

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 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.
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, ABCWUA DISTRIBUTION MAPS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP, FIELD DESIGNATION REPORT (2015.180.7) DATED NOVEMBER 12, 2015. IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ONE CALL SERVICE (TICKET #2015460898). 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.

EROSION AND SEDIMENT CONTROL MEASURES:

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES 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. NO SPOILS FROM THE PROJECT SHALL BE DEPOSITED IN THE STREET.
4. SPOILS SHALL BE STAGED ON THE UPHILL SIDE OF TRENCHES WHEN TRENCHING IS REQUIRED.
5. THE CONTRACTOR SHALL CLEAN AND REMOVE ALL FUGITIVE DUST, SOIL AND DEBRIS RESULTING FROM THIS PROJECT FROM THE STREET AT THE END OF EACH DAY.
6. CONTRACTOR SHALL LEAVE THE AREA IMMEDIATELY BEHIND THE CURB DEPRESSED TO CONTAIN NUISANCE FLOWS AND SEDIMENT.
7. CONCRETE TRUCKS SHALL BE SENT BACK TO THE PLANT FOR WASHING; THE WASHING OF CONCRETE TRUCKS SHALL NOT BE PERMITTED WITHIN THE PUBLIC RIGHT-OF-WAY.
8. 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.



LEGAL DESCRIPTION

TRACT A, BANDELIER ELEMENTARY SCHOOL, ALBUQUERQUE, NEW MEXICO

BENCHMARKS

PROJECT BENCHMARK

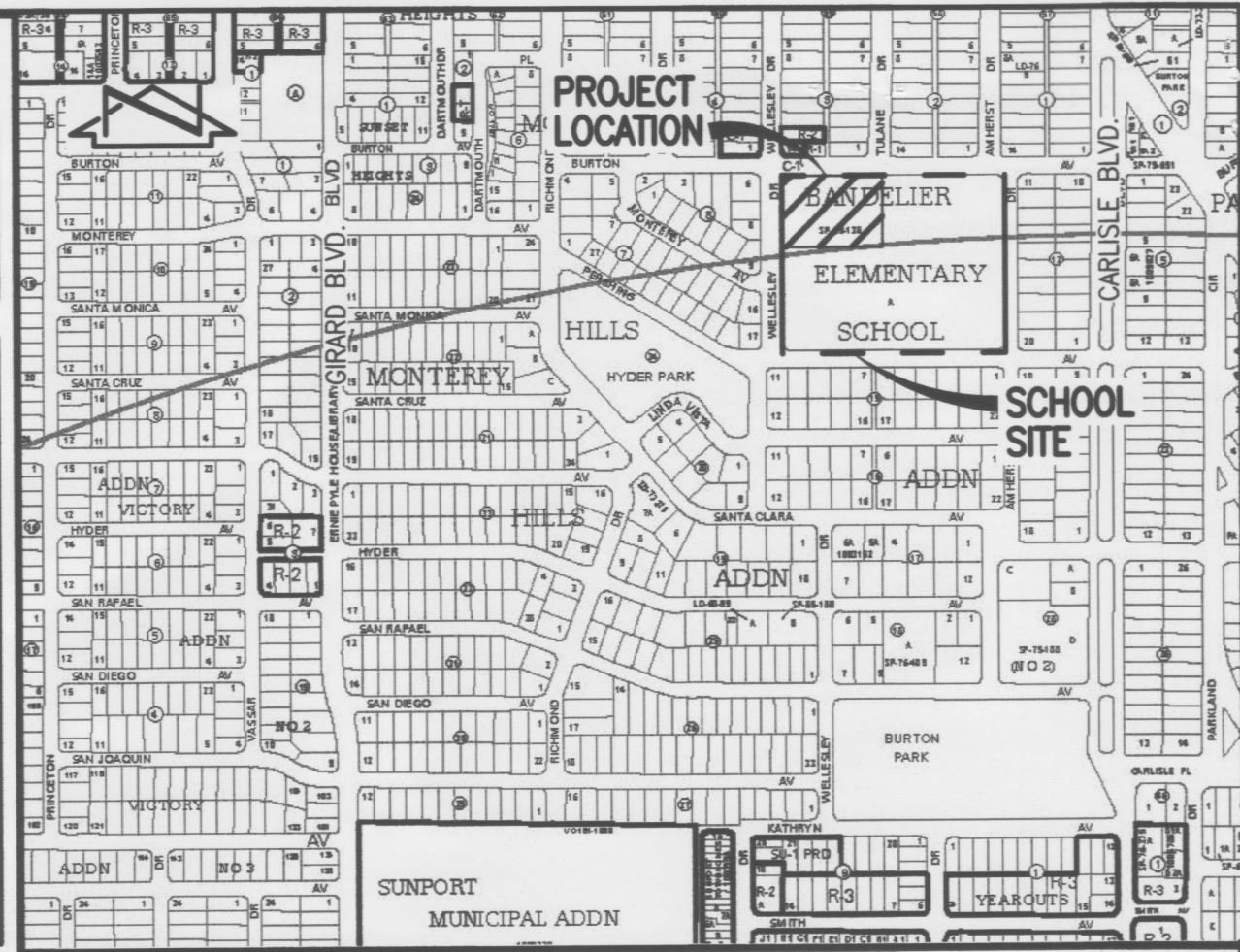
ACS BENCHMARK "16-L16" A CHISELED "□" ON TOP OF CONCRETE CURB LOCATED AT THE WSW QUADRANT OF THE INTERSECTION OF AMHERST DRIVE S.E. AND BURTON AVENUE S.E. ELEVATION = 5274.17 FEET (NGVD 1929)

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

A CHISELED "+" ON TOP OF CURB LOCATED AT THE NW RETURN OF BURTON AVENUE S.E. AND WELLESLEY DRIVE S.E., AS SHOWN ON SHEET 2. ELEVATION = 5248.99 FEET (NGVD 1929)

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

A 60d NAIL AT THE TOP OF CURB LOCATED AT THE NW RETURN OF MONTEREY AVENUE S.E. AND WELLESLEY DRIVE S.E., AS SHOWN ON SHEET 2. ELEVATION = 5264.18 FEET (NGVD 1929)



VICINITY MAP

L-16

SCALE: 1" = 750'



F.I.R.M.

