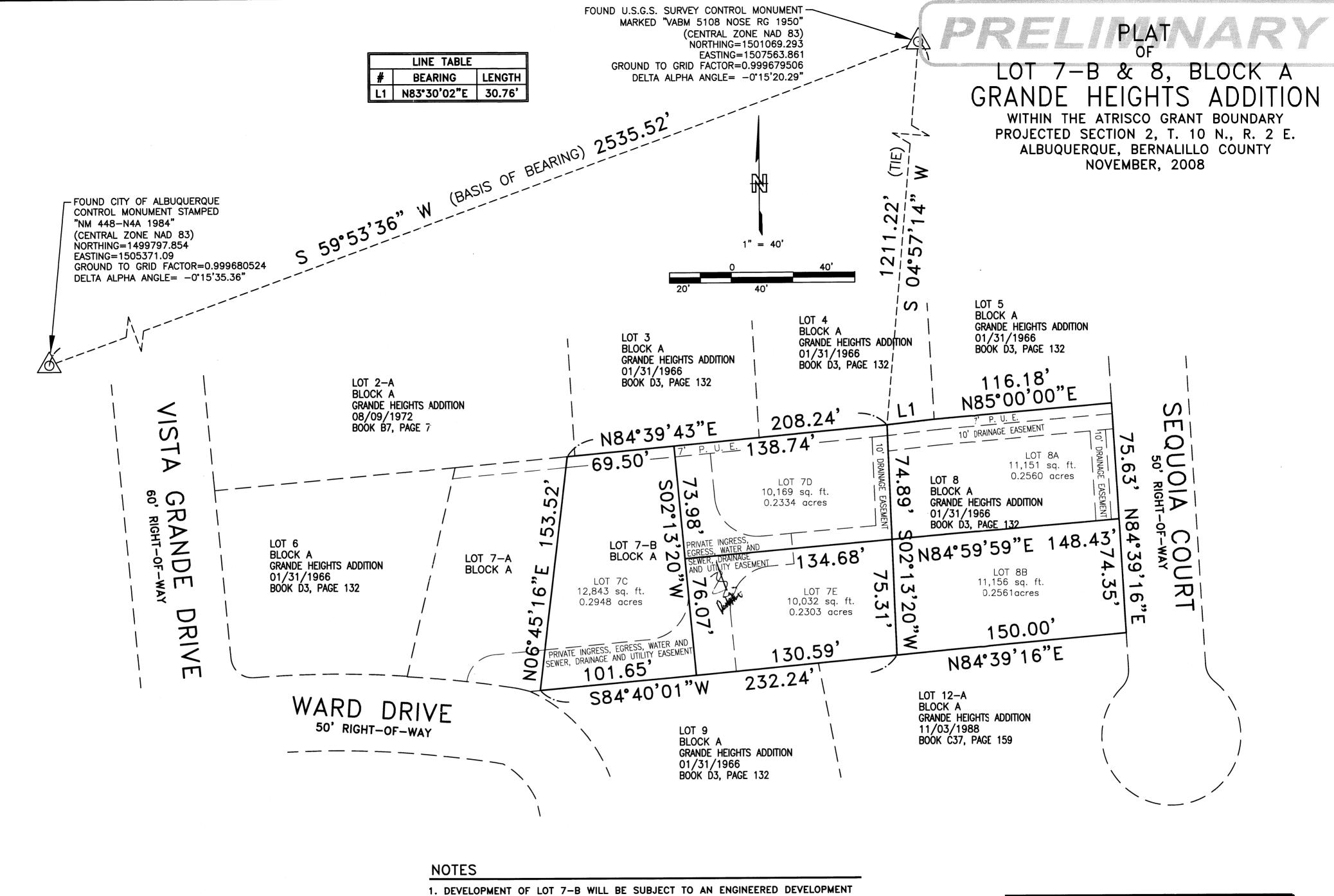


SHEET 1 of 1



- PLAN AND APPROPRIATE EASEMENTS ON THE ADJOINING, DOWNSTREAM LOT 8.
- 2. NO PROPERTY WITHIN THE AREA OF THIS PLAT SHALL AT ANY TIME BE SUBJECT TO A DEED RESTRICTION, COVENANT, OR BINDING AGREEMENT PROHIBITING SOLAR COLLECTORS FROM BEING INSTALLED ON BUILDINGS OR ERECTED ON THE LOTS OR PARCELS WITHIN THE AREA OF PROPOSED PLAT. THE FOREGOING REQUIREMENT SHALL BE A CONDITION TO APPROVAL OF THE PLAT.
- 3. THE PRIVATE INGRESS, EGRESS, WATER AND SEWER, DRAINAGE AND UTILITY EASEMENT ARE FOR THE BENIFIT AND USE BY THE OWNER(S) OF LOT 7-B AND IS TO BE MAINTAINED BY THE SAID OWNER(S).

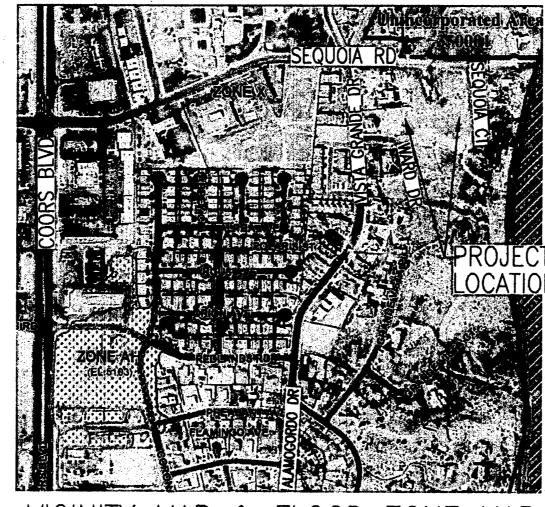


Consulting, P.C. 2620 San Mateo Blvd. N.M. Suite B Albuquerque, NM 87110 SHEET

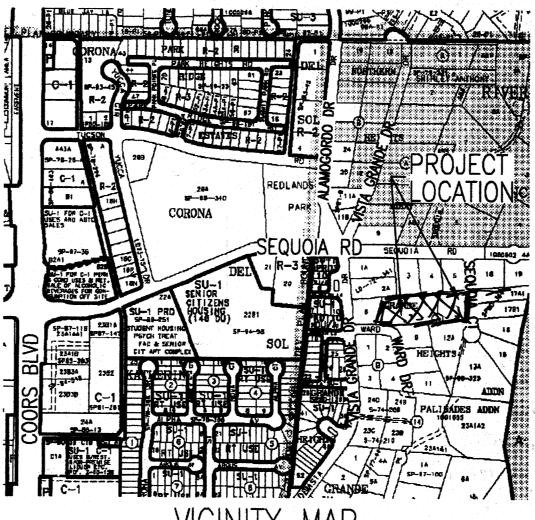
Tel 505.881.6690 Fax 505.881.6896 info@rhombuspc.com 1 of 1

www.rhombuspc.com

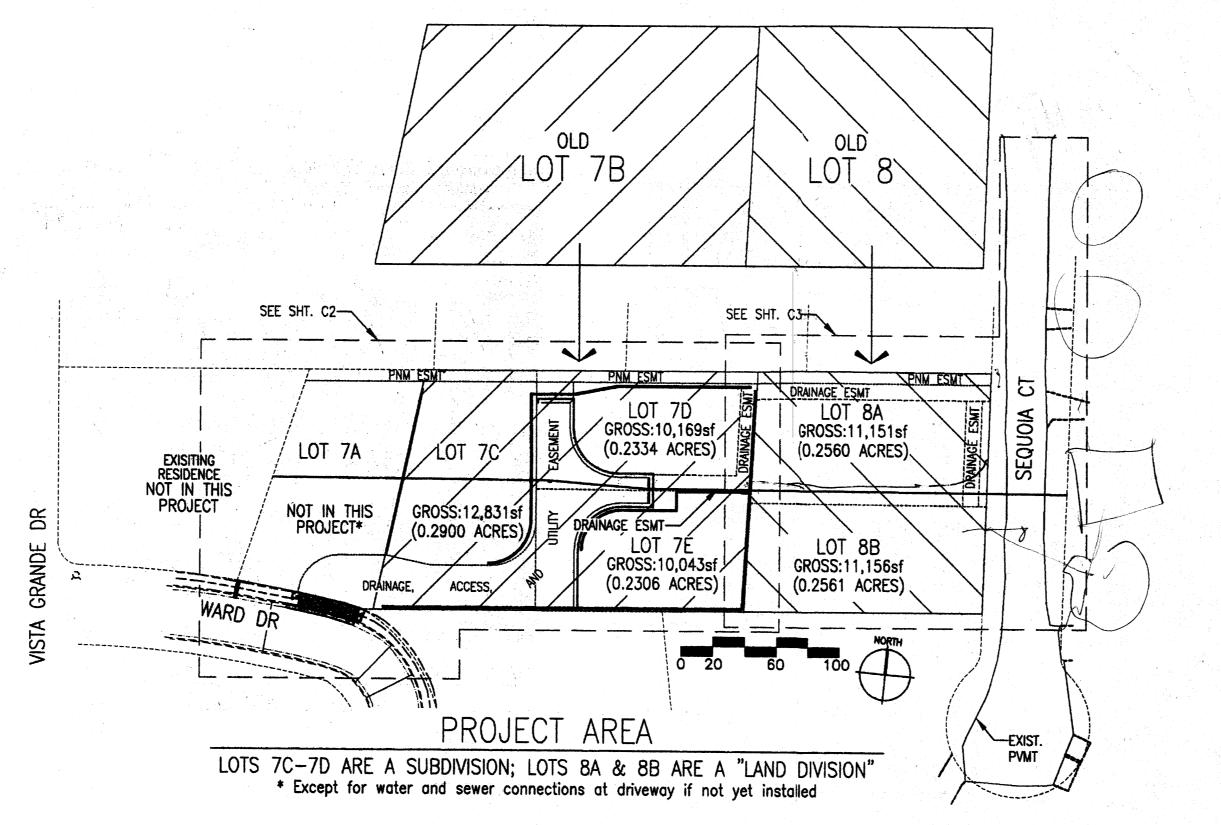
- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
- 2. ALL WORK DETAILED ON THESE PLANS IS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986, UPDATED THROUGH LATEST REVISION.
- 3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 260-1990 FOR LOCATION OF EXISTING UTILITIES. (NM ONE CALL = "811")
- 4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF
- 5. BACKFILL COMPACTION IN THE RIGHT-OF-WAY SHALL BE ACCORDING TO TRAFFIC/STREET USE.



VICINITY MAP & FLOOD ZONE MAP FEMA PANEL: 35001C0327G (2008) nts



C.O.A. MAP G-11-Z nts



SURVEY CITATION

BOUNDARY & TOPOGRAPHIC SURVEYS BY: RHOMBUS, PA, ALBUQUERQUE NM, 505/881-6690, IN CONJUNCTION WITH ABSOLUTE SURVEYING & MAPPING, INC, 829 W. 7TH STREET, CORTEZ COLORADO, 81321; 970/564-0220.

PROJECT BENCH MARK: MANHOLE IN WARD DRIVE RIM OPPOSITE LOT 7A, RIM EL.=4999.59

DRAWING INDEX

NOTE: WORK ON DIVIDING LOT 7B INTO 7C, 7D, & 7E CONTINUES THE PREVIOUS DIVISION OF LOT 7

- C1: GENERAL INFORMATION
- C2: GRADING, DRAINAGE AND PAVING PLAN, WEST PART OF SITE: (A) CONSTRUCTION ITEMS, AND (B) CONTOURS AND SPOT ELEVATIONS
- C3: GRADING, DRAINAGE PLAN, EAST PART OF SITE (NO PAVING THERE)
- C4: UTILITY PLANS & DETAILS
- C5: OTHER DETAILS
- C6: EROSION CONTROL PLAN
- C7: TRAFFIC CIRCULATION LAYOUT; FIRE TRUCK PATH; EAST-WEST CROSS-SECTION
- C8: DRAINAGE REPORT AND CALCULATIONS

INTO 7A & 7B. ALL WORK FOR LOT 8 (8A & 8B) IS NEW.

**GENERAL NOTES:** 

CONTRACTOR, PAY ATTENTION! THESE ARE NOT YOUR GRANDFATHERS'S GENERAL NOTES.

