

**NEOPRENE EXPANSION JOINT** 

MASONRY CONTROL JOINT DETAIL

# **RETAINING WALL NOTES:**

- 1. 8"X8"X16" CMU OF UBC STD. 24-4 OR 24-5.
- 2. USE KNOCK-OUT BOND BEAM BLOCK AT 4'-0" MAX C.C.. VERTICALLY, AND 1 #4 CONTINUOUS.
- 3. FILL ALL BLOCK VOIDS WITH 3000 PSI CONCRETE.
- 4. REINFORCING TO BE INTERMEDIATE GRADE STEEL.
- fs=20,000 psi 5. IN LIEU OF CONTINUOUS KNOCK-OUT BOND BEAMS.
- CONTRACTOR MAY INSTALL DUR-O-WALL REINFORCING
- EVERY SECOND COURSE. 6. SPLICE SHALL BE 40 BAR DIA, MINIMUM FOR
- VERTICAL BARS. ALL OTHER SHALL BE 20 BAR DIA, MINIMUM.
- 7. CONCRETE FILL SHALL BE 21 DAYS OLD OR ACHIEVE 70% OF DESIGN STRENGTH PRIOR TO BACKFILLING.
- 8. INSTALL MASONRY CONTROL JOINTS PER TYPICAL DETAIL AT UNIFORM SPACINGS OF 20' (MIN.) TO 24' (MAX.).

### I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE LOWER SOUTHEAST HEIGHTS NEAR THE UNIVERSITY AREA, REPRESENTS THE IMPROVEMENT OF AN EXISTING SITE WITHIN AN INFILL AREA. THE SITE IS CURRENTLY AN UNPAVED PARKING LOT FOR THE ST. CHARLES BORROMEO CHURCH. THERE ARE NO PRIOR DRAINAGE PLANS OF RECORD FOR THIS SITE. THE PROPOSED PROJECT INCLUDES REPLACING THE UNPAVED LOT WITH ASPHALT PAVING. THE PROPOSED DEVELOPMENT WILL NOT RESULT IN A SIGNIFICANT INCREASE IN IMPERVIOUS AREA AND WILL MAINTAIN OR IMPROVE EXISTING DRAINAGE PATTERNS.

DRAINAGE PLAN

THIS SUBMITTAL IS MADE IN SUPPORT OF A GRADING AND PAVING PERMIT FOR THE SUBJECT PROJECT

## II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF COAL PLACE SE AND MESA STREET SE. THE SITE IS CURRENTLY PLATTED AS LOT 12, BLOCK 68, TERRACE ADDITION. AS SHOWN BY PANEL 334 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE WITHIN NOR DRAIN TO A DESIGNATED FLOOD HAZARD ZONE.

THE PROJECT CONSISTS OF THE PAVING OF AN UNPAVED PARKING LOT. THE DEVELOPED RUNOFF FROM THE PROJECT WILL BE DIVERTED TO COAL PLACE SE AS OPPOSED TO DRAINING ONTO THE EXISTING RESIDENTAIL LOT THAT LIES IMMEDIATELY WEST OF THE SITE.

#### III. BACKGROUND DOCUMENTS & RESEARCH

RESEARCH CONDUCTED AT THE OFFICE OF THE CITY ENGINEER REVELED THAT THERE ARE NO PRIOR DRAINAGE SUBMITTALS FOR THIS SITE. THE GRADING PLAN DOES RELY UPON A TOPOGRAPHIC AND BOUNDARY SURVEY OF ST. CHARLES BORROMEO CAMPUS BY ALBUQUERQUE SURVEYING CO. INC. DATED SEPT. 30, 2005.

### IV. EXISTING CONDITIONS

AT PRESENT, THE SITE IS AN UNPAVED PARKING LOT FOR THE ST. CHARLES BORROMEO CHURCH. RUNOFF GENERTATED BY THIS SMALL PLATTED PARCEL DRAINS FROM EAST TO WEST ONTO THE EXISTING RESIDENTALL PROPERTY IMMEDIATELY WEST. THE SITE IS BOUNDED ON THE NORTH BY AN EXISTING PAVED CITY ALLEY. ON THE EAST BY AN IMPROVED CITY STREET (MESA STREET SE) AND ON THE SOUTH BY ANOTHER IMPROVED CITY STREET (COAL PLACE SE).

