

CITY OF ALBUQUERQUE



May 20, 2016

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

**Re: Kindergarten Classroom Addition
1100 Douglas MacArthur Rd NW
Request Permanent C.O. - Accepted
Engineer's Stamp dated: 10/31/2013 (F14D038)
Certification dated: 5-18-16**

Dear Mr. Graeme,

Based on the Certification received 5/19/2016, the site is acceptable for release of Certificate of Occupancy by Hydrology.

PO Box 1293

If you have any questions, you can contact me at 924-3695 or Totten Elliott at 924-3982.

Albuquerque

Sincerely,

New Mexico 87103

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

www.cabq.gov

TE/RH

C: email,

Cordova, Camille C.; Miranda, Rachel; Sandoval, Darlene M.;
Lois Blocker

File Path: P:\MWA\2016\4520\1831\1831.DWG | Plot Date: 05-18-2016
File Name: 141831_C-102-R2.DWG | Plot Time: 09:39 am

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE NORTH VALLEY OF THE ALBUQUERQUE METROPOLITAN AREA, REPRESENTS A MODIFICATION TO AN EXISTING ELEMENTARY SCHOOL SITE WITHIN AN INFILL AREA. THE PURPOSE OF THIS PROJECT IS TO PROVIDE IMPROVED DRAINAGE TO THE EXISTING COURTYARD, CONSTRUCT NEW ADDITIONS TO THE EXISTING CAFETERIA BUILDING, AND CONSTRUCT A NEW KINDERGARTEN CLASSROOM BUILDING ADDITION. THE DRAINAGE CONCEPT WILL BE TO MAINTAIN THE EXISTING DRAINAGE PATTERNS OF THE SITE AND RETAIN ANY INCREASE IN DEVELOPED RUNOFF GENERATED ONSITE.

THIS SUBMITTAL IS MADE IN SUPPORT OF BUILDING PERMIT WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERQUE.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SCHOOL SITE IS LOCATED NEAR THE INTERSECTION OF DOUGLAS MACARTHUR NW AND GRANDE DRIVE NW. THE PROPERTY IS UNPLATTED. AS SHOWN BY PANEL 119 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, SEPTEMBER 26, 2008, THIS SITE LIES WITHIN A DESIGNATED ZONE X FLOOD HAZARD ZONE, AN AREA OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS LESS THAN 1 FOOT.

III. BACKGROUND DOCUMENTS

THE PREPARATION OF THIS PLAN RELIED UPON THE FOLLOWING DOCUMENTS:

- TOPOGRAPHIC SURVEY PREPARED BY HIGH MESA CONSULTING GROUP (NMPS 11184) DATED 01-21-2010. THIS REFERENCED SURVEY PROVIDES THE BASIS FOR THE EXISTING CONDITIONS OF THE PROJECT SITE.
- GRADING AND DRAINAGE PLAN FOR DOUGLAS MACARTHUR SCHOOL PREPARED BY WILSON & COMPANY, DATED 06-17-1994. THIS PLAN SUPPORTED CONSTRUCTION OF THE MINI-GYMNASIUM AND PAVED BUS DROP OFF LOOP (NOW EXISTING) AND IDENTIFIED THE DRAINAGE BASINS 101, 102, AND 103 FOR THE SITE. THE PROPOSED IMPROVEMENTS LIE WITHIN BASIN 101 AND 102 OF THE 1994 PLAN.

IV. EXISTING CONDITIONS

THE PROPOSED PROJECT SITE INCLUDES THREE AREAS OF CONSTRUCTION, ALL WITHIN THE EASTERN PORTION OF THE SITE. THESE AREAS ARE 1) THE CAFETERIA BUILDING, 2) THE EXISTING COURTYARD, AND 3) THE EXISTING PLAYGROUND AND CLASSROOM PORTABLES AREA AT THE NORTHEAST CORNER OF THE SITE. THE ENTIRE SITE IS GENERALLY FLAT WITH MINIMAL TOPOGRAPHY, EXHIBITING POORLY DEFINED DRAINAGE PATTERNS.

RUNOFF FROM THE EXISTING CAFETERIA BUILDING LACKS WELL DEFINED DRAINAGE AS THE SITE IS GENERALLY FLAT. OVERFLOW APPEARS TO SHEET FLOW IN A WESTERLY DIRECTION TO ULTIMATELY DRAIN TO AN EXISTING DETENTION POND AT THE SOUTHWEST CORNER OF THE SCHOOL SITE THAT DISCHARGES TO THE EXISTING PUBLIC STORM DRAIN WITHIN GRANDE DRIVE NW.

