CITY OF ALBUQUERQUE

March 29, 2018

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, NM 87199

RE: **715, 719, 721 14th St NW**
Grading and Drainage Plan
Engineer's Stamp Date: 3/20/18
Drainage File: J13D208

Dear Mr. Soule:

Based on the information provided in your submittal received 3/21/18, the grading and drainage plan cannot be approved until the following are addressed:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Prior to Preliminary Plat/Grading Permit:

1. Provide onsite ponding volume on each lot for the 100-yr, 6hr volume.
2. Remove the language relating to first flush. Minor residential subdivisions (less than 10 units) and single residences are exempt from the requirement.
3. Provide all calculations on a stamped plan sheet or in a bound and stamped report; loose calculations cannot be accepted.

Prior to Building Permit:

4. Pad Certifications will be required prior to Hydrology approving the residential Building Permits.

Prior to Certificate of Occupancy:

5. Engineer's Certification, per the DPM Checklist, will be required to ensure the ponds remained intact following home construction.

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

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: 715,719,721 14th Street NW Building Permit #: _____ City Drainage #: _____

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

Legal Description: LOTS 15A,16A,17A PEREA ADDITION

City Address: 715,719,721 14th Street NW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ED PASICH Contact: _____

Address: _____

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

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

_____ TRAFFIC/ TRANSPORTATION

_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN

X GRADING PLAN

_____ DRAINAGE MASTER PLAN

_____ DRAINAGE REPORT

_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)

_____ TRAFFIC IMPACT STUDY (TIS)

_____ EROSION & SEDIMENT CONTROL PLAN (ESC)

_____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: _____ Yes X No

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X 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) _____

DATE SUBMITTED: 3/21/18 By: DAVID SOULE

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

EROSION CONTROL NOTES:

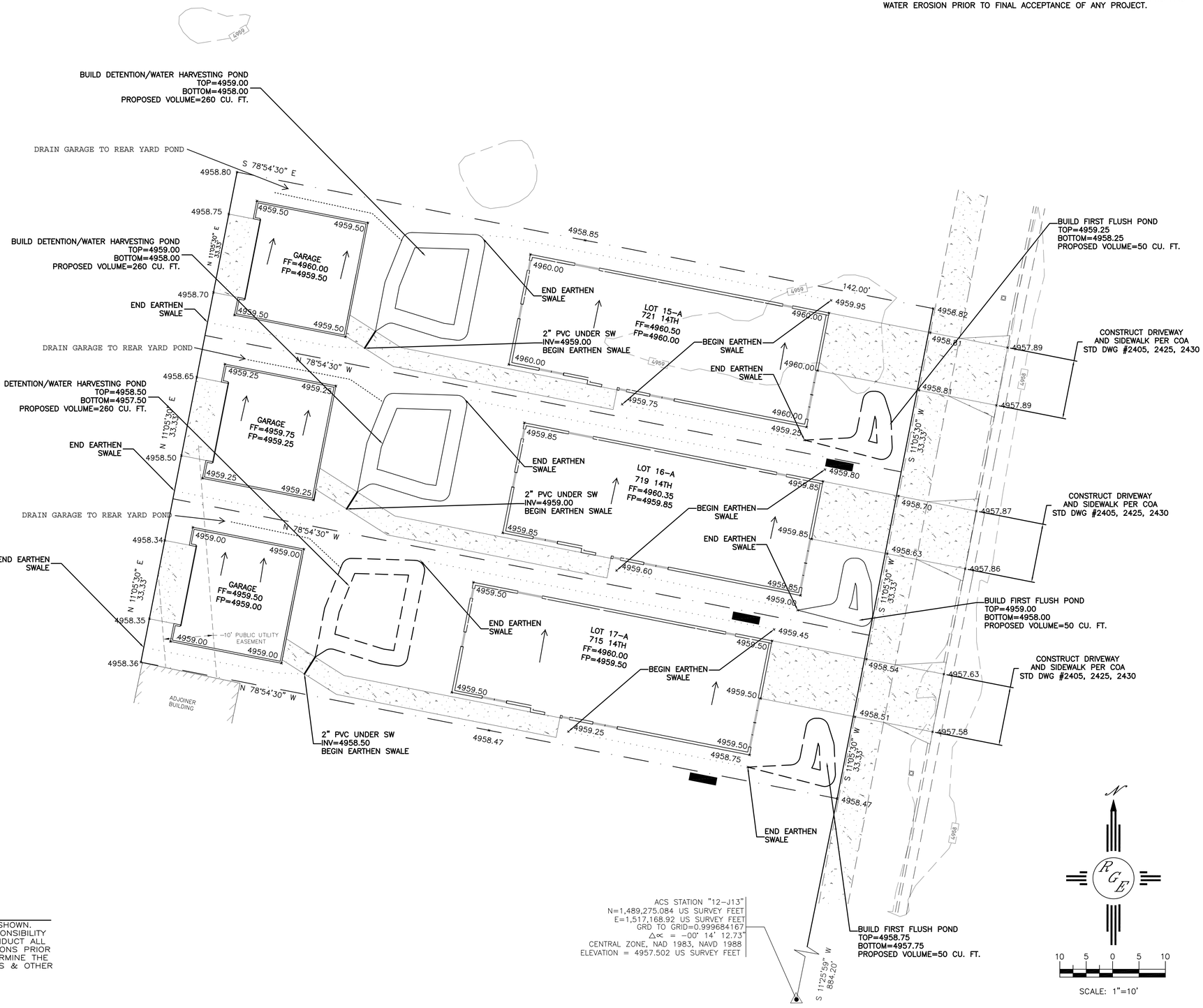
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.