#### V. DEVELOPED CONDITIONS

THE PROPOSED CONSTRUCTION CONSISTS OF THE DEVELOPMENT OF THE SITE AS A PAVED PARKING LOT TO SERVE THE CHURCH. RUNOFF FROM THE IMPROVEMENTS WILL BE DIRECTED TO COAL PLACE SE. DISCHARGE WILL OCCUR VIA THE EXISTING DRIVEPAD. FROM THIS POINT. THE RUNOFF WILL FLOW WEST WITHIN COAL PLACE SE TO UNIVERSITY BLVD SE WHERE A PUBLIC STORM DRAIN SYSTEM COLLECTS STREET RUNOFF AND CONVEYS THAT RUNOFF WEST TO EVENTUALLY ENTER THE BROADWAY STORM DRAIN, A CITY STORM DRAIN FACILITY. THE EXISTING CITY STORM DRAIN IS REPORTEDLY SIZED FOR FULLY DEVELOPED CONDITIONS AND AS SUCH CAN ACCEPT AND CONVEY THE MODEST AMOUNT OF RUNOFF PROPOSED BY THIS PLAN.

## VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS AS TAKEN FROM THE TOPOGRAPHIC AND BOUNDARY SURVEY OF ST. CHARLES BORROMEO CAMPUS BY ALBUQUERQUE SURVEYING CO. INC. DATED SEPT. 30, 2005, 2.) PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 3.) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS AS TAKEN FROM THE TOPOGRAPHIC AND BOUNDARY SURVEY OF ST. CHARLES BORROMED CAMPUS BY ALBUQUERQUE SURVEYING CO. INC. DATED SEPT. 30, 2005, 4.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 5.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES.

#### VII. CALCULATIONS

THE CALCULATIONS THAT APPEAR 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 SHOWN BY THESE CALCULATIONS, THERE WILL BE A MODEST INCREASE IN THE DEVELOPED RUNOFF GENERATED BY THIS SMALL PLATTED PARCEL.

THE FREE DISCHARGE OF RUNOFF FROM THE PROPOSED PARKING LOT TO COAL PLACE SE IS APPROPRIATE DUE TO THE FOLLOWING FACTORS:

- 1. APPARENT DOWNSTREAM CAPACITY
- 2. DEVELOPMENT OF AN EXISTING SITE WITHIN AN INFILL AREA 3. NEGLIGIBLE INCREASE IN THE PEAK DISCHARGE OF RUNOFF
- . NO ADVERSE IMPACT ON DOWNSTREAM CONDITIONS 5. THE EXISTING DRAINAGE PATTERN WILL BE IMPROVED
- 6. DRAINAGE ONTO ADJACENT PRIVATE PROPERTY WILL BE MITIGATED

# **CALCULATIONS**

- SITE CHARACTERISTICS
- 1. PRECIPITATION ZONE = 2
- 2.  $P_{6,100} = P_{360} = 2.35$
- 3. TOTAL PROJECT AREA  $(A_T) = 66000/0.15$  SF/AC

# 4. EXISTING LAND TREATMENT

TREATMENT

AREA (SF/AC) % 66000/0.15 100 5. DEVELOPED LAND TREATMENT

TREATMENT AREA (SF/AC) 1060/0.02 5540/0.13

# 5. EXISTING CONDITION

1. VOLUME  $E_{W} = (E_{A}A_{A} + E_{B}A_{B} + E_{C}A_{C} + E_{D}A_{D})/A_{T}$  $E_{w} = 1.13 \text{ IN}$ 

 $V_{100} = E_w / 12)A_T = 620 CF$ 

1. PEAK DISCHARGE  $Q_p = Q_{pA}A_A + Q_{pB}A_B + Q_{pC}A_C + Q_{pD}A_D$ 

 $Q_p = Q_{100} = 3.14(0.15) = 0.5 CFS$ 

# 7. DEVELOPED CONDITION

1. VOLUME  $E_{\mathbf{w}} = (E_{\mathbf{A}}A_{\mathbf{A}} + E_{\mathbf{B}}A_{\mathbf{B}} + E_{\mathbf{C}}A_{\mathbf{C}} + E_{\mathbf{D}}A_{\mathbf{D}})/A_{\mathbf{T}}$ 

 $E_{w} = 1.13 (0.16) + 2.12(0.84) = 1.96 \text{ IN}$  $V_{100} = E_w / 12)A_T = 1080 \text{ CF}$ 

 $\Delta V_{100}$  = 1080 CF-620 CF=460 CF (INCREASE)  $\Delta Q_{tm} = 0.7$  CFS-0.5 CFS=0.2 CFS (INCREASE)

### Construction Notes:

- 1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 (ALBUQUERQUE AREA), 1-800-321-ALERT(2537) (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
- 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. 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.
- 6. THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.
- 7. REFER TO ARCHITECTURAL SITE PLAN FOR PARKING LOT LAYOUT AND PAVING DETAILS.

#### EROSION CONTROL MEASURES:

1 1/2" DIAMETER SLEEVE-

MIN. FG ● 46.0

12"

DESIGNED BY

DRAVN BY

APPROVED BY J.G.M.

WEÉP ● 4' - 0" O.C.

