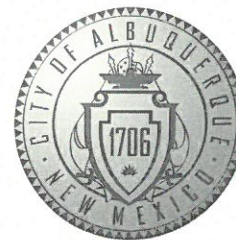


# CITY OF ALBUQUERQUE



Timothy M. Keller, Mayor

February 14, 2018

Ronald Bohannon, P.E.  
Tierra West, LLC  
5571 Midway Park Place NE  
Albuquerque, NM, 87109

**RE: Lot 2 Del Norte Plaza  
Grading and Drainage Plan  
Stamp Date: 02/05/18  
Hydrology File: C18D042D**

Dear Mr. Bohannon:

PO Box 1293 Based upon the information provided in your submittal received 02/06/2018, the Grading  
and Drainage Plan is approved for DRC Work Order.

Albuquerque Please include this approved Grading and Drainage Plan in the DRC Work Order  
construction set.

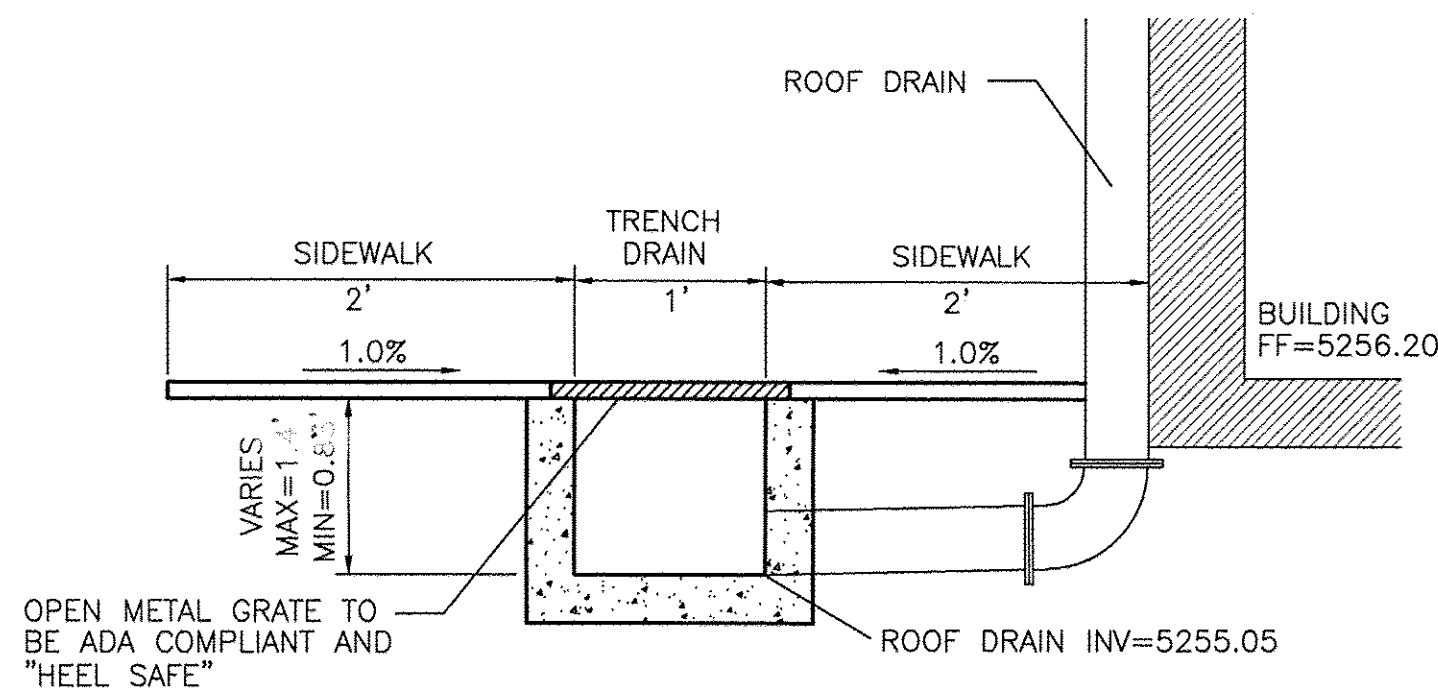
NM 87103 If you have any questions, please contact me at 924-3995 or [rbrissette@cabq.gov](mailto:rbrissette@cabq.gov).

Sincerely,

www.cabq.gov *Renée C. Brissette*

Renée C. Brissette, P.E. CFM  
Senior Engineer, Hydrology  
Planning Department





SECTION A-A  
NTS

### DOUBLE C INLET CALCULATIONS

#### Capacity of the grate:

$$L = 80'' - 2(2'' \text{ ends}) - 14(1/2'' \text{ middle bars}) - 8'' \text{ center piece} = 66 1/2'' = 5.25'$$

$$W = 25'' - 13(1/2'' \text{ middle bars}) = 18.5'' = 1.54'$$

$$\text{Area} = 5.25' \times 1.54' = 8.09 \text{ ft}^2$$

$$\text{Effective Area} = 8.09 - 8.09(0.5 \text{ clearing factor}) = 4.04 \text{ ft}^2 \text{ at the grate}$$

