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26-6729-82-2012

CONSTRUCTION PLANS
FOR
SANDIA SCIENCE AND TECHNOLOGY PARK
RESEARCH ROAD
ALBUQUERQUE, NEW MEXICO

INDEX

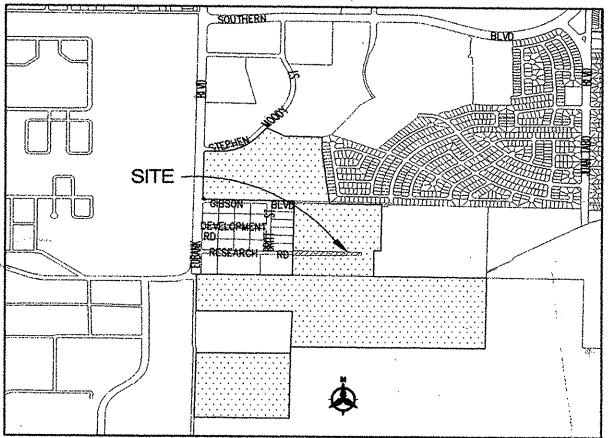
SHEET NUMBER	DESCRIPTION
1	COVER SHEET
2-3	PLAT
4	GRADING PLAN & MISCELLANEOUS DETAILS
5	RESEARCH ROAD- PAVING PLAN & PROFILE STA 1+00 TO 10+76
6	RESEARCH ROAD- UTILITY PLAN & PROFILE STA 1+00 TO 10+76
7	TRAFFIC CONTROL SIGNING & CONSTRUCTION TRAFFIC CONTROL STANDARDS
8	TYPICAL TRAFFIC CONTROL & SIGNING EXAMPLES (MUTCD)

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS.
2. PRIOR TO CONSTRUCTION SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR CONSTRUCTION OBSERVER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.
4. DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL SHALL BE DETERMINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE CONSTRUCTION OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THERE TO SHALL BE CONSIDERED IN THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.
6. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY COSTS INCURRED FOR REPAIRS SHALL BE THE COST OF THE CONTRACTOR.
7. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY.
8. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION (I.E. BARRICADEING, SURFACE DISTURBANCE)
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AT HIS EXPENSE ANY AND ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.
10. ALL PERMANENT PAVEMENT MARKING AND TRAFFIC SIGNING SHALL BE FURNISHED BY THE CONTRACTOR PER PLAN.

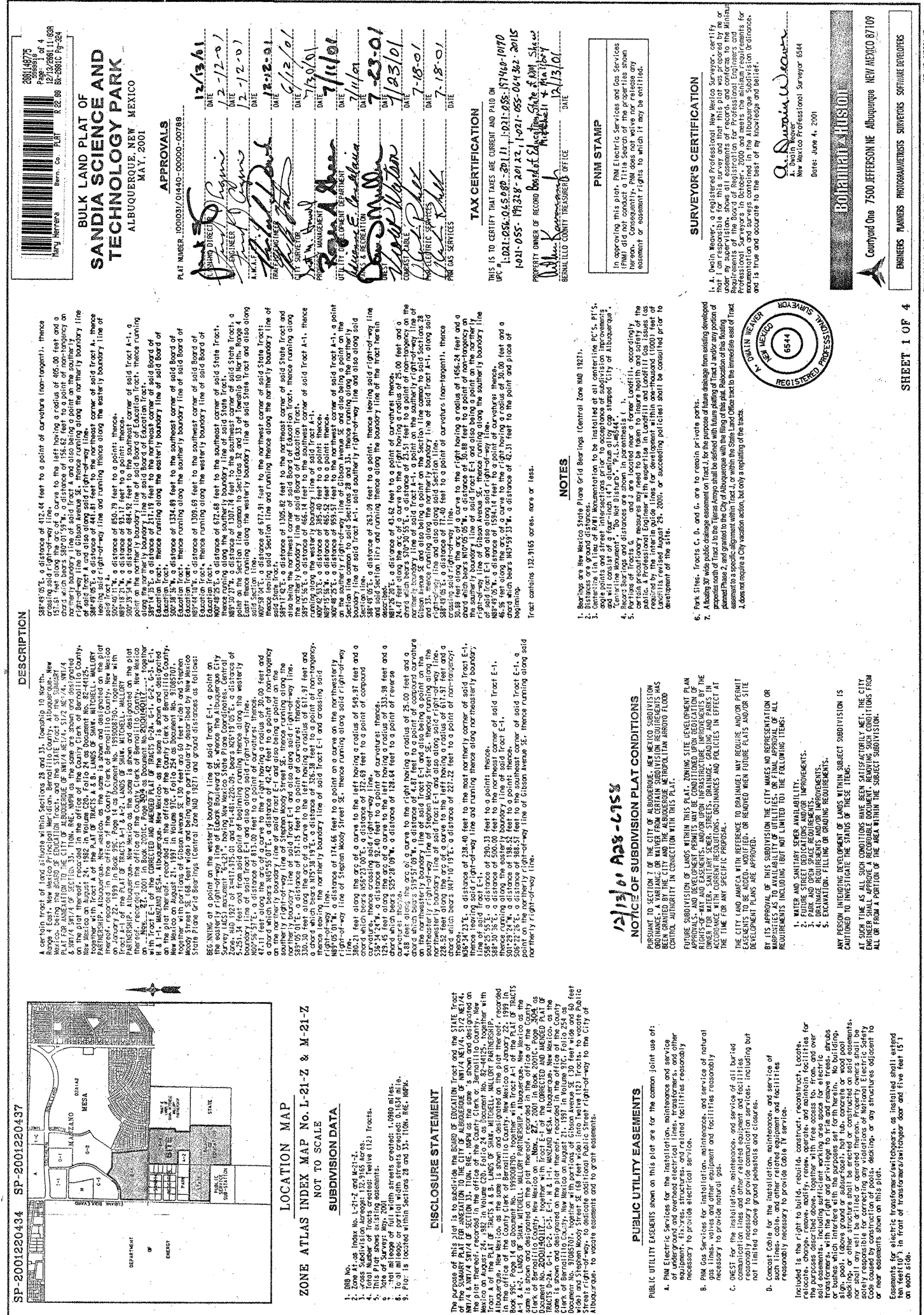
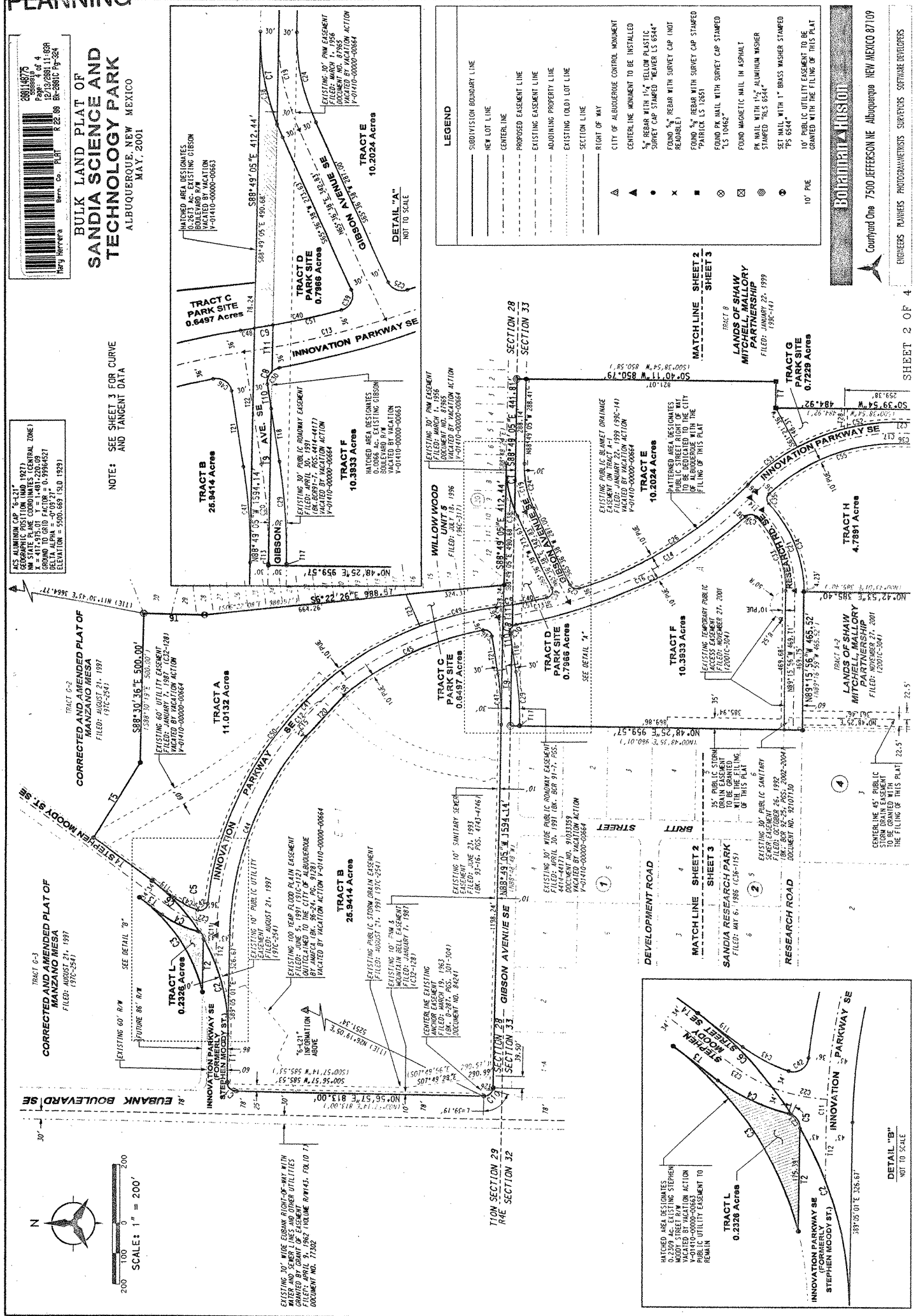
11. THE CONTRACTOR SHALL FOLLOW THE CONSTRUCTION TRAFFIC CONTROL AND SIGNING PLAN PROVIDED HEREIN. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF ALBUQUERQUE, TRAFFIC ENGINEERING DEPARTMENT, PRIOR TO BEGINNING ANY CONSTRUCTION WORK ON ADJACENT TO EXISTING STREETS.
12. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION.
13. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADES AT THE END AND BEGINNING OF EACH DAY.
14. ALL SAWCUT PAVEMENT SHALL HAVE A UNIFORM EDGE AND BE SPRAYED WITH TACK.
15. WHEN ABUTTING NEW CURB AND GUTTER TO EXISTING PAVEMENT, A 1' WIDE SECTION OF EXISTING PAVEMENT ADJACENT TO THE CURB AND GUTTER SHALL BE SAWCUT, REMOVED, AND REPLACED AS PER THE STANDARD SPECIFICATIONS.
16. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PAVEMENTS, PAVEMENT MARKINGS, CURB & GUTTER, DRIVE PADS, WHEELCHAIR RAMPS, AND SIDEWALK DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS AND SHALL REPAIR OR REPLACE PER COA STANDARDS, AT HIS OWN EXPENSE.

