

CITY OF ALBUQUERQUE



Planning Department
Suzanne Lubar, Director

Mayor Richard J. Berry

August 4, 2016

Ron Bohannon, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, New Mexico 87109

RE: **Freddy's**
131 Coors Blvd NW
Requested for 60 Day Temporary C. O. - Accepted
Engineers Stamp Date 7/7/15 (K10D001B)

Dear Mr. Bohannon,

PO Box 1293

Albuquerque

Based on the certification provided in your submittal received 8/3/2016, the above referenced is approved for a 60-day Temporary Release of Occupancy by Hydrology. However, before a permanent CO can be accepted the following comments must be addressed.

- The concrete spillway must be constructed

New Mexico 87103

An inspection by our office will need to take place after these corrects are made.

If you have any questions, you can contact me at 924-3686 or Totten Elliott at 924-3982.

www.cabq.gov

Sincerely,

Abiel Carrillo, P.E.,
Principal Engineer, Planning Department
Development and Review Services

TE/AC
C: Email

Cordova, Camille C.; Miranda, Rachel; Sandoval, Darlene M.; Blocker, Lois



City of Albuquerque

Planning Department

Development & Building Services Division

RAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: Freddy's City Drainage #: _____

DRB#: 1004095 EPC#: _____ Work Order#: _____

Legal Description: TR D-1 Plat of Hubbell Plaza _____

City Address: 111 Coors Blvd. NW Albuquerque, NM 87121 _____

Engineering Firm: Tierra West, LLC Contact: Ronald R. Bohannon

Address: 5571 Midway Park Place NE Albuquerque, NM 87109

Phone#: 505-858-3100 Fax#: 505-858-1118 E-mail: rrb@tierrawestllc.com

Owner: Oak Realty Partners, Inc. Contact: Michael Bushell

Address: 5975 S Quebec Street, Suite 141 Greenwood Village, CO 80111

Phone#: 303-318-0100 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☐ GRADING PLAN
- ☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☒ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEER'S CERT (TCL)
- ☐ ENGINEER'S CERT (DRB SITE PLAN)
- ☐ ENGINEER'S CERT (ESC)
- ☐ SO-19
- ☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

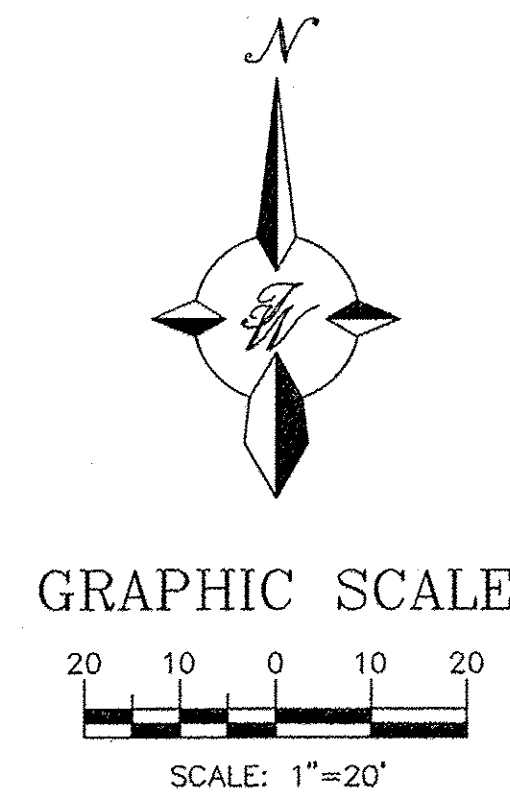
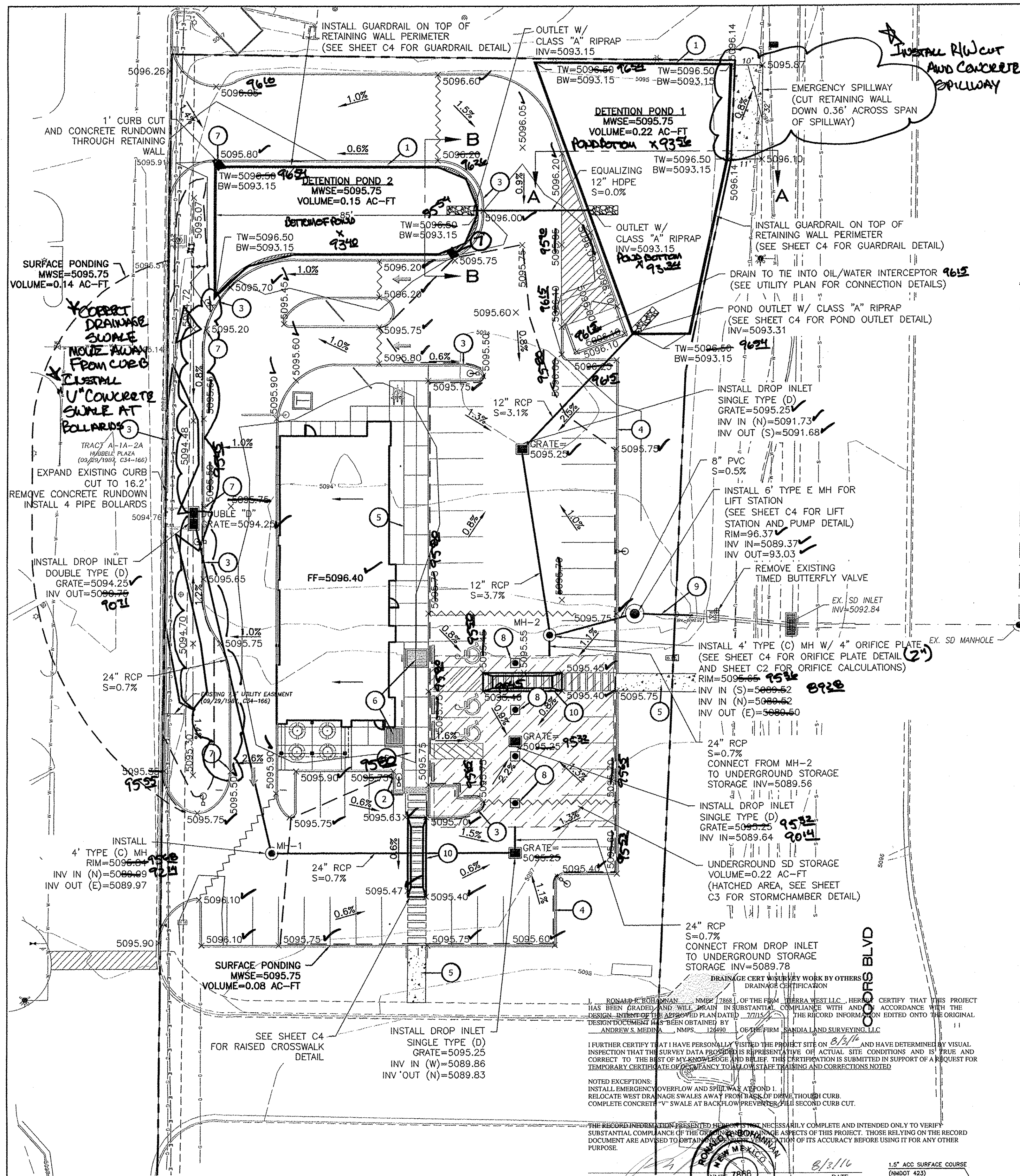
- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM)
- ☒ CERTIFICATE OF OCCUPANCY (~~PERM~~ TEMP)
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ GRADING CERTIFICATION
- ☐ SO-19 APPROVAL
- ☐ ESC PERMIT APPROVAL
- ☐ ESC CERT. ACCEPTANCE
- ☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED: _____ Yes _____ No _____ Copy Provided

DATE SUBMITTED: 8/03/16 By: BF for RRB

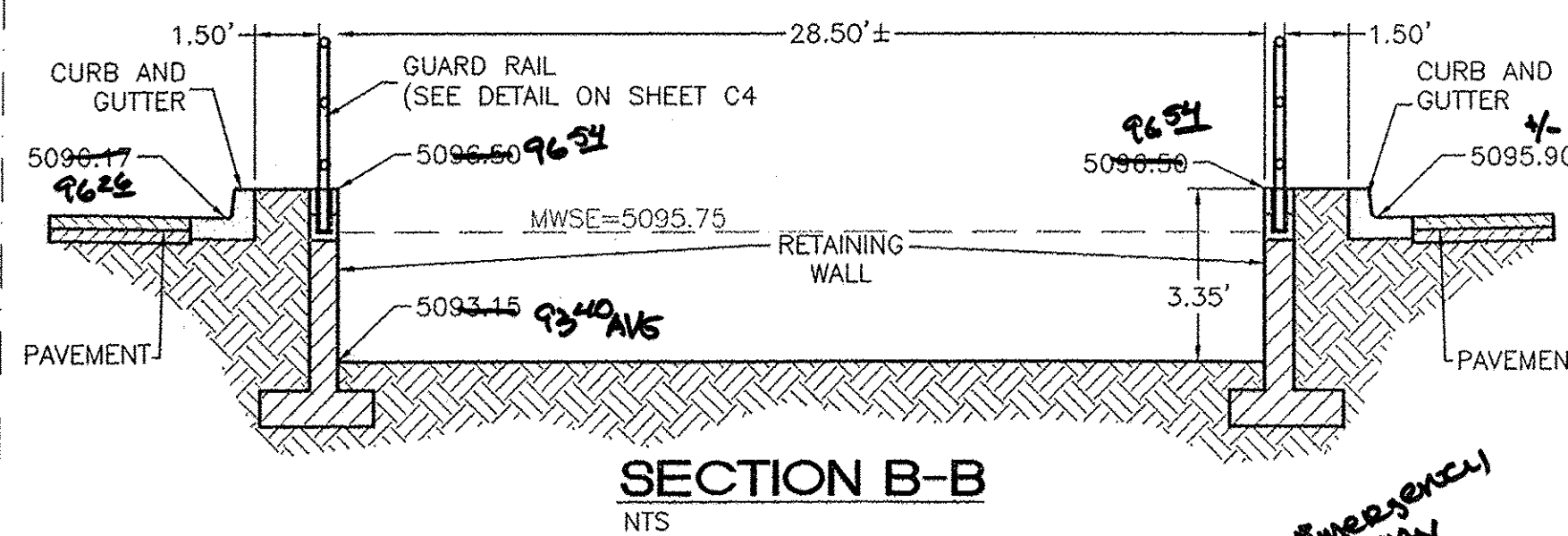
Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre that are part of a larger common plan of development



LEGEND

	CURB & GUTTER
	BOUNDARY LINE
	EASEMENT
	BUILDING
	SIDEWALK
	PEDESTRIAN CROSSWALK
	RETAINING WALL
	CONTOUR MAJOR
	CONTOUR MINOR
	SPOT ELEVATION
	WATER BLOCK
	FLOW ARROW
	EXISTING SIDEWALK
	EXISTING CURB & GUTTER
	EXISTING CONTOUR MAJOR
	EXISTING CONTOUR MINOR
	EXISTING SPOT ELEVATION
	EXISTING POND
	UNDERGROUND STORAGE



SITE LEGEND

- | | | | |
|---|-------------------|----|------------------|
| 1 | RETAINING WALL | 6 | HC RAMP |
| 2 | TURN DOWN CURB | 7 | 1 FT. CURB CUT |
| 3 | CURB AND GUTTER | 8 | 10" PVC RISER |
| 4 | HEADER CURB | 9 | 4"x8" REDUCER |
| 5 | CONCRETE SIDEWALK | 10 | RAISED CROSSWALK |

Introduction

The purpose of this submittal is to provide a drainage management plan for the proposed Freddy's restaurant located near the intersection of Coors Blvd. and Central Ave. in Albuquerque, New Mexico. The site contains approximately 1.45 acres and is located within the Hubbell Plaza Shopping Center. The site lies outside of any flood plains (FIRM Map 35001C0329H).

