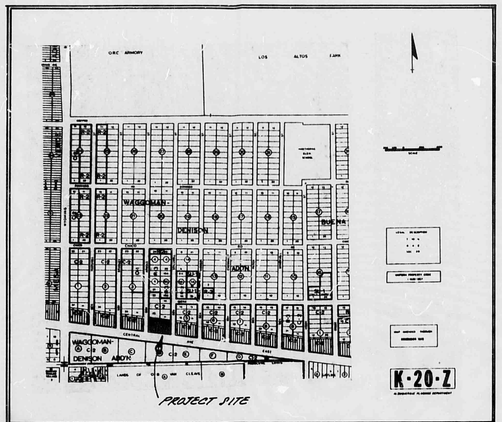
HYDROLOGY K20/D27 9001 CENTRAL N.E.

K20/D27

9001 CENTRAL N.E.

2 PLANS



VICINITY MAP

NOTICE TO CONTRACTORS

1) New Mexico Standard Specifications for Public Works Construction -1979 Edition will be referred to hereon as the "Standard Specifications."

2) All work detailed on these plans to be performed under contract shall, except as otherwise stated or provided for hereon, be constructed in accordance with "Contract Documents for City-Wide Utilities and Cash Paving No. 30 and the Standard Specifications."

3) Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4) Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer or survey so that the conflict can be resolved with minimum of delay.

THE FOLLOWING NOTES APPLY WHEN CHECKED :

☑ All utilities and utility service lines shall be installed prior to paving.

☑ Backfill compaction shall be according to specified street use. ARTERIAL

☐ Tack coat requirements shall be determined by the City Engineer.

☑ Sidewalks and wheelchair ramps within the curb returns shall be constructed wherever a new curb return is constructed.

☑ If curb is depressed for a driveped, the driveped shall be constructed prior to acceptance of the curb and gutter.

☑ All storm drain facilities shall be completed prior to final acceptance.

EROSION CONTROL AGREEMENT:

THE DEVELOPER AND OWNER OF THE SUBJECT PROPERTY HEREBY AGREE TO MAINTAIN THE TEMPORARY PONDS THAT WILL BE LOCATED IN THE GENERAL AREA OF THE PROPOSED PONDS AS SHOWN ON THE DRAINAGE PLAN. THE TEMPORARY PONDS ARE PRIVATELY OWNED AND WILL BE MAINTAINED AS REQUIRED FOR DRAINAGE CONTROL, FLOOD CONTROL, AND EROSION CONTROL, AND FOR ACCUMULATIONS OF SILT, TRASH, LITTER, OR STAGNANT WATER WHICH MIGHT CREATE A HEALTH OR SAFETY HAZARD. THESE PONDS WILL BE TEMPORARY FOR EROSION CONTROL MEASURES AND WILL BE REMOVED AND REPLACED BY THE DESIGNED PONDS UPON THE COMPLETION OF PHASE I DEVELOPMENT. DRAINAGE FLOWS WILL BE ROUTED VIA THE SAME DRAIN PIPES AS PROPOSED FOR THE FINAL DEVELOPMENT.

SIGNED: [signature] DATE: 10-17-84

CALCULATIONS :

EXISTING CONDITIONS:

EXISTING BUILDINGS AND ASPHALT PAVING = 12 % IMPERVIOUS = 0.11 AC.
PRESENT UNDEVELOPED AREA = 88 % PERVIOUS

WEIGHTED "C" FACTOR = 0.41 (FROM DPM PLATE 22.2D-1)

$T_c = (2.4)(6.84)(10)^{-0.51} = 5.07$ (PLATE 22.2D-2)

T_c IS LESS THAN 10 MIN. ; USED T_c = 10 MIN. (MINIMUM)

PEAK DISCHARGE : (RATIONAL METHOD)

$Q = CIA \quad Q = (0.41)(5.07)(40,565/43,560) = 1.94$ cfs

DEVELOPED CONDITION:

TOTAL AREA OF SITE = 0.931 ACRE, (40,565.0 SQ. FT.)