- 1. ALL WORK IS TO BE PERFORMED IN A WORKMANLIKE MANNER.
- 2. EXCEPT AS OTHERWISE STATED OR PROVIDED FOR BY THESE PLANS, ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. 1986 EDITION, UPDATED THROUGH AMENDMENT
- THERE MAY BE UTILITIES AND OTHER ITEMS THAT ARE NOT SHOWN, AND SOME ITEMS SHOWN MAY NOT BE SHOWN IN THE CORRECT LOCATION. FIELD VERIFY. PHONE 811 FOR UTILITIES SPOTTING AT LEAST 3 WORKING DAYS PRIOR TO THE START OF
- CONTRACTOR'S GOOD SENSE: THE CONTRACTOR IS REQUIRED TO USE HIS GOOD SENSE, EXPERIENCE, AND JUDGMENT.
- 5. IF <u>Unusual conflicting</u> or <u>even apparently odd circumstances</u> arise, the contractor is to consult with the <u>Engineer for a resolution before proceeding with final layout or construction.</u>
- 6. IF THE CONTRACTOR IS <u>UNCLEAR AS TO THE MEANING OR INTENT</u> OF A FEATURE OR NOTE THE CONTRACTOR IS TO CONSULT WITH THE ENGINEER FOR A RESOLUTION BEFORE PROCEEDING WITH FINAL LAYOUT OR CONSTRUCTION.
- 7. IE A NOTE SAYS TO NOT DO SOMETHING, DON'T DO IT: IF A NOTE SAYS TO DO SOMETHING CAREFULLY, DO IT CAREFULLY.
- 8. THE ENGINEER INTENDS AND EXPECTS THAT ITEMS WHOSE DETAILS WERE DRAWN FOR THIS PROJECT WILL BE CONSTRUCTED PER THOSE DETAILS, WHETHER THE FIRST TIME OR A SUBSEQUENT TIME. SEE ALSO THE GENERAL NOTES REGARDING "GOOD SENSE" (#4), "CIRCUMSTANCES" (#5), ""UNCLEAR" (#6), AND "CHANGES" (#9).
- CHANGES & DEVIATIONS ARE TO BE APPROVED IN WRITING IN ADVANCE OF CONSTRUCTION. CONTRACTOR IS TO KEEP A MARKUP COPY OF THE PLANS AND TO NOTE THEREON ALL CHANGES AND DEVIATIONS FROM THE PLANS.
- 10. <u>VERIFICATION / PHOTO VERIFICATION</u>: THESE PLANS, ESPECIALLY THE UTILITIES PLAN, MAY CALL FOR VERIFICATION OF CONSTRUCTED ITEMS, ESPECIALLY ITEMS NOT VISIBLE AT THE END OF CONSTRUCTION. VERIFICATION MAY NEED CERTIFICATION BY A PROPERLY LICENSED SURVEYOR, OR PHOTOS, OR BOTH.
- 11. ENGINEER IS WILLING TO SUPPLY AN ELECTRONIC COPY OF THIS DRAWING (AUTOCAD 2005) FOR THE CONTRACTOR'S USE ON
- 12. IF THE CONTRACTOR FEELS THERE IS A CONSTRUCTION ITEM NOT COVERED WITH A DETAIL OR SPECIFICATION, THE ENGINEER SHALL BE CONTACTED AND A DETAIL OR SPECIFICATION SHALL BE SELECTED, PROBABLY FROM THE CITY OF ALBUQUERQUE
- 13. SOILS REPORT: PRIOR TO THE START OF CONSTRUCTION, THE OWNER OR THE CONTRACTOR SHALL OBTAIN A SOILS REPORT (GEOTECHNICAL REPORT) FOR THE PROJECT PREPARED BY A PROPERLY LICENSED ENGINEER. CONSTRUCTION SHALL FOLLOW THE RECOMMENDATIONS OF THAT REPORT, ESPECIALLY IN REGARD TO BACKFILL AND COMPACTION, INCLUDING OVEREXCAVATION AND BENCHING FOR COMPACTION ON SLOPES AND UNDER RETAINING WALLS, ESPECIALLY ON SLOPES.
- 14. BACKFILL AND COMPACTION IN THE CITY RIGHT OF WAY SHALL BE ACCORDING TO TRAFFIC/STREET USE.
- 15. THE CONTRACTOR IS RESPONSIBLE FOR EARTHWORK QUANTITIES
- 16. CITY PERMITS NEEDED FOR STREET AND UTILITY CONSTRUCTION ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. PERMITS WILL BE NEEDED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT OF WAY.
- 17. PAVEMENT CUTS FOR ALL UTILITIES SHALL BE PER CITY OF ALBUQUERQUE STD DWG 2465
- 18. WATER AND SEWER SERVICES FOR LOTS 8A & 8B WILL BE PROVIDED BY THE INDIVIDUAL OWNERS WHEN THOSE LOTS ARE DEVELOPED. SEWER SERVICE TO 8A & 8B WILL BE VIA SEWER EJECTOR PUMP DISCHARGING AGAINST ROUGHLY 80 FT TO 100 FT
- 19. MAINTENANCE OF ONSITE SEWER & WATER FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNERS OF THE PROPERTY SERVED.
- 20. RETAINING WALL DESIGN IS BY OTHERS.

			ND & ABBREVIATION		
APWA	AM. PUBLIC WORKS ASSN.	FC	FACE OF CURB	RD	ROOF DRAIN
AWWA	AM. WATER WORKS ASSN	F-F	FACE TO FACE	ROW,RW	RIGHT OF WAY
В	BACK (PREFIX)	FF	FINISHED FLOOR	S	SLOPE
BC	BACK OF CURB	FG	FINISHED GRADE	SAS	SANITARY SEWER
BDY,		FL	FLOW LINE	SD	STORM DRAIN
BNDY	BOUNDARY	FM	FORCE MAIN	SDR	STANDARD DESIGN RATIO
BSW	BACK OF SIDEWALK	FP	FINISHED PAD	SDWK	SIDEWALK
BT-CB	BOTTOM OF CURB	FS	FINISHED SURFACE	SFM	SEWER FORCE MAIN/SERVICE
CG	CURB AND GUTTER	G	GAS	SSL	SANITARY SEWER LATERAL
CF	CURB FACE	GB	GRADE BREAK	SW	SIDEWALK
Cl	CAST IRON	HDPE	HIGH-DENSITY PE	T	TANGENT
CI SP	CI SOIL PIPE (SAS)	HP	HIGH POINT	T	TELEPHONE
CMU	CONCRETE MASONRY UNIT	INV	INVERT	TA	TOP OF ASPHALT
CO	CLEAN OUT	L	LENGTH	TBM	TEMPORARY BENCH MARK
COA	CITY OF ALBUQUERQUE	LF	LINEAR FOOT	TF	TOP FOOTING
E,EX,X	EXISTING (PREFIX)	LS	LANDSCAPE, -ING	TG	TOP GRATE
DIP	DUCTILE IRON	LP	LOW POINT	TC	TOP OF CHANNEL or
DI	DROP INLET	MH	MANHOLE		TOP OF CONCRETE or
DR	DESIGN RATIO	NM	NEW MEXICO		TOP OF CURB
DRWG	DRAWING	OC	ON CENTER	TCO	TOP OF CLEANOUT
DWG	DRAWING	OH	OVERHEAD	TOE	TOE OF SLOPE
E	ELECTRIC, ELECTRICITY	PA	PLANTER AREA	TOP	TOP OF SLOPE
EA	EDGE OF ASPHALT	PC	POINT OF CURVATURE	TP	TOP OF PIPE
EDF	EXTRA-DEPTH FOOTING	PE	POLYETHYLENCE	TRW	TOP OF RETAINING WALL
EG	EXISTING GRADE, or	PEX	CROSS-LINKED PE	TS	TOP OF SIDEWALK
	EDGE OF GUTTER	PP	POWER POLE	TW	TOP OF WALL
EOG	EDGE OF GUTTER	PT	POINT OF TANGENCY	UP,UT	UTILITY POLE
EP,EOP	EDGE OF PAVEMENT	PUE	PUBLIC UTILITY EASEMENT	· <b>W</b>	WATER
EOR	EDGE OF ROAD	PVC	POLYVINYL CHLORIDE	WSL	WATER SERVICE LINE
EW	EACH WAY	R	RADIUS, or	X	EXISITING (PREFIX)
		R	RATE OF SLOPE		

N=1499773.470 E=1507336.580+EXAMPLE 1234.56 EXISTING SPOT ELEVATION —90— EXISTING CONTOUR GRADE BREAK OR RIDGE 35.36fs NEW SPOT ELEVATION NEW FLOW LINE OR SWALE FLOW DIRECTION NEW RETAINING WALL CONCRETE, CROSS-SECTION

CONCRETE, PLAN VIEW

ASPHALT PAVING

NEW TOP OF CURB & RECEIVED BOTTOM OF CURB OR FIN. GRADEC 22 20

PLANTER AREA / LANDSCAPING SECTION COBBLES, FRACTURED ROCK, GRAVEL

SHEET EROSION MAT (BLANKET)

WAID, WARD CT.

INFORMATION

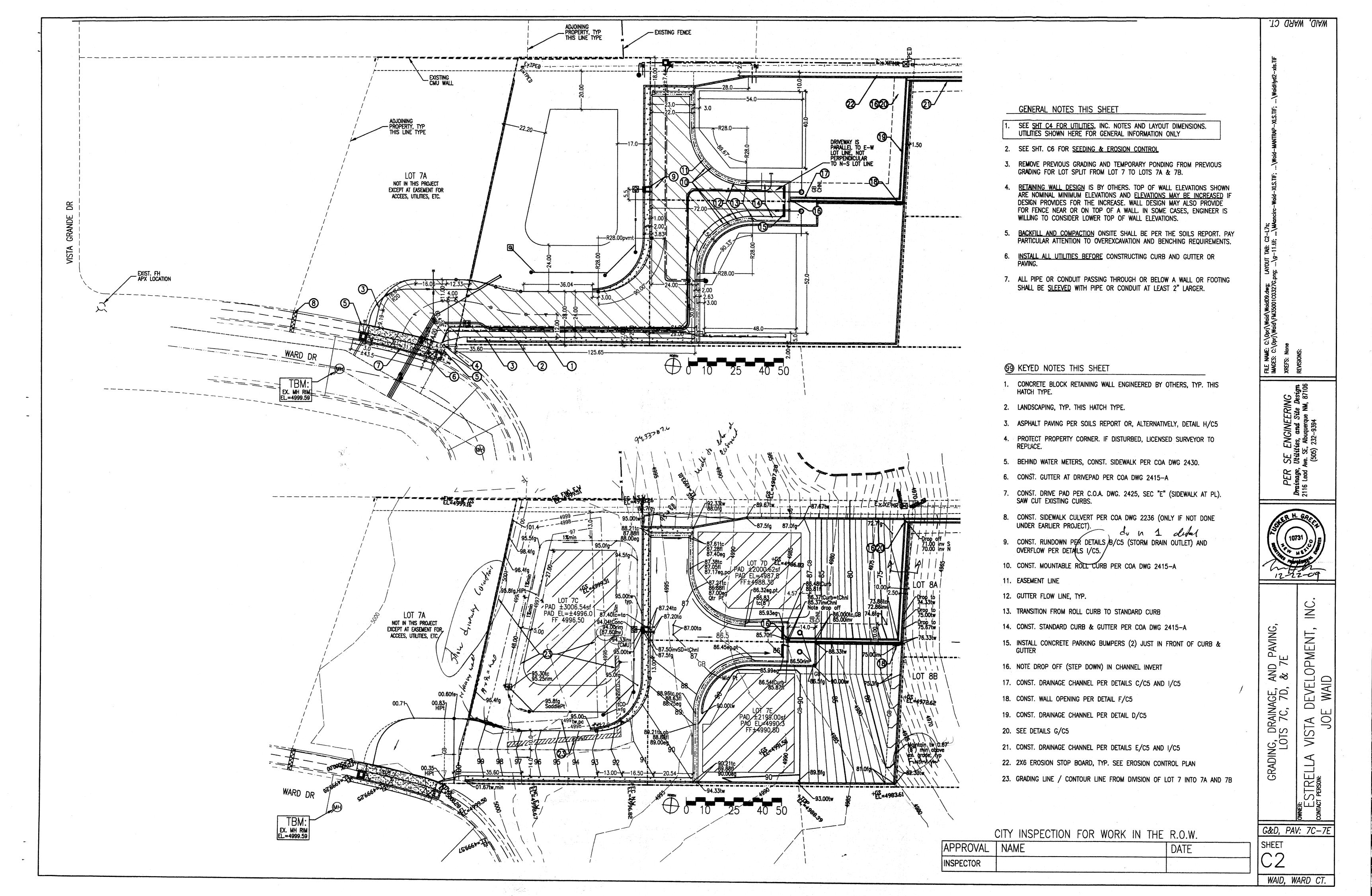
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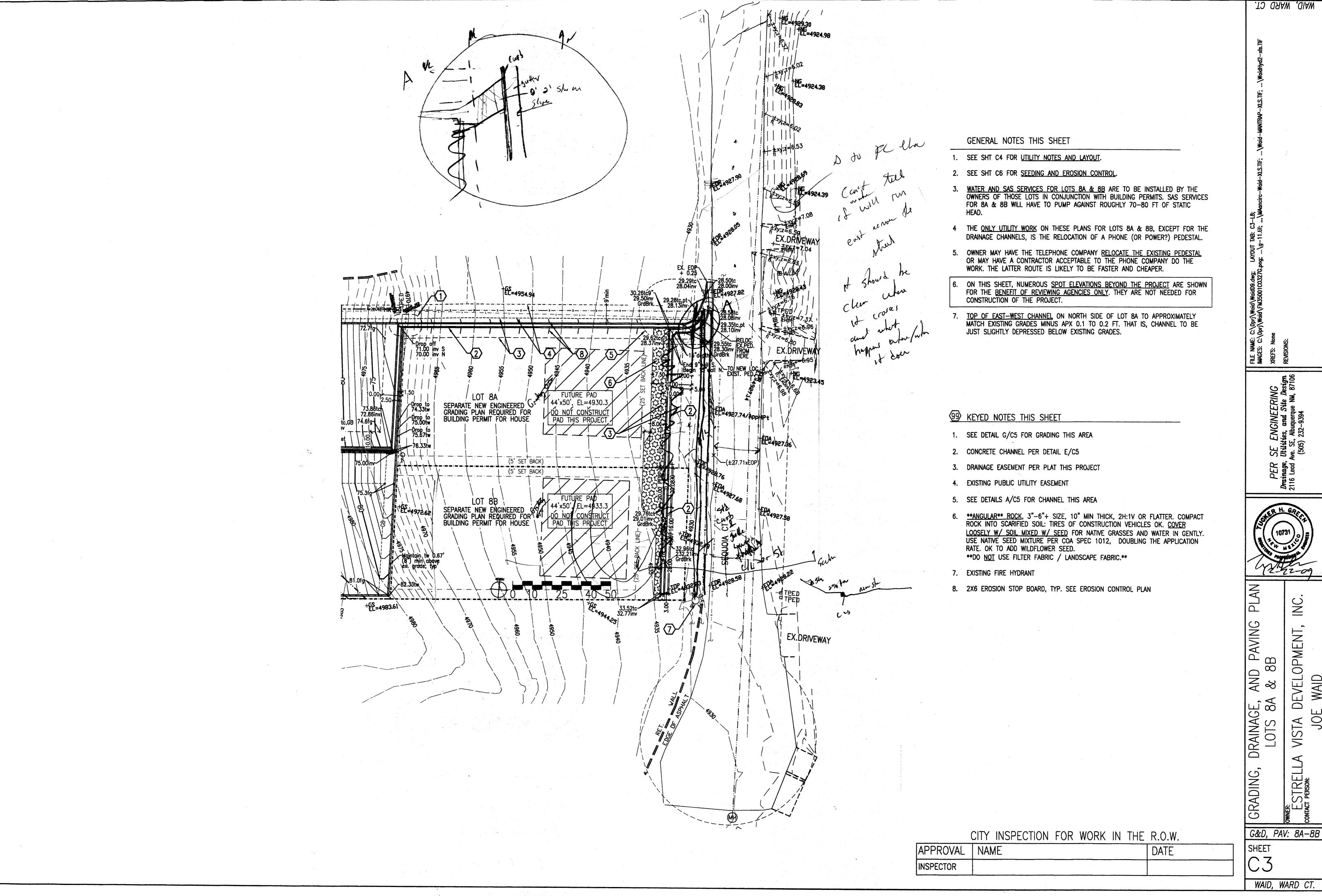
VISTA JOE

