CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

April 11, 2019

J. Graeme Means, P.E.
High Mesa Consulting Group
6010 B Midway Park Blvd NE
Albuquerque, NM 87109

RE: **Amaran Senior Living**
9100 Holly Ave NE
Grading and Drainage Plan
Engineer's Stamp Date: 2/15/19
Hydrology File: C20D079

Dear Mr. Means,

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based on the submittal received on 4/1/19, this project is cannot be approved for Building Permit until the following are corrected:

Prior to Building Permit:

1. Hydraulic Calculations are required per DPM 22.3:
   a. HGL calculations for the pipe network, determined along the energy grade line, are missing.
   b. Pond routing and water surface elevations for both the first flush and the 100-year volumes are missing.
   c. Grate capacity for the pond outlet needs to be checked using 3.72SF clear space (1.86SF w/ 50% clogging). The new grate Standard Detail is attached.
   d. Provide a section through the pond and property line, showing that the downhill property will not be adversely affected by the placement of the pond.

2. Payment in Lieu (Amount = 2180CF x $8/CF = $17,440, per Sheet C100) of management onsite for the required storm water quality volume must be made

Prior to Certificate of Occupancy (For Information):

3. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required.

4. The public work order will need to be closed out and accepted by the City, unless a financial guarantee has been posted.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

TREASURY DIVISION DAILY DEPOSIT

Transmittals for:
PROJECTS Only

Payment In-Lieu for Storm Water Quality Volume Requirement

CASH COUNT	AMOUNT	ACCOUNT NUMBER	FUND NUMBER	BUSINESS UNIT	PROJECT ID	ACTIVITY ID	AMOUNT
TOTAL CHECKS	$ 17440.00	461615	305	PCDMD	24_MS4	7547210	$ 17440.00
TOTAL AMOUNT						TOTAL DEPOSIT	**$17,440.00**

Hydrology#: C20D079 Name: Amaran Senior Living, 76,941sf imp.
Payment In-Lieu For Storm Water Quality Volume Requirement

Address/Legal Description: 9100 Holly Ave NE
Tr A, Holly Avenue Senior Living

DEPARTMENT NAME: Planning Department/Development Review Services, Hydrology

PREPARED BY Dana Peterson PHONE 924-3695

BUSINESS DATE 4/11/19

DUAL VERIFICATION OF DEPOSIT _____
EMPLOYEE SIGNATURE

AND BY _____
EMPLOYEE SIGNATURE

REMITTER: _____

AMOUNT: _____

BANK: _____

CHECK #: _____ DATE ON CHECK: _____

The Payment-in-Lieu can be paid at the Plaza del Sol Treasury, 600 2nd St. NW. **Bring two copies of this invoice to the Treasury** and provide a copy of the receipt to Hydrology, Suite 201, 600 2nd St. NW, or e-mail with the Hydrology submittal to PLNDRS@cabq.gov.

DRAINAGE PLAN

I. EXECUTIVE SUMMARY AND INTRODUCTION

THE PROPOSED HOLLY SENIOR DEVELOPMENT IS LOCATED WITHIN THE LA CUEVA SECTOR PLAN AREA OF NORTH ALBUQUERQUE ACRES. THE SITE DEVELOPMENT PLANS FOR THE PROJECT WERE APPROVED THROUGH DRB. A CONCEPTUAL GRADING PLAN WAS INCLUDED IN THE DRB SET AND THE SUBMITTAL IS CONSISTENT WITH THAT PLAN. MOST OF THE REQUIRED PUBLIC INFRASTRUCTURE IN HOLLY AVENUE NE HAS BEEN CONSTRUCTED BY PREVIOUS PROJECTS DESIGNED AND INSPECTED BY THIS ENGINEER (LOS VIGILS, VINEYARD COURT ESTATES). THE REMAINING PORTIONS REQUIRED FOR THIS PROJECT ARE THE PERMANENT HALF-WIDTH PAVING AND THE CONSTRUCTION OF TWO STORM INLETS. THE SITE DISCHARGES FREELY TO PUBLIC DRAINAGE IMPROVEMENTS IN HOLLY THAT WERE DESIGNED AND SIZED FOR THIS DISCHARGE. THE PURPOSE OF THIS PLAN IS TO OBTAIN BUILDING PERMIT APPROVALS.

II. PROJECT DESCRIPTION:

AS SHOWN BY VICINITY MAP C-20 LOCATED HEREON, THE SITE IS LOCATED IN THE NORTH ALBUQUERQUE ACRES SECTION OF ALBUQUERQUE, ON HOLLY AVE NE BETWEEN VENTURA ST NE AND HOLBROOK STREET NE. THE EXISTING LEGAL DESCRIPTION IS TRACT A, HOLLY AVENUE SENIOR LIVING. THE SITE IS ZONED MX-L AND THE PROPOSED DEVELOPMENT IS CONSISTENT WITH THE ZONING.
AS SHOWN BY PANEL 141 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS, BERNALILLO COUNTY, NEW MEXICO, AND INCORPORATED AREAS, DATED SEPTEMBER 26, 2008, THE SITE DOES NOT LIE WITHIN THE VICINITY OF ANY DESIGNATED FLOOD HAZARD ZONES..

III. BACKGROUND DOCUMENTS

THE FOLLOWING IS A LIST OF DOCUMENTS RELATED TO THE SITE AND SURROUNDING AREA. THIS LIST MAY NOT BE INCLUSIVE, HOWEVER REPRESENTS A SUMMARY OF RELEVANT PLANS AND DOCUMENTS WHICH ARE KNOWN TO THE ENGINEER AT THE TIME OF THE PLAN PREPARATION.

A. THE "NORTH AND SOUTH DOMINGO BACA ARROYO AND PASEO DEL NORTE CORRIDOR DRAINAGE MANAGEMENT PLAN" PREPARED FOR AMAFCA BY RESOURCE TECHNOLOGY, INC. (RTI) DATED DECEMBER, 1991. THIS PLAN HAS BEEN ADOPTED BY AMAFCA AS A GUIDELINE FOR DRAINAGE MANAGEMENT WITHIN THIS AREA WHICH INCLUDES THE NORTH DOMINGO BACA ARROYO (NDBA). AMAFCA RESOLUTION 1992-3 DATED JANUARY 03, 1992 FORMALLY ADOPTED THIS PLAN WHICH IDENTIFIES THE EXTENSION OF PERMANENT DRAINAGE IMPROVEMENTS WITHIN THE NDBA CORRIDOR, AND ESTABLISHED DEVELOPED DRAINAGE BASIN BOUNDARIES WITHIN THE PLAN AREAS. AS SHOWN BY THIS PLAN, THIS SITE IS IDENTIFIED TO DRAIN TO PUBLIC STORM DRAIN IMPROVEMENTS CONSTRUCTED WITHIN THE HOLLY RIGHT-OF-WAY.

B. REQUEST FOR LETTER OF MAP REVISION (LOMR) FOR THE NORTH DOMINGO BACA ARROYO CARMEL AVENUE STORM DRAIN EXTENSION PREPARED BY JMA DATED 12/08/2003 AND APPROVED BY FEMA 03/23/2004 (FEMA CASE NUMBER 04-06-671P). THIS LOMR SUPPORTS THE COMPLETED NORTH DOMINGO BACA ARROYO CARMEL AVENUE STORM DRAIN EXTENSION COST SHARE PROJECT BY AMAFCA. UPON FEMA APPROVAL, AND IT REMOVED THE ASSOCIATED FLOODPLAIN DESIGNATION FROM THE NDBA WEST OF A POINT MIDBLOCK BETWEEN HOLBROOK STREET AND EUBANK.

C. DRAINAGE REPORT FOR "LOS VIGILS SUBDIVISION" BY JEFF MORTENSEN & ASSOCIATES, INC, DATED 12/31/2002, HYDROLOGY FILE C20/D41. THIS PLAN THE CONSTRUCTION OF A 45 LOT RESIDENTIAL SUBDIVISION LOCATED TO THE NORTH OF THIS PROJECT ON THE NORTH SIDE OF HOLLY. THE LOS VIGILS PROJECT EXTENDED THE HOLLY STORM DRAIN ACROSS THE FRONTAGE OF THIS SITE AND DESIGNED THE REQUIRED INLETS ON THE SOUTH SIDE WHICH MUST NOW BE CONSTRUCTED. A BASIN MAP, STREET HYDRAULICS AND STORM DRAIN HYDRAULICS ANALYSIS WERE INCLUDED IN THIS SUBMITTAL TO ADDRESS THE EXTENSION OF HOLLY TO HOLBROOK ALL DEVELOPMENT ON HOLLY, INCLUDING THIS SITE.

D. GRADING PLAN FOR "MARK 3S HOLLY DEVELOPMENT" BY HMCG, HYDROLOGY FILE C20/D62. THIS PLAN WAS APPROVED FOR THE UPSTREAM SITE IMMEDIATELY TO THE EAST. THE DRAINAGE CONCPETS PRESENTED THEREIN ARE CONSISTENT WITH THOSE NOW PROPOSED.

THE PROPOSED CONSTRUCTION DRAINING DIRECTLY AND FREELY TO PERMANENT HOLLY AVENUE NE DRAINAGE IMPROVEMENTS AS PROPOSED AND DESCRIBED HEREIN IS IN ACCORDANCE WITH THE POLICIES AND REQUIREMENTS OF THE ABOVE LISTED DOCUMENTS, AND IS CONSISTENT WITH THE CONCEPTS PREVIOUSLY ESTABLISHED BY THE CITY AND AMAFCA FOR NDBA DEVELOPMENT.

IV. EXISTING CONDITIONS:

THE SITE IS CURRENTLY UNDEVELOPED. EXISTING SITE RUNOFF DRAINS TO HOLLY AVE NE TO EXISTING DOWNSTREAM PUBLIC STORM DRAIN FACILITIES THAT WERE CONSTRUCTED BY LOS VIGILS (REF. C). HOLLY AVE TO THE NORTH IS A PUBLIC STREET WITH HALF WIDTH (NORTH) PERMANENT PAVING IMPROVEMENTS. THE UPSTREAM SECTION OF HOLLY AVE IS ALSO AT A HALF WIDTH BUT WILL BUILT TO PERMANENT FULL WIDTH IMPROVEMENTS ALONG WITH THIS SECTION. CO
PASEO DEL NORTE TO THE SOUTH IS IS A FULLY DEVELOPED PUBLIC STREET WITH A DRAINAGE DITCH, PUBLIC STORM DRAIN AND PAVED ASPHALT TRAIL.
OFFSITE FLOWS DO NOT ENTER THE SITE FROM THE PUBLIC STREETS TO THE NORTH AND SOUTH WHICH EXHIBIT PARALLEL TOPOGRAPHY. THE SITE TO THE EAST IS CURRENTLY TO BEING REDEVELOPED AS A NEW MONTESSORI SCHOOL THAT WILL NOT FLOW INTO OUR SITE. THE DEVELOPED SITE TO THE WEST, ALBERTSON'S IS TOPOGRAPHICALLY LOWER AND INCAPABLE OF CONTRIBUTING OFFSITE FLOWS.

V. DEVELOPED CONDITIONS

THE PROPOSED IMPROVEMENTS CONSIST OF THE CONSTRUCTION OF A NEW SENIOR LIVING CENTER WITH PAVED PARKING, UTILITY AND LANDSCAPING IMPROVEMENTS. AS DEMONSTRATED BY THE STREET HYDRAULIC, STORM DRAIN AND INLET CALCULATIONS AND ANALYSIS CONTAINED WITHIN THE DRAINAGE REPORTS FOR LOS VIGIL AND VINEYARD COURT ESTATES, THE HOLLY STORM DRAIN AND STREET IS DESIGNED TO ACCEPT THE FREE DISCHARGE OF FULLY DEVELOPED RUNOFF FROM THE PROPERTIES FRONTING ON HOLLY, INCLUDING THIS SITE. ALL PROPOSED IMPROVEMENTS ARE CONSISTENT WITH PREVIOUSLY APPROVED DEVELOPMENT PLANS FOR THIS SECTION OF HOLLY.

