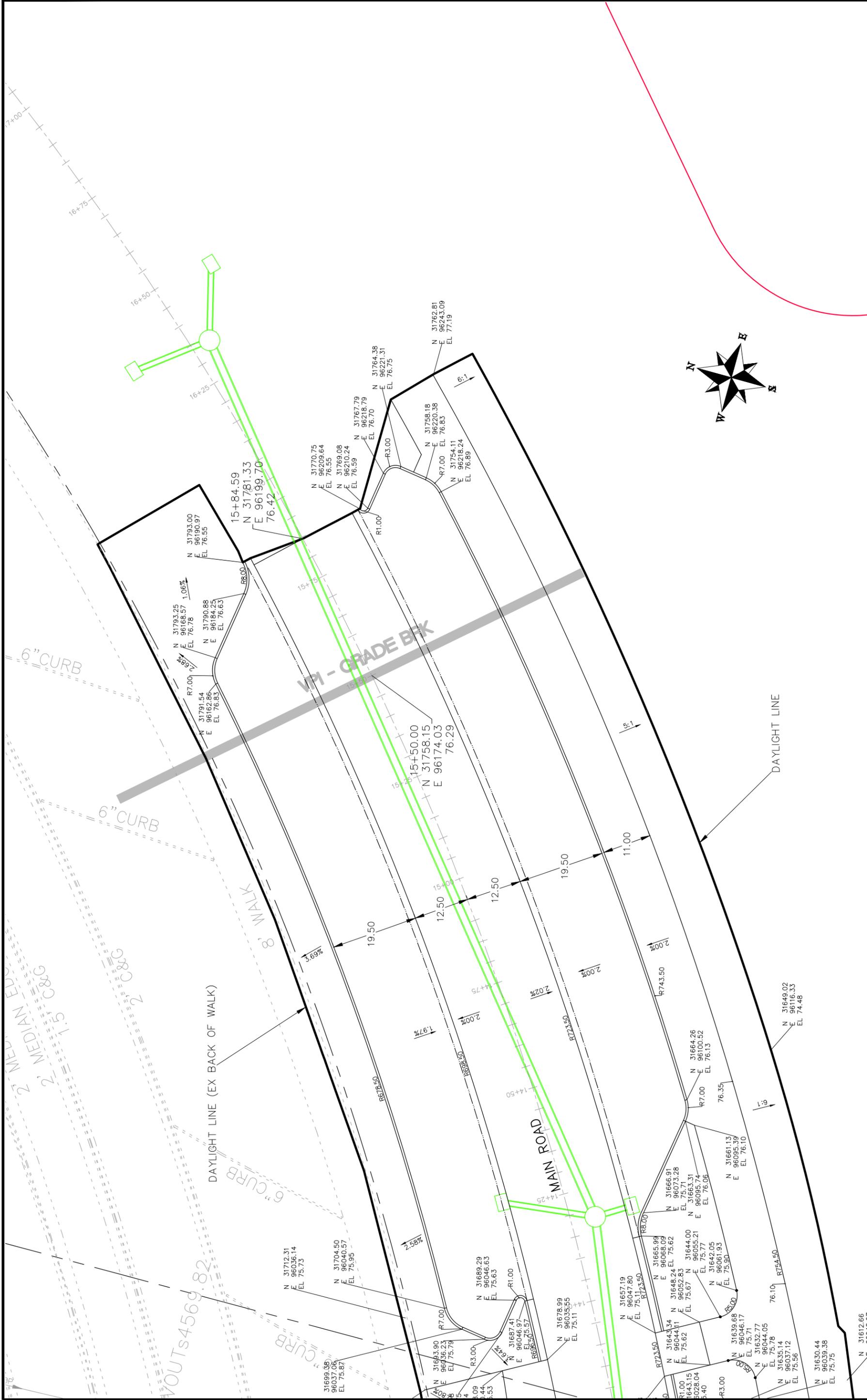


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APPROVED BY	TOP	DATE	2017																																						
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	HORIZONTAL																																								
	VERTICAL																																								
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<p>Las Colonias Business Park Phase 1a 20th Scale Staking Plan</p>			<p>40</p>																																						

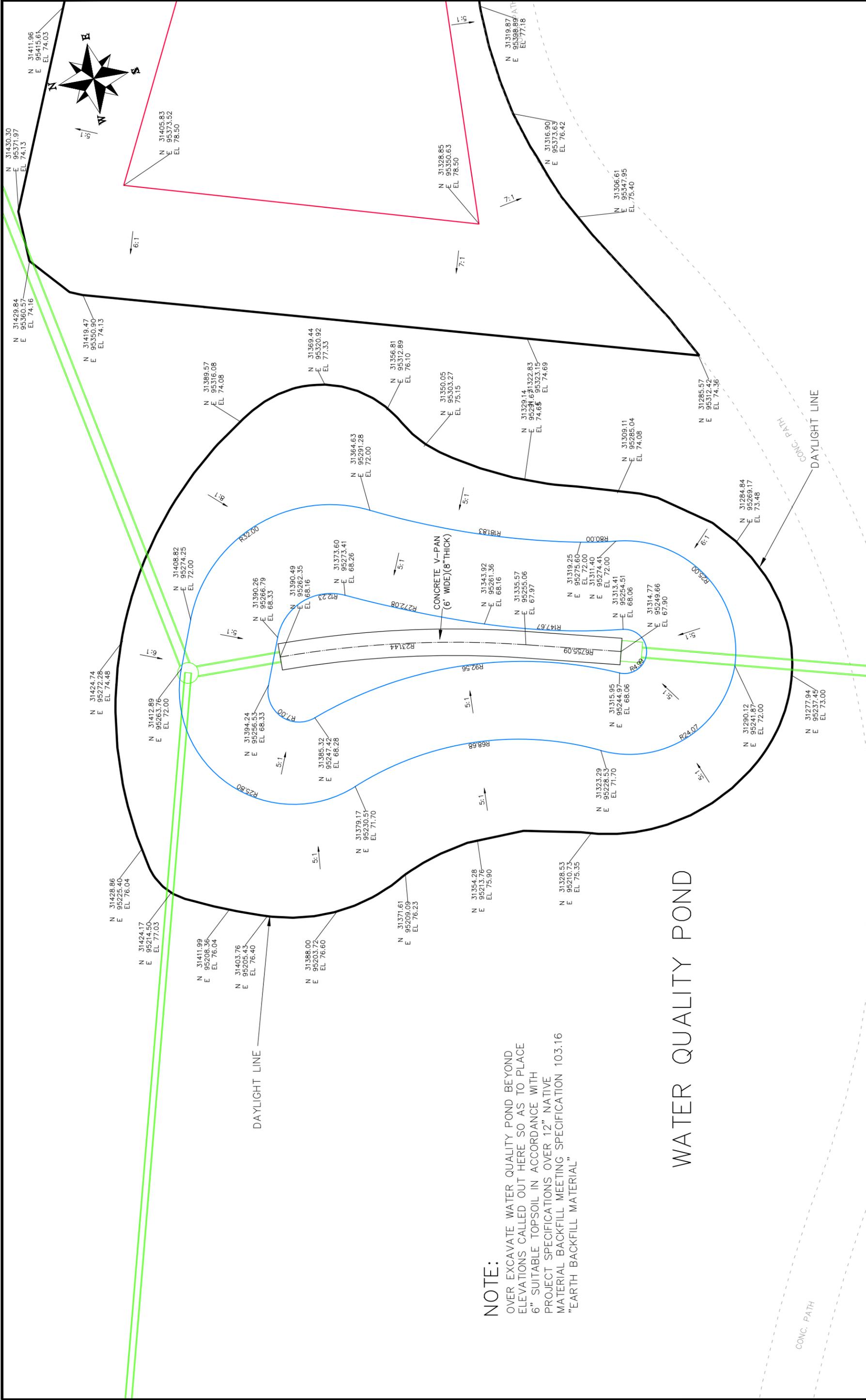


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REVISION 4		REV4_INT				

SCALE	DATE	DATE	DATE
PLAN & PROFILE	2017	2017	2017
HORIZONTAL			
VERTICAL			



		PUBLIC WORKS ENGINEERING DIVISION		Las Colonias Business Park Phase 1a 20th Scale Staking Plan		42	
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NOTE:
 OVER EXCAVATE WATER QUALITY POND BEYOND ELEVATIONS CALLED OUT HERE SO AS TO PLACE 6" SUITABLE TOPSOIL IN ACCORDANCE WITH PROJECT SPECIFICATIONS OVER 12" NATIVE MATERIAL BACKFILL MEETING SPECIFICATION 103.16 "EARTH BACKFILL MATERIAL"

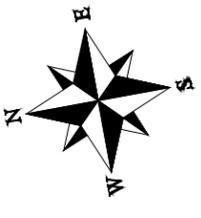
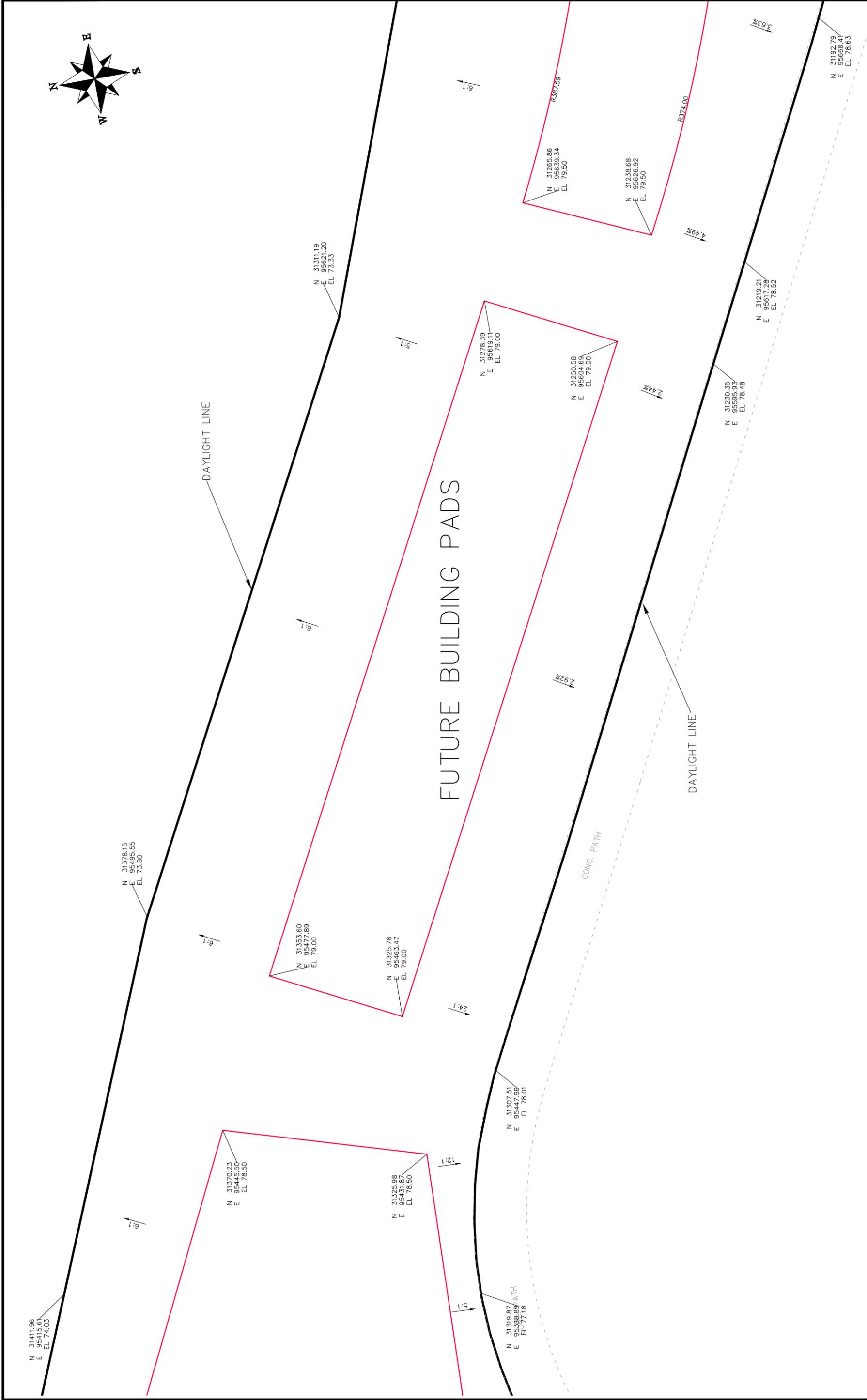
WATER QUALITY POND

