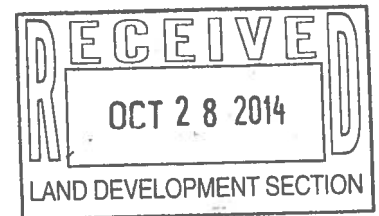


TAOS UNIT 1 STORM INLET MODIFICATION

Floyd Development Services, LLC
Rio Rancho, NM

STRUCTURAL CALCULATIONS



Submitted by Hugh Floyd

Nob Hill Structural Engineering, LLC

420 Aliso Dr NE
Albuquerque, NM 87108
505-234-6861

1.0 GENERAL

1.1 DESCRIPTION

This project consists of the modification of a Double A storm inlet. The inlet was placed in front of a residential driveway. The modification shown in the sketches will widen the driveway. New concrete infill will be placed in a portion of the inlet. The new curb will start at the edge of the existing grate.

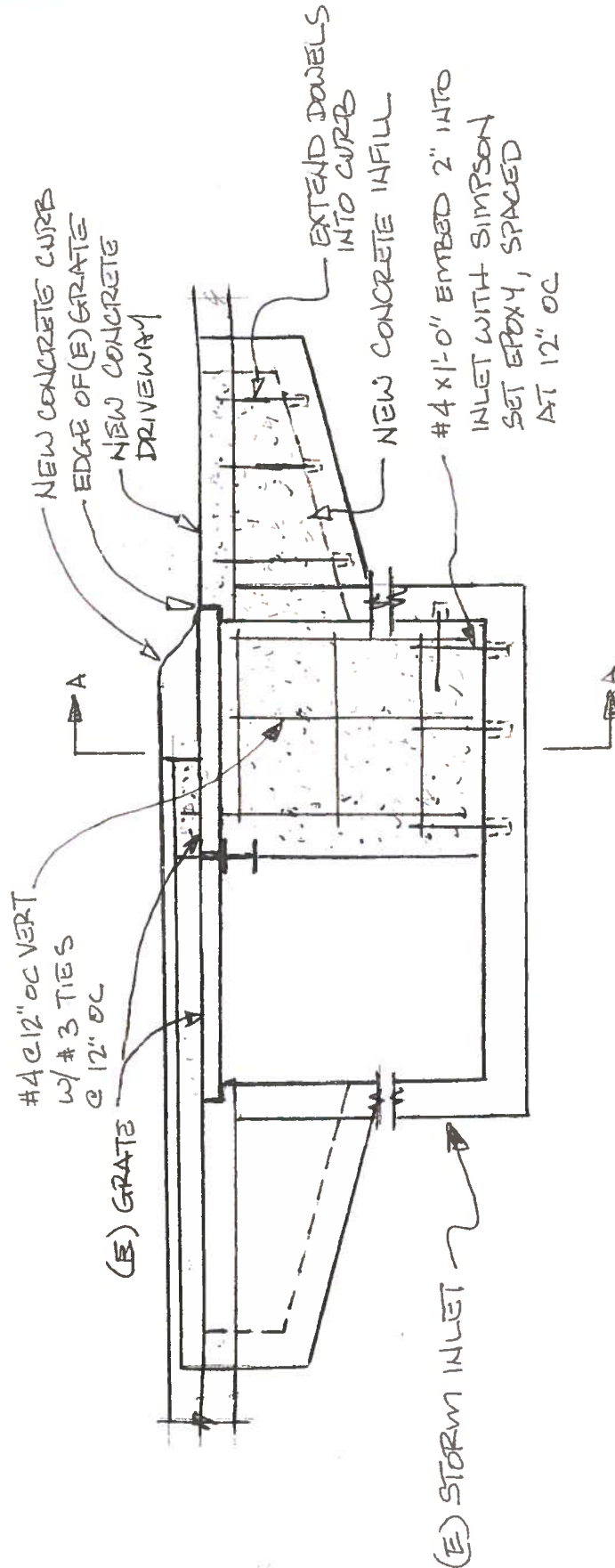
1.2 LOADING

Vehicle loads will occur at the sloped section of the inlet. The driveway will start at the edge of the grate and sit over the inlet slope. That slope will be packed tight with concrete infill and load will be transferred directly to the slope and soil. The load effects will be minimal in this section. Although not part of the driveway, the concrete infill section below the new curb was checked as a concrete column. The capacity of this section is 4.5 kips, well above the load of a vehicle. Therefore, the concrete infill will be adequate as a modification.