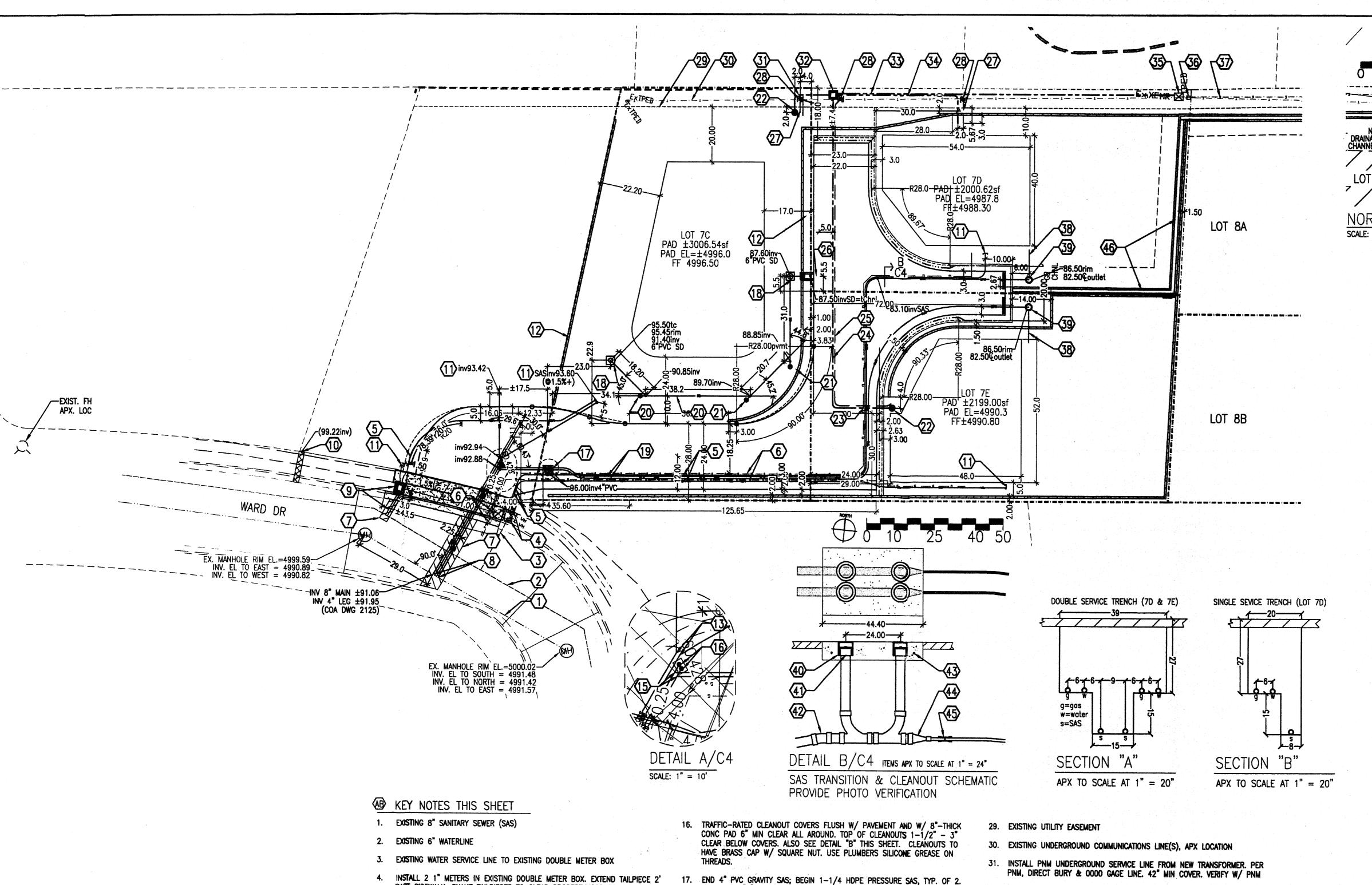
ESTRELL Pact Person:

GENERAL

WAID, WARD CT.



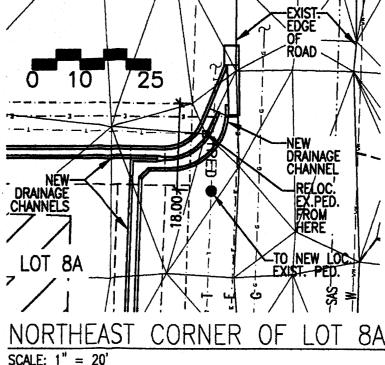




- PAST SIDEWALK. SNAKE TAILPIECES TO CLEAR PROPERTY CORNER. PROTECT PROPERTY CORNER: HAVE LICENSED SURVEYOR RESET CORNER IF CORNER DISTURBED. VERIFY CLEARANCE FOR BOTH METERS IN EXISTING BOX.
- 5. 1-1/4" AQUAPEX BRAND PEX (CROSS-LINKED POLYETHEYLENE) WATER LINE. CONNECT TO TAILPIECE FROM METER BY CODE-APPROVED METHODS. SEE GENERAL NOTES THIS SHEET.
- 6. NEW GAS SERVICES, CALL 811 FOR LINE SPOT EXISTING MAIN.
- 7. PAVEMENT CUT & REPLACE PER COA DWG 2465
- 8. FOUR (4) SANITARY SEWER TAPS (4" SCH 40 PVC) AT ANGLE SHOWN, PER
- 9. 2 WATER SERVICES. TAPS PER COA DWG 2362 USING 1" LINE FROM MAIN TO METER. METER BOX PER COA DWG 2366 W/ HEAVYWEIGHT METER BOX COVER AND LID PER COA DWG 2369. MODIFY SERVICE TO HAVE TAIL PIECE EXTEND 2' PAST BACK OF SIDEWALK. INSTALL 1" METER ON EACH SERVICE.
- 10. IF NOT ALREADY CONSTRUCTED, CONSTRUCT SIDEWALK CULVERT PER COA DWG 2236, 12" CLEAR CHANNEL WIDTH.
- 11. OK TO EXTEND PAST PIPE END SHOWN, TYP, PER GENERAL NOTES THIS
- 12. **RETAINING WALL, TYP THIS LINETYPE**
- 13. 30° ELL
- 14. 30° ELL
- 15. 45' WYE PLUS 15' ELL. (DEFLECTION APX 60.43" HORIZONTAL AND 11.6" VERTICAL FOR APX 60.8° TOTAL. TAKE ADDITIONAL DEFLECTION AT JOINTS. DO NOT EXCEED CODE TOLERANCES.

- SEE DETAIL "B" THIS SHEET. PROVIDE PHOTO VERIFICATION OF THIS WORK IN THIS AREA. CLEANOUT COVERS FLUSH W/ FINISHED PAVEMENT. SEE DETAIL B/C4 & KEYNOTES 40 THIS SHEET.
- 18. 12" NYLOPLAST INLINE DRAIN 2712AG06 W/ 6" SCH 40 PVC OUTLET AND CAST OR DUCTILE IRON DOMED (BEEHIVE) GRATE.
- 19. 1-1/4" HDPE DR 11 PRESSURE SAS LINE
- 20. 6" SCH 40 PVC STORM DRAIN
- 21. CLEANOUT. 4" SCH 40 PVC. USE GENECO STYLE 40 (GASKETED PVC, CAST IRON, & BRASS) W/ COUNTER-SUNK SQUARE NUT, SET IN CIRCULAR OR OCTAGONAL CONCRETE PAD, 18" ACROSS AND 6" THICK, SET FLUSH W/ FINISHED GRADE. USE PLUMBERS SILICONE GREASE ON CLEANOUT THREADS. USE LONG-SWEEP ELL FROM HORIZONTAL TO VERTICAL LEG.
- 22. INSTALL PEDESTAL FOR PNM (PUBLIC SERVICE COMPANY OF NM) ELECTRIC
- 23. ELECTRIC AND COMMUNICATIONS LINES GO BELOW WATER & SAS SERVICE LINES. COORDINATE W PNM, QWEST, AND OTHER AFFECTED UTILITIES.
- 24. INSTALL PNM SERVICE LINE FROM TRANSFORMER. PER PNM, USE 4" SCH 40 PVC ELECTRIC CONDUIT, 0000 GAGE LINE. VERIFY. 42" MIN COVER.
- 25. INSTALL COMMUNICATIONS LINES PER QWEST (TELEPHONE) AND OTHER
- AFFECTED PARTIES, 36" MIN COVER.
- 26. 14" WIDE CONCRETE CHANNEL PER DETAILS B/C5.
- 27. INSTALL COMMUNICATIONS SERVICE LINE STUB. COORDINATE W/ QWEST AND ANY OTHER AFFECTED UTILITY.
- 28. INSTALL COMMUNICATIONS PEDESTAL COORDINATE WITH APPROPRIATE AGENCIES, INCLUDING WHETHER THE PEDESTAL IS NEEDED.

