

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS SITE, LOCATED IN DOWNTOWN ALBUQUERQUE, IS CURRENTLY A GRADED EMPTY DIRT AND GRAVEL LOT THAT PREVIOUSLY CONTAINED A COMMERCIAL BUILDING THAT HAS BEEN DEMOLISHED. THIS PROJECT IS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA. THE PROPOSED DEVELOPMENT IS A NEW COMMERCIAL OFFICE BUILDING WITH TWO ASSOCIATED PAVED PARKING LOTS. THE DRAINAGE CONCEPT FOR THIS SITE IS CONTINUED FREE DISCHARGE FROM THE SITE INTO THE ADJACENT JOHN STREET NE TO THE WEST. THE ANALYSIS PROVIDED HEREIN DEMONSTRATES THAT FREE DISCHARGE IS JUSTIFIED. THIS SUBMITTAL IS MADE IN SUPPORT OF BUILDING PERMIT AND SOA/19 APPROVALS.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THIS SITE IS LOCATED IN DOWNTOWN ALBUQUERQUE BETWEEN BROADWAY BLVD NE AND JOHN STREET NE, JUST NORTH OF ROMA AVENUE NE. THE CURRENT LEGAL DESCRIPTION IS LOTS 1 AND 2, BLOCK 2, BRATINA ADDITION NO. 2; LOTS 1-10 INCLUSIVE, LOTS 19, 20, AND 21, FRANCHINI ADDITION; AND LOT 1, TOWNES ADDITION. THE SITE IS CURRENTLY A FLAT-GRADED, EMPTY DIRT AND GRAVEL LOT. THE ADJACENT STREETS, BROADWAY BLVD NE, JOHN STREET NE, AND ROMA AVE NE, ARE ALL FULLY DEVELOPED PUBLIC PAVED ROADWAYS WITH CURB AND GUTTER ON BOTH SIDES AND PUBLIC RCP STORM DRAINS. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED FOR BERNALILLO COUNTY, NEW MEXICO DATED APRIL 2, 2002, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE. HOWEVER, THE ADJACENT STREETS OF JOHN STREET NE AND BROADWAY BLVD NE ARE WITHIN A ZONE AH FLOOD HAZARD AREA, WITH A BASE FLOOD ELEVATION OF 4957 (NAVD 88) WHICH CONVERTS TO 4954.33 (NGVD 29). THE FINISHED FLOOR OF THE NEW BUILDING IS SET MORE THAN ONE FOOT ABOVE THE BASE FLOOD ELEVATION IN ORDER TO AVOID ANY POTENTIAL FLOODING. THE CONSTRUCTION PROPOSED FOR THIS SITE WILL NOT REPRESENT AN INCREASE TO THE TOTAL RUNOFF VOLUME AND PEAK DISCHARGE AS COMPARED TO PREVIOUS DEVELOPMENTS, AND WILL NOT ADVERSELY IMPACT THE DESIGNATED FLOOD HAZARD ZONE.

III. BACKGROUND DOCUMENTS

THE FOLLOWING ITEMS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL:

- BOUNDARY AND TOPOGRAPHIC SURVEY OF THE EXISTING SITE PREPARED BY JEFF MORTENSEN AND ASSOCIATES, INC. DATED 10/23/2006. THE SUBJECT SURVEY SHOWS THE EXISTING IMPROVEMENTS.
- RESEARCH CONDUCTED IN THE CITY ENGINEER'S OFFICE OF THE SURROUNDING ADJACENT SITES ALL ALLOW FOR FREE DISCHARGE INTO THE JOHN STREET NE STORM DRAIN SYSTEM.
 - DRAINAGE PLAN OF THE MALOOF WAREHOUSE SITE DIRECTLY WEST OF THE SITE ACROSS JOHN STREET NE, PREPARED BY DMG DATED 11/23/1999 (J14/D0384)
 - DRAINAGE PLAN FOR SOCIAL SECURITY & BIA SOUTH OF THE SITE, PREPARED BY OODEN-MILLER & ASSOC., DATED 10/09/2002 (J14/D143)

IV. EXISTING CONDITIONS

THE SITE IS LOCATED BETWEEN BROADWAY BLVD NE AND JOHN STREET NE, JUST NORTH OF ROMA AVENUE NE. THE SITE IS CURRENTLY A FLAT GRADED, EMPTY DIRT AND GRAVEL LOT, WITH MINIMAL DRAINAGE IMPROVEMENTS REMAINING FROM A PREVIOUS ON-SITE COMMERCIAL BUILDING WHICH HAS BEEN DEMOLISHED. THE ADJACENT STREETS, BROADWAY BLVD NE AND JOHN STREET NE, ARE BOTH FULLY IMPROVED PAVED PUBLIC ROADWAYS WITH CURB AND GUTTER ON BOTH SIDES AND RCP PUBLIC STORM DRAINS. RUNOFF FROM THE SITE SURFACE DRAINS EAST TO WEST ACROSS THE SITE THROUGH TWO EXISTING DAMAGED SIDEWALK CULVERTS AND THROUGH AN EXISTING CONCRETE DRIVEWAY ENTRANCE INTO JOHN STREET NE. RUNOFF IS THEN DIRECTED NORTH VIA CURB AND GUTTER ALONG JOHN STREET NE TO A PUBLIC STORM INLET APPROX. 50' NORTH OF THE SITE, WHERE IT ENTERS A PUBLIC 36" RCP STORM DRAIN.

THERE ARE MINIMAL OFFSITE FLOWS FROM THE LOT TO THE SOUTH DUE TO IT BEING SLIGHTLY HIGHER TOPOGRAPHICALLY THAN THE SITE. THERE IS NO OFF SITE FLOW FROM BROADWAY BLVD NE DUE TO IT BEING BOUNDED BY CURB AND GUTTER. ALTHOUGH THE PROPERTY TO THE NORTH IS TOPOGRAPHICALLY HIGHER, THERE IS NO OFFSITE FLOW FROM THE SITE DUE TO A CURB AT THE EDGE OF THE PARKING AREA THAT EXTENDS ALONG THE ENTIRE NORTHERN PROPERTY LINE. FINALLY, THERE IS NO OFFSITE FLOWS FROM JOHN STREET NE TO THE WEST DUE TO FLOWS BEING BOUND WITHIN ITS LIMITS BY CURB AND GUTTER, AND BECAUSE IT IS TOPOGRAPHICALLY LOWER.

V. DEVELOPED CONDITIONS

THE PROJECT CONSISTS OF THE CONSTRUCTION OF A COMMERCIAL OFFICE BUILDING WITH TWO ASSOCIATED PAVED PARKING LOTS. THIS DEVELOPMENT WILL SPLIT THE SITE INTO TWO (2) DRAINAGE BASINS, BOTH OF WHICH WILL DRAIN TO JOHN STREET NE, FOLLOWING THE HISTORIC DRAINAGE PATTERNS OF THE SITE.

BASIN A WILL BE THE NORTHERN HALF OF THE SITE WHICH WILL DRAIN TO THE PAVED PARKING LOT, AND SURFACE DRAIN ACROSS THE PARKING LOT INTO A GRAVEL LINED LANDSCAPED AREA ALONG THE NORTHERN BOUNDARY OF THE SITE. THE OUTFALL FOR THIS LANDSCAPED AREA WILL BE AT THE NORTHWEST CORNER OF THE SITE, AND DRAIN THROUGH TWO (2) CURB PENETRATIONS INTO JOHN STREET NE. THE RUNOFF WILL PROCEED TO DRAIN NORTH VIA CURB AND GUTTER WITHIN JOHN STREET INTO A PUBLIC STORM INLET THAT DISCHARGES INTO AN EXISTING 36" PUBLIC STORM DRAIN BENEATH JOHN STREET NE.

BASIN B WILL BE THE SOUTHERN HALF OF THE SITE. STORM RUNOFF WILL DRAIN EAST TO WEST ACROSS THE PAVED PARKING LOT TO A NEW 24" CONCRETE RUNOFF AT THE SOUTHWEST CORNER OF THE SITE. THE NEW RUNOFF WILL REPLACE AN EXISTING DAMAGED RUNOFF AND DISCHARGE VIA SIDEWALK CULVERT INTO JOHN STREET NE. THE RUNOFF WILL THEN FLOW NORTH VIA CURB AND GUTTER WITHIN JOHN STREET NE UNTIL IT JOINS THE RUNOFF FROM BASIN A AND ENTERS THE AFORE MENTIONED EXISTING STORM INLET IN JOHN STREET NE NORTH OF THE PROJECT SITE.

A SMALL PORTION OF THE SITE AT THE EXTREME SOUTHWEST CORNER OF THE SITE WILL NOT BE IMPROVED AS PART OF THIS PROJECT, AND WILL REMAIN IN ITS EXISTING CONDITION.

WATERBLOCKS WILL BE CONSTRUCTED AT THE NEW ENTRANCES TO THE SITE ALONG BOTH BROADWAY BLVD NE AND JOHN STREET NE TO MAINTAIN THE EXISTING CONDITION THAT THERE WILL BE OFFSITE FLOWS FROM THESE STREETS.

AS THE CALCULATIONS SHOW, THE DEVELOPMENT IMPROVEMENTS WILL RESULT IN AN OVERALL INCREASE IN PEAK DISCHARGE RATE AND RUNOFF VOLUME TO JOHN STREET NE. QUALITATIVELY, THE RUNOFF WILL BE ATTENUATED BY THE LANDSCAPED AREA AT THE NORTH EDGE OF THE SITE, WHICH WILL INFORMALLY DETAIL APPROXIMATELY 1000 CF. AS SHOWN BY THE RESEARCH MENTIONED ABOVE, EVERY SITE ADJACENT TO THIS PROJECT SITE HAD AN INCREASE IN PEAK DISCHARGE DUE TO THEIR DEVELOPMENT AND EACH HAS BEEN ALLOWED FREE DISCHARGE INTO JOHN STREET NE. THIS IS DUE TO SUFFICIENT DOWNSIDE CAPACITY IN THE PUBLIC 36" RCP STORM DRAIN BENEATH JOHN STREET NE THAT THE EXISTING STREET INLETS DISCHARGE INTO, THEREFORE, THE MINIMAL INCREASE IN PEAK DISCHARGE WILL NOT EXCEED THE CAPACITY OF THE PUBLIC 36" RCP STORM DRAIN, AND FREE DISCHARGE INTO JOHN STREET CAN CONTINUE AS THE STATUS QUO.

