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GENERAL NOTES

1. BASIS OF BEARING AND THE BASIS OF ELEVATION ARE PER TOPOGRAPHIC SURVEY OF NEW N.A.T.I.V.E. TRACT IN THE KAYENTA TOWNSHIP JOB NO. 09-08, DATED SEPTEMBER 29, 2009, A DIGITAL SURVEY DONE BY EXTREME MEASURES LAND SURVEYS, INC.
2. BASIS OF BEARING IS THE SOUTH LINE OF THE SCHOOL PROPERTY.
3. BASIS OF ELEVATION IS KAY 16--COORDINATES PROVIDED BY DON JACKSON OF THE KAYENTA TOWNSHIP ENGINEERING DEPARTMENT.
4. A COPY OF THESE APPROVED PLANS SHALL BE KEPT IN AN EASILY ACCESSIBLE LOCATION ON THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION.
5. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.
6. ALL MINOR OBSTRUCTIONS MAY NOT BE SHOWN ON PLANS. THE CONTRACTOR SHALL VISIT THE SITE AND DETERMINE THE ACTUAL CONDITIONS WITH REGARD TO THE EXISTENCE OF FENCES, DRIVEWAYS, TREES, SIDEWALKS, CULVERTS, UTILITIES AND OTHER MISCELLANEOUS OBSTACLES THAT MAY INTERFERE WITH CONSTRUCTION PRIOR TO SUBMITTING BIDS.
7. IF UNANTICIPATED SITE CONDITIONS ARE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION OR OMISSIONS AND/OR CONFLICT BETWEEN VARIOUS ELEMENTS OF CONSTRUCTION DRAWINGS, NOTES, AND/OR DETAILS, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY UPON BECOMING AWARE OF SUCH CONDITIONS, OMISSIONS AND/OR CONFLICTS AND WORK SHALL CEASE AND NOT PROCEED IN THE AREA OF CONCERN UNTIL AUTHORIZED BY THE ENGINEER OF RECORD.
8. THE INFORMATION REGARDING THE TYPE, SIZE, AND LOCATION OF UTILITIES IS SHOWN BASED ON BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF ALL UTILITIES FROM THE OWNERS OF RESPECTIVE UTILITIES. ALL UTILITY COMPANIES SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH WORK AND SHALL PROTECT ALL EXISTING UTILITIES THROUGH THE DURATION OF CONSTRUCTION. NO ASSURANCE IS HEREBY GIVEN THAT ALL EASEMENTS OR UTILITIES ARE COMPLETELY OR ACCURATELY DEPICTED.
9. ANY AMBIGUITIES OR DEFICIENCIES DISCOVERED ON THESE PLANS ARE TO BE RESOLVED BY ARROWHEAD ENGINEERING, INC.. ANYONE ELSE WHO MODIFIES THE PLANS OR THE DESIGNS ON THEM OR RESOLVES AMBIGUITIES OR DEFICIENCIES BECOMES RESPONSIBLE FOR HIS OR HER MODIFICATIONS OR DECISION.
10. UTILITY INFORMATION SHOWN ON THESE PLANS ARE PROVIDED BY K.U.S.D. FACILITY MANAGEMENT. THE ENGINEER MAKES NO GUARANTEE REGARDING THE LOCATION OR ELEVATION OF EXISTING UTILITIES SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CALL BLUE STAKE FOR ALL UTILITIES.
11. CONTRACTOR SHALL GIVE A MINIMUM OF FORTY-EIGHT (48) HOURS NOTICE BEFORE HE REQUIRES HORIZONTAL OR VERTICAL LAYOUT OF ANY PORTION OF THE WORK. HE SHALL ALSO DIG ALL STAKE HOLES NECESSARY TO GIVE LINES AND LEVELS. MEASUREMENTS OF THE WORK SHALL REMAIN IN THEIR PROPER PLACES UNTIL AUTHORIZED TO REMOVE THEM BY THE ENGINEER OF RECORD OR HIS AGENT. ANY EXPENSE INCURRED IN REPLACING ANY STAKES THAT THE CONTRACTOR OR HIS SUBORDINATES MAY HAVE FAILED TO PRESERVE SHALL BE CHARGED TO THE CONTRACTOR.
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH, HAUL, AND APPLY ALL WATER REQUIRED FOR COMPACTION AND FOR THE CONTROL OF DUST FROM CONSTRUCTION ACTIVITY. THE COST THEREOF IS TO BE INCLUDED IN THE CONSTRUCTION PRICE.
13. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE A REGISTERED SOILS ENGINEER OBSERVE, INSPECT, AND TEST ALL EARTHWORK PREPARATION. EARTHWORK PREPARATION IS REGARDED AS (BUT NOT LIMITED TO) STRUCTURAL AND TRENCH EXCAVATION, BACKFILL, AND TOGETHER WITH THE PLACEMENT OF FILL MATERIAL AND ITS SUBSEQUENT COMPACTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE, MAINTENANCE, REPAIR OR REPLACEMENT OF ANY EXISTING IMPROVEMENT IN THE WORK AREA WHICH BECOMES DAMAGED OR IS REMOVED DURING THE COURSE OF CONSTRUCTION. ALL REPAIR, REPLACEMENT, OR CLEANUP SHALL BE DONE TO THE SATISFACTION OF THE OWNER.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A TRAFFIC CONTROL PLAN THAT MEETS THE REQUIREMENTS OF THE MUTCD (LATEST EDITION WITH SUPPLEMENTS) AND THE OWNER'S AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL PROPERLY MAINTAIN THIS PLAN FOR ALL WORK WITHIN THE N.A.T.I.V.E. CAMPUS PROPERTY.
16. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS, GRADES AND POTHOLE EXISTING UTILITY LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES AND DEVIATIONS FROM EXISTING SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER PRIOR TO START OF CONSTRUCTION.
17. QUANTITIES SHOWN THROUGHOUT THESE DRAWINGS AND SPECIFICATIONS ARE APPROXIMATE. THEY SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR INDEPENDENTLY ESTIMATING BID OR WORK QUANTITIES.
18. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CURRENT "MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION" AND WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICE. ALL WORK AND MATERIALS WHICH DO NOT CONFORM TO THE STANDARDS AND SPECIFICATIONS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
19. ANY WORK PERFORMED WITHOUT THE KNOWLEDGE AND APPROVAL OF THE OWNER OR HIS AUTHORIZED REPRESENTATIVE IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
20. THE OWNER OR HIS AUTHORIZED REPRESENTATIVE MAY SUSPEND THE WORK BY WRITTEN NOTICE WHEN, IN HIS JUDGMENT, PROGRESS IS UNSATISFACTORY, WORK BEING DONE IS UNAUTHORIZED OR DEFECTIVE, WEATHER CONDITIONS ARE UNSUITABLE, OR THERE IS DANGER TO THE PUBLIC HEALTH OR SAFETY.
21. THE OWNER MAY ORDER ANY AND ALL MATERIALS USED IN THE WORK TO BE TESTED ACCORDING TO THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) AND THE AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM) STANDARDS. THE CONTRACTOR SHALL, AT HIS EXPENSE, SUPPLY ALL SAMPLES REQUIRED FOR TESTING.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE PAVEMENT AND OF PARTIALLY COMPLETED PORTIONS OF THE WORK UNTIL FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR SHALL SUBMIT TO THE OWNER OR HIS AUTHORIZE REPRESENTATIVE FOR APPROVAL A CONSTRUCTION SCHEDULE FOR ANY STREETS REQUIRED TO BE CLOSED OR PARTIALLY CLOSED FOR THE CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL REOPEN THE STREETS NO LATER THAN THE OPENING DATE SHOWN ON THE CONSTRUCTION SCHEDULE OR UPON ORDER OF THE OWNER OR HIS AUTHORIZE REPRESENTATIVE. THE REGULATION AND CONTROL OF CONSTRUCTION TRAFFIC SHALL BE AS DIRECTED BY THE OWNER OR HIS AUTHORIZE REPRESENTATIVE.
23. APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE WORKABLE UNIT. ANY DEFECTS WHICH APPEAR IN THE WORK WITHIN ONE YEAR FROM THE DATE OF ACCEPTANCE AND WHICH ARE DUE TO IMPROPER WORKMANSHIP OR INFERIOR MATERIALS SUPPLIED SHALL BE CORRECTED BY OR AT THE EXPENSE OF THE OWNER OR THE CONTRACTOR.
24. ACCEPTANCE OF COMPLETED IMPROVEMENTS WILL NOT BE GIVEN UNTIL DEFECTIVE OR UNAUTHORIZED WORK IS REMOVED, AND FINAL CLEAN-UP IS COMPLETE.
25. LOCATION OF UNDERGROUND UTILITIES BEFORE WORK IS BEGUN IS TO BE ACCOMPLISHED IN ACCORDANCE WITH ARS 40-360.22.
26. THE ESTABLISHMENT AND USE OF TEMPORARY CONSTRUCTION YARDS SHALL RECEIVE PRIOR APPROVAL FROM THE OWNER OR HIS AUTHORIZE REPRESENTATIVE.
27. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE KAYENTA TOWNSHIP CODES AND REGULATIONS. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED KAYENTA TOWNSHIP'S APPROVALS AND PERMITS, AS DEEMED NECESSARY BY THE KAYENTA TOWNSHIP, TO DISPOSE OF EXCAVATED MATERIAL.
28. ALL CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND PERFORMED UNDER THE DIRECT SUPERVISION OF A REGISTERED LAND SURVEYOR OR CIVIL ENGINEER.
29. CONTRACTOR MUST COORDINATE WITH GAS UTILITY COMPANY/PROVIDER TO EXTEND SERVICES TO BUILDINGS.
30. ALL UNDERGROUND PLASTIC WATER AND SEWER PIPING SHALL HAVE A CONTINUOUS 18 GAUGE (OR LARGER) COPPER TRACER WIRE INSTALLED WITH, AND ATTACHED TO, THE PLASTIC PIPING MATERIAL. THIS WIRE SHALL EXTEND FROM THE SEWER TAP OR WATER METER TO THE BUILDING DRAIN CONNECTION OR WATER SERVICE RISER AND TERMINATE IN A VISIBLE LOCATION ABOVE GROUND.