THE EXISTING COURTYARD GRADUALLY SLOPES FROM EAST TO WEST, SHEET FLOWING RUNOFF TOWARD THE EXISTING BUILDING AND CAUSING FLOODING OF THE EXISTING BUILDING ENTRANCES. AN EXISTING STORM INLET LIES AT THE NORTHWEST CORNER OF THE MAIN CLASSROOM BUILDING; THIS INLET COLLECTS OVERFLOW RUNOFF FROM THE COURTYARD, AS WELL AS SURFACE FLOWS FROM THE NORTHEAST PORTABLE CLASSROOMS. RUNOFF THAT DRAINS TO THIS INLET IS CONVEYED VIA PRIVATE STORM DRAIN TO ULTIMATELY DISCHARGE TO A PUBLIC STORM DRAIN IN GRANDE DRIVE NW.

RUNOFF GENERATED WITHIN THE NORTHEAST PLAYGROUND APPEARS TO POND IN A LOW POINT IN THIS AREA, WITH OVERFLOW SHEETFLOWING TO THE SOUTHEAST TO AN ONSITE LOW AREA IMMEDIATELY NORTH OF DOUGLAS MACARTHUR ROAD NW; THIS AREA ULTIMATELY OVERFLOWS TO THE PUBLIC STROM DRAIN WITHIN DOUGLAS MACARTHUR ROAD NW.

THERE ARE NO OFFSITE FLOWS IMPACTING THE PROJECT; THE AREAS SURROUNDING THE SCHOOL EXHIBIT PARALLEL TOPOGRAPHY TO THE SCHOOL SITE AND THEREFORE DO NOT CONTRIBUTE OFFSITE FLOWS.

V. DEVELOPED CONDITIONS

THE PROPOSED CONSTRUCTION INCLUDES THREE AREAS: 1) BUILDING ADDITIONS TO THE CAFETERIA BUILDING, 2) DRAINAGE IMPROVEMENTS TO THE COURTYARD, AND 3) A NEW KINDERGARTEN CLASSROOM BUILDING ADDITION AND GRAVEL FIRE LANE AT THE NORTHEAST CORNER OF THE SITE.

THE SMALL ADDITIONS TO THE EXISTING CAFETERIA BUILDING WILL REPLACE IMPERVIOUS PAVEMENT WITH IMPERVIOUS BUILDING. NO CALCULATIONS WERE PREPARED FOR THIS AREA AS THERE IS NO INCREASE IN RUNOFF GENERATED BY THIS DEVELOPMENT. RUNOFF WILL CONTINUE TO DRAIN AWAY FROM THE BUILDING ON PAVED SURFACES.

THE DRAINAGE IMPROVEMENTS TO THE EXISTING COURTYARD CONSIST OF THE REMOVAL AND REPLACEMENT OF A PORTION OF THE EXISTING SIDEWALK WITH THE INCLUSION OF A NEW TRENCH DRAIN. THE NEW TRENCH DRAIN WILL INTERCEPT AND COLLECT THE EXISTING RUNOFF THAT CURRENTLY FLOODS THE EXISTING BUILDING ENTRANCES. RUNOFF COLLECTED WITHIN THE TRENCH DRAIN WILL BE CONVEYED VIA PRIVATE STORM DRAIN EXTENSION TO THE EXISTING STORM INLET AT THE NORTHWEST CORNER OF THE EXISTING BUILDING, AND ULTIMATELY DISCHARGED TO THE PUBLIC STORM DRAIN IN GRANDE DRIVE NW. NO CALCULATIONS WERE PREPARED FOR THIS AREA AS THERE IS NO INCREASE IN RUNOFF GENERATED BY THIS DEVELOPMENT.

