CITY OF ALBUQUERQUE



August 11, 2016

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

Re: NW Diagnostic Center @ Chaparral ES

6450 Western Trail NW

Request Permanent C.O. - Accepted

Engineer's Stamp dated: 12/18/2014 (F10D005A)

Certification dated: 8-9-16

Dear Mr. Graeme,

Based on the Certification received 8/10/2016, 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

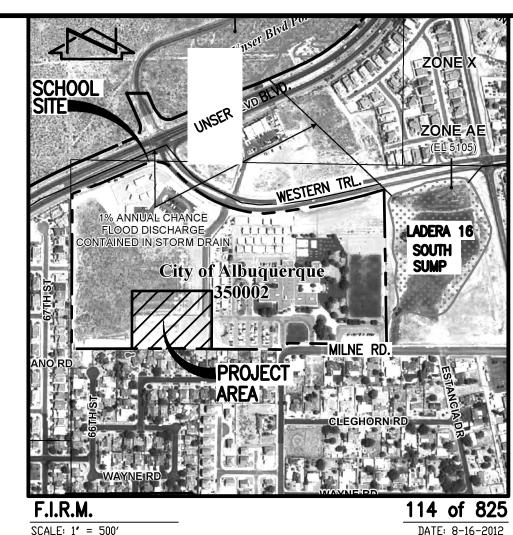
www.cabq.gov

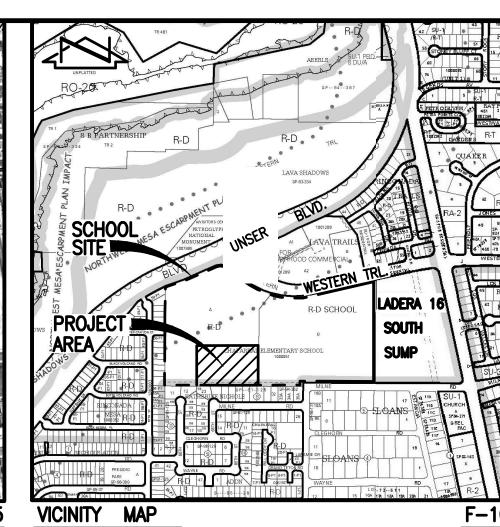
TE/RH

C: email,

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

Lois Blocker





A 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 12-18-2014. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT WAS OBTAINED 5-16-2016 AND 8-9-2016 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. THIS SUBMITTAL RECOMMENDS PERMANENT CERTIFICATE OF OCCUPANCY FOR THE DIAGNOSTIC CENTER PHASE 2.

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. Draeme Mean

J. GRAEME MEANS, NMPE 13676

08-09-2016



- 1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MÉXICO 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 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.
- 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 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 REPRESENTATION PERTAINING THERETO, AND ASSUMES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO REPRESENTATION PERTAINING THERETO, 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 FACILITIES.

LEGAL DESCRIPTION

SCALE: 1'' = 750' (APPROX.)

TRACTS A AND B, CHAPARRAL ELEMENTARY SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY NEW MEXICO ON JANUARY 11, 2000, BOOK 200C, PAGE 9.

PROJECT BENCHMARK

CITY OF ALBUQUERQUE SURVEY CONTROL 1 3/4" METALLIC DISK STAMPED "ACS BM, 15-F11" EPOXIED TO TOP OF CURB 5.20 FEET SOUTH OF THE SSE CURB RETURN OF ATRISCO ROAD N.W. AND WESTERN TRAIL N.W. ELEVATION = 5110.03 FEET (NAVD 88)

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

A SPIKE WITH JMA CONTROL CAP STAMPED "NMPS #11184". AS

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.
- 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

INDEX OF DRAWINGS

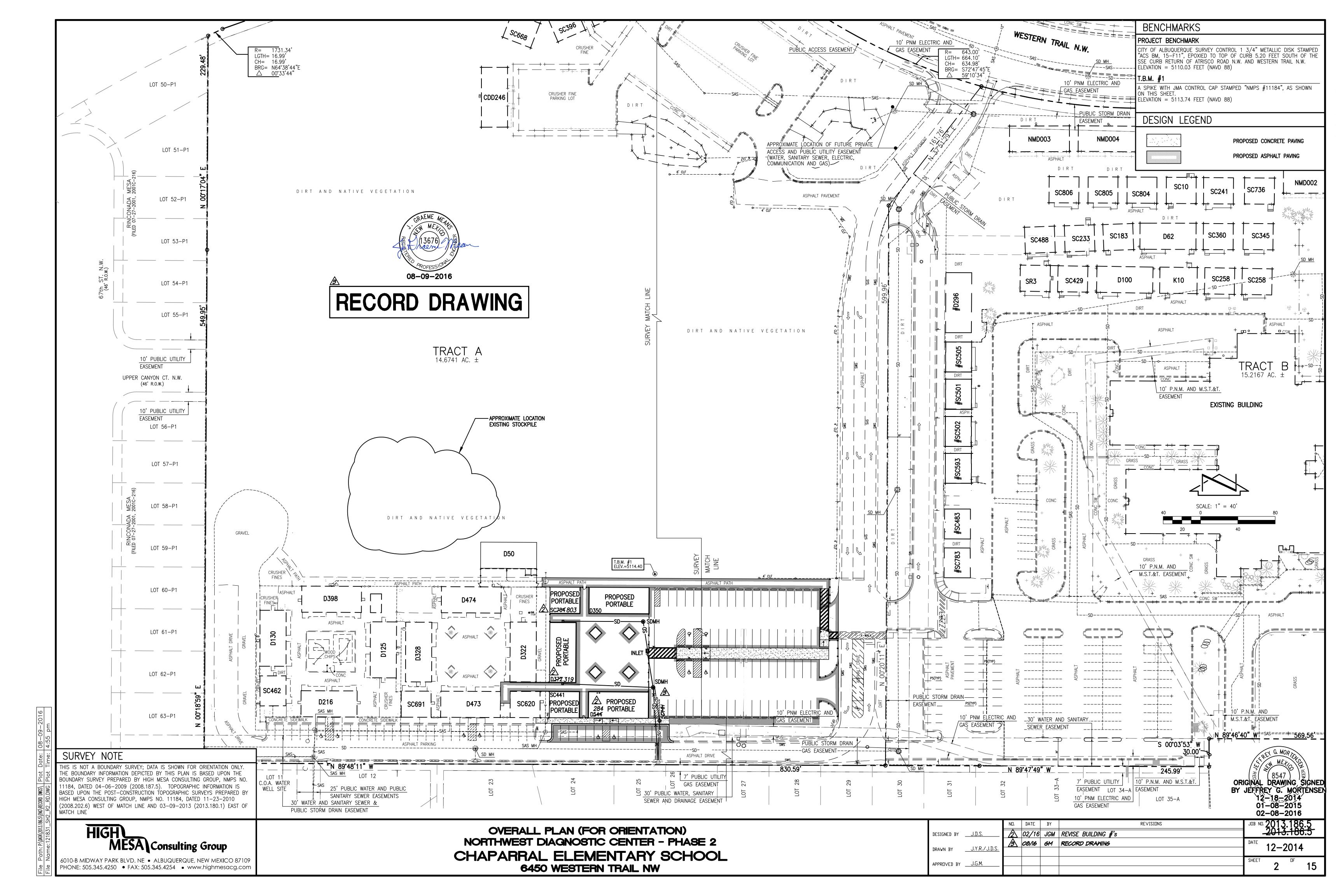
SHE	EET NO.	DESCRIPTION
1	OF 1	SUPPLEMENTAL SITE AND DRAINAGE INFORMATION
2	OF 15	OVERALL PLAN (FOR ORIENTATION)
3	OF 15	DEMOLITION PLAN
4	OF 15	SITE PLAN — BUILDINGS
5	OF 15	SITE PLAN — PARKING LOT (TCL)
8	OF 15	GRADING PLAN
9	OF 15	DRAINAGE PLAN AND CALCULATIONS
13	OF 15	PORTABLE CLASSROOM FOUNDATION PLAN

