CITY OF ALBUQUERQUE

Timothy M. Keller, Mayor

February 13, 2018

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

RE: General Mills Warehouse Addition
Grading Plan
Engineer's Stamp Date: 01/30/18
Hydrology File: C16D002

Dear Mr. Means:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 01/30/2018, the Grading Plan is approved for Building Permit and Foundation Permit.

Please attach a copy of this approved plan in the construction sets for Building Permit processing. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

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

Orig: Drainage File

2017.063.3

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 10/2015)

Project Title: General Mills Warehouse Addition Building Permit #: _____ Hydrology File #: C-16

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

Legal Description: Tract C-1-A-1 Lands of Springer Building Materials Corp

City Address: 3501 Paseo Del Norte Blvd NE, Albuquerque NM 87113

Applicant: High Mesa Consulting Group Contact: J. Graeme Means

Address: 6010-B Midway Park Blvd. NE, Albuquerque, NM 87102

Phone#: 505-345-4250 Fax#: 505-345-4254 E-mail: Gmeans@highmesacg.com

Other Contact: Klinger Constructors LLC Contact: Joel Loes

Address: 8701 Washington Street NE, Albuquerque NM 87113

Phone#: 505-856-8203 Fax#: _____ E-mail: joell@klingerllc.com

Check all that Apply:

DEPARTMENT:

- ✔ HYDROLOGY/ DRAINAGE
- ☐ TRAFFIC/ TRANSPORTATION
- ☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ARCHITECT CERTIFICATION
- ☐ CONCEPTUAL G & D PLAN
- ✔ GRADING PLAN
- ☐ DRAINAGE MASTER PLAN
- ☐ DRAINAGE REPORT
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ TRAFFIC IMPACT STUDY (TIS)
- ☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ OTHER (SPECIFY) _____

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ✔ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ SITE PLAN FOR SUB'D APPROVAL
- ☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
- ✔ FOUNDATION PERMIT APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ SO-19 APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ GRADING/ PAD CERTIFICATION
- ☐ WORK ORDER APPROVAL
- ☐ CLOMR/LOMR
- ☐ **PRE-DESIGN MEETING?**
- ☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ✔ No

DATE SUBMITTED: 01-30-2018 By: Justin Schara

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE NORTH VALLEY AREA OF THE ALBUQUERQUE METROPOLITAN AREA, REPRESENTS A MODIFICATION TO AN EXISTING INDUSTRIAL SITE WITHIN AN INFILL AREA. THE PROPOSED CONSTRUCTION CONSISTS OF A NEW BUILDING ADDITION TO AN EXISTING WAREHOUSE IN THE NORTHEAST CORNER OF THE GENERAL MILLS SITE. THE NEW BUILDING ADDITION WILL REPLACE EXISTING IMPERVIOUS PAVED AREA IMMEDIATELY NORTH OF THE EXISTING WAREHOUSE. THE DRAINAGE CONCEPT WILL BE THE CONTINUED DISCHARGE OF DEVELOPED RUNOFF FROM THE NEW BUILDING ADDITION TO AN EXISTING RETENTION POND LOCATED IMMEDIATELY NORTH OF THE PROJECT AREA. THE PROPOSED IMPROVEMENTS WILL NOT CHANGE THE RUNOFF GENERATED DUE TO REPLACING IMPERVIOUS AREA WITH BUILDING AREA. THERE WILL BE NO NET CHANGE IN RUNOFF GENERATED.

THE CITY FIRST FLUSH ORDINANCE WILL BE MET BY MAINTAINING THE EXISTING SITE CRITERIA REQUIRING ONSITE RETENTION OF ALL DEVELOPED DISCHARGE PER THE 1998 MASTER DRAINAGE STUDY (REFERENCED BELOW).

THIS SUBMITTAL IS MADE IN SUPPORT OF BUILDING PERMIT TO BE ISSUED BY THE CITY OF ALBUQUERQUE.

II. PROJECT DESCRIPTION

AS SHOWN ON THE VICINITY MAP, THE PROPOSED PROJECT SITE IS SITUATED IN THE NORTHEAST PORTION OF THE GENERAL MILLS INDUSTRIAL SITE NEAR THE INTERSECTION OF EDITH BLVD NE AND PASEO DEL NORTE BLVD. AS SHOWN BY PANEL 136 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE. HOWEVER, BASED UPON THE 1998 MASTER DRAINAGE STUDY REFERENCED BELOW, THE SITE IS REQUIRED TO RETAIN DEVELOPED RUNOFF ONSITE DUE TO THE LACK OF AN OUTFALL; THIS PROJECT WILL CONTINUE TO DISCHARGE DEVELOPED RUNOFF TO THE EXISTING ONSITE RETENTION POND.

III. BACKGROUND DOCUMENTS

THE PREPARATION OF THIS PLAN RELIED UPON THE FOLLOWING DOCUMENTS:

- GENERAL MILLS PLANT MASTER DRAINAGE STUDY PREPARED BY CHAVEZ GRIEVES, NMPE 13672, DATED 11-25-1998. THE MASTER DRAINAGE STUDY ESTABLISHED THE EXISTING DRAINAGE BASINS FOR THE GENERAL MILLS PLANT SITE, AND THE CRITERIA FOR ONSITE RETENTION OF DEVELOPED RUNOFF FROM THE MAJORITY OF THE SITE BASINS (ONLY BASINS A & G ARE PERMITTED OFFSITE DISCHARGE). THIS PROJECT LIES WITHIN BASIN C AS DEFINED BY THE MASTER DRAINAGE STUDY AND RUNOFF FROM THE PROJECT AREA DRAINS TO AN EXISTING ONSITE RETENTION POND LOCATED AT THE NORTHEAST CORNER OF BASIN C.
- PARTIAL TOPOGRAPHIC AND UTILITY SURVEY OF GENERAL MILLS PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184. DATED 12-27-2017. THE SUBJECT SURVEY PROVIDES THE BASIS FOR THE EXISTING CONDITIONS OF THE PROJECT SITE AS DEPICTED BY THIS SUBMITTAL.

IV. EXISTING CONDITIONS

THE PROJECT SITE IS LOCATED AT THE NORTHEAST CORNER OF THE OVERALL SITE AND IS WHOLLY CONTAINED WITHIN BASIN C AS DEFINED BY THE 1998 MASTER DRAINAGE STUDY. THE PROJECT SITE CONSISTS OF AN EXISTING WAREHOUSE BUILDING AND ASSOCIATED PAVED PARKING, DELIVERY DOCK AND DRIVEWAY. RUNOFF FROM THE PROJECT AREA DRAINS FROM SOUTH TO NORTH VIA BOTH SURFACE AND SUBSURFACE DRAINAGE (STORM DRAIN) IMPROVEMENTS INTO AN EXISTING ONSITE RETENTION POND AT THE NORTHEAST CORNER OF BASIN C. CALCULATIONS INCLUDED HEREIN DEMONSTRATE THAT THE EXISTING RETENTION POND CAPACITY (331,715 CF WITH TWO FEET OF FREEBOARD) IS MUCH GREATER THAN THE 100 YEAR, 10 DAY STORM EVENT VOLUME GENERATED BY THE CONTRIBUTING BASIN C (150,570 CF), THEREFORE THE 1998 MASTER DRAINAGE STUDY CRITERIA FOR ONSITE RETENTION IS MAINTAINED.