#### Orifice Equation

$$Q = CA \sqrt{2gh}$$

$$Q = 0.64 \times 4.04 \sqrt{2 \times 32.2 \times 0.50} = 13.75 \text{ cfs}$$

#### Capacity of the Throat:

$$L = 7.40'$$

$$H = 10 3/4'' - 4 1/2'' = 6 1/2'' = 0.5208'$$

$$\text{Area} = 7.40' \times 0.5208' = 3.85 \text{ ft}^2 \text{ at the throat}$$

#### Weir Equation

$$Q = CLH^{3/2}(3/2)$$

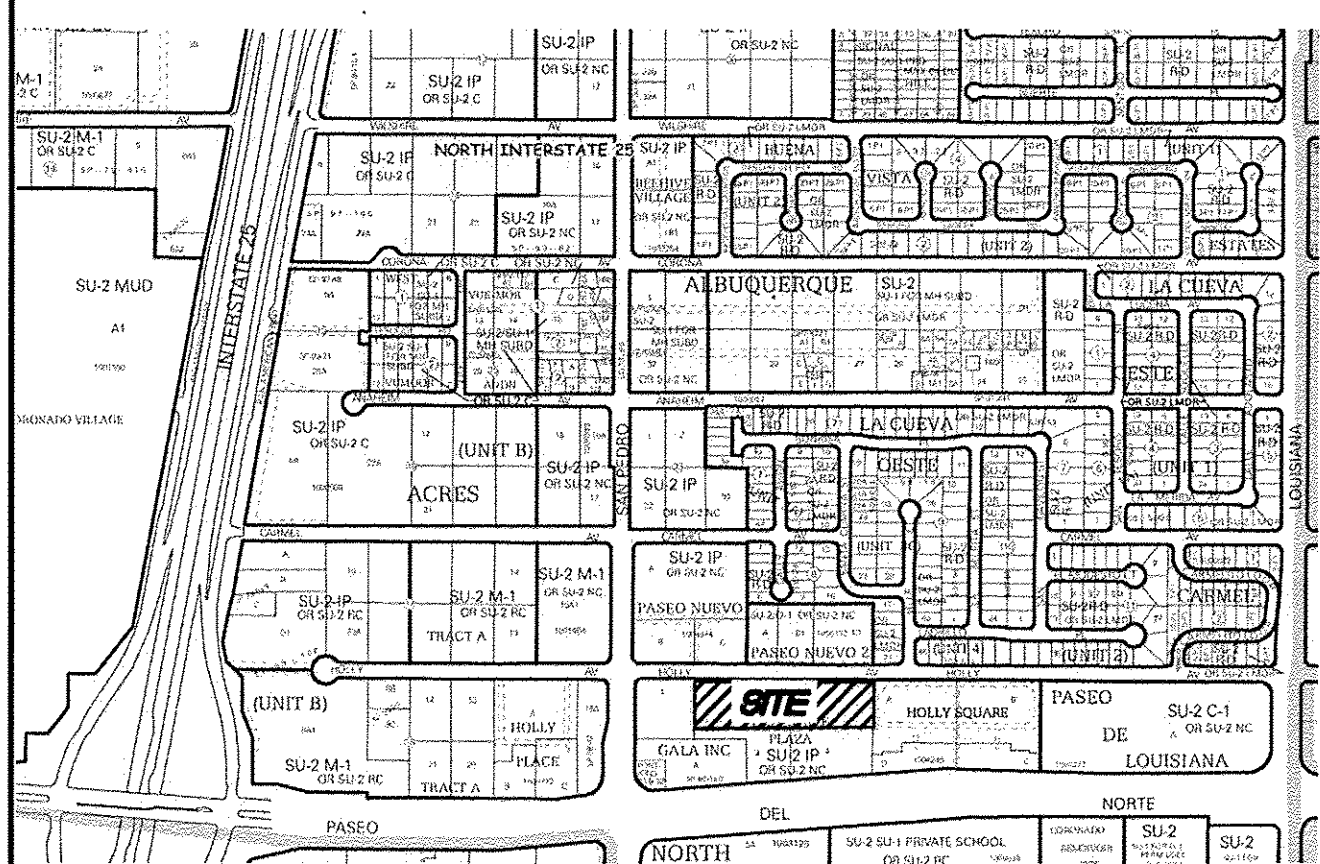
$$Q = 2.95 \times 3.85 \times 0.50^{3/2}(3/2) = 4.01 \text{ cfs}$$

#### Total Capacity:

$$Q = 15.93_{\text{grate}} + 6.24_{\text{throat}} = 17.77 \text{ cfs}$$

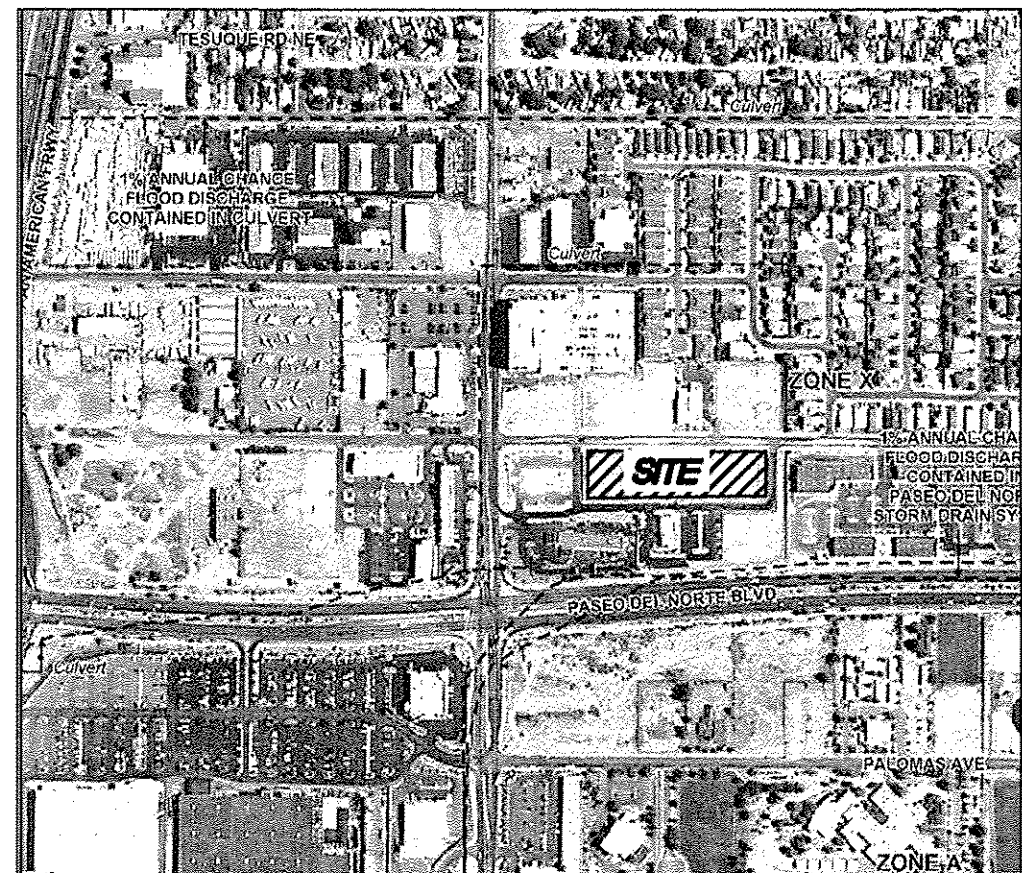
- NOTICE TO CONTRACTORS**
- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
  - ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
  - TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
  - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
  - BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
  - MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
  - WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVAL	NAME	DATE
INSPECTOR		