EARTHWORK

1. CONTRACTOR SHALL FOLLOW RECOMMENDATIONS FROM WESTERN TECHNOLOGIES, INC. JOB NO. 3129JS056, DATED 10-20-09 AND JOB NO. 3129JS075, DATED 1-12-10.
2. GENERAL -- THE CONTRACTOR SHALL ACCEPT REASONABLE VARIATIONS IN SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE ALLOWED FOR REMEDIATION OF SUBGRADE MATERIALS DUE TO HIGH MOISTURE CONTENT OR POCKETS OF OVERLY PLASTIC MATERIALS WHICH CAN BE REMEDIATED THROUGH MIXING WITH ON SITE MATERIALS, AS DETERMINED BY THE ENGINEER. IF REMOVAL AND REPLACEMENT OF MATERIAL IS REQUIRED, A CHANGE ORDER WILL BE ISSUED AT THE DISCRETION OF THE OWNER, WITH PAYMENT BASED UPON PREDETERMINED UNIT COSTS.
3. NO FILL SHALL BE PLACED OVER FROZEN GROUND OR ON-SITE CLAY. IMPORTED AND ON-SITE SOIL SHALL BE COMPACTED WITHIN A WATER CONTENT RANGE OF 3 PERCENT BELOW TO 3 PERCENT ABOVE OPTIMUM WATER CONTENT.
4. SUBGRADE PREPARATION -- SCARIFY, PREPARE TO PROPER MOISTURE CONTENT, AND RE-COMPACT TO A MINIMUM DEPTH OF 8 INCHES PRIOR TO PLACEMENT OF FILL AND ROAD MATERIALS.
5. IMPORT SOILS -- IMPORTED SOILS SHALL CONFORM TO THE FOLLOWING IN ACCORDANCE WITH THE SOILS REPORT:

GRADATION (ASTM C136)	PERCENT FINER BY WEIGHT
SIEVE SIZE (% FINER BY WEIGHT)	(% PASSING)
6"	100
4"	85-100
3/4"	70-100
NO. 4 SIEVE	50-100
NO. 200 SIEVE	40 (MAX)
MAXIMUM EXPANSIVE POTENTIAL (%)	1.50
MAXIMUM SOLUBLE SULFATES (%)	0.10

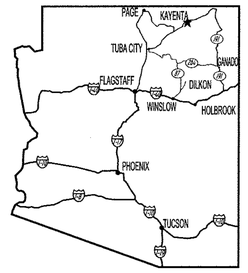
MEASURED ON A SAMPLE COMPACTED TO APPROXIMATELY 95 PERCENT OF THE ASTM D698 MAXIMUM DRY DENSITY AT ABOUT 3 PERCENT BELOW OPTIMUM WATER CONTENT. THE SAMPLE IS CONFINED UNDER A 100 PSF SURCHARGE AND SUBMERGED.

WATER NOTES

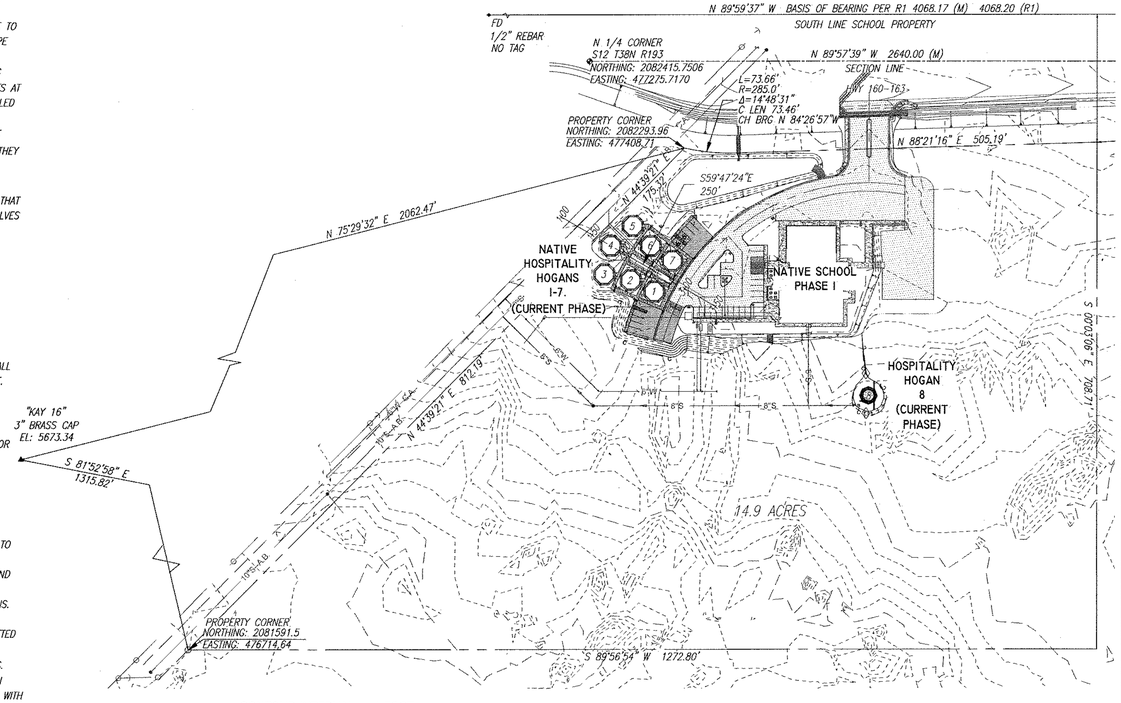
1. NTUA RECOMMENDS THAT THE NEW WATERLINE BE CONNECTED TO EXISTING WATERLINE AT MINIMAL OUTAGE TIME AND ONE TIME ONLY. PRIOR TO CONSTRUCTING THE CONNECTION, THE CONTRACTOR SHALL NOTIFY THE LOCAL NTUA DISTRICT OFFICE AT LEAST THREE DAYS IN ADVANCE AND SHOULD BE PRESENT DURING THE TAP, SAMPLING AND PRESSURE TESTING. CONNECTION TO EXISTING WATERMAIN SHALL BE AS SPECIFIED IN NTUA TECHNICAL PROVISIONS, SECTION 3.02.03, CONNECTIONS TO EXISTING MAIN. ALL TEES, ELBOWS, COUPLINGS, GATE VALVES, AND FIRE HYDRANTS ON THE WATER MAIN SHALL USE MEGA LUGS RESTRAINING COLLARS AS REQUIRED.
2. NTUA RECOMMENDS AT LEAST SDR-21, 200 PSI PVC FOR THE WATER MAIN THROUGHOUT THE PROJECT FROM THE TAP POINT TO THE FIRE HYDRANT IF INCLUDED AND TO THE END OF THE LINES. ALL FITTINGS AND VALVES SHALL MEET OR EXCEED THE PIPE PRESSURE CLASS. FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO NTUA DETAIL DRAWING NO. WS-12 AND WS-12A. HOWEVER, NTUA DOES NOT GUARANTEE FIRE PROTECTION FLOWS. IF THE WATER SYSTEM DOES NOT PROVIDE THE CUSTOMER'S FIRE FLOW REQUIREMENTS UPON PROJECT COMPLETION OR THEREAFTER, THE CUSTOMER SHALL INITIATE SYSTEM IMPROVEMENTS AT THEIR EXPENSE AND MUST HAVE PRIOR APPROVAL BY NTUA. BUILDING PLUMBING, WATER AND SEWER SERVICES TO BE INSTALLED IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE ADOPTED BY THE NAVAJO NATION.
3. THE MINIMUM HYDRAULIC REQUIREMENTS FOR FIRE HYDRANT INSTALLATION ARE 250 GPM AT 20 PSI (PRESSURE MEASURED AT NOZZLE). FIRE HYDRANTS ARE TO BE INSTALLED ON 4-INCH DIAMETER AND LARGER MAINS AND ONLY AT LOCATIONS WHERE THEY ARE OBVIOUSLY REQUIRED (I.E., AMONG DENSE GROUPS OF HOUSING, A CHAPTER HOUSE COMPOUND OR IN A COMMERCIAL DEVELOPMENT). TWO-INCH FLUSH VALVES ARE INSTALLED TO FLUSH WATER MAINS AS A PART OF ROUTINE MAINTENANCE. A STANDARD 2-INCH FLUSH VALVE IS TO BE INSTALLED ON 2-INCH WATER MAINS AND ON 4-INCH AND LARGER WATER MAINS THAT CANNOT PRODUCE THE STATED MINIMUM FIRE FLOW OR ALONG LINES IN STRICTLY RURAL SETTINGS. HYDRANTS AND FLUSH VALVES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARD DETAILS.
