

CITY OF MESA NOTES:

CITY OF MESA GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE CURRENT UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS FURNISHED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS AND AS AMENDED BY THE CITY OF MESA. ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THESE AMENDED SPECIFICATIONS AND DETAILS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

2. SEPARATE RIGHT-OF-WAY PERMITS ARE REQUIRED FOR ALL PUBLIC UTILITIES, PUBLIC STREET IMPROVEMENTS, AND RIGHT-OF-WAY LANDSCAPING. FOR INFORMATION REGARDING AVAILABILITY AND COST OF RIGHT-OF-WAY PERMITS, CONTACT THE DEVELOPMENT SERVICES DEPARTMENT AT (480) 644-4273 OR AT [HTTP://WWW.MESAAZ.GOV/DEVSUSTAIN/CONSTRUCTIONPERMITS.ASPX](http://www.mesaaaz.gov/devsustain/constructionpermits.aspx). THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED UNLESS OTHERWISE NOTED. CONTRACTORS MUST HOLD THE APPROPRIATE CLASS OF LICENSE AND SHALL HAVE ON FILE WITH THE PERMIT SERVICES SECTION PROOF OF INSURANCE COVERAGE. PERMITS BECOME INVALID AND MUST BE UPDATED IF WORK HAS NOT BEGUN WITHIN NINETY (90) DAYS. PERMITS ALSO BECOME INVALID IF THE CONTRACTOR'S INSURANCE LAPSES OR IS VOIDED.

3. TWENTY FOUR (24) HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK, CONSTRUCTION OR INSTALLATIONS ASSOCIATED WITH THIS PERMIT, THE PERMITTEE SHALL NOTIFY CITY OF MESA ENGINEERING ENGINEERING DEPARTMENT AT (480) 644-2251 OF INTENT TO BEGIN AND REQUEST/SCHEDULE PRELIMINARY FIELD REVIEW AT THE PROJECT SITE WITH THE CITY OF MESA ENGINEERING DEPARTMENT CONSTRUCTION INSPECTOR. FAILURE TO PROVIDE PROPER INSPECTION NOTIFICATION AS PRESCRIBED ABOVE, SHALL RESULT IN THIS PERMIT BECOMING INVALID AND WORK BEING STOPPED.

4. CONTRACTOR'S SHALL COMPLY WITH THE REQUIREMENTS TO OBTAIN THE NECESSARY RIGHT-OF-WAY PERMITS AND SHALL COMPLY WITH THE RIGHT-OF-WAY PERMIT CONDITIONS AS FOUND ON THE BACK OF THE PERMIT FORM.

5. THE CITY OF MESA PARKS & RECREATION DIVISION IS NOT REPRESENTED BY BLUE STAKE. WHEN THE CONTRACTOR EXCAVATES NEAR OR ADJACENT TO A CITY PARK, THE CONTRACTOR SHALL CONTACT THE PARKS & RECREATION ADMINISTRATION SECTION AT (480) 644-2354 TO REQUEST ASSISTANCE IN LOCATING ALL THEIR UNDERGROUND FACILITIES.

6. THE CONTRACTOR SHALL OBTAIN AN EARTH-MOVING PERMIT FROM THE MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT AND SHALL COMPLY WITH ITS REQUIREMENTS FOR DUST CONTROL.

7. THE ENGINEER HEREBY CERTIFIES AS EVIDENCED BY A PROFESSIONAL SEAL & SIGNATURE, THAT ALL AFFECTED UTILITY COMPANIES BOTH PUBLIC AND PRIVATE HAVE BEEN CONTACTED AND ALL EXISTING AND/OR PROPOSED UTILITY LINES AND OTHER RELATED INFORMATION HAVE BEEN TRANSFERRED ONTO THESE PLANS. THE ENGINEER OR ARCHITECT ALSO HEREBY CERTIFIES THAT ALL EXISTING AND/OR PROPOSED PUBLIC RIGHT-OF-WAY OR EASEMENTS HAVE BEEN CORRECTLY PLOTTED/SHOWN.

8. THE ENGINEER, OR LAND SURVEYOR OF RECORD SHALL CERTIFY UPON COMPLETION OF CONSTRUCTION THAT ALL PUBLIC IMPROVEMENTS (WATER AND SEWER UTILITIES, STORM SEWER, CONCRETE, PAVING, STREET LIGHTS, ETC.) HAVE BEEN INSTALLED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE APPROVED PLANS. ANY CHANGES SHALL BE REFLECTED ON "AS-BUILT" DRAWINGS PROVIDED BY THE ENGINEER TO THE ENGINEERING DEPARTMENT.