VI. FIRST FLUSH

THE AMOUNT OF WATER HARVESTING AREA ON SITE AND AREA TREATED WAS LIMITED DUE TO THE LARGE SIZE OF BUILDING, SITE LAYOUT AND THE REQUIRED GRADING ON SITE THAT MADE IT IMPRACTICAL TO CONVEY AND COLLECT ADDITIONAL SURFACE RUNOFF AT THE SINGLE WATER HARVESTING AREA ON SITE. THE PROPOSED LANDSCAPED WATER HARVESTING AREA AT THE NW CORNER OF THE SITE WILL CAPTURE AND TREAT FIRST FLUSH RUNOFF GENERATED BY THE PROPOSED IMPROVEMENTS WITHIN FIRST FLUSH BASIN A TO THE MAXIMUM EXTENT PRACTICABLE. FIRST FLUSH CALCULATION FOR THE DEVELOPED SITE SHOW THAT 2,440 CF OF WATER HARVESTING REQUIRED; THE DEVELOPED HARVESTING AREA CAPACITY IS 260 CF. A PAYMENT WILL BE MADE FOR THE 2180 CF DIFFERENCE.

VII. GRADING PLAN

THE GRADING PLAN SHOWS: 1) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1 FT INTERVALS FROM THE HMCG TOPO SURVEY DATED 01/10/2017, 2) PROPOSED GRADES INDICATED BY FINISHED FLOOR ELEVATIONS, SPOT ELEVATIONS, AND CONTOURS AT 1 FT INTERVALS, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS, 4) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES.

VIII. CALCULATIONS

THE CALCULATIONS, REPRODUCED FORM THE APPROVED CONCEPTUAL GRADING PLAN AND WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40-ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY, 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. AS DEMONSTRATED BY THE LOMR AND APPROVED DRAINAGE REPORTS PREPARED BY THIS OFFICE TO SUPPORT THE RECENTLY CONSTRUCTED AMAFCA NDBA PROJECT AND FOR LOS VIGILS, VINEYARD COURT ESTATES, AND THE DESERT RIDGE OFFICE PARK PROJECT (SEE REFERENCES), THE PUBLIC STORM DRAIN IN HOLLY IS SIZED FOR FREE DISCHARGE OF FULLY DEVELOPED RUNOFF FROM THIS SITE.

VIIII. CONCLUSION

1) THE PROPOSED SITE IMPROVEMENTS AND DRAINAGE CONCEPT ARE CONSISTENT WITH THE DEVELOPMENT CRITERIA ESTABLISHED BY PREVIOUSLY APPROVED PLANS FOR NDBA DEVELOPMENT AND THIS SPECIFIC PROJECT. 2) DEVELOPED RUNOFF FROM THIS SITE WILL DRAIN FREELY TO PERMANENT PUBLIC HOLLY PAVING AND STORM DRAINAGE IMPROVEMENTS, WHICH WERE CONSTRUCTED FOR LOS VIGILS AND VINEYARD COURT ESTATES. 3) THERE ARE NO DPM DESIGN VARIANCES, DRAINAGE EASEMENTS OR DRAINAGE COVENANTS ANTICIPATED AT THIS TIME.

CALCULATIONS

I. SITE CHARACTERISTICS
A. PRECIPITATION ZONE = 3
B. $P_{100,\,6\,HR} = P_{360} =$ 2.60 IN
C. TOTAL PROJECT AREA (A_T) = 86,275 SF / 1.98 AC

D. LAND TREATMENTS
1.

EXISTING LAND TREATMENT				DEVELOPED LAND TREATMENT			
BASIN 1	63,990 SF / 1.47 AC			BASIN 1	63,990 SF / 1.47 AC		
LAND TREATMENT	AREA (SF/AC)		%	LAND TREATMENT	AREA (SF/AC)		%
A				A			
B				B	1,385 SF / 0.03 AC		2%
C	63,990 SF / 1.47 AC		100%	C	7,915 SF / 0.18 AC		12%
D				D	54,690 SF / 1.26 AC		85%
BASIN 2	16,060 SF / 0.37 AC			BASIN 2	16,060 SF / 0.37 AC		
LAND TREATMENT	AREA (SF/AC)		%	LAND TREATMENT	AREA (SF/AC)		%
A				A			
B				B	2,700 SF / 0.06 AC		17%
C	16,060 SF / 0.37 AC		100%	C	2,160 SF / 0.05 AC		13%
D				D	11,200 SF / 0.26 AC		70%
BASIN 3	6,225 SF / 0.14 AC			BASIN 3	6,225 SF / 0.14 AC		
LAND TREATMENT	AREA (SF/AC)		%	LAND TREATMENT	AREA (SF/AC)		%
A				A			
B				B			
C	6,225 SF / 0.14 AC		100%	C	3,475 SF / 0.08 AC		56%
D				D	2,750 SF / 0.06 AC		44%

II. HYDROLOGY

A. EXISTING CONDITION 100 YEAR STORM

1. BASIN A
a. VOLUME 100-YR, 6-HR
$WT_E = (E_AA_A + E_BA_B + E_CA_C + E_DA_D)/A_T$
$\Rightarrow (0.66 \cdot 0.00) + (0.92 \cdot 0.00) + (1.29 \cdot 1.47) + (2.36 \cdot 0.00)/1.47 =$ **1.29 IN**
$V_{100,6\,HR} = (E_W/12) \cdot A_T$ $\Rightarrow (1.29/12) \cdot 1.47 =$ **0.1579 AC-FT = 6,880 CF**
b. VOLUME 100- YR, 24-HR
$V_{100,24\,HR} = V_{6HR} + A_D(P_{24HR} - P_{6HR})/12$ in/ft
$\Rightarrow 0.16 + 0.00 \cdot (3.10 - 2.60)/12$ in/ft = **0.1579 AC-FT = 6,880 CF**
c. VOLUME 100-YEAR, 10-DAY
$V_{10DAY} = V_{6HR} + A_D \cdot (P_{10DAY} - P_{6HR})/12$ in/ft
$\Rightarrow 0.16 + 0.00 \cdot (4.90 - 2.60)/12$ in/ft = **0.1579 AC-FT = 6,880 CF**
d. PEAK DISCHARGE
$Q_{100} = Q_AA_A + Q_BA_B + Q_CA_C + Q_DA_D$
$\Rightarrow (1.87 \cdot 0.00) + (2.60 \cdot 0.00) + (3.45 \cdot 1.47) + (5.02 \cdot 0.00) =$ **5.1 CFS**

2. BASIN B
a. VOLUME 100-YR, 6-HR
$WT_E = (E_AA_A + E_BA_B + E_CA_C + E_DA_D)/A_T$
$\Rightarrow (0.66 \cdot 0.00) + (0.92 \cdot 0.00) + (1.29 \cdot 0.37) + (2.36 \cdot 0.00)/0.37 =$ **1.29 IN**
$V_{100,6\,HR} = (E_W/12) \cdot A_T$ $\Rightarrow (1.29/12) \cdot 0.37 =$ **0.0396 AC-FT = 1,730 CF**
b. VOLUME 100- YR, 24-HR
$V_{100,24\,HR} = V_{6HR} + A_D(P_{24HR} - P_{6HR})/12$ in/ft
$\Rightarrow 0.04 + 0.00 \cdot (3.10 - 2.60)/12$ in/ft = **0.0396 AC-FT = 1,730 CF**
c. VOLUME 100-YEAR, 10-DAY
$V_{10DAY} = V_{6HR} + A_D \cdot (P_{10DAY} - P_{6HR})/12$ in/ft
$\Rightarrow 0.04 + 0.00 \cdot (4.90 - 2.60)/12$ in/ft = **0.0396 AC-FT = 1,730 CF**
d. PEAK DISCHARGE
$Q_{100} = Q_AA_A + Q_BA_B + Q_CA_C + Q_DA_D$
$\Rightarrow (1.87 \cdot 0.00) + (2.60 \cdot 0.00) + (3.45 \cdot 0.37) + (5.02 \cdot 0.00) =$ **1.3 CFS**

3. BASIN C
a. VOLUME 100-YR, 6-HR
$WT_E = (E_AA_A + E_BA_B + E_CA_C + E_DA_D)/A_T$
$\Rightarrow (0.66 \cdot 0.00) + (0.92 \cdot 0.00) + (1.29 \cdot 0.14) + (2.36 \cdot 0.00)/0.14 =$ **1.29 IN**
$V_{100,6\,HR} = (E_W/12) \cdot A_T$ $\Rightarrow (1.29/12) \cdot 0.14 =$ **0.0154 AC-FT = 670 CF**
b. VOLUME 100- YR, 24-HR
$V_{100,24\,HR} = V_{6HR} + A_D(P_{24HR} - P_{6HR})/12$ in/ft
$\Rightarrow 0.02 + 0.00 \cdot (3.10 - 2.60)/12$ in/ft = **0.0154 AC-FT = 670 CF**
c. VOLUME 100-YEAR, 10-DAY
$V_{10DAY} = V_{6HR} + A_D \cdot (P_{10DAY} - P_{6HR})/12$ in/ft
$\Rightarrow 0.02 + 0.00 \cdot (4.90 - 2.60)/12$ in/ft = **0.0154 AC-FT = 670 CF**
d. PEAK DISCHARGE
$Q_{100} = Q_AA_A + Q_BA_B + Q_CA_C + Q_DA_D$
$\Rightarrow (1.87 \cdot 0.00) + (2.60 \cdot 0.00) + (3.45 \cdot 0.14) + (5.02 \cdot 0.00) =$ **0.5 CFS**

B. DEVELOPED CONDITION 100 YEAR STORM

1. BASIN A
a. VOLUME 100-YR, 6-HR
$WT_E = (E_AA_A + E_BA_B + E_CA_C + E_DA_D)/A_T$
$\Rightarrow (0.66 \cdot 0.00) + (0.92 \cdot 0.03) + (1.29 \cdot 0.18) + (2.36 \cdot 1.26)/1.47 =$ **2.20 IN**
$V_{100,6\,HR} = (E_W/12) \cdot A_T$ $\Rightarrow (2.20/12) \cdot 1.47 =$ **0.2693 AC-FT = 11,730 CF**
b. VOLUME 100- YR, 24-HR
$V_{100,24\,HR} = V_{6HR} + A_D(P_{24HR} - P_{6HR})/12$ in/ft
$\Rightarrow 0.27 + 1.26 \cdot (3.10 - 2.60)/12$ in/ft = **0.3216 AC-FT = 14,010 CF**
c. VOLUME 100-YEAR, 10 DAY
$V_{10DAY} = V_{6HR} + A_D \cdot (P_{10DAY} - P_{6HR})/12$ in/ft
$\Rightarrow 0.27 + 1.26 \cdot (4.90 - 2.60)/12$ in/ft = **0.5100 AC-FT = 22,210 CF**
d. 1st FLUSH VOLUME
$V_{RQ} = ((P_F)/12) \cdot A_D$
$\Rightarrow ((0.34/12) \cdot (1.26) =$ **0.0356 AC-FT = 1,550 CF**
e. PEAK DISCHARGE
$Q_{100} = Q_AA_A + Q_BA_B + Q_CA_C + Q_DA_D$
$\Rightarrow (1.87 \cdot 0.00) + (2.60 \cdot 0.03) + (3.45 \cdot 0.18) + (5.02 \cdot 1.26) =$ **7.0 CFS**