- 32. INSTALL NEW PNM ELECTRIC TRANSFORMER. COORDINATE W/ PNM
- 33. INSTALL NEW UNDERGROUND POWER LINE FROM EXISTING TRANSFORMER TO NEW TRANSFORMER
- 34. INSTALL UNDERGROUND PNM SERVICE LINE FROM TRANSFORMER, PER PNM. USE 3" PVC ELECTRIC CONDUIT, 0000 GAGE LINE, NO PEDESTAL REQUIRED. 42" MIN COVER. VERIFY W/ PNM.
- 35. EXISTING PNM TRANSFORMER
- 36. EXISTING COMMUNICATIONS PEDESTAL
- 37. EXISTING PNM UNDERGROUND POWER LINE
- 38. 4" SCH 40 PVC STUB-OUT, 10' LONG. OK TO EXTEND. CAP, PROTECT, AND
- 39. SEWAGE WET WELL. SEE GENERAL NOTES THIS SHEET.
- 40. TRAFFIC-RATED CLEANOUT COVER. PER KEYNOTE 16 THIS SHEET. SPECIAL ORDER MAY BE NEEDED.
- 41. CODE APPROVER CLEANOUT. USE RAISED NUT.
- 42. 11-1/4° BEND
- 43. #4 REBAR HOOP.
- 44. 4" TO 1-1/4" PVC CONCENTRIC REDUCER
- 45. CODE-APPROVED COMPRESSION COUPLER FROM 1-1/4" NOM PVC TO 1-1/4" NOM HDPE.
- 46. CONCRETE DRAINAGE CHANNEL. SEE SHT C2, AND SHT C5 FOR DETAILS.

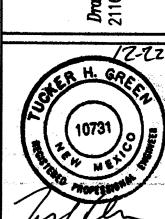


GENERAL NOTES THIS SHEET

- 1. IF AN APPLICABLE CODE CONFLICTS WITH ANY ITEM, DIMENSION, OR SPECIFICATION SHOWN OR SPECIFIED HEREIN, CONSULT THE ENGINEER IMMEDIATELY SO THAT ANY RAMIFICATIONS OR CONFLICTS CAN BE WORKED OUT.
- 2. <u>INSTALL UNDERGROUND UTILITIES BEFORE</u> CONSTRUCTING NEARBY PAVING, CHANNEL, CURB & GUTTER, OR WALLS.
- 3. IMMEDIATELY VERIFY THAT PEX (DR9) IS ACCEPTABLE PIPE MATERIAL FOR DOMESTIC WATER SERVICE LINES AND THAT HOPE DR11 (IPS) IS ACCEPTABLE PIPE MATERIAL FOR PRESSURE SEWER (PLUMBING CODE OR CITY REQUIREMENTS)
- IMMEDIATELY VERIFY THAT NO CLEANOUTS ARE NEEDED FOR HDPE PRESSURE SEWER (PLUMBING CODE OR CITY REQUIREMENTS).
- 5. THE INTENT IS TO AVOID HIGH POINTS IN THE PRESSURE SEWER LINES (I.E., ALL UPHILL TO THE TRANSITION TO GRAVITY SEWER. CONSTRUCTION IS TO ACCOMPLISH
- <u>VERIFICATION</u> / PHOTO <u>VERIFICATION</u>: NOTES ON THIS PLAN MAY CALL FOR VERIFICATION OF CERTAIN CONSTRUCTED ITEMS, ESPECIALLY ITEMS NOT VISIBLE AT THE END OF CONSTRUCTION. VERIFICATION MAY NEED CERTIFICATION BY A PROPERLY LICENSED SURVEYOR, OR PHOTOS, OR BOTH, DO IT.
- 7. LOTS 7D & 7E, AND LOTS 8A & 8B ALL NEED "FORCED" SEWAGE SYSTEMS WHICH HAVE A GRINDER PUMP AND A SMALL-DIAMETER PRESSURIZED OUTLET PIPE. DEPENDING ON THE DESIGN OF THE HOUSE FOR LOT 7C (ESPECIALLY DISTANCE TO FARTHEST PLUMBING DRAIN) IT MAY BECOME NECESSARY FOR LOT 7C TO HAVE A SEWAGE PUMP ALSO.
- 8. WATER AND SAS SERVICES FOR LOTS 8A & 8B WILL BE INSTALLED BY THE OWNERS OF THOSE LOTS IN CONJUNCTION WITH BUILDING PERMITS. SAS SERVICES FOR 8A & 8B WILL HAVE TO PUMP AGAINST ROUGHLY 70-80 FT OF STATIC HEAD.
- OWNERS / PROSPECTIVE OWNERS: AN OWNER OR PROSPECTIVE OWNER OF LOT 7C, 7D, OR 7E WHO KNOWS, PRIOR TO CONSTRUCTION, THAT A BASEMENT LEVEL WILL BE DESIRED SHOULD CONSULT WITH THE ENGINEER AND THE CONTRACTOR FOR AN ADJUSTMENT OF THE END LOCATION AND DEPTH OF THE FORCED SEWER SERVICE LINE. ANY OWNER OR PROSPECTIVE OWNER WHO KNOWS, PRIOR TO CONSTRUCTION, THAT IT IS INTENDED TO HAVE AFIRE SPRINKLER SYSTEM, SHOULD CONSULT WITH THE ENGINEER ABOUT A LARGER WATER SERVICE, BOTH THE METER AND THE SERVICE LINES.
- 10. SAS SERVICE LINES FOR LOTS 70 & 7E WERE SIZED BASED ON A PARTICULAR SEWAGE PUMP SYSTEM: HYDROMATIC HPG200 (2HP, 230V) WITH WET WELL (STORAGE TANK), WIRING, & CONTROL PANEL. OWNERS' PLUMBERS ARE RESPONSIBLE FOR ENSURING THAT ALL APPURTENANCES REQUIRED BY CODE BE PROVIDED. CONTACT TONY GRANGER AT TP PUMP IN ALBUQUERQUE FOR FINAL ORDERING AND PRICING INFORMATION (505-247-4036 OR 280-5575). OTHER SYSTEMS, EQUAL TO OR BETTER THAN THE ABOVE, COULD ALSO WORK.
- 11. WET-WELLS FOR FORCED SEWAGE SYSTEMS ARE TO BE INSTALLED FOR LOTS 7D & ZE UNDER THIS PROJECT: JUST THE WET WELLS, NOT THE APPURTENANCES AND CONTROLS. THE OUTLET AND RIM ELEVATIONS FOR THE WET WELLS (STORAGE TANKS) SHOULD BE SET TO MATCH ELEVATIONS GIVEN ON THE PLANS: THIS MAY REQUIRE SPECIAL ORDER. INSTALL WET WELLS BEFORE CONSTRUCTING NEARBY PAVING, CHANNEL, CURB & GUTTER, OR WALLS.
- 12. ALL PLASTIC WATER AND SEWER LINES SHOWN ON THESE PLANS, INCLUDING SERVICES LINES ONSITE, SHALL HAVE METALLIC LINE LOCATOR TAPE PER COA SPEC 121.4.2 EXCEPT THAT DEPTH TO TAPE SHALL BE 0 TO 6 INCHES ABOVE TOP OF PIPE WHERE PIPE BURY IS LESS THAN 3 FEET (E.G., WATER SERVICE LINE, SAS PRESSURE LINE). PLASTIC INCLUDES PVC, PEX, HDPE, ABS.
- 13. ALL SCHEDULE 40 PVC SHOWN SHALL BE SOLID WALL. DO NOT USE FOAM CORE (CELLAR CORE) PVC. PROVIDE PHOTO VERIFICATION.
- 14. ALL <u>SAS AND WATER SERVICE LINES SHOWN</u> ARE TO BE CONSTRUCTED WITH THIS PROJECT. CAP AND MONUMENT ENDS UNTIL HOUSE CONNECTIONS ARE MADE.
- 15. OK TO EXTEND WATER & SAS SERVICES BEYOND END POINTS SHOWN, IN ANTICIPATION OF FUTURE CONSTRUCTION, PROVIDED THAT ALL EXTENSIONS ARE CAPPED AND PROPERLY PROTECTED
- 16. EACH <u>PEX</u> WATER SERVICE LINE SHALL BE <u>ONE CONTINUOUS PIECE</u>, FROM CONNECTION TO TAIL—PIECE AT METER TO END. PEX PIPING SHALL BE UPONOR AQUAPEX (PEX-a, ENGEL METHOD), SIZED PER PLAN. [PER UPONOR WEB SITE NOMINAL 1-1/4" PIPE HAS OD=1.375"& ID=1.054"; NOMINAL 1" HAS OD=1.125", AND ID=0.862"
- 17. EACH HDPE SAS PRESSURE SERVICE LINE SHALL BE ONE CONTINUOUS PIECE.
- 18. MINIMUM BEND RADIUS = 24 OUTER DIAMETERS FOR PEX AND HDPE PIPE.
- 19. CAUTION: RETAINING WALL AND FOOTING DESIGNERS: PER PLUMBING CODE, NO PIPES ARE ALLOWED BELOW A LINE EXTENDING 45' DOWNWARD FROM THE BOTTOM CORNER OF A FOOTING. IT MAY BE NECESSARY TO ADJUST THE DEPTHS OF FOOTINGS TO ACCOMMODATE THIS REQUIREMENT.
- 20. ALL COMMUNICATION AND POWER CONNECTIONS AND CONSTRUCTION SHALL BE DONE ACCORDING TO APPROPRIATE CODES AND THE STANDARDS OF THE APPROPRIATE UTILITY. CONTACT AND COORDINATE WITH THE APPROPRIATE UTILITIES PRIOR TO THE START OF CONSTRUCTION. NOTE: BE SURE TO UPDATE RECORD DRAWINGS FOR THIS PROJECT TO REFLECT ANY CHANGES.
- 21. OWNER MAY HAVE THE TELEPHONE COMPANY RELOCATE THE EXISTING PEDESTAL OR MAY HAVE A CONTRACTOR ACCEPTABLE TO THE PHONE COMPANY DO THE WORK. THE LATTER ROUTE MAY BE FASTER AND CHEAPER.
- 22. AVOID HIGH POINTS IN WATER SERVICE LINES. "EXTRA DEPTH" MAY BE NEEDED NEAR WARD DRIVE IN ORDER TO ACCOMPLISH THIS. DO IT.

MAID, WARD CT.