A NEW KINDERGARTEN CLASSROOM BUILDING ADDITION AND GRAVEL FIRE LANE WILL REPLACE THE EXISTING PORTABLE CLASSROOMS AND PLAYGROUND LOCATED AT THE NORTHEAST CORNER OF THE SCHOOL SITE. THESE IMPROVEMENTS WILL RESULT IN A MINIMAL INCREASE IN DEVELOPED RUNOFF GENERATED BY THE SITE. TWO SHALLOW (6" +/-) WATER HARVESTING AREAS TO THE NORTHWEST AND EAST OF THE NEW ADDITION ARE SIZED TO RETAIN THE INCREASE IN RUNOFF GENERATED BY THE SITE. IN ADDITION, A NEW CURB AND GUTTER IS PROPOSED ALONG THE EASTERN EDGE OF THE SCHOOL SITE TO PROVIDE POSITIVE DRAINAGE OF OVERFLOW RUNOFF. THE CURB AND GUTTER WILL CONVEY OVERFLOW RUNOFF SOUTH TO THE EXISTING LOW AREA NORTH OF DOUGLAS MACARTHUR ROAD NW, MAINTAINING THE EXISTING DRAINAGE PATTERNS ALREADY ESTABLISHED FOR THIS AREA OF THE 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 GRADING AND DRAINAGE IMPROVEMENTS WILL MAINTAIN AND IMPROVE THE CURRENT DRAINAGE PATTERNS FOR THE SITE, RETAINING ONSITE ANY INCREASE IN DEVELOPED RUNOFF GENERATED BY THE IMPROVEMENTS.

VII. CALCULATIONS

CALCULATIONS ANALYZING THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT HAVE BEEN PREPARED FOR THE PORTION OF THE SITE AFFECTED BY THE NEW KINDERGARTEN CLASSROOM ADDITION BUILDING AND FIRE LANE IMPROVEMENTS. 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. IN ADDITION, THE AVERAGE END-AREA METHOD HAS BEEN USED TO QUANTIFY THE VOLUME OF RUNOFF RETAINED WITHIN THE PROPOSED WATER HARVESTING AREAS. AS DEMONSTRATED BY THESE CALCULATIONS, THE PROPOSED IMPROVEMENTS WILL RESULT IN A MINIMAL INCREASE IN PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED BY THIS PROJECT, WHICH WILL BE MITIGATED BY THE RETENTION OF THE INCREASE WITHIN THE NEW WATER HARVESTING AREAS.

VIII. CONCLUSIONS

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

- THE PROPOSED IMPROVEMENTS WILL MAINTAIN OR IMPROVE THE EXISTING DRAINAGE PATTERNS OF THIS PORTION OF THE EXISTING ELEMENTARY SCHOOL SITE.
- THE PROPOSED IMPROVEMENTS TO THE CAFETERIA AND COURTYARD WILL REPLACE EXISTING IMPERVIOUS LAND TREATMENT WITH NEW IMPERVIOUS LAND TREATMENT, MAINTAINING THE EXISTING VOLUME AND PEAK RATE OF DISCHARGE GENERATED BY THESE AREAS.
- THE PROPOSED IMPROVEMENTS TO THE KINDERGARTEN CLASSROOM ADDITION WILL RESULT IN A MINIMAL INCREASE IN VOLUME AND PEAK RATE OF DISCHARGE GENERATED BY THIS AREA.
- THE PROPOSED WATER HARVESTING AREAS ARE SIZED TO RETAIN THE INCREASE IN VOLUME OF RUNOFF GENERATED BY THE KINDERGARTEN CLASSROOM ADDITION.
- THE PROPOSED IMPROVEMENTS WILL NOT ADVERSELY IMPACT DOWNSTREAM PROPERTIES OR DOWNSTREAM DRAINAGE CONDITIONS.

CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE = 2

B. $P_{8,100} = P_{360} = 2.35$

C. TOTAL PROJECT AREA (A_T) = $\frac{27,280}{0.63}$ SF
AC

D. LAND TREATMENTS

1. EXISTING LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
A		
B	10,000 / 0.23	36
C	6,620 / 0.15	24
D	10,660 / 0.25	40

2. DEVELOPED LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
A		
B		
C	13,880 / 0.32	51
D	13,400 / 0.31	49

II. HYDROLOGY

A. EXISTING CONDITION

a. VOLUME
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = ((0.00 * 0.53) + (0.23 * 0.78) + (0.15 * 1.13) + (0.25 * 2.12)) / 0.63 = 1.40$ IN
 $V_{100} = (E_W / 12) A_T = \frac{(1.40 / 12) 0.63}{0.0732} \text{ AC-FT} = \frac{3,170}{24} \text{ CF}$

b. PEAK DISCHARGE
 $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = ((0.00 * 1.56) + (0.23 * 2.28) + (0.15 * 3.14) + (0.25 * 4.7)) = 2.2$ CFS