2. BASIN B
a. VOLUME 100-YR, 6-HR
$WT_E = (E_AA_A + E_BA_B + E_CA_C + E_DA_D)/A_T$
$\Rightarrow (0.66 \cdot 0.00) + (0.92 \cdot 0.06) + (1.29 \cdot 0.05) + (2.36 \cdot 0.26)/0.37 =$ **1.97 IN**
$V_{100,6\,HR} = (E_W/12) \cdot A_T$ $\Rightarrow (1.97/12) \cdot 0.37 =$ **0.0605 AC-FT = 2,640 CF**
b. VOLUME 100- YR, 24-HR
$V_{100,24\,HR} = V_{6HR} + A_D(P_{24HR} - P_{6HR})/12$ in/ft
$\Rightarrow 0.06 + 0.26 \cdot (3.10 - 2.60)/12$ in/ft = **0.0712 AC-FT = 3,100 CF**
c. VOLUME 100-YEAR, 10-DAY
$V_{10DAY} = V_{6HR} + A_D \cdot (P_{10DAY} - P_{6HR})/12$ in/ft
$\Rightarrow 0.06 + 0.26 \cdot (4.90 - 2.60)/12$ in/ft = **0.1098 AC-FT = 4,780 CF**
d. 1st FLUSH VOLUME
$V_{RQ} = ((P_F)/12) \cdot A_D$
$\Rightarrow ((0.34)/12) \cdot (0.26) =$ **0.0073 AC-FT = 320 CF**
e. PEAK DISCHARGE
$Q_{100} = Q_AA_A + Q_BA_B + Q_CA_C + Q_DA_D$
$\Rightarrow (1.87 \cdot 0.00) + (2.60 \cdot 0.06) + (3.45 \cdot 0.05) + (5.02 \cdot 0.26) =$ **1.6 CFS**

3. BASIN C
a. VOLUME 100-YR, 6-HR
$WT_E = (E_AA_A + E_BA_B + E_CA_C + E_DA_D)/A_T$
$\Rightarrow (0.66 \cdot 0.00) + (0.92 \cdot 0.00) + (1.29 \cdot 0.08) + (2.36 \cdot 0.06)/0.14 =$ **1.76 IN**
$V_{100,6\,HR} = (E_W/12) \cdot A_T$ $\Rightarrow (1.76/12) \cdot 0.14 =$ **0.0210 AC-FT = 910 CF**
b. VOLUME 100- YR, 24-HR
$V_{100,24\,HR} = V_{6HR} + A_D(P_{24HR} - P_{6HR})/12$ in/ft
$\Rightarrow 0.02 + 0.06 \cdot (3.10 - 2.60)/12$ in/ft = **0.0236 AC-FT = 1,030 CF**
c. VOLUME 100-YEAR, 10-DAY
$V_{10DAY} = V_{6HR} + A_D \cdot (P_{10DAY} - P_{6HR})/12$ in/ft
$\Rightarrow 0.02 + 0.06 \cdot (4.90 - 2.60)/12$ in/ft = **0.0331 AC-FT = 1,440 CF**
d. 1st FLUSH VOLUME
$V_{RQ} = ((P_F)/12) \cdot A_D$
$\Rightarrow ((0.34)/12) \cdot (0.06) =$ **0.0018 AC-FT = 80 CF**
e. PEAK DISCHARGE
$Q_{100} = Q_AA_A + Q_BA_B + Q_CA_C + Q_DA_D$
$\Rightarrow (1.87 \cdot 0.00) + (2.60 \cdot 0.00) + (3.45 \cdot 0.08) + (5.02 \cdot 0.06) =$ **0.6 CFS**

C. COMPARISON 100 YEAR STORM

1. BASIN A
a. VOLUME 100-YR, 6-HR — $\Delta V_{100,\,6\,HR} = 11730 - 6880 =$ **4,850 CF** (INCREASE)
b. VOLUME 100-YR, 24- Hr — $\Delta V_{100,\,24\,HR} = 14010 - 6880 =$ **7,130 CF** (INCREASE)
c. VOLUME 100-YR, 10-DAY — $\Delta V_{10\text{-}DAY} = 22210 - 6880 =$ **15,330 CF** (INCREASE)
d. PEAK DISCHARGE — $\Delta Q_{100} = 7.0 - 5.1 =$ **1.9 CFS** (INCREASE)

2. BASIN B
a. VOLUME 100-YR, 6-HR — $\Delta V_{100,\,6\,HR} = 2640 - 1730 =$ **910 CF** (INCREASE)
b. VOLUME 100-YR, 24- Hr — $\Delta V_{100,\,24\,HR} = 3100 - 1730 =$ **1,370 CF** (INCREASE)
c. VOLUME 100-YR, 10-DAY — $\Delta V_{10\text{-}DAY} = 4780 - 1730 =$ **3,050 CF** (INCREASE)
d. PEAK DISCHARGE — $\Delta Q_{100} = 1.6 - 1.3 =$ **0.3 CFS** (INCREASE)

3. BASIN C
a. VOLUME 100-YR, 6-HR — $\Delta V_{100,\,6\,HR} = 910 - 670 =$ **240 CF** (INCREASE)
b. VOLUME 100-YR, 24- Hr — $\Delta V_{100,\,24\,HR} = 1030 - 670 =$ **360 CF** (INCREASE)
c. VOLUME 100-YR, 10-DAY — $\Delta V_{10\text{-}DAY} = 1440 - 670 =$ **770 CF** (INCREASE)
d. PEAK DISCHARGE — $\Delta Q_{100} = 0.6 - 0.5 =$ **0.1 CFS** (INCREASE)

D. FIRST FLUSH ANALYSIS
A. TOTAL SITE VOLUME 100-YR, 1ST FLUSH
$V_{RQ} = ((P_F)/12) \cdot A_D$
$\Rightarrow ((0.34/12) \cdot (1.98) =$ **0.0561 AC-FT = 2,440 CF**
B. PROPOSED RETAINED VOLUME
V_{POND} = **260 CF**
C. PROPOSED RELEASED VOLUME
$V_{RELEASED}$ = **2,440 CF-260 CF=2180 CF**

LEGEND

AC	ASPHALT CURB
AL	AREA LIGHT
BBC	BRICK BUILDING COLUMN
BCSW	BURIED CONCRETE SIDEWALK
BTM	BOTTOM
C&G	CURB AND GUTTER
CF	LANDSCAPING CRUSHER FINES
CM	POURED CONCRETE MOUND
CMU	CONCRETE MASONRY UNIT WALL
CND	ELECTRIC CONDUIT
CONC	CONCRETE
CRW	CMU RETAINING WALL
CSW	CONCRETE SIDEWALK
DYS	PAINTED DOUBLE YELLOW TRAFFIC STRIPE
E/PM	ELECTRIC LINE BY PAINT MARK
EA	EDGE OF ASPHALT
EM	ELECTRIC METER
EO	ELECTRIC OUTLET
FH	FIRE HYDRANT
FL	FLOWLINE
G/PM	GAS LINE BY PAINT MARK
GA	GATE
GRV	LANDSCAPING GRAVEL
GTS	GATE STOP POST
GW	GUY WIRE ANCHOR
GWAP	GUY WIRE ANCHOR POLE
INV	PIPE INVERT
IVB	IRRIGATION VALVE BOX
KSW	KEYSTONE WALL
LS	LANDSCAPING IMPROVEMENTS
LSD	LANDSCAPING DIVIDER
MED	MEDIAN
MH	MANHOLE
MLP	METAL LIGHT POLE
OHC(1)	OVERHEAD COMMUNICATION (# OF LINES)
OHE(1)	OVERHEAD ELECTRIC (3 OF LINES)
OHG(2)	OVERHEAD GUY WIRE (# OF LINES)
PG	PIPE GATE
PS	PAINTED PARKING STALL STRIPE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
ROH	ROOF OVERHANG
RR	LANDSCAPING RIVER ROCK
RRT	LANDSCAPING RAILROAD TIES
SAS	SANITARY SEWER
SAS/PM	SANITARY SEWER BY PAINT MARK
SB	PAINTED TRAFFIC STOP BAR
SD/PM	STORM DRAIN BY PAINT MARK
SDI	STORM DRAIN INLET
SDMH	STORM DRAIN MANHOLE
SDP	SERVICE DROP POLE
SF	SILT FENCE (IN POOR CONDITION)
SGN	CMU SIGN
SLGT	SLIDING GATE
SLP	SYNTHETIC LIGHT POLE
SP	STEEL POLE
STC	SEPTIC TANK COVER
STS	STONE SIGN ON STUCCO WALL
STW	STUCCO WALL
SWS	PAINTED SOLID WHITE TRAFFIC STRIPE
SYD	PAINTED SOLID YELLOW TRAFFIC STRIPE
TA	TOP OF ASPHALT
TC	TOP OF CURB
TCO	TOP OF CONCRETE
TG	TOP OF GRATE
TS	TRAFFIC SIGN
TW	TOP OF WALL
TYP	TYPICAL
UPT	POSSIBLE UNDERGROUND PROPANE TANK
VG	CONCRETE VALLEY GUTTER
W/PM	WATER LINE BY PAINT MARK
WCR	CONCRETE WHEELCHAIR RAMP
WF	OUTDOOR WATER FAUCET
WLP	WOOD LIGHT POLE
WMB	WATER METER BOX
WPP	WOOD POWER POLE
WVB	WATER VALVE BOX
WWC	WWC
XC	EXTRUDED CONCRETE CURB
1.0'ø	TREE TRUNK DIAMETER

CONIFEROUS TREE
SMALL CONIFEROUS TREE
DECIDUOUS TREE
SMALL DECIDUOUS TREE
SHRUB
SMALL SHRUB
YUCCA
LANDSCAPING BOULDER
* PAINTED UTILITY LINE MARK
INV — INVERT
TA — TOP OF ASPHALT PAVEMENT
TC — TOP OF CURB
TG — TOP OF GRATE
+ 87.80 — EXISTING SPOT ELEVATION
88.70 — PROPOSED SPOT ELEVATION
SD — PROPOSED HDPE STORM DRAIN
PROPOSED 24"x24" STORM DRAIN INLET
PROPOSED SINGLE 'C' STORM DRAIN INLET
PROPOSED SINGLE 'D' STORM DRAIN INLET
PROPOSED 4' DIA. STORM DRAIN MANHOLE
PROPOSED REFUSE DRAIN
EXISTING STORM DRAIN MANHOLE
EXISTING FIRE HYDRANT
EXISTING VALVE BOX
PROPOSED FIRE HYDRANT
FIRE DEPARTMENT CONNECTION
PROPOSED VALVE BOX
F — P — EXISTING FIRE LINE
F — P — PROPOSED FIRE LINE
EXISTING POST INDICATOR VALVE
PROPOSED POST INDICATOR VALVE
EXISTING WATER SERVICE
PROPOSED WATER SERVICE
W — EXISTING WATER LINE
W — PROPOSED WATER LINE
INV — INVERT
TA — TOP OF ASPHALT PAVEMENT
TC — TOP OF CURB

TG — TOP OF GRATE
+ 87.80 — EXISTING SPOT ELEVATION
88.70 — PROPOSED SPOT ELEVATION
EXISTING FLOWLINE
PROPOSED FLOWLINE
5585 — EXISTING CONTOUR
90 — PROPOSED CONTOUR
EXISTING SINGLE CLEANOUT
PROPOSED SINGLE CLEANOUT
SAS — EXISTING SANITARY SEWER LINE
SAS — PROPOSED SANITARY SEWER LINE
EXISTING SANITARY SEWER MANHOLE
SANITARY SEWER MANHOLE
EXISTING DOUBLE CLEANOUT
PROPOSED DOUBLE CLEANOUT
EXISTING DIRECTION OF FLOW
PROPOSED DIRECTION OF FLOW
HIGH POINT / DIVIDE
PROPERTY LINE
PROPOSED CONCRETE
PROPOSED ASPHALT PAVING
PROPOSED LANDSCAPE AREA
PROPOSED GRAVEL BASE COURSE
FIRST FLUSH
DRAINAGE BASIN

LEGAL DESCRIPTION

TRACTS A, HOLLY AVENUE SENIOR LIVING FILED 11/29/2018 (2018C-0148)

TEMPORARY BENCHMARK #1 (T.B.M.)

A #5 REBAR W/CAP STAMPED "HMCG CONTROL NMPS 11184" SET IN DIRT, NEAR THE NORTHWEST CORNER OF LOT 7 IN THE NORTHWEST PORTION OF THE SITE, AS SHOWN ON CG-101 AND CU-101.
ELEVATION = 5578.05 FEET (NAVD 88)

TEMPORARY BENCHMARK #2 (T.B.M.)