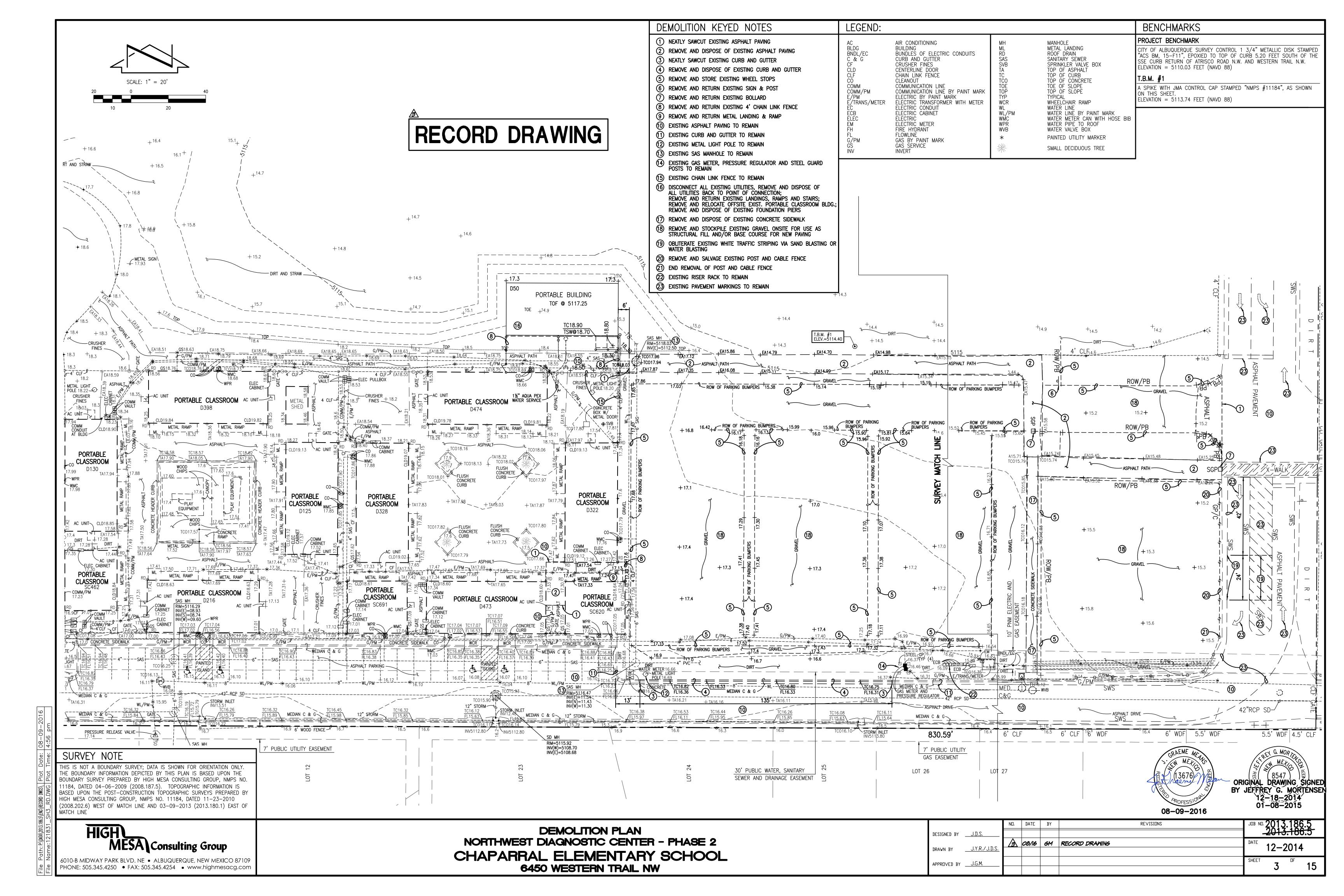
MESA Consulting Group

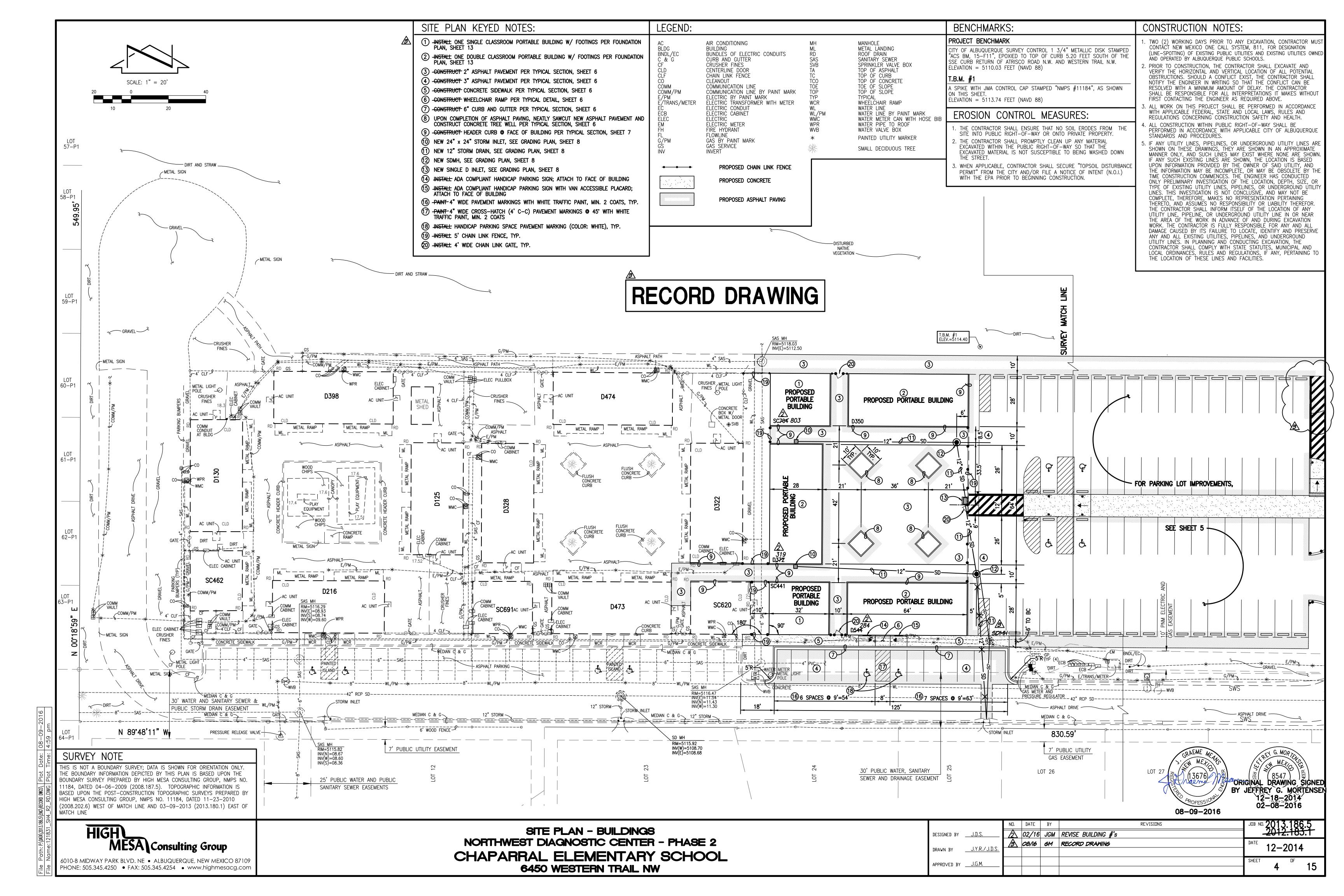
SUPPLEMENTAL SITE AND DRAINAGE INFORMATION NORTHWEST DIAGNOSTIC CENTER - PHASE 2 CHAPARRAL ELEMENTARY SCHOOL