B. DEVELOPED CONDITION

a. VOLUME
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = ((0.00 * 0.53) + (0.00 * 0.78) + (0.32 * 1.13) + (0.31 * 2.12)) / 0.63 = 1.62$ IN
 $V_{100} = (E_W / 12) A_T = \frac{(1.62 / 12) 0.63}{0.0849} \text{ AC-FT} = \frac{3,680}{24} \text{ CF}$

b. PEAK DISCHARGE
 $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$
 $Q_p = Q_{100} = ((0.00 * 1.56) + (0.00 * 2.28) + (0.32 * 3.14) + (0.31 * 4.7)) = 2.5$ CFS

c. WATER HARVESTING RETENTION PONDING (AVERAGE END-AREA METHOD)

ELEV	AREA (SF)	VOLUME (CF)	Σ VOLUME (CF)
4975.5	460	280	280
4976	860		
4976	1120	490	490

ii. EAST WATER HARVESTING AREA

ELEV	AREA (SF)	VOLUME (CF)	Σ VOLUME (CF)
4975.5	840		
4976	1120	490	490

iii. TOTAL RETENTION CAPACITY

$V_{POND} = 280 + 490 = 770$ CF

C. COMPARISON

a. VOLUME
 $\Delta V_{100} = \frac{3680 - 3170}{24} = \frac{510}{24} \text{ CF}$ (INCREASE)

b. PEAK DISCHARGE
 $\Delta Q_{100} = \frac{2.5 - 2.2}{24} = \frac{0.3}{24} \text{ CFS}$ (INCREASE)

c. RETENTION CAPACITY VS INCREASE IN VOLUME GENERATED
 $V_{POND} = 770 \text{ CF} > \Delta V_{100} = 510 \text{ CF}$; THEREFORE DECREASE IN RUNOFF DISCHARGED

ENGINEER'S FINAL DRAINAGE CERTIFICATION

I, J. GRAEME MEANS, NMPE 13676, OF THE FIRM HIGH MESA CONSULTING GROUP HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND DRAINED IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 10-31-2013. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT WAS OBTAINED 6-24-2014 AND 5/12/16 BY HIGH MESA CONSULTING GROUP UNDER THE DIRECTION OF CHARLES G. CALA, JR, NMPS 11184, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

THIS CERTIFICATION IS SUBMITTED TO SATISFY CONDITIONS OF APPROVAL FOR BUILDING PERMIT AND TO DOCUMENT COMPLETION OF THE IMPROVEMENTS FOR THE OWNER. THE CAFETERIA WAS PREVIOUSLY CERTIFIED IN JULY OF 2015 AT WHICH TIME A TEMPORARY CO WAS RECOMMENDED FOR THE KINDERGARTEN BUILDING DUE TO REQUIRED CORRECTIONS. THIS SUBMITTAL NO RECOMMENDS PERMANENT CERTIFICATE OF OCCUPANCY FOR THE KINDERGARTEN ADDITION.

AS IDENTIFIED BY THE PREVIOUS SUBMITTAL, THERE WAS AN AREA OF ASPHALT PAVEMENT THAT REQUIRED REMOVAL AND REPLACEMENT. THIS WORK HAS BEEN DONE AND IS DOCUMENTED ON REVISED SHEET C-301-K. ADDITIONALLY, THE APRONS AROUND THE BUILDING HAVE BEEN REMOVED AND REPLACED AT THE REQUEST OF THE ARCHITECT. THE AS-CONSTRUCTED CONDITION IS ALSO DOCUMENTED ON SHEET C-301-K.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THIS CERTIFICATION DOES NOT ADDRESS ADA COMPLIANCE WHICH IS BEYOND THE SCOPE OF GRADING AND DRAINAGE. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

J. GRAEME MEANS, NMPE 13676

DATE 05/18/2016



ENGINEER'S DRAINAGE CERTIFICATION

I, J. GRAEME MEANS, NMPE 13676, OF THE FIRM HIGH MESA CONSULTING GROUP HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND DRAINED IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 10-31-2013. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT WAS OBTAINED 6-24-2014 BY HIGH MESA CONSULTING GROUP UNDER THE DIRECTION OF CHARLES G. CALA, JR, NMPS 11184, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

AS SHOWN ON SHEET C-101, THIS PROJECT CONSISTS OF THREE SEPARATE WORK AREAS, EACH WITH THEIR OWN PLAN. SHEET C-301-C IS FOR ADDITIONS TO THE CAFETERIA BUILDING, AND A 180-DAY TEMPORARY CERTIFICATE OF OCCUPANCY WAS APPROVED BY CITY HYDROLOGY ON MARCH 12, 2015, FOR THE CAFETERIA ADDITIONS WITH THE OUTSTANDING REQUIREMENT BEING TO SUBMIT A FORMAL AS-BUILT CERTIFICATION FOR FINAL CERTIFICATE OF OCCUPANCY. SHEET C-301-BL1 IS FOR A TRENCH DRAIN CONSTRUCTED TO IMPROVE COURTYARD DRAINAGE, AND SHEET C-101-K IS FOR A NEW KINDERGARTEN BUILDING, PLAYGROUND, AND EMERGENCY ACCESS ROAD.

