CITY OF ALBUQUERQUE

Planning Department David Campbell, Director



Mayor Timothy M. Keller

January 31, 2019

Hugh W. Floyd, P.E. Respec 5971 Jefferson St. NE Albuquerque, NM, 87109

RE: Legacy NAA Apartments 2 Revised Grading and Drainage Plan Engineer's Stamp Date: 01/02/18 Hydrology File: C18D083

Dear Mr. Floyd:

Based upon the information provided in your revised submittal received 01/25/2019, the Grading and Drainage Plan is approved for Building Permit.

PO Box 1293 Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter. Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

Albuquerque

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Curtis Cherne, PE, <u>ccherne@cabq.gov</u>, 924-3420) 14 days prior to any earth disturbance.

^{www.cabq.gov} The Payment in Lieu payment of \$ 28,776.00 must be paid prior to Permanent Release of Occupancy approval. Please use the attached City of Albuquerque Treasury Deposit form. The Owner needs to bring three copies of this form to the cashier on the Building Permits side of the ground floor and pay the fee. Once paid, please provide Hydrology with one of the copies showing the receipt.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette

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

Hydrology

Hydrology Calculations The following calcualtions are based on Albuquerque's Development Process Manual, Seciton 22.2

Runoff Rate:

	unon nute.								
Т	Treatment Type Areas								
	Subbasin	Area _A (ac)	Area _B (ac)	Area _C (ac)	Area _D (ac)	Total (ac)			
	Subbasin North	0	0.11	0.11	1.62	1.84			
	Subbasin South	0	0.05	0.05	1.62	1.72			
	Subbasin West	0	0.23	0.09	0.54	0.85			
	NAA Allowable	0	1.50	0.71	2.21	4.41			

2.60

cfs/ac

 $Q_{C} =$

3.45

cfs/ac

Peak Discharge values based on Zone 3 from Table A-9 $Q_A = 1.87$ cfs/ac Q_B =

Peak Discharge calculation for a 100-yr, 24-hr storm event from equation A-10

Subbasin	Discharge (cfs)			
Subbasin North	8.8			
Subbasin South	8.4			
Subbasin West	3.6			
Total	20.8			
NAA Allowable	17.4			

Water Quality



 $Q_D = 5.02 \text{ cfs/ac}$

Water Quality:		\wedge		V = A * L
Required Water Quality	y volume for first flush of 0.34	į" <u>/ 1</u>		$\sqrt{1}$ $\sqrt{V_{Petertion}(W_0)} = 20.1 \text{ sf} * 120' * \frac{1 \text{ Acre}}{1 \text{ acre}} = 0.055 \text{ Acre} - f$
			Volume Provided	43,560 fs
Subbasin	Required Volume (cu. ft.)	Drains to	(Cu.Ft)	$(90'' * 1')^2$ 120/ 1 Acre 0.12 A
			total=5,270	$\frac{-v_{total} = \pi * (12'' * 2) * 120' * 43,560 fs}{43,560 fs} = 0.12 \text{Acre} - ft$
Subbasin North	1,998	North Undergroud Pond	(retained=2,395)	
Subbasin South	1,995	South Jnderground Pond	2,005	Vtotal = $(\pi / 4)^* (\frac{90}{12})^2 2^* \frac{40}{43560} = .041 \text{ AC-FT}$
Subbasin West	488	West Underground Ponc	667	
North Roof Drain		North Surface Pond		$\langle \langle \rangle$
Building 2	86		95	SouthPond Volume Provided
South Roof Drain		South Surface Pond	1 k	
Building 3	86		296	
Total	4,655	WQ Ponding TOTAL	8,333	$(60'' * 1')^2$ 1 Acre
			1,058	$\frac{\sqrt{Retention(WQ)} = \pi * \left(\frac{12'' * 2}{12'' * 2}\right) * \frac{102' * 43,560'}{43,560'} = 0.045 \text{ Acre}$
Water Quality pond	ling:			
SOUTH SURFACE POND				
Elev.	Area (Sq. Ft.) Vol (Lu. Ft.)	Lum. (Lu. Ft.)		
33.0	43.0 0.0	200		West Pond Volume Provided
	550.0 296.5	296.5		$(24'' * 1')^2$ 1 4 cre
	Aron (So. Ct.) Mol (Cu. Et.)	Cum (Cu Et)		$V_{Retention (WQ)} = \pi * \left(\frac{21 \times 1}{12'' \times 2}\right) * 250' * \frac{1100}{43.560'} = 0.018 Acr$
216		0.0	^	
32.0	274.0 0.0	0.0		Hydraulics
Δ-ΗΥΜΟ	- Innut			Orifice Rating Curve for North Pond