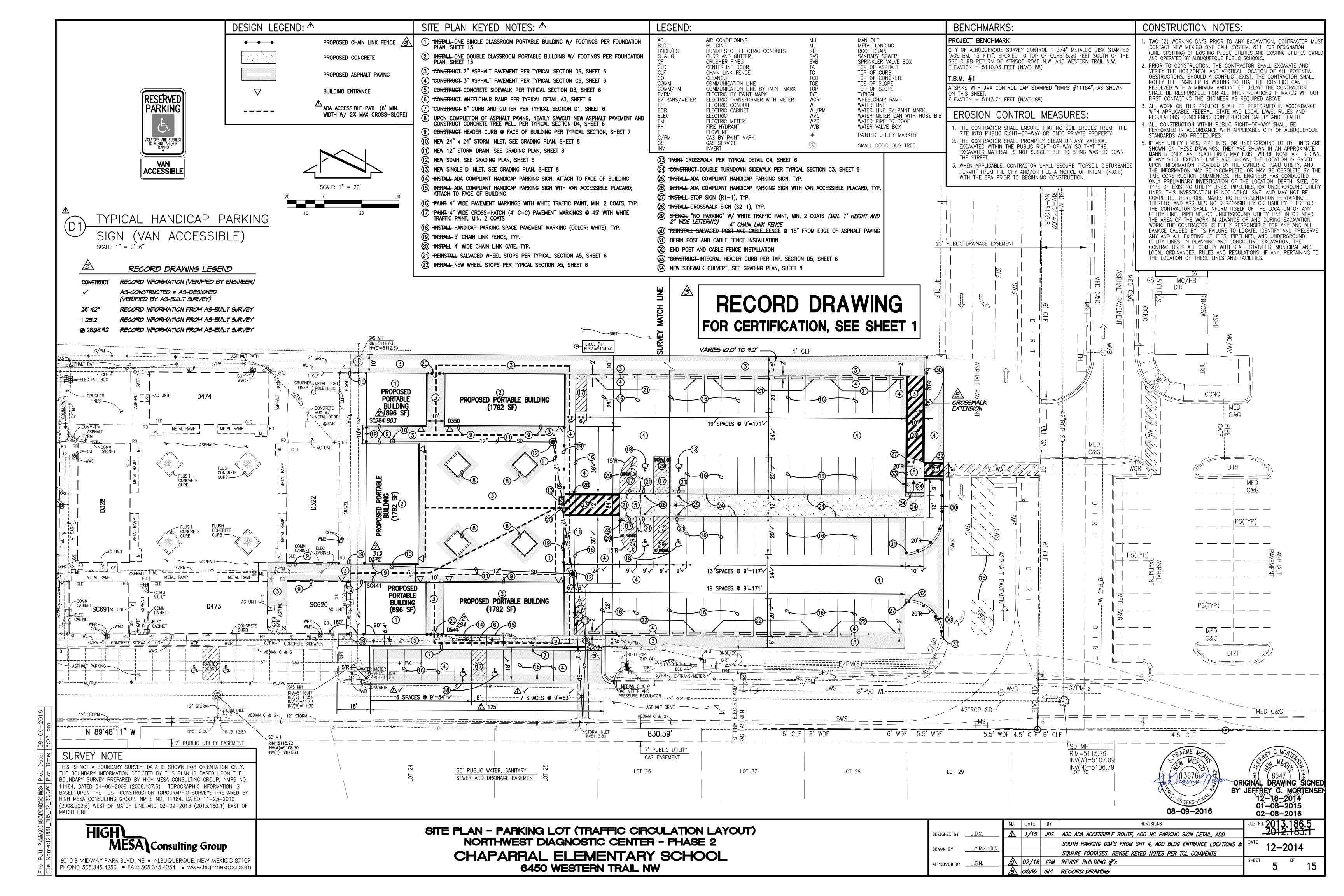
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DESIGNED BY	J.G.M	Λ	08/16	GM	RECORD DRAWING AND CERTIFICATION		2013.186.5
DRAWN BY	J.D.S.					DATE	12-2014
APPROVED BY	J.G.M.					SHEET	1 1

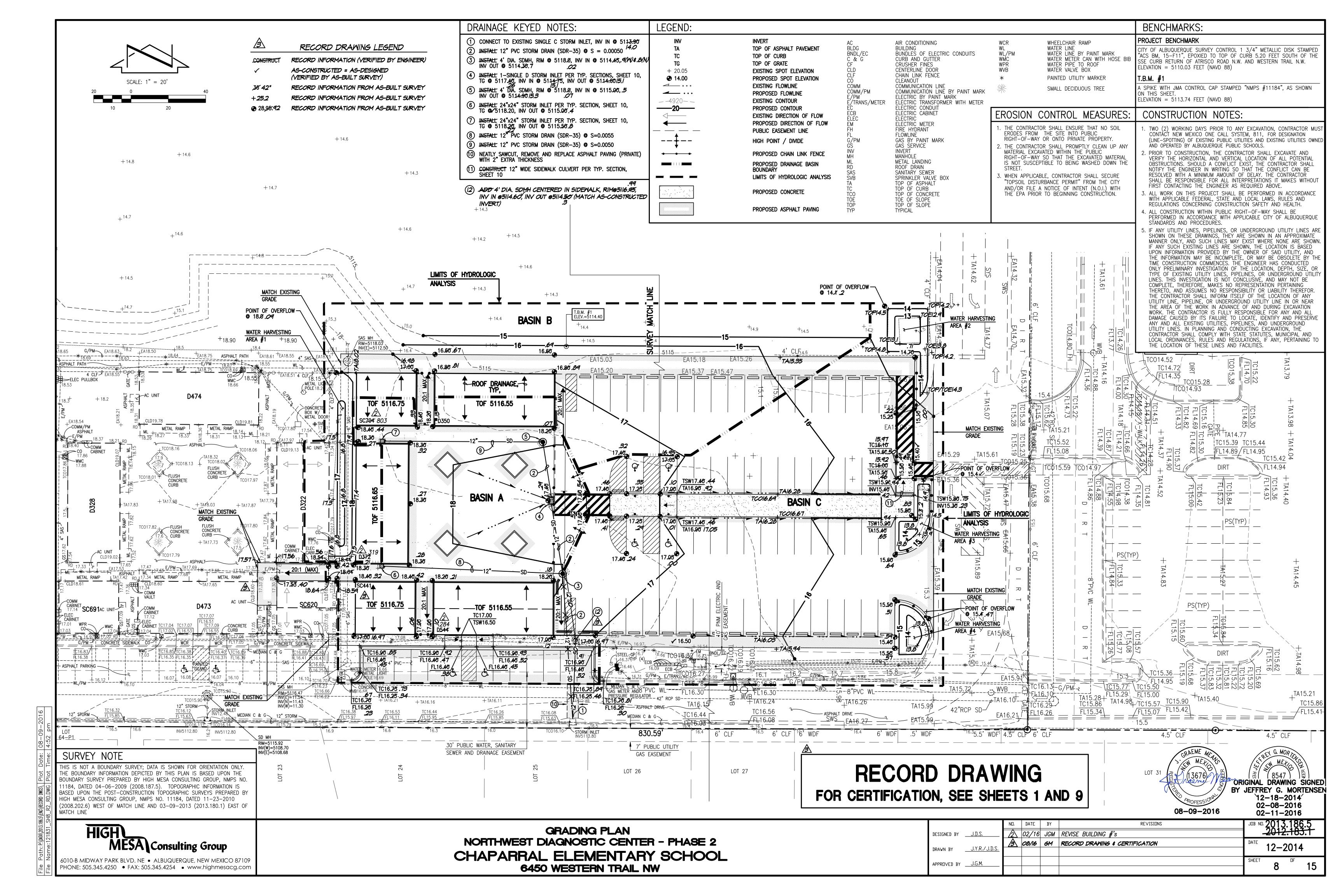
6010-B MIDWAY PARK BLVD. NE • ALBUQUERQUE, NEW MEXICO 87109 PHONE: 505.345.4250 • FAX: 505.345.4254 • www.highmesacg.con











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

IMMEDIATELY DOWNSTREAM OF CHAPARRAL ELEMENTARY SCHOOL WHERE STORMWATER CONTROL IS

ACHIEVED. THE REMAINING PORTION OF DEVELOPED RUNOFF WILL BE DISCHARGED TO THE PLAYA

II. PROJECT DESCRIPTION

LOCATED NORTH OF THE SITE.

AS SHOWN BY THE VICINITY MAP, THE SCHOOL SITE IS LOCATED ON THE SOUTH SIDE OF WESTERN TRAIL NW BETWEEN UNSER BLVD NW AND ATRISCO BLVD NW. THE CURRENT LEGAL DESCRIPTION IS TRACT A, CHAPARRAL ELEMENTARY SCHOOL. AS SHOWN BY PANEL 114 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, AUGUST 16, 2012, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE. FURTHERMORE, THE SITE LIES UPSTREAM OF THE LADERA BASIN 16 SOUTH SUMP, REFERENCED THEREON AS THE "CHAPARRAL POND", A REGIONAL STORM WATER FACILITY OWNED, OPERATED AND MAINTAINED BY THE CITY OF ALBUQUERQUE. THE PRESENCE OF THIS DOWNSTREAM FACILITY ALLOWS FOR THE FREE DISCHARGE OF RUNOFF FROM THIS SITE. THE PANEL ALSO IDENTIFIES THAT THE "1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED WITHIN STORM DRAIN".