THIS CERTIFICATION IS SUBMITTED TO SATISFY CONDITIONS OF APPROVAL FOR BUILDING PERMIT AND TO DOCUMENT COMPLETION OF THE IMPROVEMENTS FOR THE OWNER. THIS SUBMITTAL RECOMMENDS PERMANENT CERTIFICATE OF OCCUPANCY FOR THE CAFETERIA ADDITIONS, AND A TEMPORARY CERTIFICATE OF OCCUPANCY FOR THE KINDERGARTEN ADDITION.

AS NOTED ON SHEET C-301-C, THERE WERE DEVIATIONS TO THE APPROVED PLAN THAT WERE ADDED DURING CONSTRUCTION TO ENHANCE DRAINAGE CONDITIONS. SPECIFICALLY, A VALLEY GUTTER DRAINING TO A GRADED DEPRESSION TO THE SOUTH WAS ADDED TO THE WEST SIDE OF THE WESTERN ADDITION TO ACCEPT AND CONVEY ROOF RUNOFF TO THE SOUTH, AWAY FROM THE PLAYGROUND TO THE WEST.

AS NOTED ON SHEET C-301-BL1, THE COURTYARD TRENCH DRAIN WAS SHORTENED BY APPROXIMATELY 8 FT AND A SECTION NEAR THE SOUTH END WAS ADDED IN A LOCATION WHERE A CONNECTOR PIPE WAS DESIGNED WITH NO SURFACE GRATE. THESE MINOR MODIFICATIONS WERE MADE DURING CONSTRUCTION TO ADJUST TO FIELD CONDITIONS AND MEET THE INTENT OF THE APPROVED PLAN.

AS NOTED ON SHEET C-301-K, THERE ARE TWO AREAS THAT REQUIRE CORRECTION PRIOR TO RECOMMENDATION OF PERMANENT CERTIFICATE OF OCCUPANCY FOR THE KINDERGARTEN BUILDING: 1) THE PAVED AREA WEST OF THE EXISTING BUILDING THAT LIES WEST OF THE NEW KINDERGARTEN. THE PRE-EXISTING ASPHALT PAVEMENT WAS REMOVED DURING CONSTRUCTION AND THE GRADING PLAN WAS MODIFIED TO SHOW REPLACEMENT MEETING THE SAME INTENT OF DRAINING TO THE WEST TO AN EXISTING STORM INLET. INSTEAD OF DRAINING TO THE INLET, THE AS-BUILT CONDITION DRAINS TO A LOW POINT NORTH OF THE INLET THAT IS APPROXIMATELY 0.2 FT BELOW THE GRATE ELEVATION, RESULTING IN STANDING WATER. THIS AREA WILL REQUIRE CORRECTION PRIOR TO RECOMMENDATION FOR PERMANENT CERTIFICATE OF OCCUPANCY, AND 2) A PORTION OF CONCRETE SIDEWALK AND BUILDING APRON WAS NOT CONSTRUCTED AT THE TIME OF THE AS-BUILT SURVEY, AND NEEDS TO BE COMPLETED AND VERIFIED BY SUBSEQUENT SUBMITTAL.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THIS CERTIFICATION DOES NOT ADDRESS ADA COMPLIANCE WHICH IS BEYOND THE SCOPE OF GRADING AND DRAINAGE. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