Existing Conditions

The site is part of an approved drainage plan titled "Coors & Central Shopping Center" (K10-D018). The location is tract D-1 within the Hubbell Plaza Shopping Center and is currently a detention pond for 5.4 acres of the shopping center. The site collects all flows from the 5.4 acres via surface flow through a concrete channel located on the west side of the site. The pond holds all flows for a minimum of 2 hours before being discharged through an 8-inch connecting pipe on the east side of the site. A delay timer is used to discharge the pond through the 8-inch pipe towards the back of a catch basin located on Coors Blvd. and into the street storm drain system. Per the approved drainage plan calculations, the pond is designed to hold 30,068 cubic feet of runoff and discharge to the Coors storm drain system at a rate of 1.08 cfs. Flows from the tract directly north are not directed towards the existing pond onsite, these flows are directed north and away from the subject site and have no impact on the drainage.

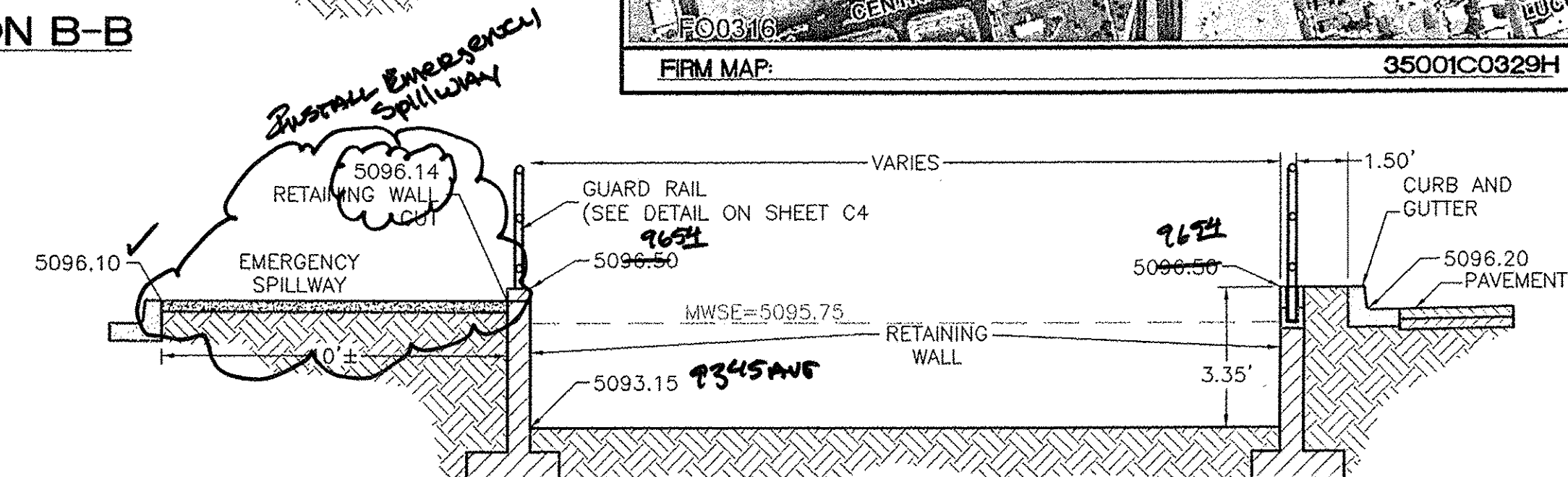
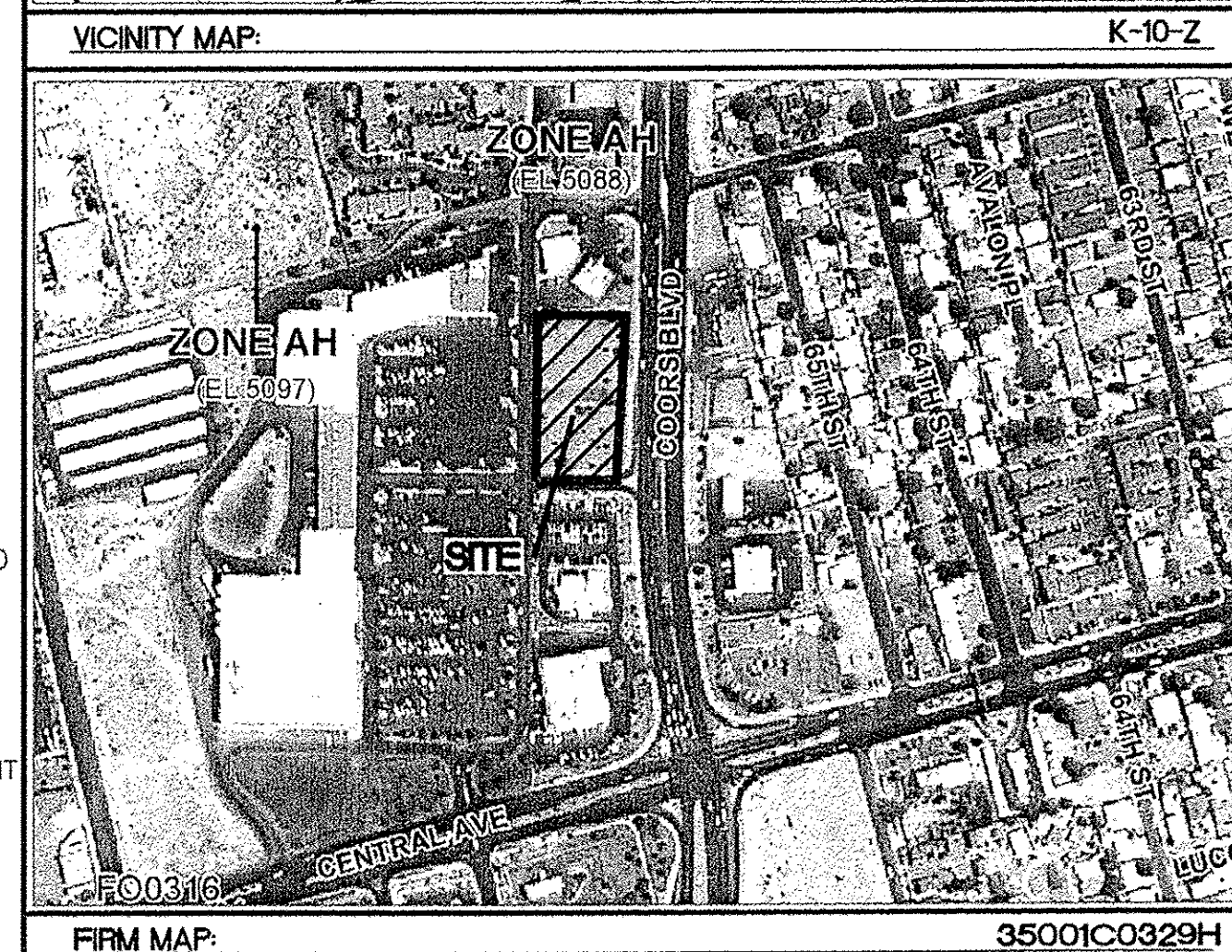
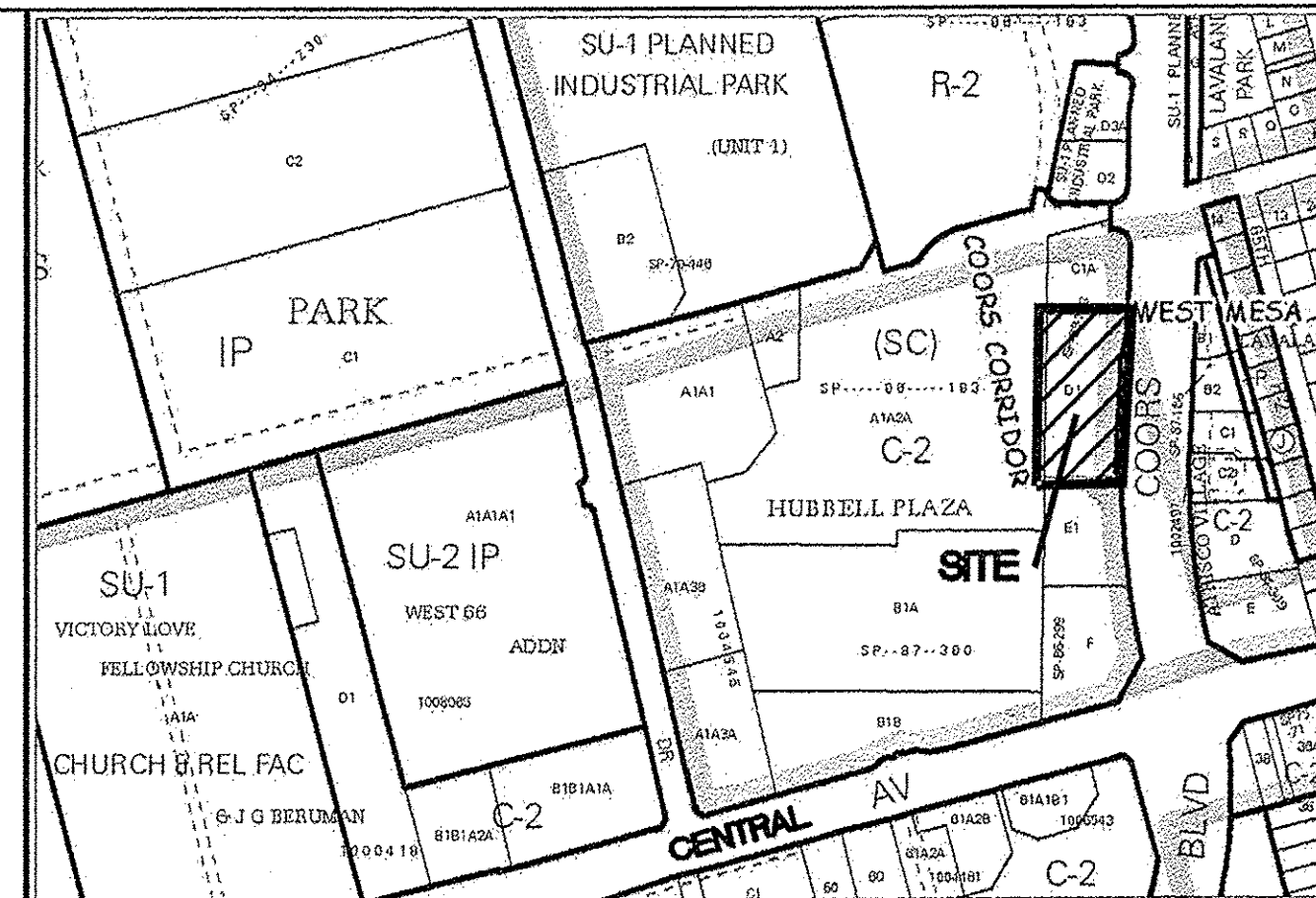
Proposed Conditions

The subject site will continue to collect all flows from the offsite area of the shopping center and detain in a subsurface system. Two detention ponds (Detention Pond 1 and Detention Pond 2) will act as a singular detention pond system with a 12-inch equalizing pipe connecting the two together. The offsite flows will drain via surface flow through the north driveway aisle and through a curb cut on the west side of the site where the existing concrete channel lies. The offsite flows through the 16 ft curb cut will be collected into a Double D drop inlet that is located in a bio swale on the western side of the site. The offsite flows through the north driveway will be collected in Detention Pond 2. All flows from the west side of the building and directly north of the building will be directed towards the bio swale and into the Double D drop inlet. All other flows from the site will be directed to three Single D drop inlets in the parking lot. The Double D inlet will interconnect via storm drain with the southern Single D inlet and underground storage system. The two detention ponds will interconnect via storm drain with the northernmost Single D inlet and the underground storage system.