MATCH EXISTING GRADE

#4 • 15" C.C. \_\_\_\_

1-#5 ● 16" C.C. - ALTERNATE

W/BAR INTO LUG SO THAT

VERTICAL BARS ARE 8" O.C.

- 1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
- 2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN
- 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.

51.00

- NEW ASPHALT PAVING

#5 ● 16" C.C. TO TOP OF WALL

#4 CONTIN. KNOCK-OUT BOND BEAMS

- BACKFILL WITH A CONTINUOUS POCKET

OF 1 1/2" TO 3" GRAVEL, 1'-0" X 1'-0"

- PROVIDE 3  $5/8^{\circ}$  X 1  $1/2^{\circ}$  KEY IN FOOTING

-#5 ● 8" O.C. TO 2' ABOVE LOW EARTH ELEVATION

AT WEEP LINE TO COLLECT AND DRAIN MOISTURE

--- T.O.F. ● 45.67

-3" MIN. COVER

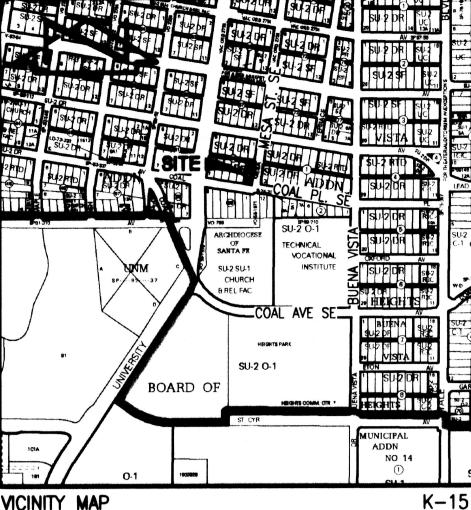
2 REQUIRED IN WALL

-3,000 P.S.I. CONCRETE

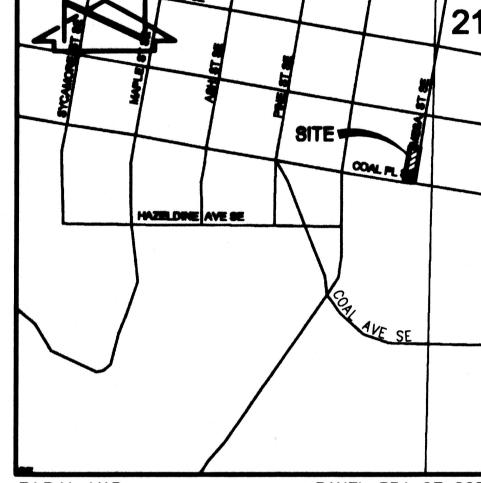
--- 1 - #3 CONTIN.

4'-0"

2'-4"



VICINITY MAP SCALE:  $1'' = 750' \pm$ 



F.I.R.M. MAP SCALE:  $1'' = 500' \pm 1$  PANEL 334 OF 825

# PROJECT BENCHMARK

ACS CONTROL STATION/BENCH MARK "2-K-15", ELEVATION = 5133.97 FEET (NGVD 1929)

# T.B.M.

TOP OF BACK OF CURB ELEVATION LOCATED AT THE NNW CURB RETURN AT THE INTERSECTION OF MESA STREET S.E. AND COAL PLACE S.E. AS SHOWN ON THE DRAWING

ELEVATION = 5150.98 FEET LEGEND UNDERGROUND UTILITY SPOT UNDERGROUND US WEST UTILITY SPOT CONIFEROUS TREE **DECIDUOUS TREE** FIRE HYDRANT WATER VALVE GAS METER UNIDENTIFIED MANHOLE GUARD POST TELEPHONE RISER

CTV RISER

ELECTRICAL BOX CLEANOUT FLOOR DRAIN DROP INLET STORM MANHOLE

TRAFFIC SIGNAL LIGHT WATER METER GAS METER

SANITARY SEWER MANHOLE - TS TRAFFIC SIGN CABLE TV RISER

POWER POLE W/LIGHT POWER POLE LIGHT POLE

**ELEVATION SPOT EXISTING CONTOUR** PROPOSED DIRECTION OF FLOW

PROPOSED SPOT ELEVATION PROPOSED CONTOUR PROPOSED RETAINING WALL

PROPOSED ASPHALT PAVEMENT

SECTION A-A
SCALE: 1" = 1' 16-12-2005 REVISIONS 2005.071.1 10-2005

COMPACT EXIST. SOIL TO A DENSITY

OF 95% ASTM D-1557, FOR A DEPTH OF 2' BELOW BOTTOM OF FOOTING

GRADING AND DRAINAGE PLAN ST. CHARLES BORROMEO OVERFLOW PARKING LOT