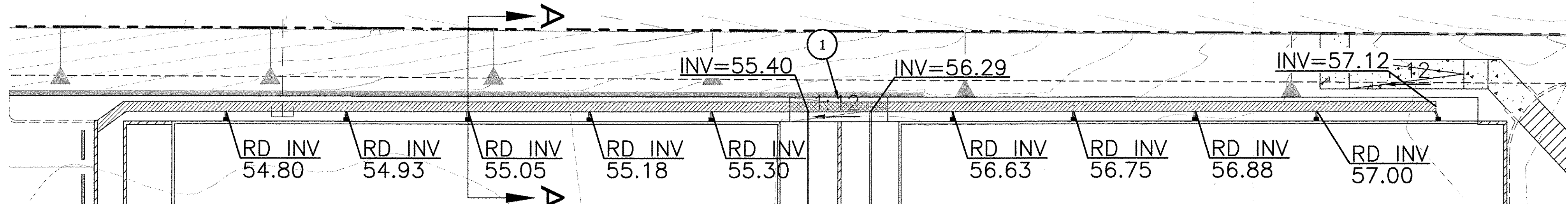
ZONE ATLAS

C-18-Z

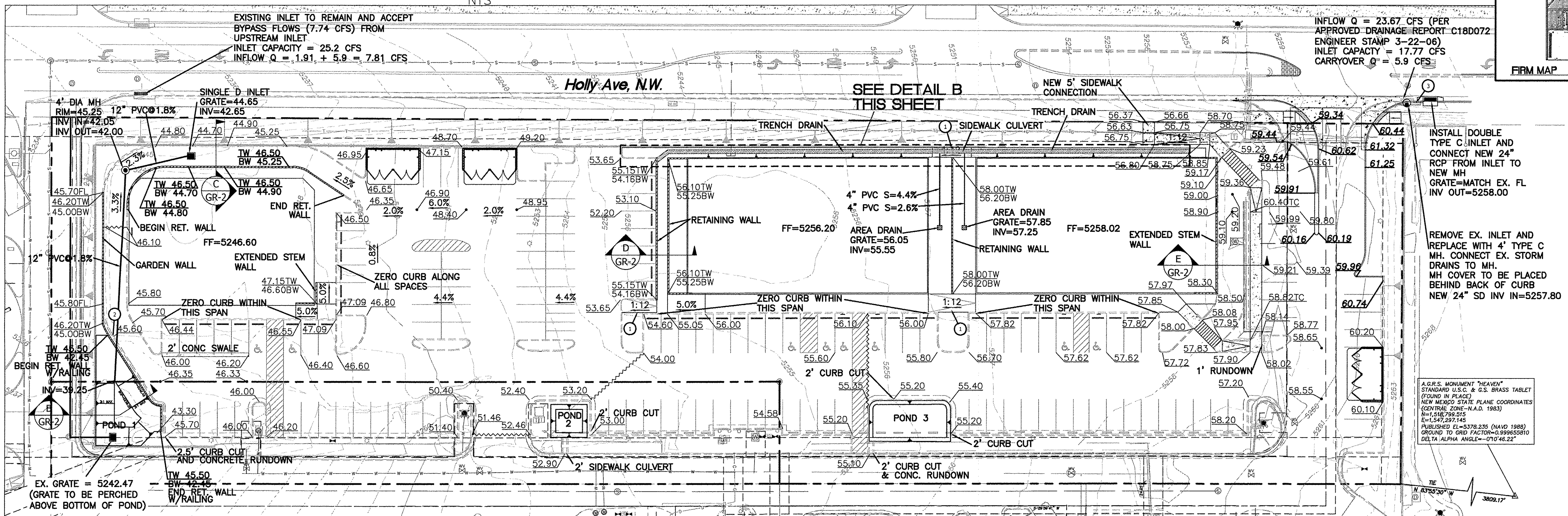


FIRM MAP

3500C037H



DETAIL B - TRENCH DRAIN DETAIL  
NTS



### LEGEND

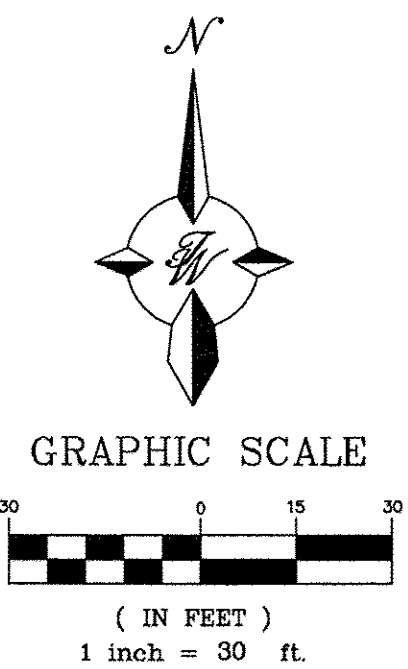
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- SIDEWALK
- EXISTING CURB & GUTTER
- SINGLE CLEAN OUT
- DOUBLE CLEAN OUT
- EXISTING SD MANHOLE
- EXISTING SAS MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING POWER POLE
- EXISTING GAS VALVE
- EXISTING OVERHEAD UTILITIES
- EXISTING GAS
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING STORM SEWER LINE
- EXISTING INDEX CONTOUR
- EXISTING CONTOUR
- WATER BLOCK

DET POND	VOL. REQUIRED	VOL. PROVIDED	TOP ELEV	BOT ELEV
1	1665.73 CF	1667.15 CF	5242.45	5239.25
2	282.93 CF	301.84 CF	5253.00	5251.75
3	734.98 CF	737.08 CF	5255.20	5254.20

NOTE - 2:1 SIDE SLOPES FROM CURB TO TOP OF POND 1  
3:1 MAX SIDE SLOPES FROM TOP TO BOTTOM OF POND 1  
2:1 MAX SIDE SLOPES ON PONDS 2 AND 3

### KEYED NOTES

- ADA RAMP WITH RAILING
- 2 FT CURB CUT
- 24" RCP FROM NEW DOUBLE C INLET TO NEW 4" TYPE C MH



### NOTICE TO CONTRACTORS

- TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
- MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
- SOURCE OF TOPO IS ALTA/ACSM LAND TITLE SURVEY OF LOT 2 HARMS INDUSTRIAL PARK PREPARED BY PRECISION SURVEYS, INC DATED JUNE, 2014.

### EROSION CONTROL NOTES

- CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
- REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.