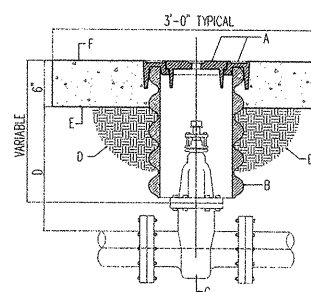
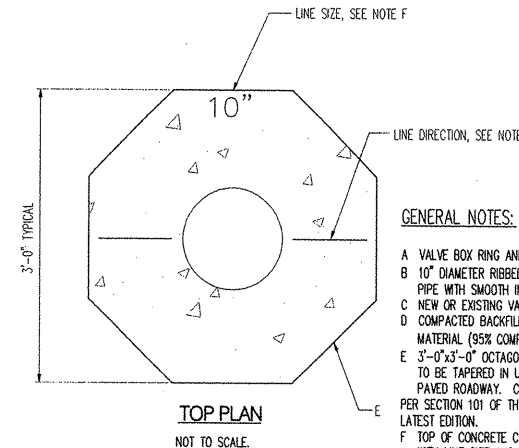
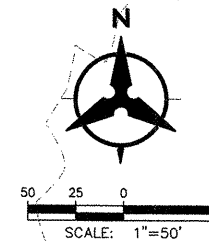
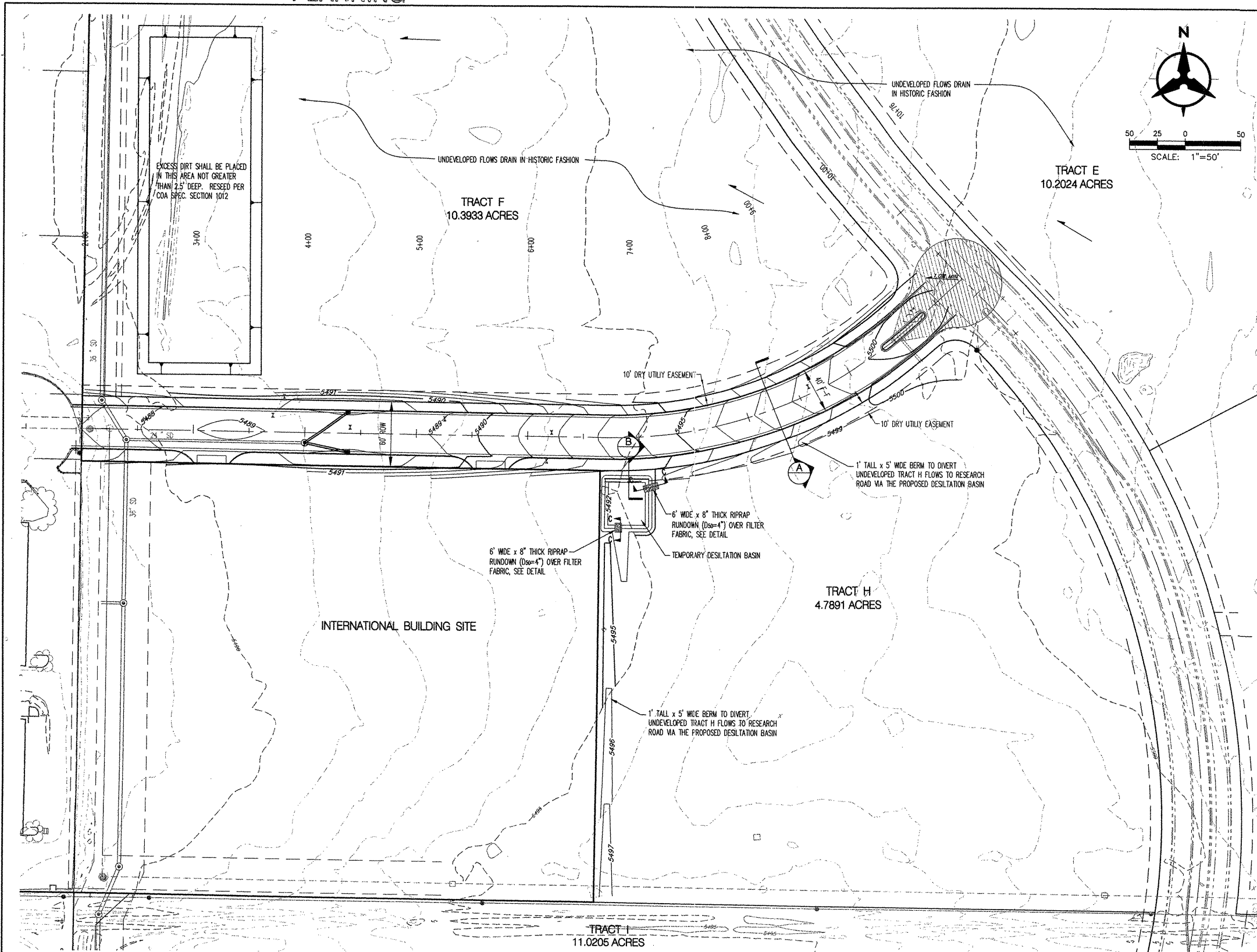


- VICINITY MAP
ZONE MAP NO. M-21-Z
- NOTICE TO CONTRACTORS**
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY RIGHT-OF-WAY.
 2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #6.
 3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (280-1990) 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 IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
 5. FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULED. TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADEING PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION COORDINATION ENGINEER (768-2888) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.
 6. ALL WORK EFFECTING ARTERIAL ROADWAYS REQUIRES TWENTY-FOUR HOUR CONSTRUCTION.
 7. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED PAVEMENT MARKING BY CONTRACTOR TO THE SAME LOCATION AS WAS EXISTING, OR AS INDICATED BY THIS PLAN SET.
 8. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE CITY SURVEYOR MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE CITY SURVEYOR AND SHALL NOTIFY THE CITY SURVEYOR AND HEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATIONS OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.
 9. CONTRACTOR SHALL RECORD DATA ON ALL UTILITY LINES AND ACCESSORIES AS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE PREPARATION OF "AS CONSTRUCTED" DRAWINGS. CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.
 10. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY GRAFFITI FROM ALL EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
 11. CONTRACTOR SHALL COORDINATE WITH THE CITY OF ALBUQUERQUE WATER SYSTEMS DIVISION (857-8200) FIVE (5) WORKING DAYS IN ADVANCE OF ANY WORK THAT MAY AFFECT EXISTING PUBLIC WATER OR SEWER UTILITIES. EXISTING VALVES TO BE OPERATED BY CITY PERSONNEL ONLY. CONTRACTOR SHALL CONTACT THE WATER SYSTEMS DIVISION THREE (3) WORKING DAYS PRIOR TO NEEDING VALVES TURNED ON OR OFF.
 12. FOR STORM DRAIN CONSTRUCTION, ROP PIPE JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION WILL DETERMINE JOINTS TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.
- THE FOLLOWING NOTES ALSO APPLY WHEN CHECKED**
- ☒ ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
 - ☒ BACKFILL COMPACTION SHALL BE ACCORDING TO SPECIFIED STREET USE.
 - ☒ 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 DEEPER FOR A DRIVEPAD, THE DRIVEPAD SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB AND GUTTER.
 - ☒ ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.
 - ☒ THE REQUESTOR OR DEVELOPER SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL CURB AND GUTTER OR SIDEWALK DAMAGED AFTER APPROVAL BY THE CITY ENGINEER OF WORK COMPLETED BY THE CONTRACTOR.