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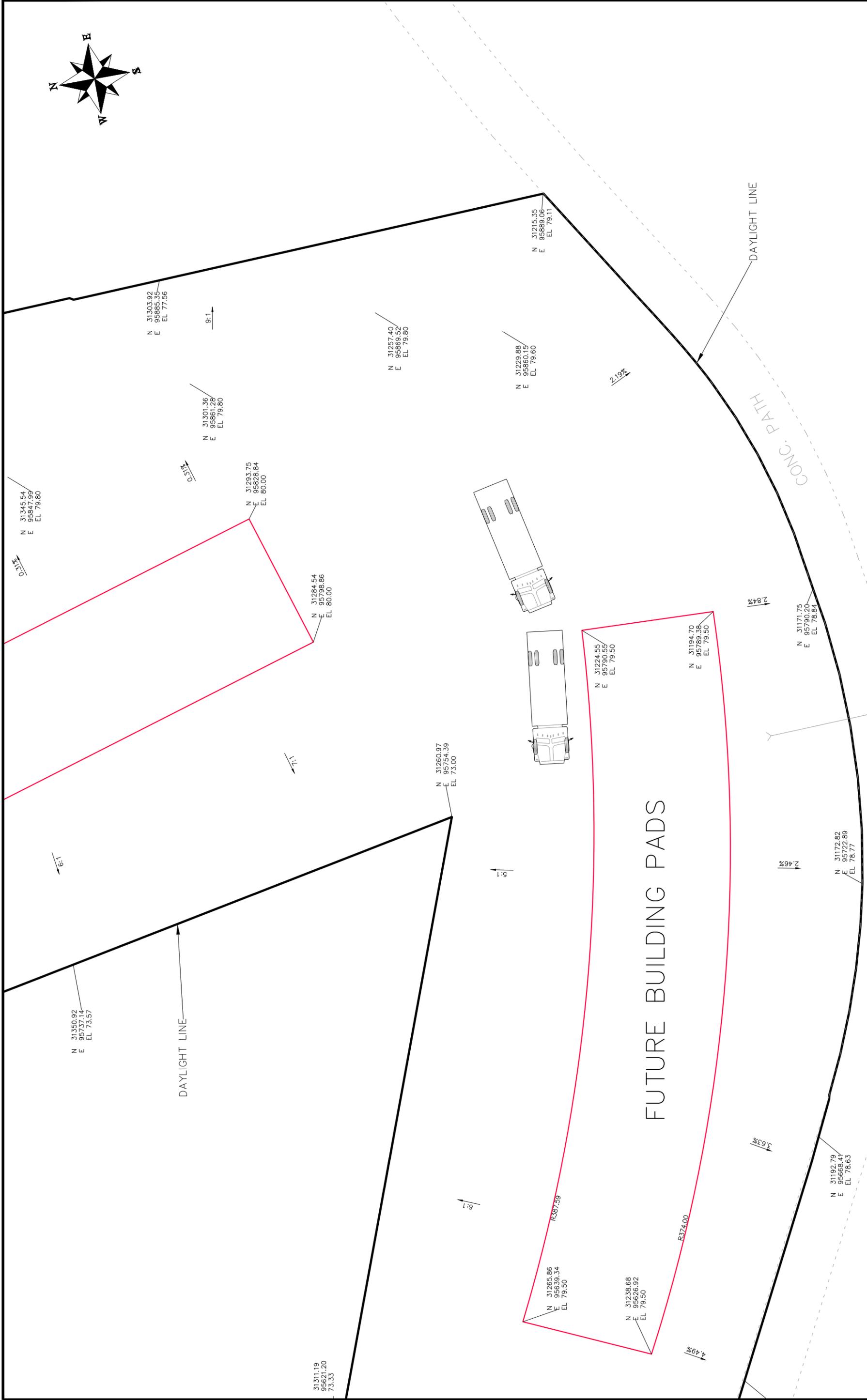
**PUBLIC WORKS
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**Las Colonias Business Park Phase 1a
20th Scale Staking Plan**



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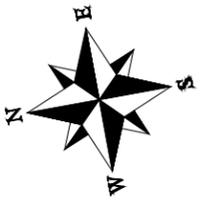
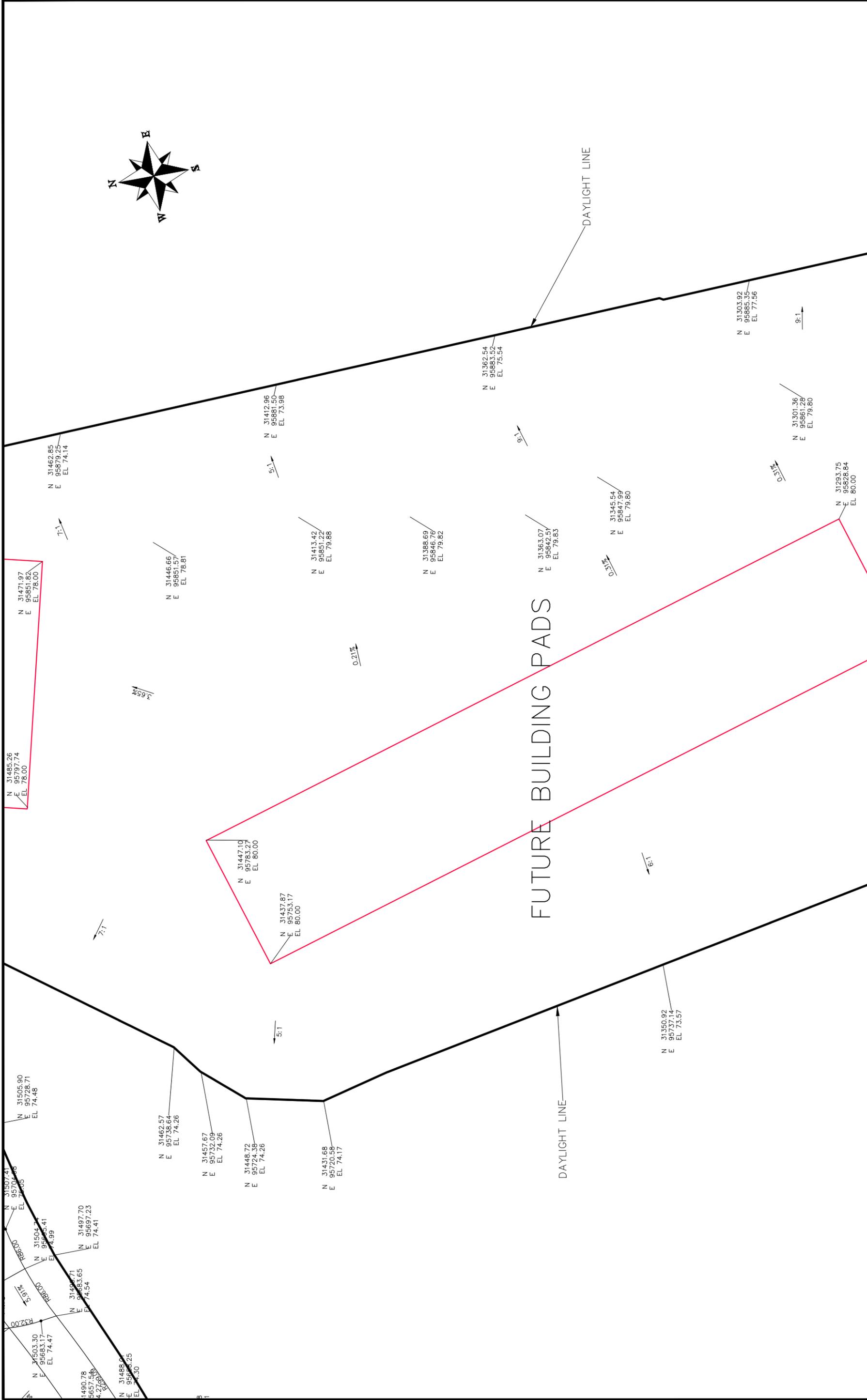


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CITY OF
Grand Junction
 COLORADO

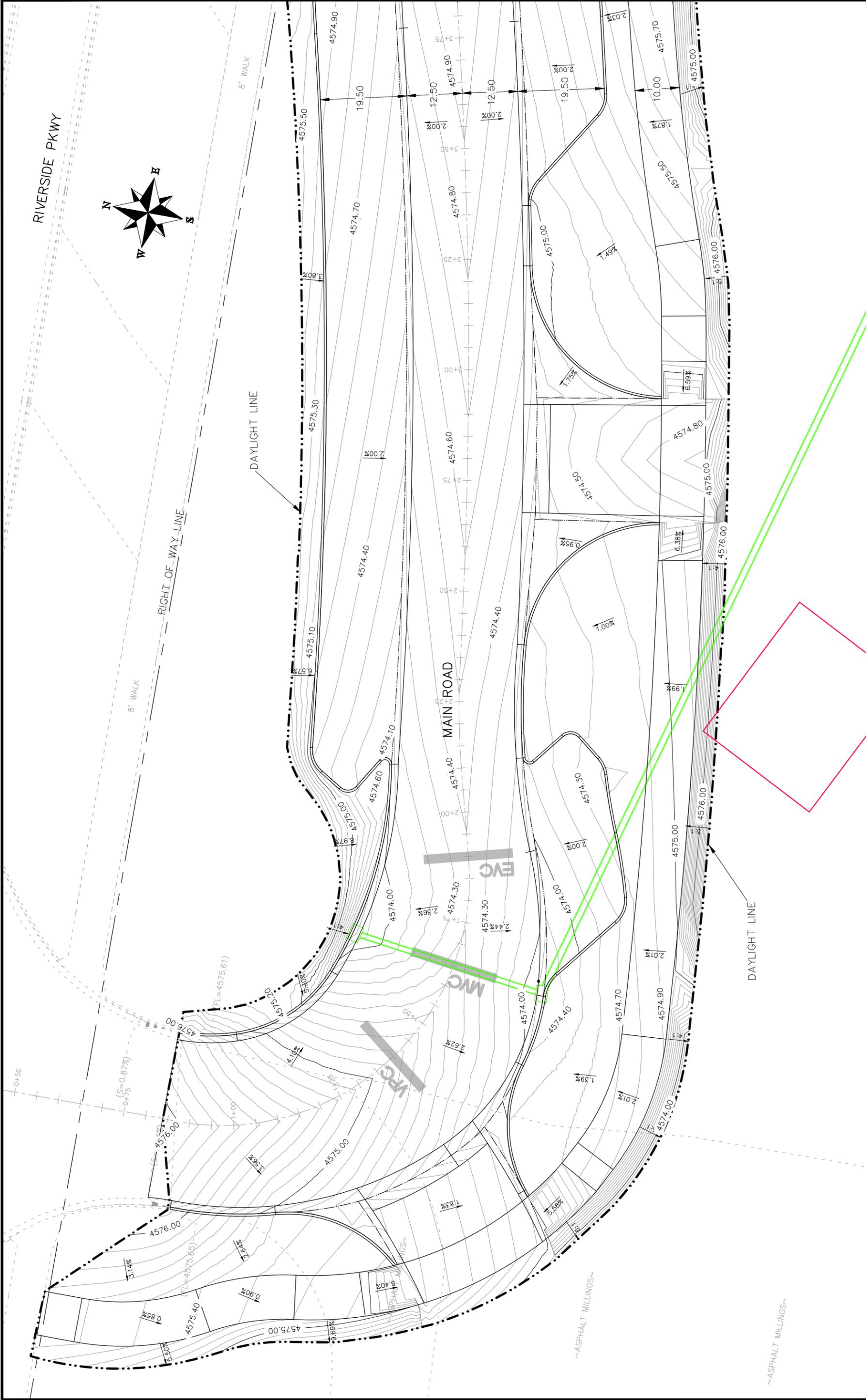
PUBLIC WORKS
ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
20th Scale Staking Plan



