

SITE GRADING GENERAL NOTES

- ALL ELEVATIONS SHOWN ARE TO FINISHED GRADE.
- ALL GRADING OPERATIONS, EXCAVATION, FILL, COMPACTION TESTING, AND BACKFILL SHALL BE OBSERVED AND TESTED BY A QUALIFIED GEOTECHNICAL ENGINEER.
- NO PAVEMENTS SHALL BE PLACED PRIOR TO APPROVAL OF THE SUBGRADE BY THE GEOTECHNICAL ENGINEER.
- ALL FILL MATERIAL SHALL BE IN COMPLIANCE WITH THE PROJECT SPECIFICATIONS.
- THE CONTRACTOR SHALL LEAVE ALL AREAS NOT TO RECEIVE PAVEMENT 6 INCHES BELOW THE FINISHED GRADE, TO ALLOW FOR TOPSOIL. SEE LANDSCAPE FOR ADDITIONAL REQUIREMENTS.
- ALL GRADING OPERATIONS SHALL BE STAKED BY A REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR.
- ALL ADA PARKING STALLS AND ACCESS AISLES, SHALL HAVE LESS THEN 2% IN ANY DIRECTION
- ALL SIDEWALKS SHALL HAVE A CROSS SLOPE OF 1.5%. (2.0% MAX)
- ALL BUILDING ENTRANCES SHALL HAVE A MINIMUM 5' LANDING WITH 1.5% SLOPE AWAY FROM THE BUILDING (2% MAX).

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING THE LOT 11 & LOT 12 MERIDIAN BUSINESS PARK GRADING AND DRAINAGE PLAN ARE CONTAINED BELOW:

- VICINITY MAP
- GRADING PLAN
- CALCULATIONS

THE PROPOSED IMPROVEMENTS, AS SHOWN BY THE VICINITY MAP, ARE LOCATED ON THE SOUTH SIDE OF MERIDIAN PLACE NW, ON THE WEST SIDE OF AIRPORT DRIVE NW AND ON THE NORTH SIDE OF BLUEWATER ROAD NW. THE SITE IS UNDEVELOPED AND SLOPES FROM NORTH TO SOUTH AT AN APPROXIMATE SLOPE OF 0.5%. THE SITE IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE ACCORDING TO EFFECTIVE MAPPING FROM F.E.M.A.

THE MASTER DRAINAGE PLAN FOR THIS SUBDIVISION WAS PREPARED BY EASTERLING AND ASSOCIATES. THIS PLAN ESTABLISHED A MAXIMUM SITE DISCHARGE RATE OF 0.10 CFS/ACRE AND REQUIRES TEMPORARY DIVERSION DITCHES AND PONDS TO CONTROL THE RUNOFF GENERATED FROM EACH LOT.

THE SITE IS BOUNDED ON THREE (3) SIDES BY PUBLIC RIGHT-OF-WAY, AND ON THE FOURTH SIDE BY PREVIOUSLY DEVELOPED SITES (INCLUDING LOT 13, FOR WHICH THE PARKING LOT IMPROVEMENTS ARE BEING DEVELOPED). THEREFORE, OFF-SITE FLOWS ARE NOT CONSIDERED SIGNIFICANT.

THE GRADING PLAN SHOWS:

- THE EXISTING AND PROPOSED GRADES, INDICATED BY CONTOURS AT 0.5' INTERVALS (REFERENCE GENERAL NOTE ON THIS SHEET REGARDING STATE OF SURVEY AT THE TIME OF SUBMITTAL).
- CONTINUITY BETWEEN EXISTING AND PROPOSED ELEVATIONS.
- THE LIMIT AND CHARACTER OF EXISTING IMPROVEMENTS, AND
- THE LIMIT AND CHARACTER OF PROPOSED IMPROVEMENTS.

THE PROPOSED IMPROVEMENTS CONSIST OF PARKING AND ASSOCIATED LANDSCAPING ON LOTS 11 & 12 AS WELL AS TENANT IMPROVEMENTS TO LOT 13 (INCLUDING CANOPIES ON THE NORTH AND SOUTH SIDE OF THE EXISTING BUILDING). THE RUNOFF FROM LOTS 11 & 12 INTO THE NORTHERN AND SOUTHERN PONDS. THE NORTHERN PONDS ARE DIVIDED INTO SUB-PONDS (N-1, N-2, N-3, N-4 & N-5) AND THE SOUTHERN PONDS ARE DIVIDED INTO SUB-PONDS (S-1, S-2, S-3 & S-4). EACH POND IS LOCATED WITHIN DEPRESSED ISLANDS WITHIN THE PARKING AREAS, AND WILL EVENTUALLY DISCHARGE INTO PUBLIC STORM SEWERS ALONG MERIDIAN PLACE NW (NORTHERN PONDS) AND BLUEWATER ROAD NW (SOUTHERN PONDS). THE RESPECTIVE RATES OF DISCHARGE FOR THE ACCUMULATED NORTHERN AND SOUTHERN PONDS ARE 0.26 AND 0.26 (BOTH OF WHICH ARE LESS THAN THE 0.1 CFS/ACRE REQUIREMENT PER THE MASTER PLAN).