As runoff volume increases and fills up the underground storage system completely, the interconnecting storm drains, drop inlets and two detention ponds will act as an equalizing system and allow runoff to be stored in both the detention ponds and on the surface of the parking lot and bio swale. During the 100-year 6-hour storm, the maximum water surface elevation for the detention system is 5095.75. This water surface elevation allows 6 inches of ponding depth in the parking lot and 18 inches of ponding in the bio swale and is below the elevation of the finished floor of the building (5096.40). A 4" cut in the retaining wall of the NE corner of Detention Pond 1 will act as an emergency overflow to Coors Blvd., assuring that the MWSE will never reach the finished floor elevation. The detention system will outflow through a 4" orifice plate located in MH-2 and will be sent to a Grindex pump system to outfall towards the existing catch basin on Coors.

When the maximum water surface elevation is reached; the volume of the detention ponds is 0.37 ac-ft, volume of underground storage is 0.22 ac-ft, and the volume of surface ponding is 0.22 ac-ft. This gives a total storage volume of 0.81 ac-ft equivalent to the required 0.81 ac-ft of storage required for developed runoff. The orifice plate at MH-2 will control the outflow to the required discharge of 1.08 cfs. The detention ponds and underground storage system will capture sediment within the bottom of each respective area; the detention ponds' outlet will be raised 0.16 ft above the pond bottom to retain the first flush volume of the site.

See sheet C2 for DPM calculations, Grate capacity, Pipe capacity, Orifice Calcs, and Basin Map
See sheet C3 for Underground StormChamber configuration and details
See sheet C4 for Pump Details and Site Details

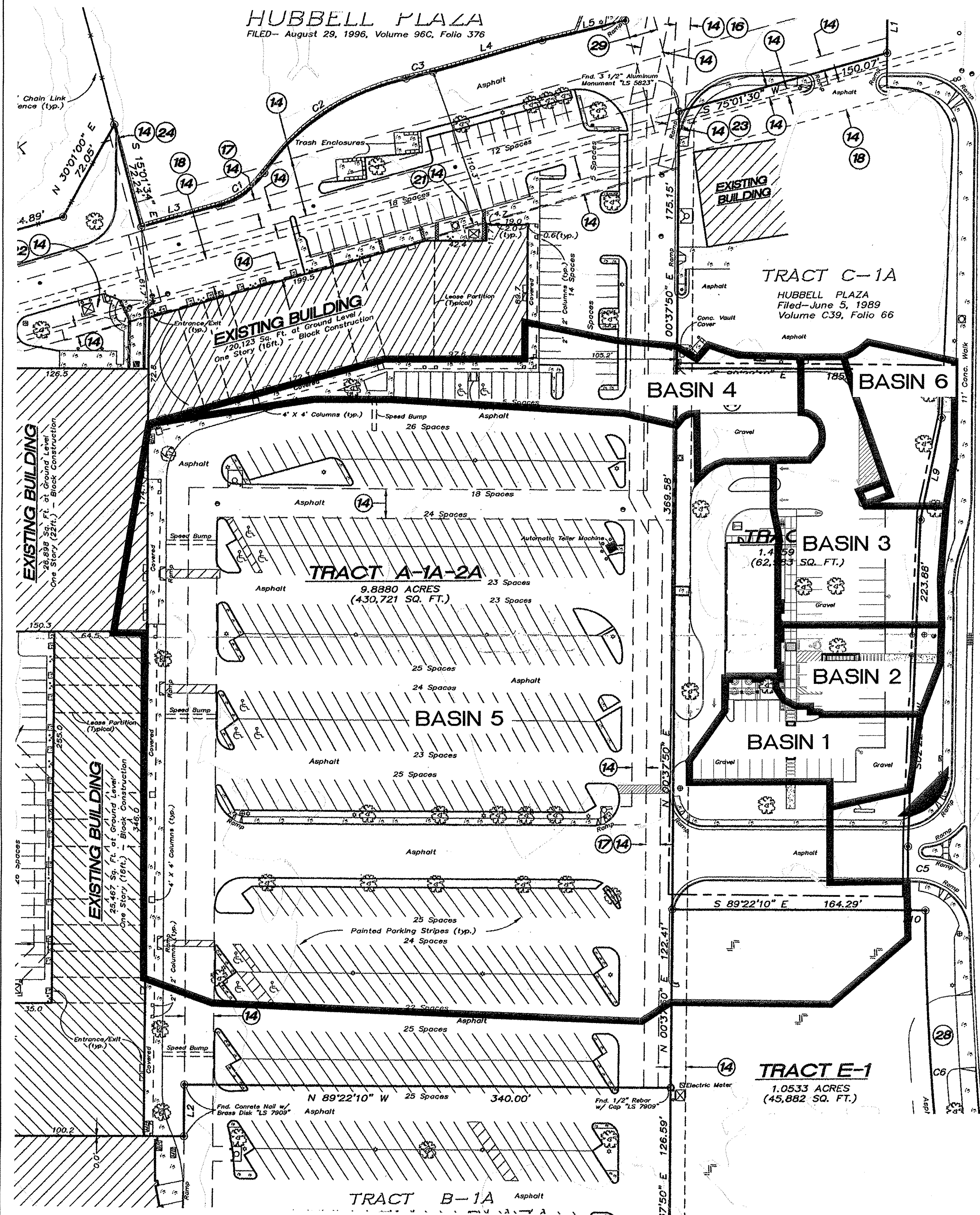


NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. 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.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. 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.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED. 7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVAL	NAME	DATE
INSPECTOR		

	FREDDY'S AT COORS AND CENTRAL	DRAWN BY DY
	GRADING AND DRAINAGE PLAN	DATE 7/07/15
	TERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierawestllc.com	2015036-GRE
		SHEET # C1
JOB # 2015036		



DPM Weighted E Method (Zone 1)

Existing Conditions

Basin Descriptions										100-Year, 6-Hr			10-Year, 6-Hr				
Basin ID	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
				%	(acres)	%	(acres)	%	(acres)	%	(acres)						
1	235,224.00	5.400	0.00844	0%	0.000	30%	1.620	0%	0.000	70%	3.780	1.580	0.711	19.81	0.934	0.420	12.16
Total	235,224.00	5.400	0.00844										0.711	19.81		0.420	12.16

Proposed Conditions

Basin Descriptions									100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E	Volume	Flow
				%	(acres)	%	(acres)	%	(acres)	%	(acres)	(ac-ft)	(ac-ft)	cfs
1	8,908.63	0.205	0.00032	0%	0.000	20%	0.041	0%	0.000	80%	0.164	1.710	0.029	0.80
2	6,297.83	0.145	0.00023	0%	0.000	15%	0.022	0%	0.000	85%	0.123	1.775	0.021	0.58
3	14,479.94	0.332	0.00052	0%	0.000	15%	0.050	0%	0.000	85%	0.283	1.775	0.049	1.34
4	17,152.37	0.394	0.00062	0%	0.000	40%	0.158	0%	0.000	60%	0.236	1.450	0.048	1.35
5	181,825.49	4.174	0.00652	0%	0.000	10%	0.417	0%	0.000	90%	3.757	1.840	0.640	17.26
6	6,559.74	0.151	0.00024	0%	0.000	0%	0.000	0%	0.000	100%	0.151	1.970	0.025	0.66
Total	235,224.00	5.400	0.00844									0.812	21.99	0.00

Grate Capacity (Based On Orifice Equation)

Basin ID	Q Required (CFS)	Grate Type	Q Allow (CFS)	Result
1	0.8	Single D	7.12	Capacity OK
2	0.58	Single D	7.12	Capacity OK
3	1.34	Single D	7.12	Capacity OK
5	17.26	Double D	19.45	Capacity OK

CAPACITY OF SINGLE D GRATES

L = 40" - 2(2"ends) - 7(5" middle bars)
= 32 1/2"
= 2.7083'

W = 25" - 13(1/2" middle bars)
= 18.5"
= 1.54'

Area = 2.7083' x 1.54'
= 4.18 ft²

Effective Area = 4.18 - 4.18 (0.5 clogging factor)
= 2.09 ft² at the grate

Orifice Equation:
Q = CA sqrt(2gH)
Q = 0.6 * 2.09 * sqrt(2 * 32.2 * 0.5)
Q = 7.12 cfs

CAPACITY OF DOUBLE D GRATE

L = 80" - 2(2"ends) - 14(5" middle bars) - 6" (center piece)
= 69"
= 5.25'

W = 25" - 13(1/2" middle bars)
= 18.5"
= 1.54'

Area = 5.25' x 1.54'
= 8.09 ft²

Effective Area = 8.09 - 8.09 (0.5 clogging factor)
= 4.04 ft² at the grate

Orifice Equation:
Q = CA sqrt(2gH)
Q = 0.6 * 4.04 * sqrt(2 * 32.2 * 1.0)
Q = 19.45 cfs

CURB CUT CAPACITY CALCULATIONS

OFFSITE FLOWS FROM SHOPPING CENTER TO DOUBLE D INLET

Use weir equation:

$$Q = CL(H)^{3/2}$$

Q = discharge (16.77 cfs for offsite flows of Basin 5)

C = coefficient of discharge (2.95)

L = Length of curb cut

H = Height of curb cut (0.5 ft)

$$16.77 = 2.95 * L * (0.5)^{3/2}$$

$$16.77 = 1.04 * L$$

L = 16.13 ft, minimum curb cut length

CURB CUT CAPACITY CALCULATIONS

ONSITE FLOWS FROM WEST SIDE OF SITE TO DOUBLE D INLET

Use weir equation:

$$Q = CL(H)^{3/2}$$

Q = discharge (0.85 cfs for onsite flows of Basin 5)

C = coefficient of discharge (2.95)

L = Length of curb cut

H = Height of curb cut (0.5 ft)

$$0.85 = 2.95 * L * (0.5)^{3/2}$$

$$0.85 = 1.04 * L$$

L = 0.82 ft, minimum curb cut length

CURB CUT CAPACITY CALCULATIONS

ONSITE/OFFSITE FLOWS TO CURB CUT ENTERING DETENTION POND 2

Use weir equation:

$$Q = CL(H)^{3/2}$$

Q = discharge (1.22 cfs for flows from Basin 4, not including pond area)

C = coefficient of discharge (2.95)

L = Length of curb cut

H = Height of curb cut (0.98 ft)

$$1.22 = 2.95 * L * (0.98)^{3/2}$$

$$1.22 = 2.86 * L$$

L = 0.43 ft, minimum curb cut length

FIRST FLUSH VOLUME RETENTION

Depth to be retained = 0.44" per city ordinance

Initial abstractions = 0.1"

$$\text{Total depth} = 0.44" - 0.1" = 0.34" = 0.02833 \text{ ft}$$

Total impervious area = 33156.97 ft²

$$\text{Total volume} = 33156.97 * 0.02833 = 939.34 \text{ ft}^3$$

Retain first flush in north detention pond:

Pond Area = 6179 ft²

$$\text{Depth to retain} = 939.34/6179 = 0.16 \text{ ft}$$

STORMCHAMBER VOLUME CALCULATION

Total storage volume required = 0.22 ac-ft

Total # of chambers = 69

Volume per chamber = 0.00172 ac-ft

$$\text{Volume inside chambers} = 0.00172 * 69 = 0.11 \text{ ac-ft}$$

Area of chambers and surrounding stone = 0.076 ac

Volume of chambers and surrounding stone = 0.076 * 6.33 = 0.48 ac-ft

Volume of only surrounding stone = 0.48 - 0.11 = 0.37 ac-ft

Volume of 30% voids in stone = 0.37 * 0.3 = 0.11 ac-ft

$$\text{Total storage of volume of Stormchamber system} = 0.11 + 0.11 = 0.22 \text{ ac-ft}$$

ORIFICE PLATE IN MANHOLE 2 CALCULATIONS

Orifice Equation: Q = CA sqrt(2gH)

C = 0.6

A = Orifice Area (ft²)

g = 32.2

H = Depth of water above center of orifice (ft)

Q = Flow (cfs)

$$Q = CA \text{ sqrt}(2gH)$$

$$1.08 = 0.6 * A * \text{sqrt}(2 * 32.2 * 6.25)$$

$$1.08 = 12.037 A$$

$$A = 0.0897 \text{ ft}^2$$

$$A = \pi * r^2$$

$$0.0897 = \pi * r^2$$

$$0.02855 = r^2$$

$$r = 0.169 \text{ ft}$$

$$r = 2"$$

Use 4" dia. orifice plate

FOR INFORMATION ONLY

ENGINEER'S SEAL	FREDDY'S AT COORS AND CENTRAL BASIN MAP AND CALCULATIONS  TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	DRAWN BY BJF
		DATE 07/07/15
		2015036-GRB-DETAILS
		SHEET # C2
		JOB # 2015036

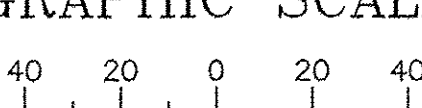
N.W.

BOULEVARD

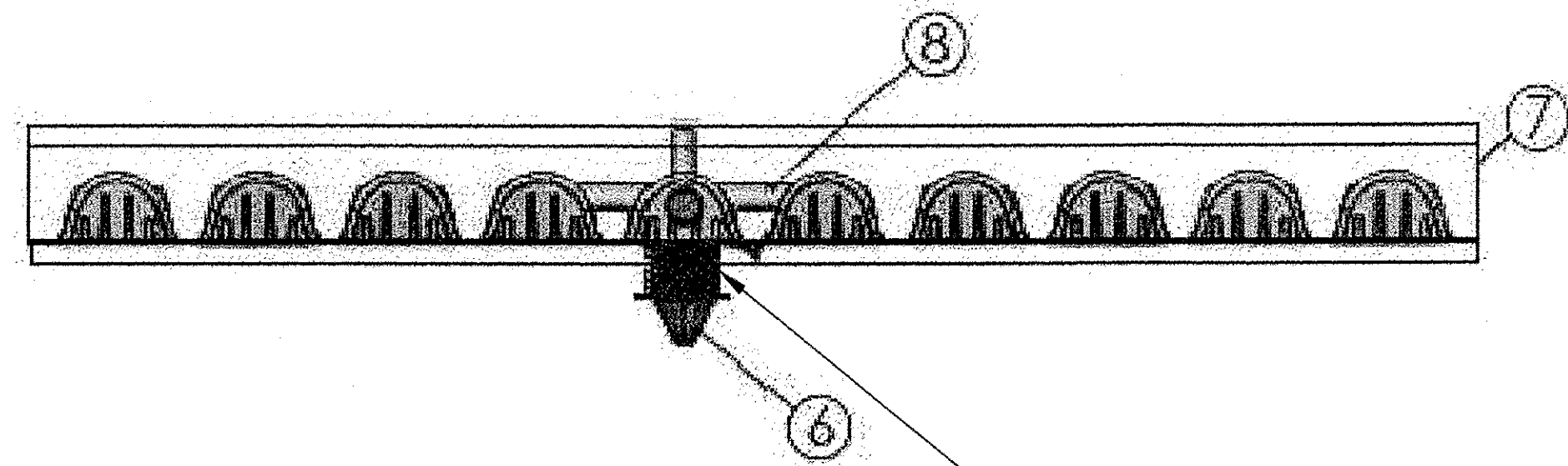
COORS

111

GRAPHIC SCALE

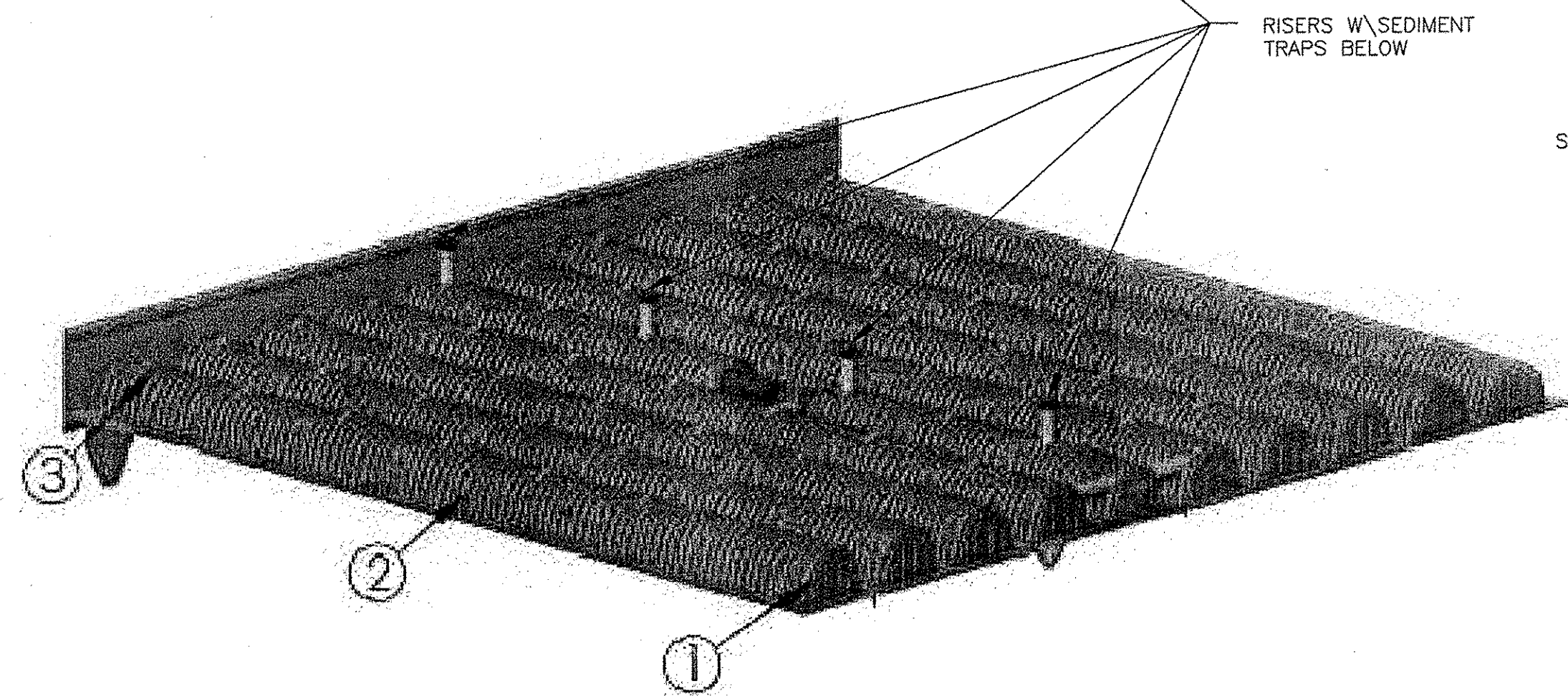


SCALE: 1"=40'

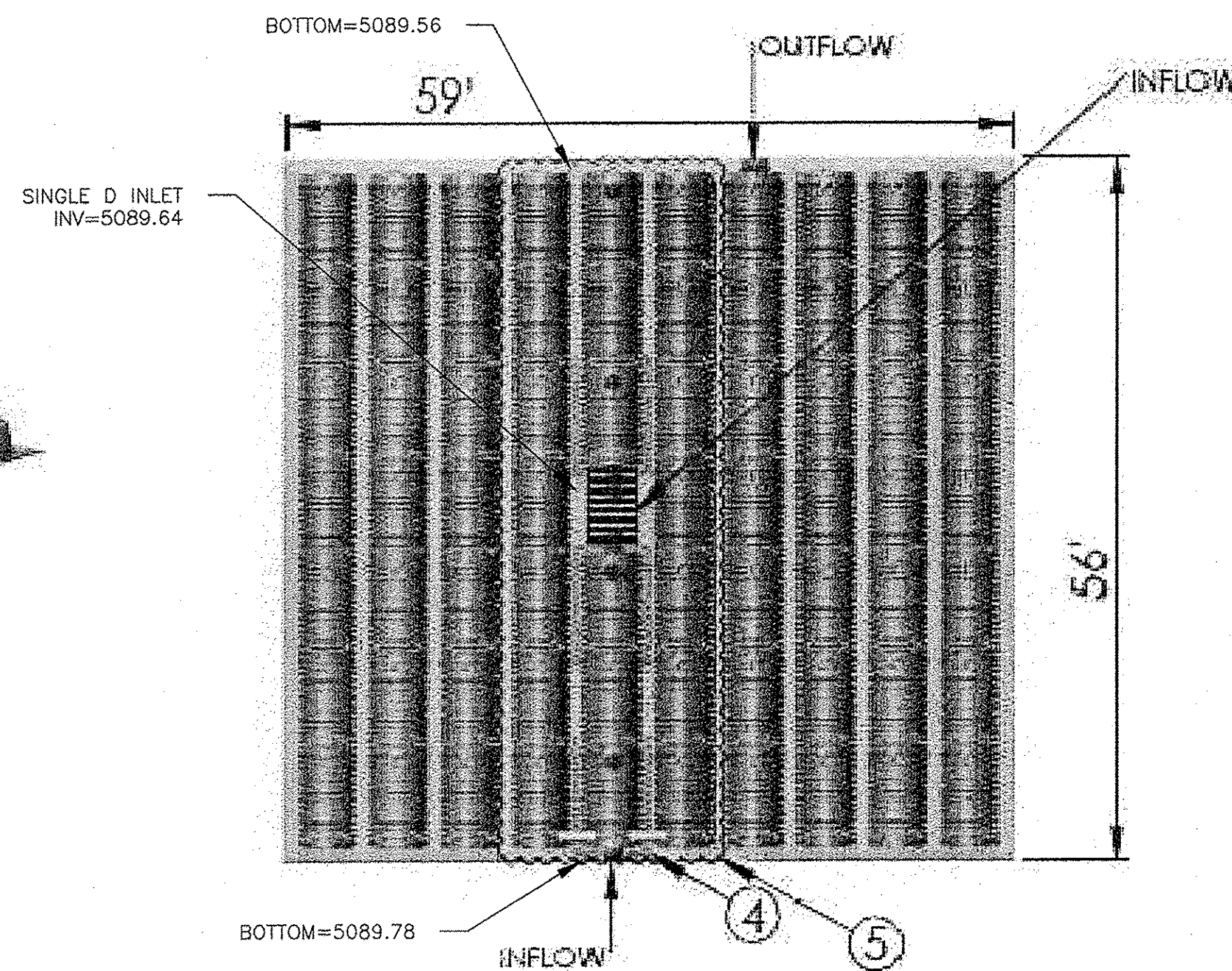


ITEM NO.	STORMCHAMBER PROPOSED LAYOUT DESCRIPTION	QTY
1	START UNITS	11
2	MIDDLE UNITS	47
3	END UNITS	11
4	7X10' HEAVY DUTY NETTING (SUPPLIED)	3
5	LIGHTWEIGHTS STABILIZATION NETTING (INFLOW AND ADJACENT ROWS) (SUPPLIED)	1
6	10" PVC INSPECTION / CLEAN OUT RISER - (SUPPLIED BY OTHERS) W / FRAME AND LID AND SEDIMENTRAP (SUPPLIED)	4
7	4oz NON WOVEN STORMCHAMBER GEOTEXTILE FILTER FABRIC (SUPPLIED)	2
8	ROW CONNECTING 10" PVC (SUPPLIED BY OTHERS)	2
INSTALLED WITH 12" COVER STONE, 30" BASE STONE, 30% STONE VOID. INSTALLED SYSTEM VOLUME (PERIMETER STONE INCLUDED) = 9583 CF.		