J. GRAEME MEANS
NMPE NO. 13676



7/14/2015
DATE

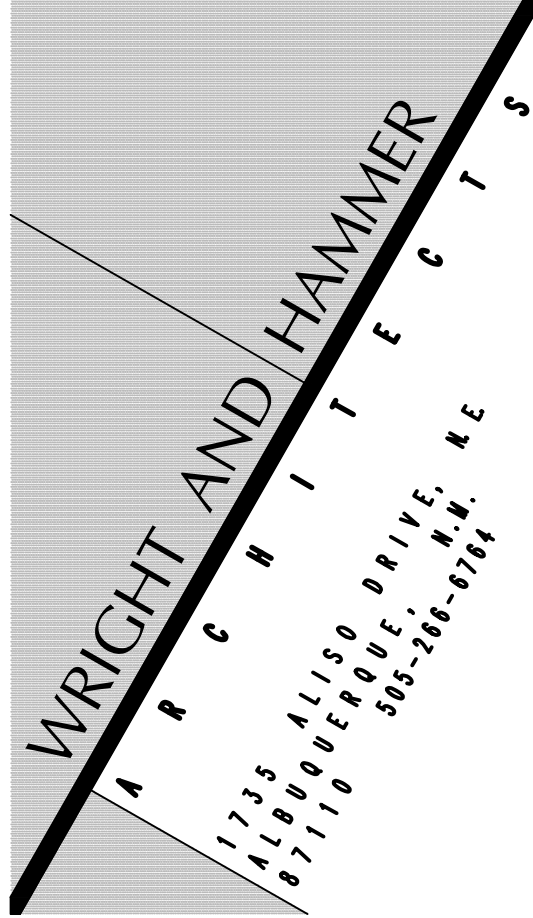
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2010-030.1

CONSTRUCTION NOTES:

- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 FOR DESIGNATION (LINE-SPOTTING) OF EXISTING PUBLIC UTILITIES AND EXISTING UTILITIES OWNED AND OPERATED BY ALBUQUERQUE PUBLIC SCHOOLS.
- 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.
- 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.
- ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
- IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY 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.
- 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.

EROSION CONTROL MEASURES:

- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
- 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.
- WHEN APPLICABLE, CONTRACTOR SHALL SECURE TOPSOIL DISTURBANCE PERMIT FROM THE CITY AND/OR FILE A NOTICE OF INTENT (N.O.I.) WITH THE EPA PRIOR TO BEGINNING CONSTRUCTION.



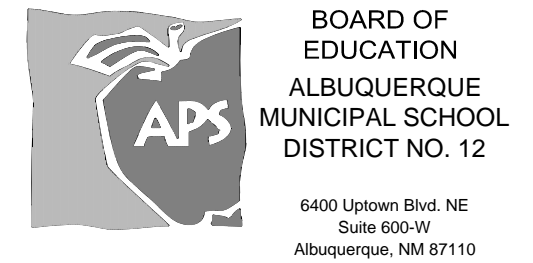
WRIGHT AND HAMMER ARCHITECTS

CONTACT INFORMATION:
DENISE HAMMER, PROJECT ARCHITECT
1735 ALISO DRIVE, NE
ALBUQUERQUE, NM 87110
505-266-8764
Denise@WrightandHammer.com



10-31-13
7-14-15
HIGH MESA Consulting Group

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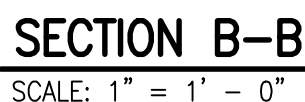
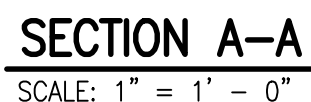
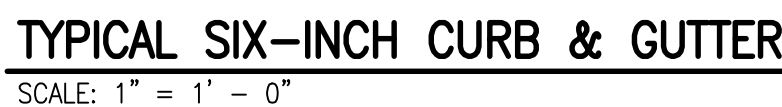
MacARTHUR
ELEMENTARY SCHOOL
KINDERGARTEN ADDITION
CAFETERIA ADDITION
& IMPROVEMENTS
RE-ROOFING

OWNER'S CONTACT:
MYRON JOHNSON, ARCHITECT
FACILITIES DESIGN & CONSTRUCTION
915 OAK STREET, SE
ALBUQUERQUE, NM 87106
505-848-8811




07/16	FINAL CERTIFICATION
07/15	ENGINEER'S CERTIFICATION
01/15	NO CHANGE THIS SHEET
11/1/13	ISSUE DATE
MARK	DATE DESCRIPTION
ISSUE INFORMATION	
PROJECT NO.: 0303.001.40105	
COPYRIGHT	
WRIGHT & HAMMER ARCHITECTS 2013	