9. THE REGISTERED ENGINEER OR LAND SURVEYOR SHALL CERTIFY THAT THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION BETWEEN UTILITIES WITHIN PUBLIC RIGHT-OF-WAY OR EASEMENTS HAS BEEN MAINTAINED AS REQUIRED BY LAW OR POLICY.

10. THE DEVELOPER SHALL PROVIDE ALL CONSTRUCTION STAKING FOR THE PROJECT.

11. THE DEVELOPER OR THE ENGINEER IS RESPONSIBLE FOR ARRANGING FOR THE RELOCATION OR REMOVAL OF ALL UTILITIES OR FACILITIES THAT ARE IN CONFLICT WITH THE PROPOSED PUBLIC IMPROVEMENTS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE RELOCATION OF ALL UTILITIES, POWER POLES, IRRIGATION DRY-UPS, RESETS REMOVALS BY OTHERS, ETC.

12. THE CONTRACTORS SHALL LOCATE ALL UTILITIES PRIOR TO EXCAVATION AND AVOID DAMAGE TO SAME. CALL (602) 263-1100 FOR BLUE STAKE TWO WORKING DAYS PRIOR TO DIGGING. CALL SALT RIVER PROJECT FOR POLE BRACING, ELECTRIC SERVICE OR CONSTRUCTION SCHEDULING AT (602) 273-8888.

13. WHEN GAS MAINS AND/OR SERVICES ARE EXPOSED, CONTACT THE CITY OF MESA AT (480) 644-2261 FOR INSPECTION OF THE EXPOSED PIPE AND COATING PRIOR TO BACKFILLING OF THE TRENCH.

14. CONTRACTORS SHALL COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AND BARRICADING PER THE CURRENT CITY OF MESA TRAFFIC BARRICADE MANUAL.

15. IF A FIRE HYDRANT IS NEEDED TO OBTAIN CONSTRUCTION WATER, THE CONTRACTOR SHALL OBTAIN A FIRE HYDRANT METER FROM PERMIT SERVICES AND PAY ALL APPLICABLE FEES AND CHARGES.

16. IF DURING THE CONSTRUCTION OF A PUBLIC FACILITY, THE CONTRACTOR FAILS TO OR IS UNABLE TO COMPLY WITH A REQUEST OF THE ENGINEERING CONSTRUCTION INSPECTOR, AND IT IS NECESSARY FOR CITY FORCES TO DO WORK THAT IS NORMALLY THE CONTRACTOR'S RESPONSIBILITY, THE CITY SHALL BE JUSTIFIED IN BILLING THE CONTRACTOR. EACH INCIDENT REQUIRING WORK BY CITY FORCES SHALL BE COVERED BY A SEPARATE BILLING AT THE CURRENT APPLICABLE RATES.

17. THE CONTRACTOR IS ADVISED THAT DAMAGE TO PUBLIC SERVICES OR SYSTEMS AS A RESULT OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AND INSPECTED BY THE CITY INSPECTOR. UNLESS OTHERWISE APPROVED BY THE CITY, ALL REPAIRS SHALL BE DONE WITHIN 24 HOURS. THE CONTRACTOR IS ADVISED THAT ANY COSTS RELATED TO REPAIR OR REPLACEMENT OF DAMAGED PUBLIC SERVICES AND SYSTEMS AS A RESULT OF CONTRACTOR'S ACTIVITIES SHALL BE BORNE BY THE CONTRACTOR.

PRELIMINARY GRADING & UTILITY PLANS  
FOR  
C2 TACTICAL  
7104 E. RAY ROAD  
MESA, ARIZONA 85212

LEGEND:

●	BRASS CAP FLUSH
●	PROPERTY CORNER
(M)	MEASURED
(R)	RECORD
⊕	CATCH BASIN
⊞	ELECTRIC BOX
⊞	ELECTRIC CABINET
⊞	ELECTRIC TRANSFORMER
⊙	FIBER OPTICS MARKER
■	METAL GRATE (RECTANGULAR)
△	TELECOMMUNICATIONS RISER
⊙	TRAFFIC SIGNAL
⊞	CABLE TELEVISION RISER
⊙	SANITARY SEWER MANHOLE
⊙	STORM DRAIN MANHOLE
●	SEWER CLEANOUT
⊞	WATER METER
⊙	FIRE HYDRANT
⊙	WATER VALVE
GM ○	EXIST. GAS METER
////	MASONRY WALL
---	EASEMENT LINE
---EX-OHE---	EXIST. OVERHEAD ELECTRIC LINE
---EX-GAS---	EXIST. GAS LINE
---EX-COMS---	EXIST. COMMUNICATIONS LINE
---EX-6" SWR---	EXIST. SEWER LINE
---EX-6" WTR---	EXIST. WATER LINE
---EX-ELECT---	EXIST. UNDERGROUND ELECTRIC
▬▬▬▬▬▬	STORM DRAIN
✿	EXIST. PALM TREE
☼	EXIST. MISC. TREE
FL=05.4	PROP. FLOW LINE GRADE
FG=05.4	PROP. FINISHED GRADE
C=05.40	PROP. CONCRETE GRADE
P=05.40	PROP. PAVEMENT GRADE
TC=05.73 G=05.40	PROP. TOP OF CURB GRADE PROP. GUTTER GRADE
TC=05.73 P=05.40	PROP. TOP OF CURB GRADE PROP. PAVEMENT GRADE
CTV ●	EXIST. CABLE TV BOX
P.P. ●	EXIST. POWER POLE
APN	ASSESSOR'S PARCEL NO.
P/L	PROPERTY LINE
1.6%	PROP. DRAINAGE SLOPE
— —	PROP. DRAINAGE PATTERN
☆	EXISTING LIGHT POLE
⊖	EXISTING GUY WIRE
— —	EXISTING SIGN
⊞— —⊞	EXISTING FENCE
---	MONUMENT LINE
---	PROPERTY/RIGHT-OF-WAY LINE
- - - - -	GRADE BREAK/FLOW LINE
● M.G. 16.2 P. 15.60 C. 15.60	EXIST. NATURAL GRADE
●	EXIST. PAVEMENT GRADE
●	EXIST. CONCRETE GRADE

OWNER:

C2 TACTICAL  
8475 S. EMERALD DRIVE  
TEMPE, ARIZONA 85284  
(602) 763-7318  
CONTACT: BOE BERGESON

CIVIL ENGINEER:

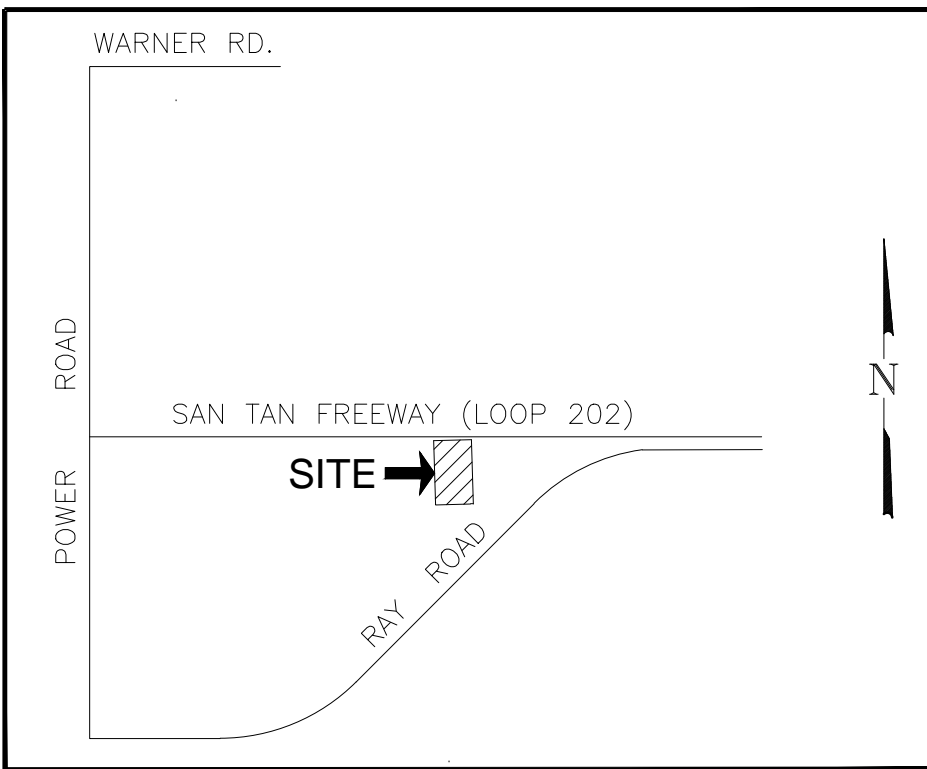
HENDERSON ENGINEERING GROUP, LLC  
1533 S. PARKCREST CIRCLE  
MESA, ARIZONA 85206  
(480) 334-7507  
CONTACT: BRENT L. HENDERSON P.E.