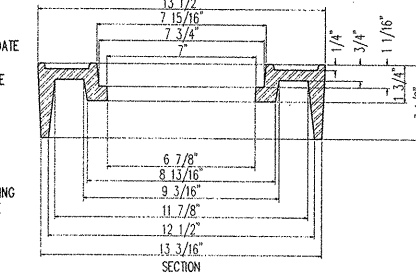
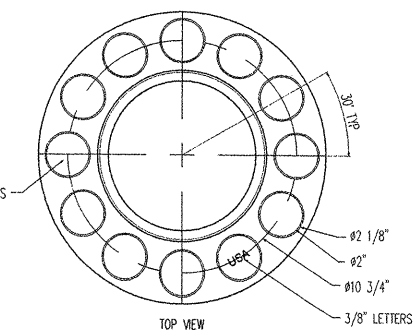
DRB # 1001253
Bohannan & Huston
Courtney One 7500 JEFFERSON NE ALBUQUERQUE NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE
ENGINEERS STAMP & SIGNATURE		APPROVALS	ENGINEER	DATE	*****		
		DRC Chairman	<i>[Signature]</i>	12-19-01	APPROVED FOR CONSTRUCTION		
		Transportation	<i>[Signature]</i>	11-29-01			
		Water/Wastewater	<i>[Signature]</i>	11-29-2001			
		Hydrology	<i>[Signature]</i>	12-12-01			
		Parks	<i>[Signature]</i>				
		Inst. Coord.	<i>[Signature]</i>	12-19-01			
City Project No.				672982	Sheet	1	Of 8





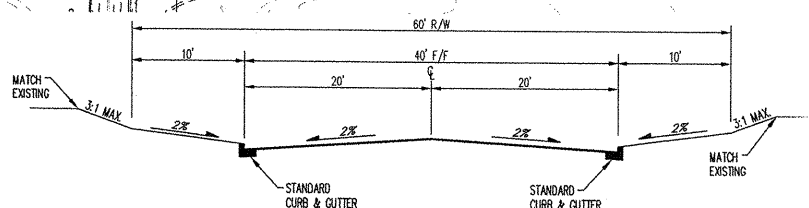
CITY OF ALBUQUERQUE
WATER
VALVE BOX
DWG. 2326 MAR 2001



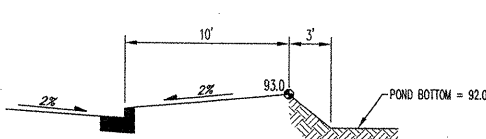
GENERAL NOTES - RING

1. ALBUQUERQUE VALVE BOX RING DESIGNED TO ACCEPT AN ALBUQUERQUE VALVE BOX COVER.
2. THE CASTING NUMBER, MANUFACTURER'S LOGO, DATE OF MANUFACTURE AND "USA" SHALL BE CAST IN A CONSPICUOUS LOCATION ON BOTH THE RING AND THE COVER.
3. FILLETS SHALL BE 1/4"R UNLESS OTHERWISE SPECIFIED.
4. A DRAFT ANGLE OF 3-5° SHALL BE APPLIED UNLESS OTHERWISE SPECIFIED.
5. FINISH: REMOVE EXCESS IRON AND FINIS.
6. THIS DETAIL DOES NOT APPLY FOR VALVE BOX RING AND COVER TO BE USED ON REUSE OR NONPOTABLE WATER SYSTEMS.

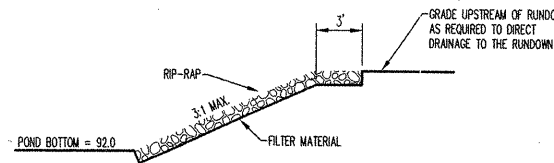
Elevations are in INTERIM NAVD 88 DATUM. To convert from INTERIM NAVD 88 DATUM to NGVD 29 subtract 2.68 feet. All Elevations in () are NGVD 29.



A TYPICAL STREET SECTION
NOT TO SCALE

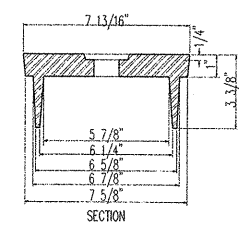
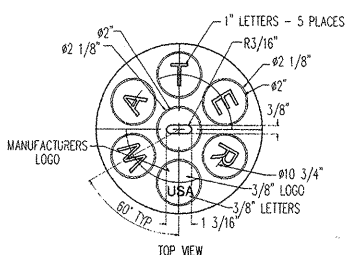


B SECTION
NOT TO SCALE



C RUNDOWN SECTION
NOT TO SCALE

NOTE:
ALL EXCESS DIRT SHALL BE PLACED, COMPACTED & RE-SEEDING AT A LOCATION WITHIN A 1/4 MILE OF THE SITE. DIRT WORK SHALL BE PAID LUMP SUM, RE-SEEDING BY THE ACRE AT THE CONTRACT UNIT PRICE.



VALVE BOX COVER
NOT TO SCALE.

GENERAL NOTES - COVER

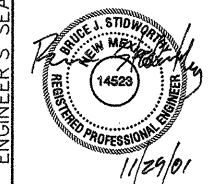
1. ALBUQUERQUE VALVE BOX COVER DESIGNED TO FIT INTO AN ALBUQUERQUE VALVE BOX RING.
2. THE CASTING NUMBER, MANUFACTURER'S LOGO, DATE OF MANUFACTURE AND "USA" SHALL BE CAST IN A CONSPICUOUS LOCATION ON BOTH THE RING AND THE COVER.
3. FILLETS SHALL BE 1/4"R UNLESS OTHERWISE SPECIFIED.
4. A DRAFT ANGLE OF 3-5° SHALL BE APPLIED UNLESS OTHERWISE SPECIFIED.
5. FINISH: REMOVE EXCESS IRON AND FINIS.

CITY OF ALBUQUERQUE
WATER
RING AND COVER FOR
VALVE BOX
DWG. 2328 MAR 2001

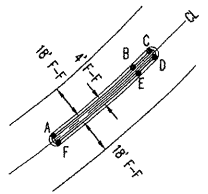
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Courtney One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT	
RESEARCH ROAD GRADING PLAN & MISCELLANEOUS DETAILS	
Design Review Committee	City Engineer Approval
City Project No. 672982	Zone Map No. M-21-Z
Sheet 4	Of 8

AS-BUILT INFORMATION				BENCH MARKS				SURVEY INFORMATION				ENGINEER'S SEAL			
CONTRACTOR	DATE	INSPECTOR	DATE	ACS Aluminum Cap stamped 6-121, 1986	DATE	Intersection of Central Ave. & Elizabeth St.	DATE	NO.	BY	DATE	NO.	DATE	NO.	DATE	NO.
FIELD	DATE	FIELD	DATE	Geographic Position (NAD 1927), in feet	DATE	N.M. State Plane Coordinates (Central Zone)	DATE								
VERIFICATION BY	DATE	VERIFICATION BY	DATE	X=47,975.07, Y=1,481,220.09	DATE	Ground-to-Grid Factor= 0.9996457; $\text{m} = -0.009727$	DATE								
RECORDED BY	DATE	RECORDED BY	DATE	Elevation= 5500.87 NGVD29, in feet	DATE	Transformed to INTERIM NAVD 88 by CORPSON V5.11.08	DATE								
				Elevation= 5503.35 NAVD88, in feet											



MEDIAN CURB DATA		
POINT	STATION	FL
A	STA. 9+39.55, 3.00' LT.	00.14
B	STA. 9+75.85, 3.00' LT.	00.25
C	STA. 9+83.55, 3.00' LT.	00.24
D	STA. 9+83.55, 3.00' RT.	00.07
E	STA. 9+75.85, 3.00' RT.	00.47
F	STA. 9+39.55, 3.00' RT.	00.18



MEDIAN DETAIL

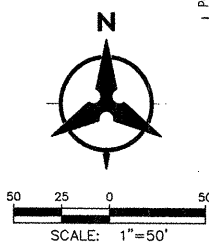
CENTERLINE TANGENT DATA		
NUMBER	BEARING	LENGTH
T1	S89°11'35"E	569.6
T2	N47°11'10"E	56.7

CENTERLINE CURVE DATA				
NUMBER	ARC	RADIUS	DELTA	TANGENT
C1	306.19'	400.65'	43°47'14"	161.0

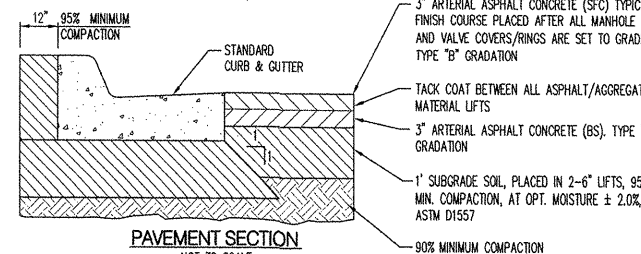
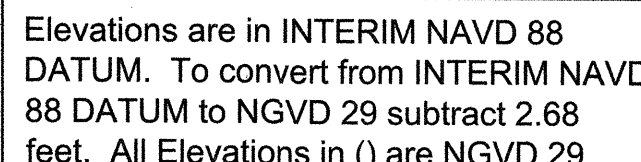
MEDIAN TANGENT TABLE		
NUMBER	BEARING	LENGTH
M4	N47°1'10"E	7.70'
M5	N47°2'10"E	7.70'