3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

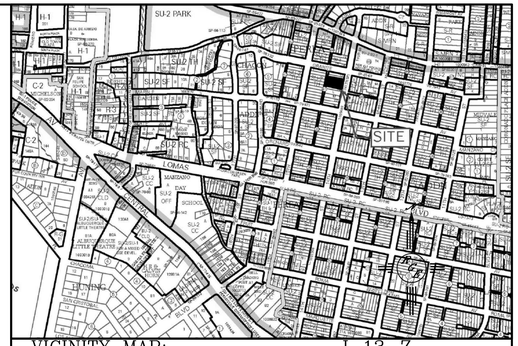
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

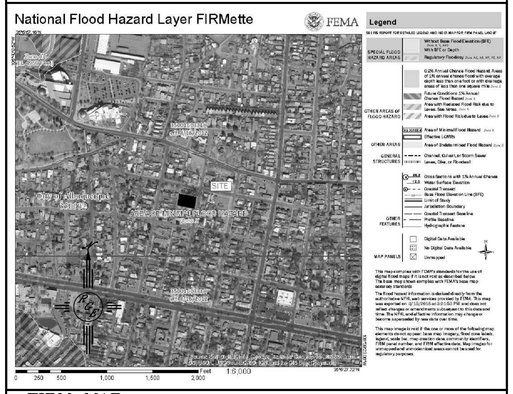
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.



CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.





LEGAL DESCRIPTION:

LOTS 15-A, 16-A & 17-A, BLOCK 41, PEREA ADDITION

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

2. ALL SLOPES SHALL BE 3:1 MAX. AND GRAVEL OR NATIVE SEEDING PRIOR TO CO.

3. ANY PERIMETER WALLS MUST BE PERMITED SEPARATELY. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.

LEGEND

- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED CONTOUR
- PROPOSED INDEX CONTOUR
- SLOPE TIE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- EXISTING CURB AND GUTTER
- PROPOSED CMU RETAINING WALL 1'-4.50' MAX RETAINAGE (DESIGN BY OTHERS)

ENGINEER'S SEAL

DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER

3/20/18

DAVID SOULE P.E. #14522

715, 719, 721
14TH STREET

GRADING AND DRAINAGE PLAN

Rio Grande Engineering
1606 CENTRAL AVENUE SE
SUITE 201
ALBUQUERQUE, NM 87106
(505) 872-0999