THERE ARE NO OFFSITE FLOWS IMPACTING THE PROJECT SITE. AN EXISTING RAILROAD EMBANKMENT ON THE NORTH AND EAST OF THE SITE BLOCK ANY FLOWS FROM THOSE DIRECTIONS, AND RUNOFF FROM ADJACENT PORTIONS OF THE SITE TO THE SOUTH AND WEST OF THE PROJECT AREA ARE DISCHARGED TO OTHER RETENTION FACILITIES ONSITE.

V. DEVELOPED CONDITIONS

THE PROPOSED PROJECT AREA IS WHOLLY CONTAINED WITHIN DRAINAGE BASIN C AS DEFINED BY THE 1998 MASTER DRAINAGE STUDY. THE PROPOSED CONSTRUCTION CONSISTS OF A NEW WAREHOUSE BUILDING ADDITION THAT WILL REPLACE EXISTING IMPERVIOUS PAVED PARKING. NEW PRIVATE SUBSURFACE STORM DRAINS WILL BE INSTALLED TO COLLECT RUNOFF FROM THE NEW WAREHOUSE ADDITION AND THE EXISTING DELIVERY DOCK IMMEDIATELY EAST OF THE ADDITION, AND CONVEY IT NORTH TO DISCHARGE INTO AN EXISTING ONSITE RETENTION POND WITHIN BASIN C, MAINTAINING THE 1998 MASTER DRAINAGE STUDY CRITERIA OF RETAINING DEVELOPED RUNOFF ONSITE. THERE WILL BE NO INCREASE IN RUNOFF GENERATED BY THE SITE DUE TO REPLACING IMPERVIOUS PAVED AREA WITH IMPERVIOUS BUILDING AREA.

AS PER THE EXISTING CONDITION, THERE ARE NO OFFSITE FLOWS THAT IMPACT THE PROJECT SITE.

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING AND PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 2.) THE LIMIT AND CHARACTER OF THE EXISTING AND PROPOSED IMPROVEMENTS, AND 3.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE PROPOSED IMPROVEMENTS WILL MAINTAIN THE CURRENT DRAINAGE PATTERN OF THE SITE, DISCHARGING DEVELOPED RUNOFF TO THE EXISTING ONSITE RETENTION POND VIA NEW SUBSURFACE STORM DRAIN IMPROVEMENTS.

VII. FIRST FLUSH

THE FIRST FLUSH GENERATED BY THE PROPOSED IMPROVEMENTS WILL BE DISCHARGED TO THE EXISTING ONSITE RETENTION POND AND CONTAINED THEREIN, THEREBY MEETING THE CITY FIRST FLUSH ORDINANCE REQUIREMENTS. ALL RUNOFF FROM THIS BASIN WILL BE FULLY RETAINED ON SITE.

VIII. EROSION CONTROL PLAN

THIS PROJECT WILL DISTURB LESS THAN ONE-ACRE OF LAND, THEREFORE A SEPARATE SEDIMENT EROSION CONTROL PLAN AND STORM WATER POLLUTION PREVENTION PLAN ARE NOT REQUIRED.

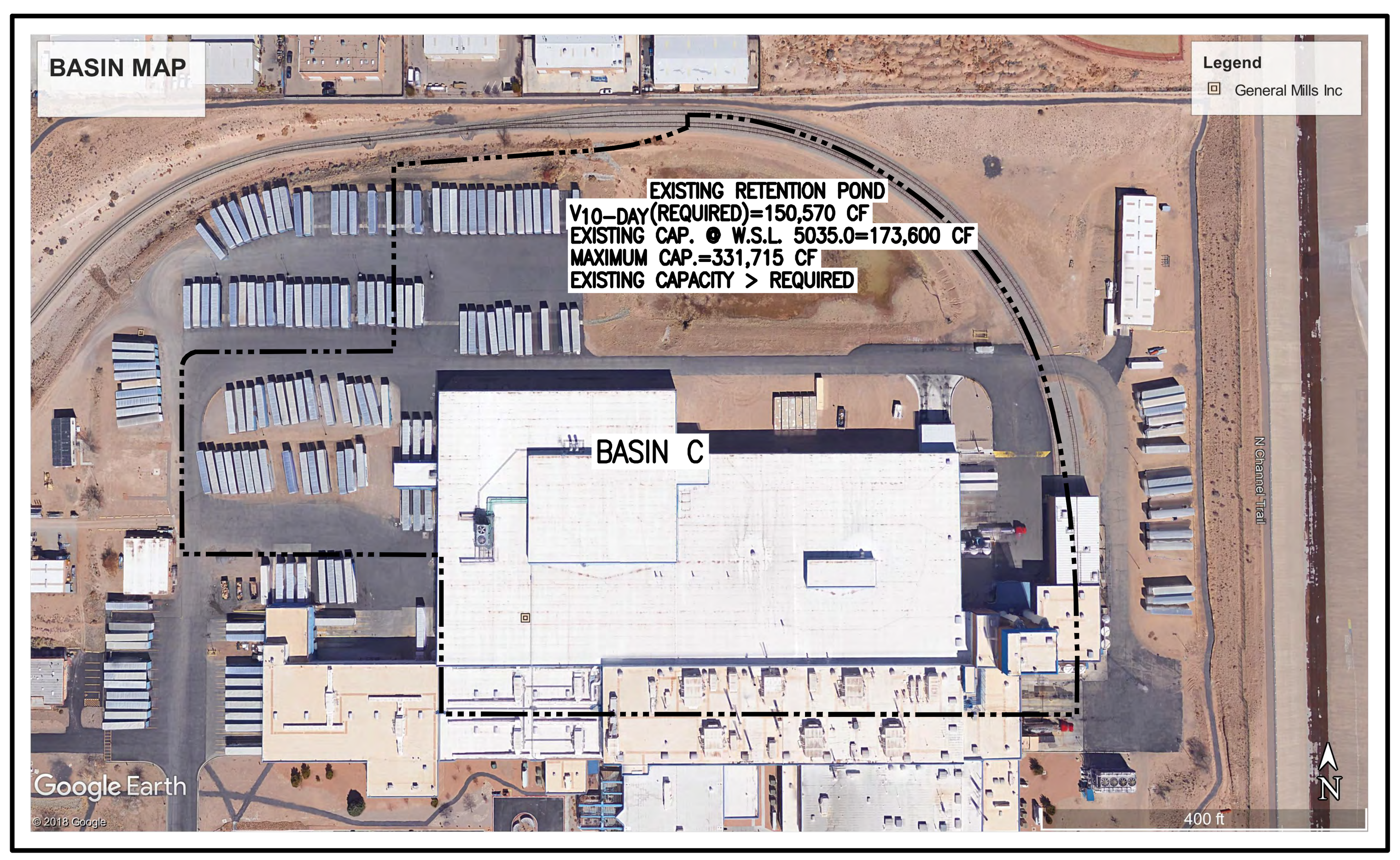
IX. CALCULATIONS

THE CALCULATIONS CONTAINED HEREON ANALYZE THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6 AND 24-HOUR RAINFALL EVENTS FOR BASIN C OF THE SITE, WHICH INCLUDES THE PROJECT AREA. 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 THESE CALCULATIONS, THERE WILL BE NO CHANGE TO THE RUNOFF GENERATED DUE TO REPLACING IMPERVIOUS AREA WITH IMPERVIOUS. EXISTING RETENTION POND CALCULATIONS WERE ALSO PERFORED USING THE END-AREA METHOD; THESE CALCULATIONS DEMONSTRATE THAT THE EXISTING POND HAS MORE THAN SUFFICIENT CAPACITY (331,715 CF) TO RETAIN THE 100 YEAR, 10 DAY BASIN C STORM EVENT RUNOFF (150,570 CF).