$\left \right\rangle$	*S* PROJECT NAME: LEGACY NAA APARTMENTS PHASE 2 *S* JOB NO. – 03231 *S* DATE: DECEMBER 13 2018 *S* INPUT FILE NAME: NAANF.hym *S* OUTPUT FILE NAME: NAANF.out ************************************					
\geq	* 24-hr, 100 year storm event RAINFALL TYPE=13 RAIN QUARTER=0.0 RAIN ONE=2.14 RAIN SIX=2.60 RAIN DAY=3.10 DT=0.05 HRS					
$\left \right\rangle$	*S**** COMPUTE SAN PEDRO STORM DRAIN PROJECT (THOMPSON REPORT) *S**** BASIN 117.20-NORTH COMPUTE NM HYD ID=1 HYD NO=SPSDP.BASIN.117.2 DA=0.00348 SQ MI PER A=0 PER B=34 PER C=16 PER D=50 TP=0.1333 HR MASS RAIN=-1 PRINT HYD ID=1 CODE=20					
$\langle \rangle$	*S**** BASIN 117.30-SOUTH COMPUTE NM HYD ID=2 HYD NO=SPSDP.BASIN.117.3 DA=0.00346 SQ MI PER A=0 PER B=34 PER C=16 PER D=50 TP=0.1333 HR MASS RAIN=-1 PRINT HYD ID=2 CODE=20 *					
$\left \right\rangle$	*S****RESPEC CALCULATIONS *S***SUBBASIN NORTH COMPUTE NM HYD ID=3 HYD NO=BasinNorth DA=0.00288 SQ MI PER A=0 PER B=6 PER C=6 PER D=90 TP=0.1333 HR MASS RAIN=-1 PRINT HYD ID=3 CODE=20					
	*S**** SUBBASIN SOUTH COMPUTE NM HYD ID=4 HYD NO=BasinSouth DA=0.00270 SQ MI PER A=0 PER B=3 PER C=3 PER D=94 TP=0.1333 HR MASS RAIN=-1 PRINT HYD ID=4 CODE=20					
\geq	*S**** SUBBASIN WEST COMPUTE NM HYD ID=5 HYD NO=BasinWest DA=0.00134 SQ MI PER A=0 PER B=27 PER C=10 PER D=63 TP=0.1333 HR MASS RAIN=-1 PRINT HYD ID=5 CODE=20 *					
$\left \right\rangle$	* *S NORTH POND ROUTING – POND RATING CURV ROUTE RESERVOIR ID=7 HYD=POND1 INFLOW ID=3 CODE=1 OUTFLOW(CFS) STORAGE(AC FT) ELEV(FT)					
	0.01 0 5222 0.7 0 5223.5 1.7 0 5223.5 2.2 0 5224.5 3.1 0 5225.5 3.4 0 5225.5 4.0 0 5226.5 4.3 0 5226.5 4.6 0 5227.5 5.0 0 5228.5 5.19 .01 5228.49 5.19 .01 5228.49 5.19 .02 5228.499 5.2 .037 5228.5 5.5 .039 5229 5.7 .041 5229.5					
$\left \right\rangle_{\Gamma}$	A-HYMO - Output					