DRAWN BY WCWJ

DATE 3-20-17

21875-LAYOUT-3-20-18

SHEET # —

JOB # 21875

Weighted E Method
LOT 15A

											100-Year, 6-hr.			10-day
Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
BASIN 15A	3529.00	0.081	0%	0	20%	0.016	21%	0.017	59%	0.048	1.644	0.011	0.32	0.017
BASIN 15B	550.00	0.013	0%	0	50%	0.006	50%	0.0063	0%	0.000	0.955	0.001	0.03	0.001
REMAINING 15	709.00	0.016	0%	0	25%	0.004	37%	0.006	38%	0.006	1.419	0.002	0.06	0.003
TOTAL	4788.00	0.11	0%	0.000	24%	0.027	27%	0.029	49%	0.054		0.014	0.406	0.021

ALOOWED 2.75 CFS PER ACRE = 0.3023 CFS

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm

Ea= 0.53 Qa= 1.56 761.11708
Eb= 0.78 Qb= 2.28
Ec= 1.13 Qc= 3.14
Ed= 2.12 Qd= 4.7

Developed Conditons

FIRST FLUSH REQUIRED PROVIDED
BASIN A 59 CF 260
BASIN B 0 CF 50
REMAINING 8 CF X 8.5=$68 CASH IN LIEU

FLOOD CONTROL 10-DAY 6-HOUR
BASIN A 761 CF 260 CF 484 CF 564 PROVIDED
BASIN B 44 CF 50 CF

FLOW FROM 2" ORIFICE
Q = CA SQRT(2gH) @.75 ABOVE INVERT=.09 CFS

NARRATIVE

SITE IS LOCATED IN THE VALLEY DRAINAGE AREA.THE SITE IS ALLOWED TO DISCHARGE AT 2.75 CFS PER ACRE. THIS SITE IS ALLOWED .30 CFS. THE SITE CONTAINS 3 DRAINAGE BASINS. BASIN A CONTAINS THE MAJORITY OF THE LOT AND BOTH BUILDINGS. THIS BA DRAINS TO A RETENTION/DETENTION POND. THE OUTFALL IS A 2" PIPE UNDER THE SIDEWALK. THE BOTTOM OF POND IS 1' BELOW THE INVE AND RETAINS 260 CFS, WHICH IS GREATER THAN THE FIRST FLUSH VOLUME OF 59 CFS. THE TOTAL POND VOLUME AT AN ELEVATION OF THE SIDEWALK WHICH IS .75' ABOVE THE INVERT IS 564 CUBIC FEET, WHICH IS GREATER THAN THE 100-YEAR, 6-HOUR VOLUME. THE PEAK DISCHARGE FROM THE POND IS DETERMINED BY THE ORIFICE EQUATION WITH THE WATER SURFACE .75' ABOVE INVERT, WHICH IS .09 CFS BASIN B CONTAINS THE FRONT YARD AND THE TOTAL FLOW GENERATED IS RETAINED. THE REMAINING PORTION OF THE LOT FREE DISCHA TO THE ADJACENT STREETS AT A PEAK FLOW OF .06 CFS. THIS BASIN HAS A 8 CF FIRST FLUSH VOLUME THAT IS NOT CAPTURED THEREFOR FEE IN LIEU OF $68 IS REQURIED. A PEAK FLOW RATE FOR THIS DEVELOPED LOT IS .15 CFS WHICH IS LESS THAN ALLOWED

Weighted E Method
LOT 16A

											100-Year, 6-hr.			10-day
Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
BASIN 15A	3792.00	0.087	0%	0	20%	0.017	24%	0.0209	56%	0.049	1.614	0.012	0.33	0.018
BASIN 15B	550.00	0.013	0%	0	50%	0.006	50%	0.0063	0%	0.000	0.955	0.001	0.03	0.001
REMAINING 15	446.00	0.010	0%	0	25%	0.003	37%	0.0038	38%	0.004	1.419	0.001	0.04	0.002
TOTAL	4788.00	0.11	0%	0.000	24%	0.026	28%	0.031	48%	0.053		0.014	0.405	0.021