X. CONCLUSIONS

THE FOLLOWING CONCLUSIONS HAVE BEEN ESTABLISHED AS A RESULT OF THE EVALUATIONS CONTAINED HEREIN:

1. THE PROPOSED IMPROVEMENTS WILL MAINTAIN THE EXISTING DRAINAGE PATTERN FOR THE PROJECT SITE VIA DISCHARGING THE DEVELOPED RUNOFF VIA NEW SUBSURFACE PRIVATE STORM DRAIN SYSTEM TO THE ONSITE RETENTION POND.
2. THE PROPOSED IMPROVEMENTS WILL RESULT IN NO CHANGE IN THE DEVELOPED RUNOFF GENERATED BY THE SITE.
3. PER THE 1998 MASTER DRAINAGE PLAN FOR THE SITE, 100% OF THE RUNOFF FROM BASIN C MUST BE RETAINED IN ONSITE RETENTION FACILITIES. CALCULATIONS INCLUDED HEREIN DEMONSTRATE THAT THE EXISTING RETENTION POND HAS MORE THAN SUFFICIENT CAPACITY (331,715 CF) TO RETAIN THE 100 YEAR, 10 DAY DEVELOPED RUNOFF FROM BASIN C (150,570 CF) WITHIN WHICH THE PROJECT AREA IS WHOLLY CONTAINED.
4. FIRST FLUSH ORDINANCE REQUIREMENTS ARE MET DUE TO FULL RETENTION OF DEVELOPED RUNOFF ONSITE.
5. THE PROPOSED IMPROVEMENTS WILL NOT ADVERSELY IMPACT DOWNSTREAM PROPERTIES OR DOWNSTREAM DRAINAGE CONDITIONS.
6. THIS PROJECT IS LESS THAN 1 ACRE AND THEREFORE IS NOT SUBJECT TO AN EPA NPDES PERMIT
7. THIS PROJECT DOES NOT REQUIRE A SEPERATE EROSION AND SEDIMENT CONTROL PLAN.



CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE = **2**

B. $P_{100,\ 6\ HR}$ = P_{360} = **2.35** IN

C.

TOTAL PROJECT AREA (A_T)	620,730	SF
(BASIN C)	14.25	AC

D. LAND TREATMENTS

1.

EXISTING LAND TREATMENT			
LAND TREATMENT	AREA (SF/AC)		%
A			
B			
C	193,668	SF	31
	4.45	AC	
D	427,062	SF	69
	9.80	AC	

2.

DEVELOPED LAND TREATMENT			
LAND TREATMENT	AREA (SF/AC)		%
A			
B			
C	193,668	SF	31
	4.45	AC	
D	427,062	SF	69
	9.80	AC	

II. HYDROLOGY (BASIN C)

A. EXISTING CONDITION 100 YEAR

1. **100-YR STORM**

a. VOLUME 100-YR, 6- HR

$E_W = (E_AA_A+E_BA_B+E_CA_C+E_DA_D)/A_T$

E_W = (0.53*0.00) + (0.78*0.00) + (1.13*4.45) + (2.12*9.80)/14.25 = **1.81 IN**

$V_{100,6\ HR} = (E_W/12)A_T$ = (1.81/12)14.25 = 2.1494 = AC-FT = **93,630 CF**

b. VOLUME 100- YR, 24- HR

$V_{100,24\ HR} = V_{6HR}+A_D*(P_{24HR}-P_{6HR})/12$ in/ft

= 2.15+9.80*(2.75-2.35)/12 in/ft= 2.4762 = AC-FT = **107,860 CF**

c. PEAK DISCHARGE

$Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

= (1.56 * 0.00) + (2.28 * 0.00) + (3.14 * 4.45) + (4.70 * 9.80) = Q_P = **60.0 CFS**

B. DEVELOPED CONDITION

1. **100-YR STORM**

a. VOLUME

$E_W = (E_AA_A+E_BA_B+E_CA_C+E_DA_D)/A_T$

E_W = (0.53*0.00) + (0.78*0.00) + (1.13*4.45) + (2.12*9.80)/14.25 = **1.81 IN**

$V_{100,6\ HR} = (E_W/12)A_T$ = (1.81/12)14.25 = 2.1494 = AC-FT = **93,630 CF**

b. VOLUME 100- YR, 24- HR

$V_{100,24\ HR} = V_{6HR}+A_D*(P_{24HR}-P_{6HR})/12$ in/ft

= 2.15+9.80*(2.75-2.35)/12 in/ft= 2.4762 = AC-FT = **107,860 CF**

c. PEAK DISCHARGE

$Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

= (1.56 * 0.00) + (2.28 * 0.00) + (3.14 * 4.45) + (4.70 * 9.80) = Q_P = **60.0 CFS**

C. COMPARISON 100 YEAR

1. **100-YR STORM**

a. VOLUME 100-YR, 6-HR

$\Delta V_{100,\ 6\ HR}$ = 93630 - 93630 = **CF** (NO CHANGE)

b. VOLUME 100-YR, 24- Hr

$\Delta V_{100,\ 24\ HR}$ = 107860 - 107860 = **CF** (NO CHANGE)

c. PEAK DISCHARGE

ΔQ_{100} = 60.0 - 60.0 = **CFS** (NO CHANGE)

D. RETENTION REQUIREMENT CALCULATION

1. **100-YR STORM**

a. VOLUME 100-YEAR, 10 DAY

$V_{10DAY} = V_{6HR}+A_D*(P_{10DAY}-P_{6HR})/12$ in/ft

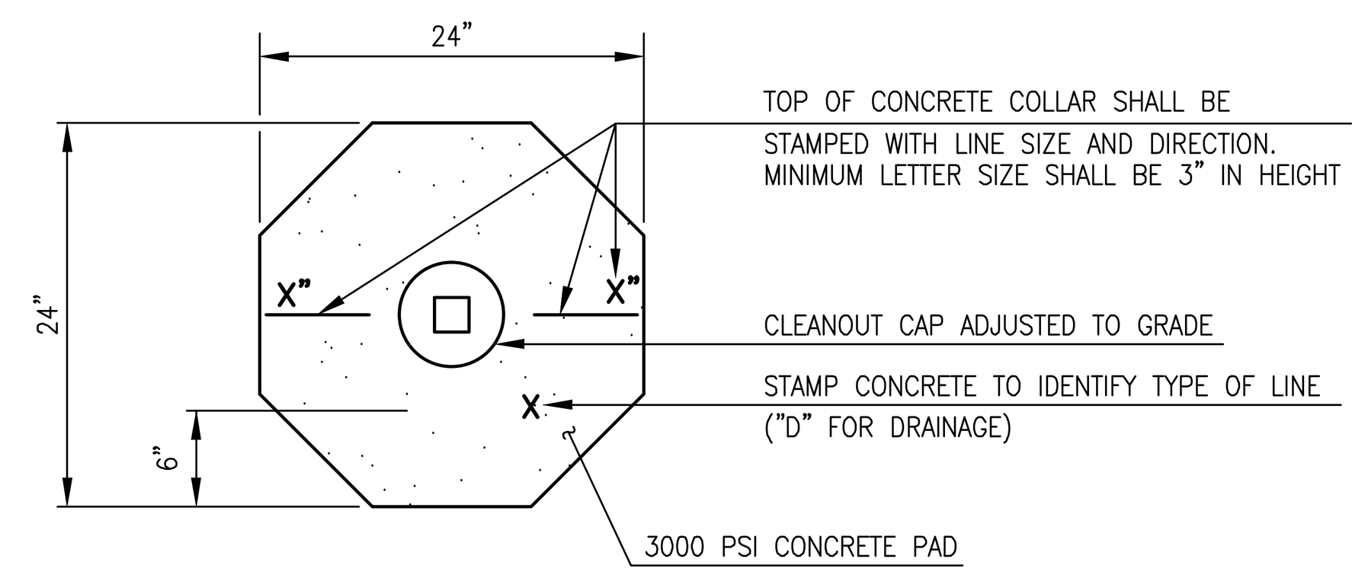
= 2.15+9.80*(3.95-2.35)/12 in/ft= 3.4566 = AC-FT = **150,570 CF**