TOTAL # OF CHAMBERS (START, MIDDLE, AND END UNITS) = 69

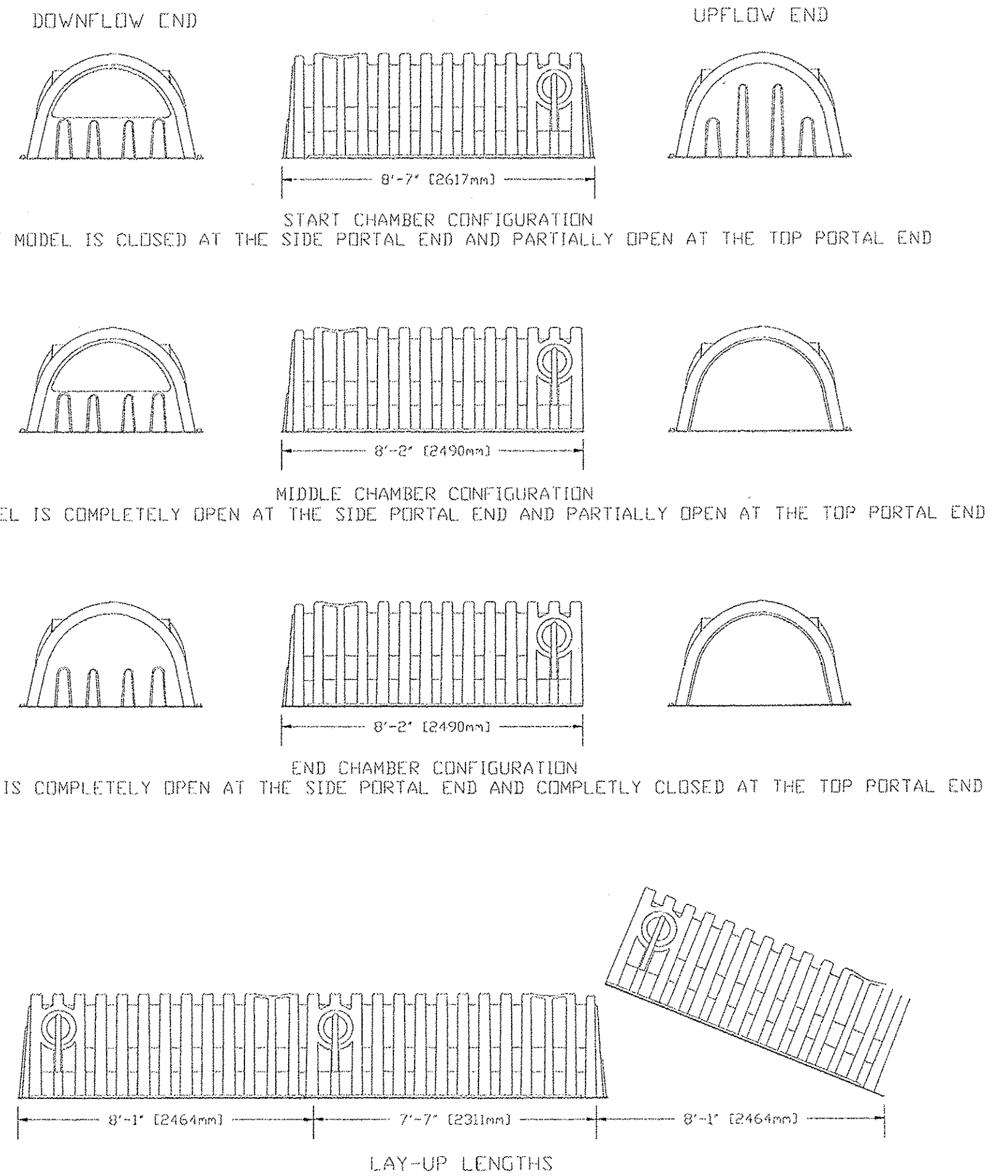
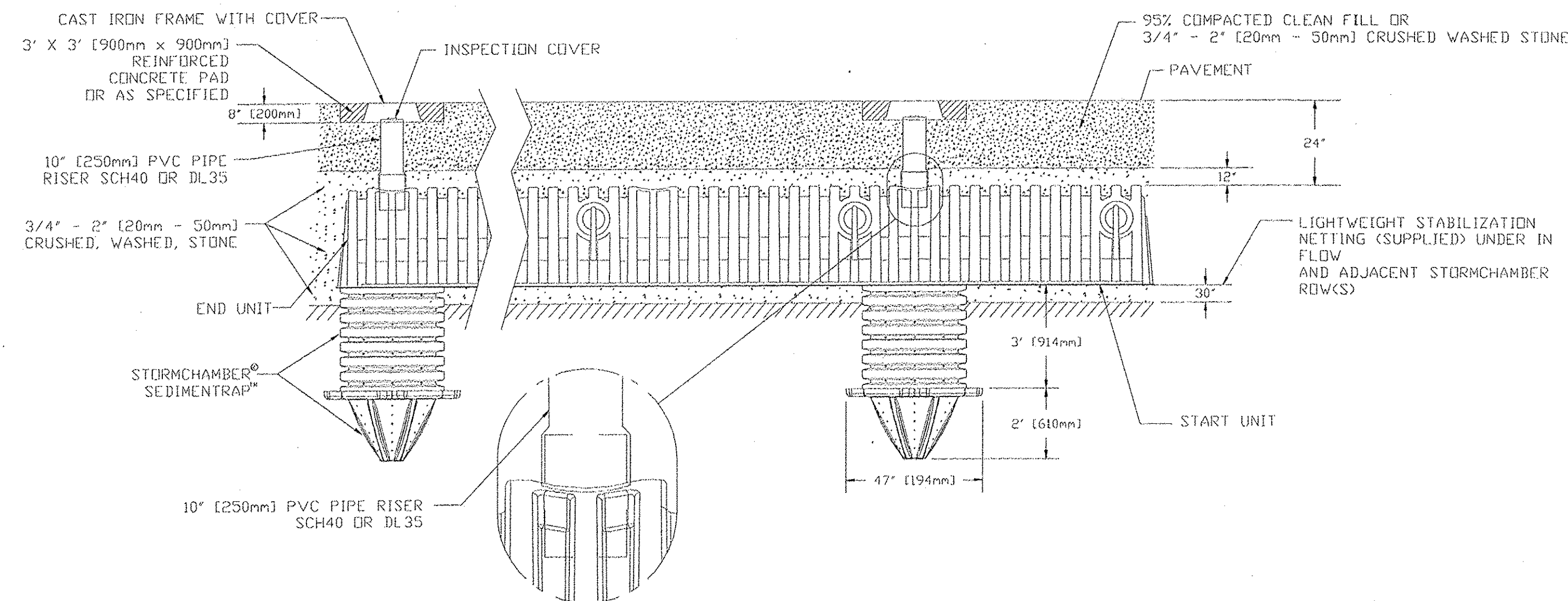
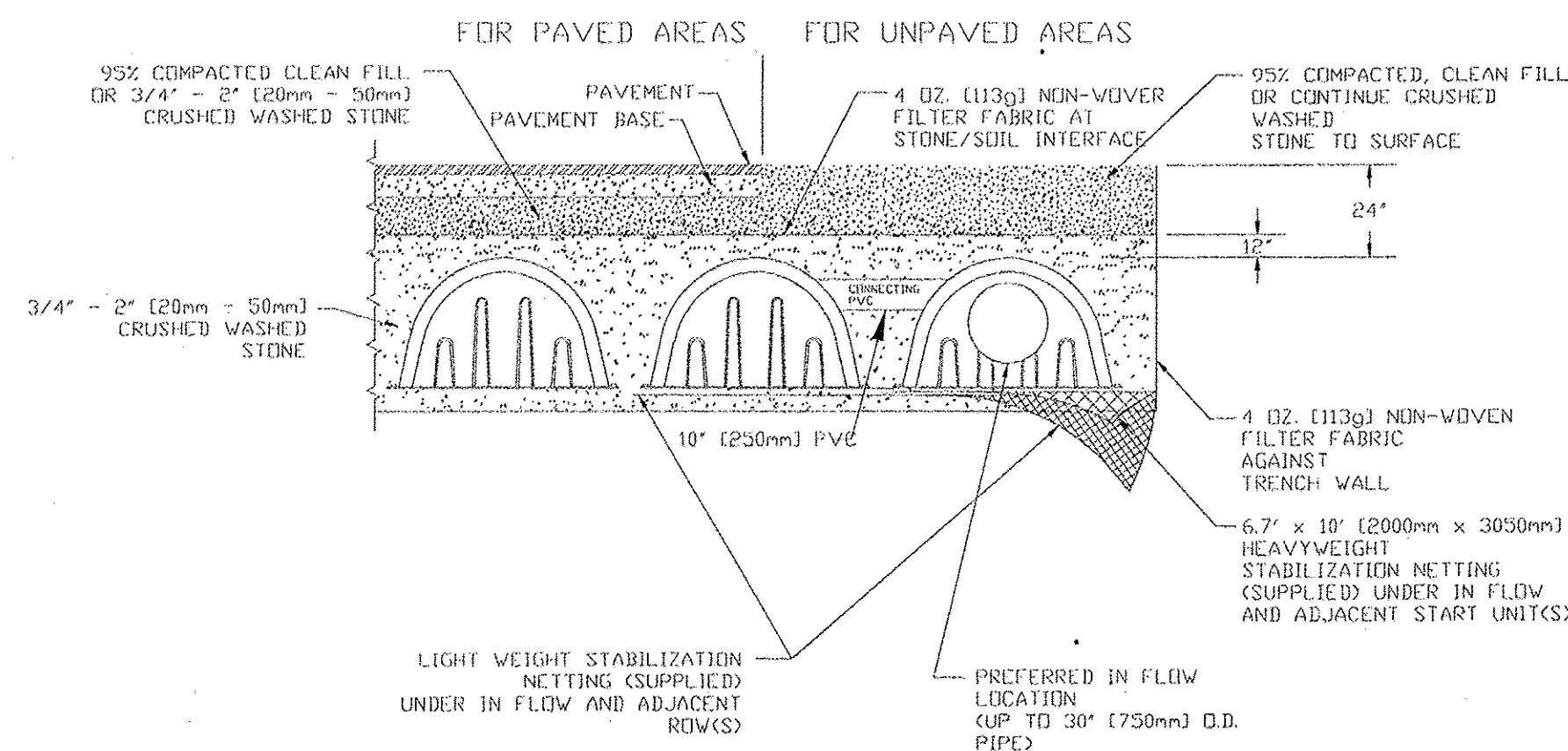