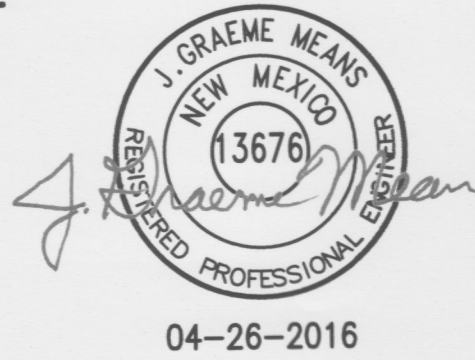
353 OF 825

SCALE: 1" = 750'

DATE: AUGUST 16, 2012

INDEX OF DRAWINGS

- |         |  |
|---------|--|
| 1 OF 1  | SUPPLEMENTAL SITE AND DRAINAGE INFORMATION           |
| 2 OF 11 | DEMOLITION PLAN AND LEGEND (FOR EXISTING CONDITIONS) |
| 4 OF 11 | GRADING PLAN   |
| 5 OF 11 | DRAINAGE PLAN AND CALCULATIONS                       |

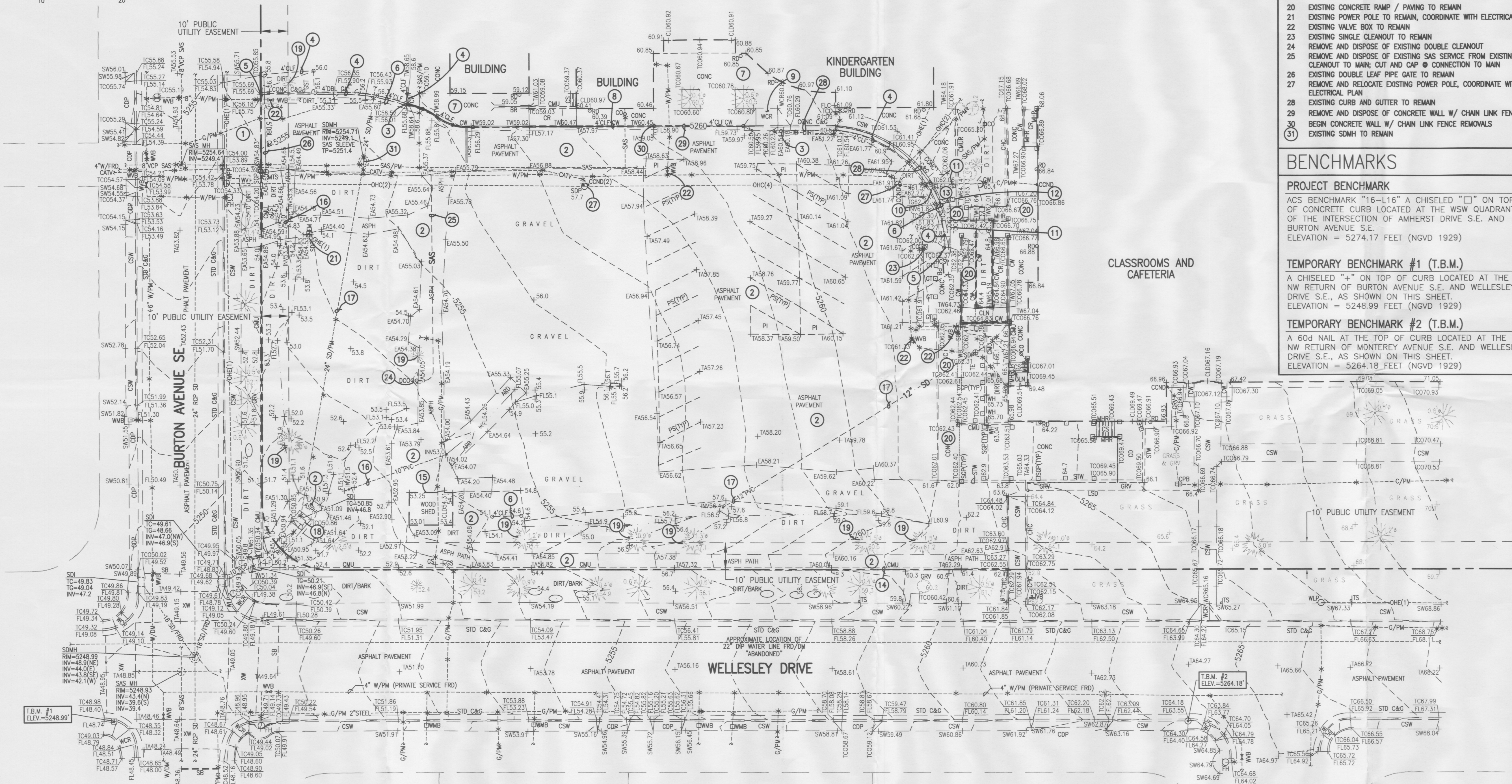


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SUPPLEMENTAL SITE AND DRAINAGE INFORMATION  
NORTH PARKING LOT RECONSTRUCTION  
BANDELIER ELEMENTARY SCHOOL

DESIGNED BY	NO.	DATE	BY	REVISIONS	JOB NO.
J.D.S.					2015.180.5
DRAWN BY					DATE
S.C.C.					04-2016
APPROVED BY					SHEET
G.M.					1 OF 1







File Path: P:\MWA\2015\151805\151805.dwg [Plot Date: 04-26-2016  
File Name: 151805 - SH4.DWG Plot Time: 11:53 am