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REVISION	Δ	REV3_INT									
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NA	SCALE
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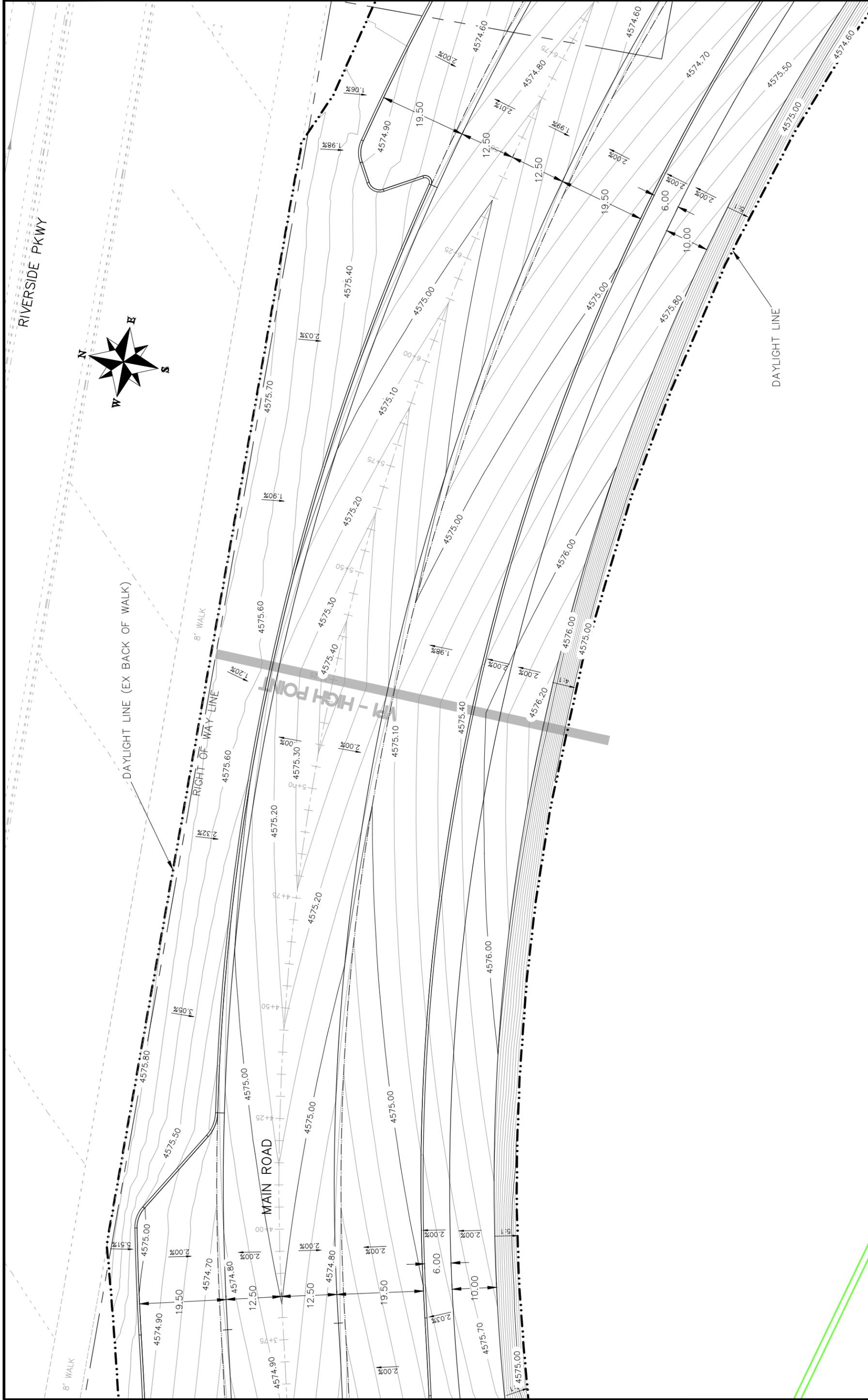


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Grand Junction
CITY OF COLORADO

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ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
20th Scale Tenth Foot Contour Plan
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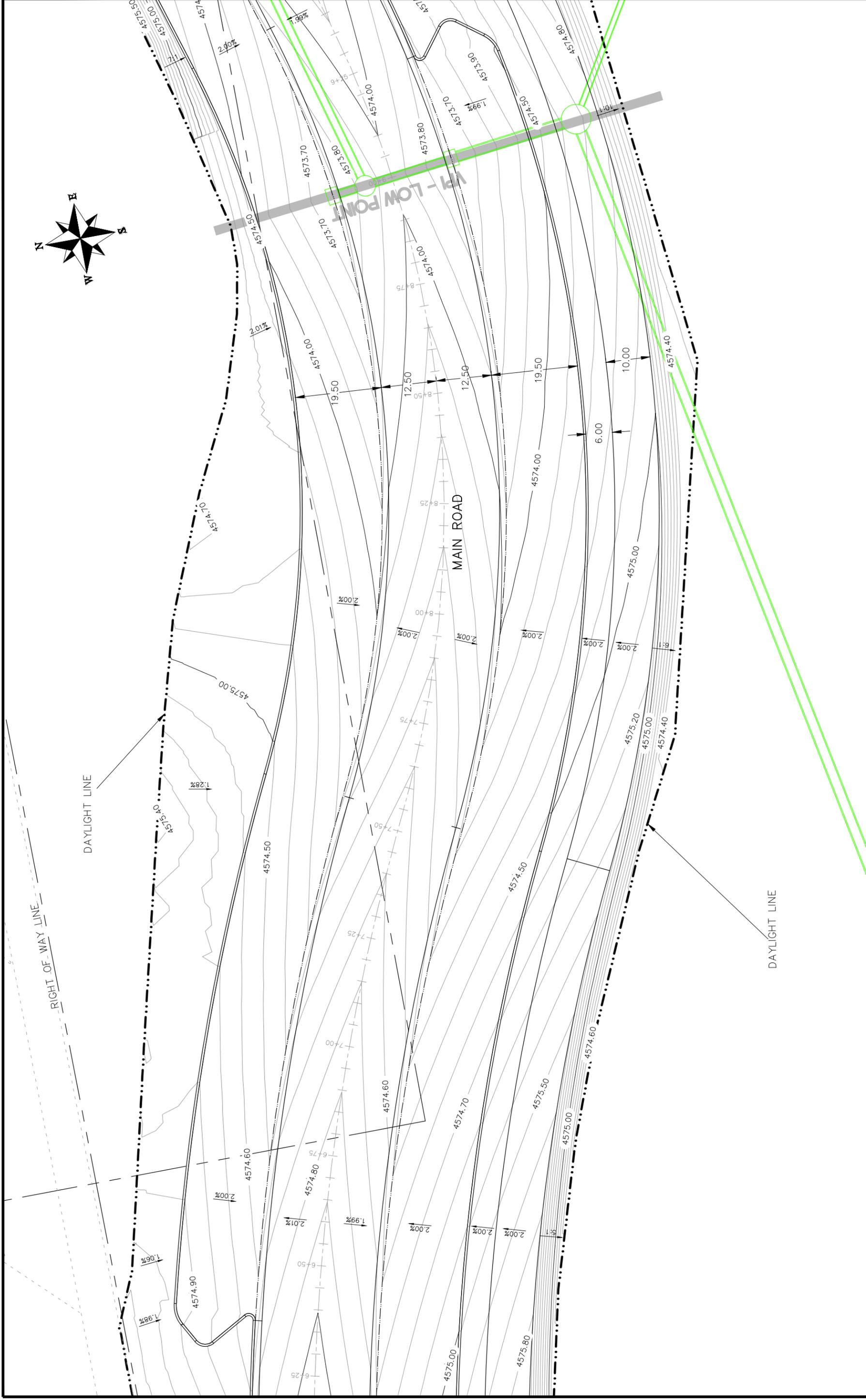


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PUBLIC WORKS
ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
20th Scale Tenth Foot Contour Plan