4. WATER SUPPLY FOR FIRE PROTECTION (FIRE FLOW) IS REQUIRED TO BE INSTALLED AND MADE SERVICEABLE PRIOR TO COMBUSTIBLE MATERIALS ARRIVING ON SITE.
5. THE DEVELOPER IS RESPONSIBLE FOR BLUE REFLECTIVE STREET MARKERS AT EACH HYDRANT LOCATION.
6. THE CENTER OF THE LARGE DIAMETER HOSE OUTLET SHALL BE NOT LESS THAN 18 IN. ABOVE FINAL GRADE.
7. A 3 FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS.
8. WHERE FIRE HYDRANTS ARE SUBJECT TO IMPACT BY MOTOR VEHICLE, GUARD POST OR OTHER APPROVED MEANS SHALL BE PROVIDED.
9. THE HYDRANT SHALL BE CLEARLY MARKED OR TAGGED AS OUT OF SERVICE. WHILE WATER LINES ARE UNDERGOING BACTERIAL CLEANSING AND TESTING, THE HYDRANT SHALL BE MARKED AS OUT OF SERVICE. THE OUT OF SERVICE MARKING AND TAG SHALL REMAIN UNTIL THE HYDRANT HAS BEEN INSPECTED BY THE DEVELOPER, APPROVED BY THE WATER UTILITY, AND IS IN SERVICE. THE WATER UTILITY WILL NOTIFY THE FIRE MARSHALL WHEN THE HYDRANT IS IN SERVICE AND IS AVAILABLE FOR FIRE FLOW TESTING.
10. WATER SERVICES SHALL HAVE A MINIMUM COVER OF 36" AND SHALL BE INSTALLED IN CONFORMANCE WITH NTUA STANDARDS.
11. SADDLES SHALL BE SINGLE STRAP/BAND TYPE. FOR STEEL PIPE O.D. PVC. SADDLES SHALL BE DOUBLE STRAP/BAND TYPE, FOR D.I., A.C., OR C-900 PIPE. ON EXISTING 2" PIPING, A 2" X 1" PVC TEE SHALL BE USED. CONTACT NTUA HEADQUARTERS ENGINEERING ON PIPING SMALLER THAN 2".
12. THE WATER METER SHALL BE CENTERED AND SET A MAX OF 24" BELOW THE TOP OF THE METER BOX COVER.
13. THE METER CAN SHALL BE LOCATED JUST BEYOND THE SIDEWALK AT THE PROPERTY LINE OR WITH OWNER'S PERMISSION A MINIMUM OF 10' FROM THE BUILDING.
14. THE POTABLE WATER SERVICE LINE IS TO BE CONSTRUCTED OF 200 PSI 3-INCH PVC PIPE. THE FIRE FLOW SERVICE LINE IS TO BE CONSTRUCTED OF 200 PSI 6-INCH PVC PIPE.
15. CONTRACTOR SHALL PLACE NTUA WARNING TAPE, MARKER POSTS, AND DECALS AS REQUIRED PER NAVAJO AREA STANDARDS AND CONSTRUCTION REQUIREMENTS TECHNICAL SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP FOR WATER AND WASTEWATER FACILITIES MOST CURRENT EDITION. WATER LINE AND DIRECTION SHALL BE INDICATED ON CEMENT COLLARS AT VALVE LOCATIONS.
16. THRUST BLOCKS SHALL BE INSTALLED AS NECESSARY IN ACCORDANCE WITH NTUA STANDARD WS-19 AND WS-19a.