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### SURVEY NOTE

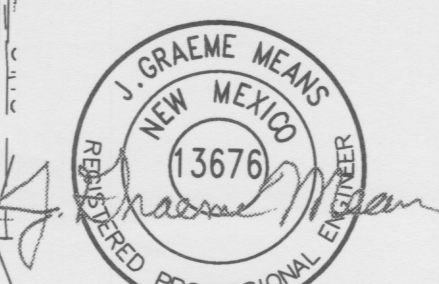
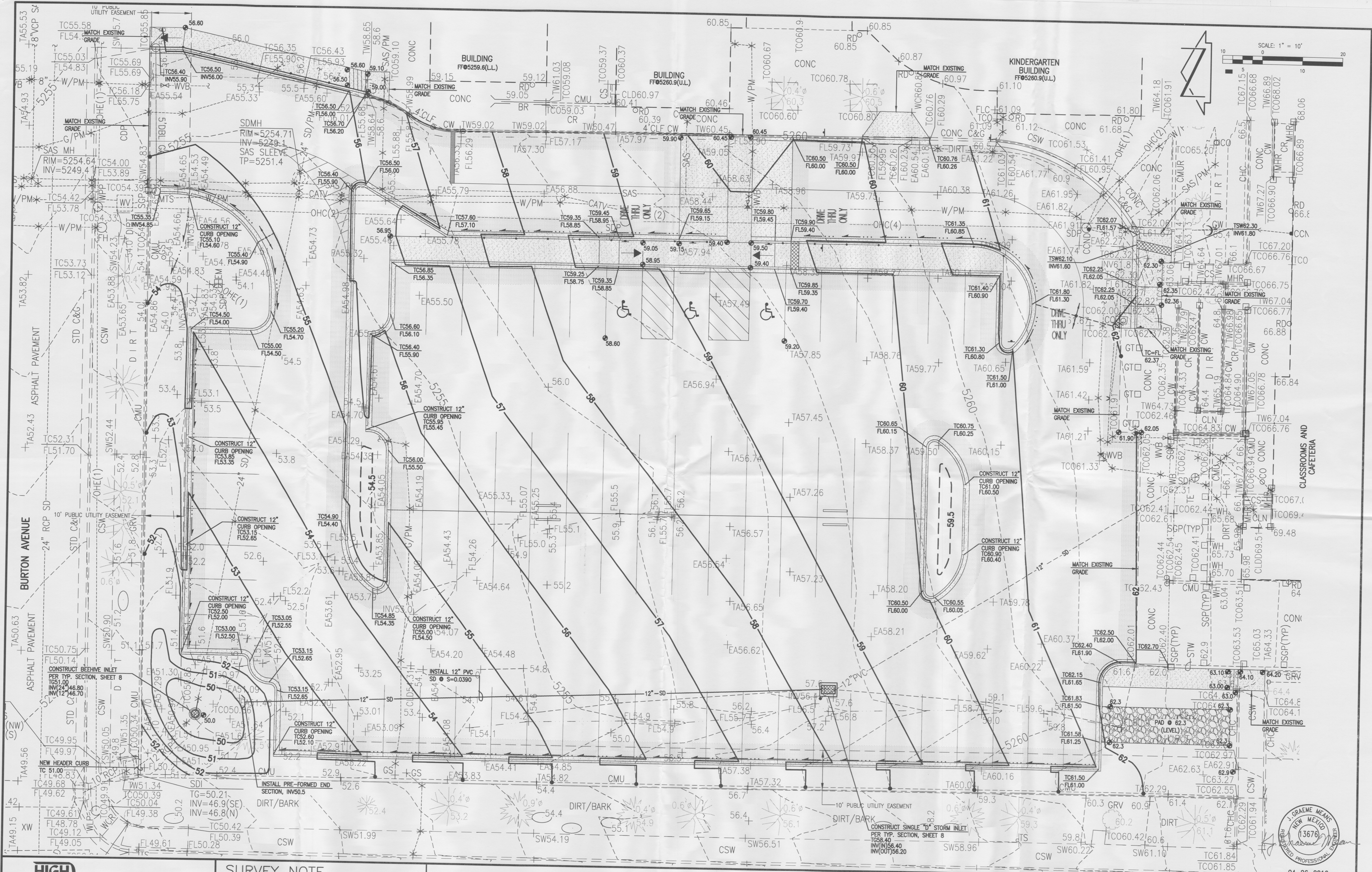
THIS IS NOT A BOUNDARY SURVEY; DATA IS SHOWN FOR ORIENTATION ONLY. THE BOUNDARY INFORMATION DEPICTED BY THIS PLAN IS BASED UPON AN BOUNDARY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 04/2007. THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE PARTIAL TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 11/30/2015 (2015.180.8).

## GRADING PLAN NORTH PARKING LOT RECONSTRUCTION BANDELIER ELEMENTARY SCHOOL

DESIGNED BY J.D.S.  
DRAWN BY J.Y.R.S.C.C.  
APPROVED BY G.M.

NO.	DATE	BY	REVISIONS

JOB NO. 2015.180.5  
DATE 04-2016  
SHEET 4 OF 11





DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE SOUTHEAST HEIGHTS OF THE ALBUQUERQUE METROPOLITAN AREA, REPRESENTS THE MODIFICATION OF AN EXISTING ALBUQUERQUE PUBLIC SCHOOLS ELEMENTARY SCHOOL SITE WITHIN AN INFILL AREA. THE PROPOSED CONSTRUCTION CONSISTS OF THE RECONSTRUCTION OF AN EXISTING PAVED PARKING LOT TO INCREASE PARKING CAPACITY, IMPROVE VEHICULAR CIRCULATION, IMPROVE PEDESTRIAN ACCESS AND ADDRESS STORM WATER QUALITY. NEW WATER HARVESTING AREAS WILL CAPTURE THE FIRST FLUSH RUNOFF FROM THE NEW PARKING LOT AND A PORTION OF THE EXISTING UPSTREAM ROOF AREA TO THE MAXIMUM EXTENT PRACTICABLE. THE DRAINAGE CONCEPT FOR THE SITE IS THE CONTINUED FREE DISCHARGE OF DEVELOPED RUNOFF PER THE 1997 APPROVED MASTER DRAINAGE PLAN REFERENCED BELOW COMBINED WITH THE CAPTURE AND TREATMENT OF FIRST FLUSH RUNOFF.

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

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE EXISTING SITE IS LOCATED ON THE SOUTH SIDE OF COPPER AVENUE NE, SOUTH OF THE LOS ALTOS PARK AND GOLF COURSE. AS SHOWN BY PANEL 358 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR BERNALILLO COUNTY, DATED AUGUST 16, 2012, THE SITE DOES NOT LIE WITHIN ANY DESIGNATED FLOOD HAZARD ZONE. THE SITE IS LOCATED UPSTREAM OF A DESIGNATED FLOOD HAZARD ZONE AO (DEPTH 1) LOCATED AT THE SOUTHWEST CORNER OF THE SCHOOL SITE AT THE INTERSECTION OF DOMINGO ROAD NE AND GENERAL SOMERVELL ST NE. THE PROPOSED PROJECT LOCATION DRAINS EAST TO WEST TO GENERAL SOMERVELL ST NE, THEN DRAINS NORTH TO COPPER AVE NE, AWAY FROM THE DESIGNATED FLOOD HAZARD ZONE.