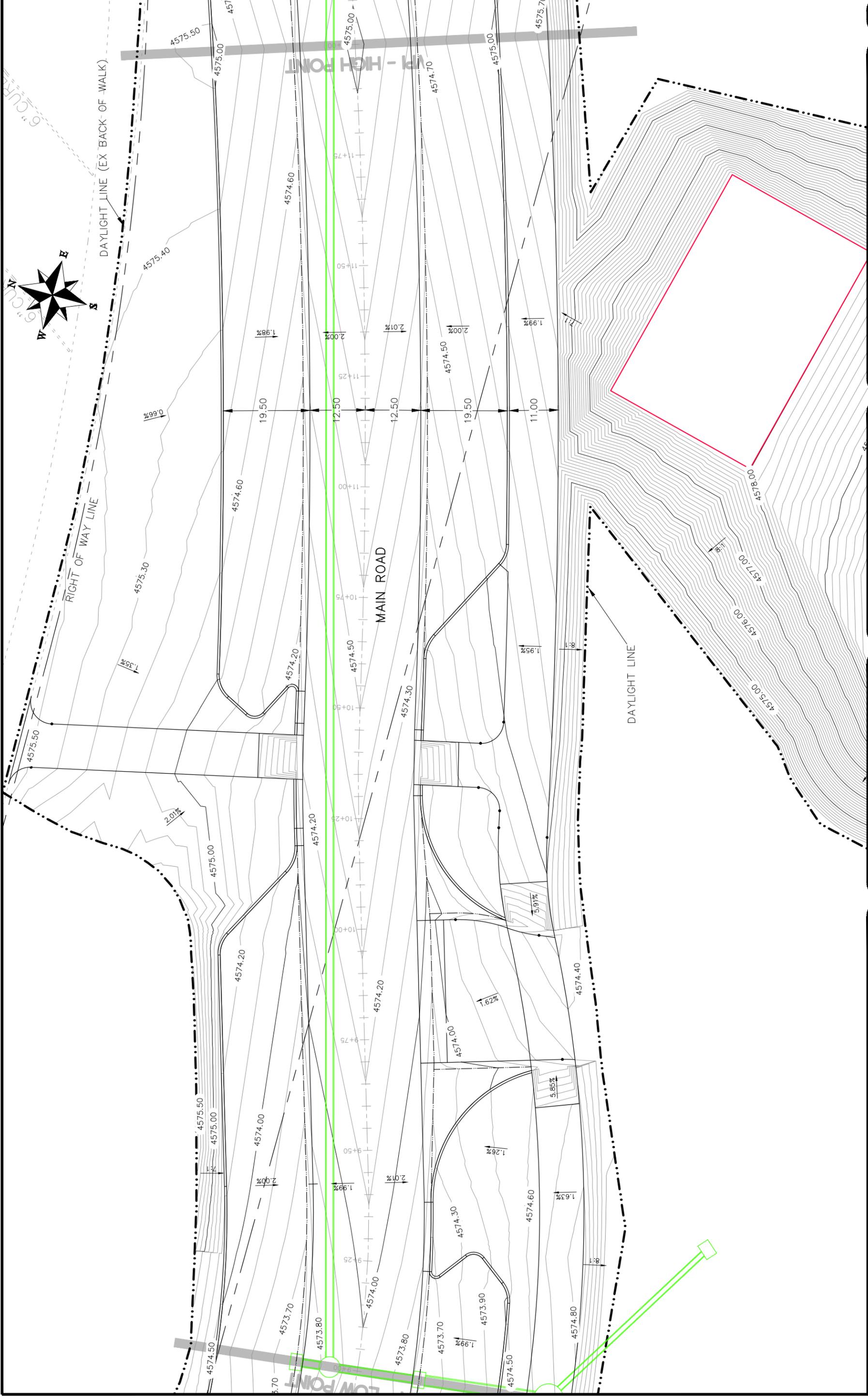


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ENGINEERING DIVISION**

**Las Colonias Business Park Phase 1a
20th Scale Tenth Foot Contour Plan**

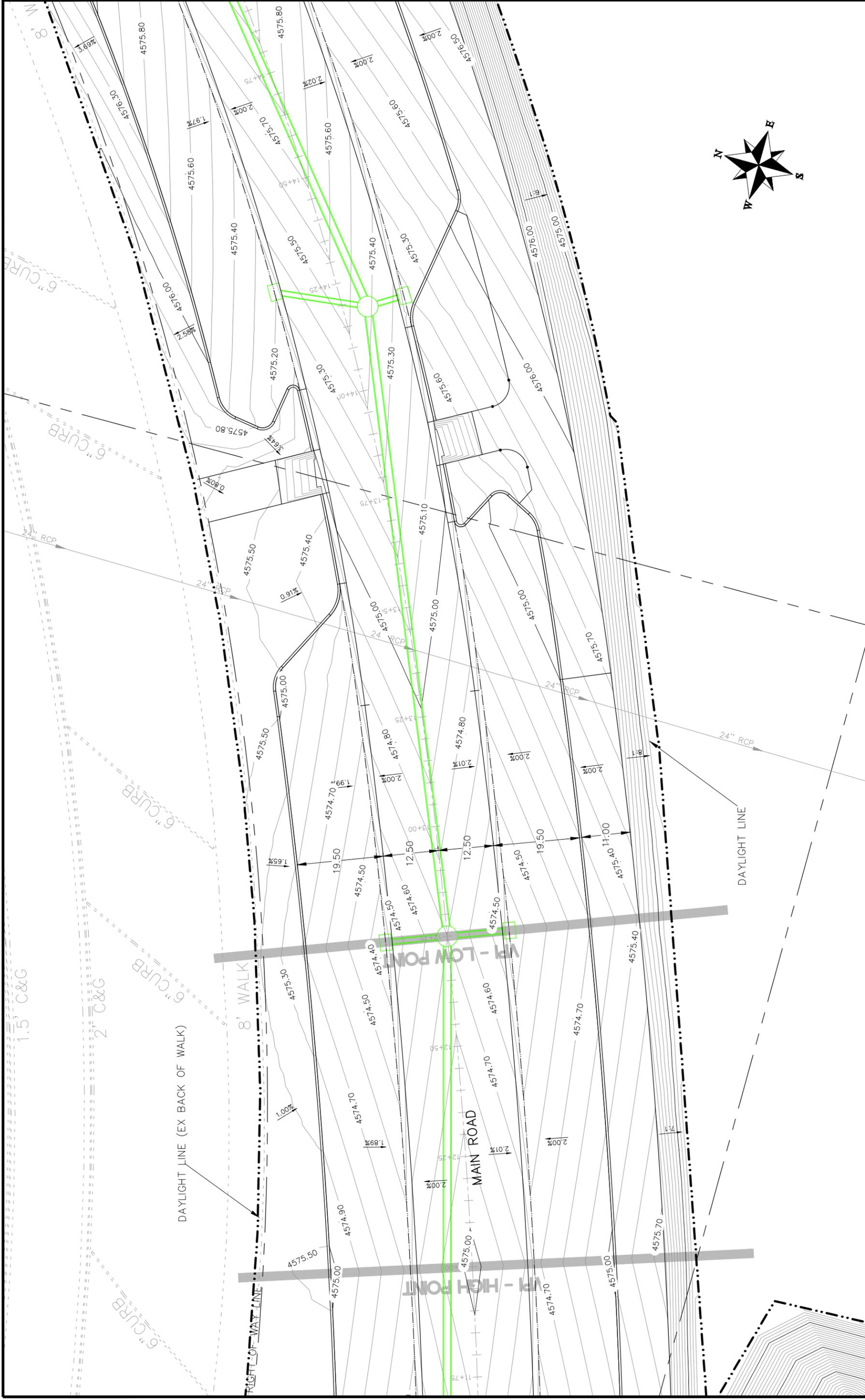


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CITY OF
Grand Junction
 COLORADO

PUBLIC WORKS
ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
 20th Scale Tenth Foot Contour Plan

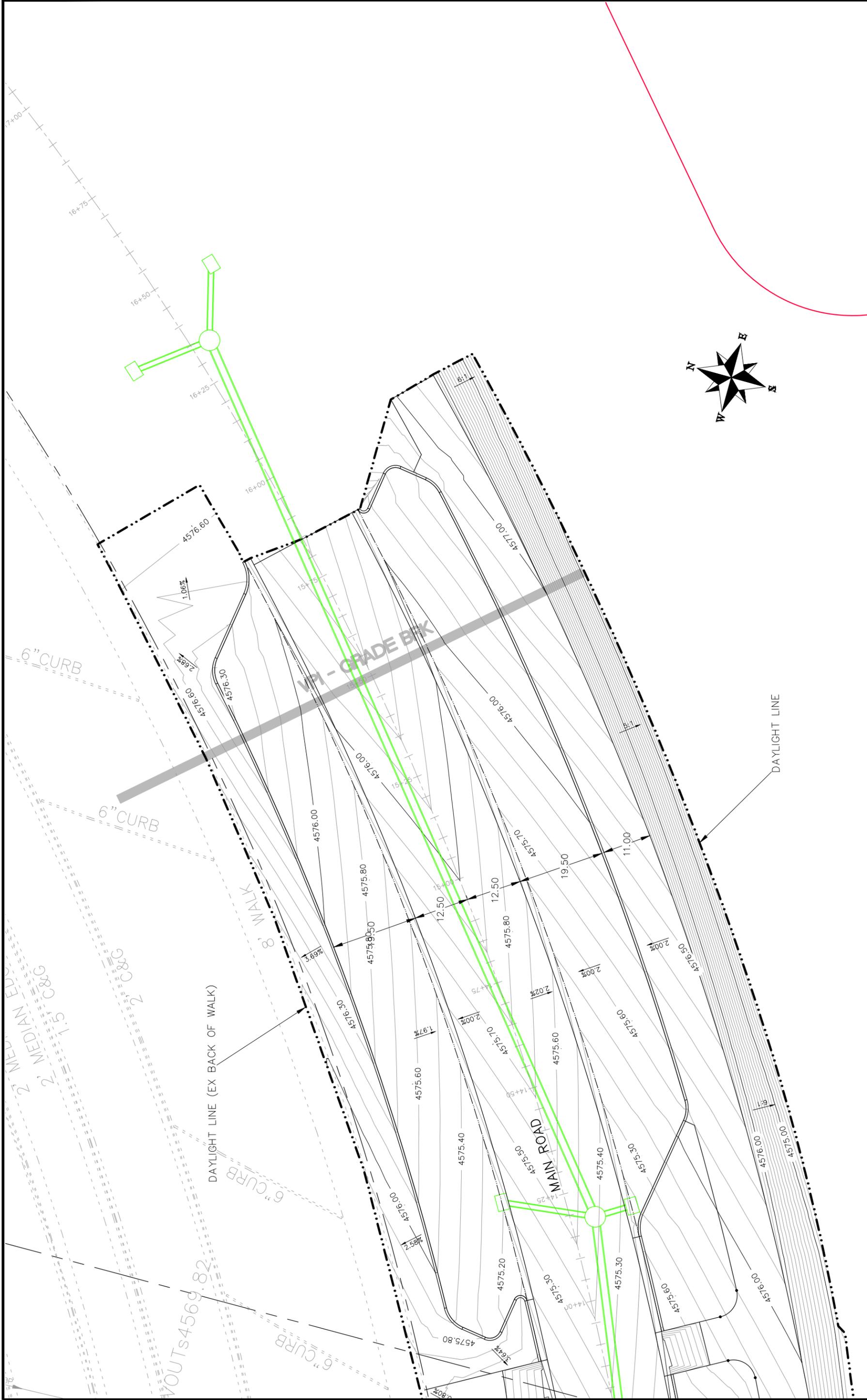


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Grand Junction
 CITY OF
 COLORADO

PUBLIC WORKS
 ENGINEERING DIVISION

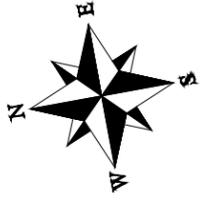
Las Colonias Business Park Phase 1a
 20th Scale Tenth Foot Contour Plan
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REVISION	DATE	DESCRIPTION	DATE	DATE	DATE	DATE	DATE
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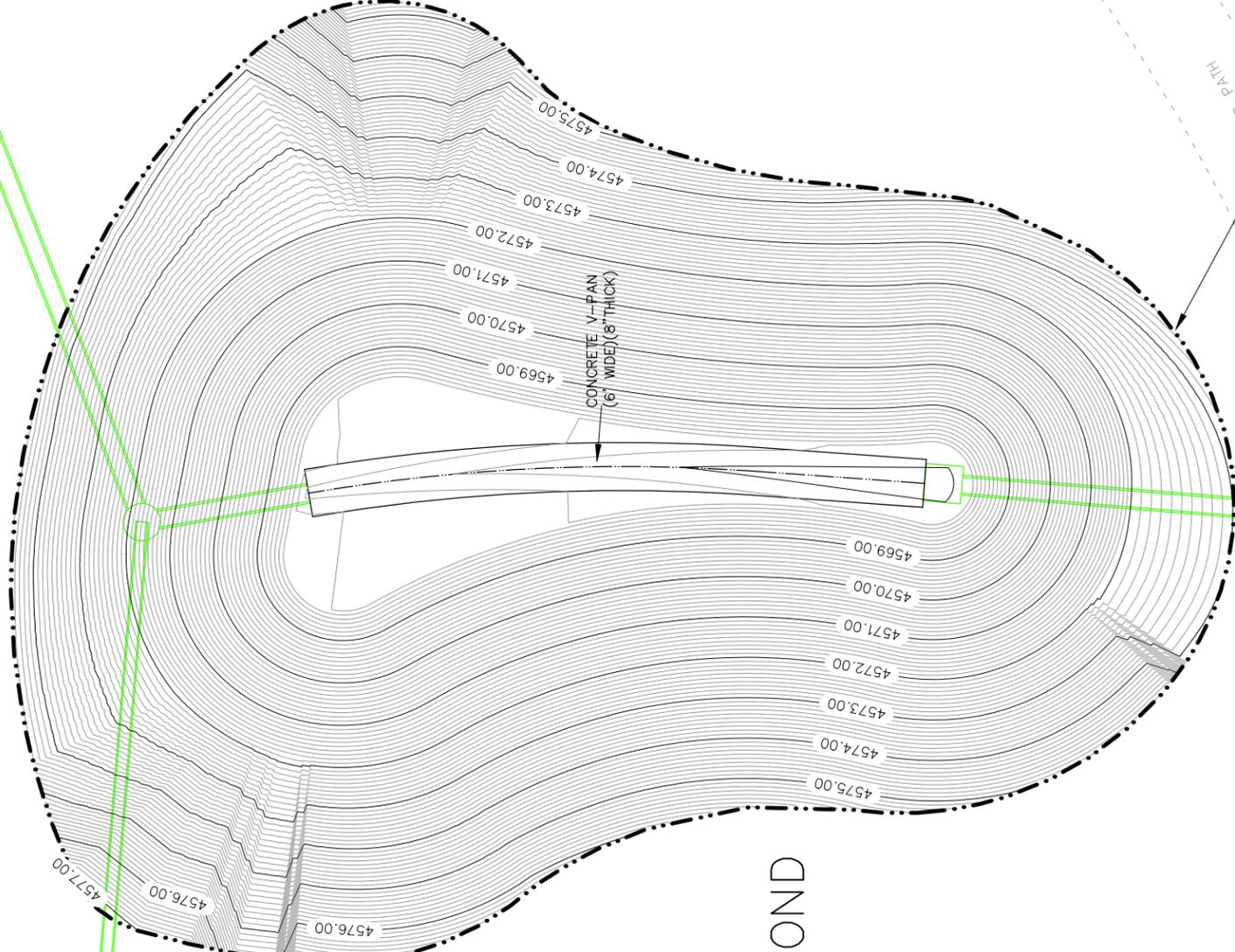
SCALE	PLAN & PROFILE
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3	VERTICAL
NA	NA
NA	NA

DATE	DATE	DATE	DATE
DATE	JCS	2017	



DAYLIGHT LINE

WATER QUALITY POND



CONC. PATH

CONC. PATH

DAYLIGHT LINE

DAYLIGHT LINE

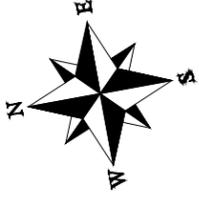


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ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
20th Scale Tenth Foot Contour Plan