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COMMAND IDENT ACRE NOTATION	IFICATION	NO.	NO.	(SQ MI)	(CFS)	(AC-FT)	(INCHES)	(HOURS)
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RAINFALL TYPE=13								
AIN24= 3.100								
*S**** COMPUTE SAN	PEDRO STORM	DRAII	N PROJECT	(THOMPSON	REPORT)			
*S**** BASIN 117.20	-NORTH							
COMPUTE NM HYD SPS	DP.BASIN.	-	1	0.00348	8.67	0.360	1.94076	1.500
.894 PER IMP= 50.00								
*S**** BASIN 117.30	-SOUTH		2	0 00246	0 ()	0 250	1 04076	1 500
COMPUTE NM HID SPS	DF.BASIN.	-	2	0.00340	8.0∠	0.358	1.940/6	1.500
*S****RESPEC CALCUL	ATIONS							
*S****SUBBASIN NORT	H							
COMPUTE NM HYD B	asinNorth	-	3	0.00288	8.69	0.407	2.64914	1.500
.715 PER IMP= 88.24								
*S**** SUBBASIN SOU	TH				0.04	0.000	0 55100	
COMPUTE NM HYD B	asınSouth	-	4	0.00270	8.34	0.396	2.75109	1.500
*.82/ PEK IMP= 94.00 *C**** GIIBBAGIN WFC	т							
COMPUTE NM HYD	BasinWest	_	5	0.00134	3.57	0.155	2,17270	1.500
.164 PER IMP= 63.00			2		5.57	0.100	2.2.2/0	1.000
*S NORTH POND ROUTI	NG - POND R.	ATING	CURV					
		-	-			0 555	0 60056	1 600



 $\frac{2' * \frac{1 \, Acre}{43,560'} = 0.045 \, Acre - f}{43,560'}$ * 250' * $\frac{1 \, Acre}{43,560'} = 0.018 \, Acre$ PROPOSED **RETAINING WALL** <u>Pond</u> Q_o = .6A√2gh $Q_o = Capacity (cfs)$ 5.7 0.44 A = Open area of grate (sq. ft) g = 32.2 (ft/s2) H = Head (ft) to orifice centroid 7.125 Orifice Rating Curve Elev (ft) Head (ft) Q (CFS) 5222 0.0 0 5222.5 0.125 0.7 5223 0.625 1.7 5223.5 1.125 2.2 5224 1.625 2.7 5224.5 2.125 3.1 5225 2.625 3.4 5225.5 3.125 3.7 5226 3.625 4.0 5226.5 4.125 43 5227 4.625 4.6 5227.5 5.125 48 5228 5.625 5.0 5228.5 6.125 5.2 5229 6.625 5.5 5229.5 7.125 5.7 Weir Calculation for 2' Sidewalk Culvert 0.5 ft Head Water Depth (h): Discharge Coeff. (C_w): 3.367 2 ft Length (L): Flow (Q) = $C_w \cdot L \cdot h^{(1.5)}$ 2.4 cfs Flow(Q) =ALAMEDA SD





AND CAP INLET

EQUIVALENT

PROPOSED

∠0.018 ac.ft

0

The Owner has elected to pay the Payment in Lieu for the required Stormwater Quality Volume of 3,597 CF. This payment Amount = 3,597 CF x \$8/CF = \$28,776.00.







	LEGEND
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	PROPOSED UNDERGROUND POND
	ROPOSED SIDEWALK CULVERT
Ø	PROPOSED SD MANHOLE
FF=00.00	PROPOSED FINISH FLOOR ELEVATION





Background

Phase 2 of the Legacy NAA Apartments account for 4.44 acres within the City of Albuquerque, Bernalillo County, New Mexico. This property is located east of San Pedro Drive between Alameda Boulevard and Oakland Avenue. There is a shaded Zone X floodplain that effects a small part of the northern portion of the site.

