CITY OF GALLUP, NEW MEXICO

NAVAJO - GALLUP WATER SUPPLY PROJECT

REACH 27.6

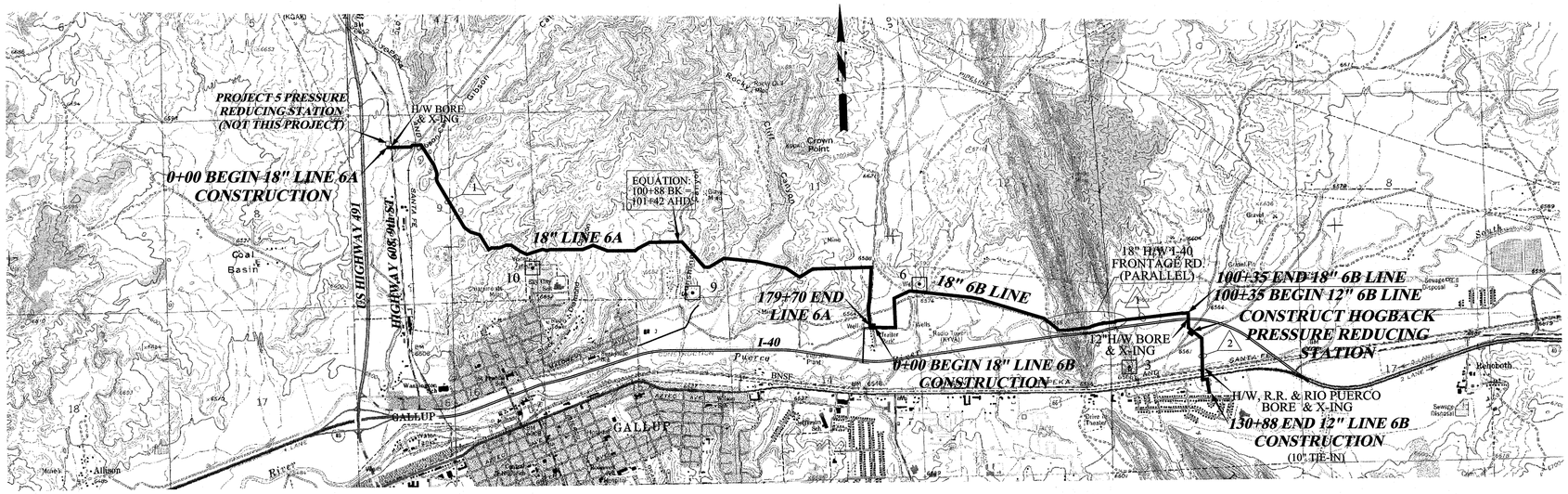
FORMAL BID NO. 1608

FUNDED BY:

THE WATER TRUST BOARD THROUGH THE NEW MEXICO FINANCE AUTHORITY, WTB #283
AND
U.S. BUREAU OF RECLAMATION COOPERATIVE AGREEMENT NO. R11AC40002
AND
THE CITY OF GALLUP