IMPERVIOUS = 37,110 SQ. FT. = 0.85 ACRE
PERVIOUS = 3,455 SQ. FT. = 0.08 ACRE
PERCENT IMPERVIOUS = 0.91%
6 HR. RAINFALL = 2.4" (PLATE 22.2D-1)

$T = (2.4)(6.84)(10)^{-0.51} = 5.07'$

AREA I : (22,205 S.F. = 0.5098 ACRE)

BLDG. = 9,450 S.F.
CONC. SIDEWALK = 420 S.F.
LANDSCAPE = 817 S.F.
ASPHALT = 11,518 S.F.

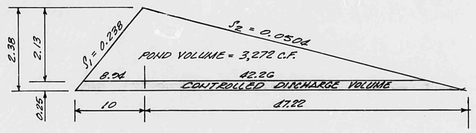
WEIGHTED "C" FACTOR = 0.92

RATIONAL METHOD: $Q = CIA = (0.92)(5.07)(0.51) = 2.38$ cfs

VOLUME: $V=(0.92)(2.4/12)(22,205) = 4,088$ c.f.

CONTROLLED DISCHARGE = 0.5 cfs/ACRE X 0.5098 ACRE = 0.25 cfs

DURATION: $T = 2V/60Q = 2(4088)/(60)(2.38) = 57.22$ MIN.



POSITIVE DISCHARGE ORIFICE:

TRY 2 1/2" ORIFICE PLATE (AN 4" P.V.C. PIPE CAP WITH A 2 1/2" DIAM. SIZE HOLE DRILLED IN CENTER.

$Q = CA\sqrt{2gh} \quad H = (2.4 - 0.17) = 2.23 \quad A = 0.0341$ S.F.

$Q = (0.6)(0.0341)\sqrt{2 \times 32.2 \times 2.23} = 0.25$ cfs

AREA II : (18,360 S.F. = 0.4215 ACRE)

CONC. SIDEWALK = 1,380 S.F.
LANDSCAPING = 1,390 S.F.
ASPHALT = 15,590 S.F.

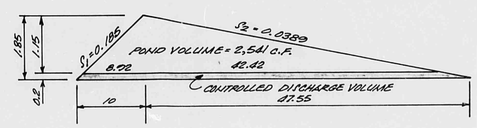
WEIGHTED "C" FACTOR = 0.87

RATIONAL METHOD: $Q = CIA = (0.87)(5.07)(0.42) = 1.85$ cfs

VOLUME: $V = (0.87)(2.4/12)(18,360) = 3,194$ c.f.

CONTROLLED DISCHARGE = 0.5 cfs/ACRE X 0.4215 = 0.21 cfs

DURATION: $T = 2V/60Q = 2(3194)/(60)(1.85) = 57.55$ MIN.



POSITIVE DISCHARGE ORIFICE:

TRY 2 1/4" ORIFICE PLATE (AN 4" P.V.C. PIPE CAP WITH A 2 1/4" DIAM. SIZE HOLE DRILLED IN CENTER.

$Q = CA\sqrt{2gh} \quad H = (2.59 - 0.17) = 2.42 \quad A = 0.0276$ S.F.

$Q = (0.6)(0.0276)\sqrt{2 \times 32.2 \times 2.42} = 0.21$ cfs

LEGAL DESCRIPTION:

PARCEL "S-1", IN BLOCK NUMBERED FOUR (4), OF THE WAGGOMAN-DENNISON ADDITION, AN ADDITION TO THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, (COMPRISING A REPLAT OF LOTS 1 THRU 10, AND LOTS "X" AND "J" IN SAID BLOCK 4).