E. EXISTING RETENTION PONDING VOLUME (BASIN C)

EXISTING RETENTION POND VOLUME BY ELEVATION				
ELEVATION (FT)	AREA (SF)	VOLUME (CF)	∑VOLUME (cf)	
5,032	602			
5,033	64,303	32,453	32,453	
5,034	71,332	67,818	100,270	
5,035	75,327	73,330	173,600	⇐ >2 FT. FREEBOARD
5,036	79,009	77,168	250,768	
5,037	82,885	80,947	331,715	

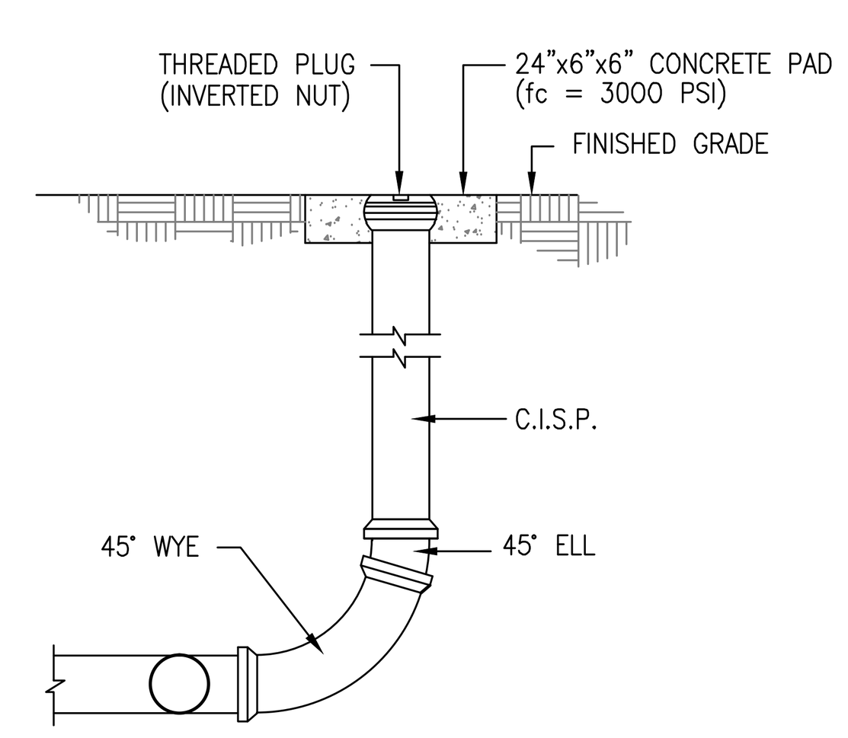
GENERAL NOTES

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 AND ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY DISTRIBUTION MAPS, AVAILABLE RECORD DRAWINGS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP (2017.062.1 SITE UTILITY DIAGRAM DATED 12-19-2017). 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 THEREFORE. 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 ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE ENGINEER MAY TAKE NECESSARY MEASURES TO ENSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE ENGINEER AND SHALL NOTIFY THE ENGINEER AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE ENGINEER. 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. ALL PAVEMENT MARKINGS AND TRAFFIC SIGNS SHALL COMPLY WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION, LATEST EDITION.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. ALL DIMENSIONS AND RADII OF CURB, CURB RETURNS, AND WALLS ARE SHOWN TO THE FACE OF CURB AND/OR WALL.
19. THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS PRIOR TO STRIPING SO THAT LAYOUT CAN BE VERIFIED.
20. 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.
21. 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.
22. ALL FILL SHALL BE CLEAN, FREE FROM VEGETATION, DEBRIS, AND OTHER DELETERIOUS MATERIALS, AND SHALL NOT BE CONTAMINATED WITH HYDROCARBONS OR OTHER CHEMICAL CONTAMINANTS.
23. ALL FILL SHALL BE COMPACTED TO A MINIMUM OF 95% ASTM D-1557 UNLESS A GREATER COMPACTION REQUIREMENT IS OTHERWISE SPECIFIED.
24. 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.
25. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT AND/OR STRUCTURAL FOR EARTHWORK REQUIREMENTS, AS APPLICABLE.