III. BACKGROUND DOCUMENTS AND RESEARCH

THE PREPARATION OF THIS SUBMITTAL RELIED UPON THE FOLLOWING DOCUMENTS:

A. MASTER DRAINAGE PLAN (MDP) FOR HAWTHORNE ELEMENTARY SCHOOL PREPARED BY HIGH MESA CONSULTING GROUP (FORMERLY JEFF MORTENSEN & ASSOCIATES, INC.) (NMPE 8547) DATED 10-29-97. THE 1997 MDP ESTABLISHED THE SITE CONSISTS OF FIVE DRAINAGE BASINS, BASINS A, B, C, D AND E. THE PROJECT SITE LIES WITHIN BASINS B AND C. THE 1997 MDP ESTABLISHED THAT WHILE THE EXISTING SITE IS ALLOWED FREE DISCHARGE TO THE ADJACENT PUBLIC STREETS OF GENERAL SOMERVELL STREET AND DOMINGO ROAD NW, RUNOFF GENERATED BY FUTURE DEVELOPMENT MUST NOT EXCEED THE ALLOWABLE MAXIMUM PEAK DISCHARGE OF 29.7 CFS FROM THE ENTIRE SCHOOL SITE AS CALCULATED IN THE 1997 MDP. RUNOFF GENERATED BY FUTURE DEVELOPMENT THAT EXCEEDS THIS RATE MUST BE MANAGED ONSITE TO MAINTAIN THE ALLOWABLE 29.7 CFS MAXIMUM DISCHARGE.

B. MINI GYMNASIUM GRADING AND DRAINAGE PLAN PREPARED BY HIGH MESA CONSULTING GROUP (FORMERLY JEFF MORTENSEN & ASSOCIATES, INC.) (NMPE 8547) DATED 03-12-99 AND CERTIFIED 02-28-2001. PERMANENT DRAINAGE IMPROVEMENTS CONSISTING OF A CONCRETE VALLEY GUTTER AND SIDEWALK CULVERTS WERE CONSTRUCTED WITHIN BASINS B AND C TO IMPROVE POSITIVE DRAINAGE FROM THE NEW MINI GYMNASIUM TO GENERAL SOMERVELL STREET NE. THE 1999 PROJECT REINFORCED AND MAINTAINED THE MAXIMUM ALLOWABLE DISCHARGE RATE OF 29.7 CFS FROM THE SCHOOL SITE ESTABLISHED BY THE 1997 MDP.

C. TOPOGRAPHIC SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 12/15/2015. THE SUBJECT SURVEY PROVIDES THE BASIS FOR THE EXISTING CONDITIONS OF THE SITE AS DEPICTED BY THIS SUBMITTAL. THIS TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE NAD 83/NVD 88 DATUM, AN UPDATE FROM THE PREVIOUS NGVD 29 DATUM UTILIZED ON THE 1997 MASTER DRAINAGE PLAN

IV. EXISTING CONDITIONS

THE PROJECT SITE IS LOCATED WITH PORTIONS OF BASINS B AND C DEFINED BY THE 1997 MASTER DRAINAGE PLAN AND CONSISTS OF AN EXISTING PAVED PARKING LOT, LANDSCAPING, AND PRIVATE STORM DRAINAGE IMPROVEMENTS. THE PROJECT SITE GENERALLY DRAINS FROM EAST TO WEST, WITH THE PAVED PARKING LOT PORTION SHEET FLOWING TO THE ADJACENT PUBLIC STREETS OF GENERAL SOMERVELL ST NE AND COPPER AVE NE, WHILE THE LANDSCAPED PORTION DRAINS VIA PRIVATE STORM DRAIN IMPROVEMENTS TO A SIDEWALK CULVERT ON THE EAST SIDE OF GENERAL SOMERVELL ST NE AND DISCHARGES INTO THE PUBLIC STREET. FROM THIS POINT, RUNOFF DRAINS NORTH TO THE INTERSECTION OF GENERAL SOMERVELL ST NE AND COPPER AVE NE, WHENCE IT FLOWS WEST WITHIN COPPER AVE NE TO THE INTERSECTION OF COPPER AVE NE AND WYOMING BLVD NE. EXISTING STORM DRAIN FACILITIES WITHIN WYOMING BLVD NE AT THIS INTERSECTION SERVE AS THE OUTFALL FOR THE SITE.

THE PROJECT SITE IS BOUNDED ON THE NORTH BY COPPER AVENUE NE, A FULLY DEVELOPED PUBLIC STREET; ON THE EAST BY AN EXISTING PORTABLE CLASSROOM BUILDING; ON THE SOUTH BY AN EXISTING PERMANENT CLASSROOM BUILDING, AND ON THE WEST BY GENERAL SOMERVELL STREET NE, A FULLY DEVELOPED PUBLIC STREET.

THERE ARE NO APPARENT OFFSITE FLOWS IMPACTING THE PROJECT SITE, AS THE SITE IS TOPOGRAPHICALLY HIGHER THAN THE ADJACENT PUBLIC STREETS, AND IS BOUNDED ON THE EAST AND SOUTH BY EXISTING SCHOOL IMPROVEMENTS. HOWEVER, IT IS NOTED THAT RUNOFF FROM THE EXISTING SCHOOL BUILDING TO THE SOUTH AND A TRENCH DRAIN OUTLET AT THE CORNER OF THE BUILDING IS ACCEPTED ONTO AND FLOWS THROUGH AN EXISTING WATER HARVESTING AREA BETWEEN THE BUILDING AND EXISTING PAVED PARKING WITH OVERFLOW DISCHARGING VIA PRIVATE STORM DRAIN AND SIDEWALK CULVERT TO GENERAL SOMERVELL STREET NE.