SE

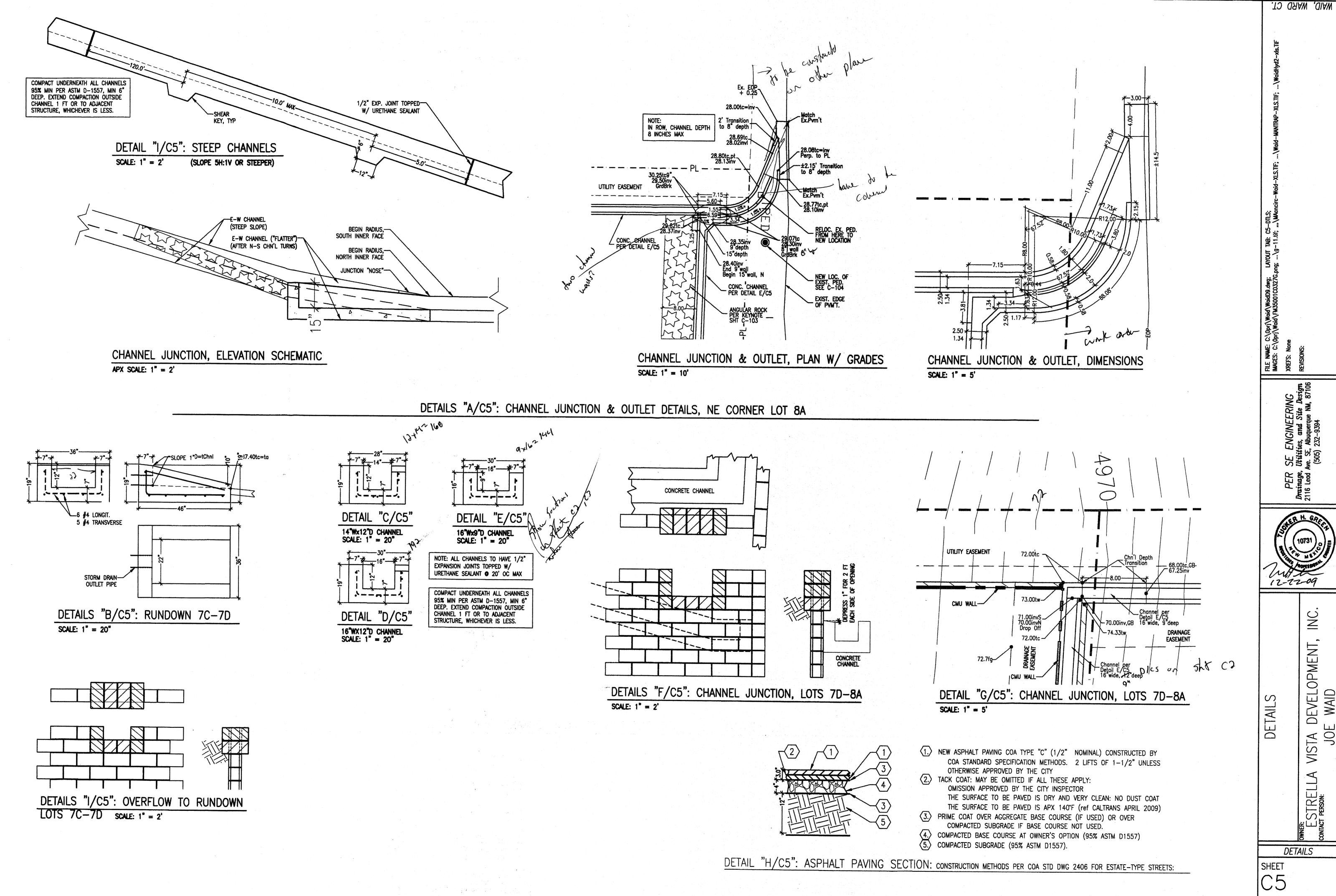


OPMENT, EVEL WAID JOE T S > STRELL

UTILITIES

SHEET

UTILITIE



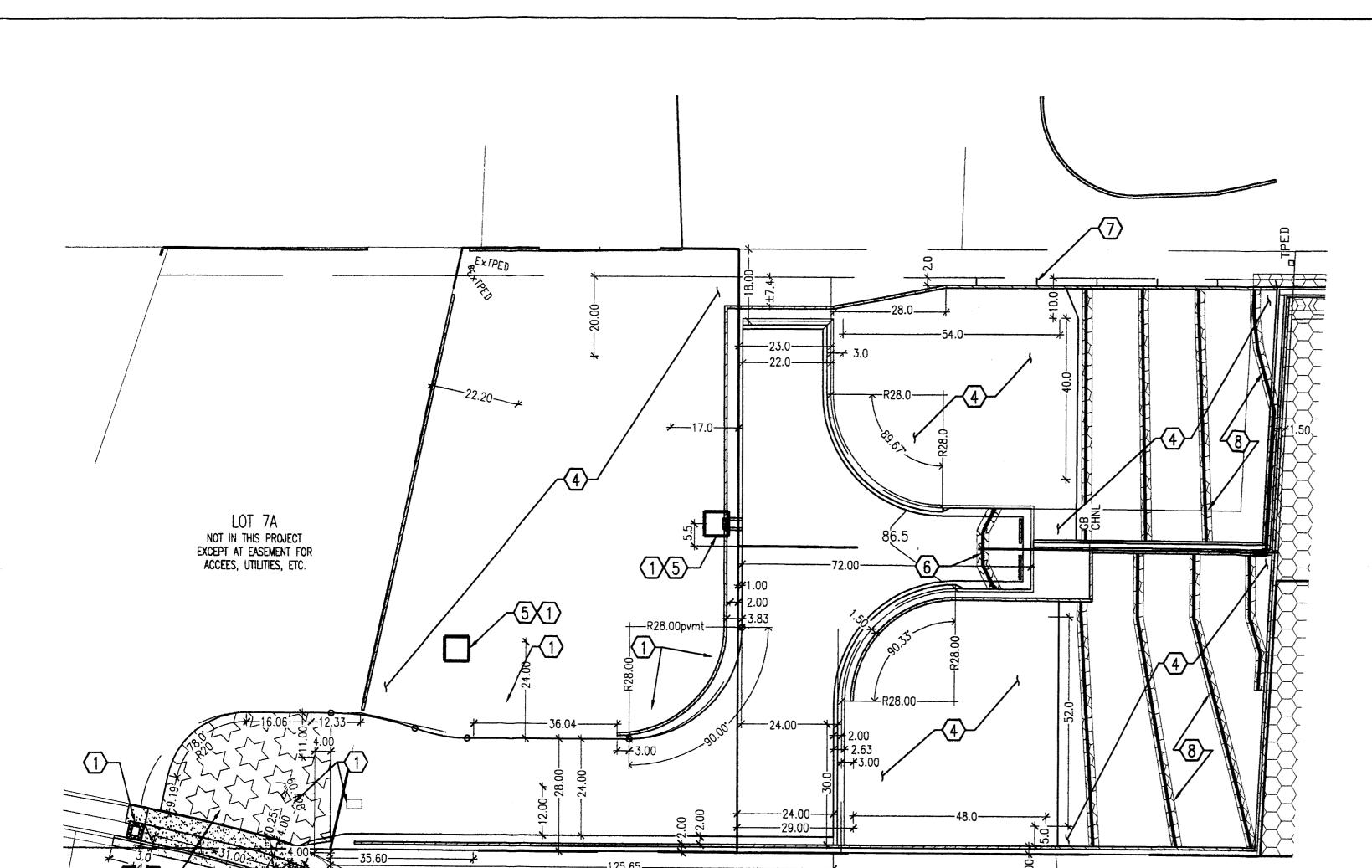
DETAILS

INC.

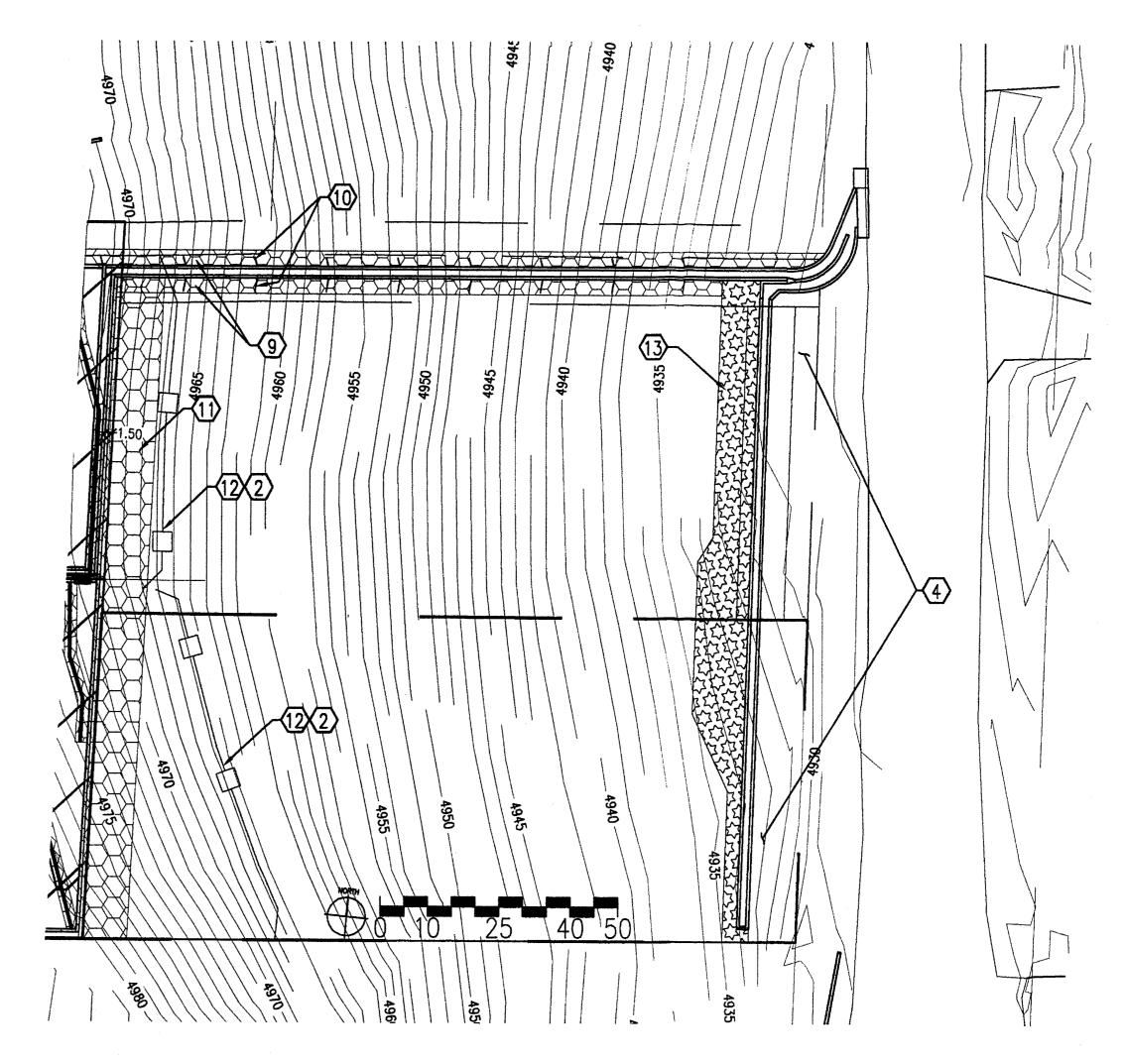
DEVELOPMENT, E WAID

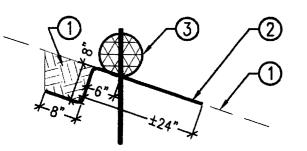
VISTA D

ESTRELLA PACT PERSON:



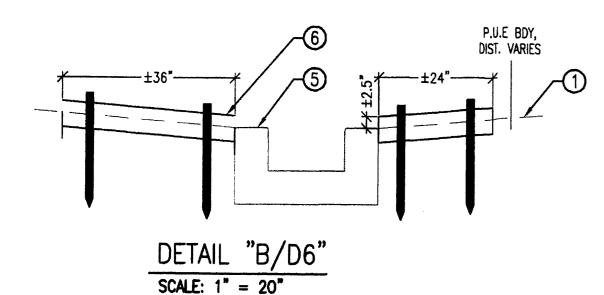
والماروع فالمناط ولماء فالمنافج الأكان ووولأ لاستمامه أعماله ويروي والمروو والمرووي





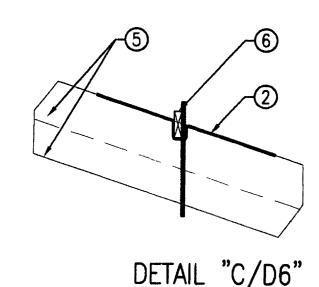
DETAIL "A/D6"

SCALE: 1" = 20"



# 99 KEYED NOTES, DETAILS THIS SHEET

- GROUND SURFACE
   40" WIDE MULCH MAT
- 3. 9" DIAMETER "ECO-LOG" WATTLE. STAKE PER MFGR W/ BIODEGRADABLE STAKES AND 24" MIN STAKE LENGTH
- 4. COMPACT 90%
  5. CONCRETE CHANNEL
- 5. CONCRETE CHANNEL6. EROSION STOP BOARD



SCALE: 1" = 20"

# (99) KEYED NOTES THIS SHEET

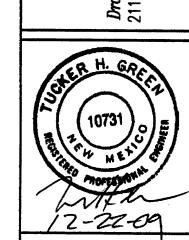
- 1. PROTECT FEATURE. SEE OTHER SHEETS AS NEEDED.
- 2. TEMPORARY
- "DIRT KNOCK-OFF APRON": 4"-8" ANGULAR ROCK, MIN. 12" DEEP.
   NATIVE GRASS SEEDING PER COA SPEC 1012 EXCEPT (1) OMIT 4-WING SALTBUSH AND (2) APPLY SEED AD TWICE THE STATED RATE (PLS/ACRE).
- 5. 9-IN DIAMETER "ECO-LOG" WATTLE AROUND INLET.
- 6. 9-IN DIAMETER "ECO-LOG" WATTLE W/ EITHER (1) 40-INCH
  "GUARDIAN MULCH MAT" BY NORTH AMERICAN GREEN, PRIOR TO
  PAVING OR (2) ANGULAR ROCK OR COBBLE PILE FRONT AND REAR
  TO HOLD ECO-LOG IN PLACE, AFTER PAVING. TO REMAIN TO
  PROTECT CHANNEL INLET UNTIL UPPER PARTS OF 7D & 7E ARE
  BUILT OUT.
- 7. 2x6 EROSION STOP BOARDS, EITHER PRESSURE—TREATED LUMBER OR SYNTHETIC DECKING MATERIAL, 2—FT LONG, 15—FT ON CENTERS WHERE SHOWN. TOP OF STOP APX 2—1/2" ABOVE GRADE. INSTALL W/ 2 1x2 STAKES 12" LONG, MIN. KEEP STAKES OUT OF UTILITY EASEMENT. SEE DETAIL "B" THIS SHEET.
- 8. 9-IN DIAMETER "ECO-LOG" WATTLE W/ 40-INCH "GUARDIAN MULCH MAT" BY NORTH AMERICAN GREEN PER DETAIL "A" THIS SHEET.
- 9. 40-INCH MULCH MAT PER NORTH AMERICAN GREEN, INSTALL IN CONJUNCTION W/ EROSION STOP BOARDS. SEE DETAIL "C" THIS SHEET. ON NORTH SIDE OF CHANNEL, MAT WILL BE WIDER THAN NEEDED: OK FOR MAT (NOT STAKES) TO EXTEND ONTO PUE EASEMENT; ALSO OK FOR CONTRACTOR TO FOLD OVER (PARTIAL DOUBLE LAYER).
- 10. 2x6 EROSION STOPS AT 15' ON CENTER, SIMILAR TO THOSE DESCRIBED BY KEY NOTE 7 ABOVE. ANGLE SLIGHTLY TO DIRECT WATER TOWARD CHANNEL. 2' LONG NORTH, 3' LONG SOUTH. INSTALL THROUGH MULCH MAT. SEE DETAILS "B" & "C" THIS SHEET.
- 11. BIO-NET SC150BN EROSION MAT BY NORTH AMERICAN GREEN. BEGIN AT RETAINING WALL. PROVIDE 10' MIN COVERAGE. INSTALL AND OVERLAP PER MANUFACTURER'S INSTRUCTIONS.
- 12. TEMPORARY SILT FENCE. REMOVE AFTER ADJACENT RETAINING WALL AND EROSION MAT ARE IN PLACE. PLACE ALONG LEVEL CONTOURS W/ "HOOKS AT EACH END. SET ENDS OF HOOKS SO MAIN PART OF FENCE IS 16-18" LOWER. \*\*SILT FENCE TO BE EMBEDDED A MINIMUM OF 6"\*\*
- 13. ANGULAR ROCK ON UPHILL SIDE OF CHANNEL AS PART OF CHANNEL CONSTRUCTION. SEE SHT C3.