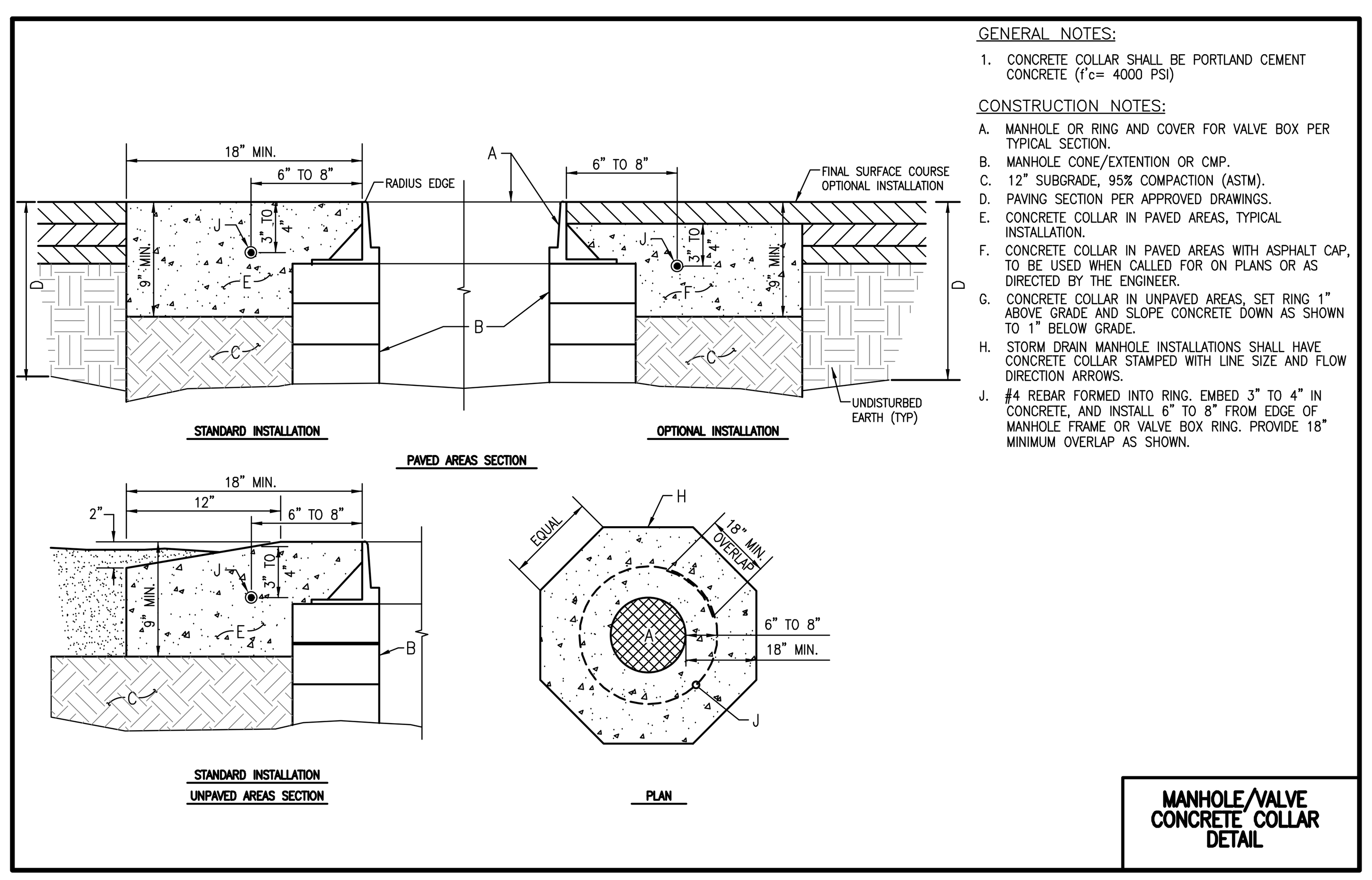
TYPICAL CLEANOUT COLLAR DETAIL

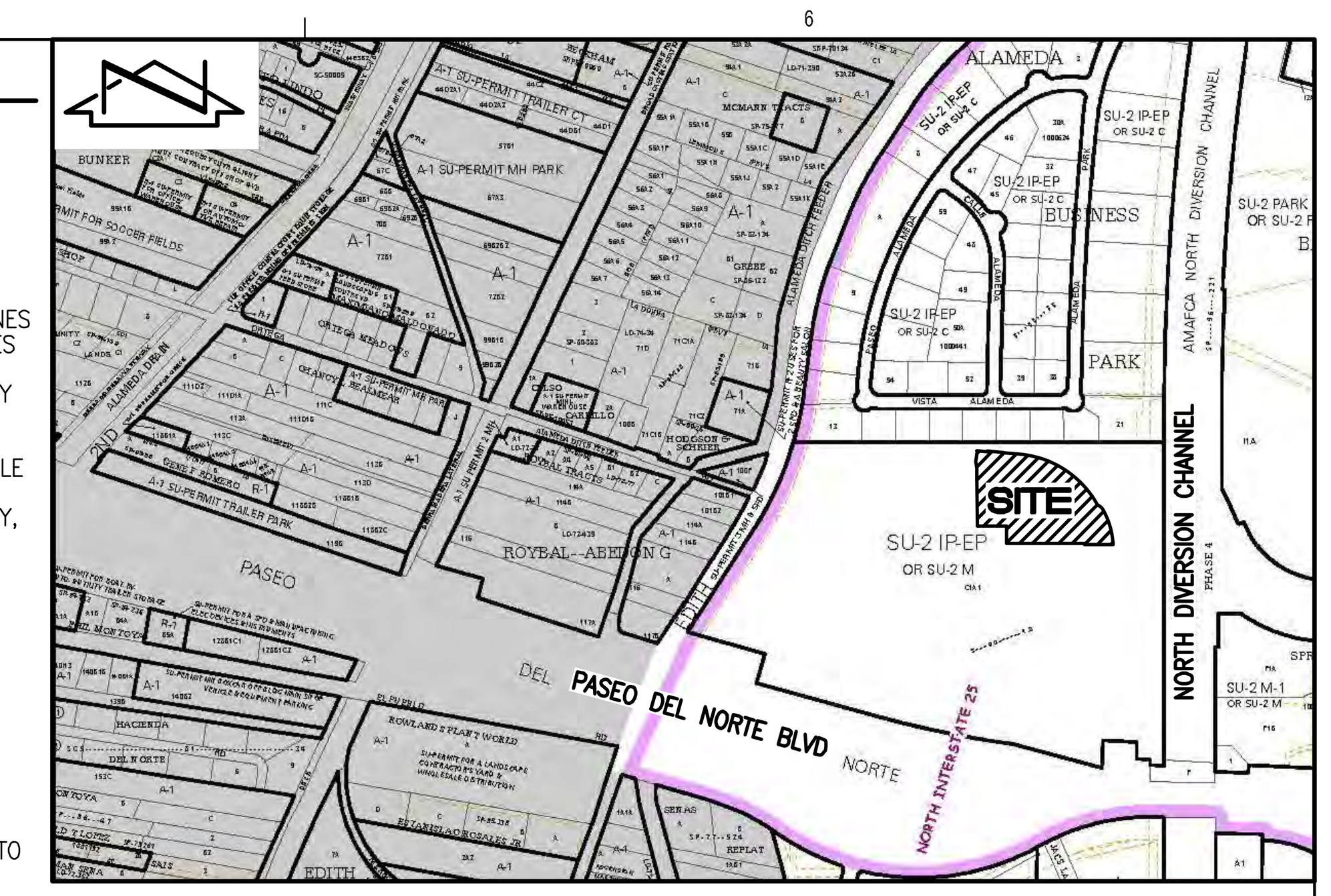
SCALE: 1" = 1'-0"