DESIGNER:

SEVEN 4 STUDIOS  
2022 E. MAUIJU DRIVE  
TEMPE, ARIZONA 85282  
(602) 703-6234  
CONTACT: DAT TRAN

LAND SURVEYOR:

AW LAND SURVEYING, LLC  
P.O. BOX 2170  
CHANDLER, ARIZONA 85244  
(480) 244-7630  
CONTACT: DANIEL D. ARMIJO, R.L.S.



VICINITY MAP  
N.T.S.

FEMA FLOOD PLAIN STATEMENT:

THE SUBJECT PROPERTY LIES WITH A FEMA DESIGNATED SHADED ZONE "X" FLOODPLAIN ACCORDING TO FEMA'S FLOOD INSURANCE RATE MAP (FIRM) PER MAP NUMBER 04013C2760L, DATED OCTOBER 16, 2013. A SHADED FLOOD ZONE "X" ARE AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1-FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

SHEET INDEX:

C-1	COVER SHEET
C-2	PRELIMINARY GRADING & UTILITY PLAN
C-3	CROSS-SECTIONS

LEGAL DESCRIPTION:

A PARCEL OF LAND SITUATED IN A PORTION OF THE NORTHEAST QUARTER OF SECTION 19, TOWNSHIP 1 SOUTH, RANGE 7 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FUTURE LOT 1 PER PARCEL A FINAL PLAT FOR RAY ROAD COMMERCE CENTER NORTH

ZONING:

L1 (LIGHT INDUSTRIAL)

LOT AREA:

AREA = 133,967.09 SQUARE FEET/3.0755 ACRES

ASSESSORS PARCEL NO:

304-30-041

SITE ADDRESS:

7104 E. RAY ROAD  
MESA, ARIZONA 85212

BENCHMARK:

CITY OF MESA BRASS TAG LOCATED ON TOP OF CURB AT THE NORTHEAST CORNER OF THE INTERSECTION OF POWER ROAD AND LOOP 202, MESA, ARIZONA

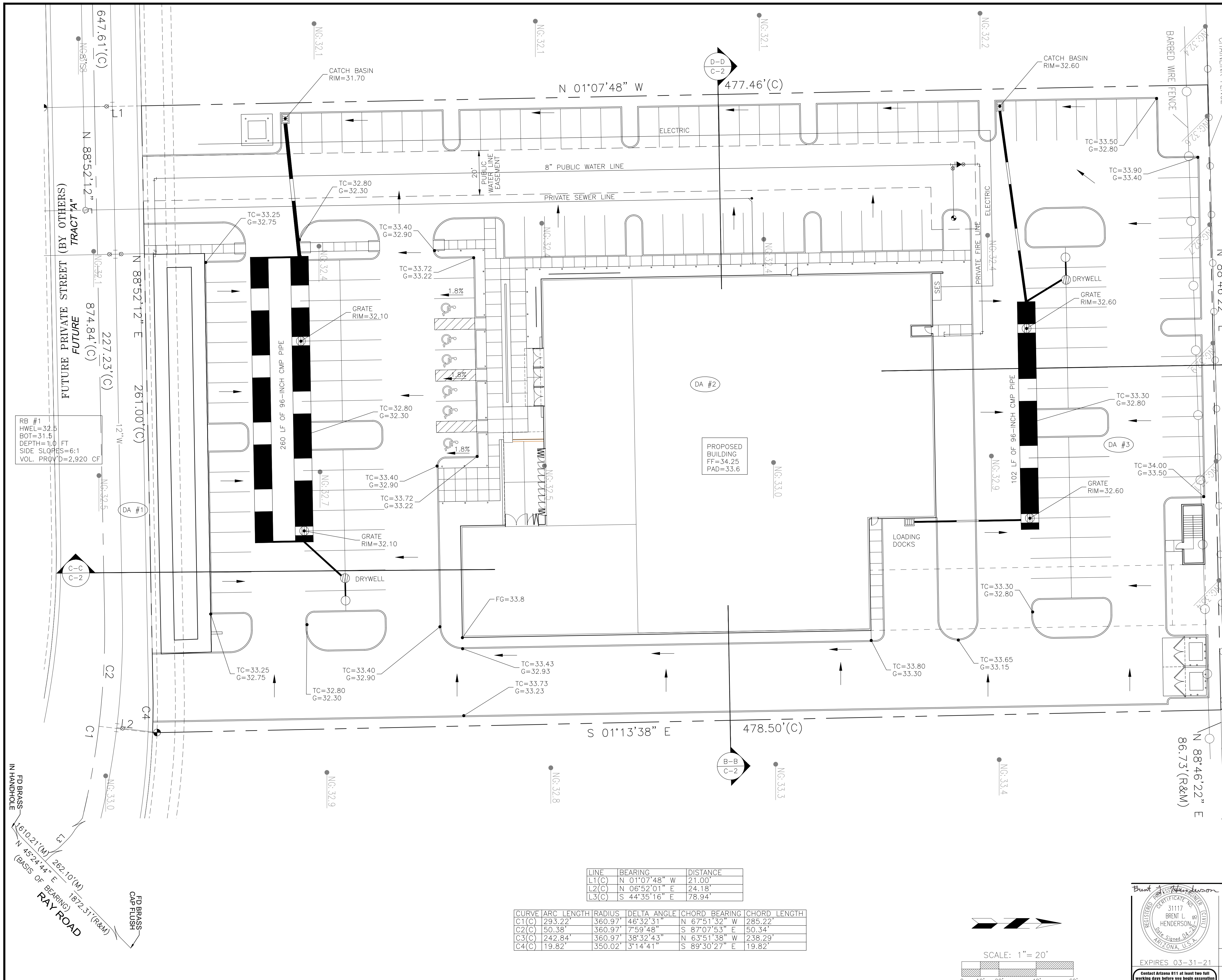
ELEVATION = 1324.10' NAVD 88 (CITY OF MESA DATUM)