The site does not currently receive any offsite flows but has previously received flows from the adjacent properties to the east. The adjacent site is currently under construction and no longer discharges onto the project area (C18D064B). This area is included in the North Albuquerque Acres Master Drainage Plan (NAAMDP). The northern half of the property is allowed to discharge to the San Pedro storm drain and the southern half is allowed to discharge to the Alameda storm drain per the modified Design Analysis Report "Alameda Blvd. - San Pedro to Wyoming" (DARASPW) by Thompson Engineering Consultants (#7663.91, January 2012)

Methodology

Hydrology Calculations for the site are performed in accordance with the Albuquerque Development Process Manual (DPM) Section 22 using AHYMO to calculate peak flow rates in order to ensure all flow paths are sufficient to carry flows effectively throughout the site. The water quality pond volume was calculated by multiplying the first flush runoff value of 0.34" by the impervious area of each sub basin. All hydrologic and hydraulic calculations can be found on this sheet.

Existing Conditions

The existing property slopes from east to west at approximately 3%. The site is currently developed and was previously used as a parking space for the Toyota dealership across San Pedro Drive (C18D083). The site runoff is currently free discharging to the northwest into an existing storm drain in San Pedro.

Proposed Conditions

The DARSPSD uses a developed impervious area of 50%, which is consistent with the assumption in the NAAMDP. One subbasin was created to model the allowable flow rate for the northern half of the property. Subbasin 117.20-NORTH is 2.23 acres and generates 8.67 cfs. The 8.67 cfs represents the allowable flow rate to the San Pedro storm drain - See A-HYMO calcs. The DARASPW revises the NAADMP allowable discharge for the southern half of the property to 3.82 cfs per acre. The southern portion of the site is 2.21 acres. Therefore, the allowable flow rate to the Alameda storm drain is 8.62 cfs.

Three proposed subbasins were created to model the developed flow rate for the proposed site. Subbasin North is 1.84 acres and was routed through an underground storage, using a 0.75' diameter orifice plate to reduce the peak flow. After routing storm water through the underground storage and orifice plate the subbasin now generates 8.69 cfs and discharges a reduced flow rate of 5.33 cfs to the San Pedro storm drain. Subbasin West is 0.85 acres and generates 3.57 cfs. Subbasin West discharges to the San Pedro storm drain. Therefore, there is a total developed flow rate to the San Pedro storm drain of 8.90 cfs. Subbasin South is 1.72 acres and generates 8.34 cfs. Subbasin South discharges to the Alameda storm drain. The total developed flow rate that enters the San Pedro storm drain is 17.24 cfs per AHYMO, which is below the allowable, 17.29 cfs per Thompson's Alameda AHYMO model.

It is proposed to install two underground ponds - North and West. The North pond will be located under the west proposed drive aisle and the West Pond will be located between the west property line and the buildings. The North Pond will function as a detention pond. This will reduce the north subbasin peak flows from 8.69 cfs to 5.33 cfs. The West subbasin pond is designed to retain 448 cu.ft coming from the West roof drains of Buildings 2 and 3, while the North and South surface ponds designed to retain 170 cu.ft coming from the North and South roof drains of Buildings 2 and 3 respectively - see tables for Water Quality calculation. The south subbasin is routed directly to the Alameda storm drain. The total required water quality pond volume for the site is 4,655 cubic feet. The total volume provided is 1,058 cubic feet. It has been determined that a payment-in-lieu will be provided for the 3,597 cubic feet of water quality volume not provided.

Alameda SD HGL shows elevation of 5230 ft (COA 7663.91). According to outlet control analysis, the developed site addition will be 0.9 ft to HGL (See graph). Total HGL=5230.95, lower than grate elevation, 5231.90.

San Pedro SD HGL shows elevation of 5230 ft (COA 5304.91). the developed site has no effect on the HGL. (See graph). Oakland SD HGL shows elevation of 5234.5 ft (COA 742484), pipe is at inlet

control. See Manning's calcs for pipe's capacity.