STORM DRAIN TANGENT TABLE						
NUMBER	BEARING	LENGTH	SIZE	Q ₁₀₀ (CFS)	VELOCITY (F/S)	SLOPE
T3	N23°35'17"E	48.35'	18	9.78	5.53	2.38%
T4	N62°04'00"W	30.23'	18	9.38	5.57	15.47%

NUMBER	ARC	RADIUS	DELTA	TANGENT
C2	9.42'	3.00'	179°59'60"	-
C3	36.57'	403.65'	05°11'28"	18.30'
C4	9.42'	3.00'	179°59'56"	-
C5	36.03'	397.65'	05°11'28"	18.03'



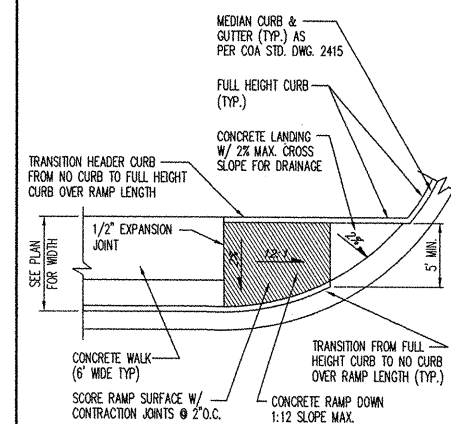
RESEARCH ROAD-PAVING & STORM DRAIN



NOTE: PAVEMENT SECTIONS SHOWN ON THIS SHEET ARE BASED ON R-VALUE OF 60 PER PAVEMENT DESIGN AS SUBMITTED AT DRC

NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATION AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.
3. ANY ADDITIONAL GRADING REQUIRED TO MATCH PROPOSED STREET GRADES SHALL BE INCIDENTAL TO PAVING ITEMS.
4. CONTRACTOR SHALL PROVIDE THE INSPECTORS, (CITY AND PRIVATE) WITH THE PROPOSED HYDROSTATIC TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.
5. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
6. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
7. REMOVAL OF THE EXISTING CURB & GUTTER SHALL BE AS PER CDA STD. DWG. 2415 (SAWNOT ONLY).



UNIDIRECTIONAL WHEEL CHAIR RAMP DATA

KEYED NOTES

- 1 INSTALL CONCRETE VALLEY GUTTER AS PER STD. DWG. 2420
- * 2 INSTALL WHEELCHAIR RAMP AS PER STD. DWG. 2441, CASE II WITH ALTERNATE SECTION AA
- 3 STD. CURB & GUTTER AS PER STD. DWG. 2415
- 4 INTBL. MEDIAN CURB & GUTTER AS PER STD. DWG. 2415
- 5 FUTURE SIDEWALK
- 6 INSTALL TEMPORARY PAVEMENT 4" ASPHALT & 8" SUBGRADE PREPARED PER COA STD DWG 2415.
- 7 BUILD UNIDIRECTIONAL WHEEL CHAIR RAMPS PER DETAIL THIS SHEET

* NOT APPLICABLE THIS SEMESTER

Bohannon Huston

 Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

 **CITY OF ALBUQUERQUE**
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

RESEARCH ROAD
PAVING & STORM DRAIN PLAN AND PROFILE
RESEARCH ROAD - STA. 1+00.00 TO STA. 10+76.00

Design Review Committee

City Project No.		Zone Map No.	Sheet	Of
672982		M-21-Z	5	8

BHI JOP NO. 01362 Date: OCTOBER 2001

P:\01362\cdp\pnp\01362Ppnp01.d
Nov 26 2001 1:39pm

PT	STATION	SD INV	CROSSING UTILITY	CLEARANCE
A	STA. 4+25.98, 10' LT	SD INV=77.73	10" WL TP=84.77	5.37'
B	STA. 4+12.94, CL	SD INV=77.33	8" SAS INV=80.42	1.37'

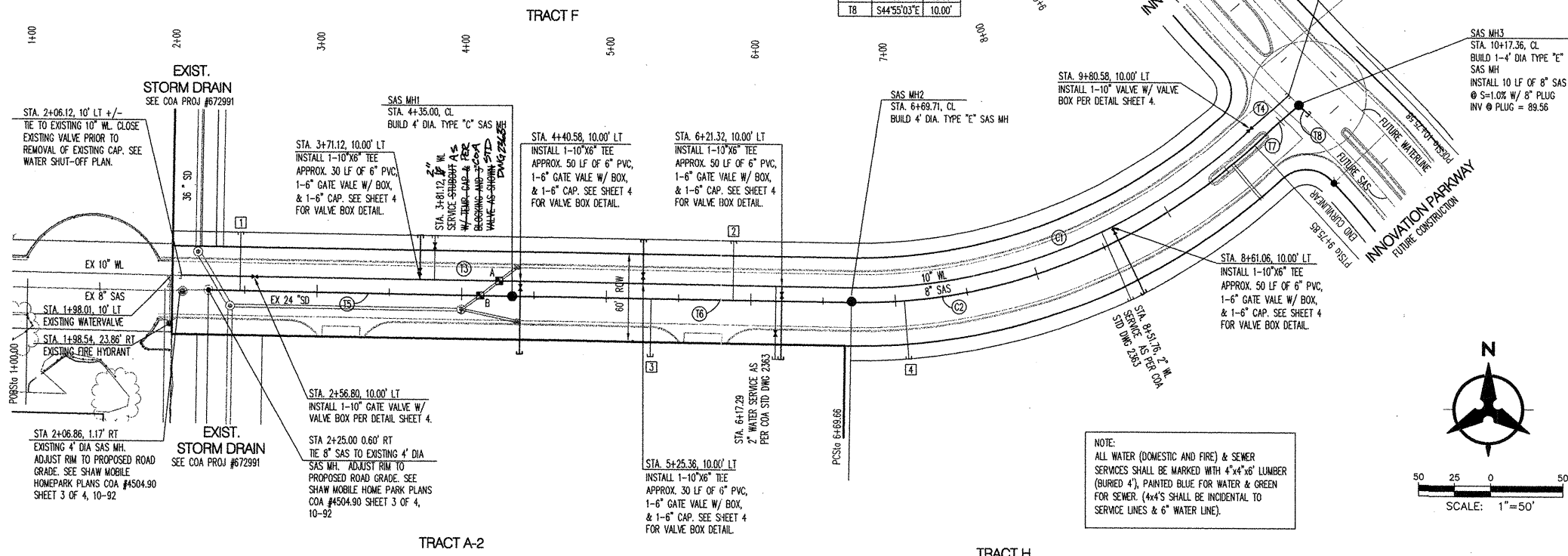
SERVICE	6" SAS TEE/WYE SERVICE	SAS LENGTH	TP @ PLUG (NO RISER)
1	STA. 2+46.83, 0.97' RT	40.00	81.23
2	STA. 5+87.74, CL	40.00	84.79
3	STA. 5+31.03, CL	40.00	84.05
4	STA. 7+06.21, CL	40.00	90.17

NUMBER	ARC	RADIUS	DELTA	TANGENT
C1	297.56'	390.00'	43°42'54"	156.44'

NUMBER	ARC	RADIUS	DELTA	TANGENT
C2	305.19'	400.00'	43°42'54"	160.45'

NUMBER	BEARING	LENGTH
T3	N89°15'56"W	463.62'
T4	N47°01'10"E	42.68'

NUMBER	BEARING	LENGTH
T5	N89°15'56"W	228.15'
T6	N89°15'56"W	234.79'
T7	S47°01'10"W	42.96'
T8	S44°55'03"E	10.00'



NOTES

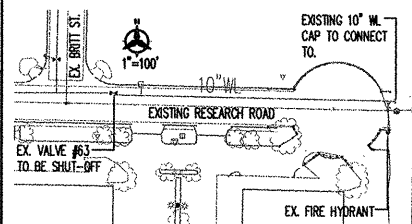
1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.
3. ANY ADDITIONAL GRADING REQUIRED TO MATCH PROPOSED STREET GRADES SHALL BE INCIDENTAL TO PAVING ITEMS.
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5. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
6. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
7. REMOVAL OF THE EXISTING CURB & GUTTER SHALL BE AS PER COA STD. DWG. 2415 (SAWOUT ONLY).

MECHANICAL JOINTS	LENGTH OF RESTRAINED JOINTS (EACH WAY) (10')
45" H. BEND	13'
90" H. BEND	31'
GATE VALVE	86'

RESTRAINING JOINT NOTES:

1. ALL MECHANICAL JOINTS SHALL BE RESTRAINED AT THE FITTING.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM PIPE LENGTH OF 20 LF FROM ALL MECHANICAL JOINTS. ALL PIPE POINTS WITHIN 20 LF OF MJ SHALL BE RESTRAINED AT THE CONTRACTORS EXPENSE.
3. THE CONTRACTOR SHALL RESTRAIN ALL PIPE JOINTS IN THE SPECIFIED DISTANCE LISTED IN THE TABLE ABOVE. (SEE NOTE 2 ABOVE)
4. THE CONTRACTOR SHALL RESTRAIN 6" LINES FROM THE TEE ON THE MAIN TO THE CAP.