III. BACKGROUND DOCUMENTS

THE PREPARATION OF THIS PLAN RELIED UPON THE FOLLOWING DOCUMENTS:

- TOPOGRAPHIC SURVEYS PREPARED BY HIGH MESA CONSULTING GROUP (NMPS 11184) DATED 11-23-2010 AND 03-09-2013. THESE REFERENCED SURVEYS PROVIDE THE BASIS FOR THE EXISTING CONDITIONS OF THE PROJECT SITE.
- RECORD DRAWING OF THE D50 PORTABLE RELOCATION FOR THE NORTHWEST DIAGNOSTIC CENTER AT CHAPARRAL ELEMENTARY SCHOOL, PREPARED BY HIGH MESA CONSULTING GROUP, NMPE 8547, DATED 12-26-2012. THIS REFERENCED PLAN PROVIDES THE BASIS FOR THE EXISTING CONDITION OF THE DOUBLE CLASSROOM PORTABLE BUILDING (D50) AND IMMEDIATE ADJACENT IMPROVEMENTS INSTALLED SUBSEQUENT TO THE TOPOGRAPHIC SURVEY IN 2010. • GRADING AND DRAINAGE PLAN FOR PRE-K AND DIAGNOSTICIAN CONSOLIDATION AT CHAPARRAL ELEMENTARY SCHOOL, PREPARED BY HIGH MESA CONSULTING GROUP, NMPE 8547, DATED 06-17-2010 AND CERTIFIED 03-01 2011. THIS REFERENCED PLAN ESTABLISHED THE DRAINAGE CONCEPT FOR THE NORTHWEST DIAGNOSTIC CENTER SITE OF DIRECT DISCHARGE TO THE PUBLIC STORM DRAIN PASSING THROUGH TRACT A.
- STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR CHARAPPARAL ELEMENTARY SCHOOL PREPARED BY HIGH MESA CONSULTING GROUP, NMPE 8547, DATED APRIL, 2012. THE EXISTING SWPPP WAS PREPARED TO SUPPORT SITE AND BUILDING IMPROVEMENTS ON THE CHAPARRAL ELEMENTARY SCHOOL SITES.

IV. EXISTING CONDITIONS

THE EXISTING SITE IS CHARACTERIZED BY ONE (1) DRAINAGE BASIN, BASIN A WITHIN TRACT A OF THE SCHOOL SITE. BASIN A PRESENTLY CONSISTS OF A GRAVEL PARKING LOT IMMEDIATELY EAST OF THE EXISTING PRE-K AND DIAGNOSTIC CENTER CAMPUSES AND SERVES THESE CAMPUSES. THE SOUTHERLY PORTION OF TRACT A, CONSISTING OF THE PRE-K AND DIAGNOSTIC CENTER, DRAINS TO THE EXISTING PUBLIC STORM DRAIN THAT OUTFALLS TO THE LADERA BASIN 16 SOUTH SUMP AS PREVIOUSLY DESCRIBED. THE AREA NORTH OF THE EXISTING PRE-K AND DIAGNOSTIC CENTER CAMPUSES IS RELATIVELY "FLAT" AND IS CHARACTERISTIC OF A PLAYA, THEREFORE HAS NO

THERE ARE NO APPARENT OFFSITE FLOWS IMPACTING THIS PROJECT SITE. THE SITE IS BOUNDED TO THE WEST BY THE EXISTING DIAGNOSTIC CENTER THAT DISCHARGES DEVELOPED RUNOFF DIRECTLY TO THE PUBLIC STORM DRAIN IN TRACT A. IT IS BOUNDED ON THE NORTH BY UNDEVELOPED AREA THAT IS TOPOGRAPHICALLY LOWER THAN THE SITE AND CHARACTERISTIC OF A PLAYA. ON THE EAST THE SITE IS BOUNDED BY A PAVED ACCESS ROAD THAT DRAINS AWAY FROM THE PROJECT SITE. TO THE SOUTH THE SITE IS BOUNDED BY EXISTING RESIDENTIAL PROPERTIES THAT APPEAR TO BE TOPOGRAPHICALLY LOWER THAN THE SITE, DRAINING SOUTH TO MILNE ROAD

V. DEVELOPED CONDITIONS THE DEVELOPED SITE IS CHARACTERIZED BY THREE (3) DRAINAGE BASINS, BASINS A, B AND C.

- THE PROPOSED CONSTRUCTION WITHIN THESE THREE BASINS MAKES UP PHASE 2 OF THE NORTHWEST DIAGNOSTIC CENTER. THE IMPROVEMENTS TO EACH BASIN ARE DENOTED AS FOLLOWS: BASIN A MAKES UP THE WEST PORTION OF THE PROJECT SITE, AND CONSISTS OF THE INSTALLATION OF TWO (2) SINGLE CLASSROOM PORTABLE BUILDINGS AND THREE (3) DOUBLE CLASSROOM PORTABLE BUILDINGS FOR DIAGNOSTIC PURPOSES. ASSOCIATED PAVED ACCESS AND PARKING WILL BE PROVIDED ALONG WITH MINIMAL LANDSCAPING. THE DEVELOPED RUNOFF FROM BASIN A WILL GENERALLY DRAIN WEST TO EAST AND BE COLLECTED IN THREE (3) PRIVATE STORM INLETS. THE COLLECTED RUNOFF WILL BE CONVEYED VIA PRIVATE STORM DRAIN TO THE EXISTING PUBLIC STORM DRAIN IN TRACT A PREVIOUSLY REFERENCED ABOVE. THE PUBLIC STORM DRAIN WAS CONSTRUCTED AS PART OF THE RINCONADA MESA SUBDIVISION AND PLANNED TO PROVIDE FREE DISCHARGE FOR THE APS PROPERTIES THROUGH WHICH IT
- BASIN B MAKES UP THE NORTHERN PORTION OF THE PROJECT SITE, CONSISTING OF PORTIONS OF THE PORTABLE BUILDINGS ROOFS THAT DRAIN AWAY FROM BASIN A, AS WELL AS A PAVED ACCESS PATH AND UNPAVED, GRADED AREAS ALONG THE NORTH SIDE OF THE PROJECT SITE. DEVELOPED RUNOFF GENERATED BY BASIN B PRIMARILY DRAINS NORTH TO THE EXISTING PLAYA REFERENCED ABOVE; THIS RUNOFF HAS NO OUTFALL AND WILL BE RETAINED ON THE PLAYA

PASSES TO REACH THE LADERA BASIN 16 SOUTH SUMP.

- A SMALL LANDSCAPED AREA BETWEEN THE WESTERNMOST DOUBLE CLASSROOM PORTABLE BUILDING AND THE EXISTING DIAGNOSTIC CENTER WILL BE GRADED TO SERVE AS A WATER HARVESTING AREA; THIS AREA WILL CAPTURE THE ROOF RUNOFF FROM THE ADJACENT BUILDINGS. OVERFLOW FROM THIS WATER HARVESTING AREA WILL FLOW NORTH TO THE EXISTING PLAYA REFERENCED ABOVE.
- BASIN C MAKES UP THE EASTERN PORTION OF THE SITE, CONSISTING OF A NEW PAVED PARKING LOT. THE DEVELOPED RUNOFF FROM BASIN C WILL GENERALLY DRAIN WEST TO EAST TO A TWO NEW LANDSCAPED WATER HARVESTING AREAS. THE PROPOSED WATER HARVESTING AREAS ARE SIZED TO CAPTURE THE FIRST FLUSH OF DEVELOPED RUNOFF GENERATED BY BASIN C. OVERFLOW FROM THE WATER HARVESTING AREA WILL SHEETFLOW EAST ONTO THE EXISTING PAVED ACCESS ROAD, AND THEN FLOW NORTH TO ULTIMATELY OUTFALL TO THE PLAYA REFERENCED ABOVE; THIS OVERFLOW RUNOFF HAS NO OUTFALL AND WILL BE RETAINED ON THE PLAYA ONSITE.