ANOTHER FACTOR ALLOWING CONTINUED FREE DISCHARGE IS THAT THIS SITE PREVIOUSLY CONTAINED A COMMERCIAL BUILDING ON-SITE THAT CREATED A LARGER RUNOFF VOLUME AND PEAK DISCHARGE THAN IS SHOWN BY THE EXISTING CONDITIONS CALCULATIONS ON THIS SHEET. THE PRE-EXISTING CONDITION ALLOWED FOR FREE DISCHARGE, AND THIS NEW DEVELOPMENT CREATES SIMILAR LAND TREATMENT VALUES FOR THE SITE, THEREFORE RESULTING IN SIMILAR RUNOFF VOLUME AND PEAK DISCHARGE RATES. THEREFORE, CONTINUED FREE DISCHARGE INTO JOHN STREET NE IS ALLOWABLE.

VI. GRADING PLAN

THE GRADING PLAN SHOWS: 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM A BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY JEFF MORTENSEN & ASSOCIATES DATED OCTOBER 23, 2006, 2.) PROPOSED GRADES INDICATED BY CONTOURS AT 1'-0" INTERVALS, 3.) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS TAKEN FROM THE AFOREMENTIONED JMA SURVEY, DATED OCTOBER 23, 2006 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, 5.) AND CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE PROPOSED DEVELOPMENT WILL REPLACE THE EMPTY LOT A NEW COMMERCIAL OFFICE BUILDING AND TWO ASSOCIATED ASPHALT PAVED PARKING LOTS. THE EXISTING DRAINAGE PATTERN WILL NOT BE SIGNIFICANTLY ALTERED AND CONTINUE TO DRAIN WEST TO EAST INTO JOHN STREET NE.

VII. CALCULATIONS

THE CALCULATIONS WHICH APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40-ACRE AND SMALLER BASINS, AS SET FOR THE 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 BY THIS DEVELOPMENT. AS SHOWN BY THESE CALCULATIONS, THERE IS ANTICIPATED TO BE AN INCREASE IN PEAK DISCHARGE RATE AND VOLUME OF RUNOFF INTO JOHN STREET NE. THIS IS THIS IS DUE TO THE FACT THAT MUCH OF THE PROPOSED WORK WILL REPLACE EXISTING PERVIOUS AREA WITH NEW IMPERVIOUS AREA. A PORTION OF THIS FLOW WILL BE MITIGATED BY THE INFORMAL LANDSCAPED DETENTION AREA AT THE NORTH EDGE OF THE PROPERTY THAT WILL DETAIN APPROX. 1000 CF OF RUNOFF. CAPACITY OF THE PROPOSED SIDEWALK CULVERT AT THE SOUTHWEST CORNER OF THE SITE WAS DETERMINED USING MANNING'S EQUATION. THE INCREASED VOLUME AND PEAK DISCHARGE DUE TO DEVELOPMENT IS ALLOWED TO FREELY DISCHARGE INTO JOHN STREET NE DUE TO:

- SUFFICIENT CAPACITY IN THE JOHN STREET NE PUBLIC 36" RCP STORM DRAIN AS SHOWN FROM RESEARCH OF ADJACENT SITES, AND,
- PRE-EXISTING CONDITIONS OF THE SITE THAT HAD A SIMILAR LAND TREATMENT TO THE NEW DEVELOPMENT, AND WERE ALLOWED FREE DISCHARGE INTO JOHN STREET NE.

VIII. CONCLUSION

THE CONTINUED FREE DISCHARGE OF RUNOFF FROM THIS SITE INTO THE ADJACENT PUBLIC STREET OF JOHN STREET NE IS APPROPRIATE DUE TO THE FOLLOWING FACTORS:

- MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA
- PRE-EXISTING CONDITIONS OF THE SITE WITH A SIMILAR LAND TREATMENT AND RUNOFF VOLUME AND PEAK DISCHARGE PREVIOUSLY ALLOWED TO FREELY DISCHARGE INTO JOHN STREET NE
- ADJACENT PROPERTY DEVELOPMENT WITH INCREASED RUNOFF HAS BEEN CONSISTENTLY ALLOWED FREE DISCHARGE INTO JOHN STREET NE
- SUFFICIENT CAPACITY IN THE PUBLIC 36" STORM DRAIN UNDER JOHN STREET NE THAT THE EXISTING STORM INLETS DISCHARGE INTO.

CALCULATIONS

SITE CHARACTERISTICS

- PRECIPITATION ZONE = 2
- $P_{100} = P_{300} = 2.35$
- TOTAL PROJECT AREA (A) = 75,390 SF / 1.73 AC
- EXISTING LAND TREATMENT
 - BASIN A 75,390 SF = 1.73 AC

TREATMENT	AREA (SF/AC)	%
C	75,390 / 1.73	100

TREATMENT	AREA (SF/AC)	%
A	26,850 SF = 0.62 AC	
B	1,300 / 0.03	5
C	1,300 / 0.03	5
D	24,350 / 0.56	90

TREATMENT	AREA (SF/AC)	%
B	5,830 / 0.13	12
C	5,825 / 0.13	12
D	37,185 / 0.85	76

EXISTING CONDITION

- BASIN A
 - VOLUME
$$E_v = (E_{A1} + E_{A2} + E_{A3} + E_{A4}) / A_r$$
$$E_v = ((0.78 * 0.13) + (1.13 * 0.03) + (2.12 * 0.85)) / 1.73 = 1.13 \text{ IN}$$
$$V_{100} = (E_v / 12) A_r = (1.13 / 12) 1.73 = 0.1630 \text{ AC-FT } 7,100 \text{ CF}$$
 - PEAK DISCHARGE
$$Q_p = Q_{10} A_1 + Q_{10} A_2 + Q_{10} A_3 + Q_{10} A_4$$
$$Q_p = Q_{10} = (3.14 * 1.73) = 5.4 \text{ CFS}$$

DEVELOPED CONDITION

- BASIN A
 - VOLUME
$$E_v = (E_{A1} + E_{A2} + E_{A3} + E_{A4}) / A_r$$
$$E_v = ((0.78 * 0.13) + (1.13 * 0.03) + (2.12 * 0.85)) / 0.82 = 2.01 \text{ IN}$$
$$V_{100} = (E_v / 12) A_r = (2.01 / 12) 0.82 = 0.1039 \text{ AC-FT } 4,515 \text{ CF}$$
 - PEAK DISCHARGE
$$Q_p = Q_{10} A_1 + Q_{10} A_2 + Q_{10} A_3 + Q_{10} A_4$$
$$Q_p = Q_{10} = (2.28 * 0.03) + (3.14 * 0.03) + (4.70 * 0.85) = 2.8 \text{ CFS}$$

- BASIN B
 - VOLUME
$$E_v = (E_{A1} + E_{A2} + E_{A3} + E_{A4}) / A_r$$
$$E_v = ((0.78 * 0.13) + (1.13 * 0.03) + (2.12 * 0.85)) / 1.11 = 1.85 \text{ IN}$$
$$V_{100} = (E_v / 12) A_r = (1.85 / 12) 1.11 = 0.1711 \text{ AC-FT } 7,470 \text{ CF}$$
 - PEAK DISCHARGE
$$Q_p = Q_{10} A_1 + Q_{10} A_2 + Q_{10} A_3 + Q_{10} A_4$$
$$Q_p = Q_{10} = (2.28 * 0.13) + (3.14 * 0.03) + (4.70 * 0.85) = 4.7 \text{ CFS}$$
 - 24" SIDEWALK CULVERT CAPACITY (MANNING'S EQUATION)
$$Q_{cap} = \frac{1.49}{n} A R^{2/3} S^{1/2}$$
$$Q_{cap} = \frac{1.49}{0.015} (2' * 0.5')^{2/3} (0.02)^{1/2}$$
$$Q_{cap} = 7.8 \text{ CFS}$$

COMPARISON

- DEV BASIN A + B TO EXIST BASIN A
 - VOLUME
$$\Delta V_{100} = (4,515 + 7,470) - 7,100 = 4,885 \text{ CF (INCREASE)}$$
 - PEAK DISCHARGE
$$\Delta Q_{100} = (2.8 + 4.7) - 5.4 = 2.1 \text{ CFS (INCREASE)}$$

CONSTRUCTION NOTES:

- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 280-1990 (ALBUQUERQUE AREA), 1-800-321-ALERT(2537) (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
- 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.
- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
- BACKFILL COMPACTION SHALL BE ACCORDING TO ARTERIAL STREET USE.
- MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE LESSEE OF THE PROPERTY SERVED.
- ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED OUT IN ACCORDANCE WITH OSHA 29CFR 1926 SUBPART P-EXCAVATIONS.

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.

APPROVALS	NAME	DATE
HYDROLOGY		
SIDEWALK INSPECTOR		
STORM DRAIN MAINTENANCE		



F.I.R.M. SCALE: 1" = 500'

PROJECT BENCHMARK
ACS 1 3/4" ALUMINUM DISK STAMPED, "ACS BN, 22-K14", EPOXYED ON TOP OF THE CONCRETE CURB RETURN, NINE QUADRANT OF BROADWAY BLVD. AND GRAND AVE. N.E. ELEVATION = 4963.67 FEET (NGVD 1929)

T.B.M. #1
CHISELED SQUARE ON TOP OF CURB ELEVATION = 4954.40 FEET (NGVD 1929)

T.B.M. #2
CHISELED SQUARE ON TOP OF CURB ELEVATION = 4954.39 FEET (NGVD 1929)

LEGAL DESCRIPTION

LOTS 1 AND 2, BLOCK 2, BRATINA ADDITION NO. 2, LOTS 1-10 INCLUSIVE, LOTS 19, 20, AND 21, FRANCHINI ADDITION, AND LOT 1, TOWNES ADDITION