DRAINAGE PLAN COMMENTS:

THE FOLLOWING ITEMS CONCERNING THE PROPOSED PROJECT SITE ARE CONTAINED HEREON:

1.) GRADING PLAN WITH EXISTING AND PROPOSED GRADES WITH 1.0' CONTOUR INTERVALS.
2.) VICINITY MAP.
3.) LEGAL DESCRIPTION OF THE SUBJECT PROPERTY.
4.) HYDROLOGY CALCULATIONS FOR FLOW RATES ANT VOLUMES.
5.) THE LIMITS AND CHARACTER OF THE EXISTING AND PROPOSED IMPROVEMENTS.

THE PROPOSED DEVELOPMENT AS SHOWN BY THE VICINITY MAP, IS LOCATED AT THE NORTHWEST INTERSECTION OF EAST CENTRAL AVENUE AND GENERAL SYLLWELL STREET, N.E., IN THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO. THE PROJECT, (1.) DOES NOT LIE WITHIN A FLOOD PLAIN; (2.) DOES NOT LIE ADJACENT TO A NATURAL OR ARTIFICIAL WATER COURSE; AND (3.) HAS NO DRAINAGE EASEMENTS ON THE PROPERTY. IT HAS BEEN RECOGNIZED BY THE STAFF OF THE CITY OF ALBUQUERQUE - HYDROLOGY SECTION, THAT DOWNSTREAM FLOODING IS A CONCERN; BECAUSE OF THIS, THE PROPOSED DEVELOPMENT OF THE SITE WILL HAVE CONTROLLED DISCHARGE OF THE RUNOFF THAT IS GENERATED. AS SHOWN BY THIS PLAN, THE RUNOFF GENERATED WILL DRAIN INTO TWO (2) DETENTION PONDS. THESE PONDS ARE DESIGNED SO THAT THE CONTROLLED DISCHARGE WILL BE RELEASED VIA AN 4" P.V.C. DRAINPIPE AT EACH POND THAT WILL EXTEND FROM SAID POND THRU THE CONCRETE CURB AND INTO GENERAL ARNOLD STREET, N.E., WHICH FLOWS IN A NORTHERLY DIRECTION.

THE CALCULATIONS WHICH APPEAR HEREWITH ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6 HOUR RAINFALL EVENT. THE RATIONAL METHOD HAS BEEN USED FOR THIS ANALYSIS IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANAUL, VOLUME II.

THE SUBJECT PROPERTY AND PROPOSED DEVELOPMENT DOES NOT, AND WILL NOT ACCEPT OR CONTRIBUTE TO OFF-SITE FLOWS OF ADJACENT PROPERTIES.

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GENERAL NOTES:

1.) TOPOGRAPHY SURVEY DATA WAS OBTAINED FROM A SURVEY OF THE SUBJECT PROPERTY PERFORMED BY OLIVER TRUJILLO, N.M.L.S. NO. 6837, DATED JUNE 21, 1984.

2.) NO SEARCH HAS BEEN MADE FOR EASEMENTS OF RECORD WITHIN THE SUBJECT PROPERTY.

3.) ELEVATIONS AS SHOWN ARE REFERENCED TO THE CITY OF ALBUQUERQUE - SURVEY SECTION DATA AND MEAN SEA LEVEL DATUM AS REFERENCED ON THE ABOVE MENTIONED OLIVER TRUJILLO SURVEY MAP.

4.) SOILS (FROM SCS SOIL SURVEY):
MWA, (MADUREZ-WINK ASSOCIATION, GROUP "B" SOIL).

5.) ADDRESS: 9001 CENTRAL AVENUE, N.E., ALBUQUERQUE, NEW MEXICO.