3-0235 — 50 SHEETS — 5 SQUARES
3-0236 — 100 SHEETS — 5 SQUARES
3-0237 — 200 SHEETS — 5 SQUARES
3-0137 — 200 SHEETS — FILLER

COMET



NOTES:

1. CONCRETE : 3000psi
2. REINFORCING: ASTM A615
GRADE 60

STORM INLET MODIFICATION

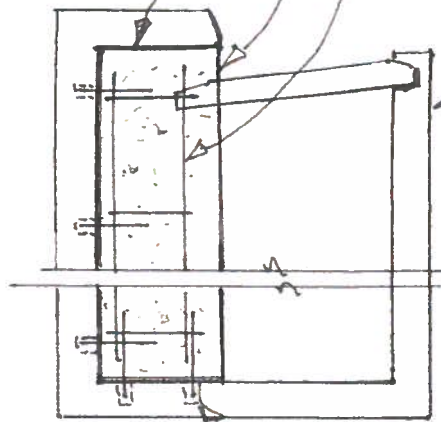
NTS

PACK CONCRETE
TIGHT AGAINST
SURFACE

NEW CONCRETE INFILL

#4 @ 12" OC VERT
w/ #3 TIES @ 12" OC

(E) STORM INLET



#4 x 1'-0" EMBED 2" INTO
INLET WITH SIMPSON
SET EPOXY, SPACED @ 12" OC

SECTION A-A
NTS

3-0235 — 50 SHEETS — 5 SQUARES
3-0236 — 100 SHEETS — 5 SQUARES
3-0237 — 200 SHEETS — 5 SQUARES
3-0137 — 200 SHEETS — FILLER

COMET

Design Results

Concrete Wall

GENERAL INFORMATION:

Design code : ACI 318-05

Geometry:

Total height : 4.00 [ft]
Total length : 3.00 [ft]
Base support type : Continuous
Wall bottom restraint : Pinned
Column bottom restraint : Fixed
Rigidity elements : None

Materials:

Material : C 3-60
Steel tension strength (Fy) : 60 [Kip/in2]
Concrete compressive strength (fc) : 3 [Kip/in2]
Steel elasticity modulus (Es) : 29000 [Kip/in2]
Concrete modulus of elasticity (E) : 3122.02 [Kip/in2]
Concrete unit weight : 0.149818 [Kip/ft3]

Number of stories: 1

Story	Story height [ft]	Wall thickness [in]
-------	-------------------	---------------------

1	4.00	24.00
---	------	-------

Load conditions:

ID	Comb.	Category	Description
DL	No	DL	Dead Load
LL	No	LL	Live Load
SC1	Yes		DL
DC1	Yes		1.4DL
D1	Yes		1.4DL
D2	Yes		1.2DL+1.6LL

Concentrated loads:

Story	Condition	Direction	Magnitude [Kip]	Eccentricity [in]	Distance [ft]
1	DL	Vertical	0.50	0.00	1.50
1	LL	Vertical	4.00	0.00	1.50

Distributed loads:

Consider self weight : DL

BEARING WALL DESIGN:

Status : OK

Geometry:

Segment	X Coordinate [ft]	Y Coordinate [ft]	Width [ft]	Height [ft]
1	0.00	0.00	3.00	4.00

Vertical reinforcement:

Reinforcement layers : 2

Segment	Bars	Spacing [in]	Ld [in]
1	3-#4	12.00	21.91

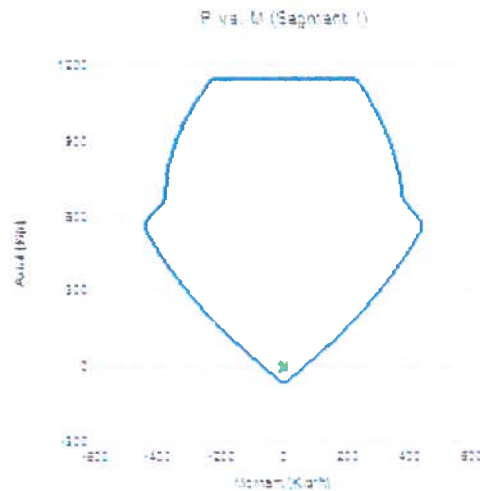
Intermediate results for axial-bending

Segment	Condition	c [in]	d [in]
1	DC1 (Top)	0.79	22.63

Combined axial flexure

Segment	Condition	Pu [Kip]	Mu [Kip*ft]	ϕ^*Mn [Kip*ft]	Mu/ ϕ^*Mn
1	DC1 (Top)	0.83	0.00	62.54	0.00

Interaction diagrams, P vs. M:



Axial compression

Segment	Condition	Pu [Kip]	ϕ^*Pn [Kip]	Pu/ ϕ^*Pn
1	D2 (Bottom)	11.18	1144.07	0.01

Axial tension

Segment	Condition	Pu [Kip]	ϕ^*Pn [Kip]	Pu/ ϕ^*Pn
1	DC1 (Top)	0.00	64.80	0.00

Shear

Segment	Condition	Vu [Kip]	ϕ^*Vn [Kip]	Vu/ ϕ^*Vn
1	DC1 (Top)	0.000	66.918	0.00