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 WILL DIRECT THE DEVELOPED RUNOFF FROM THE WESTERN PORTION OF THE SITE (BASIN A) TO NEW PRIVATE STORM DRAIN IMPROVEMENTS THAT WILL DISCHARGE TO THE EXISTING PUBLIC STORM DRAIN REFERENCED ABOVE; THIS RUNOFF WILL ULTIMATELY OUTFALLS TO THE LADERA BASIN 16 SOUTH SUMP. THE NORTHERN PORTION OF THE SITE (BASIN B) WILL DRAIN TO THE PLAYA AND BE RETAINED ONSITE. THE EASTERN PORTION OF THE SITE (BASIN C) WILL DRAIN TO NEW WATER HARVESTING AREAS THAT WILL CAPTURE THE FIRST FLUSH, WITH OVERFLOW DRAINING TO THE PLAYA AND BE RETAINED ONSITE.

VII. EROSION CONTROL PLAN

THIS PROJECT DISTURBS GREATER THAN ONE ACRE OF LAND, THEREFORE, A SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED. THE EROSION AND SEDIMENT CONTROL PLAN WILL CONTROL SEDIMENT MOBILIZED BOTH FROM THE IMMEDIATE PROJECT SITE, AS WELL AS FROM THE EXISTING SOIL STOCKPILE LOCATED DUE NORTH OF THE PHASE DEVELOPMENT THAT WILL BE UTILIZED FOR FILL ON PHASE 2. A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WAS PREPARED TO SUPPORT SITE AND BUILDING IMPROVEMENTS ON THE CHAPARRAL ELEMENTARY SCHOOL SITES (TRACTS A AND B). IF THE EXISTING SWPPP IS STILL ACTIVE UPON COMMENCEMENT OF PHASE 2 CONSTRUCTION, THE ACTIVE SWPPP WILL BE AMENDED TO INCLUDE THIS PROJECT. IN THE EVENT THAT THE CHAPARRAL ELEMENTARY SCHOOL SWPPP IS NO LONGER ACTIVE AND EPA PERMIT COVERAGE TERMINATED, A NEW SITE SPECIFIC SWPPP MUST BE PREPARED.

THE FIRST FLUSH OF RUNOFF (90TH PERCENTILE STORM EVENT. 0.44 IN) GENERATED BY EACH BASIN WAS CALCULATED HEREIN (SEE SECTION VIII BELOW). THIS FIRST FLUSH WILL BE CONTROLLED BY EACH BASIN AS FOLLOWS:

- BASIN A: THE FIRST FLUSH GENERATED BY THIS BASIN WILL BE 480 CF. THIS FIRST FLUSH WILL BE MANAGED AND CONTROLLED VIA DISCHARGE TO THE LADERA BASIN 16 SOUTH SUMP, A PUBLIC DETENTION POND LOCATED IMMEDIATELY DOWNSTREAM OF THE CHAPARRAL ELEMENTARY SCHOOL SITE. THE SOUTH SUMP IS APPROX. TEN (10) ACRES IN SIZE, WITH CONTROLLED DISCHARGE. THE DISCHARGE OF 480 CF OF RUNOFF TO THIS SUMP WILL RESULT IN A DEPTH WITHIN THE SUMP OF < 0.001 FT. THEREFORE THE SUMP HAS CAPACITY TO CONTROL THE FIRST FLUSH.
- BASIN B: THE FIRST FLUSH GENERATED BY THIS BASIN WILL BE 440 CF. THIS FIRST FLUSH WILL BE MANAGED AND CONTROLLED VIA DISCHARGE TO THE PLAYA IMMEDIATELY NORTH OF THE PHASE 2 SITE. THIS PLAYA IS APPROX. THREE (3) ACRES IN SIZE, WITH NO APPARENT OUTFALL. THE DISCHARGE OF 440 CF OF RUNOFF TO THIS PLAYA WILL RESULT IN A DEPTH WITHIN THE PLAYA OF 0.003 FT, THEREFORE THE PLAYA HAS CAPACITY TO CAPTURE THE FIRST FLUSH.
- BASIN C: THE FIRST FLUSH GENERATED BY THIS BASIN WILL BE 640 CF. THIS FIRST FLUSH WILL BE MANAGED AND CONTROLLED VIA DISCHARGE TO NEW LANDSCAPED WATER HARVESTING AREAS. THE WATER HARVESTING AREAS ARE SIZED TO CAPTURE THE FIRST FLUSH (VCAP = 1130 CF).

VIII. CALCULATIONS

THE CALCULATIONS CONTAINED HEREON ANALYZE THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT FOR EACH OF THE PROJECT SITES. 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, THE PROPOSED PHASE 2 IMPROVEMENTS WILL RESULT IN AN INCREASE IN THE DEVELOPED RUNOFF GENERATED BY THE SITE. THE RUNOFF GENERATED FROM BASIN A WILL BE DIRECTED TO THE PUBLIC STORM DRAIN IN TRACT A. THE INCREASE IN RUNOFF GENERATED FROM BASIN B WILL BE MITIGATED VIA ONSITE RETENTION OF BASIN B RUNOFF ON THE PLAYA NORTH OF THE PROJECT SITE. THE INCREASE IN RUNOFF GENERATED FROM BASIN C WILL BE MITIGATED VIA WATER HARVESTING WITHIN BASIN C AND THE ONSITE RETENTION OF OVERFLOW FROM BASIN C ON THE PLAYA NORTH OF THE PROJECT SITE. IN ADDITION, CALCULATIONS CONTAINED HEREON FOR THE FIRST FLUSH GENERATED BY THE PROJECT SITE DEMONSTRATE THAT 480 CF FROM BASIN A, 440 CF FROM BASIN B AND 640 CF FROM BASIN C MUST BE MANAGED AND CONTROLLED FROM THIS SITE.

IX. CONCLUSIONS

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

- 1. THE PROPOSED IMPROVEMENTS ARE CONSISTENT WITH THE CONCEPT FOR FREE DISCHARGE ESTABLISHED BY PRIOR SUBMITTALS
- 2. THE PROPOSED IMPROVEMENTS WILL RESULT IN A CALCULATED INCREASE IN THE DEVELOPED RUNOFF GENERATED BY THE SITE FROM BASINS A, B AND C
- 3. THE RUNOFF FROM BASIN A WILL BE DISCHARGED TO THE EXISTING PUBLIC STORM DRAIN THAT PASSES THROUGH TRACT A AND ULTIMATELY OUTFALL TO THE LADERA 16 SOUTH SUMP (PUBLIC DETENTION POND). 4. THE RUNOFF FROM BASIN B WILL BE DISCHARGED TO THE PLAYA NORTH OF THE SITE. THE
- DISCHARGE OF 2940 CF TO THE EXISTING PLAYA (APPROXIMATELY 3 ACRES IN SIZE) WILL RESULT IN A DEPTH OF 0.02 FT WITHIN THE PLAYA, THEREFORE THE PLAYA CAN RETAIN THE
- 5. THE RUNOFF FROM BASIN C WILL BE DISCHARGED EAST TO A NEW WATER HARVESTING AREA, WITH OVERFLOW DRAINING EAST AND NORTH TO ULTIMATELY OUTFALL TO THE PLAYA NORTH OF THE SITE. THE DISCHARGE OF 3260 CF (V100 = 3900 CF - VFF,C = 640 CF) TO THE EXISTING PLAYA (APPROXIMATELY 3 ACRES IN SIZE), WILL RESULT IN A DEPTH OF 0.03 FT WITHIN THE PLAYA, THEREFORE THE PLAYA CAN RETAIN THE DEVELOPED RUNOFF.
- 6. THE SITE QUALIFIES FOR FREE DISCHARGE DUE TO PROXIMITY TO THE LADERA BASIN 16 SOUTH SUMP AND THE PREVIOUSLY MENTIONED PUBLIC STORM DRAIN DISCHARGING THERETO. 7. THE FIRST FLUSH FROM THE PROJECT SITE IS MANAGED AND CONTROLLED IN THREE
- THE DEVELOPED RUNOFF FROM BASIN A WILL BE DISCHARGED TO THE PUBLIC STORM DRAIN AND OUTFALL TO THE LADERA BASIN 16 SOUTH SUMP (PUBLIC DETENTION POND). THE LARGE SIZE (APPROX. 10 ACRES) OF THE SUMP WILL SERVE TO CONTROL AND MANAGE THE FIRST FLUSH (480 CF) FROM BASIN A.
- THE DEVELOPED RUNOFF FROM BASIN B WILL BE DISCHARGED TO THE PLAYA NORTH OF THE PROJECT SITE, WHERE IT WILL BE RETAINED ONSITE WITH NO OUTFALL, THEREBY CONTROLLING AND MANAGING THE FIRST FLUSH FROM BASIN B (440 CF) ONSITE
- THE DEVELOPED RUNOFF FROM BASIN C WILL BE DRAINED TO A NEW WATER HARVESTING AREA. WITH OVERFLOW FROM THE WATER HARVESTING AREA DRAINING TO THE PLAYA NORTH OF THE SITE. THE NEW WATER HARVESTING IS SIZED TO CAPTURE THE FIRST FLUSH FROM
- BASIN C (640 CF), THEREFORE CONTROLLING AND MANAGING IT ONSITE. 8. THE PROPOSED IMPROVEMENTS WILL NOT ADVERSELY IMPACT DOWNSTREAM PROPERTIES OR DOWNSTREAM DRAINAGE CONDITIONS.