BASIS OF BEARING:

THE BASIS OF BEARING AND ALL MONUMENTATION SHOWN HEREON IS BASED ON THE MONUMENT LINE OF RAY ROAD, USING A BEARING OF NORTH 45°24'44" EAST AS SHOWN ON THE LAND SPLIT FOR RAY ROAD COMMERCE CENTER, RECORDED IN BOOK 1348, PAGE 11, MARICOPA COUNTY RECORDS.

	C2 TACTICAL 7104 E. RAY ROAD	
	COVER SHEET	
	SCALE: N/A	DATE: 04/26/18
DESIGNED BY: BLH	DRAWN BY: BLH	CHECKED BY: BLH





RETENTION VOLUME REQUIRED:

100-YEAR, 2-HOUR STORM EVENT:

$V = (C_w)(D/12)(A)$

V = VOLUME REQUIRED IN CF  
C<sub>w</sub> = WEIGHTED RUN-OFF CO-EFFICIENT  
D = RAINFALL DEPTH FOR 100-YR, 2-HR STORM EVENT (2.18-INCHES)  
A = DRAINAGE AREA

DRAINAGE AREA NO.	C <sub>w</sub>	DEPTH (INCHES)	AREA (SF)	VOL. REQ'D (CF)
1	0.73	2.18	12,856	1,705
2	0.79	2.18	90,925	13,049
3	0.78	2.18	36,118	5,118
TOTAL			139,899	19,872

ELEV. (FT)	AREA (SF)	AVG. AREA (SF)	ELEV. DIFF. (FT)	VOL. PROV'D (CF)
32.5	1,783			
33.5	4,056	2,920	1.0	2,920

RB #2 (UNDERGROUND)

PIPE LENGTH (FT)	PIPE DIAMETER (IN)	PIPE AREA (SF)	VOLUME PROVIDED (CF)
260	96	50.24	13,062

RB #3 (UNDERGROUND)

PIPE LENGTH (FT)	PIPE DIAMETER (IN)	PIPE AREA (SF)	VOLUME PROVIDED (CF)
102	96	50.24	5,124

SUMMARY OF RETENTION:

DRAINAGE AREA NO.	C <sub>w</sub>	DEPTH (INCHES)	AREA (SF)	VOL. REQ'D (CF)	VOL. PROV'D (CF)
1	0.73	2.18	12,856	1,705	2,920
2	0.79	2.18	90,925	13,049	13,062
3	0.78	2.18	36,118	5,118	5,124
TOTAL			139,899	19,872	21,107