RISERS W/ SEDIMENT TRAPS BELOW

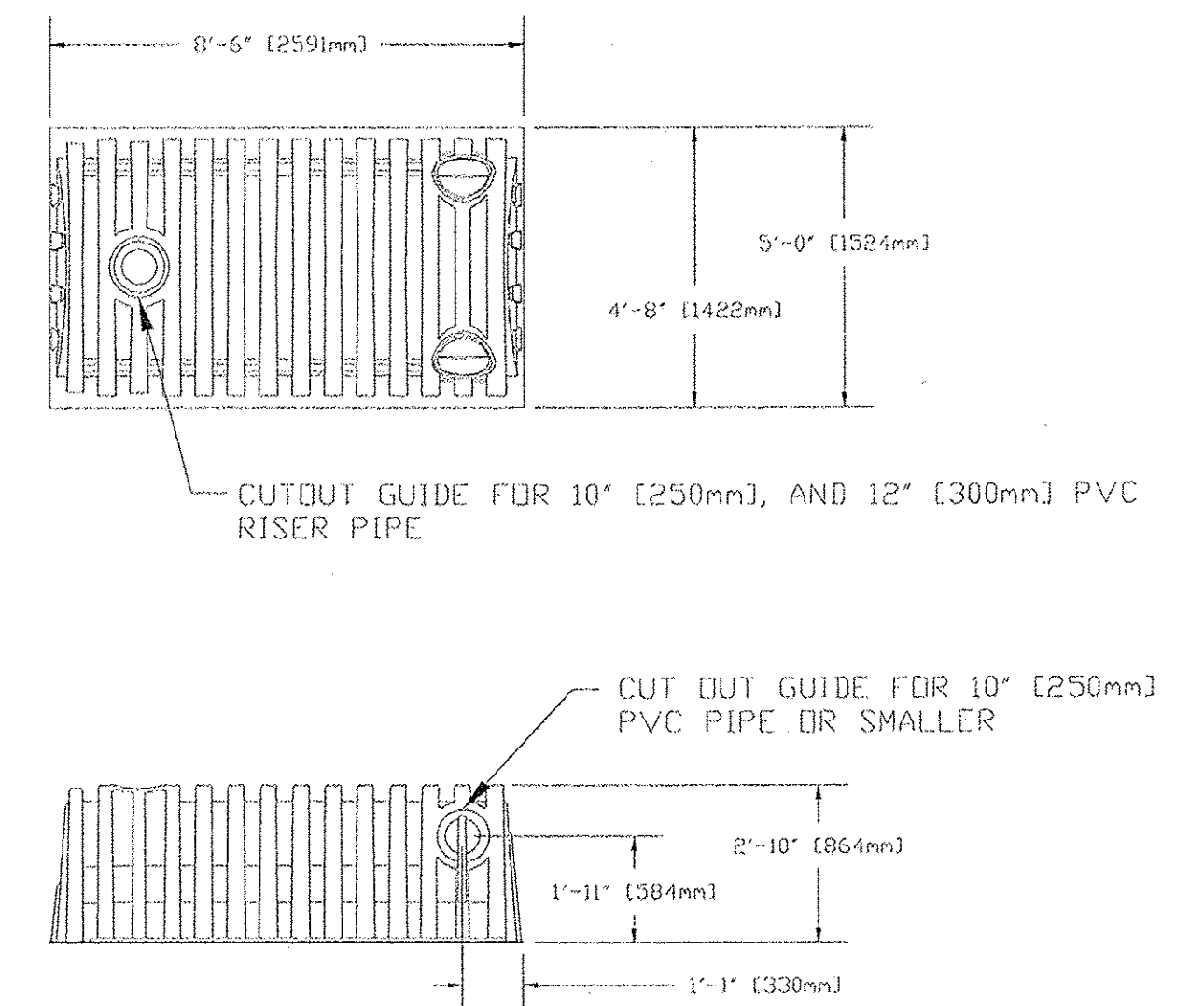


STORMCHAMBER® WITH SEDIMENTRAP™

STORMCHAMBER® TYPICAL CROSS-SECTION INSTALLATION



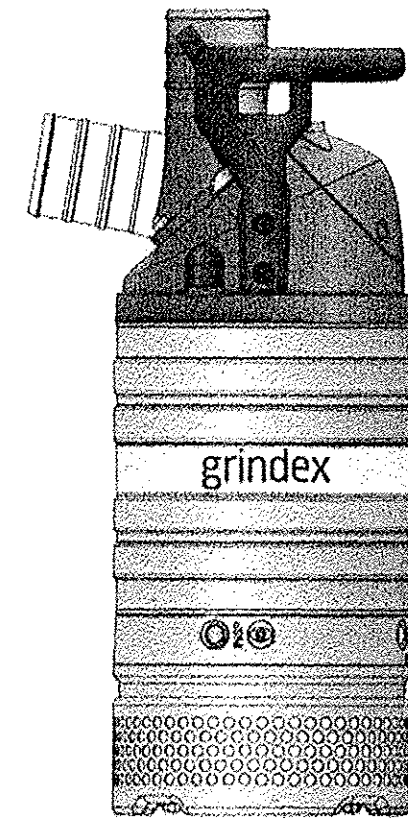
NOTE: 1. Start chambers (closed at the side portal end) are placed at the inflow end of the rows.
2. Begin placements with Start chambers and end rows with End chambers.
3. Place first rib of next chamber in the row over last rib of previous chamber.



ENGINEER'S SEAL RONALD R. BOHANNAN P.E. #7868	FREDDY'S AT COORS AND CENTRAL	DRAWN BY BJF
	STORMCHAMBER STORAGE SYSTEM	DATE 07/07/15
TERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com		SHEET # C3
		JOB # 2015036

8103.181

Electrical submersible drainage pump



Pump types
N: normal pressure
H: high pressure

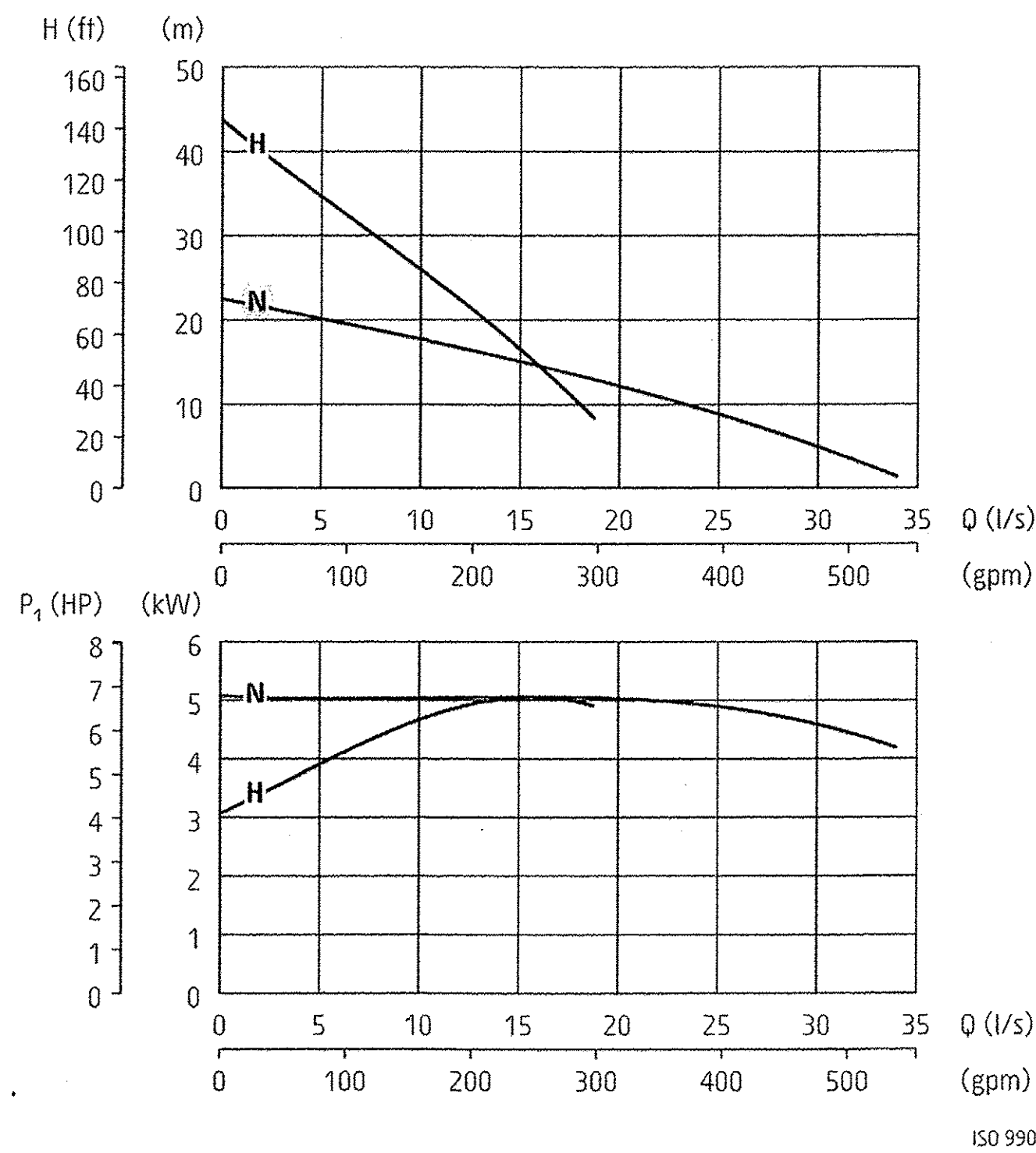
Electrical submersible drainage pump
Protection class: IP 68

Squirrel cage induction motor, insulation class: H (IEC 85)

Phase sequence control, phase failure guard, temperature guard with thermal contacts in the stator opening temperature 140°C (284°F) (= SMART system), air valve

4G2,5mm², length 20 m or 14AWG/4, length 53 ft

Max. submersion depth: 20 m (66 ft)
Max. liquid temperature: 40 °C (104 °F)
Allowed pH range: 5 - 8
Maximum liquid density: 1100 kg/m³ (68 lbs/ft³)