RESTRAINING JOINT TABLE:



WATER SHUT-OFF PLAN:

FOR CONNECTION TO EXISTING 10" WL SHUT OFF VALVE #3. EXISTING VALVES SHOWN ON THIS PLAN ARE BASED ON AUTOMATED WATER DISTRIBUTION SECTIONAL MAP M-21, AND ARE NOT EXACT LOCATIONS.

WATER SHUT-OFF REQUIREMENTS

CONTRACTOR WILL BE RESPONSIBLE FOR THE TIMING AND COORDINATION WITH THOSE AFFECTED BY THE WATER SHUT-OFF.

AT LEAST FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT PDW/WATER SYSTEMS DIVISION (857-8200) TO INITIATE IMPLEMENTATION OF THIS WATER SHUT-OFF PLAN. CONTRACTOR SHALL NOT OPERATE CITY VALVES.

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CITY OF ALBUQUERQUE
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ENGINEERING DEVELOPMENT GROUP

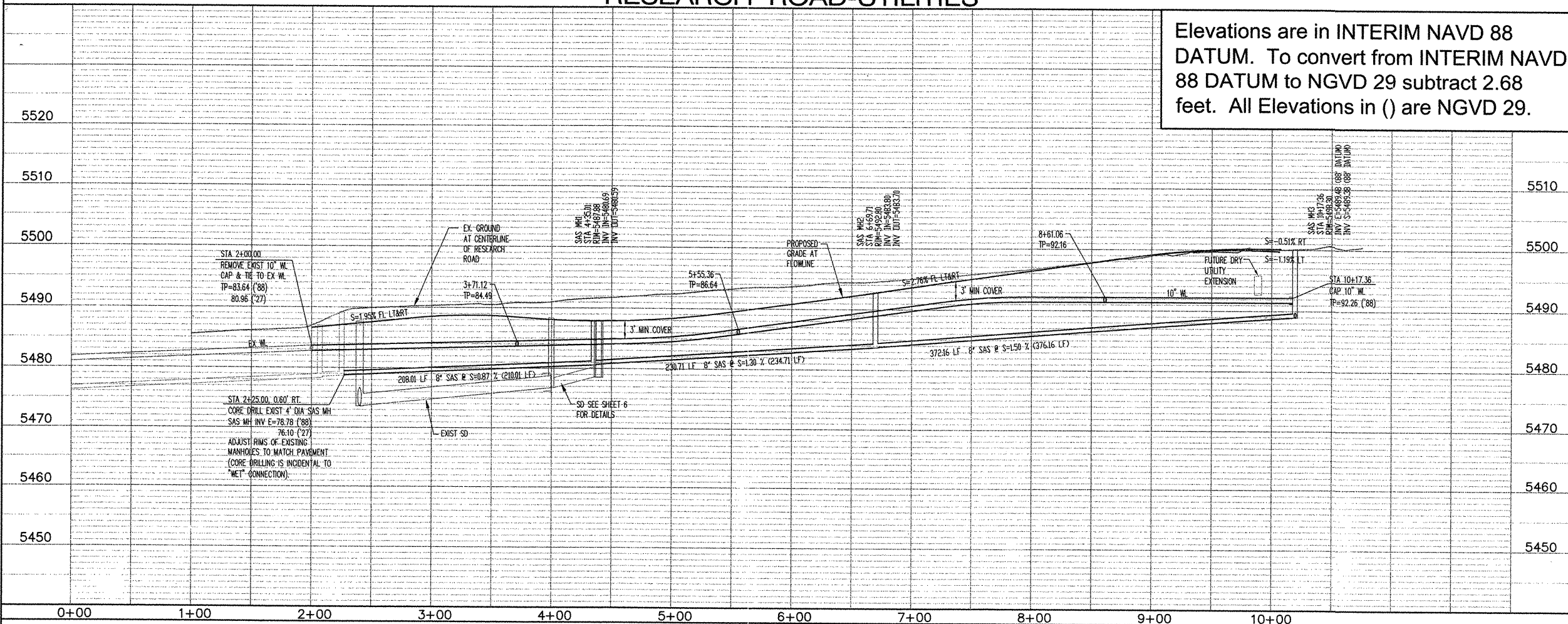
RESEARCH ROAD
UTILITY PLAN AND PROFILE
RESEARCH ROAD - STA. 1+00.00 TO STA. 10+76.00

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED DEC 19 2001			
DESIGN REVIEW COMMITTEE			

City Project No. **672982** Zone Map No. **M-21-Z** Sheet **6** Of **8**

RESEARCH ROAD-UTILITIES

Elevations are in INTERIM NAVD 88 DATUM. To convert from INTERIM NAVD 88 DATUM to NGVD 29 subtract 2.68 feet. All Elevations in () are NGVD 29.



SCALE: 1" = 50' (HORIZ.)
1" = 10' (VERT.)

CONSTRUCTION TRAFFIC CONTROL GENERAL NOTES

1. CONTRACTOR MUST OBTAIN FROM CONSTRUCTION COORDINATION AN EXCAVATION/BARRICADING PERMIT BEFORE ENGAGING IN ANY CONSTRUCTION, MAINTENANCE OR REPAIR WORK IN ANY OF THE CITY OF ALBUQUERQUE'S RIGHTS-OF-WAY. EMERGENCY WORK THAT WOULD PRESERVE LIFE OR PROPERTY IS EXCLUDED WITH THE UNDERSTANDING, THAT A PERMIT SHALL BE OBTAINED WITHIN 24 TO 48 HOURS.

2. CONTRACTOR SHALL AT THE TIME OF PERMIT REQUEST, SUBMIT FOR APPROVAL BY CONSTRUCTION COORDINATION, A TRAFFIC CONTROL PLAN DETAILING ALL EXISTING TOPOGRAPHY SUCH AS LANE WIDTHS, DRIVEWAYS, AND BUSINESS/RESIDENTIAL ACCESSES. THE TRAFFIC CONTROL PLAN SHALL INCLUDE ALL PHASES OF WORK AND SCHEDULES INVOLVED IN THE CONSTRUCTION PROJECT. ANY SEPARATE PHASES OF A CONSTRUCTION PROJECT SHALL BE GIVEN AN INDIVIDUAL PERMIT EACH. BLANKET PERMITS WILL NOT BE ISSUED.

3. THESE TYPICAL TRAFFIC CONTROL PLANS DO NOT REFLECT THE EXISTING TOPOGRAPHY SUCH AS DRIVEWAYS, LANE WIDTHS, AND BUSINESS/RESIDENTIAL ACCESSES. EVERY LOCATION THAT REQUIRES CONSTRUCTION TRAFFIC CONTROL SHALL HAVE A DETAILED TRAFFIC CONTROL PLAN SHOWING ALL EXISTING TOPOGRAPHY.

4. CONSTRUCTION SHALL NOT BEGIN UNLESS A TRAFFIC CONTROL PLAN HAS BEEN APPROVED AND VERIFIED BY CONSTRUCTION COORDINATION.

5. CONSTRUCTION COORDINATION SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY TRAFFIC CONTROL CHANGES NEEDED BY CONTRACTOR, THAT WERE NOT PREVIOUSLY APPROVED. THESE TRAFFIC CONTROL CHANGES SHALL BE REQUESTED IN WRITING ACCOMPANIED WITH A TRAFFIC CONTROL PLAN REFLECTING SUCH CHANGES.

6. ALL CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL COMPLY TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL, SERVICE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES. TRAFFIC CONTROL DEVICES SHALL NOT BE REMOVED OR ALTERED IN ANY WAY WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION, PER SECTION 6A-4 OF THE MUTCD, LATEST EDITION.

7. THE CONSTRUCTION TRAFFIC CONTROL INITIAL SET-UP SHALL BE BY AN AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED WORKSITE TRAFFIC SUPERVISOR. THE MAINTENANCE AND SERVICING SHALL ALSO BE DONE BY AN ATSSA CERTIFIED WORKSITE TRAFFIC SUPERVISOR OR EQUIVALENT.

8. CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND SERVICE ALL TRAFFIC CONTROL DEVICES 24 HOURS A DAY, 7 DAYS A WEEK THROUGHOUT LENGTH OF PROJECT. CONTRACTOR IS RESPONSIBLE THAT ALL TRAFFIC CONTROL DEVICES COMPLY WITH THE MUTCD, LATEST EDITION.

9. ALL ADVANCE WARNING SIGNS SHALL BE DOUBLE INDICATED WHENEVER THERE ARE MULTI-LANE TRAFFIC IN ANY ONE GIVEN DIRECTION AND THERE IS SUFFICIENT MEDIAN SPACE.

10. ALL BARRICADES IN ALL TAPERS AND TANGENTS SHALL BE PLACED APART, A DISTANCE MEASURED IN FEET, EQUAL TO THAT OF THE POSTED SPEED LIMIT. NO EXCEPTIONS UNLESS APPROVED BY CONSTRUCTION COORDINATION PER MUTCD SECTION 6A-4.