THE CALCULATIONS ANALYZE THE EXISTING AND PROPOSED CONDITIONS FOR THE 6-HOUR, 100 YEAR RAINFALL EVENT. PER DISCUSSIONS WITH CITY, THE ANALYSIS IS IN ACCORDANCE WITH CHAPTER 6-"DRAINAGE, FLOOD CONTROL AND EROSION CONTROL" DEVELOPMENT PROCESS MANUAL. AS SHOWN BY THESE CALCULATIONS, THE RATE AND VOLUME OF RUNOFF WILL INCREASE BUT THE POND(S) WITH CONTROLLED OUTLETS WILL MITIGATE THE INCREASE. THIS PLAN IS IN CONFORMANCE WITH THE MASTER DRAINAGE PLAN.

CALCULATIONS

PRECIPITATION ZONE 1

TOTAL SITE AREA (NORTHERN) = 2.65 ACRES, TOTAL SITE AREA (SOUTHERN) = 2.76 ACRES

NORTHERN BASIN AREA = 2.65 ACRES

EXISTING CONDITIONS

LAND TREATMENT A = 100%

EQN 6.1: $E = [(0.55 \times 2.65)] / 2.65 = 0.55$ INCHES

EQN 6.2: $V360 = (0.55 \times 2.65) / 12 = 0.122$ ACRE FEET

EQN 6.6: $Qp = (1.54 \times 2.65) = 4.08$ CFS

PROPOSED CONDITIONS

LAND TREATMENT B = 82.8% (2.19 ACRES), D = 17.2% (0.46 ACRES)

EQN 6.1: $E = [(0.93 \times 0.46) + (2.24 \times 2.19)] / 2.65 = 2.01$ INCHES

EQN 6.2: $V360 = (2.01 \times 2.65) / 12 = 0.444$ ACRE FEET

EQN 6.6: $Qp = (2.16 \times 0.46) + (4.12 \times 2.19) = 10.02$ CFS

INCREASE IN VOLUME OF RUNOFF = 0.322 ACRE FEET

INCREASE IN RATE OF RUNOFF = 5.94 CFS

POND VOLUME (NORTHERN BASINS)

$Tc = 0.2$ HR, $Ad = 2.43$ ACRES, $At = 2.65$ ACRES, $0.25(Ad/At) = 0.229$ HR

$Tb = 2.107 \times E \times (Av/Qp) - 0.25(Ad/At) = 0.891$ HR

$Tp = (0.7 \times Tc) + ((1.6 - (Ad/At)) / 12) = 0.197$ HR

$V_{required} = 19,776$ CF

POND VOLUME AND DISCHARGES

N-1: VOLUME = 3,582 CF, 1 1/8" ORIFICE (AREA = 0.0069 SF), OUTFLOW = $0.6(0.0069)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0526$ CFS

N-2: VOLUME = 4,759 CF, 1 1/8" ORIFICE (AREA = 0.0069 SF), OUTFLOW = $0.6(0.0069)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0526$ CFS

N-3: VOLUME = 2,866 CF, 1 1/8" ORIFICE (AREA = 0.0069 SF), OUTFLOW = $0.6(0.0069)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0526$ CFS

N-4: VOLUME = 2,872 CF, 1 1/8" ORIFICE (AREA = 0.0069 SF), OUTFLOW = $0.6(0.0069)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0526$ CFS

N-5: VOLUME = 5,706 CF, 1 1/8" ORIFICE (AREA = 0.0069 SF), OUTFLOW = $0.6(0.0069)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0526$ CFS