STUDIO
SW
ARCHITECTS

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
DOCUMENTS - 02/15/07

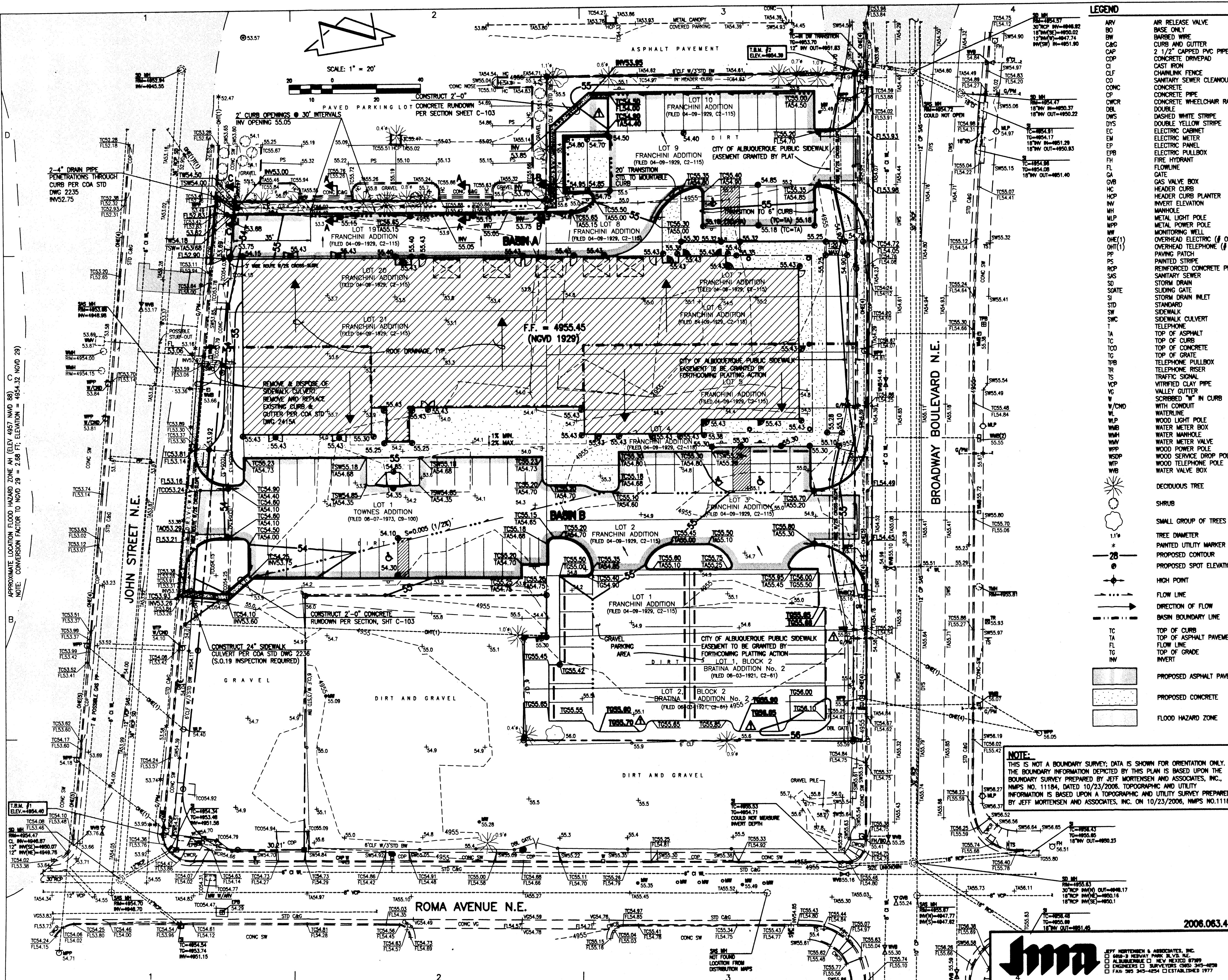
WESST CORP ENTERPRISE CENTER
DRAINAGE PLAN, CALCULATIONS, NOTES AND MAPS

Design Review Committee City Engineer Approval Mo./Day/Yr. Mo./Day/Yr.

FOR INFORMATION ONLY
NOT PART OF WORK ORDER

City Project No. 7995.91 EDA Project No. 080104126 Zone Map No. J-14-Z Sheet 6 Of 109 C-101

STUDIO SOUTHWEST JOB NO. 0618 12/20/06



- LEGEND**
- ARV AIR RELEASE VALVE
 - BO BASE ONLY
 - BW BARBED WIRE
 - C&G C&G CAP
 - CDP CONCRETE DRIVEPAD
 - CI CAST IRON
 - CLF CHAINLINK FENCE
 - CO CONCRETE
 - CONC CONCRETE
 - CP CONCRETE PIPE
 - CPR CONCRETE PULLBOX
 - CWB CONCRETE WHEELCHAIR RAMP
 - DWS DOUBLE
 - DYS DASHED WHITE STRIPE
 - EC DOUBLE YELLOW STRIPE
 - EM ELECTRIC METER
 - EP ELECTRIC PANEL
 - EPB ELECTRIC PULLBOX
 - FLH FIRE HYDRANT
 - FLW FLOWLINE
 - GA GATE
 - GVB GAS VALVE BOX
 - HC HEADER CURB
 - HCP HEADER CURB PLANTER
 - INW INVERT ELEVATION
 - MHP MANHOLE
 - MPP METAL POWER POLE
 - MPP MONITORING WELL
 - OHE(1) OVERHEAD ELECTRIC (# OF LINES)
 - OHT(1) OVERHEAD TELEPHONE (# OF LINES)
 - PWP PARKING PATCH
 - PS PAINTED STRIPE
 - RCP REINFORCED CONCRETE PIPE
 - SAS SANITARY SEWER
 - SD STORM DRAIN
 - SGATE SLIDING GATE
 - SI STORM DRAIN INLET
 - STD STANDARD
 - SW SIDEWALK
 - SWC SIDEWALK CULVERT
 - TEL TELEPHONE
 - TOP OF ASPHALT
 - TOP OF CURB
 - TOP OF CONCRETE
 - TOP OF GRADE
 - TPB TELEPHONE PULLBOX
 - TRF TRAFFIC RISER
 - VCP VALLEY GUTTER
 - W/CND WITH CONDUIT
 - W/L WATERLINE
 - WLP WOOD LIGHT POLE
 - WMB WATER METER BOX
 - WMP WATER MANHOLE
 - WMP WATER METER VALVE
 - WMP WOOD POWER POLE
 - WSD WOOD SERVICE DROP POLE
 - WTD WOOD TELEPHONE POLE
 - WVB WATER VALVE BOX
 - DECIDUOUS TREE
 - SHRUB
 - SMALL GROUP OF TREES
 - TREE DIAMETER
 - PAINTED UTILITY MARKER
 - PROPOSED CONTOUR
 - PROPOSED SPOT ELEVATION
 - HIGH POINT
 - FLOW LINE
 - DIRECTION OF FLOW
 - BASIN BOUNDARY LINE
 - TOP OF CURB
 - TOP OF ASPHALT PAVEMENT
 - FLOW LINE
 - TOP OF GRADE
 - INVERT
 - PROPOSED ASPHALT PAVEMENT
 - PROPOSED CONCRETE
 - FLOOD HAZARD ZONE

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
DOCUMENTS - 02/15/07

WEST CORP ENTERPRISE CENTER
GRADING PLAN

Design Review Committee City Engineer Approval

FOR INFORMATION ONLY
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City Project No. 7995.91 EDA Project No. 080104126 Zone Map No. J-14-Z Sheet 7 of 109

ENGINEER'S SEAL

SW ARCHITECTS

STUDIO SOUTH

2006.083.4

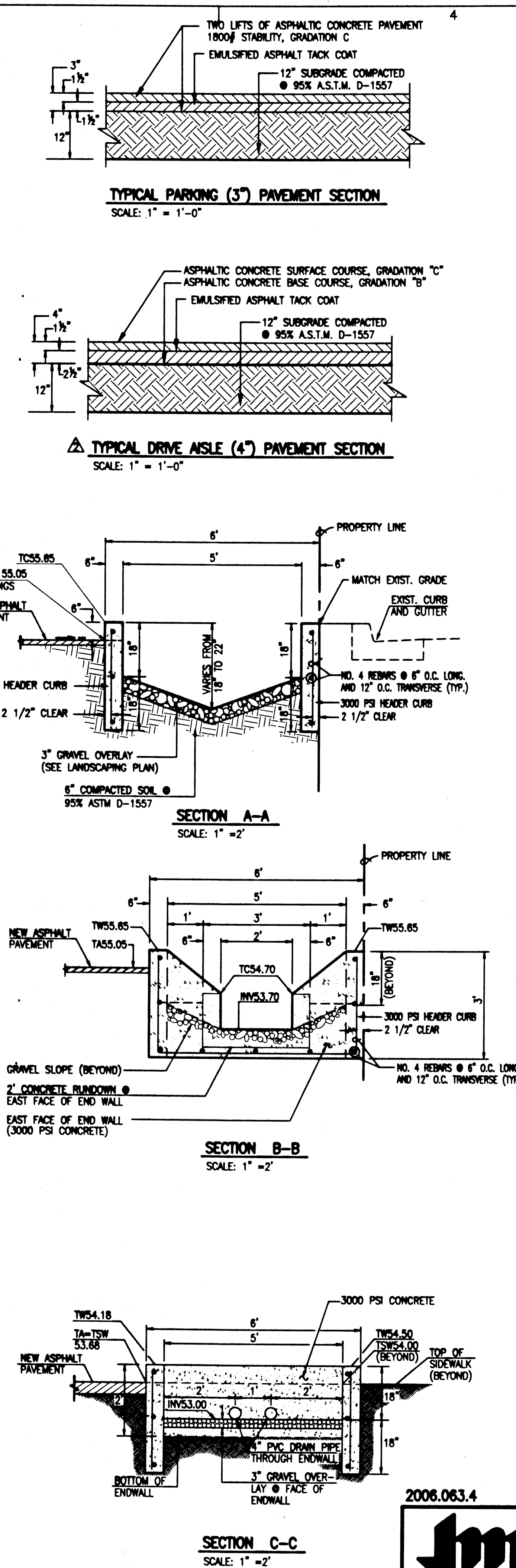
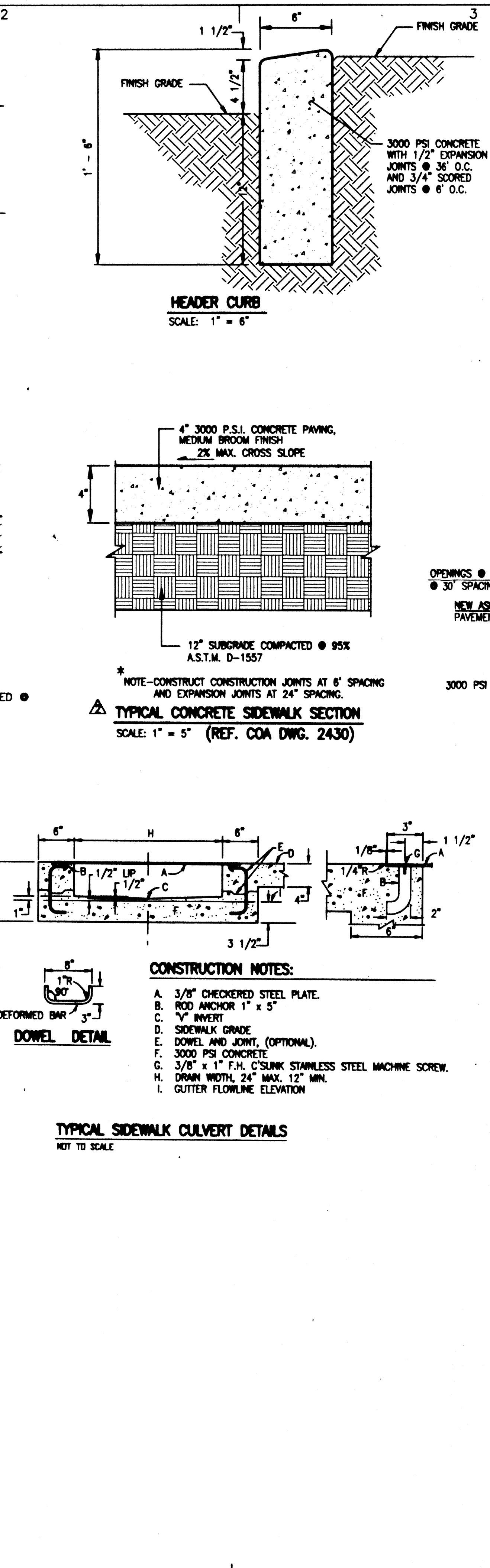
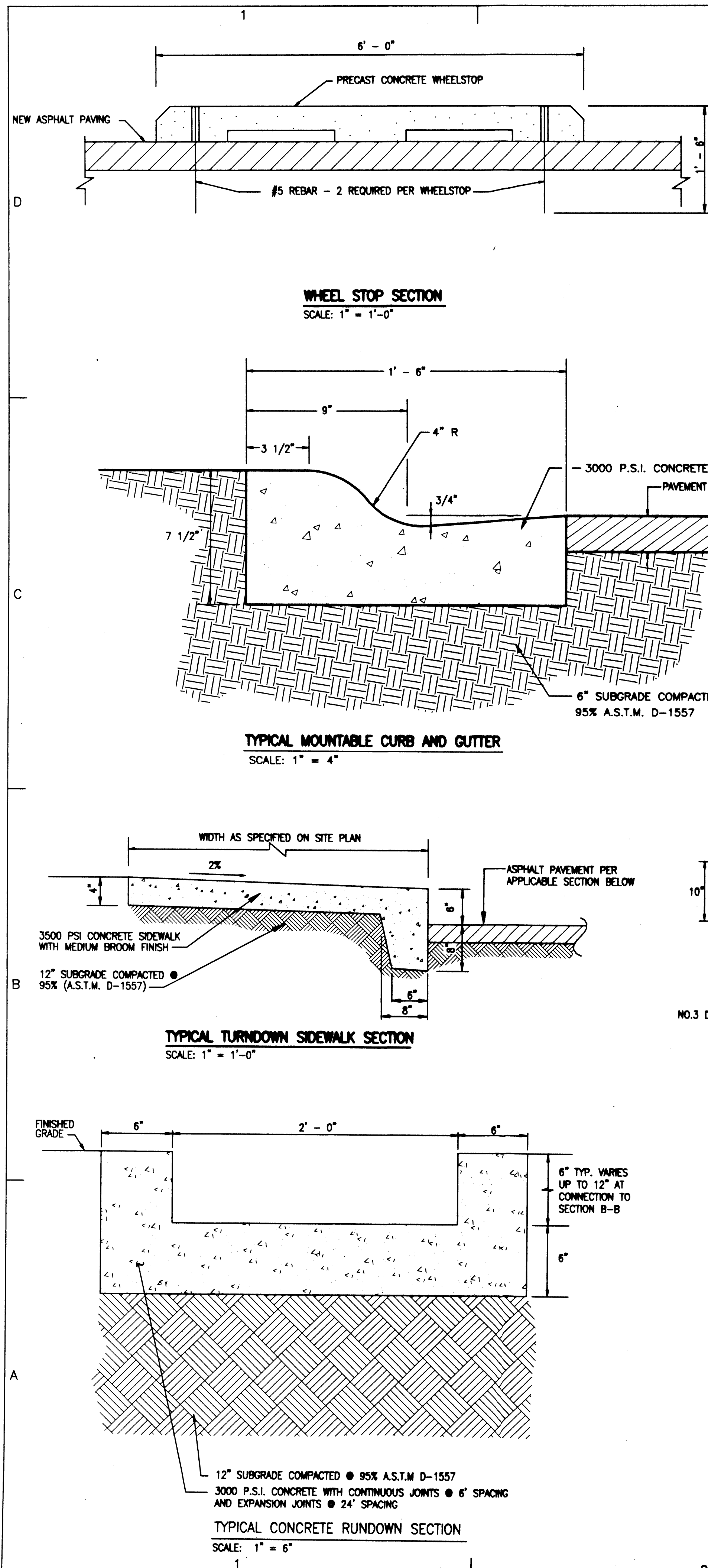
JEFF MORTENSEN & ASSOCIATES, INC.
11184 NEW MEXICO HWY 300-900
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS LICENSE NO. 11184
FAX 505 343-4254 ESTABLISHED 1977