17. ALL FITTINGS SHALL INCLUDE MEG-A-LUG JOINT RESTRAINTS IN ADDITION TO THE REQUIRED THRUST BLOCKING OR AS PERMITTED BY NTUA.
18. ALL PIPING COMPONENTS SHALL BE NSF STND. #14 & #61 APPROVED AND WILL BE INSTALLED AS PER NTUA SPECIFICATIONS.
19. ALL DUCTILE IRON FITTINGS WILL CONFORM WITH AWWA C110 AND C111 SPECIFICATIONS. VALVES WILL BE FURNISHED WITH AN ADJUSTABLE VALVE BOX AND COVER CONFORMING TO NTUA STANDARD WS-14. PRESSURE TESTING SHALL BE IN ACCORDANCE WITH NAVAJO AREA INDIAN HEALTH SERVICE DESIGN CRITERIA AND NAVAJO AREA STANDARDS AND CONSTRUCTION REQUIREMENTS TECHNICAL SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP FOR WATER AND WASTEWATER FACILITIES, MOST CURRENT EDITIONS.
20. DISINFECTION OF THE WATER LINES SHALL CONFORM TO ADEQ ENGINEERING BULLETIN NUMBER 8 AND NAVAJO AREA INDIAN HEALTH SERVICE DESIGN CRITERIA AND NAVAJO AREA STANDARDS AND CONSTRUCTION REQUIREMENTS TECHNICAL SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP FOR WATER AND WASTEWATER FACILITIES MOST CURRENT EDITIONS. NOTIFY NTUA 48 HRS IN ADVANCE TO ALL SYSTEM INTERRUPTIONS.
21. ALL AFFECTED WATER COMPANY CUSTOMERS WILL BE NOTIFIED BY NTUA 24 HRS BEFORE INTERRUPTION.
22. TRENCHING CONTRACTOR/APPLICANT SHALL PERFORM ALL WORK IN ACCORDANCE WITH TRENCH DETAIL AND SUPPLEMENTAL GENERAL SPECIFICATIONS INCLUDED IN NAVAJO AREA INDIAN HEALTH SERVICE DESIGN CRITERIA AND NAVAJO AREA STANDARDS AND CONSTRUCTION REQUIREMENTS TECHNICAL SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP FOR WATER AND WASTEWATER FACILITIES MOST CURRENT EDITIONS.
23. CONTRACTOR OR TRENCHING OPERATOR IS RESPONSIBLE FOR NOTIFYING NTUA DISTRICT OFFICE AT 1-928-697-3574 TWO WORKING DAYS PRIOR TO DIGGING.
24. TRENCHING CONTRACTOR IS NOT TO EXCAVATE WITHIN 5 FEET OF EXISTING WATER MAINS UNLESS NTUA WATER CREWS ARE PRESENT.
25. ONLY AUTHORIZED NTUA PERSONNEL MAY OPERATE SYSTEM VALVES. WATER AND SEWER LINE SEPARATIONS SHALL CONFORM TO NAVAJO AREA INDIAN HEALTH SERVICE DESIGN CRITERIA AND NAVAJO AREA STANDARDS AND CONSTRUCTION REQUIREMENTS TECHNICAL SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP FOR WATER AND WASTEWATER FACILITIES, MOST CURRENT EDITIONS.
26. ALL METER VAULTS SHALL BE LOCATED IN THE EASEMENTS, AT THE PROPERTY LINE. METER VAULT INSTALLATION LOCATION SHALL BE DISCUSSED AT THE PRE-CONSTRUCTION MEETING AND FINAL LOCATION SHALL BE APPROVED BY NTUA WATER CREW.
27. THE OWNER MUST PROVIDE ALL CONTRACTORS WITH A COPY OF THE CONSTRUCTION PLANS.