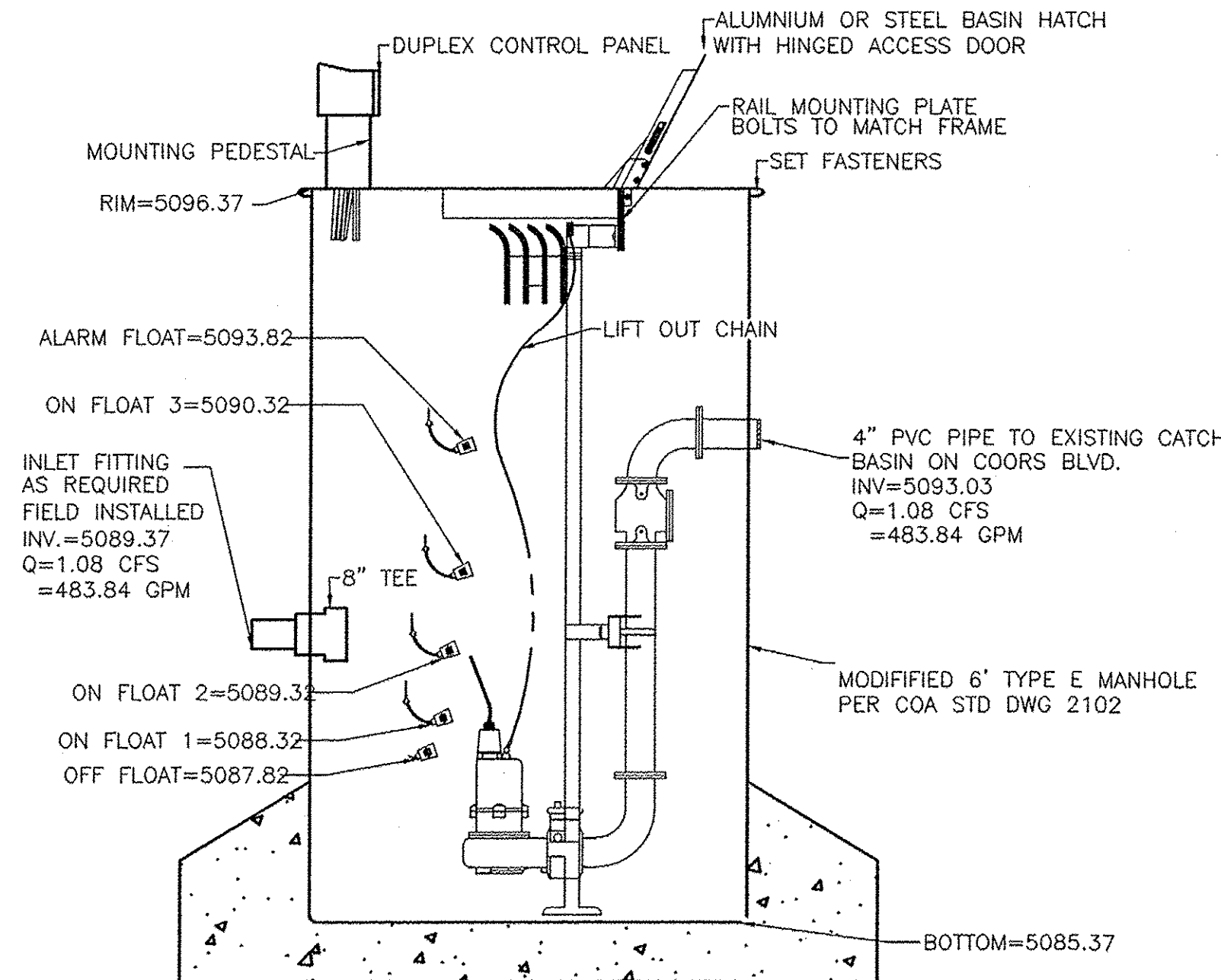
Cartridge seal: pre-assembled double mechanical seal running in an oil compartment

Ball bearings with C3 clearance

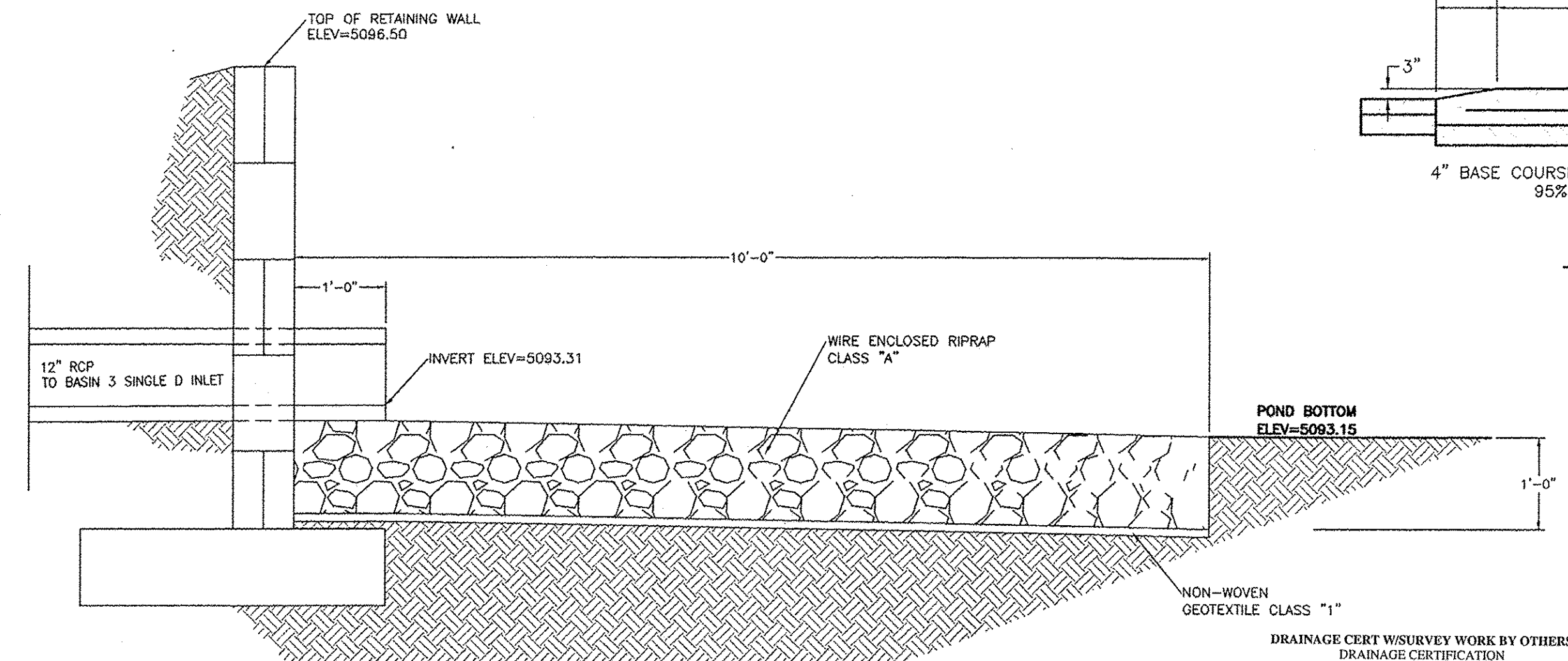
3-4" hose, ISO-G or NPT

Casted parts: *Aluminium*
Outer casing: *Stainless steel*
Motor shaft: *Stainless steel*
Impeller and suction cover: *Hard-Iron™*
Diffusers: *Nitrile rubber*
Screws and nuts: *Stainless steel*
O-rings: *Nitrile rubber*

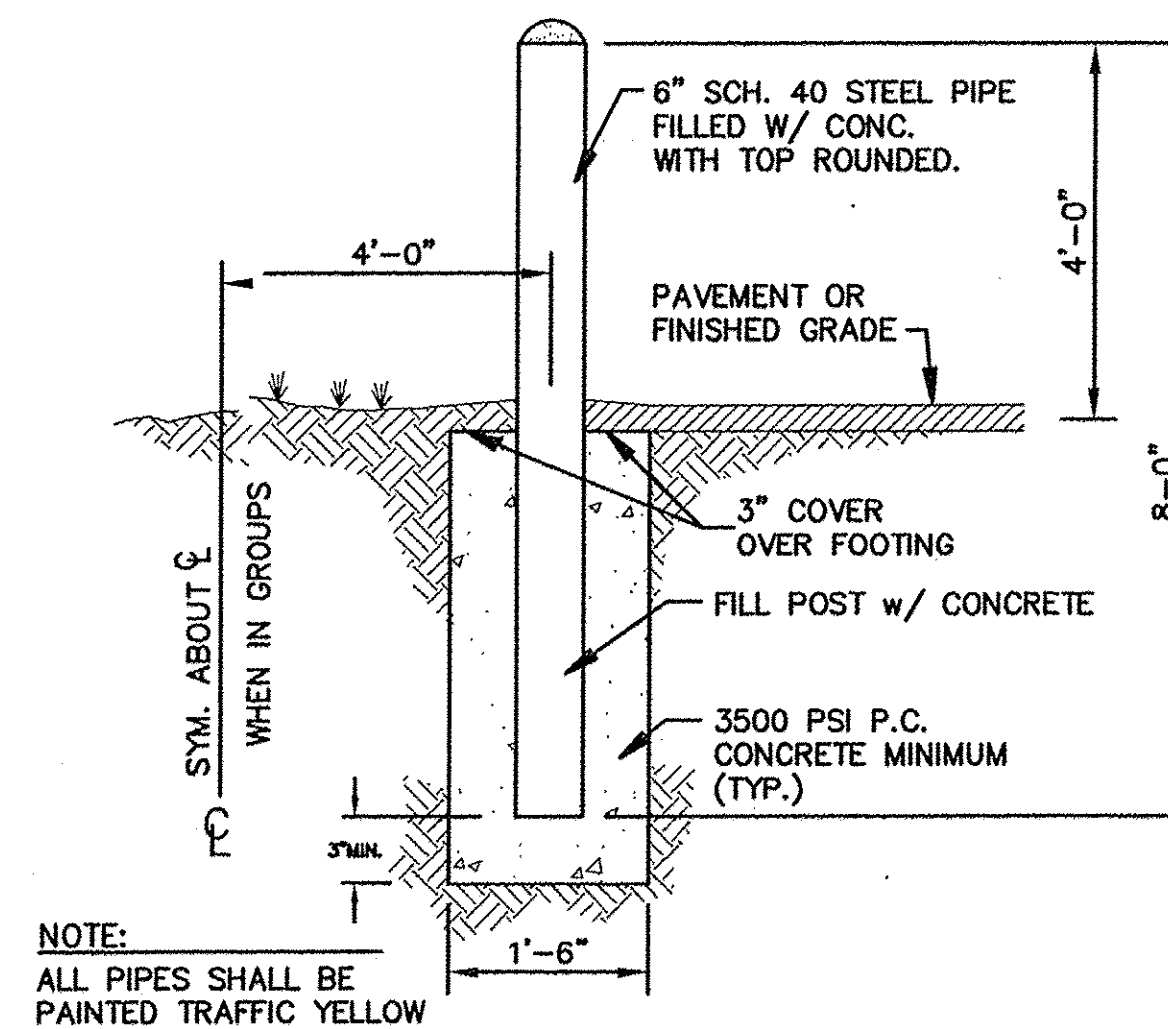
- Level regulator
- Zinc anodes
- Tandem connection
- Low suction collar
- Pump raft