### CAUTION:

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

### ROUGH GRADING APPROVAL

DATE



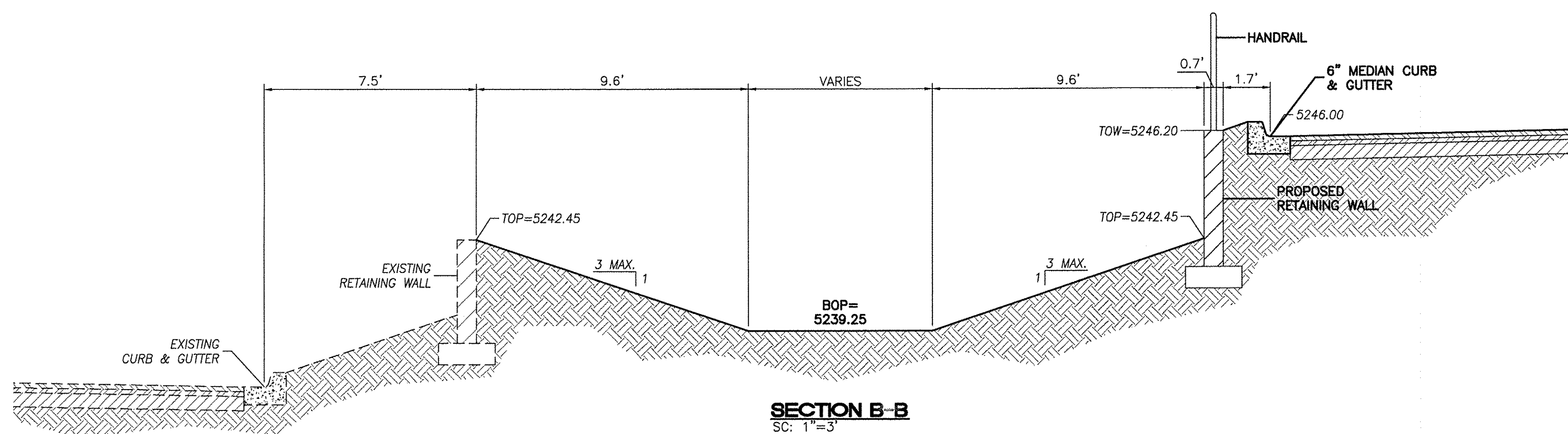
LOT 2 DEL NORTE PLAZA  
ALBUQUERQUE, NM

GRADING AND DRAINAGE  
PLAN

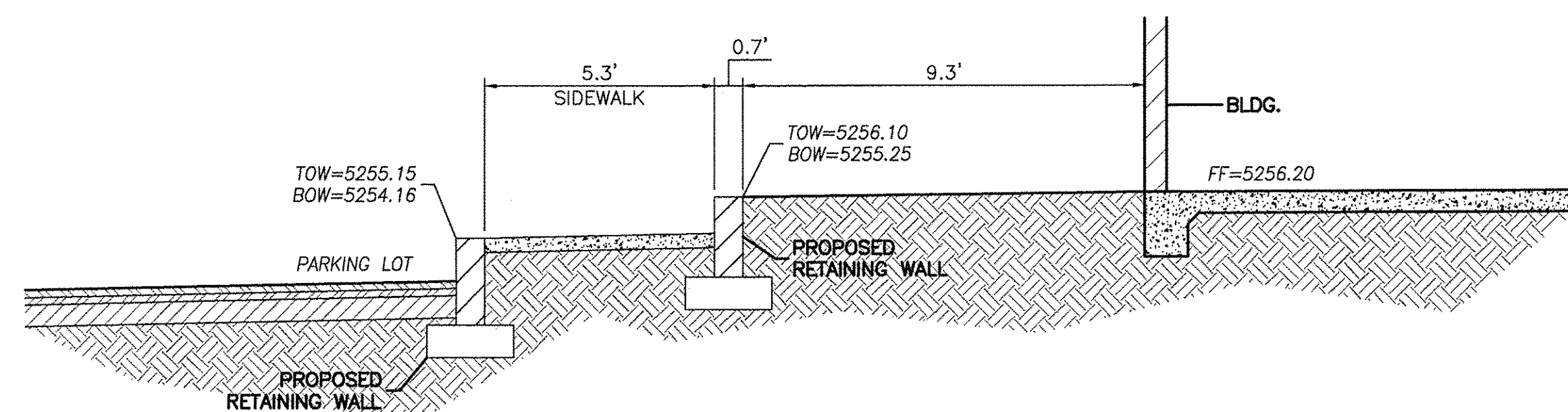
TIERRA WEST, LLC  
5571 MIDWAY PARK PL NE  