CALCULATIONS

SITE CHARACTERISTICS

A. PRECIPITATION ZONE = 2.20 IN B. $P_{100, 6 HR} = P_{360} =$ 0.44 IN P_{FIRST FLUSH} = C. TOTAL PROJECT AREA (A_T) = 66,300 SF 1.52 AC

D. LAND TREATMENTS 1. EXISTING LAND TREATMENT

a. BASIN A

TREATMENT AREA (SF/AC) 60,800 / 1.40 5,500 / 0.12 2. DEVELOPED LAND TREATMENT a. BASIN A (TO PUBLIC STORM DRAIN) 17,660 SF / 0.40 AC TREATMENT AREA (SF/AC)

760 / 0.02 16,900 / 0.38 b. BASIN B (TO PLAYA) 23,260 SF / 0.53 AC TREATMENT AREA (SF/AC)

10.800 / 0.24 12,460 / 0.29 c. BASIN C (TO PLAYA, ROUTED THROUGH WATER HARVESTING)

25,400 SF / 0.59 AC TREATMENT AREA (SF/AC) 3,800 / 0.09

21,600 / 0.50

A. EXISTING CONDITION

1. BASIN A

II. HYDROLOGY

a. VOLUME $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$ (0.44*0.00) + (0.67*0.00) + (0.99*1.40) + (1.97*0.12)/1.52 =1.07 IN $V_{100,6 \text{ HR}} = (E_W/12)A_T = (1.07/12)1.52 =$ 0.1355 AC-FT = 5.900 CF b. PEAK DISCHARGE $Q_{P} = Q_{PA}A_{A} + Q_{PB}A_{B} + Q_{PC}A_{C} + Q_{PD}A_{D}$ $Q_P = Q_{100} = (1.29 * 0.00) + (2.03 * 0.00) + (2.87 * 1.40) + (4.37 * 0.12) =$ 4.5 CFS

B. <u>DEVELOPED CONDITION</u>

1. BASIN A (TO PUBLIC STORM DRAIN)

a. VOLUME

 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$ (0.44*0.00) + (0.67*0.00) + (0.99*0.02) + (1.97*0.38)/0.40 =(1.92/12)0.40 =0.0640 AC-FT =2,790 CF $V_{100, A} = (E_W/12)A_T =$ b. PEAK DISCHARGE $Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$ $Q_P = Q_{100, A} = (1.29*0.00) + (2.03*0.00) + (2.87*0.02) + (4.37*0.38) =$ 1.7 CFS c. FIRST FLUSH (90TH PERCENTILE STORM EVENT) $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$

(0.00*0.00) + (0.00*0.00) + (0.09*0.02) + (0.34*0.38)/0.40 =

 $V_{FIRST FLUSH} = (E_W/12)A_T = (0.33/12)0.40 =$ 0.0110 AC-FT =d. LADERA BASIN 16 SOUTH SUMP CAPACITY (PUBLIC DETENTION POND)

• BASED ON REVIEW OF GOOGLE EARTH MAP FOR SOUTH SUMP \circ AREA OF SOUTH SUMP (A_{SOUTH SUMP}) \approx 10 AC

 AVERAGE DEPTH OF SOUTH SUMP ≈ 5 FT \circ VOLUME OF SOUTH SUMP (A_{SOUTH SUMP}) \approx 10 AC x 5 FT \approx 2,200,000 CF • FIRST FLUSH DISCHARGED TO SOUTH SUMP (VFIRST FLUSH) = 480 CF = 0.0110 AC-FT DEPTH OF RUNOFF IN SUMP DUE TO FIRST FLUSH = VFIRST FLUSH / ASOUTH SUMP

D_{FIRST FLUSH} = 0.0110 AC-FT / 10 AC D_{FIRST FLUSH} = 0.001 FT :: SOUTH SUMP WILL CONTROL FIRST FLUSH FROM BASIN A

2. BASIN B (TO PLAYA)

b. PEAK DISCHARGE

 $Q_{P} = Q_{PA}A_{A} + Q_{PB}A_{B} + Q_{PC}A_{C} + Q_{PD}A_{D}$

d. PLAYA CAPACITY - FIRST FLUSH

 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$ (0.44*0.00) + (0.67*0.00) + (0.99*0.24) + (1.97*0.29)/0.53 = $V_{100, B} = (E_W/12)A_T =$ (1.53/12)0.53 =0.0676 AC-FT =2,940 CF

 $Q_P = Q_{100, B} = (1.29*0.00) + (2.03*0.00) + (2.87*0.24) + (4.37*0.29) =$ c. FIRST FLUSH (90TH PERCENTILE STORM EVENT)

 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$ (0.00*0.00) + (0.00*0.00) + (0.09*0.24) + (0.34*0.29)/0.53 =0.23 IN 0.0102 AC-FT = 440 CF $V_{FIRST FLUSH} = (E_W/12)A_T = (0.23/12)0.53 =$

LOCATED BETWEEEN DIAGNOSTIC CENTER TO SOUTH & SCHOOL ON WHEELS TO NORTH AREA OF PLAYA (A_{PLAYA}) ≈ 3 AC \circ FIRST FLUSH DISCHARGED TO SOUTH SUMP (V_{FIRST FLUSH}) = 440 CF = 0.0102 AC-FT

• DEPTH OF RUNOFF ON PLAYA DUE TO FIRST FLUSH = VFIRST FLUSH / APLAYA

 $D_{FIRST FLUSH} = 0.0102 AC-FT / 3 AC$ D_{FIRST FLUSH} = 0.003 FT :: PLAYA WILL CONTROL FIRST FLUSH FROM BASIN B e. PLAYA CAPACITY - V_{100, DEV B}

• LOCATED BETWEEEN DIAGNOSTIC CENTER TO SOUTH & SCHOOL ON WHEELS TO NORTH AREA OF PLAYA (A_{PLAYA}) ≈ 3 AC

 \circ DEVELOPED RUNOFF DISCHARGED TO PLAYA (V_{100,B}) = 2,940 CF = 0.0676 AC-FT

DEPTH OF RUNOFF ON PLAYA DUE TO BASIN B = V_{100,B} / A_{PLAYA}

 $D_{100,B} = 0.0676 \text{ AC-FT CF} / 3 \text{ AC}$ D_{100.B} = 0.02 FT : PLAYA CAN RETAIN RUNOFF FROM BASIN B

3. BASIN C (TO PLAYA, ROUTED THROUGH WATER HARVESTING)

a. VOLUME $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$

(0.44*0.00) + (0.67*0.00) + (0.99*0.09) + (1.97*0.50)/0.59 =(1.82/12)0.59 =3,900 CF $V_{100, A} = (E_W/12)A_T =$

b. PEAK DISCHARGE $Q_P = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

 $Q_P = Q_{100, A} = (1.29*0.00) + (2.03*0.00) + (2.87*0.09) + (4.37*0.50) =$ 2.4 CFS

c. FIRST FLUSH (90TH PERCENTILE STORM EVENT) $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D)/A_T$