REVISIONS

No.	Date	By	Remarks
1	03/07	JMS/GM	ADDRESS DRC COMMENTS
2	03/07	JMS/GM	ADJUSTMENT PER TEL COMMENTS
3	03/07	JMS/GM	REVISIONS
4	03/07	JMS/GM	DESIGN

Designed By: JMS/GM Date: 12/06
Drawn By: RWW/JLP Date: 12/06
Checked By: GM Date: 01/07

File Path: E:\WORK\JANUARY\03-21-2007
File Name: 60634DTR.DWG
Plot Date: 03-21-2007
Plot Time: 11:52 am



ENGINEER'S SEAL		SURVEY INFORMATION		BENCH MARKS		AS-BUILT INFORMATION	
NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE
60631	10/06	60631	10/06	60631	10/06	60631	10/06
BY: JMA		BY: JMA		BY: JMA		BY: JMA	
T.B.M. #1		T.B.M. #1		T.B.M. #1		T.B.M. #1	
ELEVATION = 4843.87 FEET (NGVD 1929)		ELEVATION = 4843.87 FEET (NGVD 1929)		ELEVATION = 4843.87 FEET (NGVD 1929)		ELEVATION = 4843.87 FEET (NGVD 1929)	
CHISELED SQUARE ON TOP OF CURB		CHISELED SQUARE ON TOP OF CURB		CHISELED SQUARE ON TOP OF CURB		CHISELED SQUARE ON TOP OF CURB	
ELEVATION = 4854.40 FEET (NGVD 1929)		ELEVATION = 4854.40 FEET (NGVD 1929)		ELEVATION = 4854.40 FEET (NGVD 1929)		ELEVATION = 4854.40 FEET (NGVD 1929)	
T.B.M. #2		T.B.M. #2		T.B.M. #2		T.B.M. #2	
CHISELED SQUARE ON TOP OF CURB		CHISELED SQUARE ON TOP OF CURB		CHISELED SQUARE ON TOP OF CURB		CHISELED SQUARE ON TOP OF CURB	
ELEVATION = 4854.38 FEET (NGVD 1929)		ELEVATION = 4854.38 FEET (NGVD 1929)		ELEVATION = 4854.38 FEET (NGVD 1929)		ELEVATION = 4854.38 FEET (NGVD 1929)	

REVISIONS		REMARKS	
No.	Date	No.	Date
1	12/06	1	12/06
2	12/06	2	12/06
3	01/07	3	01/07

DESIGNED BY: JDS/GM		DRAWN BY: RRW		CHECKED BY: GM	
DATE: 12/06	DATE: 12/06	DATE: 12/06	DATE: 12/06	DATE: 01/07	DATE: 01/07
DESIGNED BY: JDS/GM		DRAWN BY: RRW		CHECKED BY: GM	

CITY OF ALBUQUERQUE		WEEST CORP ENTERPRISE CENTER	
DEPARTMENT OF MUNICIPAL DEVELOPMENT		GRADING AND PAVING SECTIONS AND DETAILS	
DOCUMENTS - 02/15/07		FOR INFORMATION ONLY	
NOT PART OF WORK ORDER		NOT PART OF WORK ORDER	
City Project No. 080104126		Zone Map No. J-14-Z	
EDA Project No. 7995.91		Sheet 8 of 109	
C-103		C-103	

RECEIVED		HYDROLOGY SECTION	
MAR 22 2007		MAR 22 2007	
RECEIVED		HYDROLOGY SECTION	

JMA		JEFF HORTON & ASSOCIATES, INC.	
4400-S REDBAY PARK BLVD. NE		ALBUQUERQUE, NM 87109	
ENGINEERS & SURVEYORS		CRED: 245-4258	
FAX: 245-4254		ESTABLISHED 1977	
2006.063.4		2006.063.4	

STUDIO
SW
ARCHITECTS

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
DOCUMENTS - 02/15/07

WEEST CORP ENTERPRISE CENTER
GRADING AND PAVING SECTIONS AND DETAILS
Design Review Committee City Engineer Approval

FOR INFORMATION ONLY
NOT PART OF WORK ORDER

City Project No. 080104126
EDA Project No. 7995.91
Zone Map No. J-14-Z
Sheet 8 of 109
C-103

STUDIO SOUTHWEST JOB NO. 0618 12/20/06

File Path: E:\WORK\DWG\DWG\A
File Name: 60634DPR.DWG
Plot Date: 01-09-2007
Plot Time: 08:57 am

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS SITE, LOCATED IN DOWNTOWN ALBUQUERQUE, IS CURRENTLY A GRADED EMPTY DIRT AND GRAVEL LOT THAT PREVIOUSLY CONTAINED A COMMERCIAL BUILDING THAT HAS BEEN DEMOLISHED. THIS PROJECT IS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA. THE PROPOSED DEVELOPMENT IS A NEW COMMERCIAL OFFICE BUILDING WITH TWO ASSOCIATED PAVED PARKING LOTS. THE DRAINAGE CONCEPT FOR THIS SITE IS CONTINUED FREE DISCHARGE FROM THE SITE INTO THE ADJACENT JOHN STREET NE TO THE WEST. THE ANALYSIS PROVIDED HEREIN DEMONSTRATES THAT FREE DISCHARGE IS JUSTIFIED. THIS SUBMITTAL IS MADE IN SUPPORT OF BUILDING PERMIT AND SO#19 APPROVALS.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THIS SITE IS LOCATED IN DOWNTOWN ALBUQUERQUE BETWEEN BROADWAY BLVD NE AND JOHN STREET NE, JUST NORTH OF ROMA AVENUE NE. THE CURRENT LEGAL DESCRIPTION IS LOTS 1 AND 2, BLOCK 2, BRATINA ADDITION NO. 2; LOTS 1-10 INCLUSIVE, LOTS 19, 20, AND 21, FRANCHINI ADDITION; AND LOT 1, TOWNES ADDITION. THE SITE IS CURRENTLY A FLAT-GRADED, EMPTY DIRT AND GRAVEL LOT. THE ADJACENT STREETS, BROADWAY BLVD NE, JOHN STREET NE, AND ROMA AVE NE, ARE ALL FULLY DEVELOPED PUBLIC PAVED ROADWAYS WITH CURB AND GUTTER ON BOTH SIDES AND PUBLIC RCP STORM DRAINS. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED FOR BERNALILLO COUNTY, NEW MEXICO DATED APRIL 2, 2002, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE. HOWEVER, THE ADJACENT STREETS OF JOHN STREET NE AND BROADWAY BLVD NE ARE WITHIN A ZONE AH FLOOD HAZARD AREA, WITH A BASE FLOOD ELEVATION OF 4957 (NAVD 88) WHICH CONVERTS TO 4954.33 (NGVD 29). THE FINISHED FLOOR OF THE NEW BUILDING IS SET MORE THAN ONE FOOT ABOVE THE BASE FLOOD ELEVATION IN ORDER TO AVOID ANY POTENTIAL FLOODING. THE CONSTRUCTION PROPOSED FOR THIS SITE WILL NOT REPRESENT AN INCREASE TO THE TOTAL RUNOFF VOLUME AND PEAK DISCHARGE AS COMPARED TO PREVIOUS DEVELOPMENTS, AND WILL NOT ADVERSELY IMPACT THE DESIGNATED FLOOD HAZARD ZONE.