V. DEVELOPED CONDITIONS

THE PROPOSED CONSTRUCTION CONSISTS OF RECONSTRUCTION OF AN EXISTING PARKING LOT. LANDSCAPED AREAS WITHIN THE PARKING LOT, AS WELL AS A LANDSCAPED BUFFER AROUND THE PERIMETER OF THE PARKING LOT WILL BE DEPRESSED TO THE MAXIMUM EXTENT PRACTICABLE WHERE POSSIBLE TO CAPTURE DEVELOPED RUNOFF. RUNOFF FROM THE PARKING LOT WILL DRAIN VIA CURB OPENINGS INTO THESE LANDSCAPED WATER HARVESTING AREAS. OVERFLOW RUNOFF FROM THE LANDSCAPED BUFFER WILL SHEETFLOW INTO COPPER AVENUE NE.

ROOF RUNOFF FROM THE EXISTING CLASSROOM BUILDING TO THE SOUTH WILL DRAIN TO A NEW LANDSCAPED WATER HARVESTING AREA BETWEEN THE BUILDING AND THE PAVED PARKING. NEW PRIVATE STORM DRAIN IMPROVEMENTS WILL COLLECT THE OVERFLOW RUNOFF FROM THIS AREA, IN ADDITION TO INTERCEPTING RUNOFF FROM THE EXISTING TRENCH DRAIN OUTLET REFERENCED ABOVE, AND DISCHARGE IT TO THE BACK OF THE EXISTING SIDEWALK CULVERT ALONG GENERAL SOMERVELL ST NE.

THE PROPOSED IMPROVEMENTS WILL RESULT IN A MINIMAL INCREASE IN DEVELOPED RUNOFF GENERATED BY THE SITE (50 CF, 0.2 CFS) AS A RESULT OF INCREASED IMPERVIOUS AREA, HOWEVER THIS WILL BE OFFSET BY THE WATER HARVESTING CAPACITY (~800 CF) PROVIDED IN THE DEVELOPED CONDITION.

AS IN THE EXISTING CONDITION, THERE ARE NO OFFSITE FLOWS IMPACTING THE PROJECT SITE.

VI. FIRST FLUSH

THE PROPOSED LANDSCAPED WATER HARVESTING AREAS WITHIN THE NEW PARKING LOT AND THE DEPRESSED LANDSCAPED BUFFER BETWEEN THE PAVED PARKING LOT AND THE PUBLIC SIDEWALKS WILL CAPTURE AND TREAT THE FIRST FLUSH RUNOFF GENERATED BY THE PROPOSED PARKING LOT TO THE MAXIMUM EXTENT PRACTICABLE. HOWEVER, THIS AREA IS LIMITED AND IS NOT LARGE ENOUGH TO CONTAIN THE ENTIRE FIRST FLUSH. BECAUSE OF THIS, A VARIANCE TO THE CITY'S FIRST FLUSH REQUIREMENTS IS REQUESTED BASED UPON THE FOLLOWING:

- THE PROJECT SITE IS LOCATED IN AN OVERALL SITE WITHOUT ZONING (SITE PLAN) REQUIREMENTS FOR SUFFICIENT LANDSCAPING AREAS TO CONTAIN FIRST FLUSH FROM THE PARKING LOT.
- THE WATER HARVESTING AREAS WITHIN THE PARKING LOT AND THE LANDSCAPED BUFFERS AT THE PERIMETER OF THE PARKING LOT ARE INSUFFICIENT IN SIZE TO CAPTURE THE ENTIRE FIRST FLUSH FROM THE PROJECT SITE
- WHILE THE WATER HARVESTING AREA BETWEEN THE EXISTING BUILDING AND PARKING LOT WILL NOT CAPTURE RUNOFF FROM THE PARKING LOT, THIS AREA WILL CAPTURE AND TREAT FIRST FLUSH FROM THE ADJACENT EXISTING CLASSROOM BUILDING, THEREBY MITIGATING THE OVERALL FIRST FLUSH FROM THE SITE TO THE MAXIMUM EXTENT PRACTICABLE

- VOLUME CONTAINED IS THAT WHICH IS PRACTICABLE YET LESS THAN THE REQUIRED 0.44-INCH STORM AS CALCULATED

VII. 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 PLAN WILL MAINTAIN THE CURRENT DRAINAGE PATTERN OF THE PROJECT SITE, WITH DEVELOPED RUNOFF RESTRAINED TO NOT EXCEED THE MAXIMUM ALLOWABLE PEAK DISCHARGE RATE OF 29.7 CFS FROM THE SITE.

VIII. EROSION AND SEDIMENT CONTROL

THE PROJECT DISTURBS ONE-ACRE OF LAND, OR GREATER. A SEPARATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN PREPARED CONCURRENT WITH THIS PLAN. A SITE SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS INCLUDED HEREIN THAT PROPOSES SILT FENCE AND INLET PROTECTION BEST MANAGEMENT PRACTICES (TEMPORARY BMPs), SEDIMENT DETENTION BASINS (PERMANENT BMPs) AND GOOD HOUSEKEEPING BMPs TO CAPTURE CONSTRUCTION RELATED SEDIMENT FROM DISCHARGING TO THE ADJACENT AND DOWNSTREAM CITY STREETS.

IX. CALCULATIONS

THE CALCULATIONS CONTAINED HEREON ANALYZE THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. 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 PROJECT WILL RESULT IN A MINIMAL INCREASE IN DEVELOPED RUNOFF GENERATED BY THE SITE (50 CF, 0.2 CFS); HOWEVER, THIS INCREASE WILL BE OFFSET BY THE INCLUSION OF LANDSCAPED WATER HARVESTING AREAS SIZED TO CAPTURE 800 CF OF FIRST FLUSH RUNOFF FROM THE SITE. FIRST FLUSH CONTAINMENT VOLUMES WERE EVALUATED (CALCULATED) USING THE AVERAGE END-AREA METHOD.