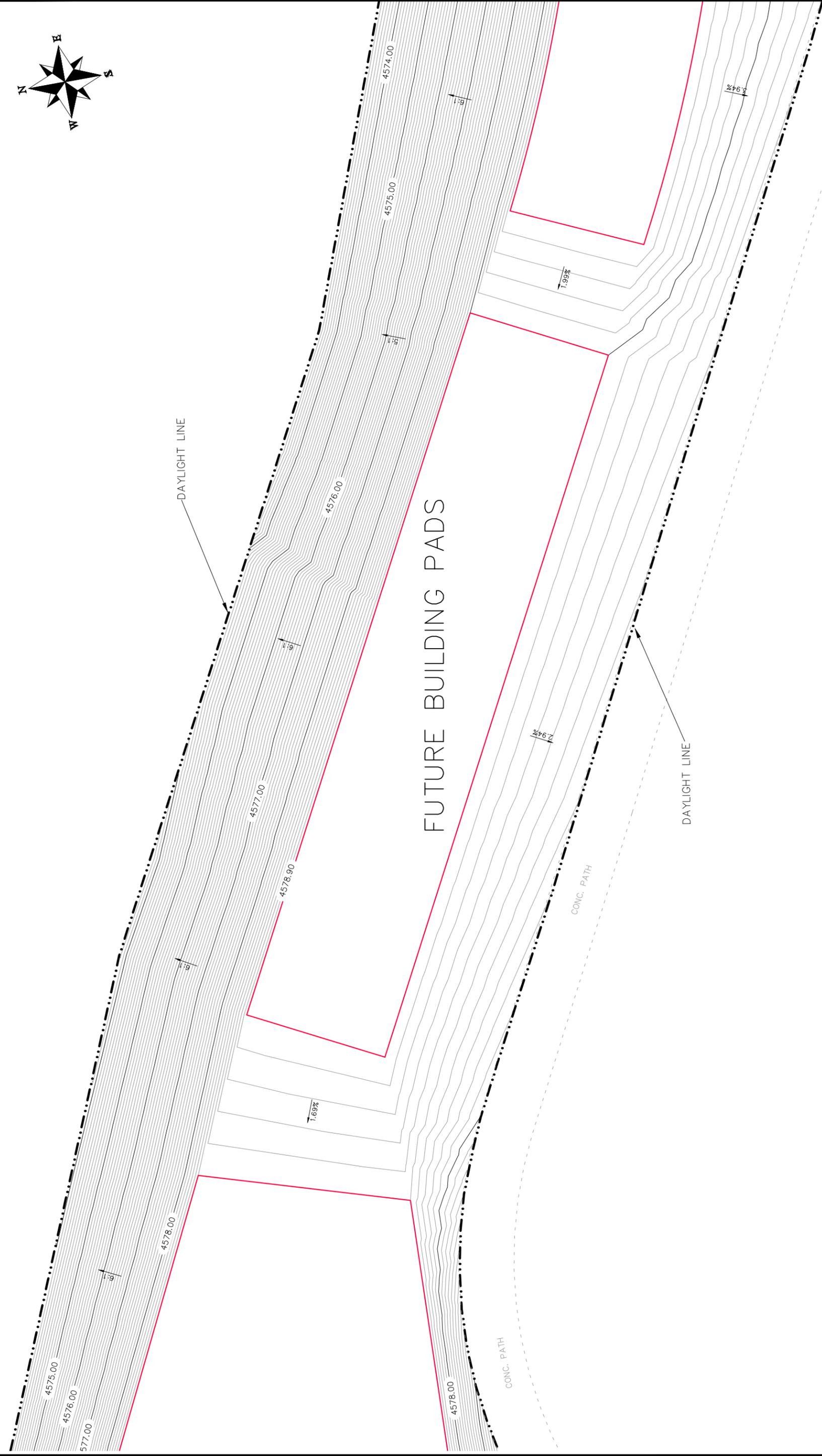
DAYLIGHT LINE

FUTURE BUILDING PADS

DAYLIGHT LINE

CONC. PATH

CONC. PATH



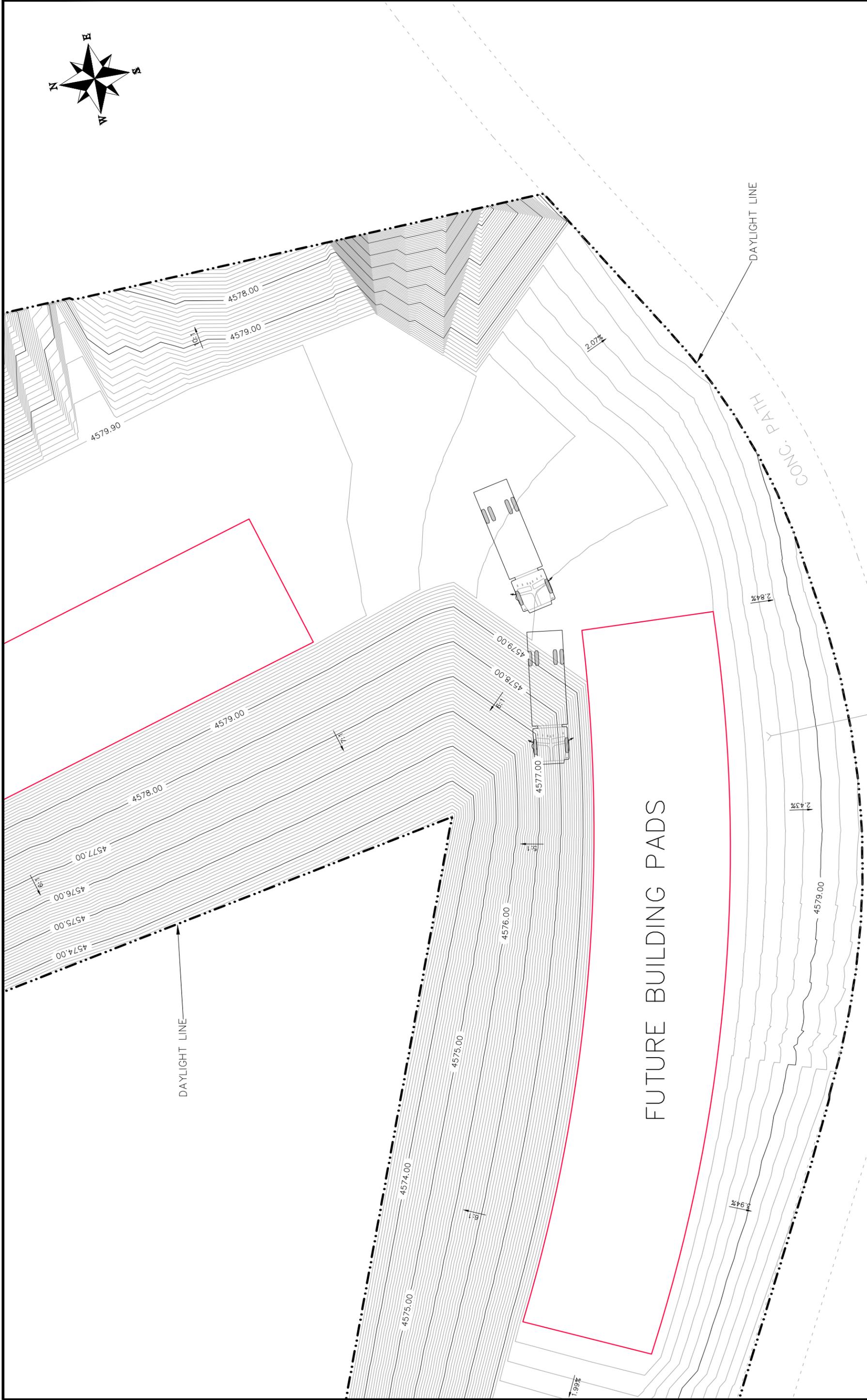
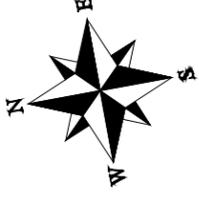
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PUBLIC WORKS
ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
20th Scale Tenth Foot Contour Plan
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SCALES:	PLAN & PROFILE
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NA	VERTICAL

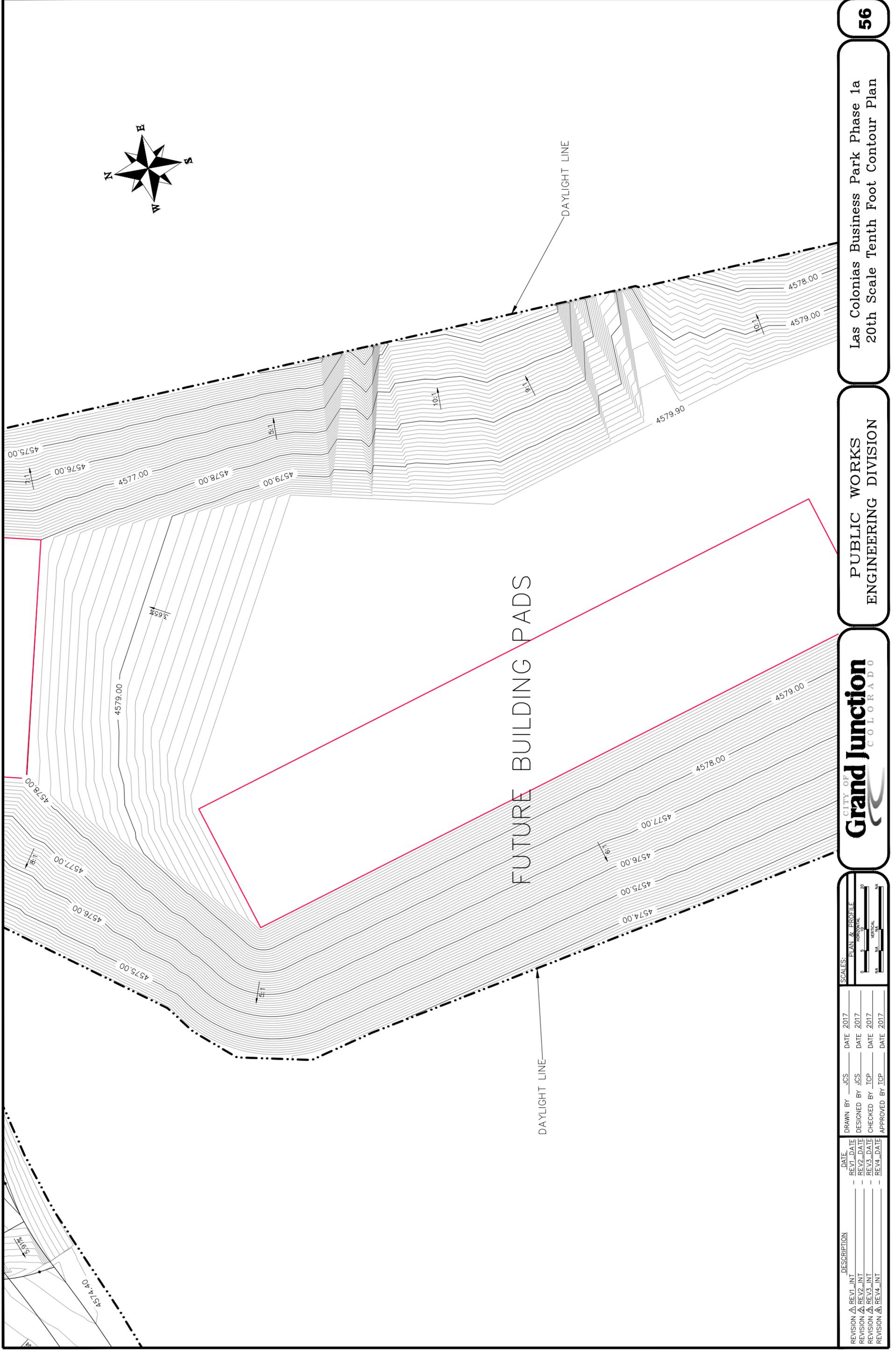


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DRAWN BY JCS
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PUBLIC WORKS
 ENGINEERING DIVISION

Las Colonias Business Park Phase 1a
 20th Scale Tenth Foot Contour Plan



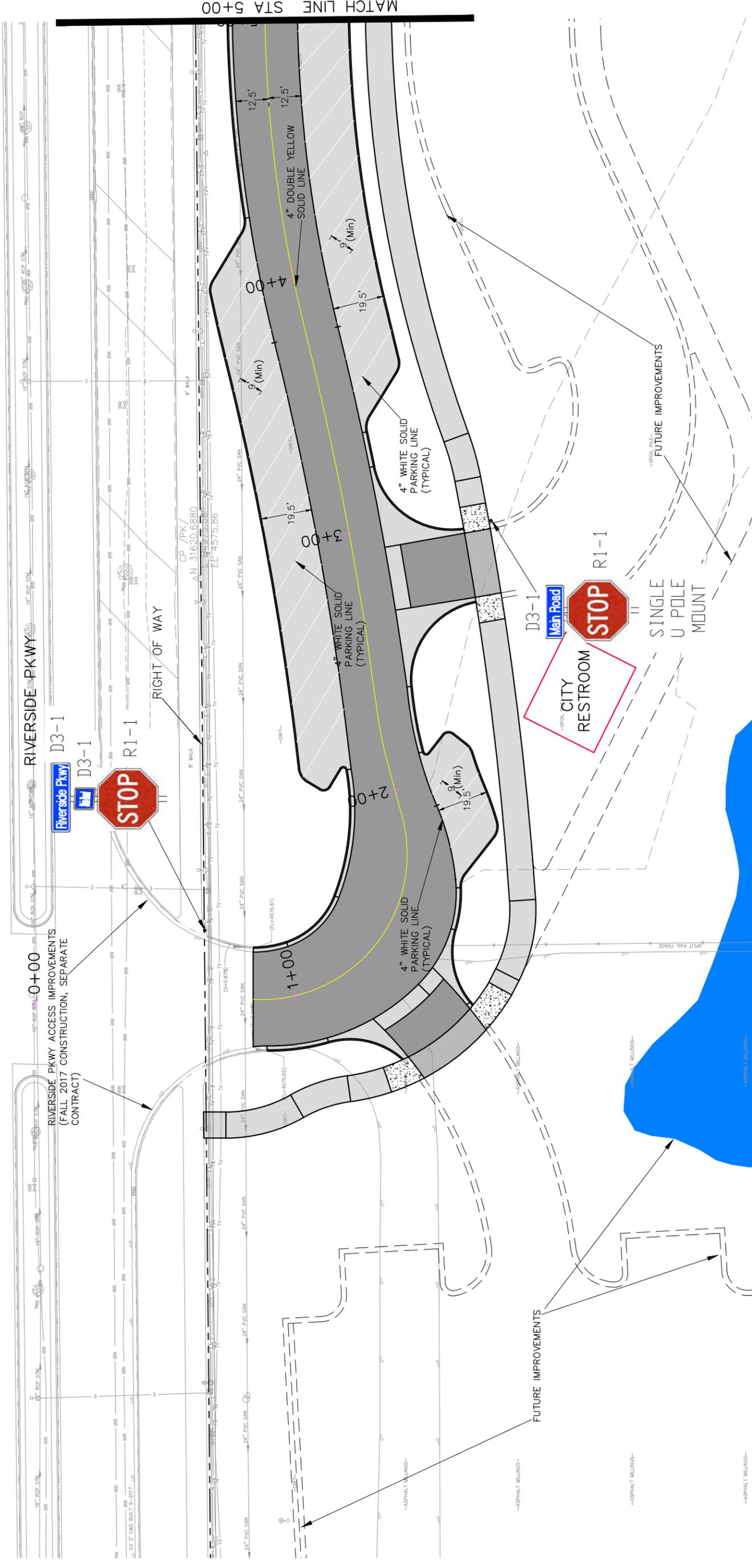
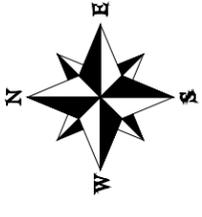
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4	REV4_INT	2017	JCS	2017