 $E_W = (0.00*0.00) + (0.00*0.00) + (0.09*0.09) + (0.34*0.50)/0.59 =$ $V_{FIRSTFLUSH} = (E_W/12)A_T = (0.30/12)0.59 =$ 0.0148 AC-FT =640 CF

d. WATER HARVESTING AREA CAPACITY

i. WATER HARVESTING AREA #2 - OVERFLOW @ 5114.1 AREA VOLUME (CF) ΣVOLUME (CF) 5113 200 5114.1 620

ii. WATER HARVESTING AREA #3 - OVERFLOW @ 5115.3 AREA VOLUME (CF) ΣVOLUME (CF) 5114

5115.3 440

iii. WATER HARVESTING AREA #4 - OVERFLOW @ 5115.4 AREA VOLUME (CF) ΣVOLUME (CF)

5114

V_{TOTAL WATER HARVESTING} = 450 + 290 + 390 = 1130 CF > V_{FIRST FLUSH} = 640 CF ∴ WATER HARVESTING WILL MANAGE FIRST FLUSH

e. PLAYA CAPACITY - V_{100, DEV C}

5115.4

• LOCATED BETWEEEN DIAGNOSTIC CENTER TO SOUTH & SCHOOL ON WHEELS TO NORTH AREA OF PLAYA (A_{PLAYA}) ≈ 3 AC

 \circ DEVELOPED RUNOFF DISCHARGED TO PLAYA (V_{OVERFLOW,C}) = V_{100,C} - V_{WATER HARVESTING} V_{OVERFLOW, C} = 3,900 CF - 680 CF = 3220 CF = 0.0739 AC-FT

DEPTH OF RUNOFF ON PLAYA DUE TO BASIN C = Voverflow, C / Aplaya Doverflow.c = 0.0739 AC-FT CF / 3 AC

Doverflow, c = 0.03 FT :: PLAYA CAN RETAIN RUNOFF FROM BASIN C

C. COMPARISON

1. BASIN A

a. VOLUME DISCHARGED FROM BASIN $\Delta V_{100, BASIN A} = 2,790 - 5,900 =$ -3,110 CF (DECREASE)

b. PEAK DISCHARGE DISCHARGED FROM BASIN

-2.8 CFS (DECREASE) $\Delta Q_{100, BASIN A} = 1.7 - 4.5 =$

c. FIRST FLUSH REQ'D VS VOLUME CONTROLLED (BASIN A TO LADERA BASIN SOUTH SUMP) V_{FIRST FLUSH} = 480 CF < V_{SOUTH SUMP CAP} ≈ 2,200,000 CF ∴ FIRST FLUSH IS MANAGED

2. BASIN B

a. VOLUME $\Delta V_{100, BASIN B} = 2,940 - 0 =$ 2,940 CF (INCREASE)

b. PEAK DISCHARGE

 $\Delta Q_{100, BASIN B} = 2.0 - 0.0 =$ 2.0 CFS (INCREASE)

c. FIRST FLUSH REQ'D VS VOLUME CONTROLLED (BASIN B TO PLAYA)

 $V_{\text{FIRST FLUSH}}$ = 440 CF; $V_{\text{PLAYA AREA}} \approx 3$ AC; RUNOFF DEPTH IN PLAYA DUE TO FIRST FLUSH INCREASES BY 0.003 FT :: FIRST FLUSH IS MANAGED

3. BASIN C

2.0 CFS

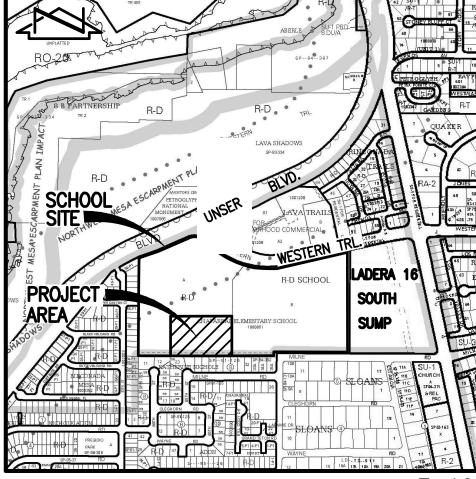
a. VOLUME

b. PEAK DISCHARGE

 $\Delta Q_{100, BASIN C} = 2.4 - 0.0 =$

 $\Delta V_{100, BASIN C} = 3,900 - 0 =$ 3,900 CF (INCREASE)

c. FIRST FLUSH REQ'D VS VOLUME CONTROLLED (BASIN C TO WATER HARVESTING) V_{FIRST FLUSH} = 640 CF < V_{WATER HARVESTING} = 1130 CF ∴ FIRST FLUSH IS MANAGED



PANEL 114 OF 82

LEGAL DESCRIPTION

SCALE: 1" = 500'

TRACTS A AND B, CHAPARRAL ELEMENTARY SCHOOL, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON JANUARY 11, 2000, BOOK 2000C, PAGE 9.

BENCHMARKS:

PROJECT BENCHMARK

CITY OF ALBUQUERQUE SURVEY CONTROL 1 3/4" METALLIC DISK STAMPED "ACS BM, 15-F11", EPOXIED TO TOP OF CURB 5.20 FEET SOUTH OF THE SSE CURB RETURN OF ATRISCO ROAD N.W. AND WESTERN TRAIL N.W. ELEVATION = 5110.03 FEET (NAVD 88)

T.B.M. #1

A SPIKE WITH JMA CONTROL CAP STAMPED "NMPS #11184", AS SHOWN ELEVATION = 5113.74 FEET (NAVD 88)



2.4 CFS (INCREASE)



08-16-201

ORIGINAL DRAWING SIGNED BY JEFFREY G. MORTENSEN

HIGH MESA\Consulting Group

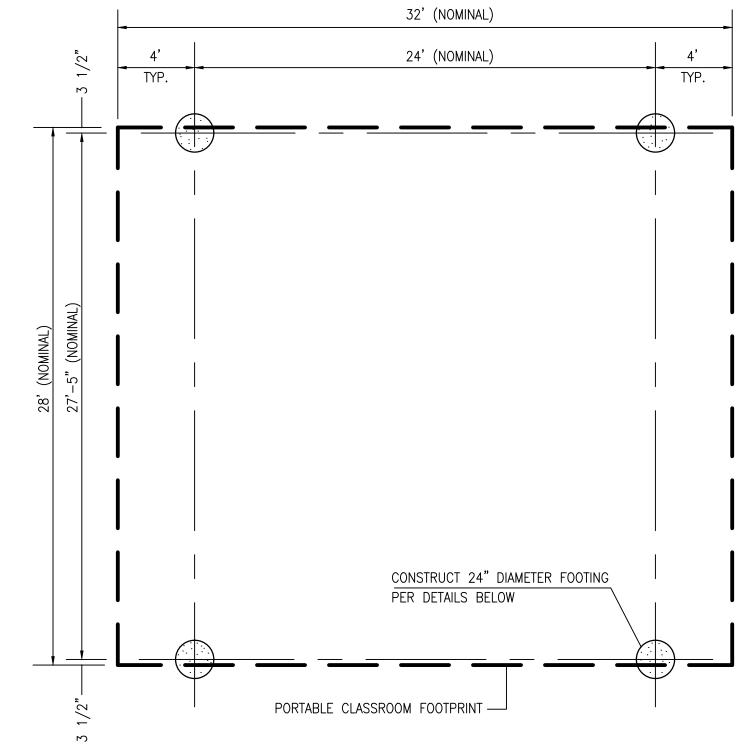
6010-B MIDWAY PARK BLVD. NE • ALBUQUERQUE, NEW MEXICO 87109

PHONE: 505.345.4250 • FAX: 505.345.4254 • www.highmesacg.com

DRAINAGE PLAN AND CALCULATIONS NORTHWEST DIAGNOSTIC CENTER - PHASE 2 CHAPARRAL ELEMENTARY SCHOOL 6450 WESTERN TRAIL NW

REVISIONS DESIGNED BY J.D.S. 3 08/16 GM RECORD DRAWING AND CERTIFICATION 12-2014 <u>___J.Y.R./J</u>.D.S APPROVED BY J.G.M.