TYPICAL SINGLE CLEANOUT SECTION

NOT TO SCALE

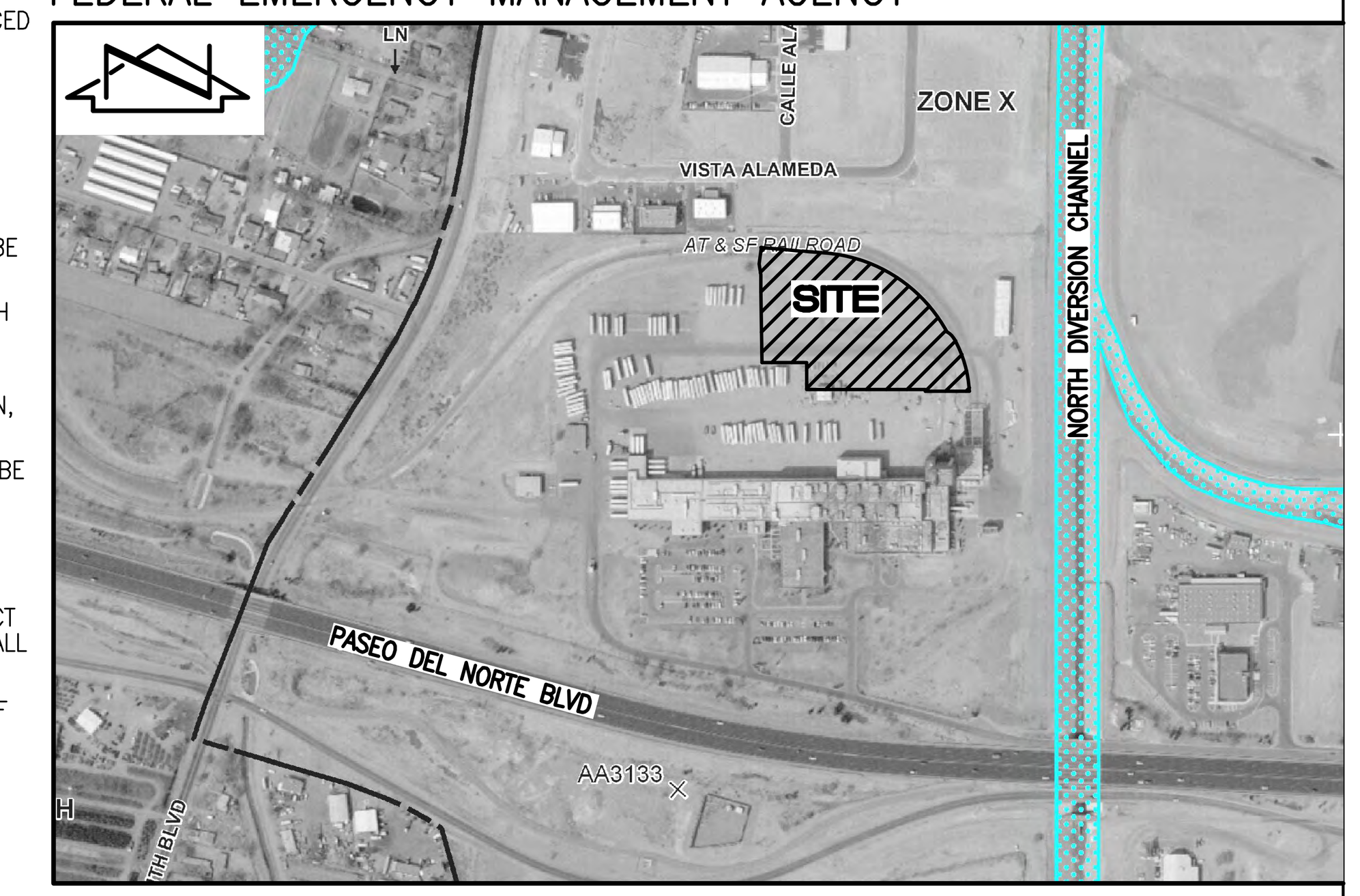




VICINITY MAP C-16

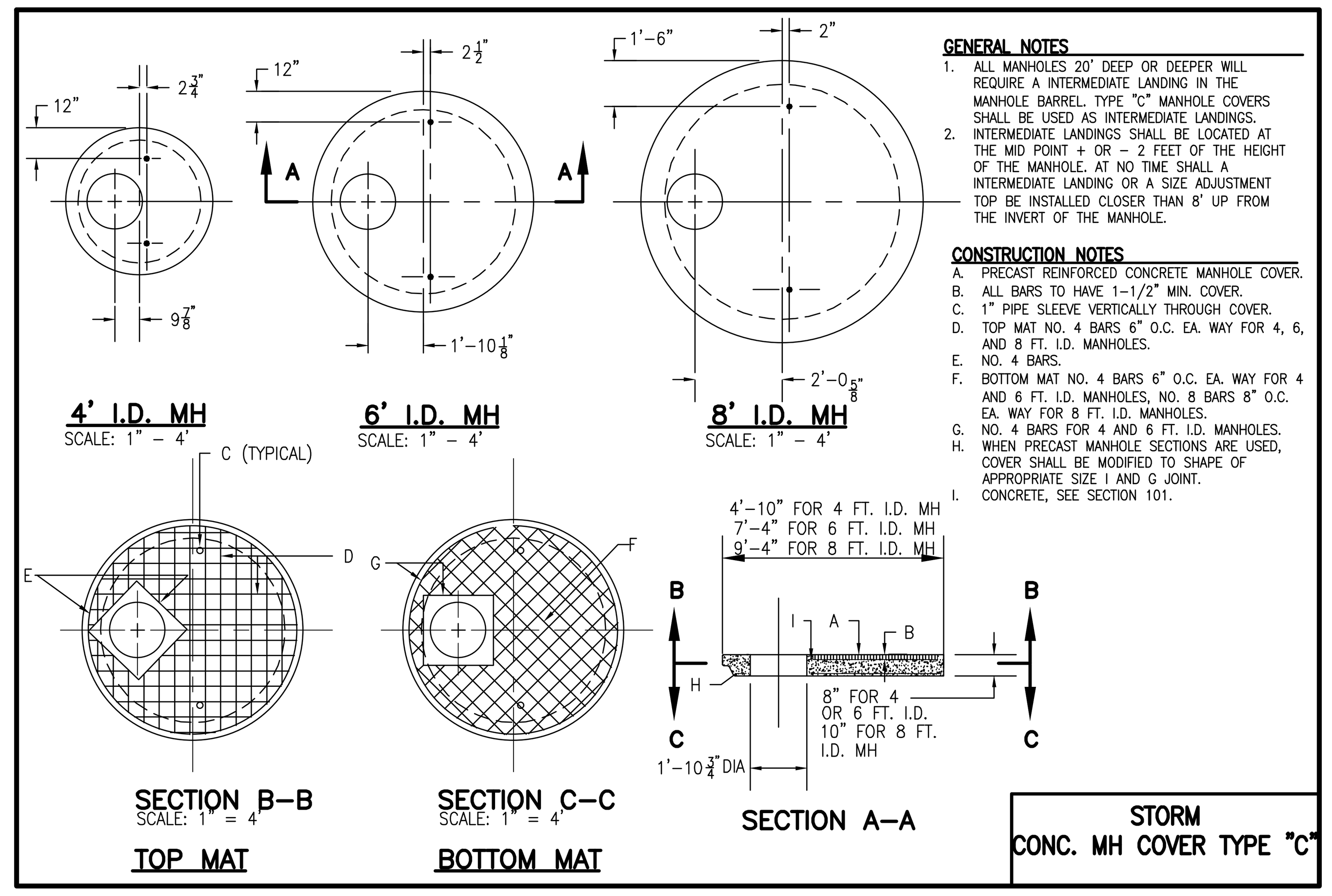
SCALE: 1" = 750'