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MAP NUMBER 35001C0137H EFFECTIVE 8/16/2012

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RESPEC

5971 JEFFERSON STREET SUITE 101

ALBUQUERQUE, NEW MEXICO 87109

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NOTE: ALL PROPOSED SPOT ELEVATIONS INDICATE FLOW LINE SPOT ELEVATIONS



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APARTMENTS - II SAN PEDRO AND ALAMEDA Albuquerque, New Mexico



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NOTE: ALL PROPOSED SPOT ELEVATIONS INDICATE FLOW LINE SPOT ELEVATIONS



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NOTE: ALL PROPOSED SPOT ELEVATIONS INDICATE FLOW LINE SPOT ELEVATIONS





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GENERAL NOTES:

1. ALL PUBLIC INFRASTRUCTURE WILL BE BUILT WITH A PUBLIC WORK ORDER.

2. ALL SINGLE CLEAN OUTS WILL SWEEP

DOWNSTREAM.ON-SITE HYDRANT WILL BE PAINTED SAFETY

E WILL BE BUILT WITH L SWEEP AINTED SAFETY

LEGEND

PROPERTY BOUNDARY

W EXISTING WATER LINE

www.www.proposed water line

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4" - 3500 PSI PCC PAD (SEE CONCRETE PAD PLAN)

CHAMFER EDGE

LANDSCAPE, ~ ASPHALT, OR CONCRETE PAVING

EXISTING SANITARY SEWER LINE

PROPOSED SEWER MANHOLE

4 x 4 x 6 GAGE WELDED WIRE MESH

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CONCRETE PAD PLAN

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REVISIONS
1/2/19 RESIZE SD AND ADJUST FIRE LINE
2 1/18/19 MOVED FH AND FDCS
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FIRST CITY SUBMITTAL
DATE: JANUARY 24, 2019 ORB # 17-219
C-7 SITE UTILITY