A MAG NAIL W/WASHER SET IN THE TOP OF A CONCRETE CURB, IN THE NORTHEASTERN PORTION OF THE SITE, NOT SHOWN.
ELEVATION = 5592.04 FEET (NAVD 88)

TEMPORARY BENCHMARK #3 (T.B.M.)

A MAG NAIL W/WASHER SET IN AN ASPHALT PATH, IN THE SOUTHERN PORTION OF THE SITE, AS SHOWN ON CG-101 AND CU-101.
ELEVATION = 5586.17 FEET (NAVD 88)

WATER LINE CONSTRUCTION NOTES:

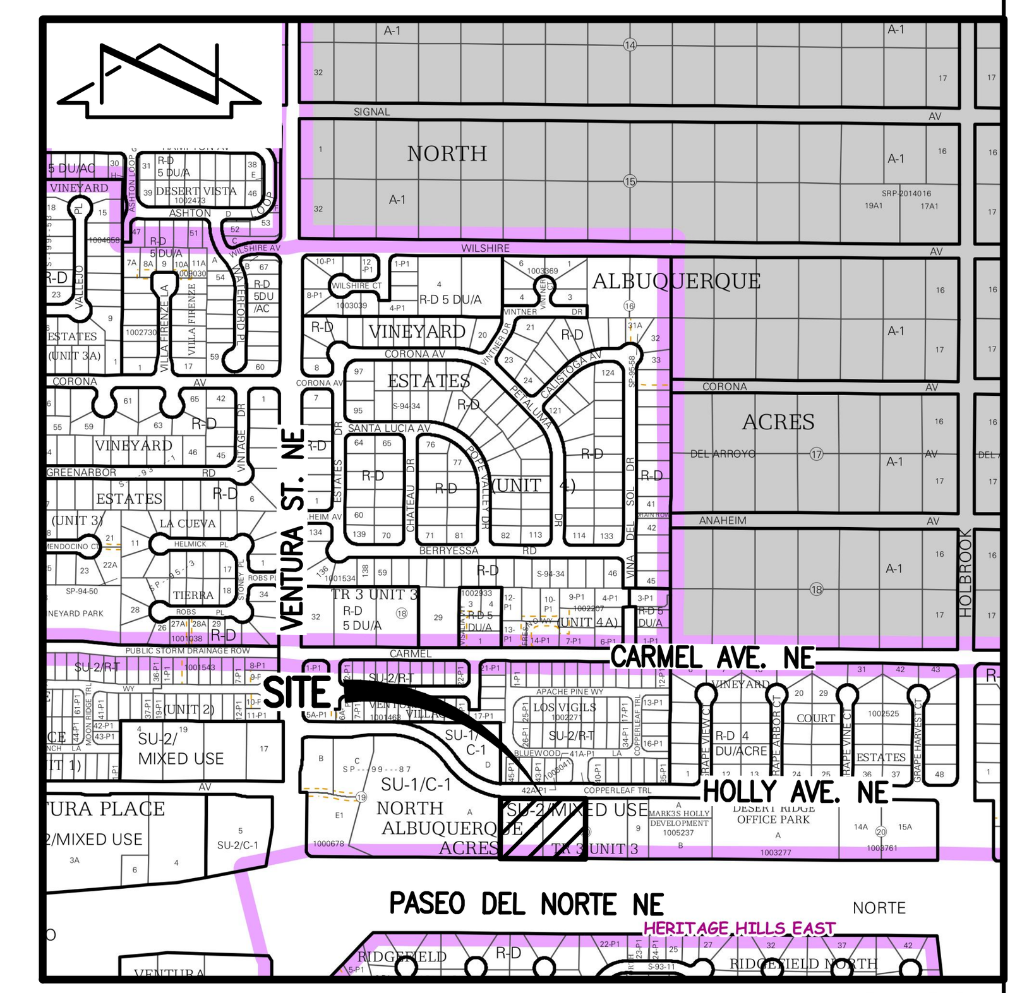
1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION – 1987, PUBLISHED BY THE NEW MEXICO CHAPTER AMERICAN PUBLIC WORKS ASSOCIATION. (REVISED 12/06)
2. PROPOSED WATER LINE MATERIALS SHALL BE PVC PIPE, MEETING AWWA C-900: DRB REQUIREMENTS (6"-12") OR DUCTILE IRON PIPE MEETING AWWA C-150 REQUIREMENTS (6"-48"). 2" WATER SERVICE PIPE MATERIAL SHALL BE COPPER OR MUNICIPEX.
3. WATER LINE SHALL HAVE A MINIMUM COVER OF 3'-0" (FINISHED GRADE TO TOP OF PIPE). EXTRA DEPTH TRENCHING, IF REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.
4. IN ACCORDANCE WITH SECTION 801 OF THE "STANDARD SPECIFICATIONS", METALIZED DETECTABLE WARNING TAPE SHALL BE INSTALLED 18" ABOVE ALL PVC PIPE INSTALLED ON THIS PROJECT.
5. JOINT RESTRAINT SHALL BE PROVIDED ON ALL JOINTS OF FIRE LINES.
6. FOR THE PURPOSES OF THIS PROJECT, ALL RESTRAINED JOINTS AND JOINT RESTRAINT SHALL BE MECHANICALLY RESTRAINED. JOINT RESTRAINT LENGTHS SPECIFIED HEREON ARE THE LENGTHS TO BE RESTRAINED EACH SIDE OF THE FITTING.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING APPROPRIATE MEANS AND METHODS TO EXCAVATE AND TRENCH AND INSTALL PIPE SO AS TO NOT EXCEED RIGHT-OF-WAY OR EASEMENT LIMITS, AND SO AS NOT TO INTERFERE WITH OTHER UTILITIES. THIS SHALL BE CONSIDERED INCIDENTAL TO TRENCHING, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, SUPPORTING AND REPLACING, IF DAMAGED, ALL OTHER UTILITIES ENCOUNTERED DURING CONSTRUCTION. THIS SHALL BE CONSIDERED INCIDENTAL TO TRENCHING, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.
9. NEW WATER LINE INSTALLATIONS SHALL INCLUDE INSULATED 12 GAUGE COPPER TRACER WIRE INSTALLED CONTINUOUSLY ALONG THE PIPE WITH WATER-PROOF SPLICE BOXES AT JUNCTIONS AND TEES. TRACER WIRE SHALL BE ACCESSIBLE AT ALL VALVES AND SERVICES. TRACER WIRE INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO TRENCHING, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.

SANITARY SEWER CONSTRUCTION NOTES:

1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION – 1987, PUBLISHED BY THE NEW MEXICO CHAPTER AMERICAN PUBLIC WORKS ASSOCIATION. (REVISED 12/06)
2. ALL SEWER PIPE SHALL BE PVC (SDR-35).
3. SLOPES SHOWN ON THE PROFILES ARE BASED ON TRUE DISTANCES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING APPROPRIATE MEANS AND METHODS TO EXCAVATE AND TRENCH AND INSTALL PIPE SO AS TO NOT EXCEED RIGHT-OF-WAY OR EASEMENT LIMITS, AND SO AS NOT TO INTERFERE WITH OTHER UTILITIES. THIS SHALL BE CONSIDERED INCIDENTAL TO TRENCHING, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, SUPPORTING AND REPLACING, IF DAMAGED, ALL OTHER UTILITIES ENCOUNTERED DURING CONSTRUCTION. THIS SHALL BE CONSIDERED INCIDENTAL TO TRENCHING, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.
6. WHERE WATER AND SANITARY SEWER LINES CROSS, THE SANITARY SEWER LINE SHALL BE INSTALLED AS PRESSURE PIPE BETWEEN MANHOLES IF 18 INCHES OF VERTICAL SEPARATION DOES NOT EXIST.
7. ALL SANITARY SEWER MANHOLES SHALL BE 4' DIAMETER TYPE "C" MANHOLES PER CITY OF ALBUQUERQUE STD. DWG. 2101 UNLESS OTHERWISE NOTED.

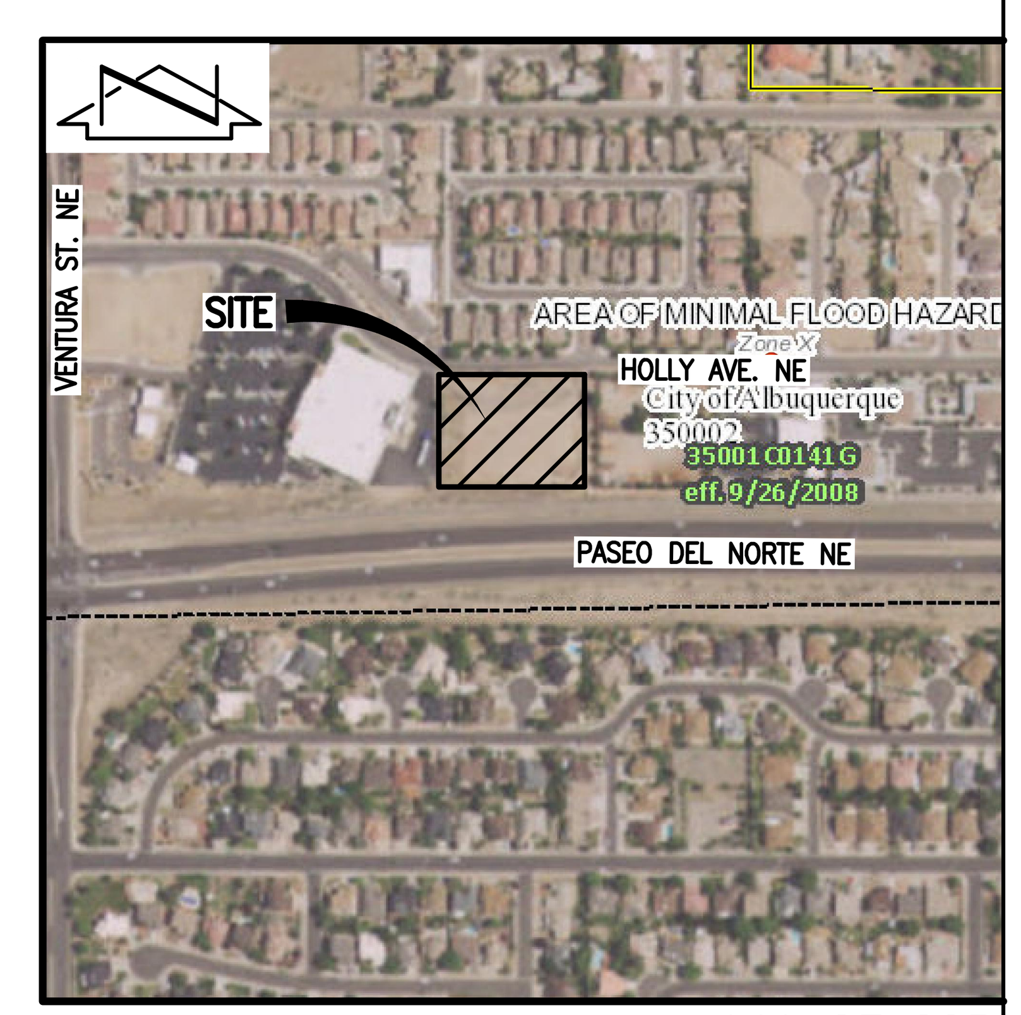
GENERAL NOTES:

1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION – 1987, PUBLISHED BY THE NEW MEXICO CHAPTER AMERICAN PUBLIC WORKS ASSOCIATION. (REVISED 12/06)
2. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 811, FOR DESIGNATION (LINE-SPOTTING) OF EXISTING UTILITIES.
3. UTILITY INFORMATION SHOWN HEREON IS BASED UPON ONSITE SURFACE EVIDENCE, REVIEW OF AVAILABLE ABCWUA AND CITY OF ALBUQUERQUE RECORD DRAWINGS AND DISTRIBUTION MAPS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP (2016.059.1 AND 2016.059.2). IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ON CALL SERVICE (TICKET NOS. 16DE200007 AND 17AP210205). UTILITY LINES THAT APPEAR ON THESE DRAWINGS ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
4. SHOULD A CONFLICT EXIST BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY FOR ALL PARTIES.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION.
6. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING SAFETY AND HEALTH.
7. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
8. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
9. CONTRACTOR SHALL NOTIFY THE SURVEYOR NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE SURVEYOR MAY TAKE NECESSARY MEASURES TO ENSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE SURVEYOR AND SHALL NOTIFY THE SURVEYOR AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATION OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED.
10. IF THE REMOVAL OF EXISTING CURB AND GUTTER, SIDEWALK, AND/OR PAVING IS REQUIRED, THE CONTRACTOR SHALL SAWCUT AND/OR REMOVE TO THE NEAREST JOINT. WHEN ABUTTING NEW PAVEMENT TO EXISTING, THE CONTRACTOR SHALL CUT BACK THE EXISTING PAVING TO A STRAIGHT LINE IN ORDER TO REMOVE ANY BROKEN OR CRACKED PAVEMENT. CURB AND GUTTER AND/OR PAVEMENT SHOWN AS EXISTING AND NOT TO BE REMOVED UNDER THIS CONTRACT AND WHICH IS DAMAGED OR DISPLACED BY THE CONTRACTOR SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
11. A DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL (CONTAMINATED OR OTHERWISE), ASPHALTIC PAVING, CONCRETE PAVING, ETC. SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE REGULATIONS. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND IN HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT SHALL BE MADE.
12. A BORROW SITE FOR IMPORT MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE REGULATIONS. ALL COSTS INCURRED IN OBTAINING A BORROW SITE AND IN HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT SHALL BE MADE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFELY OBTAINING THE REQUIRED COMPACTION. THE CONTRACTOR SHALL SELECT AND USE METHODS WHICH SHALL NOT BE INJURIOUS OR DAMAGING TO THE EXISTING FACILITIES AND STRUCTURES WHICH SURROUND THE WORK AREAS.
14. THE CONTRACTOR SHALL CONFINE HIS WORK WITHIN THE CONSTRUCTION LIMITS IN ORDER TO PRESERVE THE EXISTING IMPROVEMENTS AND SO AS NOT TO INTERFERE WITH THE OPERATIONS OF THE EXISTING FACILITIES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING APPROPRIATE MEANS AND METHODS TO EXCAVATE AND TRENCH AND/OR INSTALL PIPE SO AS TO NOT EXCEED RIGHT-OF-WAY OR EASEMENT LIMITS, AND SO AS NOT TO INTERFERE WITH OTHER UTILITIES OR IMPROVEMENTS. THIS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, SUPPORTING AND REPLACING, IF DAMAGED, ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION. THIS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.
17. ALL DIMENSIONS AND RADII OF CURB, CURB RETURNS, AND WALLS ARE SHOWN TO THE FACE OF CURB AND/OR WALL.
18. THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS PRIOR TO STRIPING SO THAT LAYOUT CAN BE VERIFIED.
19. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
20. WHEN APPLICABLE, CONTRACTOR SHALL SECURE, ON BEHALF OF THE OWNER AND OPERATORS, "TOPSOIL DISTURBANCE PERMIT" FROM THE CITY AND/OR FILE A NOTICE OF INTENT (N.O.I.) WITH THE EPA PRIOR TO BEGINNING CONSTRUCTION.
21. ALL FILL SHALL BE CLEAN, FREE FROM VEGETATION, DEBRIS, AND OTHER DELETERIOUS MATERIALS, AND SHALL NOT BE CONTAMINATED WITH HYDROCARBONS OR OTHER CHEMICAL CONTAMINANTS.
22. ALL FILL SHALL BE COMPACTED TO A MINIMUM OF 95% ASTM D-1557 UNLESS A GREATER COMPACTION REQUIREMENT IS OTHERWISE SPECIFIED.
23. CAUTION: THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR. ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926, SUBPART P-EXCAVATIONS.
24. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT AND/OR STRUCTURAL FOR EARTHWORK REQUIREMENTS, AS APPLICABLE.
25. CONTRACTOR SHALL TEST SUBGRADE R-VALUE PRIOR TO CONSTRUCTION. IN THE EVENT THE R-VALUE IS LESS THAN 50, CONTRACTOR SHALL REMOVE 2 FT. OF SUBGRADE MATERIAL AND IMPORT SUITABLE MATERIAL WITH R-VALUE 50 OR GREATER.



VICINITY MAP — C-20

SCALE: 1" = 500'



F.I.R.M. — 141 OF 825

SCALE: 1" = 500'

INDEX OF DRAWINGS

2018.027.1

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ARCHITECT
ENGINEER
J. GRAEME MEANS — NEW MEXICO — 13676 — REGISTERED PROFESSIONAL ENGINEER
02/15/2019

PROJECT

AMARAN SENIOR LIVING
9100 HOLLY AVENUE NE
ALBUQUERQUE, NM 87122

PERMIT SET

REVISIONS

DRAWN BY	J.Y.R.
REVIEWED BY	G.M.
DATE	02.15.2019
PROJECT NO.	18-0038

DRAWING NAME
DRAINAGE PLAN, CALCULATIONS, VICINITY MAP, LEGEND AND INDEX OF DRAWINGS

SHEET NO.
C100
OF

File Path: P:\DATA\2018\2018.027.1\ENG\ | Plot Date: 02-15-2019
File Name: 180271_BASE.DWG | Plot Time: 10:04 am

FIRST FLUSH POND GRATE CAPACITY:

HEC-22, EQUATION 4-27; $Q = CA(2GD)^{0.5}$

C= 0.67, G=32.2, D=DEPTH (FT), A = CLEAR OPENING AREA

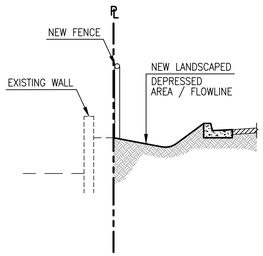
CITY GRATE AREA = 4.56 SF (CLEAR)

ASSUME 50% CLOGGED; NET AREA = 2.28 SF; USE 2.28

D = 0.2 FT

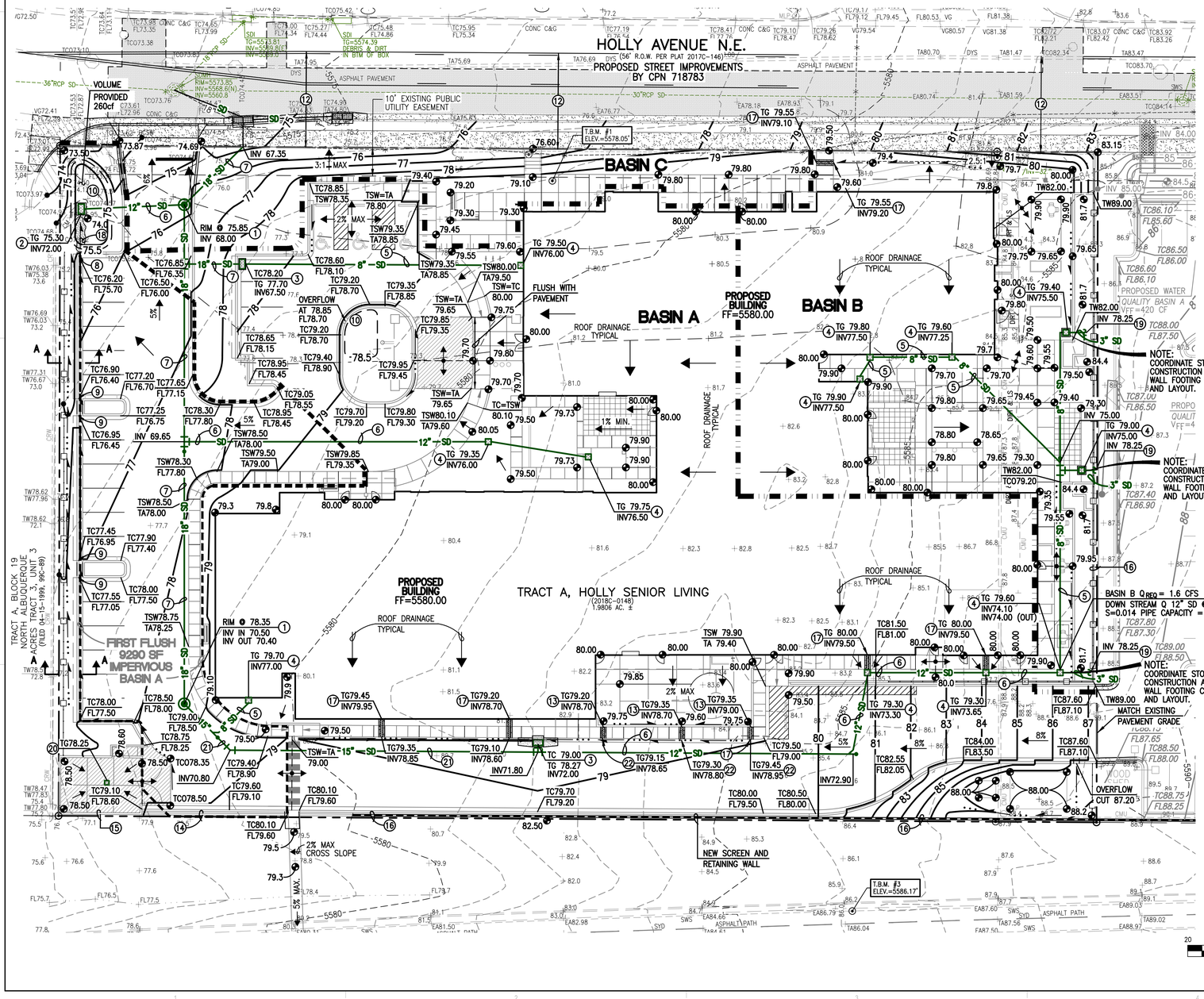
Q_{CAP} =5.48 CFS

Q_{REQ}= 1.1 CFS



SECTION A-A

SCALE: 1" = 5'



CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 811, FOR DESIGNATION (LINE-SPOTTING) OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. UTILITY INFORMATION SHOWN HEREON IS BASED UPON ONSITE SURFACE EVIDENCE, REVIEW OF AVAILABLE ABCWUA AND CITY OF ALBUQUERQUE RECORD DRAWINGS AND DISTRIBUTION MAPS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP (2016.059.1 AND 2016.059.2). IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ON CALL SERVICE (TICKET NOS. 16DE200007 AND 17AP210205). UTILITY LINES THAT APPEAR ON THESE DRAWINGS ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
6. THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.
7. THE GRADES INDICATED ON THIS PLAN ARE FINISHED GRADES UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING SUBGRADE AT ELEVATIONS THAT SHALL ACCOMMODATE PROPOSED IMPROVEMENTS AS INDICATED ON THE PLANS INCLUDING, BUT NOT LIMITED TO, SURFACE DRAINAGE STRUCTURES, PAVING AND LANDSCAPING SURFACING.
8. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT FOR EARTHWORK REQUIREMENTS, AS APPLICABLE.

KEYED NOTES:

1. CONSTRUCT 4' DIA. STORM DRAIN MANHOLE
2. CONSTRUCT SINGLE 'D' STORM DRAIN INLET
3. CONSTRUCT SINGLE TYPE 'C' STORM DRAIN INLET
4. CONSTRUCT 24"x24" STORM DRAIN INLET
5. INSTALL 8" HDPE STORM DRAIN
6. INSTALL 12" HDPE STORM DRAIN
7. INSTALL 18" HDPE STORM DRAIN
8. NEW 2'-0" CURB CUT PER STANDARD SECTION, CP501
9. CONSTRUCT 16" WIDE CONCRETE RUNDOWN
10. DEPRESSED LANDSCAPING FOR WATER QUALITY
11. NEW REFUSE DRAIN. SEE CONCEPTUAL UTILITY PLAN
12. HOLLY IMPROVEMENTS TO BE CONSTRUCTED BY WORK ORDER
13. NEW 4" WALL OPENING. ALIGN OPENING WITH SIDEWALK CULVERT
14. NEW SCREEN WALL
15. NEW REFUSE WALL
16. NEW RETAINING WALL
17. INSTALL SIDEWALK CULVERT. INVERT TO MATCH ROOF DRAIN DOWN SPOUT OR WALL OPENING
18. NEW COBBLES FOR SLOPE PROTECTION
19. EXTEND 3" STORM DRAIN LINE FROM HYDRODUCT COIL SYSTEM TO INLET
20. INSTALL 12" HEAVY DUTY DRAIN, SEE SHEET CU101 FOR CONTINUATION
21. INSTALL 15" HDPE STORM DRAIN
22. INSTALL NEW SIDEWALK CULVERT WITH DECORATIVE GRATED LID. ALIGN WITH WALL OPENING.