INDEX

ITEM	SHEET NO.
TITLE SHEET	1-1
GENERAL NOTES	1-2
WATERLINE PLAN & PROFILES	
WATERLINE 6A (18") - Bid Lot 1	
0+00 TO 20+000	2-1
20+00 TO 40+00	2-2
40+00 TO 60+00	2-3
60+00 TO 70+00	2-4
70+00 TO 90+00	2-5
90+00 TO 111+42	2-6
111+42 TO 131+42	2-7
131+42 TO 151+42	2-8
151+42 TO 171+42	2-9
171+42 TO 179 +70	2-10
WATERLINE 6B (18" & 12") - Bid Lot 1	
0+00 TO 22+00	2-11
22+00 TO 44+00	2-12
44+00 TO 66+00	2-13
66+00 TO 88+00	2-14
88+00 TO 110+00	2-15
110+00 TO 130+99	2-16
CONNECTOR LINES - Bid Lot 2	
8" WATERLINE	2-10
14" REHOBOTH LINE	2-17
8" SEWER LINE	2-18
MONTOYA LINE (12") - Bid Lot 3	2-19
MINE REMEDIATION - Bid Lot 4	
BLACK DIAMOND MINE	3-1
McVICKERS, BUBANY, OTERO & UNKNOWN ENTRY MINES	3-2
MISC. WATERLINE ITEMS	
ARROYO GRADE CONTROL DETAILS	4-1
SPECIAL PIPELINE ITEMS & ARCHEOLOGY SITES	4-2
CMP RUNDOWN DETAILS	4-3
BORE/CASING, HOR. GATE VALVES, ETC.	4-4
FENCING, RIP-RAP, ARV & 12" LINE ABANDONMT.	4-5
HOGBACK PRESSURE REDUCING STATION - Bid Lot 5	
SITE PLAN	5-1
PIPING PLAN.	5-2
BUILDING DETAILS	5-3
MECHANICAL GENERAL NOTES & DETAILS	5-4,5
ELECTRICAL DETAILS	5-6,7,8,8A,9
SCADA & ELECTICAL DETAILS	5-10
HEATON PUMP STATION - Bid Lot 6	
SITE PLAN	6-1
YARD PIPING PROFILES.	6-2
BUILDING FLOOR PLAN	6-3
INTERIOR WATER PIPING PLAN	6-4
INTERIOR FLOOR DRAIN PLAN	6-5
INTERIOR WATER PIPING ELEVATIONS	6-6,7,8,9,10
INTERIOR FLOOR DRAIN PROFILES	6-11
BUILDING ELEVATIONS	6-12
STRUCTURAL DETAILS	6-13,14,15,16
ROOF, GABLE, EAVE & RAKE DETAILS	6-17
CRANE & SURGE PANEL MOUNT DETAILS	6-18
MECHANICAL GENERAL NOTES & DETAILS	6-19,20
STATION ELECTRICAL DETAILS	6-21,22,23,24,25
SCADA & ELECTICAL DETAILS	6-24A,24B,26
SCADA ADDITIONS & REVISIONS - Bid lot 7 (PLANS & PROGRAMMING BY CITY CONTRACTOR)	-
MISC. CITY OF GALLUP STANDARDS	7-1,2



SCALE: 1"=2000' APPROXIMATE

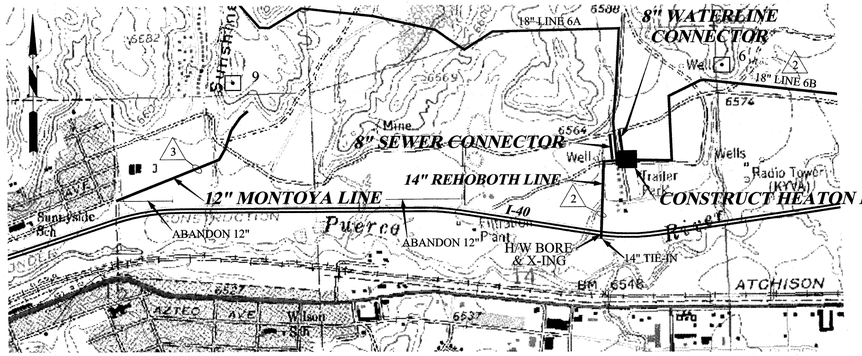
PROJECT 6 - 18" & 12" WATERLINES , PRESSURE REDUCING STATION VICINITY MAP

HOGBACK PRESSURE REDUCING STATION - Bid Lot 5

ELECTRICAL INDEX	SHEET NO.
GENERAL NOTES	5-6
SITE PLAN	5-7
POWER PLAN	5-8
SPECIAL SYSTEMS PLAN	5-8A
POWER RISER	5-9
SCADA & ELECTRICAL	5-10

HEATON PUMP STATION - Bid Lot 6

ELECTRICAL INDEX (W/ SCADA)	
FIXTURE SCHEDULE & GENERAL NOTES	6-21
SITE PLAN	6-22
LIGHTING PLAN	6-23
POWER PLAN	6-24
POWER RISER, LOAD SUMMARY & PANEL SCHEDULES	6-25
SPECIAL SYSTEMS & SCADA PLANS	6-24A
SCADA J-BOX /CONTROL SCHEME	6-24B
SCADA DIAGRAMS & SCHEMES	6-26



PROJECT 6 (ENLARGEMENT) - HEATON PUMP STATION CONNECTOR LINES 12" MONTOYA LINE VICINITY MAP

SCALE: 1"=1000' APPROXIMATE

CITY OF GALLUP CONTROL POINTS:

			GROUND CO-ORDINATES		ELEVATION
3	⊡	*LIL HOG*	*N: 1650169.67*	*E: 2469963.29*	*6596.29*
6	⊡	*DETENTION*	*N: 1652655.51*	*E: 2464145.47*	*6607.69*
9	⊡	*SUNSHINE*	*N: 1652615.56*	*E: 2457844.01*	*6617.66*
10	⊡	*SKY*	*N: 1653680.53*	*E: 2453176.20*	*6736.13*

KURT A. SPOLAR — NEW MEXICO — 17637 — LICENSED PROFESSIONAL ENGINEER — 2-28-16

WATER PRESSURE ZONES:

		HIGH WATER
1	GAMERCO ZONE	ELEV 6905
2	COUNTRY CLUB ZONE	ELEV 6794
3	TRADE MART ZONE	ELEV 6733

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION :
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulieengineering.com

for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

TITLE SHEET

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 1 - 1

ENGINEER-I: C:\Users\Public\Documents\engineer\Proj 68

GENERAL UTILITY CONSTRUCTION NOTES:

1. WORKMANSHIP AND MATERIALS FOR ASPHALTIC PATCH SECTION AND CONCRETE SHALL CONFORM TO THE NMDOT SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, 2014 EDITION, PROVIDED HOWEVER THAT CITY SPECIFICATIONS CONTAINED HEREIN SHALL APPLY. NMDOT REQUIREMENTS FOR INSURANCE & WORK PERMITS APPLY.

2. REMOVAL OF STRUCTURES AND OBSTRUCTIONS INCLUDING ASPHALT PAVEMENT, CONCRETE PAVEMENT, CULVERTS, TREES, SHRUBS, SIDEWALK, CURB & GUTTER, ROCK AND OTHER MISC. ITEMS THAT NEED TO BE REMOVED OR DISPOSED OF SHALL BE TAKEN TO DESIGNATED AREAS AND/OR AN APPROVED LANDFILL IN ACCORDANCE WITH PROVISIONS OF THE NEW MEXICO SOLID WASTE ACT PROVIDED HOWEVER, THAT RECYCLABLE MATERIAL MAY BE TAKEN TO APPROPRIATE COMPANIES.

3. WATER FOR PIPELINE EARTHWORK CONSTRUCTION SHALL BE POTABLE WATER AND MAY BE TAKEN FROM THE CITY OF GALLUP EAST PUMP STATION LOCATED IMMEDIATELY NORTH OF INTERSTATE 40 AND APPROX. 1/2 MILE EAST OF FORD DRIVE IN THE CITY OF GALLUP. WATER FOR FILLING, PRESSURE TESTING AND BACTERIOLOGICAL TESTING MAY BE TAKEN FROM AN APPROVED CONNECTION TO THE EXISTING CITY SYSTEM UTILIZING STATIC OR PUMPED HEAD AVAILABLE PROVIDED PROPER APPARATUS FOR CROSS-CONNECTION PREVENTION IS IN PLACE. WATER FOR WATERLINE TESTING MAY ALSO BE TAKEN FROM A FIRE HYDRANT DESIGNATED BY THE CITY WATER DEPT. CONTRACTOR TO USE WATER FLUSHED FROM NEW LINE TO THE EXTENT POSSIBLE FOR PIPELINE CONSTRUCTION. WATER HAULING SHALL BE IN CLEAN, POTABLE WATER TANKERS. CONTRACTOR TO COORDINATE WITH CITY WATER DEPARTMENT AS REQUIRED TO OBTAIN WATER AND ACCESS WATER FACILITIES. CONTRACTOR TO PROVIDE ALL MATERIALS, FITTINGS AND EQUIPMENT REQUIRED TO FACILITATE PIPELINE TESTING.

4. QUALITY CONTROL TESTING FOR PROJECT MATERIALS SHALL BE PERFORMED BY AN INDEPENDENT TESTING LAB AS HIRED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS IN ADVANCE WHEN CONCRETE PLACEMENTS ARE SCHEDULED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE TESTING LAB WHEN COMPACTION TESTS ARE NEEDED AND WHEN CONCRETE PLACEMENTS ARE GOING TO BE MADE. THE CONTRACTOR SHALL PROVIDE THE TESTING LAB ACCESS AT ANY TIME FOR TESTING AT THE CONSTRUCTION SITE. THE CONTRACTOR SHALL ASSIST THE TESTING LAB AS REQUIRED TO OBTAIN MATERIAL SAMPLES.