X. CONCLUSIONS

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

1. THIS PROJECT REPRESENTS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA
2. THE PROPOSED IMPROVEMENTS WILL MAINTAIN AND NOT ALTER THE EXISTING DRAINAGE PATTERNS OF THE SITE
3. THE PROPOSED IMPROVEMENTS WILL NOT RESULT IN AN INCREASE IN THE DEVELOPED RUNOFF VOLUME DISCHARGED FROM THE SITE AND HENCE WILL NOT EXCEED THE MAXIMUM DISCHARGE LIMITS SET FORTH IN THE APPROVED 1997 MASTER DRAINAGE PLAN
4. THE PROPOSED IMPROVEMENTS WILL NOT ADVERSELY IMPACT DOWNSTREAM PROPERTIES OR DOWSTREAM DRAINAGE CONDITIONS
5. EROSION AND SEDIMENT CONTROL MEASURES ARE PROPOSED HEREIN FOR INSTALLATION DURING CONSTRUCTION; BMP INSTALLATION BASED ON THIS PLAN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE CONSTRUCTION RELATED SEDIMENT DOES NOT DISCHARGE FROM THE SITE TO PUBLIC RIGHT-OF-WAY
6. THIS PROJECT IS SUBJECT TO AN EPA NPDES PERMIT
7. A VARIANCE TO THE REQUIREMENT TO CAPTURE AND TREAT THE FIRST FLUSH (0.44 INCH STORM) OF RUNOFF FROM THE NEW IMPERVIOUS (PAVED) AREA CREATED BY THIS PLAN IS REQUESTED BASED UPON THE FOLLOWING:
  - a. NEW LANDSCAPED AREAS ARE DEPRESSED WHERE POSSIBLE TO CAPTURE AND TREAT THE FIRST FLUSH TO THE MAXIMUM EXTENT PRACTICABLE
  - b. THE WATER HARVESTING AREAS WITHIN THE PARKING LOT AND THE LANDSCAPED BUFFERS AT THE PERIMETER OF THE PARKING LOT ARE NOT LARGE ENOUGH TO CAPTURE THE ENTIRE FIRST FLUSH GENERATED BY THE PROJECT SITE
  - c. WHILE THE WATER HARVESTING AREA BETWEEN THE EXISTING BUILDING AND PARKING LOT WILL NOT CAPTURE RUNOFF FROM THE PARKING LOT, IT WILL CAPTURE AND TREAT FIRST FLUSH ROOF RUNOFF FROM THE EXISTING ADJACENT CLASSROOM BUILDING, THEREBY MITIGATING THE FIRST FLUSH FROM THE OVERALL SITE TO THE MAXIMUM EXTENT PRACTICABLE
  - d. THE PROJECT SITE IS LOCATED IN AN OVERALL SITE WITHOUT ZONING (SITE PLAN) REQUIREMENTS FOR SUFFICIENT LANDSCAPING AREAS TO CONTAIN FIRST FLUSH FROM THE PARKING LOT VOLUME CONTAINED IS THAT WHICH IS PRACTICABLE YET LESS THAN THE REQUIRED 0.44-INCH STORM

CALCULATIONS

I. SITE CHARACTERISTICS

- A. PRECIPITATION ZONE = 2
- B.  $P_{100, 6\text{ HR}} = P_{360} = 2.35$
- C. TOTAL PROJECT AREA ( $A_T$ ) = 43,200 SF  
1.00 AC

D. LAND TREATMENTS

1. EXISTING CONDITION			
TREATMENT	AREA (SF/AC)		%
A	0 / 0		0
B	0 / 0		0
C	7,750 / 0.18		18
D	35,750 / 0.82		82
2. DEVELOPED CONDITION			
TREATMENT	AREA (SF/AC)		%
A	0 / 0		0
B	0 / 0		0
C	2,040 / 0.05		5
D	41,160 / 0.95		95

II. AREA OF DISTURBANCE

AREA OF DISTURBANCE = 1.0 AC ∴ SEPARATE EROSION & SEDIMENT CONTROL IS REQ'D

III. HYDROLOGY

A. EXISTING CONDITION

- a. VOLUME  
 $E_w = (E_a A_a + E_b A_b + E_c A_c + E_d A_d) / A_T$   
 $E_w = (0.53^*0.00) + (0.78^*0.00) + (1.13^*0.18) + (2.12^*0.82) / 1.00 = 1.94 \text{ IN}$   
 $V_{100, 6 \text{ HR}} = (E_w / 12) A_T = (1.94 / 12) 1.00 = 0.1617 \text{ AC-FT} = 7,040 \text{ CF}$
- b. PEAK DISCHARGE  
 $Q_p = Q_{pa} A_a + Q_{pb} A_b + Q_{pc} A_c + Q_{pd} A_d$   
 $Q_p = Q_{100} = (1.56^*0.00) + (2.28^*0.00) + (3.14^*0.18) + (4.70^*0.82) = 4.4 \text{ CFS}$

B. DEVELOPED CONDITION

- a. VOLUME  
 $E_w = (E_a A_a + E_b A_b + E_c A_c + E_d A_d) / A_T$   
 $E_w = (0.53^*0.00) + (0.78^*0.00) + (1.13^*0.05) + (2.12^*0.95) / 1.00 = 2.07 \text{ IN}$   
 $V_{100, 6 \text{ HR}} = (E_w / 12) A_T = (2.07 / 12) 1.00 = 0.1725 \text{ AC-FT} = 7,510 \text{ CF}$
- b. PEAK DISCHARGE  
 $Q_p = Q_{pa} A_a + Q_{pb} A_b + Q_{pc} A_c + Q_{pd} A_d$   
 $Q_p = Q_{100} = (1.56^*0.00) + (2.28^*0.00) + (3.14^*0.05) + (4.70^*0.95) = 4.6 \text{ CFS}$
- c. FIRST FLUSH (90TH PERCENTILE STORM EVENT)  
 $E_w = (E_a A_a + E_b A_b + E_c A_c + E_d A_d) / A_T$   
 $E_w = (0.00^*0.00) + (0.00^*0.00) + (0.00^*0.05) + (0.44^*0.95) / 1.00 = 0.42 \text{ IN}$   
 $V_{\text{FIRST FLUSH}} = (E_w / 12) A_T = (0.42 / 12) 1.00 = 0.0350 \text{ AC-FT} = 1,520 \text{ CF}$

d. WATER HARVESTING AREA CAPACITY

ELEV	AREA	VOLUME	ΣVOLUME
5249	200		
5250	420	310	310

$V_{WH} = 310 \text{ CF}$

- ii. PARKING LOT ISLANDS WATER HARVESTING (3 WATER HARVESTING AREAS)  
 $V_{WH} = 250 \text{ CF}$

- iii. TOTAL PROJECT SITE WATER HARVESTING  
 $V_{\text{TOTAL WH}} = 310 + 250 = 560 \text{ CF} < V_{\text{FIRST FLUSH}} = 1,160 \text{ CF}$   
∴ FIRST FLUSH CAPTURED TO THE MAXIMUM EXTENT PRACTICABLE