RETAINING WALL GENERAL NOTES

- COMPACT SUBGRADE TO 95% MIN. RELATIVE DENSITY (12" MIN. DEPTH) PER ASTM D1557. IF CLAY OR LOOSE SAND IS ENCOUNTERED. CONTACT THE ENGINEER BEFORE PROCEEDING.
- 2. COMPACT BACKFILL TO 90% MIN. RELATIVE DENSITY PER ASTM D1557. CONTRACTOR IS RESPONSIBLE FOR METHOD OF PLACEMENT AND COMPACTION OF BACKFILL MATERIALTO ENSURE THAT LOADS SUFFICIENT TO CAUSE DAMAGE TO WALL ARE NOT EXCEEDED.
- 3. MAINTAIN 2" MINIMUM CLEARANCE BETWEEN ALL REINFORCING BARS AND OUTSIDE SURFACE OF FORMED CONCRETE, 3" BETWEEN BARS AND OUTSIDE SURFACE OF CONCRETE POURED AGAINST EARTH.
- 4. ALL BLOCKS ARE TO BE GROUTED SOLID WITH CONCRETE BLOCK FILL.
- 5. CONCRETE FOR FOOTINGS AND FILLING OF CELLS SHALL MEET OR EXCEED 3,000 P.S.I. AT 28 DAYS, WITH 3/4" MAXIMUM SIZE AGGREGATE, AND A MAXIMUM SLUMP OF 5".
- 6. MASONRY MORTAR SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C 270, TYPE M.
- 7. WALL BLOCKS ARE TO BE STANDARD MASONRY UNITS (8"X8"X16" OR AS OTHERWISE INDICATED).
- 8. INSTALL 9 GA., GALV. DUR-O-WAL (OR APPROVED EQUAL) EVERY OTHER COURSE (16" OC), OR BOND BEAM WITH 2-#4 REBAR EVERY THIRD COURSE (24" OC, MAX.).
- 9. REINFORCING STEEL SPLICES SHALL HAVE 24" MIN. LAPS.
- 10. THE TOP COURSE OF BLOCK SHALL USE 2" SOLID MASONRY UNITS AS CAPS, UNLESS A 6" CMU PARTY WALL IS TO BE INSTALLED ON TOP OF A RETAINING WALL.
- 11. DRAIN BLOCKS FOR PARTY WALLS SHALL CONSIST OF STANDARD MASONRY UNITS TURNED FACE DOWN. THEY SHALL BE INSTALLED THROUGH THE 6" PARTY WALL ABOVE THE RETAINING WALL SECTION AFTER THE RETAINING WALL SECTION IS COMPLETE AND BACKFILLED, AND AT LOCATIONS SPECIFIED BY THE OWNER.
- 12. ALL WALLS FACING PUBLIC ROW MUST BE SPRAYED WITH ANTI-GRAFITTI COATING. USE PROSOCO DEFACER ERASER OR APPROVED EQUAL. (AT OWNERS DIRECTION).
- 13. IF WALL IS TO BE CONSTRUCTED WITH PILASTERS (TO BE SPECIFIED BY OWNER), THEN CONSTRUCT PILASTERS AT 16' ON CENTERS (MAXIMUM). AND AS APPROPRIATE FOR CORNERS, JUNCTIONS, ANGLE POINTS AND ENDS. PILASTER BLOCKS ARE TO BE SIZED APPROPRIATELY FOR THE INTENDED APPLICATION. THE TOP OF PILASTERS SHALL HAVE 2" SOLID MASONRY UNITS OF APPROPRIATE SIZE UNLESS CMU PARTY WALL IS TO BE INSTALLED ON TOP OF RETAINING WALL.
- 14. ALL CMU AND MORTAR COLOR SHALL BE AT THE OWNERS DIRECTION.
- 15. IF NO PILASTERS ARE TO BE CONSTRUCTED THE APPROPRIATE EXPANSION / CONTRACTION JOINTS SHALL BE PROVIDED AT 16' O.C. MAXIMUM SPACING.
- 16. ALL WALLS SHOWN HERE ON HAVE BEEN DESIGNED TO ACCEPT A 6' (MAX.) CMU PARTY WALL.
- 17. EXTEND #4 BARS AT 48" O.C. WITH MINIMUM INBEDMENT OF 16" IN RETENTION WALL FOR LOCATIONS TO INCLUDE CMU PARTY WALLS.
- 18. WATERPROOFING SHALL BE HYDROCIDE LIQUID MEMBRANE HLM 5000 OR APPROVED EQUAL, AND SHALL BE APPLIED FROM FINISHED GRADE TO TOP OF FOUNDATION.
- 19. PARTY WALL DETAILS NOT INCLUDED, TO BE PROVIDED BY OWNER.