III. BACKGROUND DOCUMENTS

- THE FOLLOWING ITEMS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL:
- BOUNDARY AND TOPOGRAPHIC SURVEY OF THE EXISTING SITE PREPARED BY JEFF MORTENSEN AND ASSOCIATES, INC. DATED 10/23/2006. THE SUBJECT SURVEY SHOWS THE EXISTING IMPROVEMENTS.
 - RESEARCH CONDUCTED IN THE CITY ENGINEER'S OFFICE OF THE SURROUNDING ADJACENT SITES ALL ALLOW FOR FREE DISCHARGE IN THE JOHN STREET NE STORM DRAIN SYSTEM.
 - DRAINAGE PLAN OF THE MALOOF WAREHOUSE SITE DIRECTLY WEST OF THE SITE ACROSS JOHN STREET NE, PREPARED BY DMG DATED 11/23/1999 (J14/D0384)
 - DRAINAGE PLAN FOR SOCIAL SECURITY & BIA SOUTH OF THE SITE, PREPARED BY ODEEN-MILLER & ASSOC., DATED 10/09/2002 (J14/D143)

IV. EXISTING CONDITIONS

THE SITE IS LOCATED BETWEEN BROADWAY BLVD NE AND JOHN STREET NE, JUST NORTH OF ROMA AVENUE NE. THE SITE IS CURRENTLY A FLAT GRADED, EMPTY DIRT AND GRAVEL LOT, WITH MINIMAL DRAINAGE IMPROVEMENTS REMAINING FROM A PREVIOUS ON-SITE COMMERCIAL BUILDING WHICH HAS BEEN DEMOLISHED. THE ADJACENT STREETS, BROADWAY BLVD NE AND JOHN STREET NE, ARE BOTH FULLY IMPROVED PAVED PUBLIC ROADWAYS WITH CURB AND GUTTER ON BOTH SIDES AND RCP PUBLIC STORM DRAINS. RUNOFF FROM THE SITE SURFACE DRAINS EAST TO WEST ACROSS THE SITE THROUGH TWO EXISTING DAMAGED CONCRETE SIDEWALK CULVERTS AND THROUGH AN EXISTING CONCRETE DRIVEWAY ENTRANCE INTO JOHN STREET NE. RUNOFF IS THEN DIRECTED NORTH VIA CURB AND GUTTER ALONG JOHN STREET TO A PUBLIC STORM INLET APPROX. 50' NORTH OF THE SITE, WHERE IT ENTERS A PUBLIC 36" RCP STORM DRAIN.

THERE ARE MINIMAL OFFSITE FLOWS FROM THE LOT TO THE SOUTH DUE TO IT BEING SLIGHTLY HIGHER TOPOGRAPHICALLY THAN THE SITE. THERE IS NO OFF SITE FLOW FROM BROADWAY BLVD NE DUE TO IT BEING BOUNDED BY CURB AND GUTTER. ALTHOUGH THE PROPERTY TO THE NORTH IS TOPOGRAPHICALLY HIGHER, THERE IS NO OFFSITE FLOW FROM THE SITE DUE TO A CURB AT THE EDGE OF THE PARKING AREA THAT EXTENDS ALONG THE ENTIRE NORTHERN PROPERTY LINE. FINALLY, THERE IS NO OFFSITE FLOWS FROM JOHN STREET NE TO THE WEST DUE TO FLOWS BEING BOUND WITHIN ITS LIMITS BY CURB AND GUTTER, AND BECAUSE IT IS TOPOGRAPHICALLY LOWER.

V. DEVELOPED CONDITIONS

THE PROJECT CONSISTS OF THE CONSTRUCTION OF A COMMERCIAL OFFICE BUILDING WITH TWO ASSOCIATED PAVED PARKING LOTS. THIS DEVELOPMENT WILL SPLIT THE SITE INTO TWO (2) DRAINAGE BASINS, BOTH OF WHICH WILL DRAIN TO JOHN STREET NE, FOLLOWING THE HISTORIC DRAINAGE PATTERNS OF THE SITE.

BASIN A WILL BE THE NORTHERN HALF OF THE SITE WHICH WILL DRAIN TO THE PAVED PARKING LOT, AND SURFACE DRAIN ACROSS THE PARKING LOT INTO A GRAVEL LINED LANDSCAPED AREA ALONG THE NORTHERN BOUNDARY OF THE SITE. THE OUTFALL FOR THIS LANDSCAPED AREA WILL BE AT THE NORTHWEST CORNER OF THE SITE, AND DRAIN THROUGH TWO (2) CURB PENETRATIONS INTO JOHN STREET NE. THE RUNOFF WILL PROCEED TO DRAIN NORTH VIA CURB AND GUTTER WITHIN JOHN STREET INTO A PUBLIC STORM INLET THAT DISCHARGES INTO AN EXISTING 36" PUBLIC STORM DRAIN BENEATH JOHN STREET NE.

BASIN B WILL BE THE SOUTHERN HALF OF THE SITE. STORM RUNOFF WILL DRAIN EAST TO WEST ACROSS THE PAVED PARKING LOT TO A NEW 24" CONCRETE RUNDOWN AT THE SOUTHWEST CORNER OF THE SITE. THE NEW RUNDOWN WILL REPLACE AN EXISTING DAMAGED RUNDOWN AND DISCHARGE VIA SIDEWALK CULVERT INTO JOHN STREET NE. THE RUNOFF WILL THEN FLOW NORTH VIA CURB AND GUTTER WITHIN JOHN STREET NE UNTIL IT JOINS THE RUNOFF FROM BASIN A AND ENTERS THE AFORE MENTIONED EXISTING STORM INLET IN JOHN STREET NE NORTH OF THE PROJECT SITE.

A SMALL PORTION OF THE SITE AT THE EXTREME SOUTHWEST CORNER OF THE SITE WILL NOT BE IMPROVED AS PART OF THIS PROJECT, AND WILL REMAIN IN ITS EXISTING CONDITION.

WATERBLOCKS WILL BE CONSTRUCTED AT THE NEW ENTRANCES TO THE SITE ALONG BOTH BROADWAY BLVD NE AND JOHN STREET NE TO MAINTAIN THE EXISTING CONDITION THAT THERE WILL BE OFFSITE FLOWS FROM THESE STREETS.

AS THE CALCULATIONS SHOW, THE DEVELOPMENT IMPROVEMENTS WILL RESULT IN AN OVERALL INCREASE IN PEAK DISCHARGE RATE AND RUNOFF VOLUME TO JOHN STREET NE. QUALITATIVELY, THE RUNOFF WILL BE ATTENUATED BY THE LANDSCAPED AREA AT THE NORTH EDGE OF THE SITE, WHICH WILL INFORMALLY DETAIL APPROXIMATELY 1000 CF. AS SHOWN BY THE RESEARCH MENTIONED ABOVE, EVERY SITE ADJACENT TO THIS PROJECT SITE HAD A INCREASE IN PEAK DISCHARGE DUE TO THEIR DEVELOPMENT AND EACH HAS BEEN ALLOWED FREE DISCHARGE INTO JOHN STREET NE. THIS IS DUE TO SUFFICIENT DOWNSIDE CAPACITY IN THE PUBLIC 36" RCP STORM DRAIN BENEATH JOHN STREET NE THAT THE EXISTING STREET INLETS DISCHARGE INTO. THEREFORE, THE MINIMAL INCREASE IN PEAK DISCHARGE WILL NOT EXCEED THE CAPACITY OF THE PUBLIC 36" RCP STORM DRAIN, AND FREE DISCHARGE INTO JOHN STREET CAN CONTINUE AS THE STATUS QUO.

ANOTHER FACTOR ALLOWING CONTINUED FREE DISCHARGE IS THAT THIS SITE PREVIOUSLY CONTAINED A COMMERCIAL BUILDING ON-SITE THAT CREATED A LARGER RUNOFF VOLUME AND PEAK DISCHARGE THAN IS SHOWN BY THE EXISTING CONDITIONS CALCULATIONS ON THIS SHEET. THE PRE-EXISTING CONDITION ALLOWED FOR FREE DISCHARGE, AND THIS NEW DEVELOPMENT CREATES SIMILAR LAND TREATMENT VALUES FOR THE SITE, THEREFORE RESULTING IN SIMILAR RUNOFF VOLUME AND PEAK DISCHARGE RATES. THEREFORE, CONTINUED FREE DISCHARGE INTO JOHN STREET NE IS ALLOWABLE.

VI. GRADING PLAN

THE GRADING PLAN SHOWS: 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS TAKEN FROM A BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY JEFF MORTENSEN & ASSOCIATES DATED OCTOBER 23, 2006, 2.) PROPOSED GRADES INDICATED BY CONTOURS AT 1'-0" INTERVALS, 3.) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS TAKEN FROM THE AFOREMENTIONED JMA SURVEY, DATED OCTOBER 23, 2006 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, 5.) AND CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE PROPOSED DEVELOPMENT WILL REPLACE THE EMPTY LOT A NEW COMMERCIAL OFFICE BUILDING AND TWO ASSOCIATED ASPHALT PAVED PARKING LOTS. THE EXISTING DRAINAGE PATTERN WILL NOT BE SIGNIFICANTLY ALTERED AND CONTINUE TO DRAIN WEST TO EAST INTO JOHN STREET NE.