NOTE:

THIS IS NOT A BOUNDARY SURVEY OR RIGHT-OF-WAY SURVEY. APPARENT PROPERTY CORNERS, RIGHT-OF-WAY LINES OR PROPERTY LINES AS SHOWN ARE DERIVED FROM THE PLAT OF RECORD (2018C-0148, #2018103144, RECORDED 11-29-2018) PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 11/06/2018 (2016.059.5) AND IS NOT GUARANTEED OR TO BE RELIED ON FOR THE ESTABLISHMENT OF PROPERTY LINES.

THE TOPOGRAPHIC AND UTILITY INFORMATION DEPICTED HEREON IS BASED UPON THE EXISTING TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY THIS FIRM, NMPS NO. 11184, DATED 01/10/2017 (2016.059.1).

2018.027.1

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02/15/2019

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REVISIONS

DRAWN BY	J.Y.R.
REVIEWED BY	G.M.
DATE	02.15.2019
PROJECT NO.	18-0038

DRAWING NAME

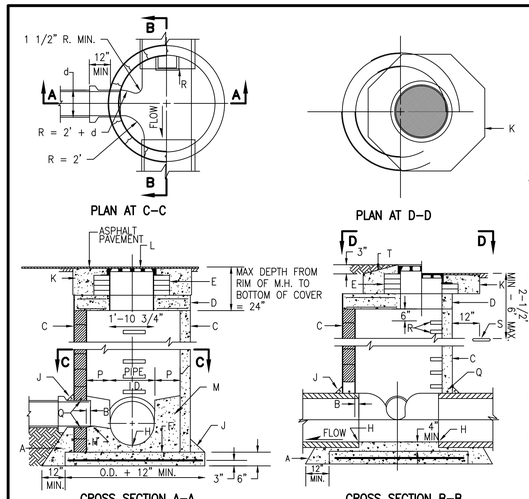
GRADING AND DRAINAGE PLAN

SHEET NO.

CG101

OF

File Path:P:\DMA\2018\2018027.1\DWG\ | Plot Date: 02-15-2019
File Name:180271_BASE.DWG | Plot Time: 11:23 am



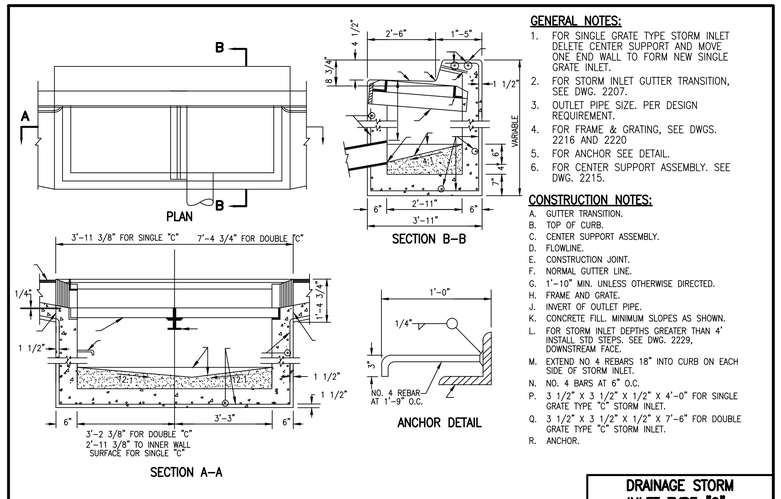
GENERAL NOTES

1. USE TYPE "C" MANHOLE FOR DEPTHS OF LESS THAN 6' MEASURED FROM INVERT TO RIM.
2. CONTRACTOR HAS OPTION TO CONSTRUCT TYPE "C" MANHOLE IN LIEU OF TYPE "E" MANHOLE FOR DEPTHS OF 6' OR MORE.
3. DESIGN APPLIES TO 4' TO 6' I.D. MANHOLES.
4. MANHOLE GREATER THAN 18' IN DEPTH SHALL ONLY BE CONSTRUCTION PRECAST CONCRETE SECTIONS.
5. USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PENETRATIONS.
6. COMPACT ALL BACKFILL AROUND MANHOLE TO 95%.
7. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

CONSTRUCTION NOTES

A. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE TO BELL OF FIRST JOINT AND SHALL CRADLE PIPE TO SPRING LINE NOT APPLICABLE FLEXIBLE PIPE.
B. PIPE PENETRATION INTO MANHOLE SHALL BE FLUSH TO 2" MAX., MEASURED AT SPRINGLINE OF PIPE.
C. MANHOLE MAY BE CONSTRUCTED OF POURED CONCRETE OR PRECAST REINFORCED CONCRETE (5" MIN. WALL THICKNESS FOR 4' DIA., 7" MIN WALL THICKNESS FOR 6' DIA.).
D. PRECAST CONCRETE COVER, SEE DWG. 2107.
E. USE MAX., 4 COURSES GR. MS BRICK ON UNPAVED STREET FOR FUTURE ADJUSTMENT OF MANHOLE FRAME TO PAVEMENT GRADE PLASTER INSIDE WITH 1/2" MORTAR.
F. CONCRETE BASE TO BE POURED IN PLACE USING NO. 4 BARS AT 6" O.C. EA. WAY FOR MANHOLE DEPTH OF 16' OR GREATER. NO. 4 BARS AT 12" O.C. EA. WAY FOR MANHOLE LESS THAN 16' IN DEPTH.
H. INVERT ELEVATION OF STUB OR LATERAL AS SHOWN ON PLANS.
J. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
K. USE A 5' X 5' x 6" THICK OCTAGONAL CONCRETE PAD IN ALL AREAS.
L. FRAME AND COVER, SEE DWG. 2110.
M. CONCRETE, SEE NMAPWA SPEC. SECTION 101.
N. SLOPE 1" PER FT. FROM PIPE CROWN.
P. SHELF TO BE 9" WIDE MIN.
Q. APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.
R. STEPS TO BE INSTALLED AS PER NMAPWA SPEC. SECTION 920.
S. EMD (IN UNPAVED AREAS).
T. IN UNPAVED AREAS SET FRAME TO GRADE AND SLOPE OF PAD.

STORM MANHOLE TYPE "C"
DWG. 2101 AUG. 1986



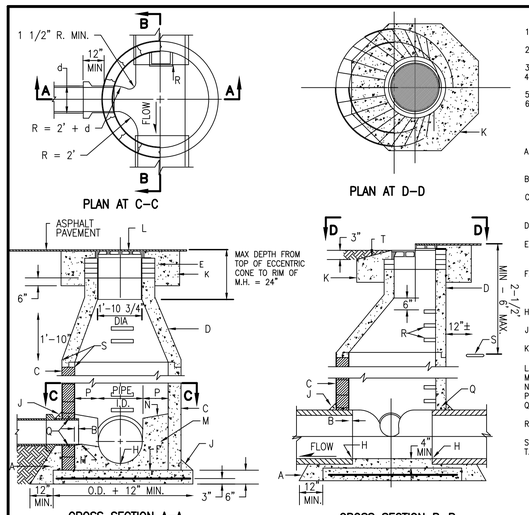
GENERAL NOTES:

1. FOR SINGLE GRATE TYPE STORM INLET DELETE CENTER SUPPORT AND MOVE ONE END WALL TO FORM NEW SINGLE GRATE INLET.
2. FOR STORM INLET GUTTER TRANSITION, SEE DWG. 2207.
3. OUTLET PIPE SIZE. PER DESIGN REQUIREMENT.
4. FOR FRAME & GRATING, SEE DWGS. 2216 AND 2220
5. FOR ANCHOR SEE DETAIL.
6. FOR CENTER SUPPORT ASSEMBLY. SEE DWG. 2215.

CONSTRUCTION NOTES:

A. GUTTER TRANSITION.
B. TOP OF CURB.
C. CENTER SUPPORT ASSEMBLY.
D. FLOWLINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN. UNLESS OTHERWISE DIRECTED.
H. FRAME AND GRATE.
J. INVERT OF OUTLET PIPE.
K. CONCRETE FILL. MINIMUM SLOPES AS SHOWN.
L. FOR STORM INLET DEPTHS GREATER THAN 4' INSTALL STD STEPS. SEE DWG. 2229, DOWNSTREAM FACE.
M. EXTEND NO 4 REBARS 18" INTO CURB ON EACH SIDE OF STORM INLET.
N. NO. 4 BARS AT 6" O.C.
P. 3 1/2" X 3 1/2" X 1/2" X 4'-0" FOR SINGLE GRATE TYPE "C" STORM INLET.
Q. 3 1/2" X 3 1/2" X 1/2" X 7'-6" FOR DOUBLE GRATE TYPE "C" STORM INLET.
R. ANCHOR.

DRAINAGE STORM INLET TYPE "C"
DWG. 2205



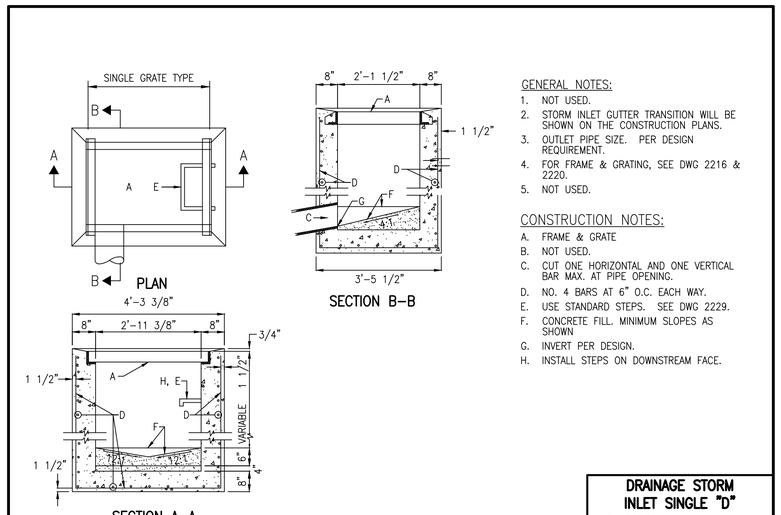
GENERAL NOTES:

1. TYPE "E" MANHOLE NOT TO BE USED FOR DEPTHS LESS THAN 6' MEASURED FROM INVERT TO RIM.
2. MANHOLE GREATER THAN 18' IN DEPTH SHALL BE OF PRECAST CONCRETE SECTIONS ONLY.
3. DESIGN APPLIES TO 4' TO 6' I.D. MANHOLES.
4. USE NON-SHRINK GROUT FOR JOINTS, FILLETS AND PIPE PENETRATIONS.
5. COMPACT ALL BACKFILL AROUND MANHOLE TO 95%.
6. POSITION MANHOLE OPENING OVER THE UPSTREAM SIDE OF MAIN LINE.