C. COMPARISON

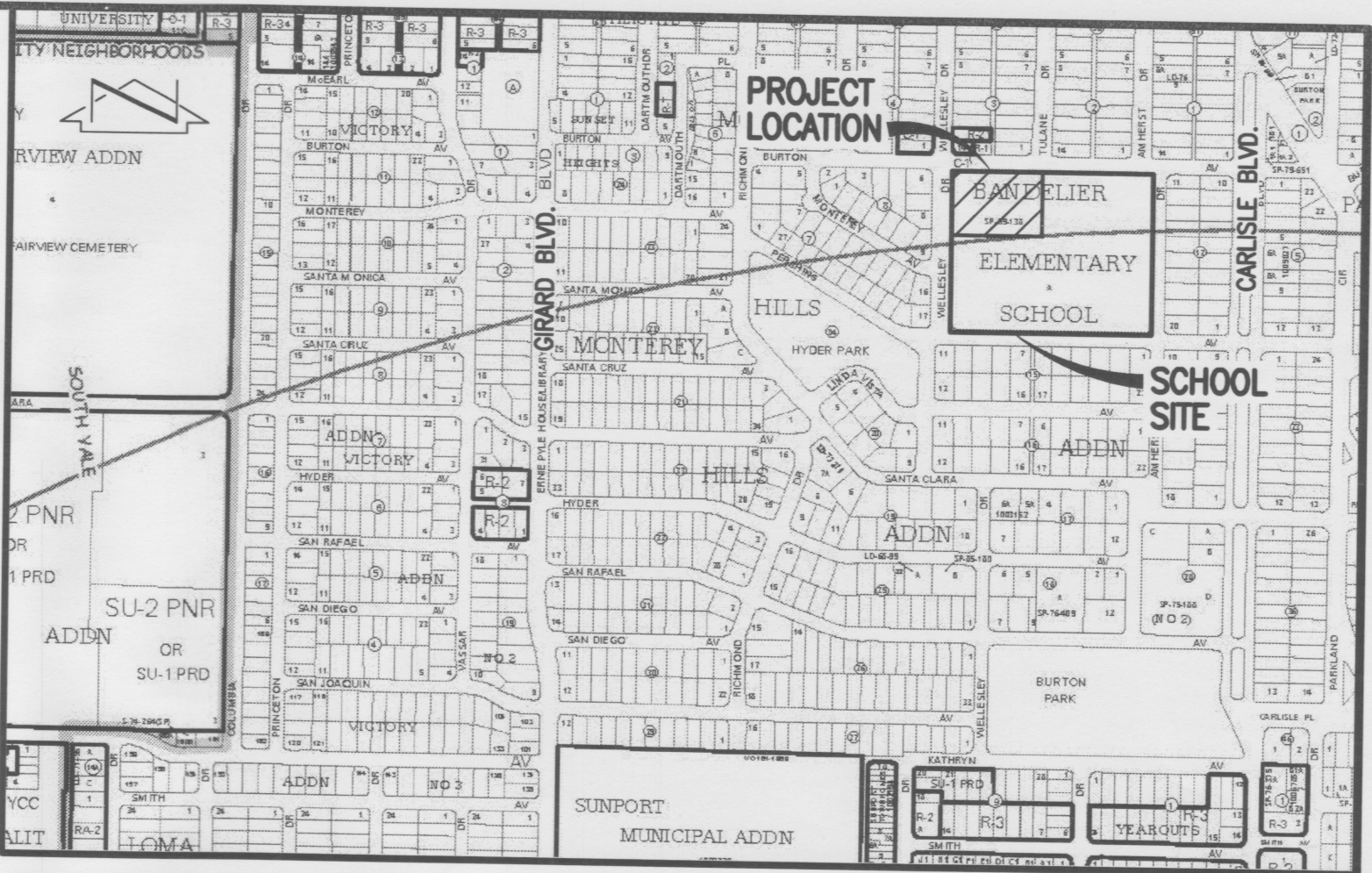
- a. VOLUME WITHOUT WATER HARVESTING  
 $\Delta V_{100, 6 \text{ HR}} = V_{\text{DEV } 100} - V_{\text{EX } 100}$   
 $\Delta V_{100, 6 \text{ HR}} = 7510 - 7040 = 470 \text{ CF} \text{ (INCREASE)}$
- b. VOLUME WITH WATER HARVESTING  
 $\Delta V_{100, 6 \text{ HR}} = V_{\text{DEV } 100} - V_{\text{EX } 100} - V_{\text{TOTAL WH}}$   
 $\Delta V_{100, 6 \text{ HR}} = 7510 - 7040 - 560 = -90 \text{ CF} \text{ (DECREASE)}$
- c. FIRST FLUSH  
 $V_{\text{FIRST FLUSH}} = 1,160 \text{ CF} > V_{\text{TOTAL WH}} = 560 \text{ CF}$   
∴ FIRST FLUSH CAPTURED TO THE MAXIMUM EXTENT PRACTICABLE
- d. PEAK DISCHARGE  
 $\Delta Q_{100} = 4.6 - 4.4 = 0.2 \text{ CFS} \text{ (INCREASE)}$

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 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.
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, ABCWUA DISTRIBUTION MAPS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP, FIELD DESIGNATION REPORT (2015.180.7) DATED NOVEMBER 12, 2015. IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ONE CALL SERVICE (TICKET #2015460898). 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.