SCALES: PLAN & PROFILE
 HORIZONTAL 1" = 30'
 VERTICAL 1" = 10'
 NA NA NA NA

Grand Junction
 COLORADO

PUBLIC WORKS
 ENGINEERING DIVISION

Signs & Striping by City
for Information Only



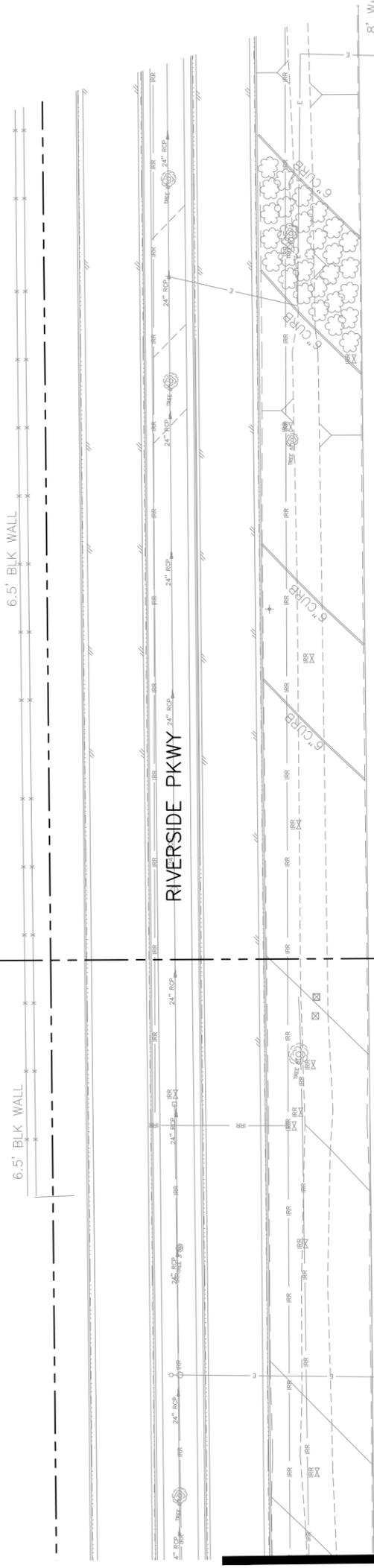
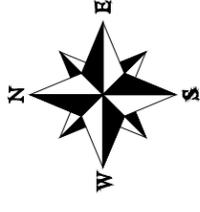
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REVISION	2017	JCS	2017
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REVISION	2017	TOP	2017
REVISION	2017	TOP	2017

SCALES:
 PLAN & PROFILE
 HORIZONTAL 1" = 40'
 VERTICAL 1" = 10'
 NA VERTICAL NA

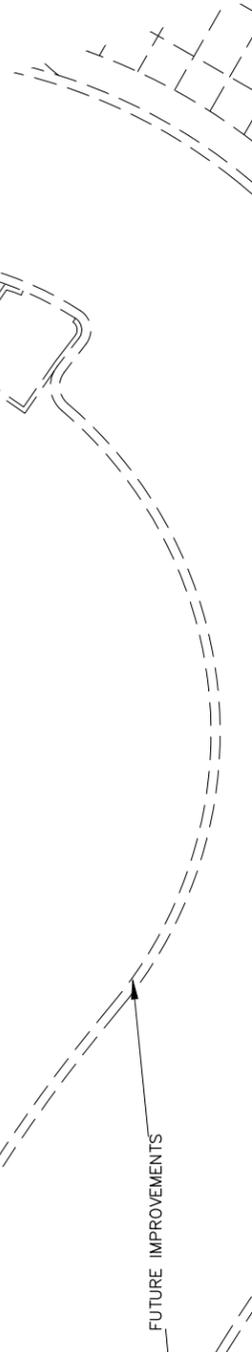
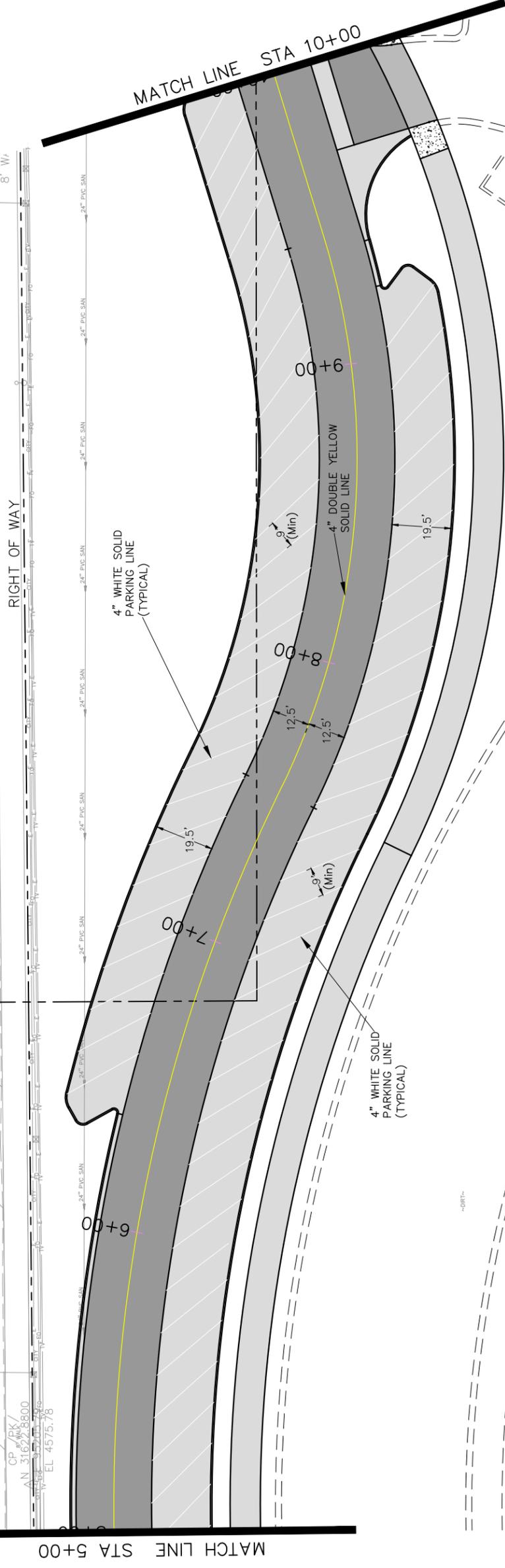
Grand Junction
 COLORADO

PUBLIC WORKS
 ENGINEERING DIVISION

Las Colonias Business Park Phase Ia
 Striping Plan



SEE STAKING PLANS FOR STAKING DATA



REVISION	DESCRIPTION	DATE

DRAWN BY: JCS DATE: 2017
 DESIGNED BY: JCS DATE: 2017
 CHECKED BY: TCP DATE: 2017
 APPROVED BY: TCP DATE: 2017

SCALES:
 PLAN & PROFILE: 1" = 20'
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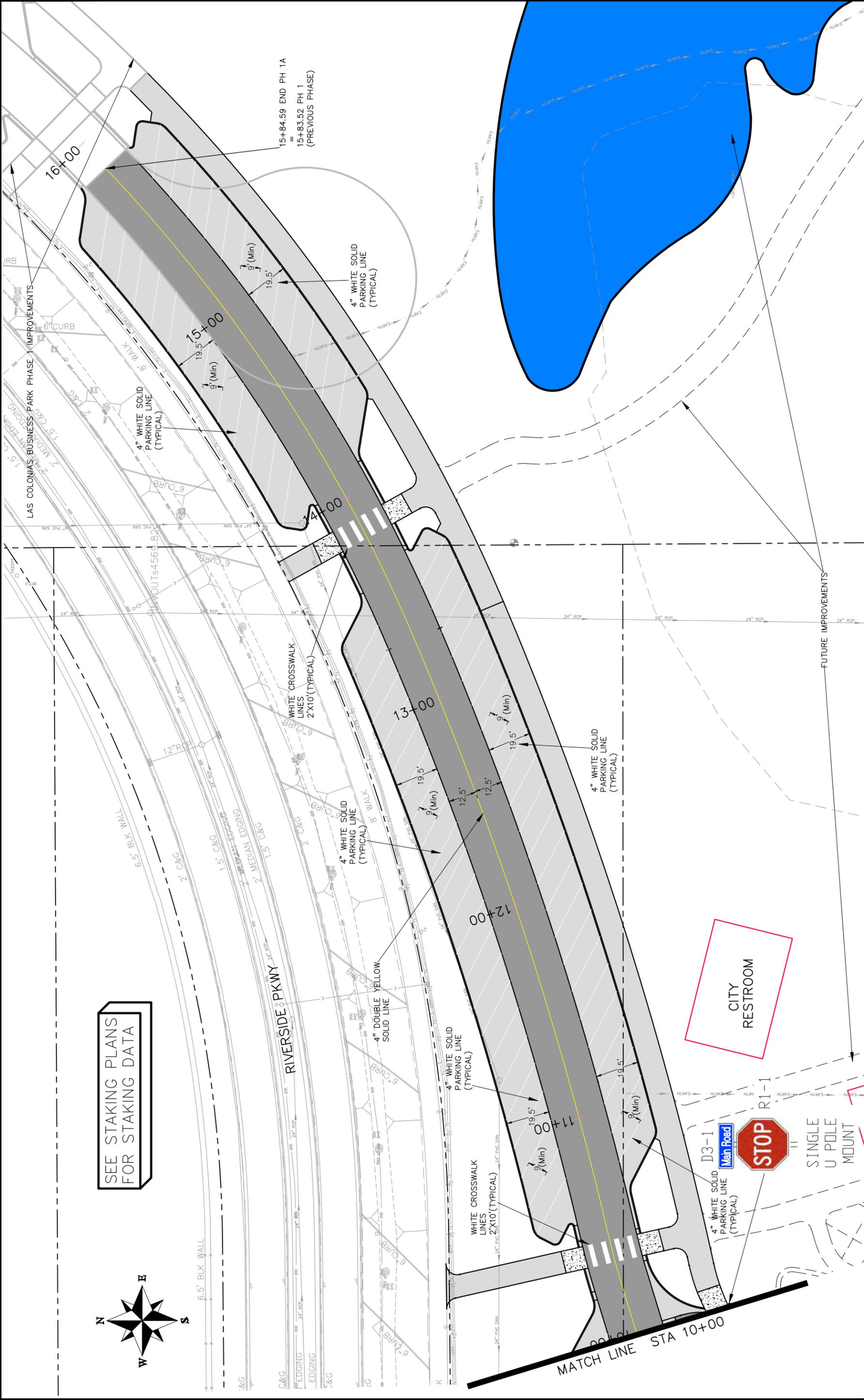


PUBLIC WORKS ENGINEERING DIVISION

Las Colonias Business Park Phase Ia Striping Plan



SEE STAKING PLANS FOR STAKING DATA



REVISION	DATE	DESCRIPTION
△		
△		
△		
△		

DRAWN BY	DATE	DATE
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JCS	2017	2017
TOP	2017	2017
TOP	2017	2017

PLAN & PROFILE	SCALE
HORIZONTAL	1" = 40'
VERTICAL	1" = 10'



PUBLIC WORKS ENGINEERING DIVISION

Las Colonias Business Park Phase Ia Striping Plan

EROSION CONTROL MEASURES

Contractor to update the SWMP according to specific construction phasing and stormwater management practices for current construction activity when warranted.