5. CONCRETE FOR THIS PROJECT SHALL BE 4500 PSI (28 DAY) CONCRETE WITH 4 1/2 - 7 1/2% ENTRAINED AIR. CONCRETE TO BE PLACED WITH NO MORE THAN 4" SLUMP WITH LIMITED WATER TO BE USED TO FACILITATE FINISHING. ALL REINFORCEMENT FOR CAST IN PLACE CONCRETE SHALL BE GRADE 40 OR 60 DEFORMED BARS AS SPECIFIED PER ASTM A615. CEMENT TO BE TYPE II. SEE THE CONTRACT DOCUMENTS FOR ADDITIONAL CONCRETE REQUIREMENTS.

6. THE CONTRACTOR SHOULD BE AWARE THAT NO CONSTRUCTION SHALL COMMENCE UNTIL ALL UTILITY LOCATIONS ARE MARKED. THE CONTRACTOR SHOULD EXPECT THAT SOME SHIFTS IN ALIGNMENT WILL BE MADE TO AVOID EXISTING UTILITIES AND MEET PROXIMITY REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE EXPLORATORY EXCAVATION AT LOCATIONS SHOWN ON THE PROJECT DRAWINGS OR AS REQUIRED FOR ALIGNMENT CHANGES. WATER LINE STAKES SHALL BE PROVIDED BY THE CONTRACTOR WITH CHECKS BY THE ENGINEER AS WORK PROGRESSES.

7. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY STAKING AS SUPERVISED BY A LICENSED SURVEYOR WITH RANDOM CHECKS BY THE ENGINEER. THE CONTRACTOR SHALL DEMONSTRATE THAT HE OR SHE HAS THE EQUIPMENT AND THE EXPERIENCE TO PROPERLY MAINTAIN ACCURATE CONTROL OF THE PROJECT INSTALLATION UTILIZING THE DATA PROVIDED. THE ENGINEER WILL PROVIDE RANDOM BASIC CONTROL POINTS WITH GROUND CO-ORDINATES AND ELEVATIONS IN THE NEAR PROXIMITY OF THE PIPE LINE AT APPROXIMATE 2000 FT. INTERVALS FOR USE BY THE CONTRACTOR. EXISTING CITY CONTROL POINTS AS SHOWN ON THE PROJECT DRAWINGS ARE ALSO AVAILABLE . THE CONTRACTOR WILL BE RESPONSIBLE FOR NOTIFYING THE ENGINEER WHEN VALVES, FITTINGS AND SPECIALS ARE IN PLACE SO THAT 'AS BUILT' SURVEYS BY THE ENGINEER CAN BE CONDUCTED PRIOR TO BACKFILL.

8. SLEEVES FOR CAST IRON PIPE SIZES SHALL BE HEAVY DUTY, LONG BODY, M.J. TYPE WITH ADAPTER TYPE WHERE REQUIRED.

9. BASE COURSE FOR STREET CONSTRUCTION SHALL BE NMDOT TYPE I. GRAVEL (BASE COURSE) FOR DETOURS OR DRIVEWAYS TO BE TYPE I OR TYPE II.

10. ALL ABANDONED LINES SHALL BE PLUGGED W/ CONCRETE (OR OTHER CEMENT BASED PRODUCTS) AT TIE-IN LOCATIONS UNLESS OTHERWISE NOTED. REMOVE OLD VALVES WHERE CALLED FOR, OTHERWISE REMOVE VALVE CANS & COMPACT BACKFILL OR INSTALL FLOWABLE FILL WITH OLD VALVE TO BE CLOSED AND REMAIN IN PLACE. PROVIDE 10' MINIMUM HORIZONTAL SEPARATION OF WATER AND SEWER LINES.

11. SUBMITTALS ARE REQUIRED FOR ALL MATERIALS AND EQUIPMENT PROPOSED FOR THE PROJECT WITH APPROVAL REQUIRED BY THE CITY. SCHEDULES FOR MANHOLE BARRELS, CONES AND RIMS SHALL BE PROVIDED.