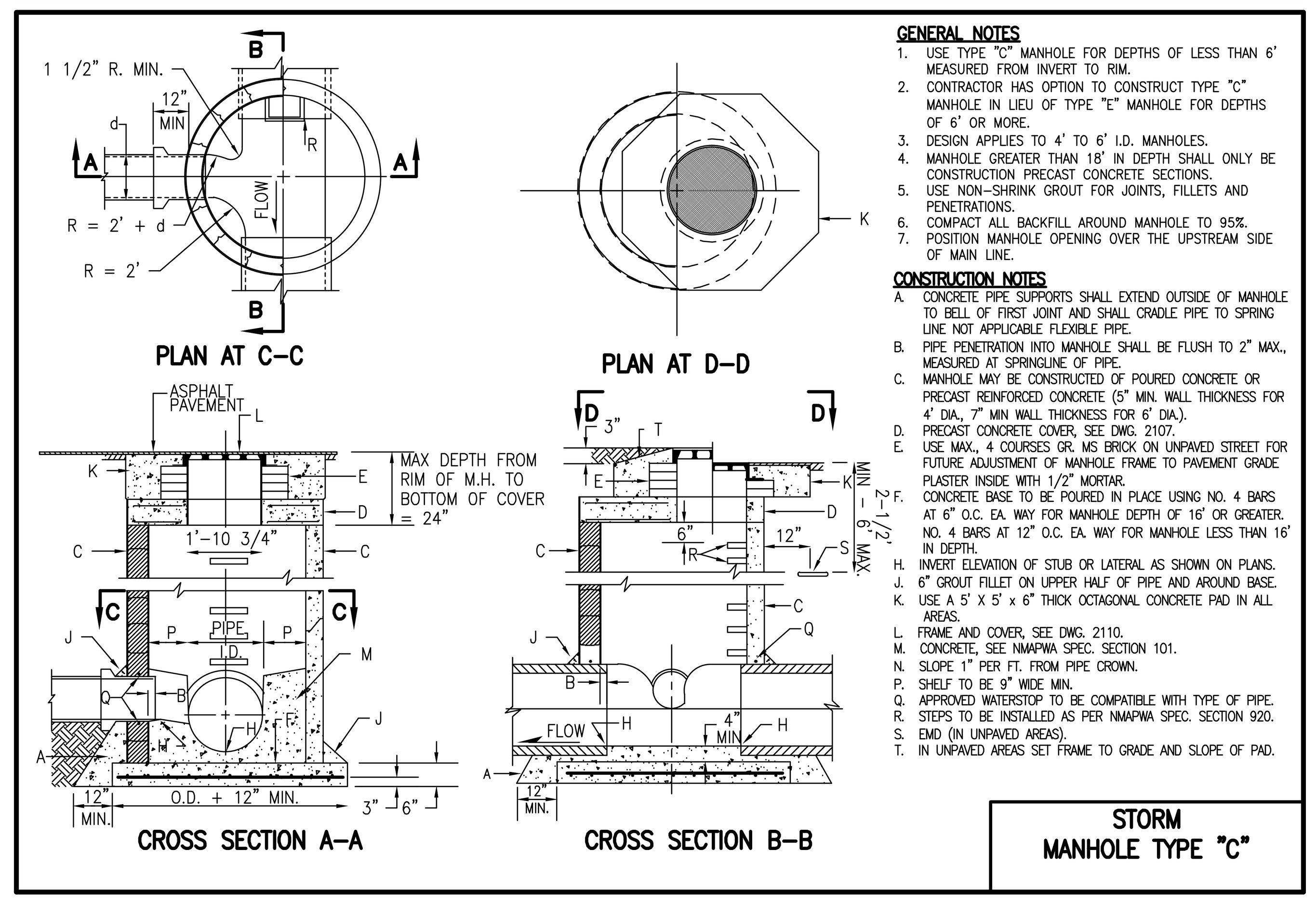
FEDERAL EMERGENCY MANAGEMENT AGENCY



F.I.R.M. PANEL 136 OF 825

SCALE: 1" = 500' DATED 9/26/2008





2017.063.3

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J. GRAEME MEANS NEW MEXICO 13676 REGISTERED PROFESSIONAL ENGINEER

01-30-2018

SEAL

PROJECT

GENERAL MILLS

3501 PASEO DEL NORTE N.E.
ALBUQUERQUE, NEW MEXICO

100% CONSTRUCTION DRAWINGS

REVISIONS

DRAWN BY	S.C.C.
REVIEWED BY	GM
DATE	01/30/2018
PROJECT NO	17-0117

DRAWING NAME

DRAINAGE PLAN, CALCULATIONS, VICINITY MAP, SECTIONS AND DETAILS

SHEET NO

C100

File Path:	P:\DATA\2017\2017.063.3\ENG\	Plot Date:	01-30-2018
File Name:	170633_BASE.DWG	Plot Time:	08:17 am

PROJECT BENCHMARK

AGRS 3 1/4" ALUMINUM DISC STAMPED "13-D16 1991", SET FLUSH IN THE SOUTHWEST CORNER OF THE CONCRETE BRIDGE ABUTMENT OF PASEO DEL NORTE BLVD. BRIDGE OVER THE NORTH DIVERSION CHANNEL.
NORTHING 1,518,996.001 (GRID) 1,518,996.001 (GROUND)
EASTING 1,534,181.325 (GRID) 1,534,181.325 (GROUND)
ELEVATION = 5073.471 FEET (NAVD 1988)

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

A #5 REBAR WITH CAP STAMPED "HMCG CONTROL NMPS 11184" EAST LIMIT OF THE SITE SURVEY, AS SHOWN ON THIS SHEET.
NORTHING 1520262.509 (GROUND)
EASTING 1533984.767 (GROUND)
ELEVATION = 5041.14 FEET (NAVD 1988)

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

A #5 REBAR WITH CAP STAMPED "HMCG CONTROL NMPS 11184" JUST SOUTH OF THE RETAINING POND, AS SHOWN ON THIS SHEET.
NORTHING 1520275.635 (GROUND)
EASTING 1533579.936 (GROUND)
ELEVATION = 5042.52 FEET (NAVD 1988)

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

A #5 REBAR WITH CAP STAMPED "HMCG CONTROL NMPS 11184" NORTHWEST OF THE RETAINING POND, AS SHOWN ON THIS SHEET.
NORTHING 1520498.676 (GROUND)
EASTING 1533326.343 (GROUND)
ELEVATION = 5040.51 FEET (NAVD 1988)