Site Description

1. The site has a total disturbance area of 5.76 acres with the majority of disturbance being caused by the development of Phase 1A of the LAS COLONIAS BUSINESS PARK.
2. Stormwater leaves the site for this phase through a 24" RCP installed as a part of improvements for this phase as the outlet works for a permanent water quality basin where it drains directly to the Colorado River.
3. Proposed utilities for this project include: storm drain, sanitary sewer, potable water, gas, electricity, telephone, cable television, and broadband infrastructure.

EROSION CONTROL MEASURES

Performance Standards

The general requirements for erosion control work shall be as follows:

1. Any grading shall be conducted in such a manner so as to effectively reduce accelerated soil erosion and resulting sedimentation.
2. All grading shall be designed, constructed and completed in such a manner so that exposed area of any disturbed land shall be limited to the shortest time period.
3. Sediment caused by accelerated soil erosion shall be removed from runoff water before leaving the site.
4. The contractor shall try to minimize the amount of disturbance necessary for the construction project by preserving established vegetation to act as a BMP.

During Construction (Temporary Measures)

1. Anchored Straw Bales (ASB): The use of hay bales is proposed as a culvert outlet trap at the discharge of the 24" RCP being installed as the outlet works for the new permanent water quality basin at the slough which directly discharges into the Colorado River.
2. Erosion Logs: The use of erosion logs is proposed at the toe of cut and fill slopes and other areas where sediment from upstream flows may spill to existing drainage ways. Other locations are shown on the plan. Installation shall be in accordance with the detail as shown on the plans.

After Construction (Permanent Measures)

1. Rip-Rap: The use of rip-rap per construction drawings is proposed for around the outlet of the 24" RCP being installed as the outlet works for the new permanent water quality basin.
2. Reseeding: Native seed mix will be applied to all disturbed areas and protected with a bonded fiber matrix for soil protection and stability.

Maintenance

1. The contractor or his designated representative shall make routine checks on all erosion control measures to determine if repairs or sediment removal is necessary.
2. After each rainfall or moderate snow melt, erosion control measures are to be checked. If repairs are needed, they shall be completed immediately.
3. Silt and sediment shall be removed when they reach a height of one-half of the barrier (erosion log or anchored straw bale).
4. When temporary measures are to be removed, any silt and sediment deposits shall be removed and spread evenly in fill areas.

General Notes

1. The SWMP establishes the minimum acceptable requirements for stormwater pollution prevention on site. The Contractor may supplement these requirements as appropriate for specific construction activities. Any changes to the practices shown on this plan must be reviewed by Project Inspector/Engineer prior to implementation.
2. At all times during construction, erosion and sediment control shall be maintained by the contractor or his designated representative.
3. Erosion control systems shall be installed as grading progresses.
4. The Contractor shall provide and maintain a portable concrete washout facility.
5. Details shown are schematic only. Adjust as necessary to fit field conditions.
6. Erosion bales shall be placed to avoid runoff flowing between, around or under bales. Bales shall be anchored with 2" x 2" x 4' wooden stakes or #4 reinforcing bars, two per bale (see details for further instructions).
7. Negative impacts to downstream areas (or receiving waters) caused by the slope grading to be monitored and corrected by the contractor.
8. Construction traffic entrances shall be cleaned on a continual basis during slope grading.
9. A copy of the SWMP and construction plans shall be maintained on site at all times.

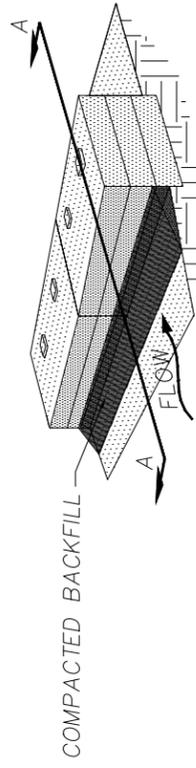
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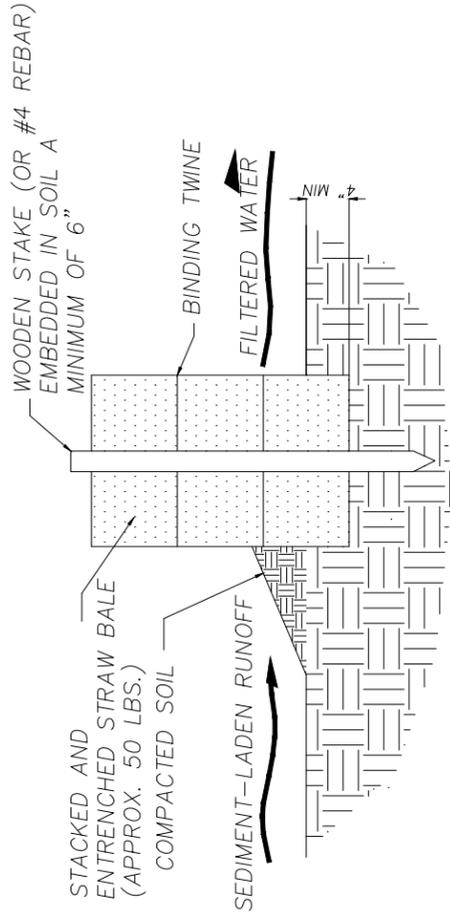
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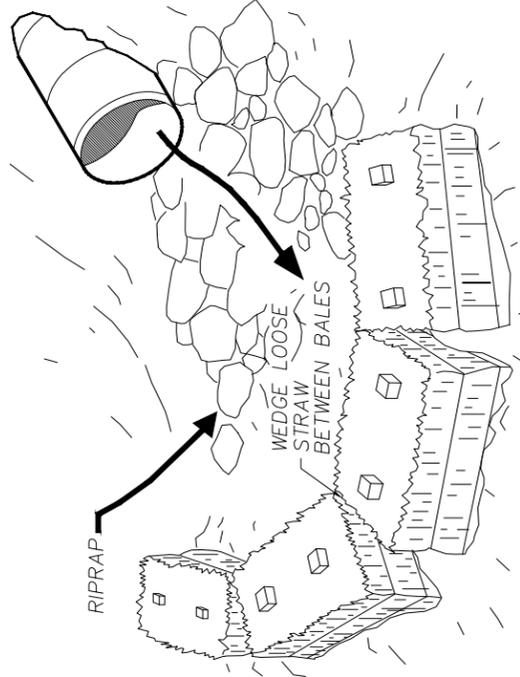
**PUBLIC WORKS
ENGINEERING DIVISION**



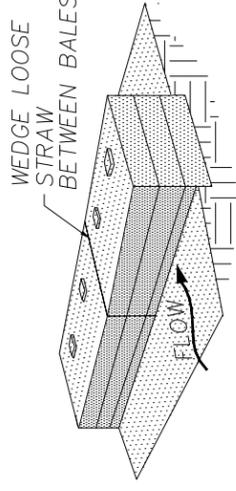
STEP 3. PLACE COMPACTED BACKFILL AGAINST THE UPSTREAM FACE.



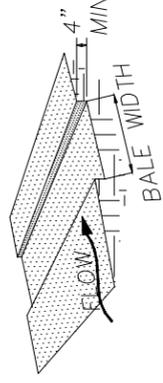
SECTION A-A



CULVERT OUTLET TRAP
N.T.S.
ANCHORED STRAW BALE (A.S.B.)

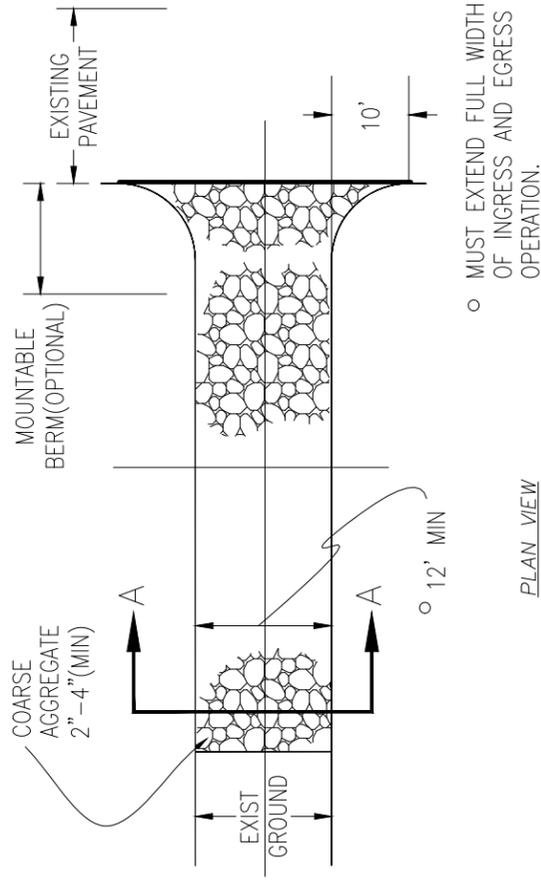


STEP 2. PLACE BALE IN TRENCH, STAKE IN PLACE

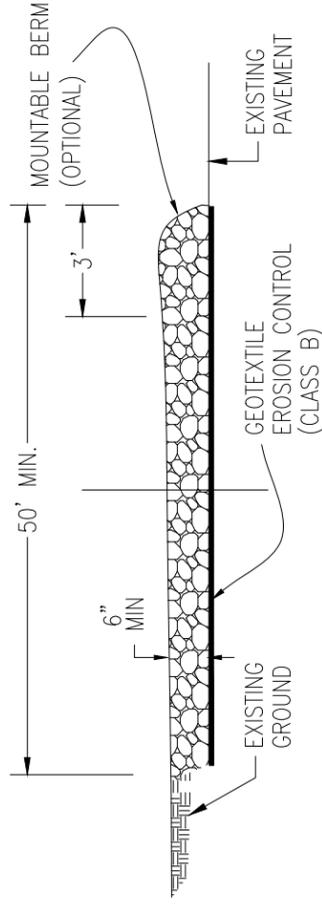


STEP 1. EXCAVATE TRENCH FOR BALES

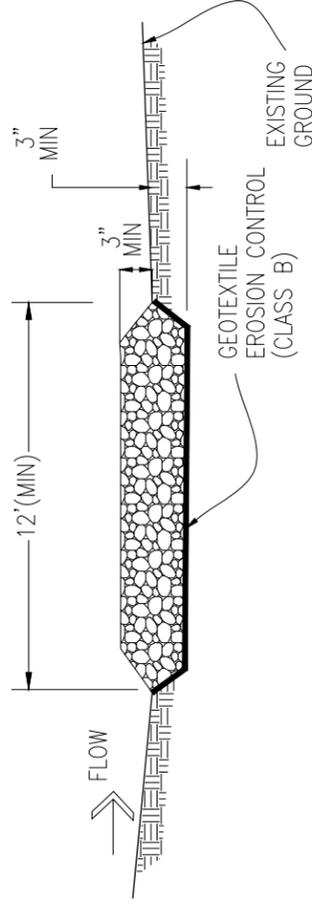
BALE INSTALLATION PROCEDURE



PLAN VIEW



SIDE ELEVATION



SECTION A-A

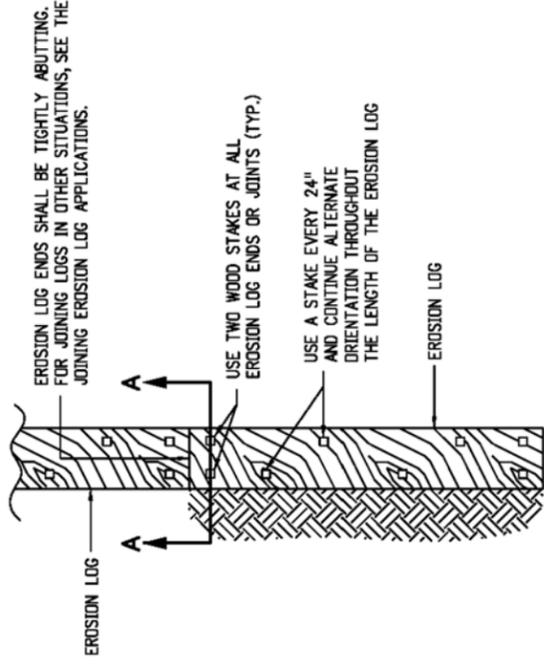
STABILIZED CONSTRUCTION ENTRANCE

REVISION	DESCRIPTION	DATE	DRAWN BY	DATE	SCALE
REVISION			JCS	2017	PLAN & PROFILE
REVISION			JCS	2017	HORIZONTAL
REVISION			TOP	2017	VERTICAL
REVISION			TOP	2017	