## GENERAL NOTES THIS SHEET

- 1. UNLESS NOTED AS "TEMPORARY", EROSION AND SEDIMENT CONTROL FEATURES ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED.
- FOR THE "DIRT KNOCK OFF APRON" THIS MEANS UNTIL THE END OF DIRT WORK OR PAVING OF THE DRIVEWAY, WHICHEVER COMES FIRST.
- FOR SLOPE PROTECTION ITEMS IT MEANS UNTIL VEGETATION IS ESTABLISHED, OR UNTIL SUBSEQUENT WORK SUPERSEDES (PERHAPS IN CONJUNCTION WITH A BUILDING PERMIT FOR A RESIDENCE), OR UNTIL THE FEATURE DEGRADES IN PLACE NATURALLY.
- 2. FOR ANY ITEM SPECIFIED, THE ENGINEER IS WILLING TO CONSIDER AN "OR EQUAL". HOWEVER, DO NOT SUBSTITUTE WITHOUT SUBMITTING A WRITTEN REQUEST W/ VERIFYING INFORMATION AND RECEIVING WRITTEN APPROVAL FROM THE ENGINEER.
- NON-ROCK <u>EROSION CONTROL PRODUCTS</u> ON THIS SHEET ARE AVAILABLE FROM <u>TITAN CONSTRUCTION PRODUCTS</u>, PLACITAS, NM. CONTACT KELLY FETTER AT 505.771-3399.
- 4. ECO-LOG IS A BARK-BASED WATTLE-TYPE PRODUCT AVAILABLE FROM TITAN CONSTRUCTION PRODUCTS, 505.771-3399. STAKE PER MFGR'S INSTRUCTIONS EXCEPT STAKE LENGTH TO BE 24" MIN. (LONGER IF CALLED FOR BY MFGR.)
- BIO-NET EROSION MAT AND GUARDIAN MULCH MATS ARE TO BE INSTALLED W/ 6" BIO-STAKES, WHICH ARE MADE OF A BIODEGRADABLE PLASTIC.
- 6. CONTRACTOR IS TO MAINTAIN ALL EROSION CONTROL IN GOOD WORKING ORDER.
- 7. CONTRACTOR IS TO IMMEDIATELY CLEAN UP ANY ERODED DIRT THAT DOES LEAVE THE SITE.

oid\WaidD9.dwg; LAYOUT TAB: C6—EROS;
FM35001C0327G.png; ...\g—11.tif; ,,,\MAancirc—Waid—XLS.TIF; ...\Waid—MANTRAP—XLS.TIF; ...\WaidHyd2—xls.T

PER SE ENGINEERING
Prainage, Utilities, and Site Design
116 Lead Ave. SE, Albuquerque NM, 87106
(505) 232-9394



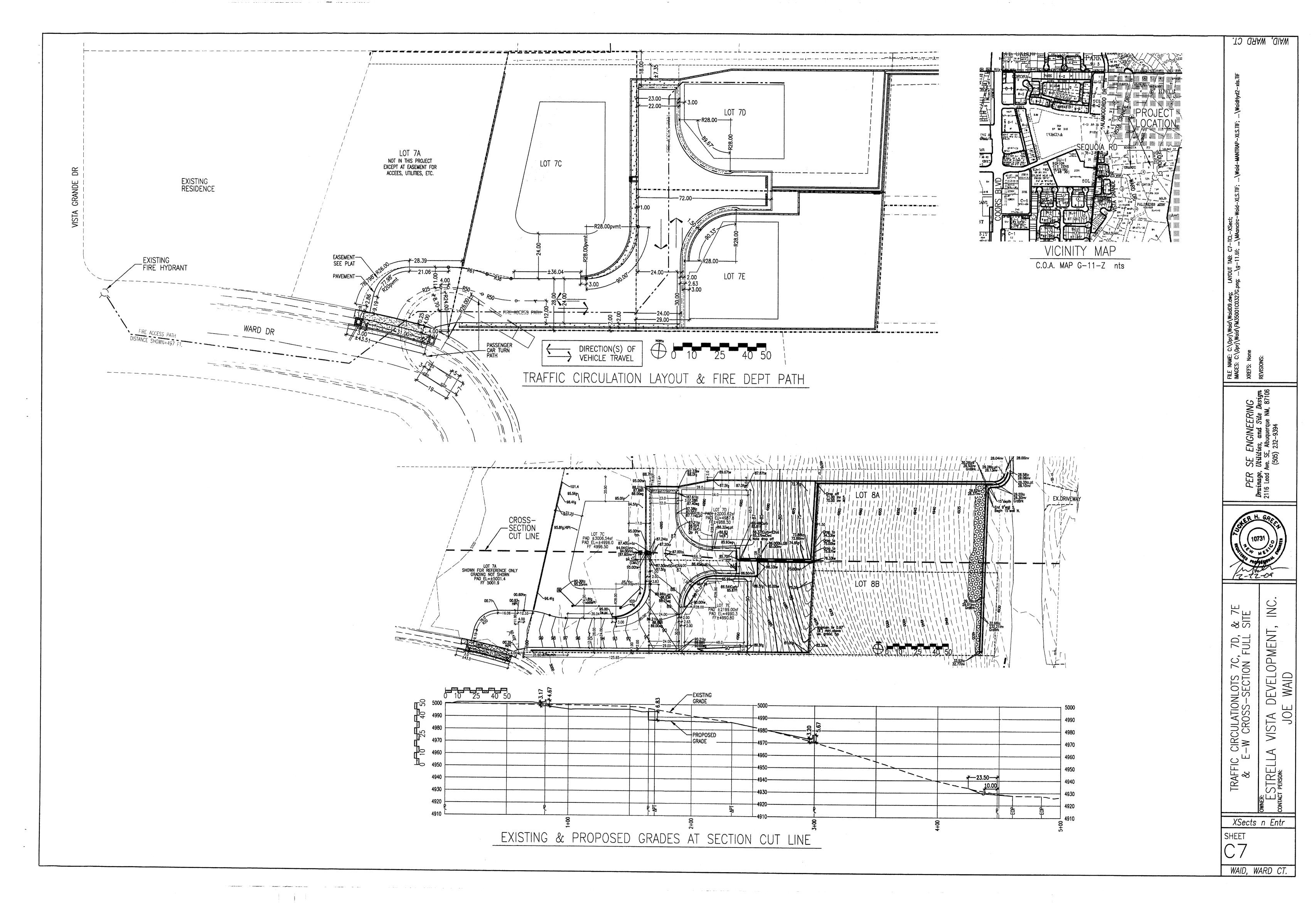
EROSION CONTROL PLAN

ESTRELLA VISTA DEVELOPMENT, INC.

JOE WAID

EROSION CONTROL
SHEET

C6



OSION CONTRO CONTACT PERSON

EROSION CONTROL
SHEET
C8,Rept

WAID, WARD CT.

SEQUOIA RD

SEQUOIA RD

SEQUOIA RD

SEQUOIA RD

SEQUOIA RD

PROJECT LOCATION

PREPLANIES TO COMPANY

PROPERTY TO COMPANY

PROPERTY

المالية والمراب للمراب وللموار وحمالا والمالا فالمناف والمالا والمالا والمالا والمالا

VICINITY MAP & FLOOD ZO FEMA PANEL: 35001C0327G (2008) nts

PORONA/S
PARK R-2 R DET ROSE SOLUTION REPORT RATE ROSE SOLUTION REPORT R

C.O.A. MAP G-11-Z nts

EX. PUE QUOIA GROSS:11,151sf (0.2334 ACRES) (0.2560 ACRES) >20%, typ LOT 7A GROSS:11,509sf LOT 7C GROSS:12,831sf ليا (0.2642 ACRES) (0.2900 ACRES) S (DRAINED TO SEQUOIA CT PRE-DEVELOPMENT) GROSS:10,043sf (0.2306 ACRES) (0.2561 ACRES) EX. OFSITE (steep)Trtmt A -> Trtmt C HISTORIC CONDITIONS 1" = 40' ALL LOTS DRAIN EAST, INC. 7A

DISCUSSION FOR HYDROLOGY / DRAINAGE CALCULATIONS:
1. Free discharge
2. COA DPM (Development Process Manual) methods for small watersheds
3. Developed Treatment %'s are estimated separately for each lot
4. Developed condition %'s for Treatment C are likely to be lower than estimated here because houses are likely to be built into the steep slopes. (Analysis here is conservative.)
5. Lots 8A and 8B remain undeveloped for the present, except for channel

construction. No building pads graded but calculations agume their presence.

6. Areas are per AutoCad polylines, rounded. Z EX. PUE EX. PUE DRAINAGE ESMT LOT 7D LOT 8A QUOIA PAD 32487 GROSS:10,169sf GROSS:11,151sf TRTMT %'s (0.2334 ACRES) (0.2560 ACRES) TRTMT %'s LOT 7A NOT IN THIS PROJECT (BUT NOW DRAINS LOT 7C GROSS:12,831sf >20%, typ B = 10SE (0.2900 ACRES) TO WARD DR DRAINAGE ESMT TRTMT %'s B = 25 C = 20TRTMT %'s GROSS:10,043sf GROSS:11,156sf A = 0(0.2306 ACRES) (0.2561 ACRES) B = 15>20%, typ WARD DR 

DEVELOPED CONDITIONS 1" = 40'

ALL LOTS EXCEPT 7A DRAIN EAST

[7A DRAINS TO WARD DR. BY PREVIOUS PROJECT]

11/13/2009 04:35:39 PM WAIDHYD-3.123

PROJECT: Waid, Ward Dr to Sequoia Ct: (Lots 7B->7B,7C,&dD) + (Lot 8->8A,8B)

ALBUQUERQUE, NM (1/93) CRITERIA - D.P.M. SIMPLE PROCEDURE FOR <= 40 ACRES (ASSUMES TG=0.2hr = 12min)

BASIC TREATMENT CLASSES: A=UNDISTURBED, B=LAWNS, C=LINPAVED ROADS or STEEP B, D=ROOPS,PAVEMENT: SEE DPM 22.2 P A-6

PX100-6 = PRECIPITATION EXCESS FROM 100-YEAR 8-HOUR STORM; PX10-6 = SAME FOR 10-YEAR STORM

VOL10D = VOLUME OF RUMOFF FROM 10-DAY STORM; APPROXIMATE "8-HR" HYDRIGRAPH PER DPM 22.2 SECTION A.8

PRE-DE Storm,yr	100	Zone	1	L	Op6,cfs	3.35		VOL1D.d	4,149	וֹ וֹ	SF.total	66,859
Se gen		TRIMT	AREA	AREA	PX100-6	QP100-6	QP100-6	VOL6HR	VOLID	VOL4D	VOL10D	TRIMI
Rain,	inches	CLASS	SQFT	ACRES	INCHES	CFS/AC	CFS	CU FT	CUFT	CUFT	CUFT	PERCENT
0.2 hr	0.94	A	22,725.0	0.5217	0.44	1.29	0.673	833	833	833	833	33.99
1 hr	1.87	В	12,190.0	0.2798	0.67	2.03	0.568	681	681	681	681	18.23
6 hr	2.20	C	31,944.0	0.7333	0.99	2.87	2,105	2,635	2,635	2.635	2,635	47.78
1 day	2.66	D	0.0	0.0000	1.97	4.37	0.000	0	2,000	0	0,555	0.00
4 day	3.12	TOTAL	66,859.0	1.5349	0.745	2.180		4,149	4,149	4,149	4,149	100.00
10 day	3.67		SQ MI>	0.0023962	^Average	per acre ^	AC-FT>	0.0953	0.0953	0.0953		<ac-ft< td=""></ac-ft<>
px. hydgro	graph	Tconc	0.20	T Base		TPeak		eak asts		Hydrograph		