LEGEND

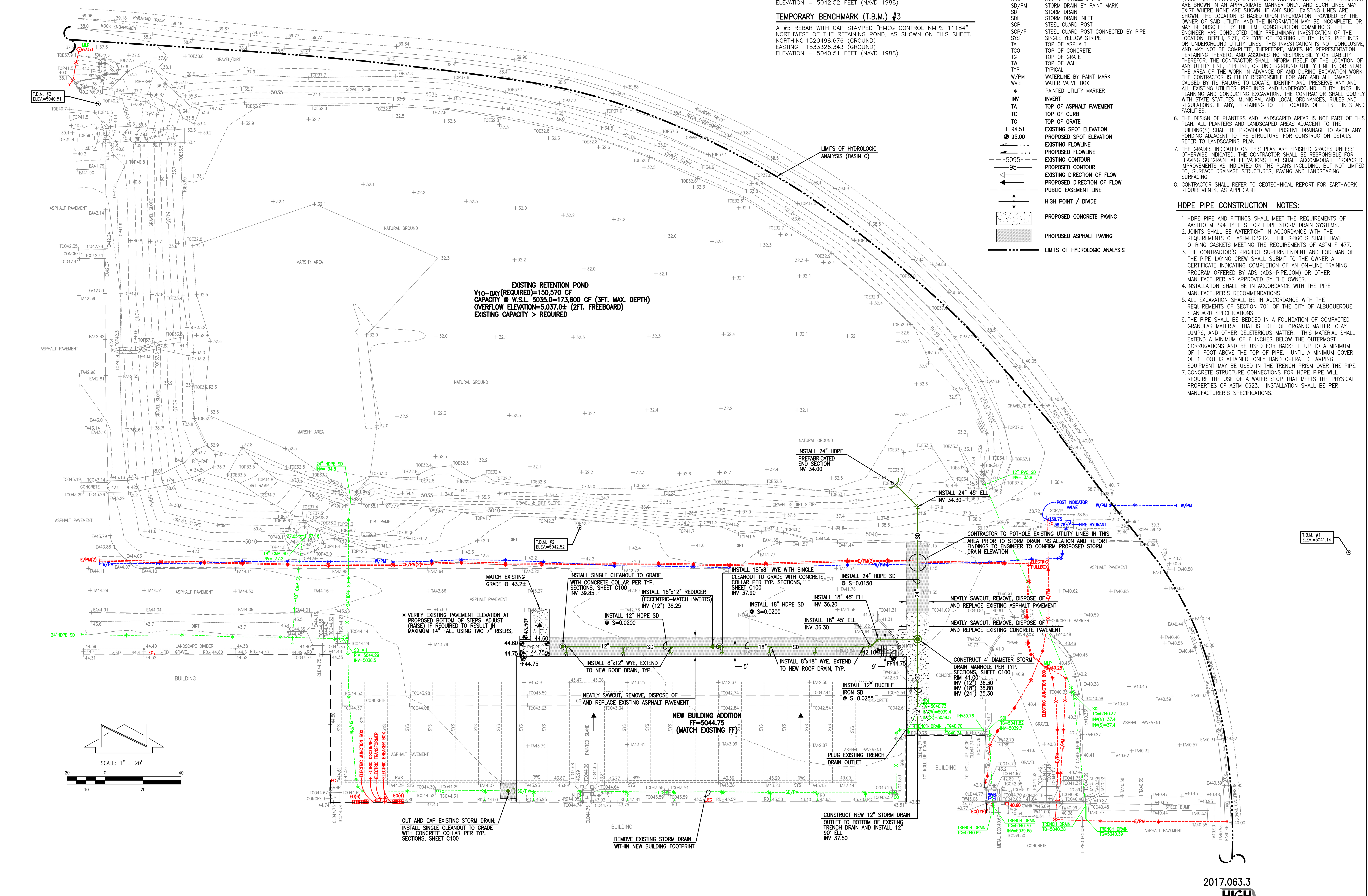
BOH	BUILDING OVERHANG
CHW	CONCRETE HEADER WALL
CL	CONCRETE LANDING
CLD	CENTERLINE OF DOOR
CMP	CORRUGATED METAL PIPE
CO	STORM DRAIN SEWER CLEANOUT
CONC	CONCRETE
CS	CONCRETE STEPS
CWHR	CONCRETE WALL WITH METAL HANDRAIL
E/PM	ELECTRIC BY PAINT MARK
EA	EDGE OF ASPHALT
EC	ELECTRIC CONDUIT
EO	ELECTRIC OUTLET
GRV	GRAVEL
INV	INVERT ELEVATION
MH	MANHOLE
MHR	METAL HANDRAIL
MLP	METAL LIGHT POLE WITH CONCRETE BASE
MS	METAL SIGN
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
RWS	ROW OF WHEEL STOPS
SD/PM	STORM DRAIN BY PAINT MARK
SD	STORM DRAIN
SDI	STORM DRAIN INLET
SGP	STEEL GUARD POST
SGP/P	STEEL GUARD POST CONNECTED BY PIPE
SYS	SINGLE YELLOW STRIPE
TA	TOP OF ASPHALT
TCO	TOP OF CONCRETE
TG	TOP OF GRATE
TW	TOP OF WALL
TYP	TYPICAL
W/PM	WATERLINE BY PAINT MARK
WVB	WATER VALVE BOX
*	PAINTED UTILITY MARKER
INV	**INVERT**
TA	**TOP OF ASPHALT PAVEMENT**
TC	**TOP OF CURB**
TG	**TOP OF GRATE**
+ 94.51	**EXISTING SPOT ELEVATION**
● 95.00	**PROPOSED SPOT ELEVATION**
	EXISTING FLOWLINE
	PROPOSED FLOWLINE
-5095-	**EXISTING CONTOUR**
95	**PROPOSED CONTOUR**
	EXISTING DIRECTION OF FLOW
	PROPOSED DIRECTION OF FLOW
	PUBLIC EASEMENT LINE
	HIGH POINT / DIVIDE
	PROPOSED CONCRETE PAVING
▨	**PROPOSED ASPHALT PAVING**
	LIMITS OF HYDROLOGIC ANALYSIS

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 AND ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY DISTRIBUTION MAPS, AVAILABLE RECORD DRAWINGS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP (2017.062.1 SITE UTILITY DIAGRAM DATED 12-19-2017). IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ONE CALL SERVICE (TICKET #17DE140291). 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

HDPE PIPE CONSTRUCTION NOTES:

1. HDPE PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF AASHTO M 294 TYPE S FOR HDPE STORM DRAIN SYSTEMS.
2. JOINTS SHALL BE WATERTIGHT IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM D3212. THE SPIGOTS SHALL HAVE O-RING GASKETS MEETING THE REQUIREMENTS OF ASTM F 477.
3. THE CONTRACTOR'S PROJECT SUPERINTENDENT AND FOREMAN OF THE PIPE-LAYING CREW SHALL SUBMIT TO THE OWNER A CERTIFICATE INDICATING COMPLETION OF AN ON-LINE TRAINING PROGRAM OFFERED BY ADS (ADS-PIPE.COM) OR OTHER MANUFACTURER AS APPROVED BY THE OWNER.
4. INSTALLATION SHALL BE IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS.
5. ALL EXCAVATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 701 OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS.
6. THE PIPE SHALL BE BEDDED IN A FOUNDATION OF COMPACTED GRANULAR MATERIAL THAT IS FREE OF ORGANIC MATTER, CLAY LUMPS, AND OTHER DELETERIOUS MATTER. THIS MATERIAL SHALL EXTEND A MINIMUM OF 6 INCHES BELOW THE OUTERMOST CORRUGATIONS AND BE USED FOR BACKFILL UP TO A MINIMUM OF 1 FOOT ABOVE THE TOP OF PIPE. UNTIL A MINIMUM COVER OF 1 FOOT IS ATTAINED, ONLY HAND OPERATED TAMPING EQUIPMENT MAY BE USED IN THE TRENCH PRISM OVER THE PIPE.
7. CONCRETE STRUCTURE CONNECTIONS FOR HDPE PIPE WILL REQUIRE THE USE OF A WATER STOP THAT MEETS THE PHYSICAL PROPERTIES OF ASTM C923. INSTALLATION SHALL BE PER MANUFACTURER'S SPECIFICATIONS.



NOTE:
THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE "PARTIAL TOPOGRAPHIC AND UTILITY SURVEY" PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 12/27/2017 (2017.063.2).

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2017.063.3
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J. GRAEME MEANS NEW MEXICO 13676 REGISTERED PROFESSIONAL ENGINEER
[illegible]
01-30-2018
SEAL

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ALBUQUERQUE, NEW MEXICO

100% CONSTRUCTION DRAWINGS

REVISIONS

DRAWN BY	S.C.C.
REVIEWED BY	GM
DATE	01/30/2018
PROJECT NO	17-0117

DRAWING NAME
GRADING PLAN

SHEET NO
C101