ALOOWED 2.75 CFS PER ACRE = 0.3023 CFS

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm

Ea= 0.53 Qa= 1.56 793.2864
Eb= 0.78 Qb= 2.28
Ec= 1.13 Qc= 3.14
Ed= 2.12 Qd= 4.7

Developed Conditons

FIRST FLUSH REQUIRED PROVIDED
BASIN A 60 CF 260
BASIN B 0 CF 50
REMAINING 5 CF X 8.5=$68 CASH IN LIEU

FLOOD CONTROL 10-DAY 6-HOUR
BASIN A 793 CF 260 CF 510 CF 564 PROVIDED
BASIN B 44 CF 50 CF

FLOW FROM 2" ORIFICE
Q = CA SQRT(2gH) @.75 ABOVE INVERT=.09 CFS

NARRATIVE

SITE IS LOCATED IN THE VALLEY DRAINAGE AREA.THE SITE IS ALLOWED TO DISCHARGE AT 2.75 CFS PER ACRE. THIS SITE IS ALLOWED .30 CFS. THE SITE CONTAINS 3 DRAINAGE BASINS. BASIN A CONTAINS THE MAJORITY OF THE LOT AND BOTH BUILDINGS. THIS BA DRAINS TO A RETENTION/DETENTION POND. THE OUTFALL IS A 2" PIPE UNDER THE SIDEWALK. THE BOTTOM OF POND IS 1' BELOW THE INVE AND RETAINS 260 CFS, WHICH IS GREATER THAN THE FIRST FLUSH VOLUME OF 59 CFS. THE TOTAL POND VOLUME AT AN ELEVATION OF THE SIDEWALK WHICH IS .75' ABOVE THE INVERT IS 564 CUBIC FEET, WHICH IS GREATER THAN THE 100-YEAR, 6-HOUR VOLUME. THE PEAK DISCHARGE FROM THE POND IS DETERMINED BY THE ORIFICE EQUATION WITH THE WATER SURFACE .75' ABOVE INVERT, WHICH IS .09 CFS BASIN B CONTAINS THE FRONT YARD AND THE TOTAL FLOW GENERATED IS RETAINED. THE REMAINING PORTION OF THE LOT FREE DISCHA TO THE ADJACENT STREETS AT A PEAK FLOW OF .06 CFS. THIS BASIN HAS A 8 CF FIRST FLUSH VOLUME THAT IS NOT CAPTURED THEREFOR FEE IN LIEU OF $68 IS REQURIED. A PEAK FLOW RATE FOR THIS DEVELOPED LOT IS .15 CFS WHICH IS LESS THAN ALLOWED

Weighted E Method
LOT 17A

											100-Year, 6-hr.			10-day
Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
BASIN 15A	3523.00	0.081	0%	0	20%	0.016	20%	0.0162	60%	0.049	1.654	0.011	0.32	0.018
BASIN 15B	550.00	0.013	0%	0	50%	0.006	50%	0.0063	0%	0.000	0.955	0.001	0.03	0.001
REMAINING 15	715.00	0.016	0%	0	25%	0.004	37%	0.0061	38%	0.006	1.419	0.002	0.06	0.003
TOTAL	4788.00	0.11	0%	0.000	24%	0.027	26%	0.029	50%	0.055		0.014	0.408	0.021