12. ABANDONED MINE REMEDIATION ACTIVITIES SHALL BE COMPLETED WELL IN ADVANCE OF APPROACHING PIPELINE INSTALLATION OR BYPASSED UNTIL WORK ON ADJACENT STRETCHES IS COMPLETE. UNKNOWN CONDITIONS MAY IN SOME CASES REQUIRE ADJUSTMENT OF PLANNED WATERLINE ALIGNMENT. PAYMENT FOR MOBILIZATION OF DRILLING AND GROUTING EQUIPMENT WILL BE LIMITED TO A ONE TIME OCCURRENCE FOR WORK DESCRIBED HEREIN WITHIN STATION LIMITS OF 66+00 TO 90+00 . UNEXPECTED MINE CONDITIONS ENCOUNTERED AFTER REMEDIATION WORK SHOWN ON THESE PLANS IS COMPLETE WILL JUSTIFY PAYMENT FOR ADDITIONAL MOBILIZATION COST AT THE UNIT PRICE BID. CONTRACTOR TO COMPLY WITH ALL STATE LEGAL AND SAFETY ISSUES IN REGARD TO ABANDONED MINE REMEDIATION REQUIREMENTS DEPICTED HEREIN. THE PURPOSE OF REMEDIATION EFFORTS IS TO STABILIZE THE GROUND BENEATH PROPOSED PIPELINE.

13. PIPE LINE TO GRADE UPWARD TO RESERVOIR OR THE NEAREST AIR RELEASE VALVE.

14. MIN. COVER FOR 8",12" PIPE TO BE 3.5' UNLESS SHOWN OTHERWISE. MIN. COVER FOR 18" PIPE TO BE 4.0' UNLESS OTHERWISE DESIGNATED. PRESSURE CLASS FOR ALL DUCTILE IRON PIPE & FITTINGS TO BE 350 PSI. GRP PIPE TO BE CL 250. PVC PIPE TO BE AWWA C900-07, DR18 OR WHEN APPROPRIATE, C905 DR18.

15. THE USE OF "WATER FLOODING" OR "WATER JETTING" TO ACHIEVE COMPACTION OF PIPE BEDDING OR BACKFILL WILL NOT BE PERMITTED . BACKFILL TO STAY WITHIN 100' OF PIPE LAYING AT ALL TIMES AND TO END OF PIPE AT COMPLETION OF WORKDAY.

16. PROPOSED REVISIONS OR CLARIFICATIONS BY THE CONTRACTOR OF VERTICAL PIPELINE ALIGNMENT IN SPECIFIC AREAS WILL REQUIRE A "LAYING SCHEDULE" FOR APPROVAL OF THAT AREA. LAYING SCHEDULE TO INCLUDE PLAN & PROFILE, WITH STATIONS, ELEVATIONS, GRADES, DEFLECTIONS, JOINT RESTRAINT AND OTHER INFORMATION REQUIRED TO DETERMINE HOW PIPELINE DESIGN IS TO BE IMPLEMENTED.

17. ALL PIPE BEDDING SHALL BE AN IMPORTED GRANULAR MATERIAL. TRENCH BACKFILL ABOVE BEDDING SHALL BE GRANULAR MATERIAL IN SOME LOCATIONS WHERE CALLED FOR. GRANULAR MATERIAL MAY BE TAKEN FROM ANY SUITABLE SOURCE. THE MATERIAL SHALL BE SANDY IN NATURE, FRIABLE WITH NO CLODS OR CLAY BALLS AND EXHIBIT MINIMAL "PUMPING" CHARACTERISTICS WHEN COMPACTED AT MOISTURE CONTENT SLIGHTLY BELOW OPTIMUM. IN ADDITION, MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING
1"	100
NO. 4	40 - 100
NO. 200	LESS THAN 30
PI < 12	

ACCEPTABLE SOURCES ON PAST PROJECTS INCLUDE THE FOLLOWING:

1. CRUSHER FINES FROM LOCAL AGGREGATE COMPANIES.
2. PUERCO RIVER, FROM LOCATIONS APPROVED BY THE CITY PUBLIC WORKS DIRECTOR.
3. LOCAL QUARRY OR STOCKPILE.