CONSTRUCTION NOTES:

A. CONCRETE PIPE SUPPORTS SHALL EXTEND OUTSIDE OF MANHOLE TO BELL OF FIRST JOINT AND SHALL CRADLE PIPE TO SPRING LINE NOT APPLICABLE FLEXIBLE PIPE.
B. PIPE PENETRATION INTO MANHOLE SHALL BE FLUSH TO 2" MAX., MEASURED AT SPRINGLINE OF PIPE.
C. MANHOLE MAY BE CONSTRUCTED OF POURED CONCRETE OR PRECAST REINFORCED CONCRETE (5" MIN. WALL THICKNESS FOR 4' DIA., 7" WALL THICKNESS FOR 6' DIA.)
D. PRECAST REINFORCED CONCRETE ECCENTRIC CONE. THE CONTRACTOR SHALL PROVIDE SHOP DWGS. FOR APPROVAL.
E. USE MAX., 4 COURSES GR. MS BRICK ON UNPAVED STREET FOR FUTURE ADJ. OF FRAME TO PAVEMENT GRADE PLASTER INSIDE WITH 1/2" MORTAR.
F. BASE TO BE POURED IN PLACE USING NO. 4 BARS AT 6" O.C. EA. WAY FOR MANHOLE DEPTH OF 16" OR GREATER NO. 4 BARS AT 12" O.C. EA. WAY FOR MANHOLE LESS THAN 16' DEEP.
H. INVERT ELEVATION OF STUB OR LATERAL AS SHOWN ON PLANS.
J. 6" GROUT FILLET ON UPPER HALF OF PIPE AND AROUND BASE.
K. USE A 5' X 5' X 6" THICK OCTAGONAL CONCRETE PAD IN ALL AREAS.
L. MANHOLE FRAME AND COVER, SEE DWG. 2110.
M. CONCRETE, SEE NMAPWA SPEC. SECTION 101.
N. SLOPE 1" PER FT. FROM PIPE CROWN.
P. SHELF TO BE 9" WIDE MIN.
Q. APPROVED WATERSTOP TO BE COMPATIBLE WITH TYPE OF PIPE.
R. STEPS TO BE INSTALLED AS PER NMAPWA SPEC. SECTION 920.
S. EMD (IN UNPAVED AREAS).
T. IN UNPAVED AREAS SET FRAME TO GRADE AND SLOPE OF PAD.

STORM MANHOLE TYPE "E"
DWG. 2102 AUG. 1986



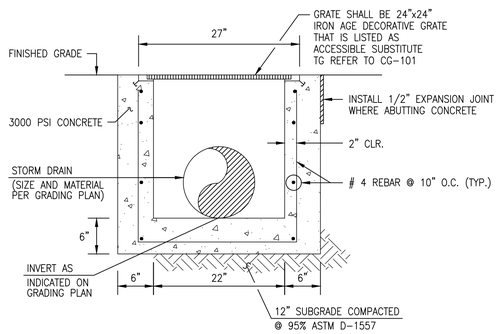
GENERAL NOTES:

1. NOT USED.
2. STORM INLET GUTTER TRANSITION WILL BE SHOWN ON THE CONSTRUCTION PLANS.
3. OUTLET PIPE SIZE. PER DESIGN REQUIREMENT.
4. FOR FRAME & GRATING, SEE DWG 2216 & 2220.
5. NOT USED.

CONSTRUCTION NOTES:

A. FRAME & GRATE
B. NOT USED.
C. CUT ONE HORIZONTAL AND ONE VERTICAL BAR MAX. AT PIPE OPENING.
D. NO. 4 BARS AT 6" O.C. EACH WAY.
E. USE STANDARD STEPS. SEE DWG 2229.
F. CONCRETE FILL. MINIMUM SLOPES AS SHOWN
G. INVERT PER DESIGN.
H. INSTALL STEPS ON DOWNSTREAM FACE.

DRAINAGE STORM INLET SINGLE "D"
DWG. 2206



TYPICAL 24"X24" STORM INLET SECTION

SCALE: 1" = 1'-0"

2018.027.1

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DRAWN BY	J.Y.R.
REVIEWED BY	G.M.
DATE	02.15.2019
PROJECT NO.	18-0038

DRAWING NAME

GRADING AND DRAINAGE SECTIONS AND DETAILS

SHEET NO.
CG501
OF

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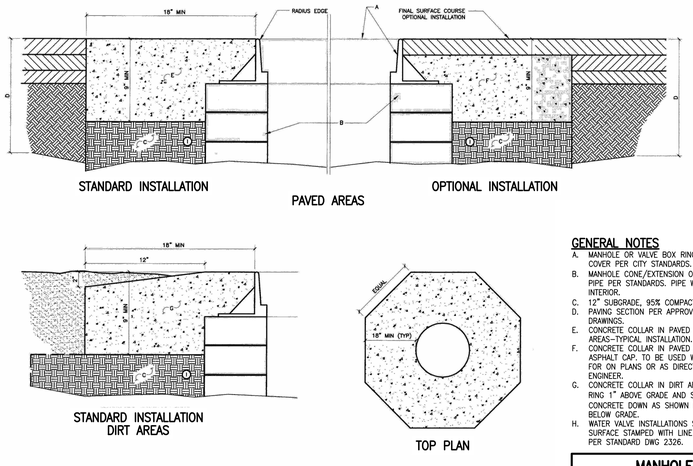
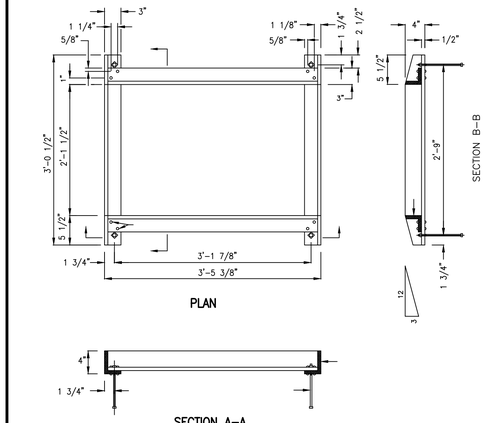


GENERAL NOTES

A. MANHOLE OR VALVE BOX RING AND COVER PER CITY STANDARDS.
B. MANHOLE CONE/EXTENSION OR VALVE PIPE PER STANDARDS. PIPE WITH SMOOTH INTERIOR.
C. 12" SUBGRADE, 95% COMPACTION (ASTM)
D. PAVING SECTION PER APPROVED DRAWINGS.
E. CONCRETE COLLAR IN PAVED AREAS--TYPICAL INSTALLATION.
F. CONCRETE COLLAR IN PAVED AREAS WITH ASPHALT CAP. TO BE USED WHEN CALLED FOR ON PLANS OR AS DIRECTED BY ENGINEER.
G. CONCRETE COLLAR IN DIRT AREAS – SET RING 1" ABOVE GRADE AND SLOPE CONCRETE DOWN AS SHOWN TO 1" BELOW GRADE.
H. WATER VALVE INSTALLATIONS SHALL HAVE SURFACE STAMPED WITH LINE INFORMATION PER STANDARD DWG 2326.

MANHOLE CONCRETE COLLAR

DWG 2461 FEB. 2006



GENERAL NOTES:

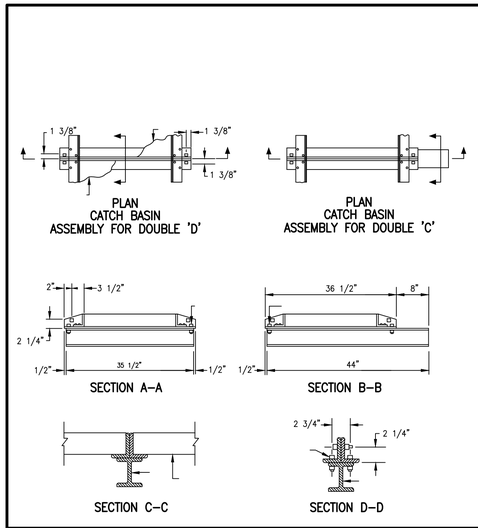
1. ALL EXPOSED METAL PARTS SHALL BE PAINTED PRIOR TO ASSEMBLY. WELDING, MACHINING AND DRILLING SHALL BE DONE PRIOR TO PAINTING. ALL DIMENSIONS ARE FINISHED DIMENSIONS.
2. ALL PARTS SHALL BE OF STRUCTURAL STEEL, GRADE 36.
3. AFTER CLEANING SURFACE OF SCALE, RUST, ETC., GRATING AND FRAME SHALL BE PAINTED WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS ALUMINUM PAINT (AASHTO M 69).
4. FRAME MAY BE WELDED OR RIVETED.

CONSTRUCTION NOTES:

A. 4" X 3" X 1/2" X 3'– 1/2" ∠.
B. 2 – 3/8" RIVETS AT EACH CORNER, SEE GENERAL NOTE NO. 5.
C. 4 – 1/2" X 8" BOLTS WITH SQUARE HEAD & NUT AT EACH CORNER FOR ANCHORING FRAME INTO CONCRETE WALL.
D. 3 – 1/2" X 3" X 3/8" X 3'– 4 – 3/8" ∠.

DRAINAGE STORM INLET FRAME

DWG. 2216



GENERAL NOTES:

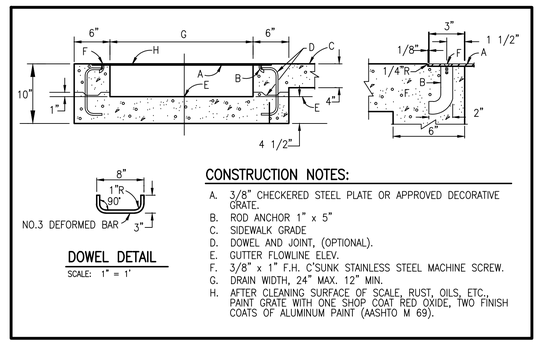
1. ALL BOLTS USED IN CENTER SUPPORT ASSEMBLY SHALL BE 1/2".
2. FRAME MAY BE RIVETED OR WELDED.
3. BOLTS (NOT RIVETS OR WELDS) SHALL BE USED TO JOIN TWO OR MORE FRAMES TOGETHER AND TO THE WF BEAM.
4. AFTER CLEANING SURFACE OF SCALE, RUST, ETC., GRATING, FRAME AND CENTER SUPPORT SHALL BE PAINTED WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS ALUMNUM PAINT (AASHTO M 69).
5. FOR SINGLE TYPE CATCH BASIN, MOVE ONE END WALL TO FROM NEW SINGLE GRATE CATCH BASIN.

CONSTRUCTION NOTES:

A. 4" X 3" X 1/2" X 36 1/2" ∠.
B. 3 1/2" X 3" X 3/8" X 40 3/8" ∠.
C. 5 X 5 WF 18.5 FLANGE BEAM, FOR CATCH BASIN TYPE DOUBLE 'C'.
D. 5 X 5 WF 18.5 FLANGE BEAM, FOR CATCH BASIN TYPE DOUBLE 'D'.
E. 1/2" BOLTS, WITH NUTS TO SECURE ANGLE TO BEAM.
F. FOR FRAME AND GRATE SEE DWGS. 2216 & 2220.

DRAINAGE STORM INLET CENTER SUPPORT ASSEMBLY

DWG. 2215



DOWEL DETAIL

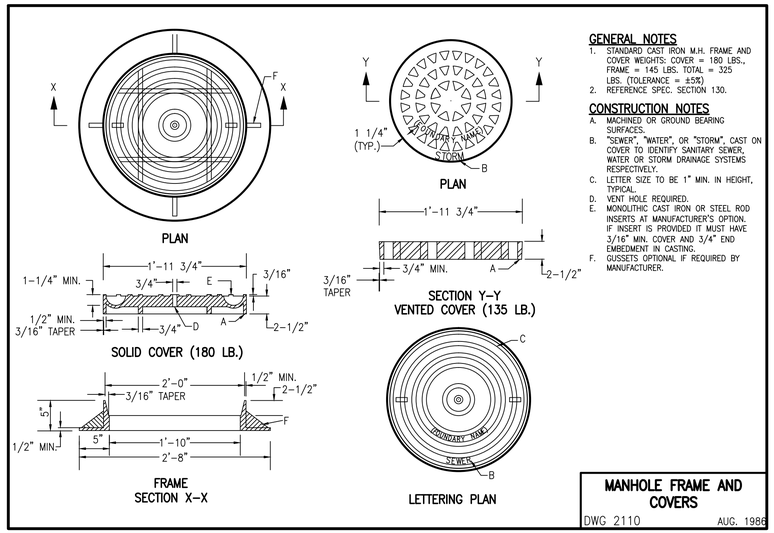
SCALE: 1" = 1'

CONSTRUCTION NOTES:

A. 3/8" CHECKERED STEEL PLATE OR APPROVED DECORATIVE GRATE.
B. ROD ANCHOR 1" x 5"
C. SIDEWALK GRADE
D. DOWEL AND JOINT, (OPTIONAL).
E. GUTTER FLOWLINE ELEV.
F. 3/8" x 1" F.H. C'SUNK STAINLESS STEEL MACHINE SCREW.
G. DRAIN WIDTH, 24" MAX. 12" MIN.
H. AFTER CLEANING SURFACE OF SCALE, RUST, OILS, ETC., PAINT GRATE WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS OF ALUMINUM PAINT (AASHTO M 69).