CMU FENCE GENERAL NOTES

- COMPACT SUBGRADE TO 95% MIN. RELATIVE DENSITY (12" MIN. DEPTH) PER ASTM D1557. IF CLAY OR LOOSE SAND IS ENCOUNTERED, CONTACT THE ENGINEER BEFORE PROCEEDING.
- COMPACT BACKFILL TO 90% MIN. RELATIVE DENSITY PER ASTM D1557. CONTRACTOR IS 2. RESPONSIBLE FOR METHOD OF PLACEMENT AND COMPACTION OF BACKFILL MATERIALTO ENSURE THAT LOADS SUFFICIENT TO CAUSE DAMAGE TO WALL ARE NOT EXCEEDED.
- 3. MAINTAIN 2" MINIMUM CLEARANCE BETWEEN ALL REINFORCING BARS AND OUTSIDE SURFACE OF FORMED CONCRETE, 3" BETWEEN BARS AND OUTSIDE SURFACE OF CONCRETE POURED AGAINST EARTH.
- 4. ALL CELLS WITH REBAR AND ALL MASONRY BELOW GRADE ARE TO BE GROUTED SOLID WITH CONCRETE BLOCK FILL.
- 5. CONCRETE FOR FOOTINGS AND FILLING OF CELLS SHALL MEET OR EXCEED 3,000 P.S.I. AT 28 DAYS, WITH 3/4" MAXIMUM SIZE AGGREGATE, AND A MAXIMUM SLUMP OF 5".
- 6. MASONRY MORTAR SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C 270, TYPE M.
- 7. WALL BLOCKS ARE TO BE STANDARD MASONRY UNITS
- 8. REINFORCING STEEL SPLICES SHALL HAVE 24" MIN. LAPS.
- 9. THE TOP COURSE OF BLOCK SHALL BE 2" SOLID MASONRY UNIT CAPS.
- 10. DRAIN BLOCKS FOR PARTY WALLS SHALL CONSIST OF STANDARD MASONRY UNITS TURNED FACE DOWN. THEY SHALL BE INSTALLED THROUGH THE 6" PARTY WALL AT LOCATIONS SHOWN ON PLAN AND/OR SPECIFIED BY THE OWNER.
- 11. ALL WALLS FACING PUBLIC ROW MUST BE SPRAYED WITH ANTI-GRAFITTI COATING. USE PROSOCO DEFACER ERASER OR APPROVED EQUAL. (AT OWNERS DIRECTION).
- 12. IF WALL IS TO BE CONSTRUCTED WITH PILASTERS (TO BE SPECIFIED BY OWNER), THEN: A. CONSTRUCT PILASTERS AT 16' ON CENTERS (MAXIMUM), AND AS APPROPRIATE FOR CORNERS, JUNCTIONS, ANGLE POINTS AND ENDS. PILASTER BLOCKS ARE TO BE SIZED APPROPRIATELY FOR THE INTENDED APPLICATION.
- B. PILASTERS SHALL HAVE 2" SOLID MASONRY UNITS OF APPROPRIATE SIZE.
- C. PROVIDE 1 "J-BAR" AND VERITICAL BAR, IF NORMAL SPACING DOES NOT DO SO, OF SPECIFIED SIZE AT EACH PILASTER
- D. ALL PILASTER CELLS ARE TO BE GROUTED WITH CONCRETE BLOCK FILL.
- 13. IF NO PILASTERS ARE TO BE CONSTRUCTED THEN:
- A. PROVIDE APPROPRIATE EXPANSION/CONTRACTION JOINTS AT 16' O.C. MAXIMUM SPACING. B. PROVIDE "J-BAR" AND VERTICAL BAR OF SPECIFIED SIZE, IF NORMAL SPACING DOES
- NOT DO SO, AND GROUT FILL FIRST CELL ON EITHER SIDE OF EXPANSION/CONTRACTION JOINTS.
- C. DISCONTINUE BOND BEAM AT EXPANSION/CONTRACTION JOINTS.
- 14. ALL CMU AND MORTAR COLOR SHALL BE AT THE OWNERS DIRECTION UNLESS OTHERWISE SPECIFIED HEREIN.
- 15. WALL, INCLUDING FOOTING, SHALL NOT EXTEND ACROSS ANY PROPERTY LINE OR RIGHT-OF-WAY WITHOUT THE WRITTEN CONSENT OF THE ADJACENT PROPERTY OWNER OR RIGHT-OF-WAY AUTHORITY.





- RETAINING WALL FOR LOCATIONS TO INCLUDE CMU PARTY WALL



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FIRST CITY SUBMITTAL
DATE: JANUARY 24, 2019 ORB # 17-219
C-9
STORM DRAIN DETAILS



CROSS-SECTION A-A

NTS









NTS

CROSS-SECTION B-B













NTS

TYPICAL PAVEMENT SECTION FOR PARKING LOTS NTS



SWALE TYPICAL DETAIL

NTS



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- 3" ASPHALT CONCRETE IN 1 LIFT — 4" AGGREGATED BASE COARSE - 12" SUBGRADE PREPERATION @95% MAXIMUM DENSITY PER ASTM D-1557

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