EROSION AND SEDIMENT CONTROL MEASURES:

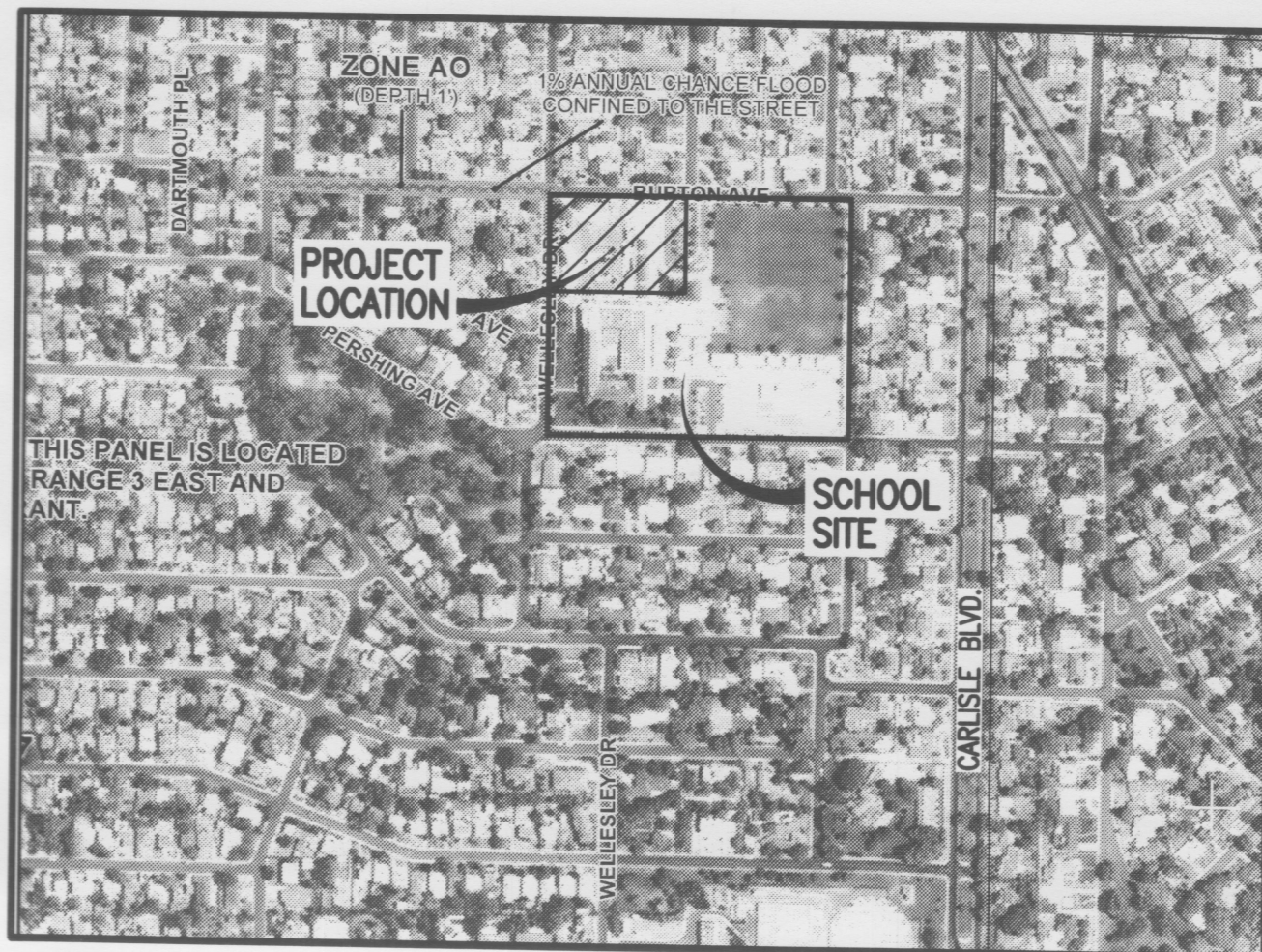
1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. NO SPOILS FROM THE PROJECT SHALL BE DEPOSITED IN THE STREET.
4. SPOILS SHALL BE STAGED ON THE UPHILL SIDE OF TRENCHES WHEN TRENCHING IS REQUIRED.
5. THE CONTRACTOR SHALL CLEAN AND REMOVE ALL FUGITIVE DUST, SOIL AND DEBRIS RESULTING FROM THIS PROJECT FROM THE STREET AT THE END OF EACH DAY.
6. CONTRACTOR SHALL LEAVE THE AREA IMMEDIATELY BEHIND THE CURB DEPRESSED TO CONTAIN NUISANCE FLOWS AND SEDIMENT.
7. CONCRETE TRUCKS SHALL BE SENT BACK TO THE PLANT FOR WASHING; THE WASHING OF CONCRETE TRUCKS SHALL NOT BE PERMITTED WITHIN THE PUBLIC RIGHT-OF-WAY.
8. 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.



D5 VICINITY MAP

SCALE: 1" = 750'

L-16



C6

F.I.R.M.

SCALE: 1" = 750'

353 OF 825

DATE: AUGUST 16, 2012

BENCHMARKS

PROJECT BENCHMARK

ACS BENCHMARK "16-L16" A CHISELED "□" ON TOP OF CONCRETE CURB LOCATED AT THE WSW QUADRANT OF THE INTERSECTION OF AMHERST DRIVE S.E. AND BURTON AVENUE S.E.  
ELEVATION = 5274.17 FEET (NGVD 1929)

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

A CHISELED "+" ON TOP OF CURB LOCATED AT THE NW RETURN OF BURTON AVENUE S.E. AND WELLESLEY DRIVE S.E., AS SHOWN ON SHEET 2.  
ELEVATION = 5248.99 FEET (NGVD 1929)

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

A 60d NAIL AT THE TOP OF CURB LOCATED AT THE NW RETURN OF MONTEREY AVENUE S.E. AND WELLESLEY DRIVE S.E., AS SHOWN ON SHEET 2.  
ELEVATION = 5264.18 FEET (NGVD 1929)

LEGAL DESCRIPTION

TRACT A, BANDELIER ELEMENTARY SCHOOL, ALBUQUERQUE, NEW MEXICO



04-26-2016

DESIGNED BY	J.G.M.	NO.	DATE	BY	REVISIONS	JOB NO.
DRAWN BY	J.Y.R.S.C.C.					2015.180.5
APPROVED BY	G.M.					DATE
						04-2016
						SHEET
						5 OF 11