TOTAL VOLUME PROVIDED = 19,785 CF, TOTAL OUTFLOW = 0.2628 CFS, ALLOWABLE OUTFLOW = $2.65 \times 0.1 = 0.265$ CFS

SOUTHERN BASIN AREA = 2.76 ACRES

EXISTING CONDITIONS

LAND TREATMENT A = 100%

EQN 6.1: $E = [(0.55 \times 2.76)] / 2.76 = 0.55$ INCHES

EQN 6.2: $V360 = (0.55 \times 2.76) / 12 = 0.127$ ACRE FEET

EQN 6.6: $Qp = (1.54 \times 2.76) = 4.25$ CFS

PROPOSED CONDITIONS

LAND TREATMENT B = 82.8% (2.29 ACRES), D = 17.2% (0.47 ACRES)

EQN 6.1: $E = [(0.93 \times 0.47) + (2.24 \times 2.29)] / 2.76 = 2.02$ INCHES

EQN 6.2: $V360 = (2.02 \times 2.76) / 12 = 0.465$ ACRE FEET

EQN 6.6: $Qp = (2.16 \times 0.47) + (4.12 \times 2.29) = 10.45$ CFS

INCREASE IN VOLUME OF RUNOFF = 0.338 ACRE FEET

INCREASE IN RATE OF RUNOFF = 6.20 CFS

POND VOLUME (SOUTHERN BASINS)

$Tc = 0.2$ HR, $Ad = 2.53$ ACRES, $At = 2.76$ ACRES, $0.25(Ad/At) = 0.229$ HR

$Tb = 2.107 \times E \times (Av/Qp) - 0.25(Ad/At) = 0.895$ HR

$Tp = (0.7 \times Tc) + ((1.6 - (Ad/At)) / 12) = 0.197$ HR

$V_{required} = 20,700$ CF

POND VOLUME AND DISCHARGES

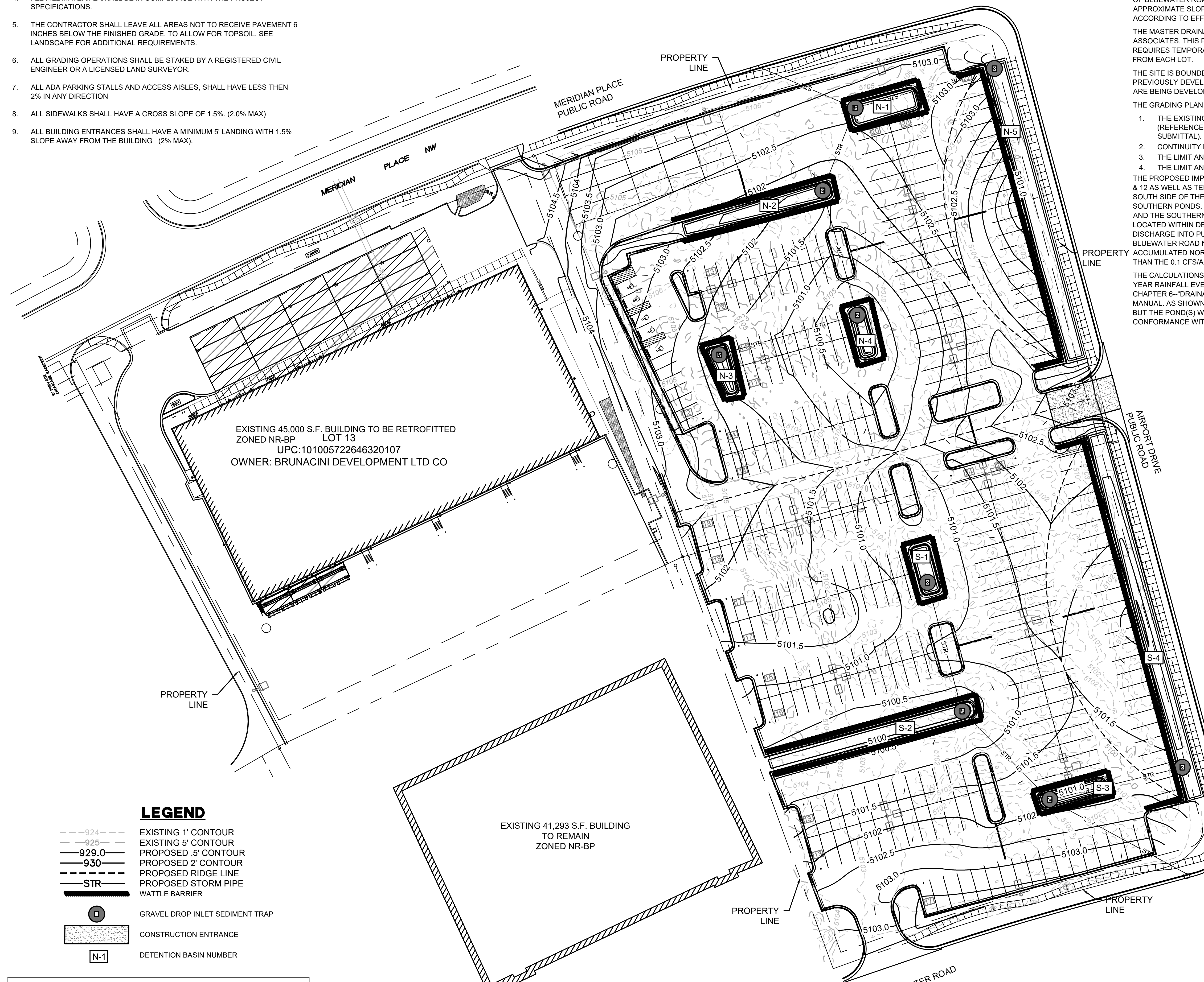
S-1: VOLUME = 3,002 CF, 1 1/4" ORIFICE (AREA = 0.0085 SF), OUTFLOW = $0.6(0.0085)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0649$ CFS