ALOOWED 2.75 CFS PER ACRE = 0.3023 CFS

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm

Ea= 0.53 Qa= 1.56
Eb= 0.78 Qb= 2.28
Ec= 1.13 Qc= 3.14
Ed= 2.12 Qd= 4.7

Developed Conditons

FIRST FLUSH REQUIRED PROVIDED
BASIN A 60 CF 260
BASIN B 0 CF 50
REMAINING 8 CF X 8.5=$68 CASH IN LIEU

FLOOD CONTROL 10-DAY 6-HOUR
BASIN A 767 CF 260 CF 486 CF 564 PROVIDED
BASIN B 44 CF 50 CF

FLOW FROM 2" ORIFICE
Q = CA SQRT(2gH) @.75 ABOVE INVERT=.09 CFS

NARRATIVE

SITE IS LOCATED IN THE VALLEY DRAINAGE AREA.THE SITE IS ALLOWED TO DISCHARGE AT 2.75 CFS PER ACRE. THIS SITE IS ALLOWED .30 CFS. THE SITE CONTAINS 3 DRAINAGE BASINS. BASIN A CONTAINS THE MAJORITY OF THE LOT AND BOTH BUILDINGS. THIS BA DRAINS TO A RETENTION/DETENTION POND. THE OUTFALL IS A 2" PIPE UNDER THE SIDEWALK. THE BOTTOM OF POND IS 1' BELOW THE INVE AND RETAINS 260 CFS, WHICH IS GREATER THAN THE FIRST FLUSH VOLUME OF 59 CFS. THE TOTAL POND VOLUME AT AN ELEVATION OF THE SIDEWALK WHICH IS .75' ABOVE THE INVERT IS 564 CUBIC FEET, WHICH IS GREATER THAN THE 100-YEAR, 6-HOUR VOLUME. THE PEAK DISCHARGE FROM THE POND IS DETERMINED BY THE ORIFICE EQUATION WITH THE WATER SURFACE .75' ABOVE INVERT, WHICH IS .09 CFS BASIN B CONTAINS THE FRONT YARD AND THE TOTAL FLOW GENERATED IS RETAINED. THE REMAINING PORTION OF THE LOT FREE DISCHA TO THE ADJACENT STREETS AT A PEAK FLOW OF .06 CFS. THIS BASIN HAS A 8 CF FIRST FLUSH VOLUME THAT IS NOT CAPTURED THEREFOR FEE IN LIEU OF $68 IS REQURIED. A PEAK FLOW RATE FOR THIS DEVELOPED LOT IS .15 CFS WHICH IS LESS THAN ALLOWED

EROSION CONTROL NOTES:

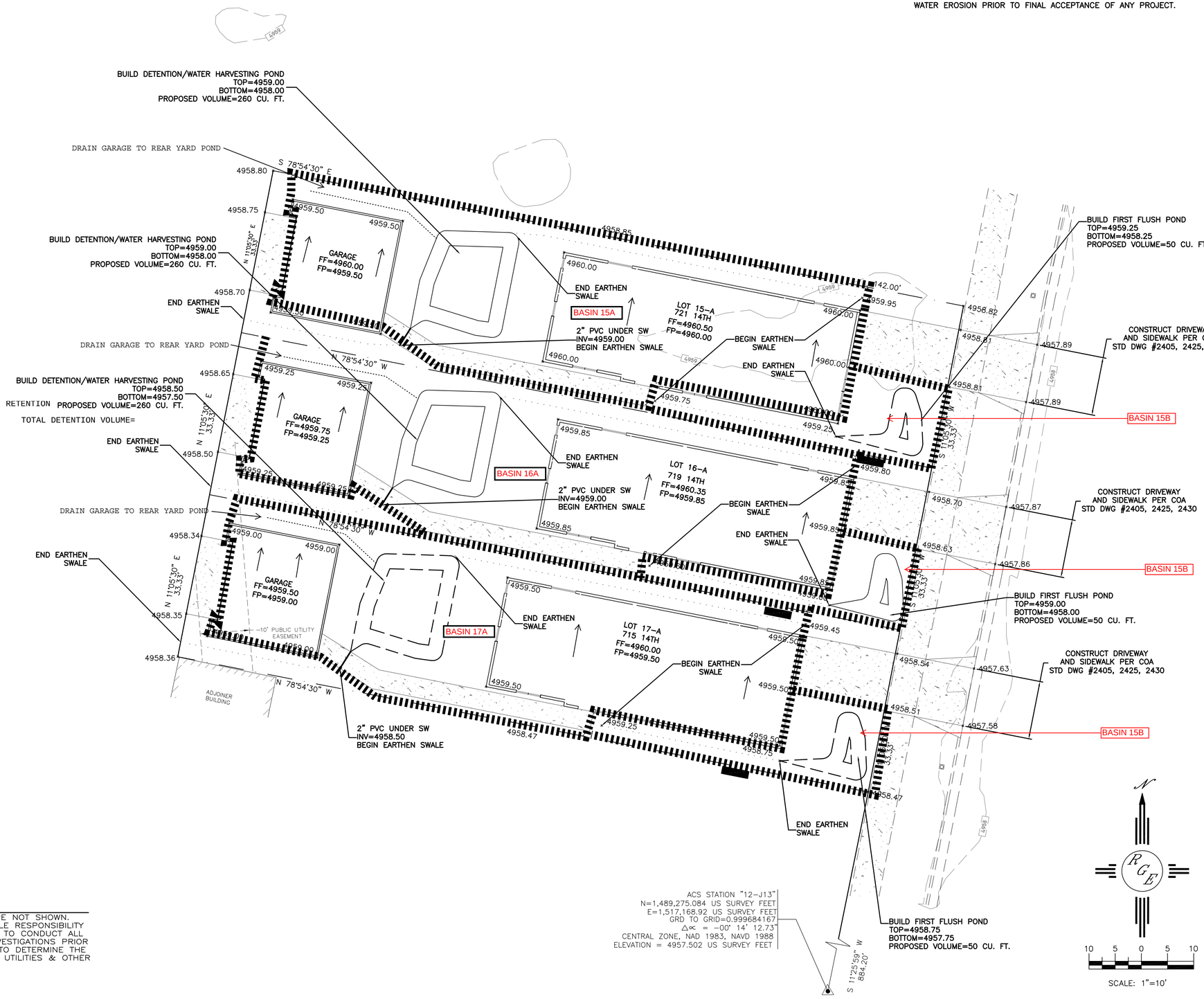
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN–OFF ON SITE DURING CONSTRUCTION.