GENERAL
DRAINAGE PLAN AND
CALCULATIONS

C-102



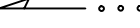


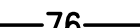






RECORD DRAWING
FOR CERTIFICATION, SEE SHEET C-102

AP	ASPHALT PATH
APRX	APPROXIMATE LOCATION
ASPH	ASPHALT
ASV	ANTI-SIPHON VALVE
BGP	BASKETBALL GOAL POST
BQH	BUILDING OVERHANG
BR	BIKE RACK
C	COMMUNICATION
C&G	CURB AND GUTTER
CB	CONCRETE BENCH
CB	CONCRETE BUILDING COLUMN
CPC	CONCRETE GUARD POST
CI	CAST IRON PIPE
CL	CENTERLINE
CLD	CENTERLINE OF DOOR
CLDD	CENTERLINE OF DOUBLE DOOR
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
CMS	CONCRETE MOW STRIP
CMU	CONCRETE MASONRY UNIT
CO	SANITARY SEWER CLEANOUT
CONC	CONCRETE
CP	CONCRETE PIPE
CPT	CONCRETE PICNIC TABLE
CR	CONCRETE RAMP
CS	CONCRETE STEPS
CSHR	CONCRETE STEPS WITH METAL HANDRAIL
CSW	CONCRETE SIDEWALK
CTC	CONCRETE TRASH CAN
CW	CONCRETE WALL
DCA	DOUBLE GATE
DW	DRIVEWAY
E/PM	ELECTRIC LINE BY PAINT MARK
EA	EDGE OF ASPHALT
EB	ELECTRIC BOX
EC	ELECTRIC CONDUIT
ECB	ELECTRIC CABINET
EPB	ELECTRIC PULLBOX
ERM	ELECTRICAL ROOM
ET	ELECTRIC TRANSFORMER
FI	FIRE HYDRANT
FL	FLOWLINE
FLC	FIRE LINE CONNECTION
G/PM	GAS LINE BY PAINT MARK
GA	GATE
GM	GAS METER
GPR	GAS PRESSURE REGULATOR
GS	GAS SERVICE
GT	GREASE TRAP
GW	GUY WIRE ANCHOR
HDP	HANDSAW
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HTR	HEATER
INV	INVERT ELEVATION
MC	METAL COLUMN
MCB	METAL GATE WITH BIB VALVE
MGP	METAL GUARD POST
MH	MANHOLE
MHR	METAL HANDRAIL
MLP	METAL LIGHT POLE
MPC	METAL LIGHT POLE WITH CONCRETE BASE
MP	METAL POLE
MR	METAL RAMP
MRS	METAL RAMP WITH STEPS
MS	METAL SIGN
MST	METAL STEPS
OHC(2)	OVERHEAD COMMUNICATION LINE (# OF LINES)
OHE(2)	OVERHEAD ELECTRIC LINE (# OF LINES)
OHM	OVERHEAD ELECTRIC MAST
PI	PARKING BUMPER
PB	PAINTED ISLAND
PLB	PLASTIC BENCH
PPM	WOOD POWER POLE WITH ELECTRIC METER
PSL	WOOD POWER POLE WITH STREET LIGHT
PSP	PARKING STRIPE
PVC	POLYVINYL CHLORIDE PIPE
PVP	PAVING PATCH
RCP	REINFORCED CONCRETE PIPE
ROF	ROOF
RBP	ROOF OF PARKING BUMPERS
RS	RUBBER SURFACE
SAS	SANITARY SEWER
SAS/FRD	SANITARY SEWER LINE FROM RECORD DRAWING
SFP/PM	SANITARY SEWER LINE BY PAINT MARK
SD	SPRINKLER CONTROL TIMER
SD	STORM DRAIN
SD/FRD	STORM DRAIN LINE FROM RECORD DRAWING
SOP	SERVICE DROP POLE
SGP	STEEL GUARD POST
ST	SAND TRAP
STD	STANDARD
STUW	STUCCO WALL
SVB	SPRINKLER VALVE BOX
SVP	SEWER VENT PIPE
SW	SIDEWALK
T	TOP OF ASPHALT
TB	TETHER BALL POLE
TC	TOP OF CURB
TCO	TOP OF CONCRETE
TC	TOP OF GRATE
TS	TRAFFIC SIGN
TW	TOP OF WALL
TYP	TYPICAL
VCP	VITRIFIED CLAY PIPE
W/FRD	WATER LINE FROM RECORD DRAWING
W/PM	WATER LINE BY PAINT MARK
WCR	WHEELCHAIR RAMP
WF	WATER FOUNTAIN
WHB	WATER HOT BOX
WM	WATER METER
WPP	WOOD POWER POLE
WPPC	WOOD POWER POLE WITH CONDUIT
WPRV	WATER PRESSURE REGULATOR VALVE
WS	WOOD STEPS
WVB	WATER VALVE BOX
WVT	WATER VAULT
X-WALK	PAINTED CROWSWALK
	CONIFEROUS TREE
	DECIDUOUS TREE
	SHRUB
*	PAINTED UTILITY MARKER

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 FOR DESIGNATION (LINE-SPOTTING) OF EXISTING PUBLIC UTILITIES AND EXISTING UTILITIES OWNED AND OPERATED BY ALBUQUERQUE PUBLIC SCHOOLS.
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. SINCE THE CONFLICT CAN BE RESOLVED WITH A MINIMUM 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. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY 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 LOCATION OF SUCH LINES MAY BECOME 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 BE RESPONSIBLE FOR 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 COUNTY 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.