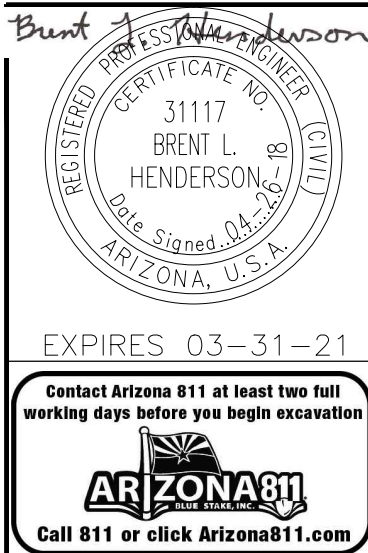
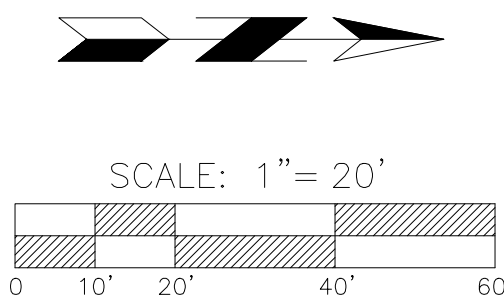
VOLUME (PROV'D) = 21,107 CF > VOLUME (REQ'D) = 19,872 CF

ALTERNATIVE UNDERGROUND RETENTION STORAGE SYSTEM:

STORMTECH'S MC-3500 STORAGE CHAMBERS (23.85 CF/FT)  
(762 FT) X (23.85 CF/FT) = 18,174 CF OF STORAGE  
782 FT OF CHAMBERS = 104 CHAMBERS

LINE	BEARING	DISTANCE
L1(C)	N 01°07'48" W	21.00'
L2(C)	N 06°52'01" E	24.18'
L3(C)	S 44°35'16" E	78.94'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1(C)	293.22'	360.97'	46°32'31"	N 67°51'32" W	285.22'
C2(C)	50.38'	360.97'	7°59'48"	S 87°07'53" E	50.34'
C3(C)	242.84'	360.97'	38°32'43"	N 63°51'38" W	238.29'
C4(C)	19.82'	350.02'	3°14'41"	S 89°30'27" E	19.82'





**Henderson Engineering Group, LLC**  
Site Development • Storm Water • Planning • Transportation/Traffic  
Structural • Forensics • Project Management • Water/Wastewater

1533 SOUTH PARKCREST CIRCLE MESA, AZ 85206  
(480) 334-7507 BRENT@HEG-LLC.COM WWW.HEG-LLC.COM

C2 TACTICAL  
7104 E. RAY ROAD

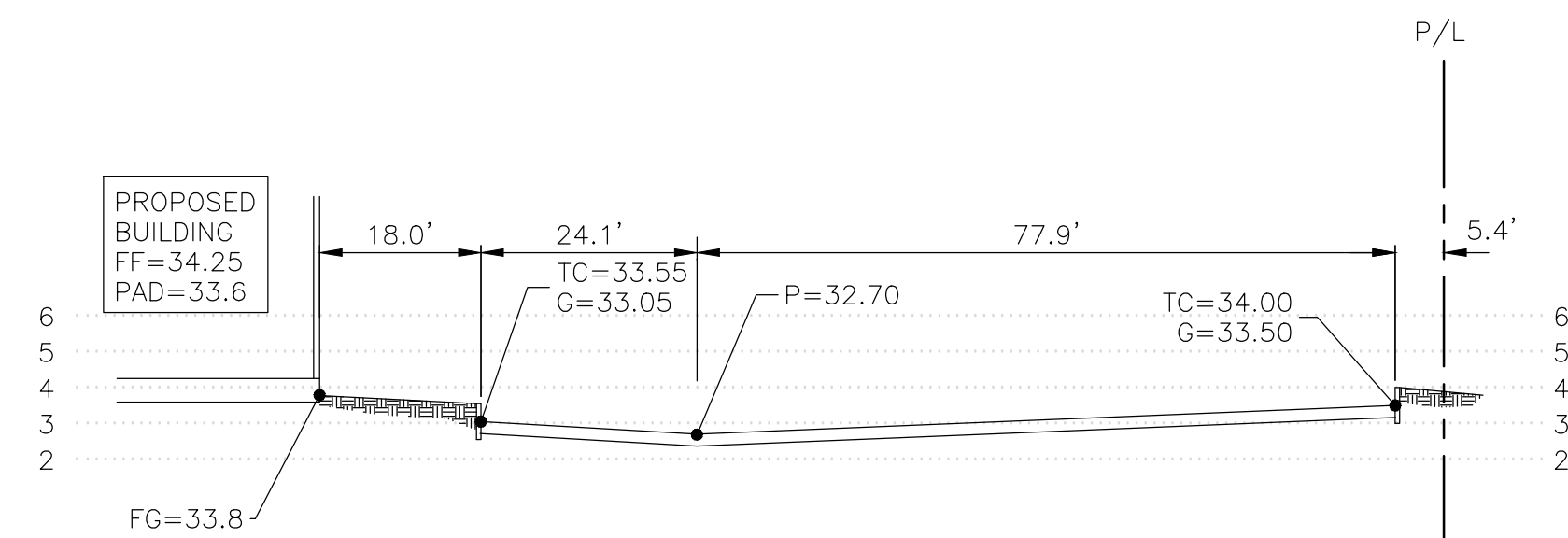
**PRELIM. GRADING & UTILITY PLAN**

SCALE: 1"=20' DATE: 04/26/18 PROJECT NO: 180401  
DESIGNED BY: BLH DRAWN BY: BLH CHECKED BY: BLH

SHEET NO:

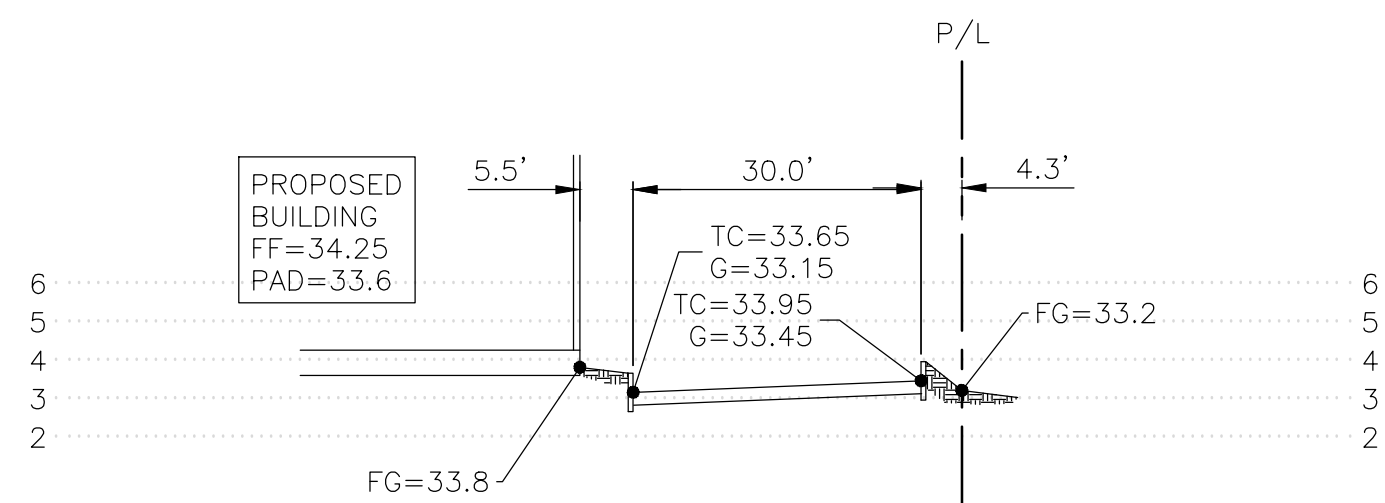
**C-2**

2 OF 3



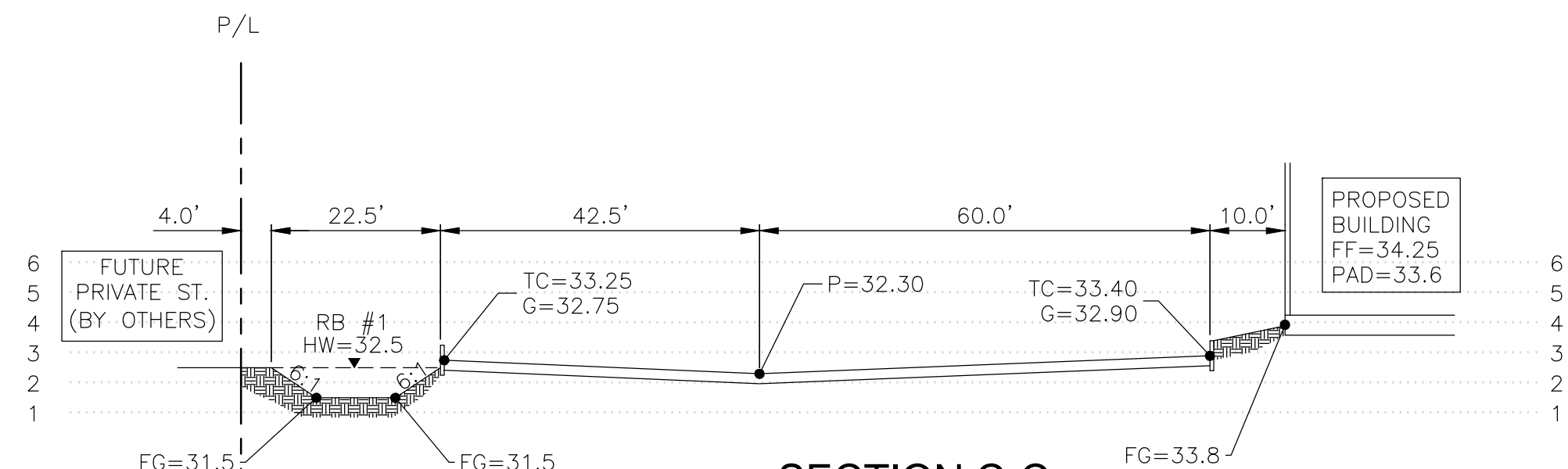
SECTION A-A

HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=5'



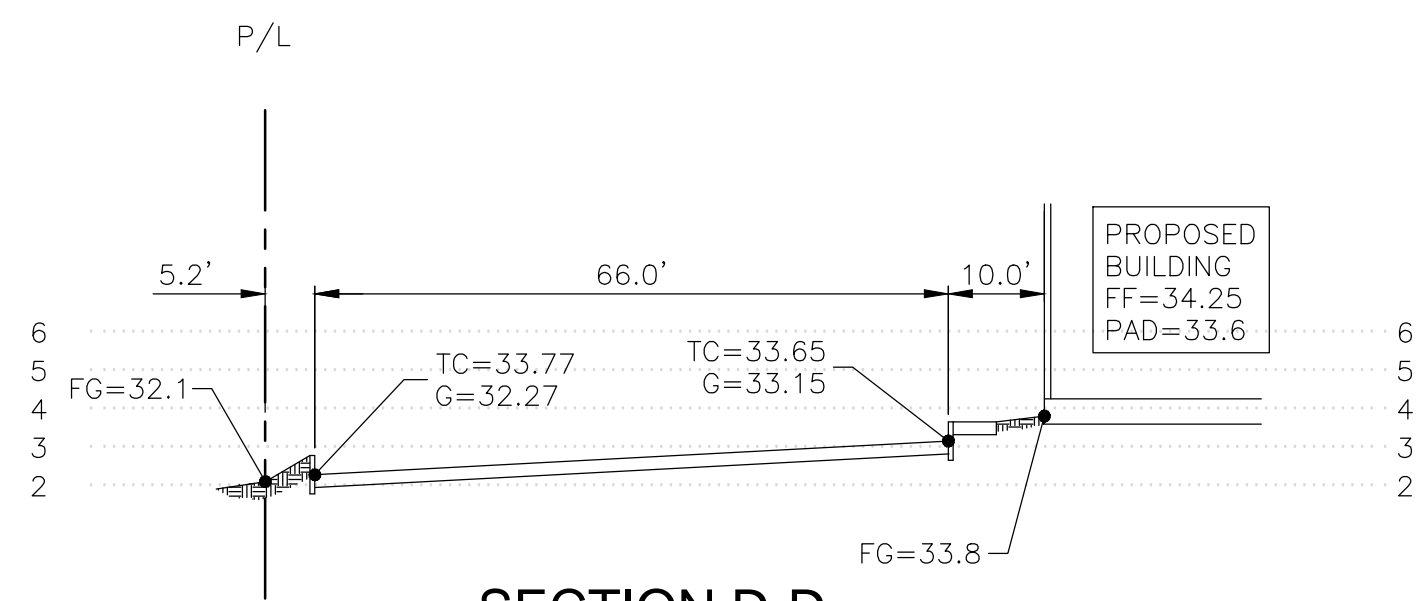
SECTION B-B

HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=5'



SECTION C-C

HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=5'



SECTION D-D

HORIZ. SCALE: 1"=20'  
VERT. SCALE: 1"=5'

	<b>Henderson Engineering Group, LLC</b> Site Development • Storm Water • Planning • Transportation/Traffic Structural • Forensics • Project Management • Water/Wastewater			SHEET NO:  <b>C-3</b> 3 of 3
	1533 SOUTH PARKCREST CIRCLE MESA, AZ 85206 (480) 334-7507 BRENT@HEG-LLC.COM WWW.HEG-LLC.COM			
	<b>C2 TACTICAL</b> <b>7104 E. RAY ROAD</b>			
	<b>CROSS-SECTIONS</b>			
EXPIRES 03-31-21 Contact Arizona 811 at least two full working days before you begin excavation 	SCALE: AS NOTED DESIGNED BY: BLH	DATE: 04/26/18 DRAWN BY: BLH	PROJECT NO: 180401 CHECKED BY: BLH	