11. ALL WORK IN ARTERIAL ROADWAYS SHALL BE ON A CONTINUOUS 24 HOUR PER DAY BASIS UNTIL COMPLETED.

12. CONTRACTOR IS RESPONSIBLE TO PROVIDE CONSTRUCTION COORDINATION, A WEEKLY LOG OF DAILY INSPECTIONS OF BARRICADE AND MAINTENANCE SCHEDULES ON PROJECTS THAT ARE OVER ONE WEEK DURATION.

13. EQUIPMENT OR MATERIALS SHALL NOT BE STORED WITHIN 15 FEET OF A TRAVELED TRAFFIC LANE DURING NON-WORKING HOURS WITHOUT THE APPROVAL OF CONSTRUCTION COORDINATION.

14. CONTRACTOR SHALL PROVIDE AND MAINTAIN A SAFE AND ADEQUATE MEANS OF CHANNELIZING PEDESTRIAN TRAFFIC AROUND AND THROUGH THE CONSTRUCTION AREA.

15. CONTRACTOR IS RESPONSIBLE FOR OBLITERATION OF ANY CONFLICTING STRIPING AND RESPONSIBLE FOR ALL TEMPORARY STRIPING.

16. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES, BUSINESSES AND/OR RESIDENTS AT ALL TIMES.

17. CONTRACTOR SHALL PROVIDE ACCESS SIGNS FOR BUSINESSES LOCATED WITHIN THE CONSTRUCTION AREA UNDER THE SUPERVISION OF CONSTRUCTION COORDINATION. EACH ACCESS SIGN SHALL HAVE 5 INCH, WHITE OPAQUE LETTERING ON BLUE REFLECTORIZED BACKGROUND. ACCESS SIGNS SHALL BE CONSIDERED INCIDENTAL TO THE BID AND NOT PART OF THE CONTRACT UNLESS OTHERWISE STATED. NO MORE THAN 3 BUSINESSES SHALL BE LISTED ON A ACCESS SIGN. SHOPPING CENTERS AND MALLS SHALL BE LISTED AS SUCH.

18. ALL ADVANCE WARNING SIGNS SHALL MEET THE MINIMUM REFLECTIVE INTENSITY REQUIREMENTS SET FORTH BY THE CITY OF ALBUQUERQUE. CONSTRUCTION COORDINATION SHALL DETERMINE ALL REQUIREMENTS AND APPROVE OR DISAPPROVE ANY ADVANCE WARNING SIGN PER SECTION 6A-4 OF THE MUTCD, LATEST EDITION.

19. 48 HOURS PRIOR TO OCCUPYING OR CLOSING OF A RIGHT-OF-WAY, CONTRACTOR SHALL NOTIFY: POLICE, FIRE DEPARTMENT, SCHOOLS, HOSPITALS, TRANSIT AUTHORITY, BUSINESSES AND/OR RESIDENTS THAT WILL BE AFFECTED BY THE CONSTRUCTION.

20. ANY FIELD ADJUSTMENTS SHALL BE APPROVED BY CONSTRUCTION COORDINATION.

21. EXCAVATIONS SHALL BE PLATED, TEMPORARILY PATCHED OR RESURFACED PRIOR TO OPENING OF TRAFFIC. A MINIMUM OF 11 FEET SHALL BE PROVIDED FOR TRAFFIC IN ANY GIVEN DIRECTION. CONTRACTOR IS RESPONSIBLE FOR ANY WORK INVOLVED IN SATISFYING THESE REQUIREMENTS.

22. CONTRACTOR SHALL AT ALL TIMES COMPLY WITH THE FOLLOWING:
1. STANDARDS AND REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
2. THE CITY OF ALBUQUERQUE TRAFFIC CODE, LATEST EDITION.
3. SECTION 19 OF THE CITY OF ALBUQUERQUE'S STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION, AS WELL AS OTHER SECTIONS.

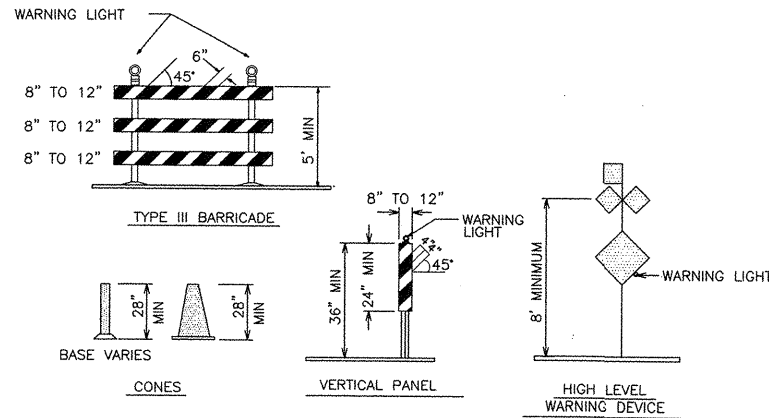
23. FAILURE TO COMPLY WITH ANY OF THE ABOVE MENTIONED, WILL BE ADEQUATE CAUSE TO CEASE ALL WORK ON ANY CONSTRUCTION PROJECT. WORK WILL NOT RESUME UNTIL ALL REQUIREMENTS ARE ADDRESSED AND APPROVED BY CONSTRUCTION COORDINATION.

24. ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT IN NEW-CLEAN CONDITION, WASHING OF EQUIPMENT IS INCIDENTAL TO IT'S PLACEMENT AND MAINTENANCE.

25. TRAFFIC CONTROL STANDARDS APPLY ONLY WHERE THE CONSTRUCTION TRAFFIC CONTROL PLANS ARE NOT SPECIFIC.

26. ADVANCE WARNING SIGNS SHALL BE 36"x36" MIN. WITH SUPER ENGINEERING GRADE SHEETING OR BETTER. MOUNTING HEIGHT AT TOP OF SIGN SHALL BE THE SAME AS FOR A 48" SIGN AS INDICATED IN THE M.U.T.C.D.

27. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORKSITE. ALL GRAFFITI SHALL BE PROMPTLY REMOVED FROM ALL EQUIPMENT, BOTH PERMANENT AND TEMPORARY.



TAPER REQUIREMENT

SPEED LIMIT (MPH)	TAPER LENGTH(L) (FEET)			MINIMUM NUMBER OF DEVICES FOR TAPER	MAXIMUM DEVICE SPACING IN FEET	
	10' LANE	11' LANE	12' LANE		ALONG TAPER	AFTER TAPER
20	70	75	80	5	20	20
25	105	115	125	6	25	25
30	150	165	180	7	30	30
35	205	225	245	8	35	35
40	270	295	320	9	40	40
45	450	495	540	13	45	45
50	500	550	600	13	50	50
55	550	605	660	13	55	55

RECOMMENDED SIGN SPACING(D) FOR ADVANCE WARNING SIGN SERIES

SPEED LIMIT (MPH)	MINIMUM DISTANCE IN FEET BETWEEN SIGNS		FROM LAST SIGN TO TAPER
	PER HOUR	PER MILE	
0-20	10 X SPEED LIMIT	10 X SPEED LIMIT	10 X SPEED LIMIT
25-30	10 X SPEED LIMIT	10 X SPEED LIMIT	10 X SPEED LIMIT
30-35	10 X SPEED LIMIT	10 X SPEED LIMIT	10 X SPEED LIMIT
40-45	10 X SPEED LIMIT	10 X SPEED LIMIT	10 X SPEED LIMIT
50-60	10 X SPEED LIMIT	10 X SPEED LIMIT	10 X SPEED LIMIT