ALBUQUERQUE, NEW MEXICO 87109  
(505) 858-3100  
www.tierrawestllc.com

DRAWN BY  
pm  
DATE  
1-15-18  
DRAWING  
2015064-GR  
SHEET #  
GR-1  
JOB #  
2015064

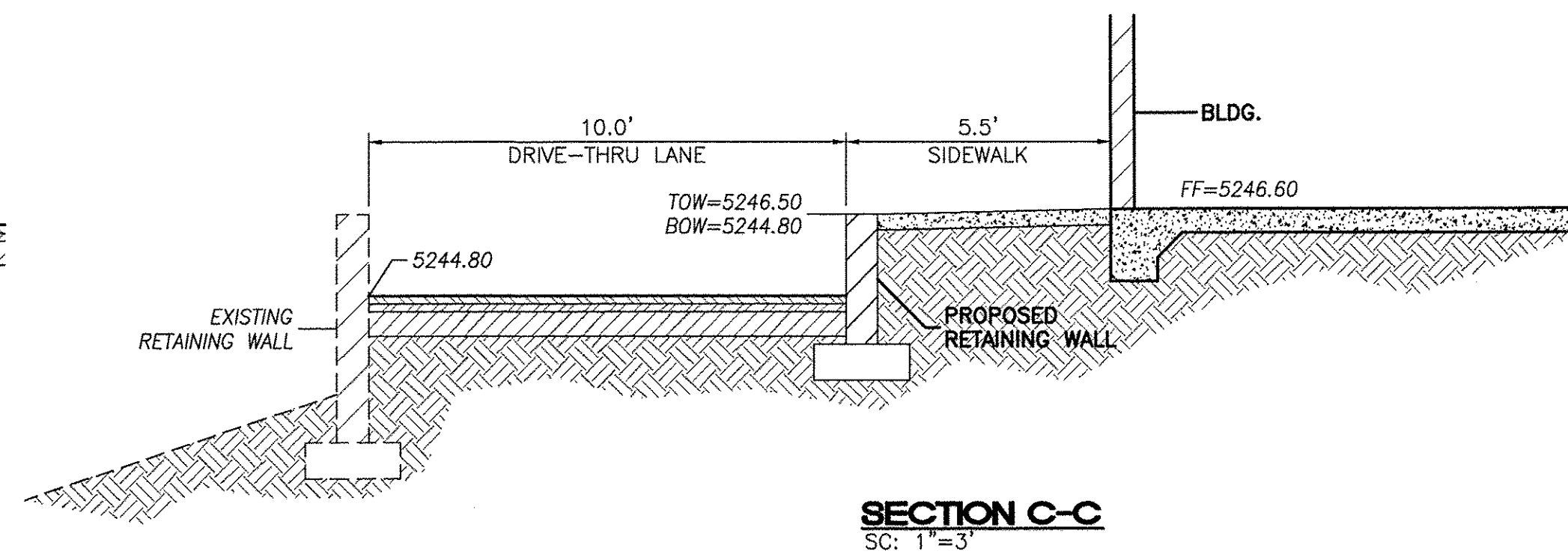




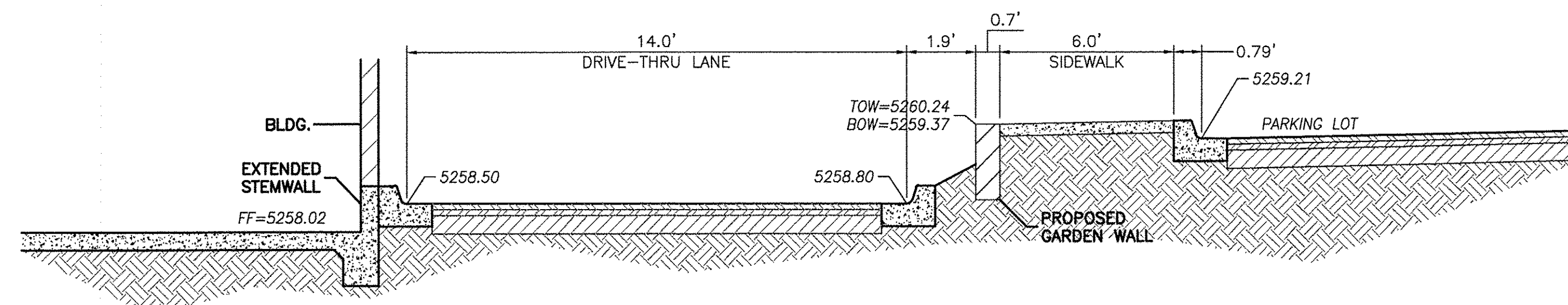
**SECTION B-B**  
SC: 1"=3'