DOUBLE PORTABLE CLASSROOM FOUNDATION PLAN



SINGLE PORTABLE CLASSROOM FOUNDATION PLAN

SCALE: 1" = 5' - 0"

FOUNDATION AND PORTABLE INSTALLATION NOTES;

- 1. FOUNDATION LOCATIONS SHALL BE STAKED BY THE PROJECT SURVEYOR UNDER CONTRACT WITH THE OWNER.
- 2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN FOUNDATIONS HAVE BEEN EXCAVATED AND ALL FORMS SET.
- 3. PRIOR TO POURING FOUNDATIONS, THE ENGINEER, OR HIS REPRESENTATIVE, SHALL OBSERVE AND APPROVE THE WORK FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS.
- 4. THE ENGINEER, OR HIS REPRESENTATIVE, SHALL BE PRESENT TO OBSERVE THE POURING OF CONCRETE WITHIN THE FOUNDATION FORMS.
- 5. UPON COMPLETION OF CONSTRUCTION OF THE FOUNDATIONS, THE PROJECT SURVEYOR SHALL OBTAIN AS-BUILT MEASUREMENTS FOR THE HORIZONTAL AND VERTICAL LOCATIONS OF EACH FOUNDATION.
- 6. PRIOR TO INSTALLATION OF THE PORTABLE CLASSROOM BUILDINGS, THE ENGINEER SHALL REVIEW THE AS-BUILT SURVEY DATA AND PREPARE A FOUNDATION CERTIFICATION. PORTABLE BUILDINGS SHALL NOT BE INSTALLED WITHOUT THE CONSENT OF THE ENGINEER.
- 7. A PRE-INSTALLATION MEETING SHALL BE CONDUCTED PRIOR TO INSTALLATION OF THE PORTABLE CLASSROOM BUILDINGS TO DETERMINE THE CRITERIA FOR ALIGNING EACH BUILDING WITH RESPECT TO THE AS-CONSTRUCTED FOUNDATION LOCATIONS. ANY BUILDING INSTALLED IN ADVANCE OF A PRE-INSTALLATION MEETING SHALL BE ADJUSTED TO THE SATISFACTION OF THE OWNER AND THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
- 8. SEISMIC SITE CLASS D (VINYARD & ASSOC. REPORT, NMPE 8261, DATED SEPTEMBER 15, 2009)

58 TOF @ 16.55

0.07 W

56 TOF **©** 16.55

0.15 E

0.14 W

TOF @ 16.55

PROPOSED PORTABLE BUILDING

PROPOSED PORTABLE BUILDING

0.57 W

TOF @ 16.55

TOF @ 16.55

0.83 E

\TOF @ 16.55

TOF @ 16.7578

∖TOF **©** 16.ĕ්ජ්

TOF @ 16.65

TOF @ 16.65 /(0.34 S)

(0.22 N)

TOF @ 16.55

0.16 W

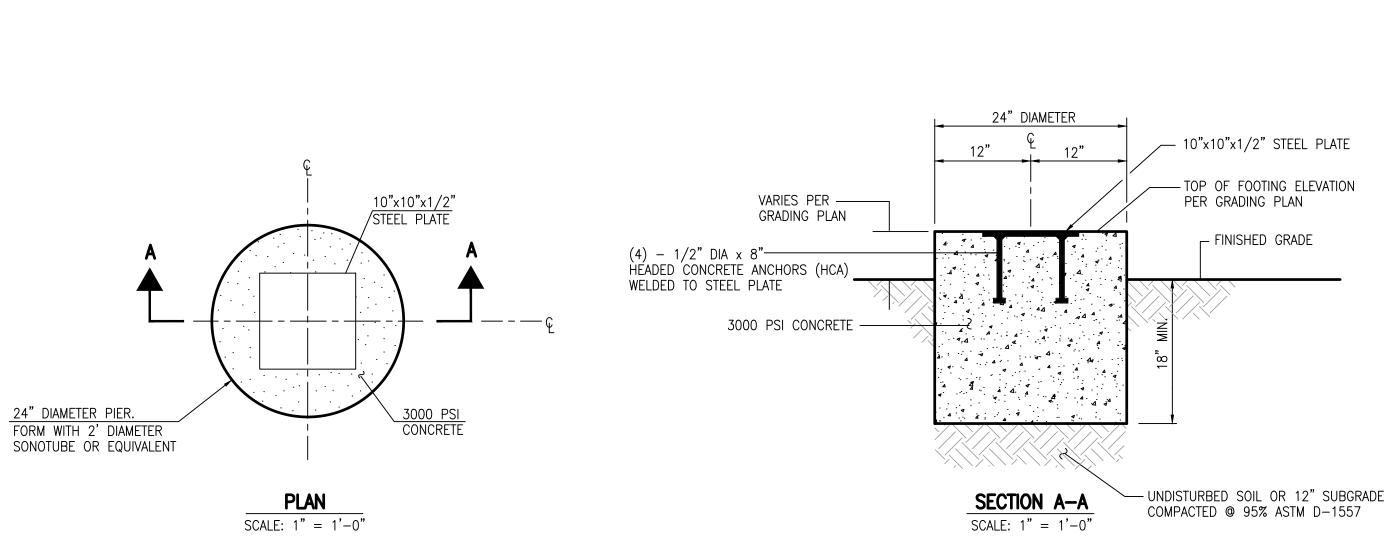
\TOF @ 16.55

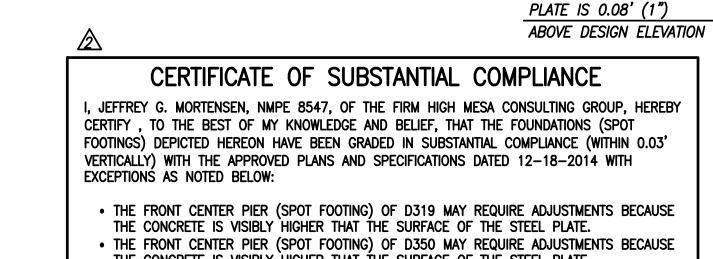
CONCRETE HIGHER THAN PLATE

(VISUAL SIGHT INSPECTION 02-01-2016)

56 TOF **◎** 16.55

\TOF @ 16.55





THE CONCRETE IS VISIBLY HIGHER THAT THE SURFACE OF THE STEEL PLATE. • THE ELEVATION OF THE PIER (SPOT FOOTING) AT THE SOUTHWEST CORNER OF SC803 IS 0.08' 1-INCH) TOO HIGH BASED UPON THE APPROVED PLAN; SHIMMING OF THE OTHERTHREE (3) PIERS OR RECONSTRUCTION OF THE NONCONFORMING PIER MAY BE

THE RECORD INFORMATION EDITED ONTO THIS ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED FROM AN AS-BUILT SURVEY CONDUCTED BY HIGH MESA CONSULTING GROUP UNDER THE DIRECTION OF JOSEPH M. SOLOMON, JR., NMPS 15075, DATED 02-01-2016 AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

THIS RECORD INFORMATION IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING OF THE FOUNDATION DESIGN ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE. THIS CERTIFICATION IS SUBMITTED TO DOCUMENT THE CONDITIONS OF PIER CONSTRUCTION FOR THE OWNER IN ADVANCE OF INSTALLATION OF PORTABLE BUILDING.

ORIGINAL DRAWING SIGNED BY JEFFREY G. MORTENSEN 02-11-2016

JEFFREY G. MORTENSEN. NMPE 8547

FOUNDATION PLAN

TOF **©** 16.75√° TOF **©** 16.75 74

0.12 W

PROPOSED

PORTABLE

BUILDING

TOF @ 16.75

0.04 W

0.22 W

67 TOF @ 16.65

(0.06 N)

TOF @ 16.65

TOF @ 16.65

(0.35 N)

0.12 E

TOF @ 16.75

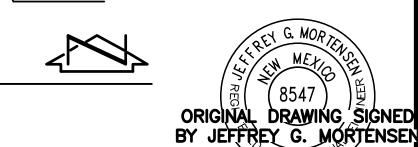
(0.52 N)

0.10 N /

0.06 S

PROPOSED PORTABLE

BUILDING



RECORD DRAWING

2 02/16 JGM REVISE BUILDING #'s, FDTN CERTIFICATION 12-2014 ____J.Y.R./J.D.S APPROVED BY J.G.M. 13

HIGH\ MESA Consulting Group

FOOTING DETAILS

PORTABLE CLASSROOM FOUNDATION PLAN NORTHWEST DIAGNOSTIC CENTER - PHASE 2 CHAPARRAL ELEMENTARY SCHOOL 6450 WESTERN TRAIL NW

SCALE: 1" = 5' - 0"

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