VII. CALCULATIONS

THE CALCULATIONS WHICH APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40-ACRE AND SMALLER BASINS, AS SET FOR THE 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 BY THIS DEVELOPMENT. AS SHOWN BY THESE CALCULATIONS, THERE IS ANTICIPATED TO BE AN INCREASE IN PEAK DISCHARGE RATE AND VOLUME OF RUNOFF INTO JOHN STREET NE. THIS IS THIS IS DUE TO THE FACT THAT MUCH OF THE PROPOSED WORK WILL REPLACE EXISTING PERVIOUS AREA WITH NEW IMPERVIOUS AREA. A PORTION OF THIS FLOW WILL BE MITIGATED BY THE INFORMAL LANDSCAPED DETENTION AREA AT THE NORTH EDGE OF THE PROPERTY THAT WILL DETAIN APPROX. 1000 CF OF RUNOFF. CAPACITY OF THE PROPOSED SIDEWALK CULVERT AT THE SOUTHWEST CORNER OF THE SITE WAS DETERMINED USING MANNING'S EQUATION. THE INCREASED VOLUME AND PEAK DISCHARGE DUE TO DEVELOPMENT IS ALLOWED TO FREELY DISCHARGE INTO JOHN STREET NE DUE TO:

- SUFFICIENT CAPACITY IN THE JOHN STREET NE PUBLIC 36" RCP STORM DRAIN AS SHOWN FROM RESEARCH OF ADJACENT SITES, AND,
- PRE-EXISTING CONDITIONS OF THE SITE THAT HAD A SIMILAR LAND TREATMENT TO THE NEW DEVELOPMENT, AND WERE ALLOWED FREE DISCHARGE INTO JOHN STREET NE.

VIII. CONCLUSION

THE CONTINUED FREE DISCHARGE OF RUNOFF FROM THIS SITE INTO THE ADJACENT PUBLIC STREET OF JOHN STREET NE IS APPROPRIATE DUE TO THE FOLLOWING FACTORS:

- MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA
- PRE-EXISTING CONDITIONS OF THE SITE WITH A SIMILAR LAND TREATMENT AND RUNOFF VOLUME AND PEAK DISCHARGE PREVIOUSLY ALLOWED TO FREELY DISCHARGE INTO JOHN STREET NE
- ADJACENT PROPERTY DEVELOPMENT WITH INCREASED RUNOFF HAS BEEN CONSISTENTLY ALLOWED FREE DISCHARGE INTO JOHN STREET NE
- SUFFICIENT CAPACITY IN THE PUBLIC 36" STORM DRAIN UNDER JOHN STREET NE THAT THE EXISTING STORM INLETS DISCHARGE INTO.

CALCULATIONS

SITE CHARACTERISTICS

- PRECIPITATION ZONE = 2
- $P_{6,100} = P_{360} = 2.35$
- TOTAL PROJECT AREA (A_t) = 75,390 SF / 1.73 AC
- EXISTING LAND TREATMENT
 - A. BASIN A 75,390 SF = 1.73 AC
 - TREATMENT C AREA (SF/AC) %
75,390 / 1.73 100
- DEVELOPED LAND TREATMENT
 - A. BASIN A 26,950 SF = 0.62 AC
 - TREATMENT B AREA (SF/AC) %
1,300 / 0.03 5
1,300 / 0.03 5
24,350 / 0.56 90
 - B. BASIN B 48,440 SF = 1.11 AC
 - TREATMENT B AREA (SF/AC) %
5,630 / 0.13 12
5,625 / 0.13 12
37,185 / 0.85 76

EXISTING CONDITION

- BASIN A
 - VOLUME
 - $E_w = (E_{A1} + E_{A2} + E_{A3} + E_{A4}) / A_t$
 $E_w = ((1.13 + 1.73)) / 1.73 = 1.13$ IN
 - $V_{100} = (E_w / 12) A_t = (1.13 / 12) 1.73 = 0.1630$ AC-FT 7,100 CF
 - PEAK DISCHARGE
 - $Q_p = Q_{A1} + Q_{A2} + Q_{A3} + Q_{A4}$
 $Q_p = Q_{100} = (3.14 + 1.73) = 5.4$ CFS

DEVELOPED CONDITION

- BASIN A
 - VOLUME
 - $E_w = (E_{A1} + E_{A2} + E_{A3} + E_{A4}) / A_t$
 $E_w = ((0.78 + 0.03) + (1.13 + 0.03) + (2.12 + 0.56)) / 0.62 = 2.01$ IN
 - $V_{100} = (E_w / 12) A_t = (2.01 / 12) 0.62 = 0.1039$ AC-FT 4,515 CF
 - PEAK DISCHARGE
 - $Q_p = Q_{A1} + Q_{A2} + Q_{A3} + Q_{A4}$
 $Q_p = Q_{100} = (2.28 + 0.03) + (3.14 + 0.03) + (4.70 + 0.56) = 2.8$ CFS
- BASIN B
 - VOLUME
 - $E_w = (E_{A1} + E_{A2} + E_{A3} + E_{A4}) / A_t$
 $E_w = ((0.78 + 0.13) + (1.13 + 0.13) + (2.12 + 0.85)) / 1.11 = 1.85$ IN
 - $V_{100} = (E_w / 12) A_t = (1.85 / 12) 1.11 = 0.1711$ AC-FT 7,470 CF
 - PEAK DISCHARGE
 - $Q_p = Q_{A1} + Q_{A2} + Q_{A3} + Q_{A4}$
 $Q_p = Q_{100} = (2.28 + 0.13) + (3.14 + 0.13) + (4.70 + 0.85) = 4.7$ CFS
 - 24" SIDEWALK CULVERT CAPACITY (MANNING'S EQUATION)
 - $Q_{cap} = \frac{4.49}{0.0149} (2' + 0.5') \left(\frac{1}{4} \right)^{2/3} (0.02)^{1/2}$
 $Q_{cap} = 7.8$ CFS

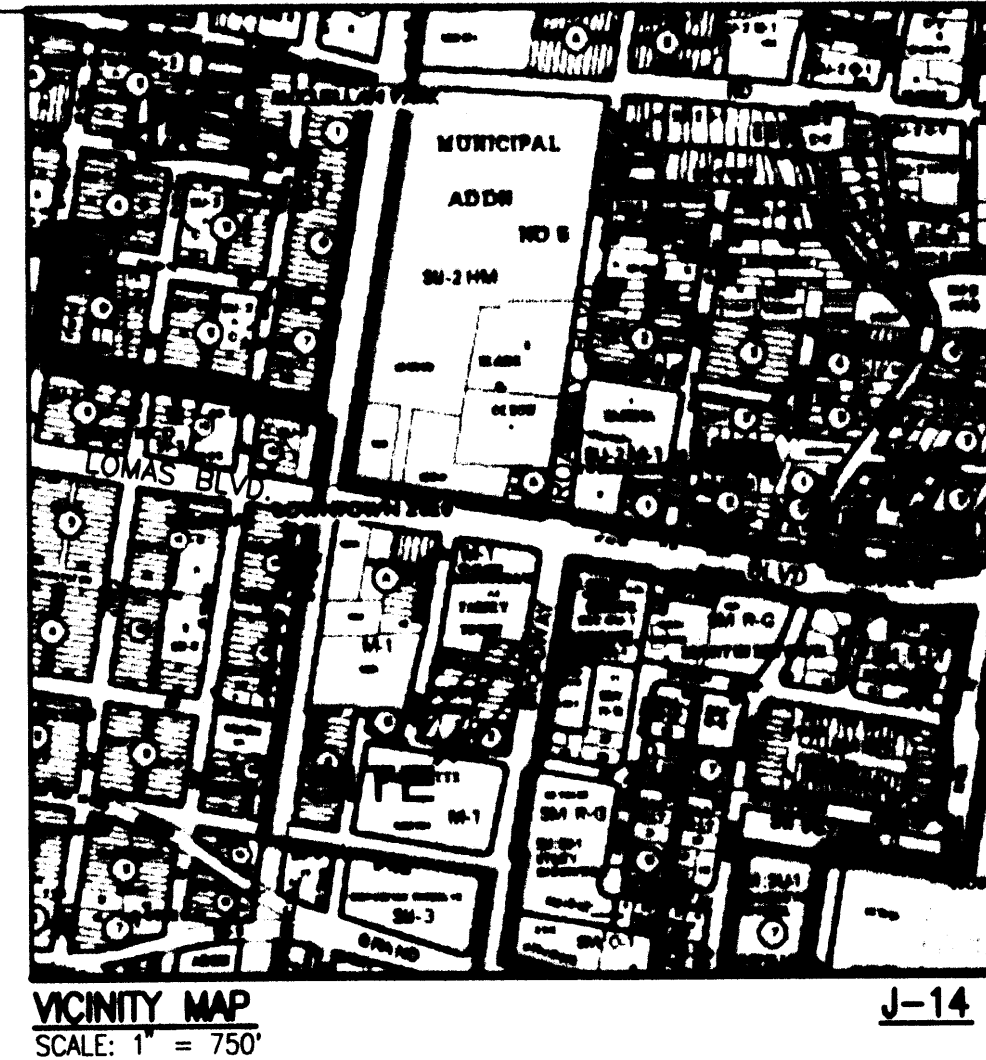
COMPARISON

- DEV BASIN A + B TO EXIST BASIN A
 - VOLUME
 - $\Delta V_{100} = (4,515 + 7,470) - 7,100 = 4,885$ CF (INCREASE)
 - PEAK DISCHARGE
 - $\Delta Q_{100} = (2.8 + 4.7) - 5.4 = 2.1$ CFS (INCREASE)

CONSTRUCTION NOTES:

- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 280-1990 (ALBUQUERQUE AREA), 1-800-321-ALERT(2537) (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
 - 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.
 - AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
 - BACKFILL COMPACTION SHALL BE ACCORDING TO ARTERIAL STREET USE.
 - MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
- 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.

APPROVALS	NAME	DATE
HYDROLOGY		
SIDEWALK INSPECTOR		
STORM DRAIN MAINTENANCE		



F.I.R.M.