Stormyr	100	Zone	1	L	Op6,cls	4.48		VOL1D,cf	7,757	) (	SF,lotal	2805.0
		TRIMI	AREA	AREA	PX100-6	QP100-6	QP100-6	VOL6HR	VOL1D	VOL4D	VOL10D	TRIMI
Rain.	inches	CLASS	SQ FT	ACRES	INCHES	CFS/AC	CFS	CUFT	CUFT	CUFT	CUFT	PERCENT
0.2 hr	0.94	A	0.0	0,0000	0.44	1.29	0.000	0	0	0	0	0.00
1 hr	1.87	В	9,077.2	0.2084	0.67	2.03	0.423	507	507	507	507	16.25
6 hr	2.20	C	18,514.1	0.4250	0.99	2.87	1.220	1,527	1,527	1,527	1.527	33.15
1 day	2.66	D	28,260.9	0.6488	1.97	4.37	2.835	4,639	5,723	6.806	8,101	50.60
4 day	3.12	TOTAL	55,852.2	1.2822	1.434	3.492			7.757	8,840	10,136	
10 day	3.67		SQ MI>	0.0020034	^Average	per acre ^		0.1532	0.1781	0.2029	0 2327	
px. hydgro	ograph	Toone	0.20	TBase		TPeak		Peak Lasts		Hydrograpi	7,575	-77-0-1

Storm, yr	100	Zone	1	7D,7E, 8/	Qp6,cfs	4.45		VOL1D,d		) [	SF.total	55,350
		TRIMI	AREA	AREA	PX100-6	QP100-6	QP100-6	VOL6HR	VOLID	VOL4D	VOL10D	TRIM
Rain,	inches	CLASS	SQFT	ACRES	INCHES	CFS/AC	CFS	CU FT	<b>CUFT</b>	CUFT	CUFT	PERCEN
0.2 hr	0.94	A	0.0	0.0000	0.44	1.29	0.000	0	0	0	0	0.0
1 hr	1.87	В	8,575.0	0.1969	0.67	2.03	0.400	479	479	479	479	15.4
6 hr	2.20	C	18,514.1	0.4250	0.99	2.87	1.220	1,527	1.527	1,527	1.527	33.4
1 day	2.66	D	28,260.9	0,6488	of 1.97	4.37	2.835	4,639	5,723	6,806	8,101	51.0
4 day	3.12	TOTAL	55,350.0	1.2707	1.441	3,506	4.455	6,646	7,729	8,812	10,108	100.0
10 day	3,67		SQ MI>	0.0019854	^ Average	per acre ^	AC-FT>	0.1526	0.1774	0.2023		<ac-ft< td=""></ac-ft<>

	DIUIV	Oute	CHAINTE	<u>(</u> +/-24U	usr) apx r	nakes up	for omitt	ing offsiti	e flow.			
Storm,yr	100	Zone	1		Op6,cfs	1.77		VOL1D,cf	3,023	1	SF,total	22,307
		TRIMI	AREA	AREA	PX100-6	QP100-6	QP100-6	VOL6HR	VOLTO	VOL4D	VOLTOD	TRIM
Rain,	inches	CLASS	SQFT	ACRES	INCHES	CFS/AC	CFS	CUFT	CUFT	CUFT	CUFT	PERCEN
0.2 hr	0.94	A	0.0	0.0000	0.44	1.29	0.000	0	0	0	0	0.0
i ni	1.87	В	3,346.1	0.0768	0.67	2.03	0.156	187	187	187	187	15.0
6 m	2.20	C	8,365.3	0.1920	0.99	2.87	0.551	690	690	690	690	37.5
1 day	2.66	D	10,595.7	0.2432	1.97	4.37	1.063	1.739	2,146	2,552	3.037	47.5
4 029	3.12	TOTAL	22,307.0	0.5121	1.407	3,456	1,770	2,616	3,023	3,429	3,914	100.0
10 day	3.67		SOMIS	0.0008002	^ Average	per acre ^	AC-FT>	0.0601	0.0694	0.0787	0.0899	

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Waid-MANTRAP.XLS

Waid

Manning's equation for normal flow in trapezoidal channels
b=bottom width (=0 for triangles), m=sideslope H:V (=0 for rectangles)
P=wetted perimeter; R=A/P; Q=flow(cfs); Ev=velocity energy; Fr=Froude no.
Es=specific energy=y+v^2/2g; Ms=specific momentum=Q^2/gA+A\*ybar
(For Ms, see e.g. F.M.Henderson, Open Channel Flow, 1966, Eqns 3-8 & 3-9)
Tau = (bed) shear stress (psf) = (gamma water=62.4pcf)\*Slope\* (Hydraulic Radius R)

Use n=0.013 for concrete bottom and side
Use n=0,030 for cobble bottom and concrete/CMU sides
Case 2 shows 16"-wide chan could convey total flow @ 2% stope

			C 2,0 616p.
	Case 1	Case 1	Case 2
n	0.01300	0.01300	0.01300
S	0.00700	0.00700	0.02000
M1	0.00	0.00	0.00
M2	0.00	0.00	0.00
В	1.33	1.33	1.33
Y	0.370	0.400	0.490
T	1.33	1.33	1.33
Α	0.49	0.53	0.65
P	2.07	2.13	2.31
R	0.24	0.25	0.28
Q	1.81	2.02	4.53
V	3.67	3.79	6.95
Ev	0.21	0.22	0.75
Es	0.58	0.62	1,24
Fr (Y)	1.06	1.06	1.75
Fr (A/T)	1.06	1.06	1.75
Ms	0.30	0.34	1,14
Tau, psf	0.16	0.17	0.61
K,ent (culvert)	0.50	0.50	0.50
Es + 0.5Ev	0.68	0.74	1.62

Project and Drainage Discussion for:
Lots 7C, 7D, & 7E, and Lots 8A & 8B,
Block A, Grande Heights Subdivision, Albuquerque, NM (COA MAP G-11)

<u>Project Address / Location:</u> Between Sequoia Ct. and Ward Dr. NW (east of Coors & Sequoia Rd); Lot 8 is 3511 Sequoia Ct. NW

<u>Legal Description:</u> Lots 7C, 7D, 7E, 8A & 8B, Block A, Grande Heights Subdivision, Albuquerque, Bernalillo County, NM (Formerly Lot 7B and Lot 8.)

Flood\_Zone: None, per FEMA panel 35001-c037g, September 2008

Project Description:

Lot 7B will be split into 3 residential lots accessed from Ward Dr. Lot 7C, the upper, westerly, lot will contain about 0.29 acre and Lots 7D and 7E will each contain slightly over 0.23 acre. Lots 8A and 8B will each contain a little over 0.25 acre and will be accessed from Sequoia Ct, which is on the order of 80 feet lower than Ward Dr. Roughly half of 7C and 7D will be developed fairly level for house pads while the other half will slope at almost 3H:1V down to retaining walls at the property lines with Lots 8A and 8B. Lot 8 will be split into 8A and 8B but will not be developed at this time EXCEPT FOR small drainage channels. One channel will carry runoff from Lots 7C, 7D, 7E along the north side of 8A. A second channel will collect runoff from 8A and 8B and join the other channel. The combined channel will discharge onto Ward Ct. at the northeast corner of Lot 8A. The idea is to turn the flow while maintaining its velocity, to help runoff pass existing driveways in Sequoia Ct. Runoff will then flow north in Sequoia Ct and east down Sequoia Dr. to an existing dentated sill control structure. Constructing the outlet channel will require relocating a utility pedestal.

Site Existing Conditions / History:

Grande Heights Subdivision was created in approximately 1960. In August 2007 the owners made a Sketch Plat submittal to the City and received comments. Since then there have been several discussions with City of Albuquerque staff (particularly Brad Bingham of Hydrology) about how to develop both Lots 7 and Lot 8 into an eventual total of 6 residential lots. Lot 7 was recently split into 7A and 7B, with 7A being available for sale as a residential lot and 7B being used to retain drainage until it could be developed into 3 lots (7C, 7D, 7E) by the present project. Lot 7A was graded so as to drain to Ward Drive although under pre-development conditions it drained down to Sequoia Ct.

The lower halves of 7D and 7E are steep. Lots 8A and 8B lie downhill from Lot 7, front on Sequoia Ct. (the 1st street west of the Rio Grande) and are steep and undeveloped. The land south of the project site is undeveloped. There is existing residential development directly west of the site, northwest of the site, and on 2 of the lots directly north of the site. The views, across the river and toward the mountains, are magnificent.

<u>Grading and Drainage</u>:

Appropriate easements and channels are provided. There will be free discharge of all 5 lots onto Sequoia Ct. Runoff will be directed northward from the northeast corner of Lot 8A without killing its velocity. This will get the runoff heading north in Sequoia Ct., in contrast to east across Sequoia Ct, which is the current condition. Hydrology calculations are per COA DPM (City of Albuquerque Development Process Manual) Chapter 22 methods for small watersheds. No credit is claimed for water harvesting or onsite ponding. The project will have no adverse drainage effect on neighboring or downstream properties.

The north—heading channel along the east side of Lots 8A and 8B directs runoff to the combined outlet at the northeast corner of 8A and then north in Sequoia Ct. The Owner of 8B may find some way other way than the channel on 8B to get runoff to the channel on 8A BUT developed runoof from (almost all of) 8B is to be directed to 8A and then north past the site. On Lot 8A the channel is is a new easement. If the owner of 8A found some other way to convey water from the current location at 8B and get it properly to the combined outlet, that would be appropriate in terms of the present design BUT 8A must accept the runoff from 8B.

DEVELOPMENT OF LOTS 8A AND 8B WILL REQUIRE INDIVIDUAL ENGINEERED DRAINAGE PLANS.

END OF REPORT TEXT

9/15/2009

C:\Oprj\Waid\MANCIRC-Waid.XLS

Manning's equation for flow in circular pipes
flowing just full or less, with sediment (crud) depth allowed  $Q = (1.49/n)^*A^*R(2/3)^*S \cap (1/2)$ Units are feet, seconds, radians; slope is ft/ft n = Manning's roughness; A = flow area; S = slope = bed slope for normal flow R = hydraulic radius = A/P where P = wetted perimeter = Pw; & Q = flow in cfsTheta = radian angle from a downward vertical to the water or crud level \*\* Original formulas in hidden column AA (approximate location) \*\*

Storm drain from Lot 7C to 7D: apx 60% of apx 1.3 cfs (peak) = 0.78 cfs req'd Use nomial diameters; actual diameters slightly larger Friction slope = pipe slope for pipes less than full Manning'a n for PVC may be lower (smoother) than 0.012

•	PVC	1
n	0.012	: 1.5
Friction Slope ft/ft	0.04000	cales hu
Diameter ft	0.5	
Depth of water,ft	0.300	$\mathcal{L}$ $\mathcal{W}$
Depth of crud	0	1 P
Theta water, radians	1.772	1 k James
Theta crud	0.00	Ç.
Area,sf	0.12	
Pwet,ft	0.89	( h
R hyd	0.14	(d) Univ
Velocity fps	6.64	_ γν
Q cfs	0.82	-
	#	10°-7 y
Hv=v ^ 2/2g	0.69	Charles Charles
Specific Energy	0.99	O, · · ·
Froude No.	2.14	
**		

Lots 7A & 7B, Block A, Grande Heights Subdivision, Albuquerque, NM (COA MAP G-11)

Project Address / Location: 3420 Ward Dr, between Sequoia Ct. and Ward Dr. NW (east of Coors & Sequoia Rd)

Legal Description: Lots 7A and 7B, Block A, Grande Heights Subdivision, Albuquerque, Bernalillo County, NM

Flood Zone: None, per FEMA panel 35001-c037g, September 2008

#### **Project Description:**

The owners propose to replat Lot 7 into 2 lots. The upper, westerly, lot will contain about 1/4 acre and will be developed as a residential lot. The remaining area, roughly 3/4 acre, is not proposed to be developed at this time except as needed to (1) develop the upper lot (borrow dirt to raise the upper lot); (2) prevent sediment and erosion problems; and (3) provide utility stubs to accommodate a future division of the remainder. In the near future, but not now, the owners will develop the rest of Lot 7 and Lot 8, which they also own

## **Site Existing Conditions / History:**

The project site, accessed from a bend in Ward Ct, is currently undeveloped, contains slightly over 1 acre, and has 2 distinctly different parts roughly equal in size: a fairly level upper half and a steep lower half. Lot 8 lies downhill from Lot 7 and fronts on Sequoia Ct., which is the 1st street west of the Rio Grande. Lot 8, containing slightly over 0.5 acres, is also steep, is also currently undeveloped. The land south of the site is undeveloped. There is existing residential development directly west of the site, northwest of the site, and on 2 of the lots directly north of the site. The views, across the river and toward the mountains, are magnificent.