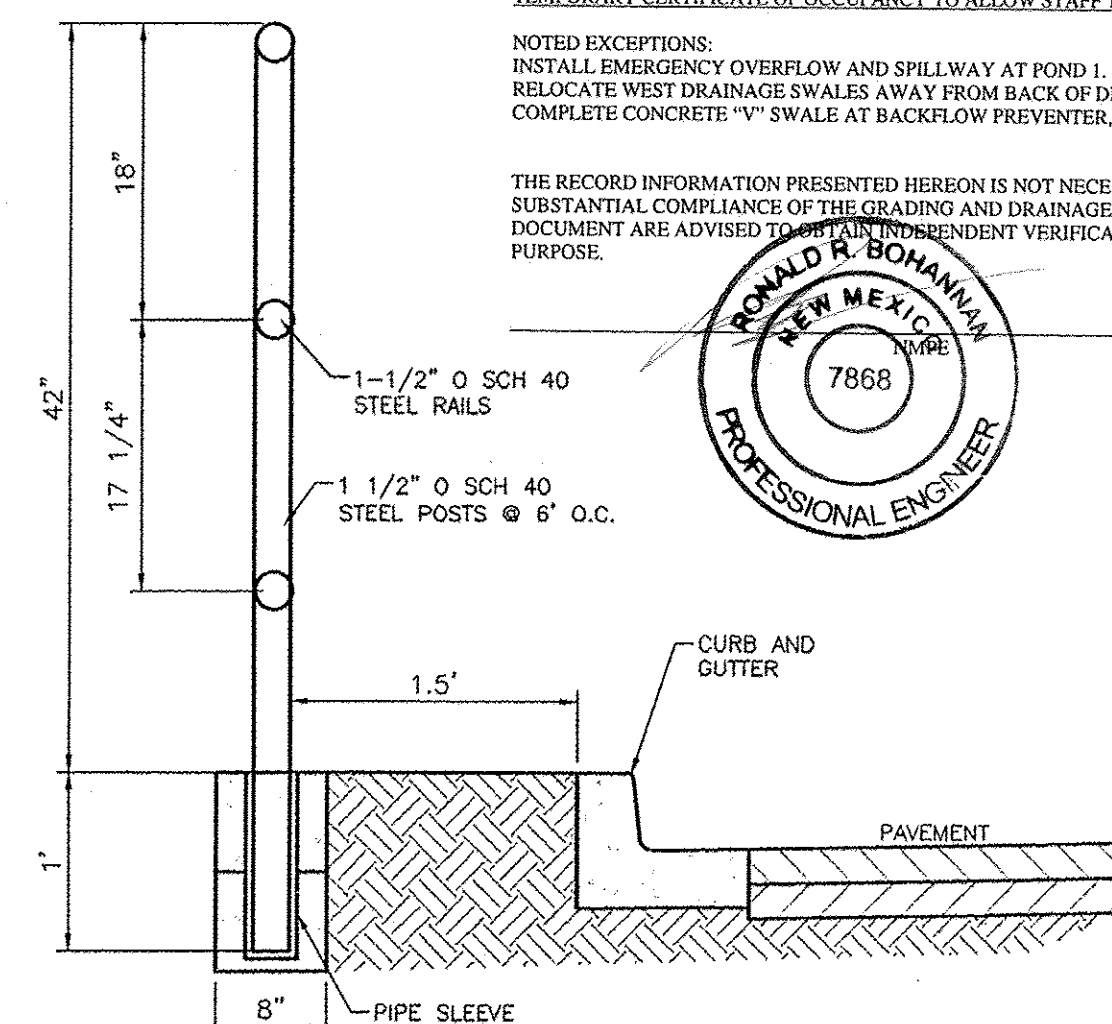
LIFT STATION DETAIL



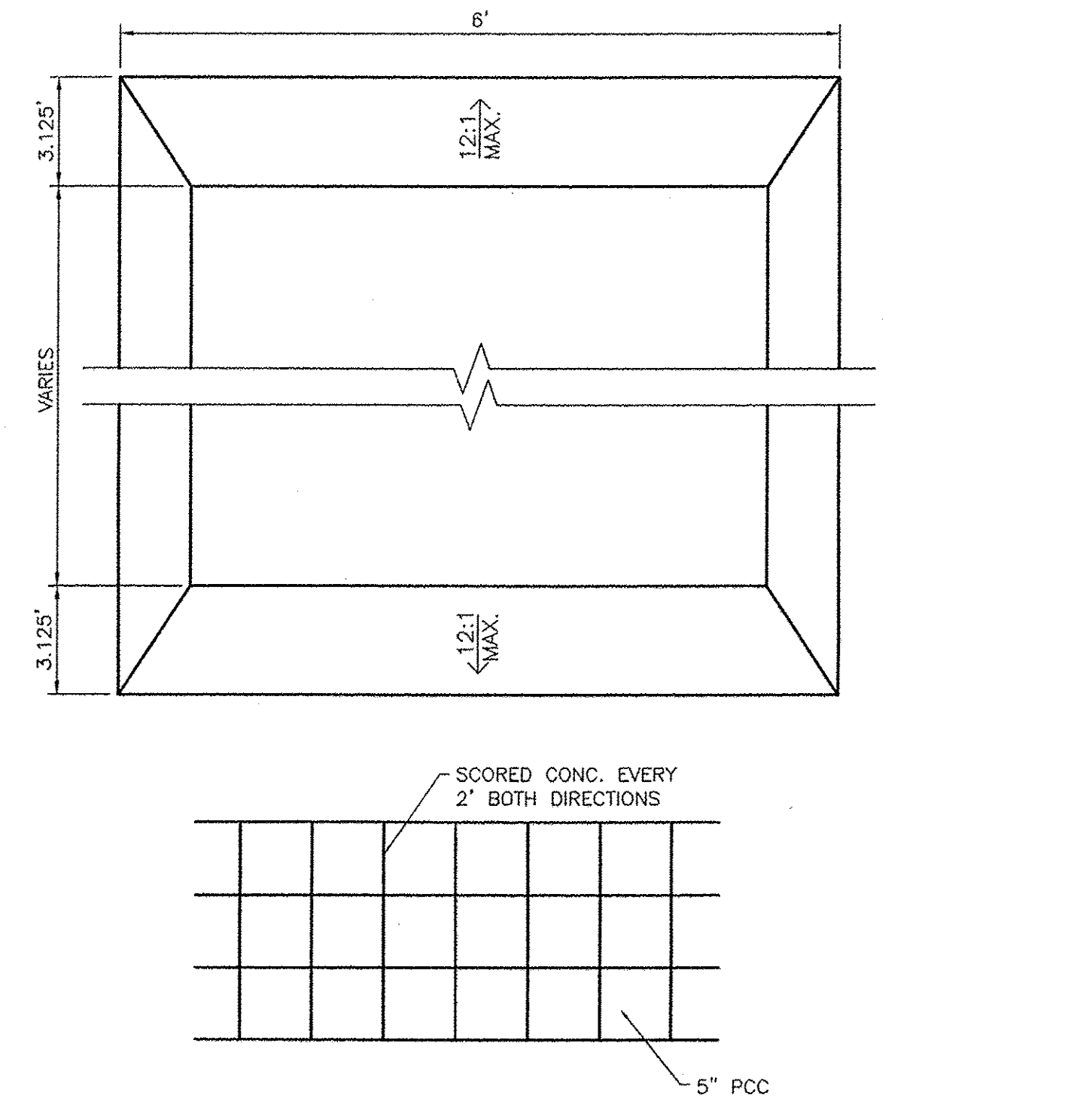
POND OUTLET DETAIL
NTS



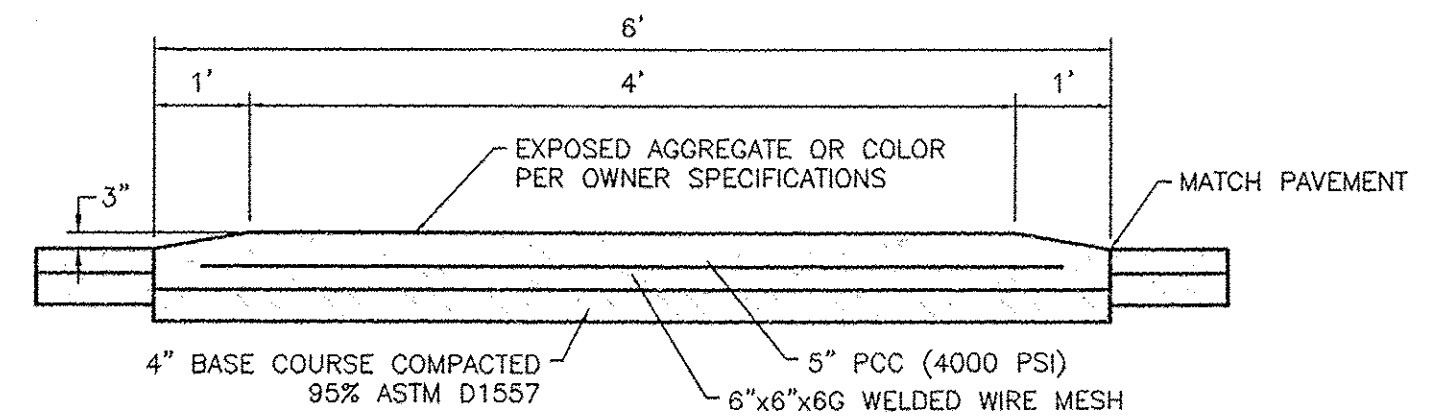
PIPE BOLLARD DETAIL
NTS



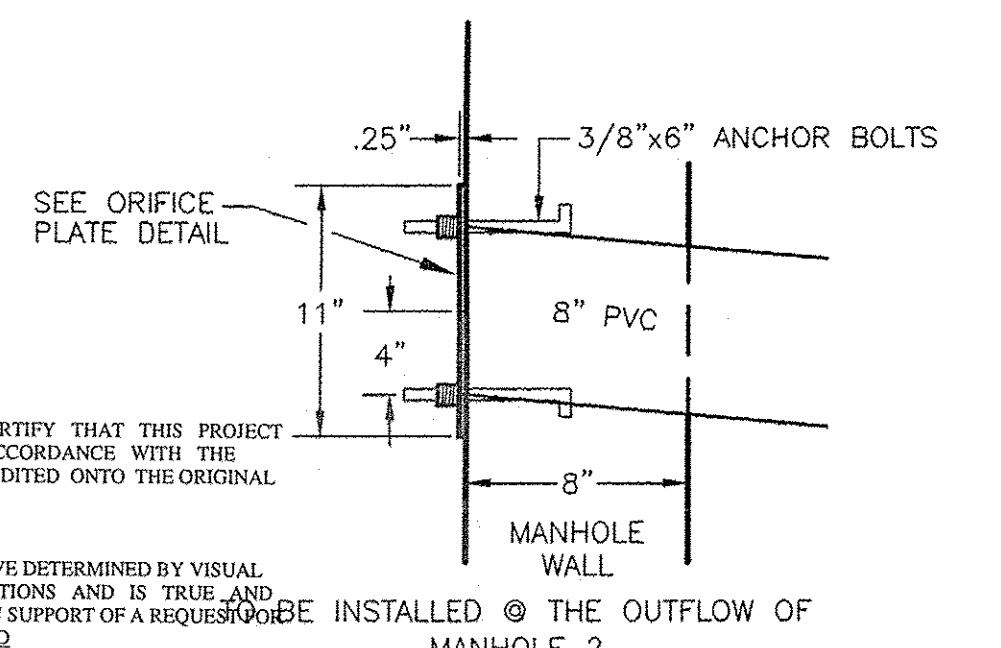
GUARD RAIL DETAIL
NTS



CROSSWALK PLAN VIEW



RAISED CROSSWALK
NTS



TYP. OFFICE PLATE DETAIL
NTS