SCALE: 1" = 500'

PROJECT BENCHMARK

ACS 1 3/4" ALUMINUM DISK STAMPED, "ACS BM, 22-K14", EPOXIED ON TOP OF THE CONCRETE CURB RETURN, NNE QUADRANT OF BROADWAY BLVD, AND GRAND AVE. N.E. ELEVATION = 4963.67 FEET (NGVD 1929)

T.B.M. #1

CHISELED SQUARE ON TOP OF CURB ELEVATION = 4954.40 FEET (NGVD 1929)

T.B.M. #2

CHISELED SQUARE ON TOP OF CURB ELEVATION = 4954.39 FEET (NGVD 1929)

LEGAL DESCRIPTION

LOTS 1 AND 2, BLOCK 2, BRATINA ADDITION NO. 2, LOTS 1-10 INCLUSIVE, LOTS 19, 20, AND 21, FRANCHINI ADDITION, AND LOT 1, TOWNES ADDITION

STUDIO
SW
ARCHITECTS

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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
DOCUMENTS - / - / -

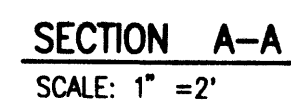
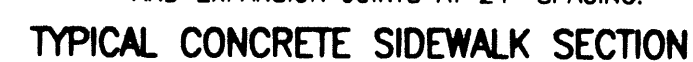
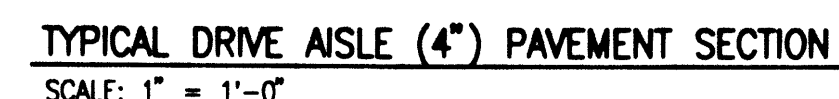
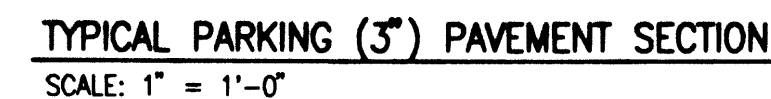
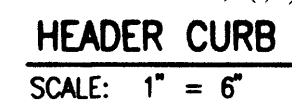
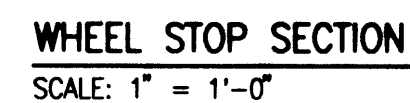
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JAN 29 2007
HYDROLOGY SECTION

WESST CORP					
DRAINAGE PLAN, CALCULATIONS, NOTES AND MAP					
Design Review Committee	City Engineer Approval		Mo./Day/Yr.	Mo./Day/Yr.	Mo./Day/Yr.
City Architect Approval			Design Update		
City Project No.		EDA Project No.		Zone Map No.	
7995.91				J-14-Z	
Sheet Of		C-101			

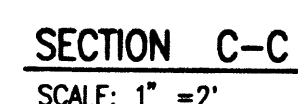
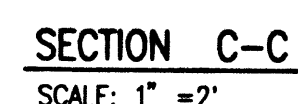
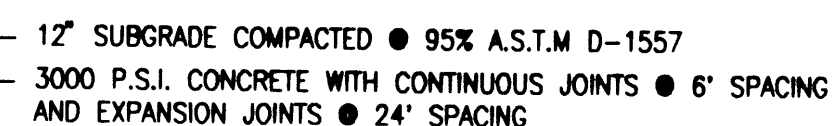
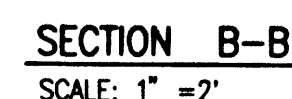
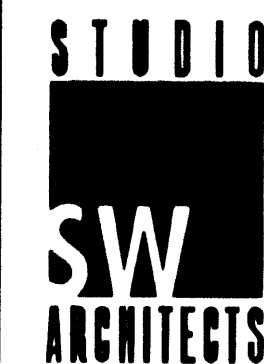
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Jma

JEFF MORTENSEN & ASSOCIATES, INC.
6002-B MIDWAY PARK BLVD. NE
ALBUQUERQUE, NM 87109
ENGINEERS & SURVEYORS (505) 345-4250
FAX: 505 345-4254 © ESTABLISHED 1977



- A. 3/8" CHECKERED STEEL PLATE.
- B. ROD ANCHOR 1" x 5"
- C. "V" INVERT
- D. SIDEWALK GRADE
- E. DOWEL AND JOINT, (OPTIONAL).
- F. 3000 PSI CONCRETE
- G. 3/8" x 1" F.H. C/SUNK STAINLESS STEEL MACHINE SCREW.
- H. DRAIN WIDTH, 24" MAX. 12" MIN.
- I. GUTTER FLOWLINE ELEVATION

[illegible]

STUDIO SOUTHWEST ARCHITECTS, INC.
2161 Mountain Rd. NW, Albuquerque, NM 87104
505.842.5555 fax 505.842.5555
Web Site: www.studiosouthwest.com
E-Mail: nash@studiosouthwest.com

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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
DOCUMENTS - / /

WESST CORP
GRADING AND PAVING SECTIONS AND DETAILS

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
-------------------------	------------------------	-------------	-------------

		Only English approved Only English approved Only English approved Only English approved	Update	

	City Architect Approval	Cost Designer	

City Project No.	EDA Project No.	Zone Map No.	Sheet Of
7995.91		J-14-Z	C-103

STUDIO SOUTHWEST JOB NO. 0618 12/20/06

SHEET KEYNOTES

- 1) ASPHALT PAVING
- 2) CURB AND GUTTER, REFER TO CIVIL
- 3) NEW 4" CONCRETE SIDEWALK, REFER TO CIVIL
- 4) EXISTING SIDEWALK
- 5) CURB RAMP, MAXIMUM SLOPE OF 15:1, REFER TO BS/A-100.
- 6) TRUNCATED DOMES, REFER TO BS/A-100.
- 7) 6'-0" LENGTH CONCRETE WHEEL STOP, TYP.
- 8) BIKE RACK FIVE BICYCLES
- 9) DIRECTIONAL ARROW, PAINTED, REFER TO B2/AS-501
- 10) LANDSCAPE AREA
- 11) GRAVEL SURFACE
- 12) VALLEY GUTTER, REFER TO CIVIL
- 13) 4" CONC PAVING
- 14) FLAG POLE, REFER TO C3/AS-501
- 15) PAVEMENT IS FLUSH WITH SIDEWALK, NO CURB RAMP REQUIRED
- 16) PROVIDE 2% (MAX) CROSS SLOPE, 3'-0" WIDE PEDESTRIAN PATHWAY
- 17) CURB RAMP REFER TO DTL A4/AS101
- 18) 5'-0" WIDE BENCH
- 19) FIRE DEPT CONNECTION

JOHN STREET N.E.

ROMA AVE N.E.

BROADWAY BOULEVARD N.E.

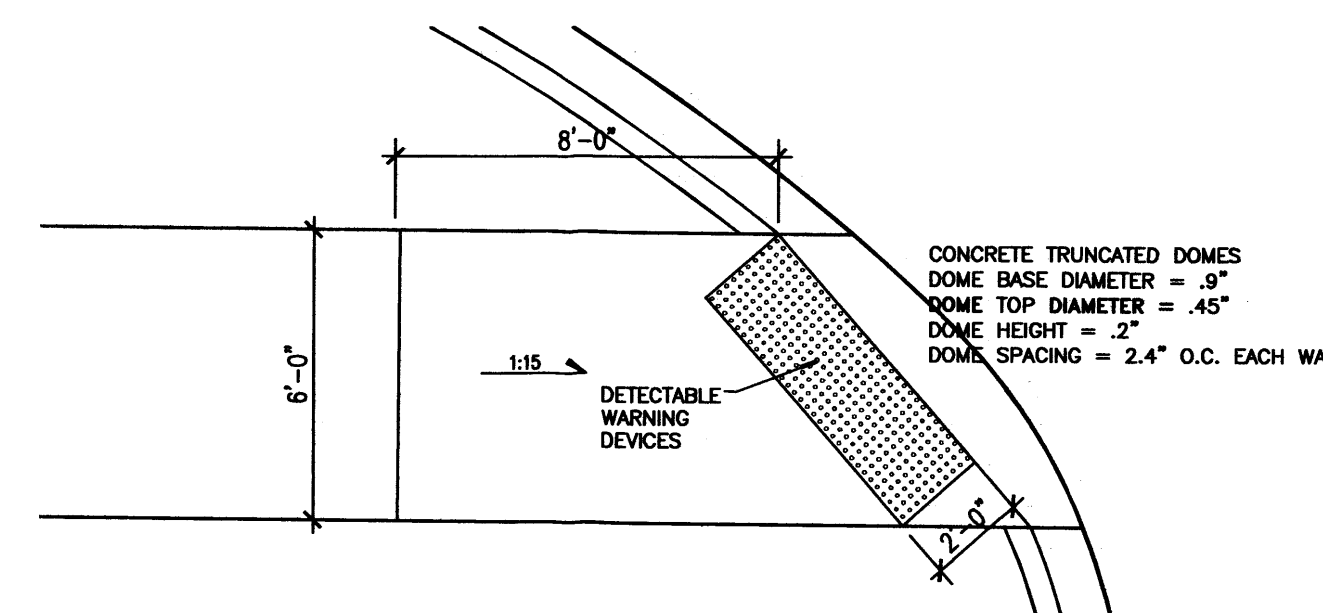
SIGN TYPES

A) REFER TO SHEET A-512 FOR SIGN TYPE DETAILS.

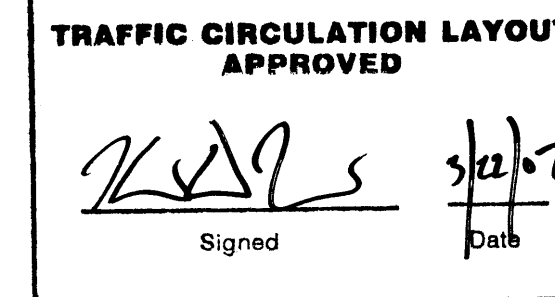
A	ONE WAY	D	DO NOT ENTER
B	HANDICAP ACCESSIBLE PARKING	E	MOTORCYCLE PARKING
C	VAN ACCESSIBLE PARKING	F	EMPLOYEE PARKING

EXISTING LEGAL DESCRIPTION: LOTS 1 & 2, BLOCK 2, BRATINA ADDITION NO.2; LOTS 1-10 INCLUSIVE, LOTS 19, 20 AND 21 FRANCHINI ADDITION AND LOT 1, TOWNES ADDITION

PROPOSED LEGAL DESCRIPTION: TRACT 1, LANDS OF WESST CORP



B5 CURB RAMP 1/4" = 1'-0"



- Parking**
 - Office
 - 1 sp/200 net leasable at 1st floor
 - 1 sp/300 net leasable at 2nd floor
 - 1 sp/250 net leasable for first 15000 s.f.
 - 1 sp/3 employees or 1 sp/1000 net leasable
 - Retail
 - Manufacturing Retail
- Parking calculation**
 - Office
 - First floor 499/200 = 3
 - Second floor 9978/300 = 33
 - Instruction/conference 1870/200 = 9
 - Manufacturing 7550/1000 = 7
 - Mercantile 2755/250 = 11
 - 10% credit for bus line (deduct) 63
- Spaces required 57
- Spaces provided 85
- 25% small car spaces allowed
- Accessible parking required/included in 57 required spaces
 - 4 total spaces
 - 3 HC + 1 van
- Bicycle parking required
- Motorcycle parking**
 - 3 spaces 4 ft.x8 ft.