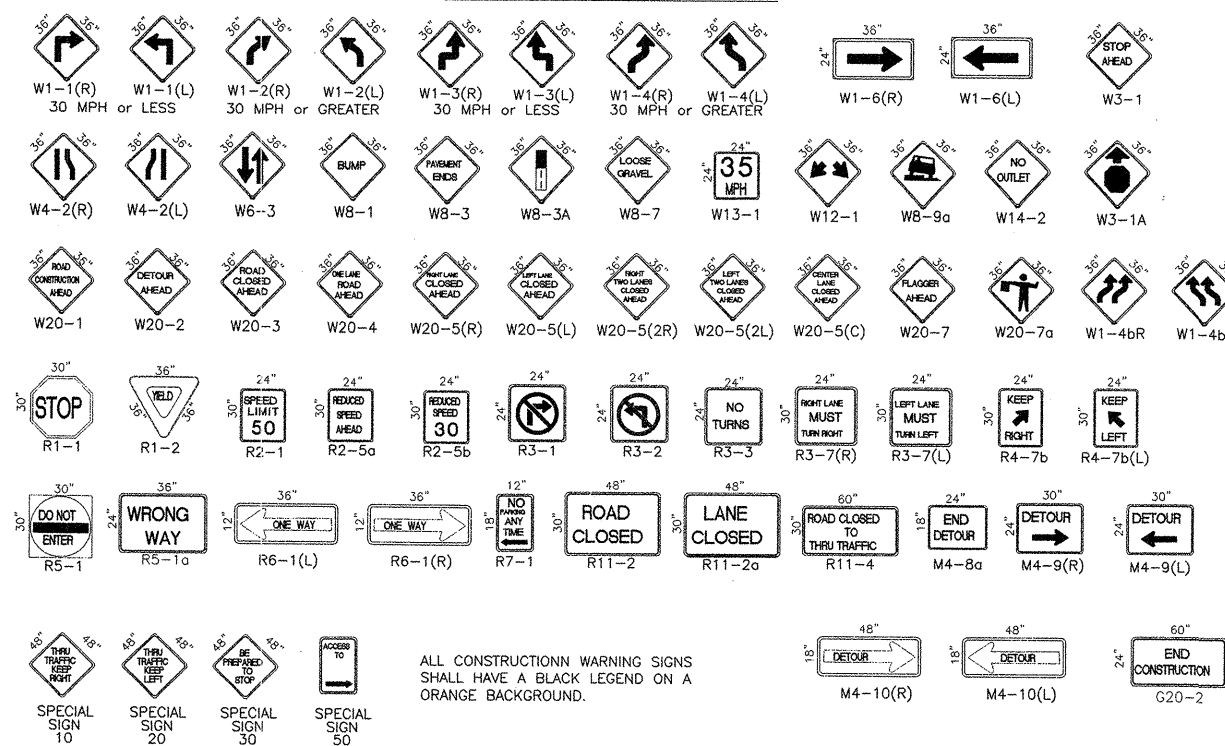
TAPER CRITERIA

TYPE OF TAPER	TAPER LENGTH
UPSTREAM TAPER:	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/2 L MINIMUM
TWO-WAY TRAFFIC TAPER	100 FEET MAXIMUM
DOWNSTREAM TAPERS	100 FEET PER LANE

TAPER LENGTH COMPUTATION

SPEED LIMIT	L = WS ² / 60
40 MPH OR LESS	L = WS ² / 60
40 MPH OR GREATER	L = W x S
L = TAPER LENGTH W = WIDTH OF OFFSET IN FEET S = POSTED SPEED OR OFF-PEAK 85-PERCENTILE SPEED IN MPH	

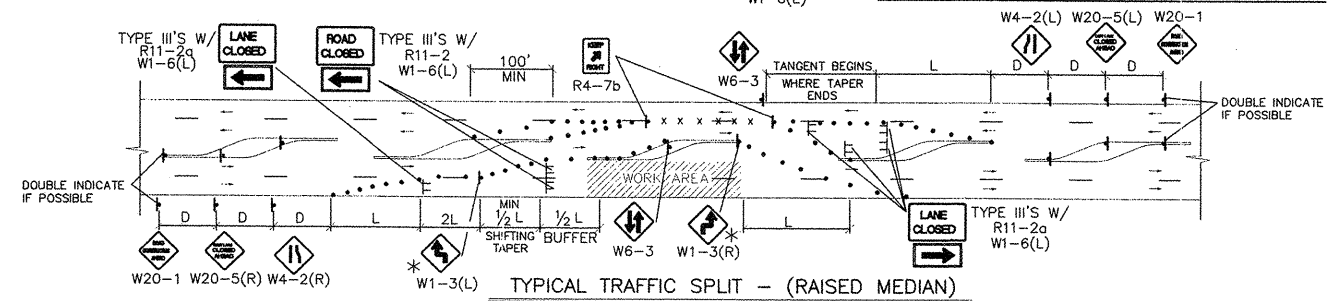
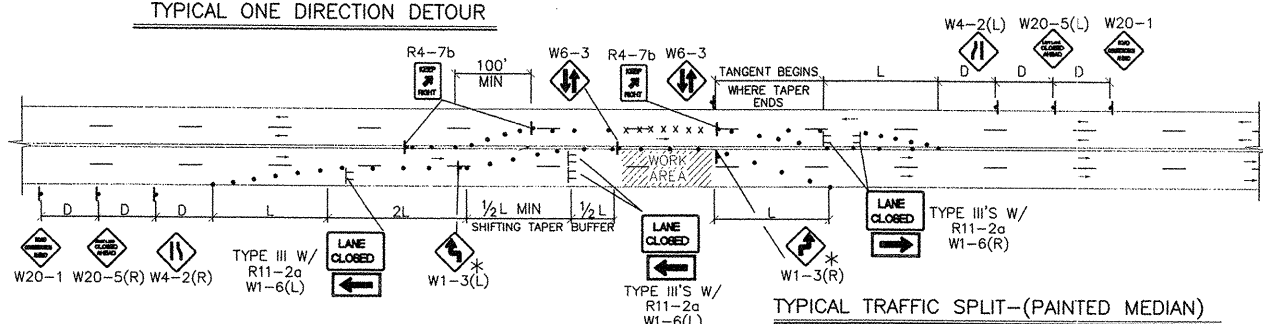
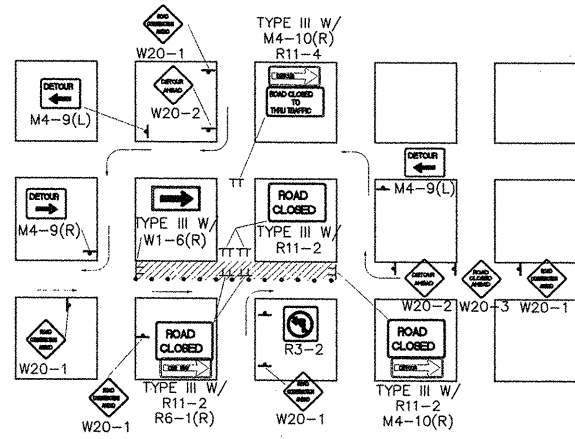
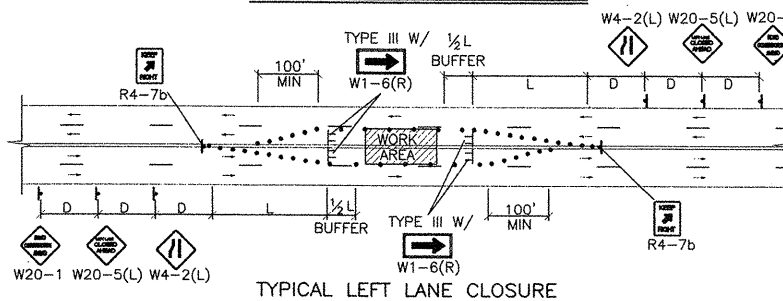
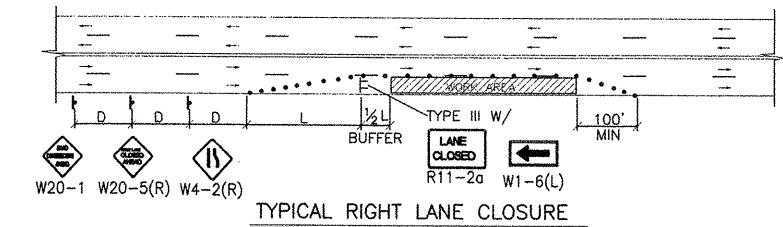
SIGN FACE DETAILS



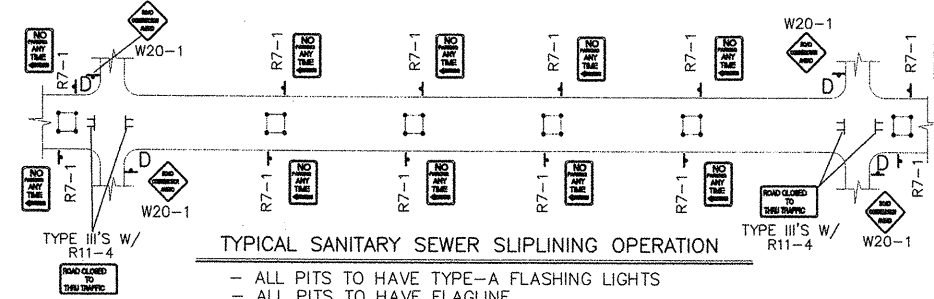
AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	ACS Aluminum Cap stamped 6-121, 1986	Intersection of Central Ave. & Elizabeth St.	NO.	BY	COA STANDARD	
INSPECTOR	DATE	Geographic Position (NAD 1927), in feet					
APPROVED BY	DATE	N.M. State Plane Coordinates (Central Zone)					
APPROVED BY	DATE	X=477,975.01, Y=1,481,220.09					
APPROVED BY	DATE	Ground-to-Grid Factor= 0.99964527, dd= -000927"					
RECORDED BY	DATE	Elevation= 5500.67 NAVD29, in feet					
		Transformed to INTERIM NAVD 88 by CORPSCON V5.11.08					
		Elevation= 5503.35 NAVD83, in feet					

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CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT			
RESEARCH ROAD TRAFFIC CONTROL SIGNING & CONSTRUCTION CONTROL STANDARDS			
Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
COA	STD		
City Project No.	Zone Map No.	Sheet	Of
672982	M-21-Z	7	8



- TRAFFIC SPLIT NOTES:
1. THE OFFSET DISTANCE MUST BE CALCULATED IN ALL SHIFTING TAPERS. THE OFFSET DISTANCES SHALL INCLUDE LANE WIDTHS PLUS MEDIAN WIDTHS.
 2. 1/2 L IS THE MINIMUM DISTANCE FOR SHIFTING TAPERS.
 3. REVERSE CURVES MAY BE IMPLEMENTED. ALL CURVE DATA SHALL BE CALCULATED.
 4. MEDIAN REMOVAL SHALL BE REQUIRED IF 1/2 L OR REVERSE CURVE IS NOT SUFFICIENT. MEDIAN REMOVAL SHALL TAKE PLACE BEFORE SPLITS.
 5. REDUCED SPEED MAY BE CONSIDERED.
 6. * USE W1-3 FOR 30 MPH OR LESS, W1-4 FOR SPEED 35 MPH OR GREATER.