S-2: VOLUME = 6,602 CF, 1 1/4" ORIFICE (AREA = 0.0085 SF), OUTFLOW = $0.6(0.0085)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0649$ CFS

S-3: VOLUME = 3,627 CF, 1 1/4" ORIFICE (AREA = 0.0085 SF), OUTFLOW = $0.6(0.0085)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0649$ CFS

S-4: VOLUME = 7,593 CF, 1 1/4" ORIFICE (AREA = 0.0085 SF), OUTFLOW = $0.6(0.0085)[SQ(2^2 \times 32.2^2 \times 5)] = 0.0649$ CFS

TOTAL VOLUME PROVIDED = 20,824 CF, TOTAL OUTFLOW = 0.2595 CFS, ALLOWABLE OUTFLOW = $2.76 \times 0.1 = 0.276$ CFS



EXISTING 45,000 S.F. BUILDING TO BE RETROFITTED
ZONED NR-BP LOT 13
UPC:101005722646320107
OWNER: BRUNACINI DEVELOPMENT LTD CO

EXISTING 41,293 S.F. BUILDING
TO REMAIN
ZONED NR-BP

LEGEND

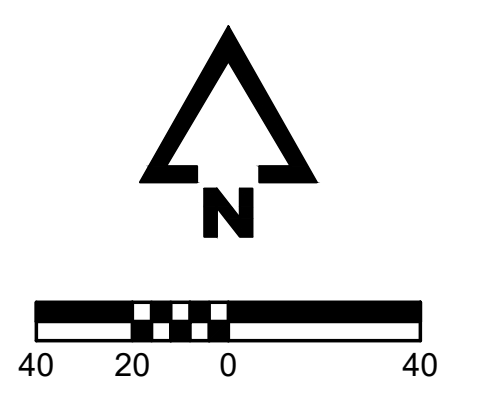
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED .5' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED RIDGE LINE
- PROPOSED STORM PIPE
- WATTLE BARRIER
- GRAVEL DROP INLET SEDIMENT TRAP
- CONSTRUCTION ENTRANCE
- DETENTION BASIN NUMBER

NOTE
AT THE TIME OF THIS SUBMITTAL, SURVEY HAD ONLY BEEN PARTIALLY COMPLETED. GRADES WITHIN THE NEW PARKING AREAS EAST OF THE EXISTING BUILDING ARE INCLUDED, BUT INFORMATION ON ADJACENT STREETS AND AT AND ADJACENT TO THE EXISTING BUILDING WAS STILL IN PROCESS. THE AREA AROUND THE EXISTING BUILDING AND STREETS WILL LARGELY REMAIN UNCHANGED, BUT OUR DOCUMENTS WILL INCLUDE INFORMATION IN THESE AREAS AS IT BECOMES AVAILABLE



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WAQ1
GRADING AND STORM PLAN

ALBUQUERQUE, NEW MEXICO
191313-000
INITIAL ISSUE DATE

REVISIONS

ENGINEER: MVE
DRAWN BY: ELM
CHECKED BY: CJF
SURVEYOR: FIELDBOOK

DRAWING NO.: C002
SHEET NO.: 4 OF 7

P:\191313-000\DRAWINGS\CIVIL\SITE PLAN SHEETS\191313-000 GRAD.DWG PLOT DATE: 4/17/2020 1:59 PM BY: EMC/QUEEN