3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT–OF–WAY.

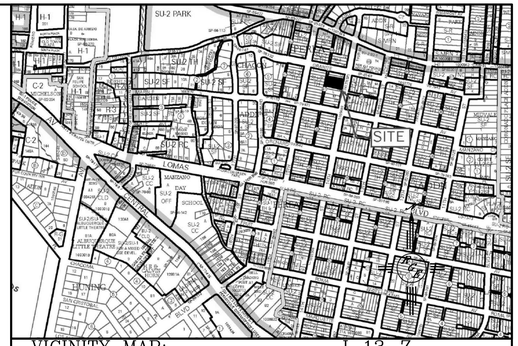
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

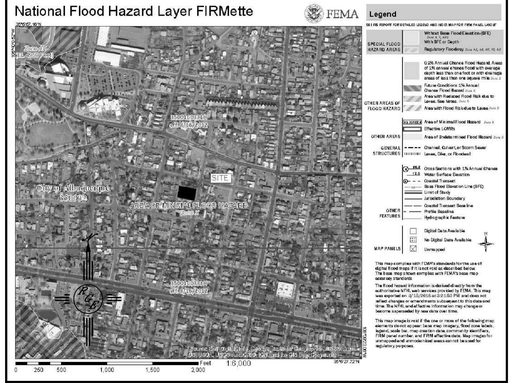
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.



CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.





LEGAL DESCRIPTION:

LOTS 15–A, 16–A & 17–A, BLOCK 41, PEREA ADDITION

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

2. ALL SLOPES SHALL BE 3:1 MAX. AND GRAVEL OR NATIVE SEEDING PRIOR TO CO.

3. ANY PERIMETER WALLS MUST BE PERMITED SEPARATELY. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.

LEGEND

- XXXX — EXISTING CONTOUR
- XXXX — EXISTING INDEX CONTOUR
- XXXX — PROPOSED CONTOUR
- XXXX — PROPOSED INDEX CONTOUR
- SLOPE TIE
- XXXX — EXISTING SPOT ELEVATION
- XXXX — PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT–OF–WAY
- EXISTING CURB AND GUTTER
- PROPOSED CMU RETAINING WALL 1'–4.50" MAX RETAINAGE (DESIGN BY OTHERS)

ENGINEER'S SEAL
DAVID SOULE NEW MEXICO 14522 REGISTERED PROFESSIONAL ENGINEER
3/20/18
DAVID SOULE P.E. #14522

715, 719, 721
14TH STREET
GRADING AND DRAINAGE PLAN

Rio Grande Engineering
1606 CENTRAL AVENUE SE SUITE 201
ALBUQUERQUE, NM 87106
(505) 872–0999

DRAWN BY WCWJ
DATE 3–20–17
21875–LAYOUT–3–20–18
SHEET # —
JOB # 21875