- ALL PITS TO HAVE TYPE-A FLASHING LIGHTS
- ALL PITS TO HAVE FLAGLINE

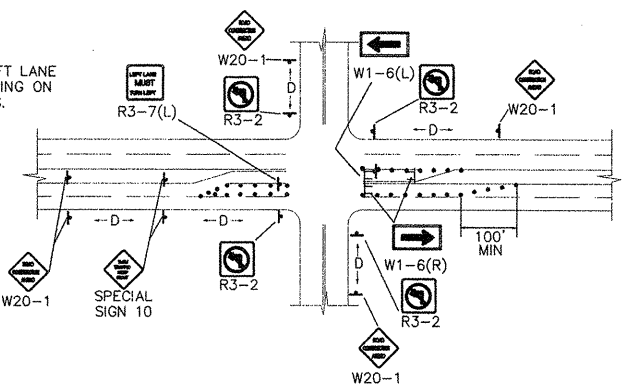
GENERAL NOTE:

ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON AN ORANGE BACKGROUND.

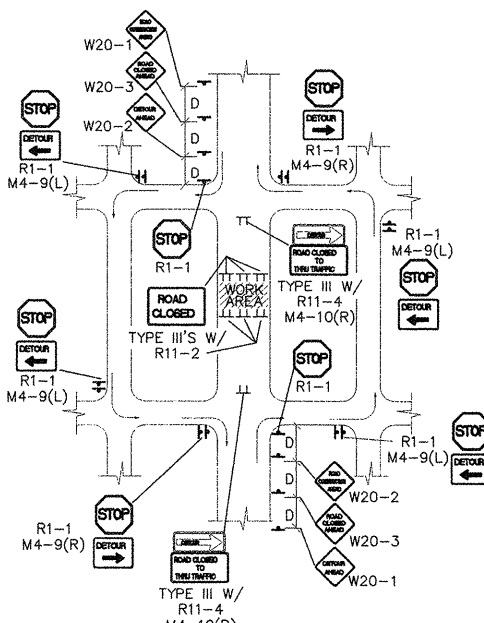
ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" THIRTY SIX INCHES BY 36" THIRTY SIX INCHES IN SIZE AND SHALL HAVE ONE WARNING LIGHT.

NOTE:

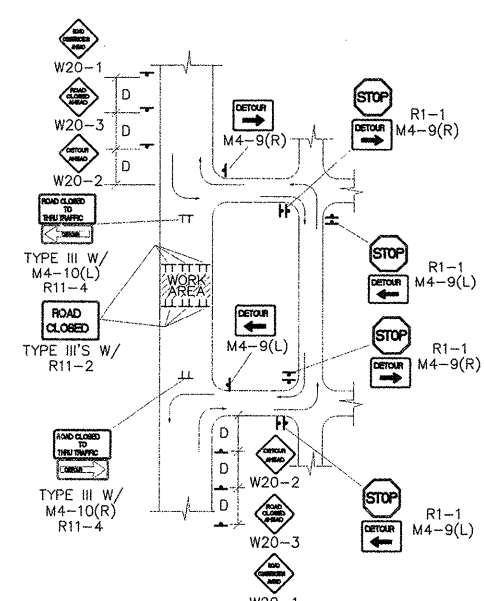
MAY REQUIRE LEFT LANE CLOSURE DEPENDING ON FIELD CONDITIONS.



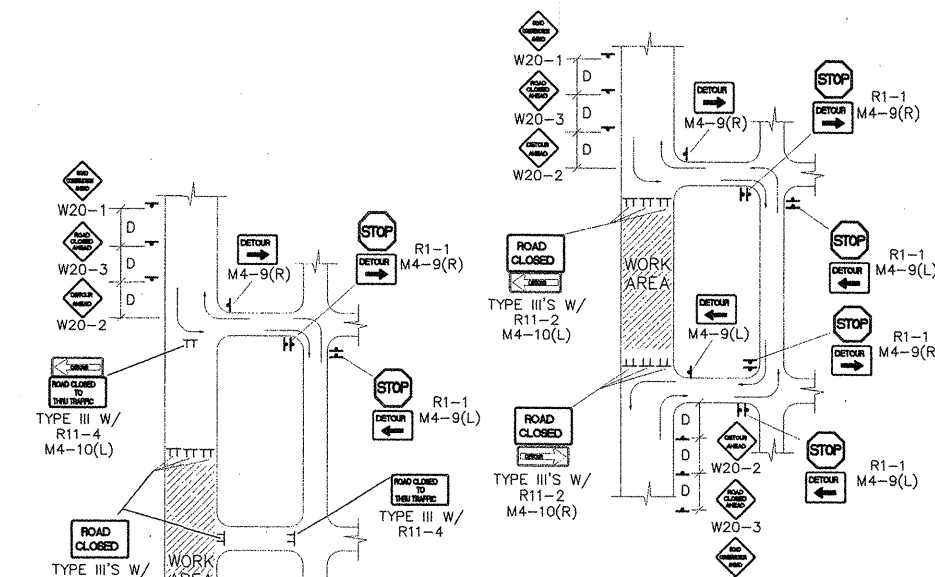
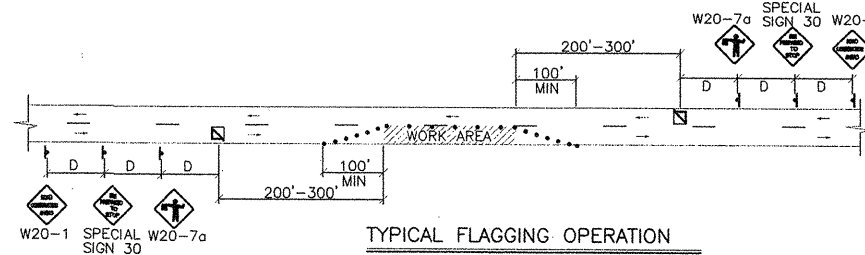
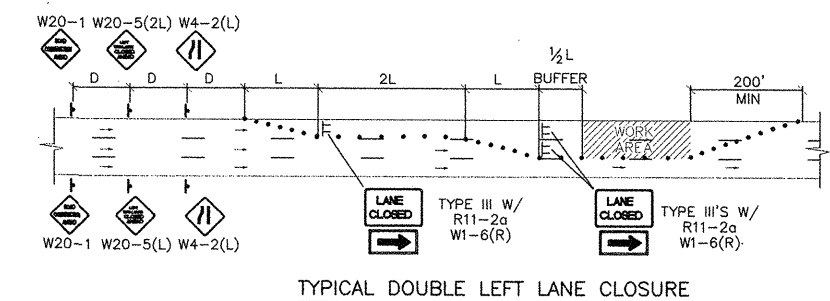
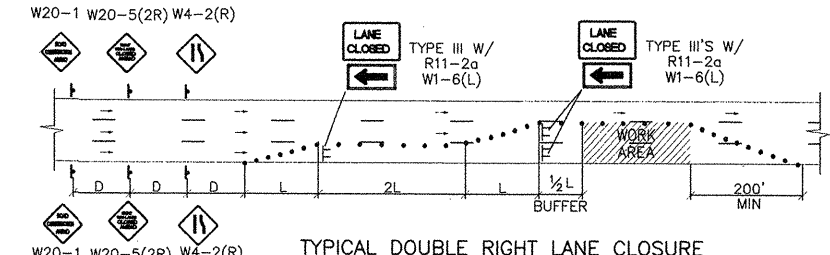
NOTE: DEPENDING ON WORK ZONE LOCATION.



NOTE: (R1-1) BASED ON FIELD CONDITIONS.



NOTE: (R1-1) BASED ON FIELD CONDITIONS.



NOTE: (R1-1) BASED ON FIELD CONDITIONS.

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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

RESEARCH ROAD
TYPICAL TRAFFIC CONTROL
& SIGNING EXAMPLES (REF MUTCD)

Design Review Committee	City Engineer Approval	Ms./Day/Yr.	Ms./Day/Yr.
COA	STD		
City Project No.	Zone Map No.	Sheet	Of
672982	M-21-Z	8	8

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL		REMARKS		DESIGN		COA STANDARD	
DATE	CONTRACTOR	DATE	AS Aluminum Cap stamped 6-121, 1986	DATE	FIELD NOTES	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
DATE	DATE	DATE	Intersection of Central Ave. & Elizabeth St.	DATE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
DATE	DATE	DATE	Geographic Position (NAD 1983) in feet	DATE	BY	BY	BY	BY	BY	BY	BY	BY	BY
DATE	DATE	DATE	N.M. State Plane Coordinates (Central Zone)	DATE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
DATE	DATE	DATE	Ground-to-Grid Factor = 0.99964577; ud = -000927"	DATE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
DATE	DATE	DATE	Elevation = 5500.87 MVD29; in feet	DATE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
DATE	DATE	DATE	Transformed to INTERM NAVD 88 by COPCON V5.11.08	DATE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
DATE	DATE	DATE	Elevation = 5503.35 NAVD83; in feet	DATE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.