SEWER NOTES

1. ALL SEWER PIPES SHALL BE MADE OF MATERIAL CONFORMING TO REQUIREMENTS OF ASTM D1784, TYPE I, GRADE 1 FOR RIGID POLYVINYL CHLORIDE COMPOUNDS. ALL SEWER PIPES AND FITTINGS SHALL BE AT LEAST SDR 35, TYPE PSM WITH ELECTROMERIC GASKET JOINTS MEETING THE REQUIREMENTS OF ASTM D 3034. SERVICE CONNECTIONS TO NEW SEWER MAINS SHALL BE WYE FITTINGS.
2. SEWER CLEANOUTS ARE REQUIRED ON ALL BENDS IN EXCESS OF 45 DEGREES AS PER PLUMBING CODE ADOPTED BY THE NAVAJO NATION. MODIFY MATERIAL LIST ACCORDINGLY AFTER CONSULTING WITH N.T.U.A. HEADQUARTERS ENGINEERING.
3. ADDITIONAL SEWER CLEANOUTS ARE REQUIRED ON SEWER SERVICES LONGER THAN 50 FT. AS PER UNIFORM PLUMBING CODE ADOPTED BY THE NAVAJO NATION. MODIFY MATERIAL LIST ACCORDINGLY AFTER CONSULTING WITH N.T.U.A HEADQUARTERS ENGINEERING. EACH ADDITIONAL CLEANOUT IS AT THE CUSTOMERS EXPENSE INSTALL AT LEAST ONE CLEANOUT AS REQUIRED. IF CUSTOMER REQUEST FEWER AND REALIZED ITS VIOLATES NAVAJO TRIBAL CODE, THEN INSTALL PER THE CUSTOMER'S REQUEST AND SO NOTE ON THE INDIVIDUAL AS-BUILT, N.T.U.A. RECOMMENDS THAT CLEANOUTS BE SPACED NO MORE THAN 100'.
4. PROVIDE PROPOSED ELEVATION AT WALL. PROVIDE 6 IN. DIAMETER SLEEVE IF PIPING PENETRATES WALL OR 4 IN. DEPTH OF SAND BETWEEN FOOTING AND TOP OF PIPING IS BELOW THE FOOTING. ORDER ASTM D-1785 SCH. 40 PIPE WITH LENGTH AS NEEDED FOR THE SLEEVE. CONTACT N.T.U.A. HEADQUARTERS ENGINEERING ON PIPING SMALLER THAN 2 IN. IN SIZE.
5. MINIMUM SLOPE OF ¼ INCH PER FOOT (2%) OR CONTACT N.T.U.A. HEADQUARTERS ENGINEERING.
6. BACKFILL IS TO BE HAND TAMPED (NO MECHANICAL) AND COMPACTED IN 6 INCH LAYERS FOR AT LEAST 12 IN. ABOVE PVC PIPE. INSTALL PER ASTM D-2321 AND UNIFORM PLUMBING CODE ADOPTED BY NAVAJO NATION.
7. NEW SEWER SERVICES SHALL BE INSTALLED WITH 36" OF MINIMUM COVER PER NTUA TECHNICAL SPECIFICATION 4.04.01, UNLESS OTHERWISE INDICATED ON THESE PLANS.