**SECTION D-D**  
SC: 1"=3'

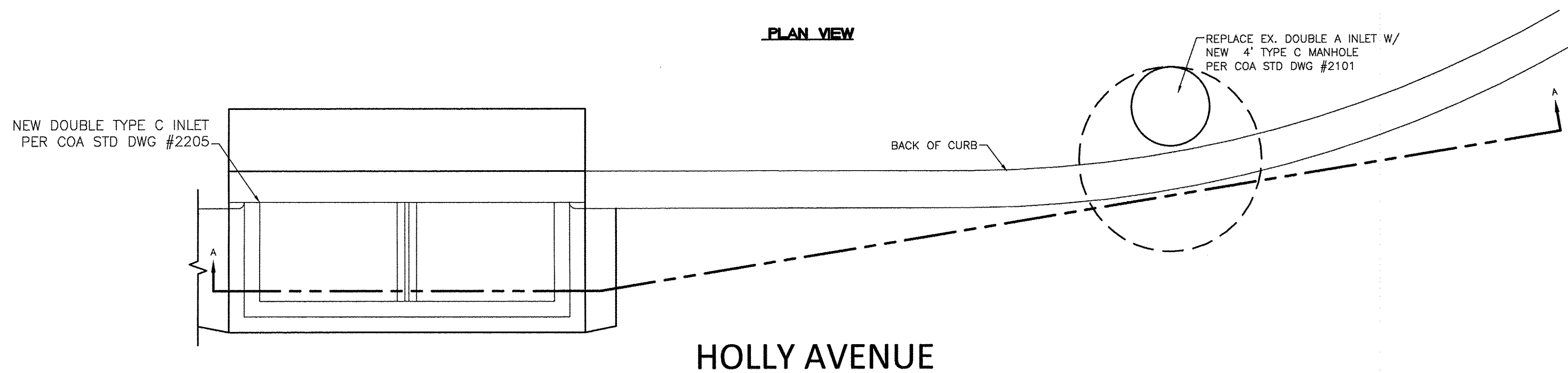


**SECTION C-C**  
SC: 1"=3'



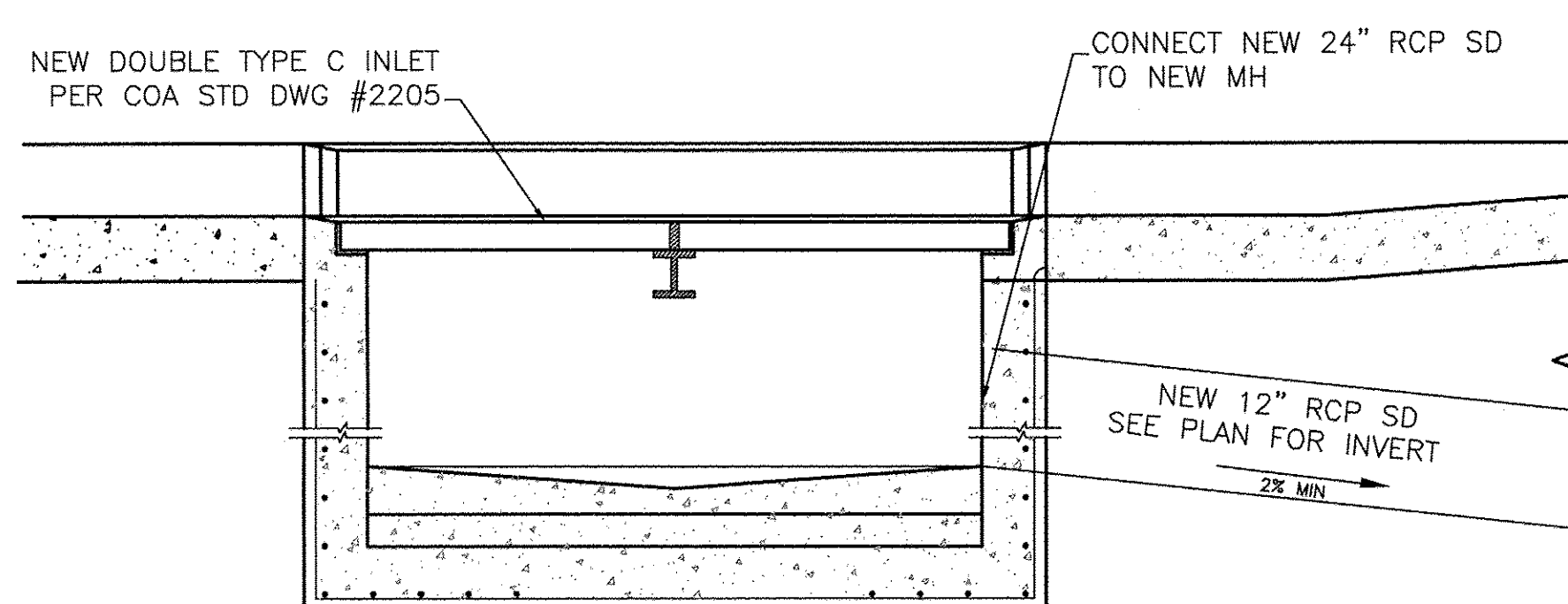
**SECTION E-E**  
SC: 1"=3'