#### **Project Histor**

Grande Heights Subdivision was created in approximately 1960. In August 2007 the owners made a Sketch Plat submittal to the City and received comments. Since then there have been several discussions with City of Albuquerque staff (particularly Brad Bingham of Hydrology) about how to develop both Lots 7 and Lot 8 into an eventual total of 6 residential lots. This submittal draws on those discussions.

### Grading and Drainage:

The new residential lot will be raised and graded to drain to Ward Dr. with free discharge. Immediately east of this new lot is an area roughly equal in size with slopes under 3% and bounded downhill by a low chainlink fence. Borrow to raise the upper lot will be taken from this area. The borrow area will be left low to trap any sediment arising from construction operations, but hydrology design will not count on storage there. The east side of the borrow area will be graded to as to avoid concentrated flow. East of the fence the site steepens.

Hydrology calculations are per COA DPM (City of Albuquerque Development Process Manual) Chapter 22 methods for small watersheds. No credit is claimed for water harvesting or onsite ponding. The project will have no adverse drainage effect on neighboring or downstream properties.

#### END OF REPORT TEXT

See full report for calculations and maps.

# NOTICE TO CONTRACTORS:

- 1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
- 2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HERON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
- 3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 260–1990, FOR LOCATION OF EXISTING UTILITIES. (NM ONE CALL = "811")
- 4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- 5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
- 6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
- 7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVAL	NAME	DATE
INSPECTOR		

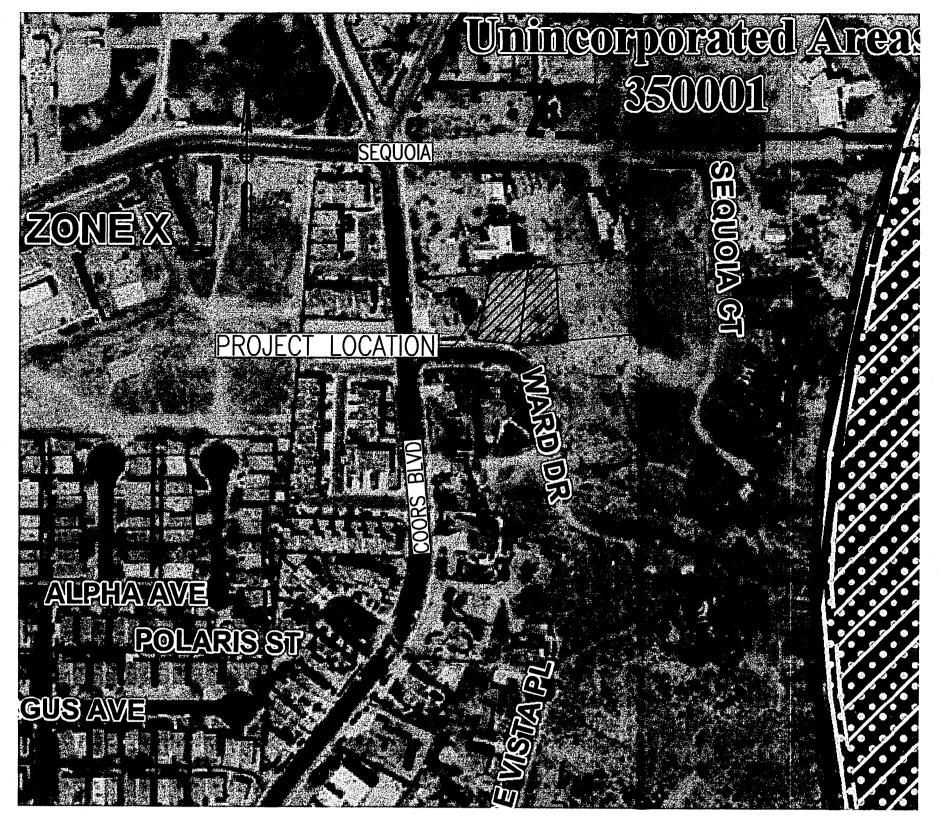
BOUNDARY SURVEY BY: Absolute Surveying & Mapping, Inc. TOPOGRAPHICAL SURVEY BY: Absolute Surveying & Mapping, Inc.

NOTE: THE TOPOGRAPHICAL SURVEY STATES: "THE BASIS OF BEARINGS IS BASED ON GPS OBSERVATION COORDINATE SYSTEM."

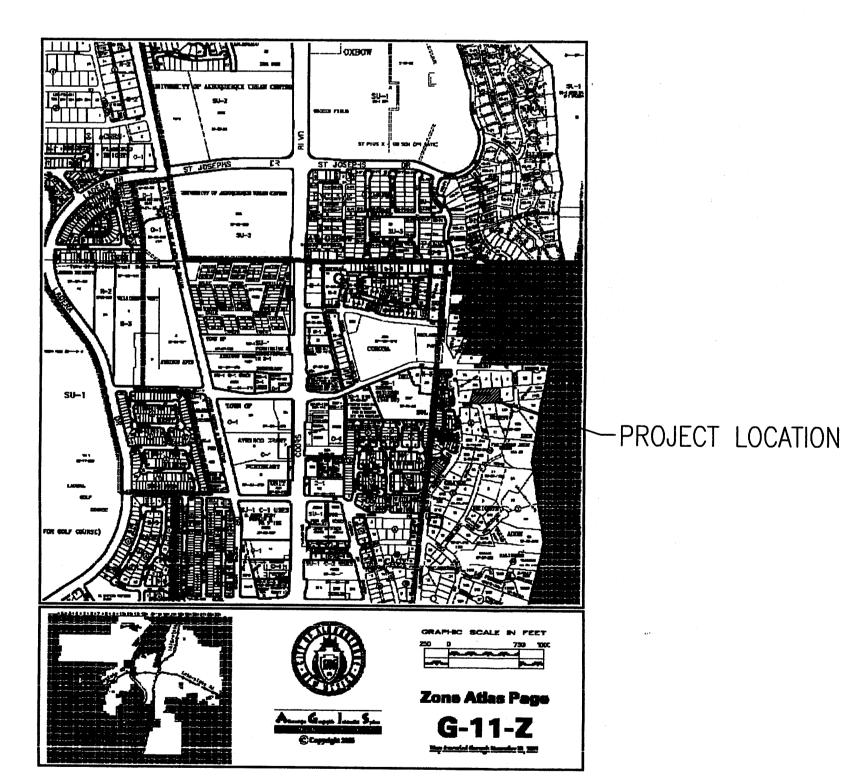
## DRAWING INDEX

C-101: DRAWING INDEX, LEGEND & ABBREVIATIONS, GENERAL NOTES, PROJECT DESCRIPTION & DRAINAGE DISCUSSION.

C-102: GRADING, PAVING & DRAINAGE PLAN, & UTILITY PLAN



VICINITY MAP & FLOOD ZONE MAP
FEMA PANEL: 0327 (2008) C.O.A. MAP
SCALE: NTS



VICINITY MAP

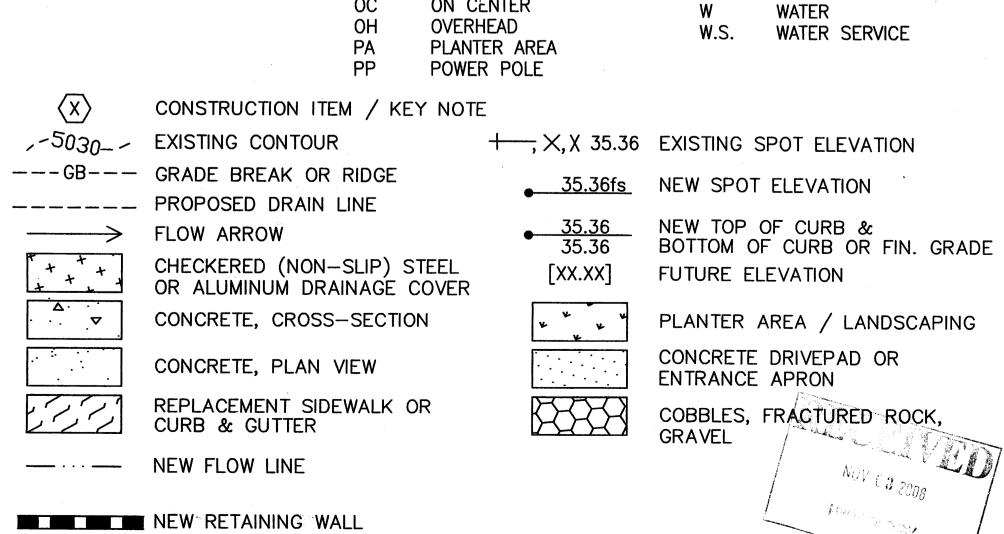
C.O.A. MAP G-11-Z

SCALE: 1" = 1000'

**GENERAL NOTES:** 

- 1. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. 1986 EDITION, UPDATED THROUGH AMENDMENT 1 TO REVISION 7.
- 2. THERE MAY BE UTILITIES AND OTHER ITEMS THAT ARE NOT SHOWN. FIELD VERIFY. CALL NEW MEXICO ONE—CALL: FOR UTILITIES SPOTTING AT LEAST 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- 3. CONTRACTOR'S GOOD SENSE: THE CONTRACTOR IS EXPECTED TO USE HIS GOOD
   SENSE, EXPERIENCE, AND JUDGEMENT.
- 7.4. IF UNUSUAL, CONFLICTING, OR EVEN APPARENTLY ODD CIRCUMSTANCES ARISE, THE CONTRACTOR IS TO CONSULT WITH THE ENGINEER FOR A RESOLUTION BEFORE PROCEEDING WITH FINAL LAYOUT OR CONSTRUCTION.
- 5. CHANGES & DEVIATIONS ARE TO BE APPROVED IN WRITING IN ADVANCE OF CONSTRUCTION. CONTRACTOR IS TO KEEP A MARKUP COPY OF THE PLANS AND TO NOTE THEREON ALL CHANGES AND DEVIATIONS FROM THE PLANS.
- 6. ALL WORK IS TO BE PERFORMED IN A WORKMANLIKE MANNER.
- 7. ENGINEER IS WILLING TO SUPPLY AN ELECTRONIC COPY OF THIS DRAWING (AUTOCAD 2005) FOR THE CONTRACTOR'S USE ON THIS PROJECT.
- 8. IF THE CONTRACTOR FEELS THERE IS A CONSTRUCTION ITEM NOT COVERED WITH A DETAIL OR SPECIFICATION, THE ENGINEER SHALL BE CONTACTED AND A DETAIL OR SPECIFICATION SHALL BE SELECTED, PROBABLY FROM THE CITY OF ALBUQUERQUE SPECIFICATIONS.
- 9. PAVEMENT CUTS FOR ALL UTILITIES SHALL BE PER CITY OF ALBUQUERQUE
- 10. ALL ELEVATIONS SHOWN ON THIS PLAN ARE TO BE STAKED TO ASSURE CONSTRUCTION CONFORMANCE TO THE PLAN.
- 11. CITY PERMITS NEEDED FOR STREET UTILITY CONSTRUCTION ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- 12. THE CONTRACTOR IS RESPONSIBLE FOR EARTHWORK QUANTITIES

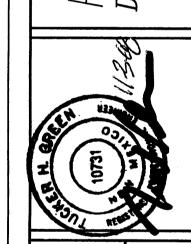
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APWA B BT-CB BC BSW C&G CF CI SP COA CRR CORR E,EX,X DI DRWG DWG E EA EDF EG	AM. PUBLIC WORKS ASSN. BACK (PREFIX) BOTTOM OF CURB BACK OF CURB BACK OF SIDEWALK CURB AND GUTTER CURB AND GUTTER CURB FACE CAST IRON CI SOIL PIPE (SAS) CLEAN OUT CITY OF ALBUQUERQUE CITY OF RIO RANCHO CITY OF RIO RANCHO	EOG EP FC FF FF FG FL F.M. FP FS G B HP IN LF LP MH NMDOT OCH PP	EDGE OF GUTTER EDGE OF PAVEMENT EACH WAY FACE OF CURB FACE TO FACE	R RD R.W. S SAS SD SDWK S.L. SW T	RADIUS & RATE OF SLOPE ROOF DRAIN RIGHT OF WAY SLOPE SANITARY SEWER STORM DRAIN/SEWER SIDEWALK SEWER LATERAL SIDEWALK TANGENT TELEPHONE TOP OF ASPHALT TEMPORARY BENCH MARK TOP OF CURB TOP OF CONCRETE TOP OF CONCRETE TOP OF CLEANOUT TOE / BOTTOM OF SLOPE TOP OF SLOPE TOP OF PIPE TOP OF RETAINING WALL TOP OF SIDEWALK TOP OF WALL
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SHEET, INDEX, VICINITY AND LEGEND TA DEVELOPMENT, INC.

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