8. ALL NEWLY CONSTRUCTED LINES ARE REQUIRED TO BE CLAMPED AND TESTED FOR EXFILTRATION. TESTING IS TO BE CONDUCTED AS NAVAJO AREA STANDARDS AND CONSTRUCTION REQUIREMENTS TP 4.08. THE ENGINEER IS REQUIRED TO COMPLETE THE CERTIFICATION FORMS AS APPROPRIATE. THE COMPLETED FORMS ARE TO BE FORWARDED BY THE ENGINEER TO THE NTUA HEADQUARTERS, SPECIAL PROJECT DEPARTMENT, FOR REVIEW AND APPROVAL. A LETTER OF ACCEPTANCE OF THE TEST RESULTS WILL BE FORWARDED FROM THE NTUA HEADQUARTERS TO THE DISTRICT ENGINEER.
9. BEFORE TAPPING AN EXISTING MANHOLE, A TAPPING PERMIT MUST BE ACQUIRED. SERVICE TAPS FOR NEW CONSTRUCTION SHALL BE CONSTRUCTED WITH GASKETED WYES. EXISTING LINES MAY BE TAPPED WITH GASKETED WYE FITTINGS USING STAINLESS STEEL CLAMPS.
10. MANHOLES ARE TO BE TESTED FOR WATER TIGHTNESS. EACH MANHOLE IS TO BE TESTED BY ITSELF. THAT IS, A SEWER MAIN AND MANHOLE MAY NOT BE TESTED AT THE SAME TIME. TESTING IS TO BE CONDUCTED AS PER NAVAJO AREA STANDARDS AND CONSTRUCTION REQUIREMENTS TP 4.09.
11. THE MATERIAL LIST SHALL BE MODIFIED IF A FIELD MARKER OF THE TAP POINT IS TO BE INSTALLED. UNDER THE AS-BUILT TIE INFORMATION. PROVIDE THE SURFACE DESCRIPTION OF THE TAP POINT (e.g. OPEN FIELD, PAVED ROAD, etc.)



LOCATION MAP
SCALE: NO SCALE
A PORTION OF N 1/2 SECTION 12, T-38-N, R-19-E, G.&S.R.M., NAVAJO COUNTY, ARIZONA



CONTOUR INTERVAL = 1 FOOT
HORIZONTAL SCALE: 1" = 100'
0' 100' 200' 300'

NO.	DESCRIPTION	DATE
1	PLAN REVIEW 4.6.12	4-6-12

REVISIONS

Registered Professional Engineer (Civil) CERTIFICATE NO. 43885 MERWIN T. YELLOWHAIR Date Signed 4-06-12 ARIZONA, U.S.A.
EXPIRES 3/31/12

ARROWHEAD ENGINEERING, INC.
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TUCSON, ARIZONA 85713
PHONE: 520-822-7702
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AEI JOB: 211-013

COVER SHEET
NATIVE NEW VOC. HIGH SCHOOL
HOGANS
THE PROJECT IS LOCATED IN A PORTION SECTION 12, T-38-N, R-19-E, G&S.R.B.&M. NAVAJO COUNTY, ARIZONA

SHEET 1 OF 6