**PLAN VIEW**

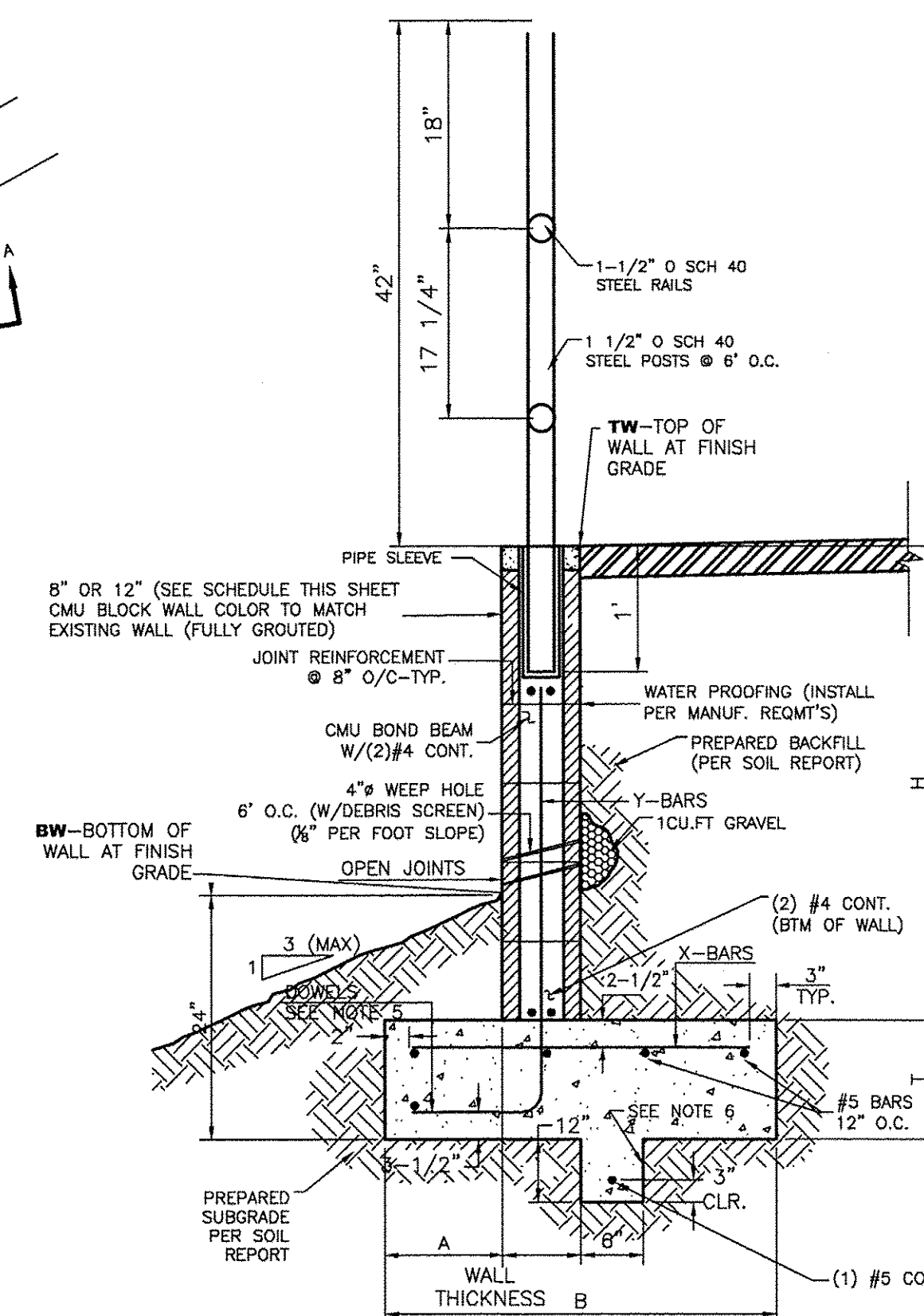
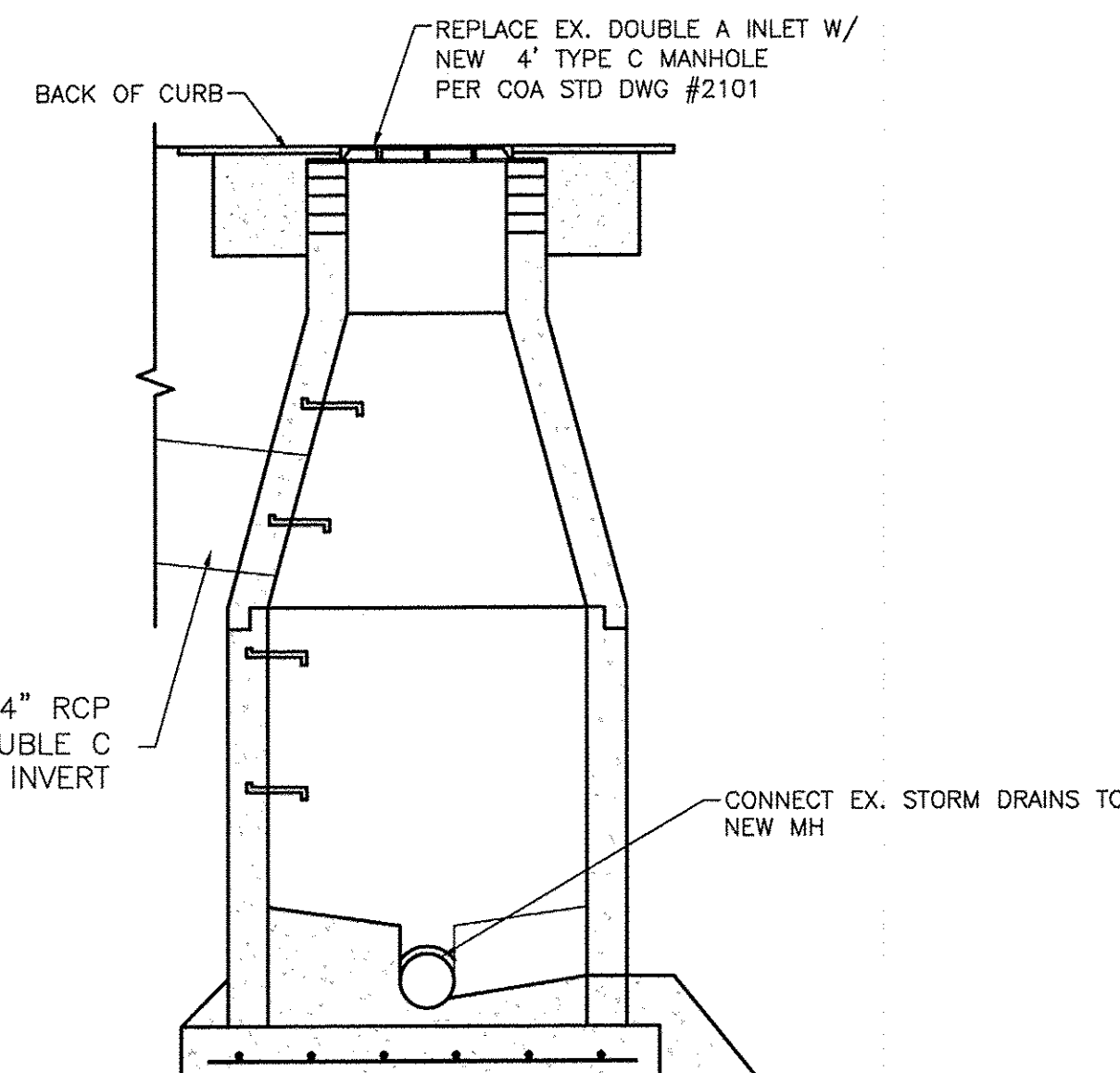