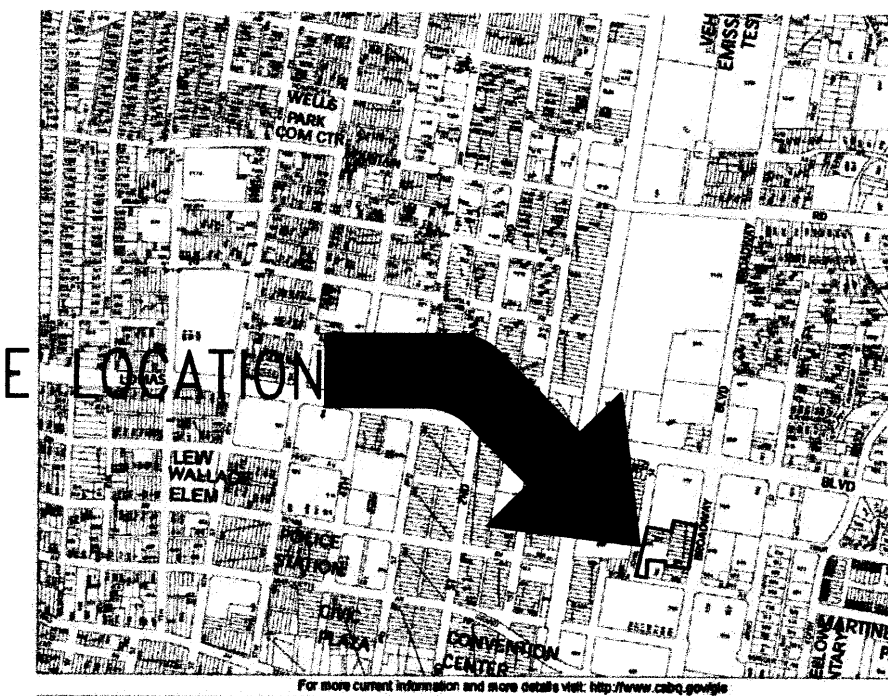
Public Infrastructure shown on these plans for information only and not part of approval. Separate DRC/Permit approval and Work Order required.

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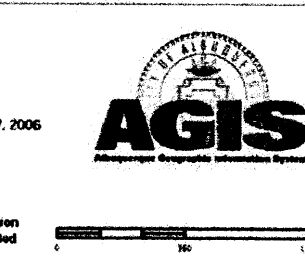
STUDIO SOUTHWEST ARCHITECTS, INC.
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SITE LOCATION



AGIS
Map amended through Aug 07, 2006



CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
DOCUMENTS - 02/15/07

WESST CORP ENTERPRISE CENTER
TRAFFIC CIRCULATION LAYOUT

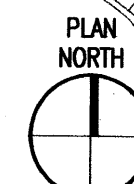
Design Review Committee City Engineer Approval Mo./Day/Yr. Mo./Day/Yr.

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
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City Project No. 7995.91 EDA Project No. 080104126 Zone Map No. J-14-Z Sheet 36 of 109 AS-100

A1 TRAFFIC CIRCULATION LAYOUT 1" = 20'-0"

0 10' 20' 40'



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- 19) FIRE DEPT CONNECTION

USE TO ADJUST LOTS
DRIVEN FROM PROPERTY LINE

COA STANDARD
DWG 2425

COA STANDARD
DWG 2426

JOHN STREET N.E.

ROMA AVE N.E.

BROADWAY BOULEVARD N.E.

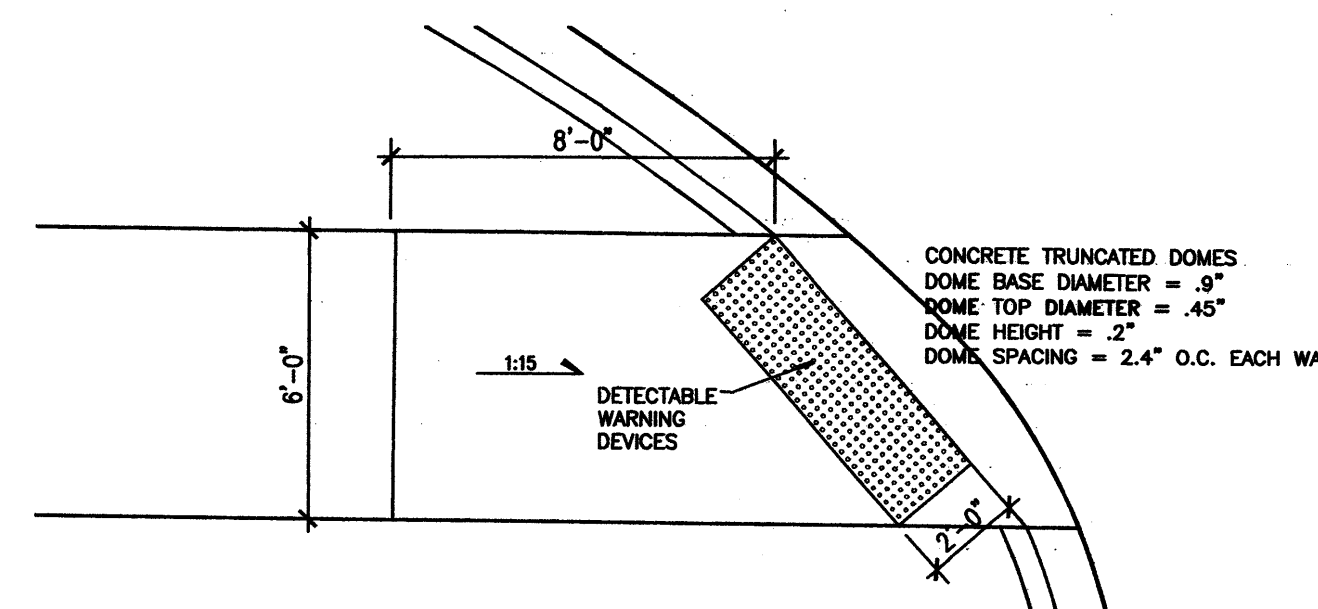
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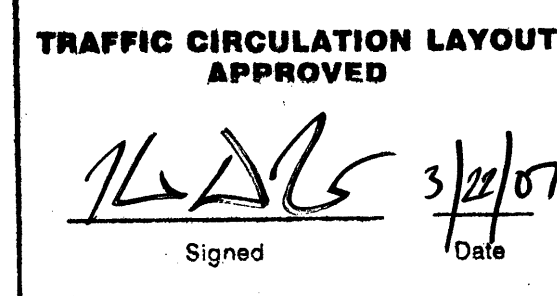
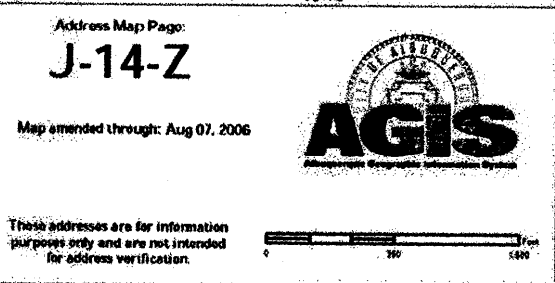
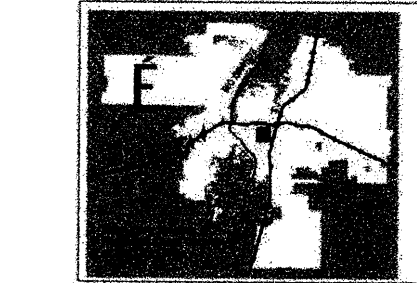
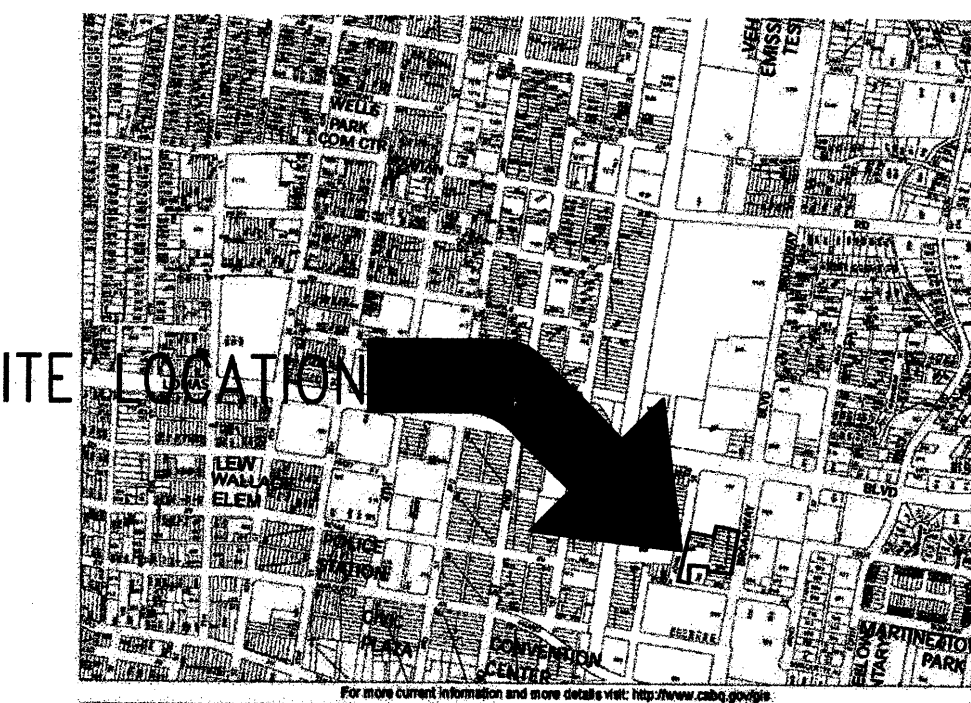


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1/4" = 1'-0"

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CITY OF ALBUQUERQUE
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WESST CORP ENTERPRISE CENTER
TRAFFIC CIRCULATION LAYOUT

Design Review Committee City Engineer Approval Mo./Day/Yr. Mo./Day/Yr.
APPROVED APR 05 2007 APPROVED APR 05 2007

DESIGN REVIEW COMMITTEE CITY ENGINEER
City Project No. 104104126 J-14-Z AS-100

AS-BUILT INFORMATION	DATE
CONTRACTOR	DATE
INSPECTOR	DATE
INSPECTOR'S BY	DATE
FIELD VERIFICATION BY	DATE
REVISIONS BY	DATE
RECORDED BY	DATE

BENCH MARKS	DATE
CONTRACTOR	DATE
INSPECTOR	DATE
INSPECTOR'S BY	DATE
FIELD VERIFICATION BY	DATE
REVISIONS BY	DATE
RECORDED BY	DATE

SURVEY INFORMATION	DATE
CONTRACTOR	DATE
INSPECTOR	DATE
INSPECTOR'S BY	DATE
FIELD VERIFICATION BY	DATE
REVISIONS BY	DATE
RECORDED BY	DATE

ENGINEER'S SEAL	DATE
CONTRACTOR	DATE
INSPECTOR	DATE
INSPECTOR'S BY	DATE
FIELD VERIFICATION BY	DATE
REVISIONS BY	DATE
RECORDED BY	DATE

REMARKS	DATE
CONTRACTOR	DATE
INSPECTOR	DATE
INSPECTOR'S BY	DATE
FIELD VERIFICATION BY	DATE
REVISIONS BY	DATE
RECORDED BY	DATE

DESIGNED BY	DATE
CONTRACTOR	DATE
INSPECTOR	DATE
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FIELD VERIFICATION BY	DATE
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