SIDEWALK CULVERT SECTION

SCALE: 1" = 2"



GENERAL NOTES

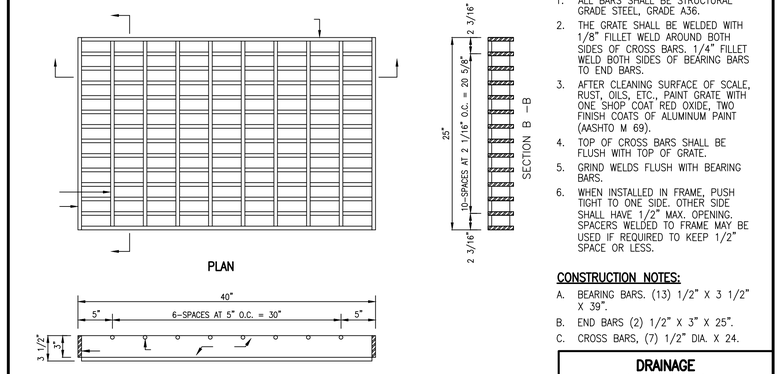
1. STANDARD CAST IRON M.H. FRAME AND COVER WEIGHTS: COVER = 180 LBS., FRAME = 145 LBS. TOTAL = 325 LBS. (TOLERANCE = ±5%)
2. REFERENCE SPEC. SECTION 130.

CONSTRUCTION NOTES

A. MACHINED OR GROUND BEARING SURFACES.
B. "SEWER", "WATER", OR "STORM", CAST ON COVER TO IDENTIFY SANITARY SEWER, WATER OR STORM DRAINAGE SYSTEMS RESPECTIVELY.
C. LETTER SIZE TO BE 1" MIN. IN HEIGHT, TYPICAL.
D. VENT HOLE REQUIRED.
E. MONOLITHIC CAST IRON OR STEEL ROD INSERTS AT MANUFACTURER'S OPTION. IF INSERT IS PROVIDED IT MUST HAVE 3/16" MIN. COVER AND 3/4" END EMBEDMENT IN CASTING.
F. GUSSETS OPTIONAL IF REQUIRED BY MANUFACTURER.

MANHOLE FRAME AND COVERS

DWG 2110 AUG. 1986



GENERAL NOTES:

1. ALL BARS SHALL BE STRUCTURAL GRADE STEEL, GRADE A36.
2. THE GRATE SHALL BE WELDED WITH 1/8" FILLET WELD AROUND BOTH SIDES OF CROSS BARS. 1/4" FILLET WELD BOTH SIDES OF BEARING BARS TO END BARS.
3. AFTER CLEANING SURFACE OF SCALE, RUST, OILS, ETC., PAINT GRATE WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS OF ALUMINUM PAINT (AASHTO M 69).
4. TOP OF CROSS BARS SHALL BE FLUSH WITH TOP OF GRATE.
5. GRIND WELDS FLUSH WITH BEARING BARS.
6. WHEN INSTALLED IN FRAME, PUSH TIGHT TO ONE SIDE. OTHER SIDE SHALL HAVE 1/2" MAX. OPENING. SPACERS WELDED TO FRAME MAY BE USED IF REQUIRED TO KEEP 1/2" SPACE OR LESS.

CONSTRUCTION NOTES:

A. BEARING BARS. (13) 1/2" X 3 1/2" X 39".
B. END BARS (2) 1/2" X 3" X 25".
C. CROSS BARS, (7) 1/2" DIA. X 24.

DRAINAGE STORM INLET GRATE

DWG. 2220

2018.027.1

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PERMIT SET

REVISIONS
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△
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DRAWN BY	J.Y.R.
REVIEWED BY	G.M.
DATE	02.15.2019
PROJECT NO.	18-0038

DRAWING NAME

GRADING AND DRAINAGE SECTIONS AND DETAILS

SHEET NO.

CG502

OF

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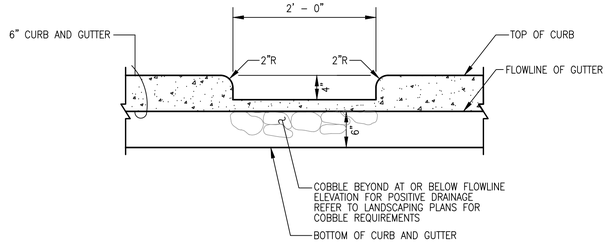
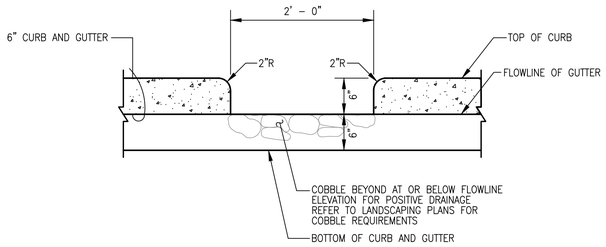


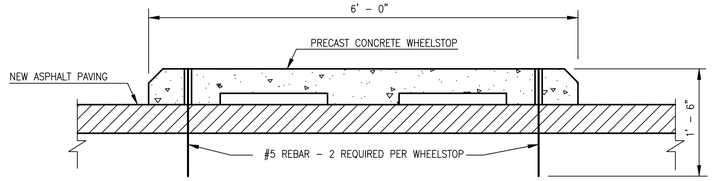
CURB OVERFLOW SECTION

SCALE: 1" = 1'–0"



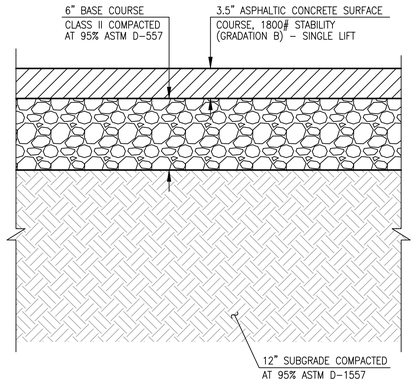
CURB CUT SECTION

SCALE: 1" = 1'–0"



WHEELSTOP SECTION

SCALE: 1" = 1'–0"



TYPICAL 3.5" ASPHALT HEAVY DUTY PAVING SECTION

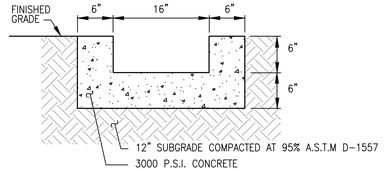
SCALE: 1" = 5" **(VEHICULAR TRAFFIC AREAS)**

SECTION NOTES:

1. CONTRACTOR SHALL TEST SUBGRADE R–VALUE PRIOR TO CONSTRUCTION. IN THE EVENT THE R–VALUE IS LESS THAN 50, CONTRACTOR SHALL REMOVE 2 FT. OF SUBGRADE MATERIAL AND IMPORT SUITABLE MATERIAL WITH R–VALUE 50 OR GREATER.

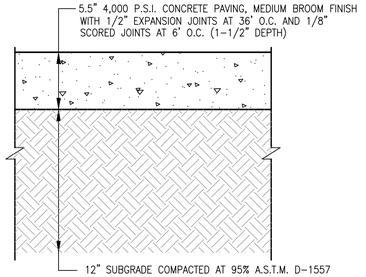
NOTE:

SECTION FROM GEOTECHNICAL REPORT DATED OCTOBER 14, 2018 BY TERRACON NMPE 12132



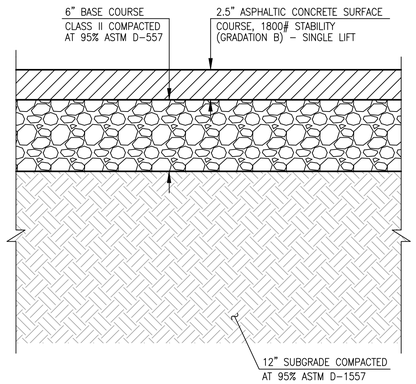
TYPICAL RUNDOWN SECTION

SCALE: 1" = 1'–0"



TYPICAL RE–INFORCED CONCRETE PAVEMENT SECTION

SCALE: 1" = 6"



TYPICAL 2.5" ASPHALT LIGHT DUTY PAVING SECTION

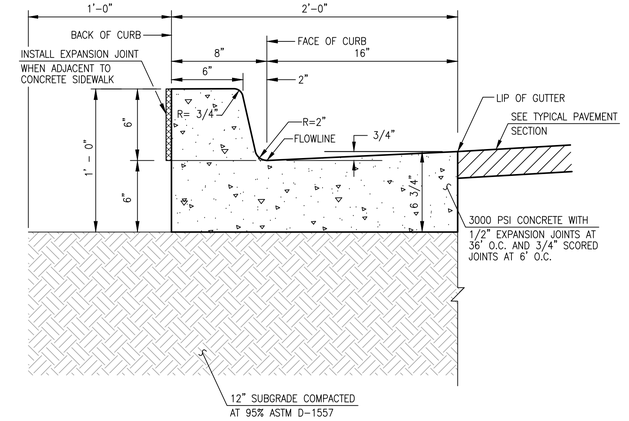
SCALE: 1" = 5" **(VEHICULAR TRAFFIC AREAS)**

SECTION NOTES:

1. CONTRACTOR SHALL TEST SUBGRADE R–VALUE PRIOR TO CONSTRUCTION. IN THE EVENT THE R–VALUE IS LESS THAN 50, CONTRACTOR SHALL REMOVE 2 FT. OF SUBGRADE MATERIAL AND IMPORT SUITABLE MATERIAL WITH R–VALUE 50 OR GREATER.

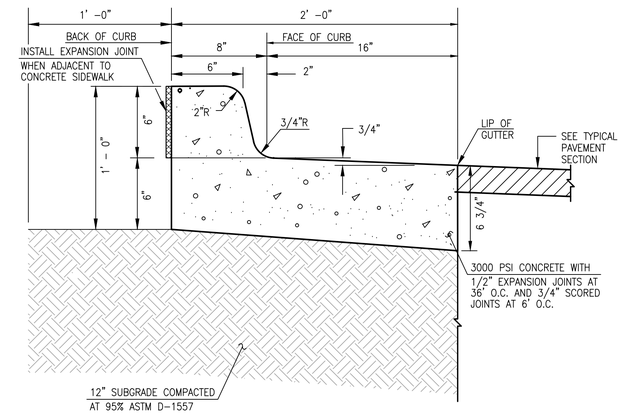
NOTE:

SECTION FROM GEOTECHNICAL REPORT DATED OCTOBER 14, 2018 BY TERRACON NMPE 12132



TYPICAL SIX–INCH CURB & GUTTER

SCALE: 1" = 0'–6"



TYPICAL SIX–INCH DEPRESSED CURB AND GUTTER

SCALE: 1" = 0'–6"

NOTE: USE THIS SECTION FOR CASES WHERE PAVING SLOPES AWAY FROM FACE OF CURB

2018.027.1

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PERMIT SET

REVISIONS

DRAWN BY	J.Y.R.
REVIEWED BY	G.M.
DATE	02.15.2019
PROJECT NO.	18-0038

DRAWING NAME

PAVING SECTIONS AND DETAILS

SHEET NO.

CP501

OF

File Path: P:\DATA\2018\2018.027.1\DWG\ | Plot Date: 02–12–2019
File Name: 180271_BASE.DWG | Plot Time: 2:06 pm