**HOLLY AVENUE**

**SECTION A-A**



**MODIFICATION TO EXISTING INLET DETAIL**  
NTS



**RETAINING WALL DETAIL**

- NTS
- $f'_m = 1500$  PSI
  - SOIL ALLOWABLE 2000 PSF (VERIFY W/SOILS REPORT)
  - ACTIVE SOIL PRESSURE  $= 35$  PSF/FT (VERIFY W/SOILS REPORT)
  - PASSIVE SOIL PRESSURE  $= 250$  PSF/FT (VERIFY W/SOILS REPORT)
  - SOIL FRICTION FACTOR  $= 0.4$  (VERIFY W/SOILS REPORT)

8 INCH REINFORCED CONCRETE MASONRY WALL							
H	A	B	T	Y-BARS	X-BARS		
ft.-in.	in.	ft.-in.	in.				
2'-0"	10"	2'-4"	10"	#4 @24" O.C.	#4 @24" O.C.		
2'-8"	10"	2'-4"	10"	#4 @24" O.C.	#4 @24" O.C.		
3'-4"	10"	2'-4"	10"	#4 @24" O.C.	#4 @24" O.C.		
4'-0"	12"	2'-8"	10"	#4 @16" O.C.	#4 @24" O.C.		
4'-8"	16"	3'-4"	12"	#5 @16" O.C.	#4 @18" O.C.		
5'-4"	19"	3'-10"	12"	#5 @8" O.C.	#5 @24" O.C.		
6'-0"	20"	4'-8"	12"	#6 @8" O.C.	#5 @24" O.C.		

Y-BARS EDGE (2") FROM RETAINING FACE

12 INCH REINFORCED CONCRETE MASONRY WALL							
H	A	B	T	Y-BARS	X-BARS		
ft.-in.	in.	ft.-in.	in.				
5'-4"	16"	3'-8"	12"	#5 @16" O.C.	#5 @24" O.C.		
6'-0"	19"	4'-2"	12"	#5 @8" O.C.	#5 @24" O.C.		
6'-8"	21"	4'-6"	12"	#5 @8" O.C.	#5 @16" O.C.		
7'-4"	23"	4'-10"	12"	#6 @8" O.C.	#6 @18" O.C.		
8'-0"	26"	5'-4"	12"	#6 @8" O.C.	#6 @18" O.C.		
8'-8"	28"	5'-8"	12"	#6 @8" O.C.	#6 @12" O.C.		

Y-BARS EDGE (3") FROM RETAINING FACE

**GENERAL NOTES:**

- ALL CONCRETE IS TO BE 4000 PSI @ 28 DAYS.
- MINIMUM COMPACTION UNDER FOOTINGS IS TO BE 95% PER ASTM. D 1557 FOR A DEPTH OF 12" MOISTURE CONTENT IS TO BE  $\pm 2.0\%$ .
- BACK FILL AGAINST WALLS IS TO BE HAND-PLACED AND COMPACTED.
- ALL BARS ARE TO BE GRADE 60, ASTM 615.
- DOWELS SHALL BE EQUAL IN SIZE AND SPACING TO Y-BARS, SHALL PROJECT A MINIMUM OF #4-24", #5-30", #6-36" INTO THE FILLED BLOCK CORES, AND SHALL EXTEND TO THE TOE OF THE FOOTING.
- PROVIDE KEY FOR 8" AND 12" WALLS WHERE H EXCEEDS 6'.
- USE EITHER EXPANSION JOINTS ON 20' CENTERS OR PILASTERS EVERY 16'.

<b>ENGINEER'S SEAL</b>  <b>RONALD R. BOHANNAN</b> P.E. #7888	<b>LOT 2 DEL NORTE PLAZA</b> <b>ALBUQUERQUE, NM</b> <b>GRADING AND DRAINAGE</b> <b>SECTIONS</b>  <b>TERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWN BY pm
		DATE 4-10-17
		DRAWING 2015064-GR
		SHEET # <b>GR-2</b>