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
2. 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.
3. WHEN APPLICABLE, CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" FROM THE CITY AND/OR FILE A NOTICE OF INTENT (N.O.I.) WITH THE EPA PRIOR TO BEGINNING CONSTRUCTION.

THIS IS NOT A BOUNDARY SURVEY; DATA IS SHOWN FOR ORIENTATION ONLY. THE BOUNDARY INFORMATION DEPICTED BY THIS PLAN IS BASED UPON A UNRECORDED BOUNDARY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 01/21/2010 (2008.194.4). THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE TOPOGRAPHIC SURVEY PREPARED BY HIGH MESA CONSULTING NMPS 11184, DATED 01/21/2010 (2008.194.4)

INV	INVERT
TA	TOP OF ASPHALT PAVEMENT
TC	TOP OF CURB
TG	TOP OF GRATE
+ 75.61	EXISTING SPOT ELEVATION
⊕ 76.85	PROPOSED SPOT ELEVATION
 ...	EXISTING FLOWLINE
 ...	PROPOSED FLOWLINE
 -4978-	EXISTING CONTOUR
 -76-	PROPOSED CONTOUR
	EXISTING DIRECTION OF FLOW
	PROPOSED DIRECTION OF FLOW
	RIGHT OF WAY LINE
	PUBLIC EASEMENT LINE
	HIGH POINT / DIVIDE
	PROPOSED CONCRETE

CONSTRUCT	RECORD INFORMATION (VERIFIED BY ENGINEER)
✓	AS-CONSTRUCTED = AS-DESIGNED (VERIFIED BY AS-BUILT SURVEY)
36.42"	RECORD INFORMATION FROM AS-BUILT SURVEY
+25.2	RECORD INFORMATION FROM AS-BUILT SURVEY
② 28.98'42"	RECORD INFORMATION FROM AS-BUILT SURVEY


WRIGHT AND HAMMER ARCHITECTS

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10-31-13
7-14-15
5/18/16

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**BOARD OF
EDUCATION**
**ALBUQUERQUE
MUNICIPAL SCHOOL
DISTRICT NO. 12**

6400 Uptown Blvd. NE
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Albuquerque, NM 87110




**MacARTHUR
ELEMENTARY SCHOOL**

KINDERGARTEN ADDITION

**CAFETERIA ADDITION
& IMPROVEMENTS**

RE—ROOFING

OWNER'S CONTACT:
MYRON JOHNSON, ARCHITECT
FACILITIES DESIGN & CONSTRUCTION
915 OAK STREET, SE
ALBUQUERQUE, NM 87106
505-848-8811

	05/16	ENGINEER'S CERTIFICATION
	07/15	ENGINEER'S CERTIFICATION
	01/15	PAVING TO BUS ROAD
	11/1/13	ISSUE DATE
MARK	DATE	DESCRIPTION
ISSUE INFORMATION		
PROJECT NO.: 0303.001.40105		
COPYRIGHT		
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KINDERGARTEN		

KINDERGARTEN

GRADING PLAN SECTIONS AND DETAILS

C-301-K



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: _____ Building Permit #: _____ City Drainage #: _____

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

Legal Description: _____

City Address: _____

Engineering Firm: _____ Contact: _____

Address: _____

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

Owner: _____ Contact: _____

Address: _____

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

Architect: _____ Contact: _____

Address: _____

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

Surveyor: _____ Contact: _____

Address: _____

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

Contractor: _____ Contact: _____

Address: _____

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

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☐ GRADING PLAN
- ☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEER'S CERT (TCL)
- ☐ ENGINEER'S CERT (DRB SITE PLAN)
- ☐ ENGINEER'S CERT (ESC)
- ☐ SO-19
- ☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM)
- ☐ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ GRADING CERTIFICATION
- ☐ SO-19 APPROVAL
- ☐ ESC PERMIT APPROVAL
- ☐ ESC CERT. ACCEPTANCE
- ☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED: _____ Yes _____ No _____ Copy Provided

DATE SUBMITTED: _____ By: _____

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development