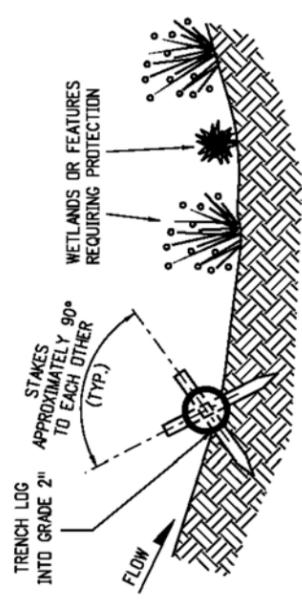


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STORM WATER MANAGEMENT PLAN-DETAILS

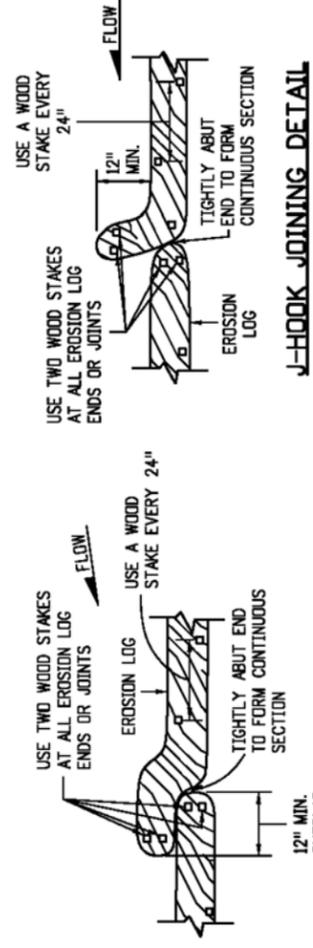


PLAN VIEW



SECTION A-A

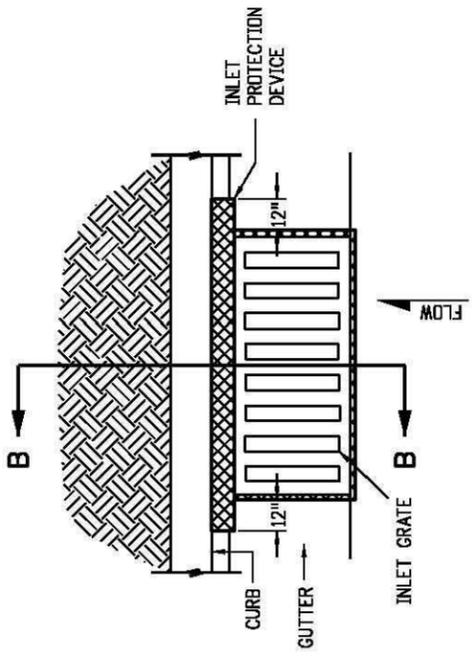
TYPICAL STAKE INSTALLATION



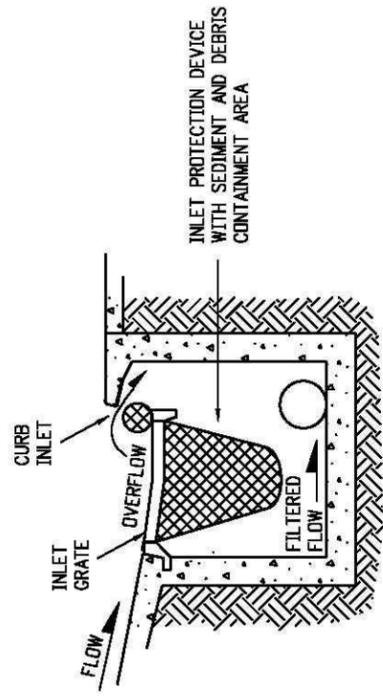
OVERLAP JOINING DETAIL

J-HOOK JOINING DETAIL

JOINING EROSION LOG APPLICATIONS



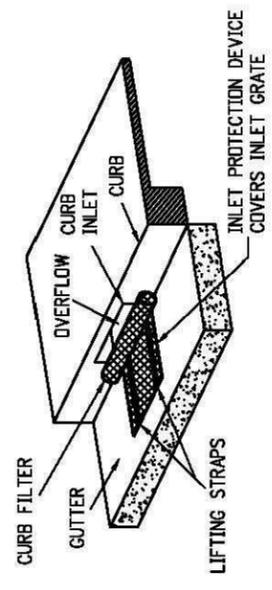
PLAN VIEW



SECTION B-B

OPTION A

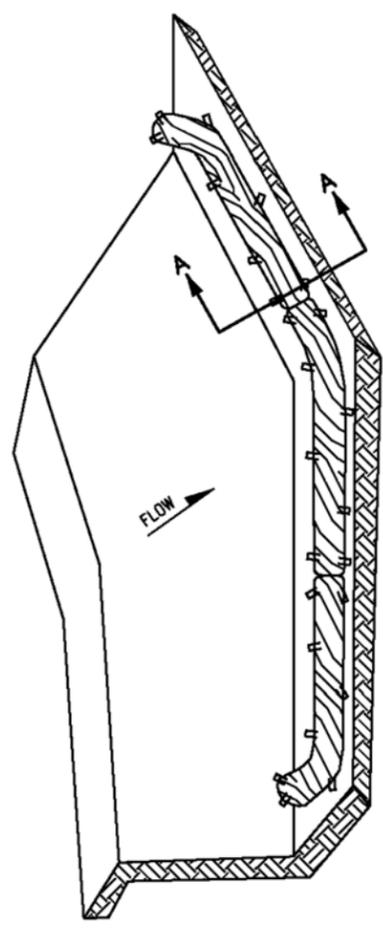
STORM DRAIN INLET PROTECTION (TYPE II)



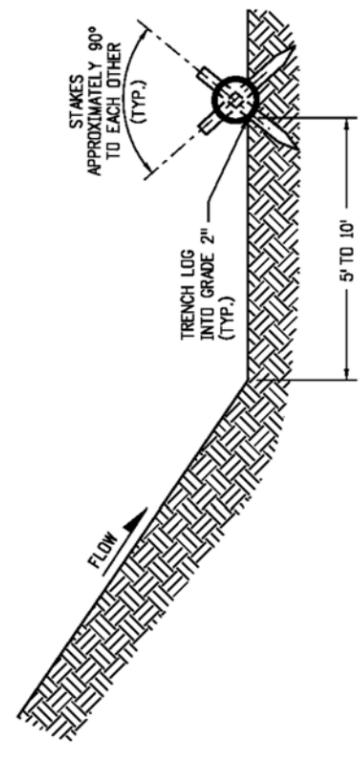
ISOMETRIC VIEW

OPTION B

STORM DRAIN INLET PROTECTION (TYPE II)



ISOMETRIC VIEW



SECTION A-A

- NOTES:**
1. EROSION LOGS USED AT TOE OF SLOPE SHALL BE PLACED 5 TO 10 FEET BEYOND TOE OF SLOPE TO PROVIDE STORAGE CAPACITY.
 2. EROSION LOGS SHALL BE PLACED ON THE CONTOUR WITH ENDS FLARED UP SLOPE.
 3. SEE SHEET 2 OF 11 FOR JOINING LOGS DETAIL.

EROSION LOG TOE OF SLOPE PROTECTION

EROSION LOGS PAY ITEMS NUMBER	DESCRIPTION
208-00012	TYPE 1 (9'')
208-00002	TYPE 1 (12'')
208-00013	TYPE 1 (20'')
208-00007	TYPE 2 (8'')
208-00008	TYPE 2 (12'')
208-00009	TYPE 2 (18'')

REVISION	DESCRIPTION	DATE

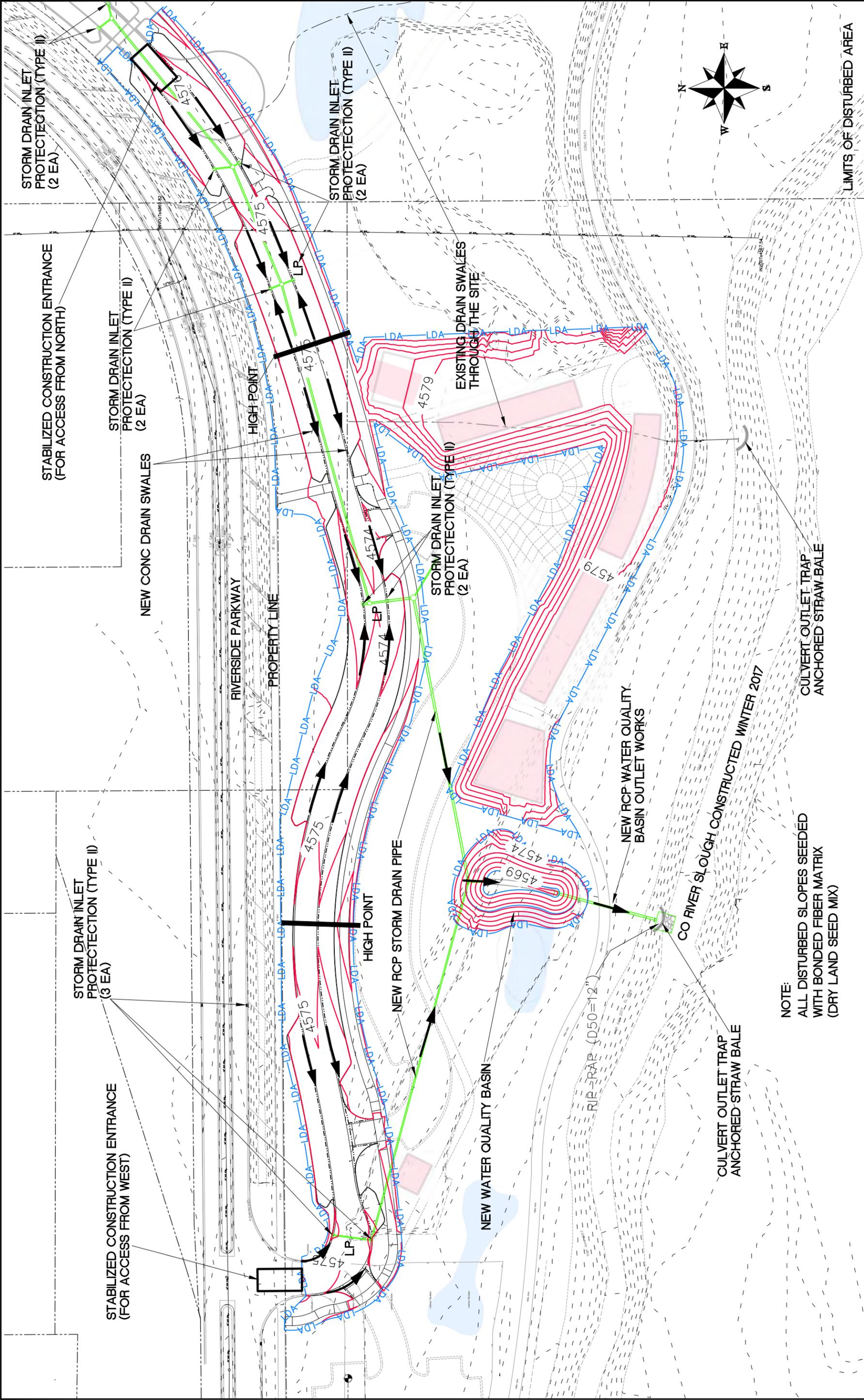
DRAWN BY	JCS	DATE	2017
DESIGNED BY	JCS	DATE	2017
CHECKED BY	TOP	DATE	2017
APPROVED BY	TOP	DATE	2017

SCALES:	
PLAN & PROFILE	1" = 10'
HORIZONTAL	1" = 40'
VERTICAL	1" = 10'



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STORM WATER MANAGEMENT PLAN-DETAILS**



NOTE:
 ALL DISTURBED SLOPES SEEDED
 WITH BONDED FIBER MATRIX
 (DRY LAND SEED MIX)

REVISION	DESCRIPTION	DATE	DRAWN BY	DATE	SCALE
1		2017	JCS	2017	PLAN & PROFILE
2		2017	JCS	2017	HORIZONTAL
3		2017	JCS	2017	VERTICAL
4		2017	JCS	2017	NA



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**Las Colonias Business Park Phase Ia
 STORM WATER MANAGEMENT PLAN-SITE MAP**