ENGINEERS SEAL

FRANK O. LOVELADY
NEW MEXICO
6512
REGISTERED PROFESSIONAL ENGINEER
October 10, 1984

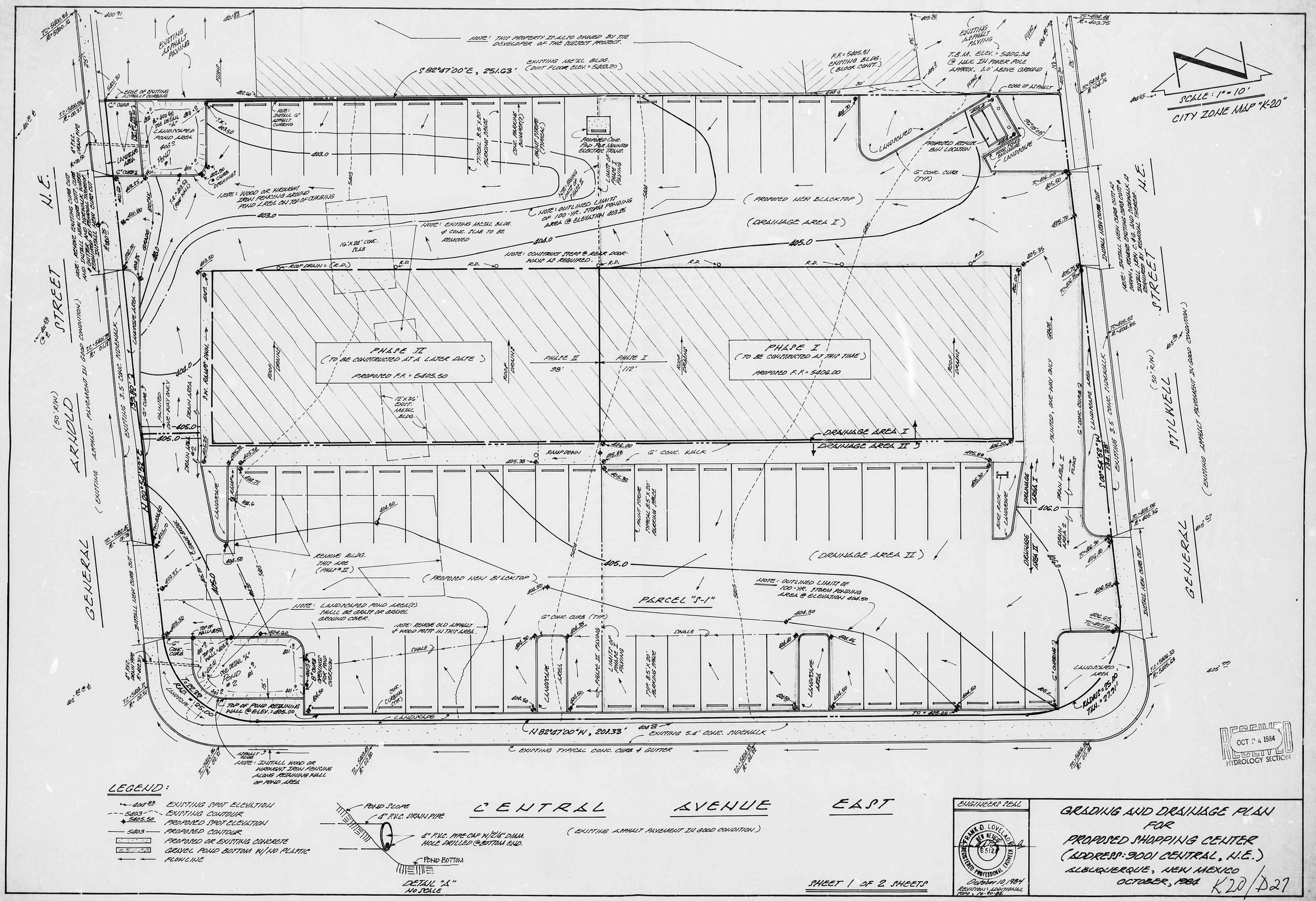
SHEET 2 OF 2 SHEETS

GRADING AND DRAINAGE PLAN FOR PROPOSED SHOPPING CENTER

(ADDRESS: 9001 CENTRAL, N.E.)

ALBUQUERQUE, NEW MEXICO
OCTOBER, 1984

K20/D27


SCALE: 1" = 10'
CITY ZONE MAP "K-20"
NOTE: THIS PROPERTY IS ALSO OWNED BY THE DEVELOPER OF THE SUBJECT PROJECT.
S 82°47'00"E, 251.63'
EXISTING METAL BLDG. (DIRT FLOOR ELEV. = 5403.20)
F.F. = 5405.51 EXISTING BLDG. (BLOCK CONST.)
T.B.M. ELEV. = 5406.34 @ JUC. IN POWER POLE APPROX. 1.0' ABOVE GROUND
EXISTING ASPHALT PAVING
EDGE OF ASPHALT
PROPOSED REFUSE BIN LOCATION
LANDSCAPE
G" CONC. CURB (TYP.)
(PROPOSED NEW BLACKTOP)
(DRAINAGE AREA I)
NOTE: OUTLINED LIMITS OF 100-YR. STORM PONDING AREA @ ELEVATION 403.85
NOTE: EXISTING METAL BLDG. & CONC. SLAB TO BE REMOVED
NOTE: CONSTRUCT STEP @ REAR DOOR-WALK AS REQUIRED.
ROOF DRAIN = (R.D.)
PHASE II (TO BE CONSTRUCTED AT A LATER DATE)
PROPOSED F.F. = 5405.50
PHASE I (TO BE CONSTRUCTED AT THIS TIME)
PROPOSED F.F. = 5406.00
PHASE II 98'
PHASE I 112'
DRAINAGE AREA I
DRAINAGE AREA II
RAMP DOWN
G" CONC. WALK
(DRAINAGE AREA II)
REMOVE BLDG. THIS AREA (PHASE II)
(PROPOSED NEW BLACKTOP)
PARCEL "S-1"
NOTE: OUTLINED LIMITS OF 100-YR. STORM PONDING AREA @ ELEVATION 404.50
NOTE: LANDSCAPED POND AREA(S) SHALL BE GRASS OR GRAVEL GROUND COVER.
NOTE: REMOVE OLD ASPHALT & WOOD POSTS IN THIS AREA.
G" CONC. CURB (TYP)
SWALE
TOP OF POND RETAINING WALL @ ELEV. = 405.00
N 82°47'00"W, 201.33'
EXISTING 5.4' CONC. SIDEWALK
EXISTING TYPICAL CONC. CURB & GUTTER
NOTE: INSTALL WOOD OR WROUGHT IRON FENCING ALONG RETAINING WALL OF POND AREA
N.E. STREET
ARNOLD
(50' R/W)
ASPHALT PAVEMENT IN GOOD CONDITION)
EXISTING 3.5' CONC. SIDEWALK
GENERAL
STILWELL
(50' R/W)
(EXISTING ASPHALT PAVEMENT IN GOOD CONDITION)
INSTALL NEW CURB OUT
CENTRAL AVENUE EAST
(EXISTING ASPHALT PAVEMENT IN GOOD CONDITION)
LEGEND:
EXISTING SPOT ELEVATION
EXISTING CONTOUR
PROPOSED SPOT ELEVATION
PROPOSED CONTOUR
PROPOSED OR EXISTING CONCRETE
GRAVEL POND BOTTOM W/NO PLASTIC
FLOWLINE
POND SLOPE
4" P.V.C. DRAIN PIPE
4" P.V.C. PIPE-CAP W/1/4" DIA. HOLE DRILLED @ BOTTOM END.
POND BOTTOM
DETAIL "A" NO SCALE
SHEET 1 OF 2 SHEETS
ENGINEER'S SEAL
FRANK D. LOVELAND
NEW MEXICO
6512
REGISTERED PROFESSIONAL ENGINEER
October 10, 1984
REVISION: CONDITIONAL FDP, 10-30-84
GRADING AND DRAINAGE PLAN FOR PROPOSED SHOPPING CENTER
(ADDRESS: 9001 CENTRAL, N.E.)
ALBUQUERQUE, NEW MEXICO
OCTOBER, 1984
K20/D27
RECEIVED OCT 24 1984 HYDROLOGY SECTION