18. FITTINGS TO BE MJ TYPE W/ RESTRAINING GLANDS UNLESS OTHERWISE NOTED. JOINT RESTRAINT SHALL BE PROVIDED ON 3 OR MORE JOINTS FOR A TOTAL LENGTH OF 36' UPSTREAM AND DOWNSTREAM OR AS CALLED FOR, ON ALL VERTICAL ELLS WITH DEFLECTIONS TOWARD THE GROUND. THIS WILL REQUIRE MJ PIPE W/ RESTRAINING GLANDS OR MJ SLEEVES W/ RESTRAINING GLANDS. MAX. VERTICAL TURN DOWN DEFLECTION ELLS THIS PROJECT TO BE 22.5°. ALL BOLTED FITTINGS, GLANDS, FLANGES & DUCTILE IRON PIPE TO BE WRAPPED OR SLEEVED WITH 2 PROTECTIVE LAYERS CONSISTING OF 8 MIL AWWA C105 POLYETHYLENE & V-BIO W/ STAGGERED JOINTS. POTENTIAL PUNCTURING OF E WRAP BY RESTRAINING BOLTS TO BE MITIGATED BY INSTALLING STYROFOAM OR OTHER MATERIAL ADJACENT TO BOLTS, TAPED IN PLACE, PRIOR TO INSTALLING PROTECTIVE WRAP. CONTRACTOR TO USE CAUTION WHEN POURING THRUST BLOCKS TO INSURE THAT MJ BOLTS ARE NOT COVERED WITH CONCRETE. WRAPPED PIPE TO BE CAREFULLY LIFTED INTO PLACE W/ SLANGS THAT WILL NOT DAMAGE THE WRAP (CHAINS NOT PERMITTED). LATERAL COMPACTION SHALL PROCEED IN A CAREFUL, CONTROLLED MANNER WHILE PROTECTING THE WRAP. WRAP TO BE HELD REASONABLY TIGHT AGAINST THE PIPE W/ TAPE OR OTHER APPROVED MEANS.
SEE SHEET 7-1 FOR OTHER THRUST RESTRAINT DETAILS.

19. FITTINGS AND PIPE INTERIORS TO BE WIPED DOWN WITH CHLORINE SOLUTION (50 PPM) AT WATER TIE-INS.

20. GATE VALVES TO BE AWWA RESILIENT WEDGE TYPE WITH EPOXY COATING INSIDE AND OUT. 18" GATE VALVES TO BE THE "HORIZONTAL" (LAY-DOWN) TYPE OR AS CALLED FOR. GATE VALVES 18" AND LARGER TO HAVE VALVED BYPASSES. CHECK VALVES AND AIR RELEASE VALVES TO BE AS CALLED FOR IN THE SPECIFICATIONS AND DRAWINGS.

21. EXISTING UTILITIES: EXISTING UTILITIES SHOWN ARE FROM UTILITY COMPANY MAPS, EVIDENCE ON THE GROUND AND CONVERSATION WITH UTILITY COMPANY OFFICIALS. THE EXACT LOCATION, DEPTH AND SIZE OF SOME OF THE LINES ARE UNKNOWN. CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UTILITIES PRIOR TO TRENCHING. UTILITIES THAT ARE DAMAGED OR CUT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST. THE CONTRACTOR SHALL CALL 811 FOR "LOCATES" ON ALL UTILITIES PRIOR TO CONSTRUCTION.

22. LINE MEASUREMENT AND BASIS OF PAYMENT - THESE ITEMS OF WORK CONSIST OF FURNISHING ALL MATERIALS, PLANT, EQUIPMENT AND LABOR IN INSTALLING PIPE OF THE DIAMETER AND MATERIAL SPECIFIED, COMPLETE WITH MAIN LINE FITTINGS CALLED FOR, APPURTENANCES AND TRENCHING, BEDDING AND BACKFILL, BUT DOES NOT INCLUDE PAVEMENT REMOVAL AND REPLACEMENT OR ROCK EXCAVATION. VERTICAL 11¼° ELLS THAT ARE NOT CALLED FOR ON PROJECT DRAWINGS BUT MAY BE REQUIRED TO FACILITATE CONSTRUCTION WILL BE PAID FOR AT THE UNIT PRICE BID EACH. MEASUREMENT WILL BE BY THE LINEAR FOOT ALONG THE CENTERLINE OF THE PIPE THROUGH VALVES, MANHOLES AND FITTINGS WITHOUT CORRECTION FOR SLOPE. PAYMENT WILL BE FOR THE ACTUAL LINEAR FEET OF PIPE INSTALLED AND IN PLACE AT THE CONTRACT UNIT PRICE BID FOR THE ITEM.

23. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL DEVICES AS DESCRIBED IN USDOT/FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES ON ALL PARTS OF THE PROJECT UNDER CONSTRUCTION. THE DEVICES SHALL INCLUDE, BUT NOT BE LIMITED TO, TYPE 1 BARRICADES TYPE 2 BARRICADES, CONES, DRUMS, WARNING SIGNS, DETOUR SIGNS, NIGHT TIME FLASHERS AND PORTABLE FLASHERS. THE DEVICES SHALL BE MAINTAINED SEVEN (7) DAYS A WEEK FOR THE DURATION OF THE PROJECT. AT A MINIMUM, THE CONTRACTOR SHALL MAINTAIN THE TRAFFIC CONTROL PLAN AT ALL TIMES. CONTRACTOR SHALL MAKE ADJUSTMENTS TO THE TRAFFIC CONTROL PLAN DURING THE PROGRESSION OF WORK, TO ENSURE THAT LIFE AND PROPERTY ARE PROTECTED AT ALL TIMES.

24. PROPERTY CORNERS, BENCHMARKS AND CONTROL POINTS TO BE PROTECTED AT ALL TIMES. LOST OR DAMAGED POINTS DUE TO NEGLIGENCE SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

25. WATERLINE TIE-INS TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE PROJECT DRAWINGS AND SHALL INCLUDE ALL PIPE, SLEEVES, SPECIALS AND APPURTENANCES EXCEPT VALVES REQUIRED TO COMPLETE THE TIE-IN.

26. DIP & GRP WATERLINES SHALL BE PRESSURE TESTED AT 250 PSI AT THE LOW END OF TEST SEGMENTS FOR 6A & 6B PIPELINES. TEST PRESSURE FOR PVC TO BE 200 PSI. THE LINE SEGMENT BEING TESTED MAY EXTEND UPHILL UNTIL RESULTING TEST PRESSURE IS NO LESS THAN 125 PSI. THE MAXIMUM LENGTH FOR A PRESSURE SEGMENT IS 4000 FT. SEE ALSO TESTING NOTE ON SHEET 2-2.

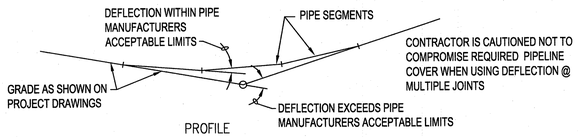
27. ALL PIPING SHALL BE SEALED AT WORK DAYS END TO PREVENT THE ENTRANCE OF INSECTS, MAMMALS AND REPTILES. CLOSURE SHALL ALSO BE SUCH AS TO PREVENT VANDALISM AND FLOOD DAMAGE. CLOSURE TO BE COVERED WITH EXCAVATED MATERIAL SO THAT THE END OF PIPE AND METHOD OF CLOSURE IS NOT VISIBLE. CLOSURE EFFORTS TO BE ESPECIALLY INTENSE ON WEEK ENDS.

28. CONTRACTOR SHALL TAKE PRECAUTIONS AS REQUIRED TO PREVENT DAMAGE TO THE ENVIRONMENT ADJACENT TO CONSTRUCTION. CONTRACTOR TO REMOVE ONLY THE TREES, SHRUBS, GROUND COVER AND ROCK AS ABSOLUTELY NECESSARY TO COMPLETE THE PROJECT. TREES, EXCESS ROCK AND SPOIL SHALL BE REMOVED AND PROPERLY DISPOSED OF, PROVIDED HOWEVER, THAT EXCAVATED ROCK MAY BE USED AS EROSION CONTROL AS DIRECTED. STAGING AREAS TO BE LIMITED TO AREAS WHERE CONSTRUCTION IS PLANNED, CONSTRUCTION R/Ws OR AREAS PROPERLY SECURED FROM LANDOWNERS. ALL AREAS AFFECTED BY CONSTRUCTION TO BE PROPERLY CLEANED, GRADED AND DRESSED UPON COMPLETION. RE-SEEDING WILL BE REQUIRED IN SOME AREAS AS DIRECTED. CONTOUR BERMS WILL BE REQUIRED AS DIRECTED TO PREVENT RUNOFF FROM TRAVELING ALONG PIPELINE TRENCH.

29. THE LOCATION OF VERTICAL POINTS OF INTERSECTION (PVI's) WHERE NO FITTINGS ARE CALLED FOR, ARE APPROXIMATE. THE REQUIRED DEFLECTION CAN BE ACHIEVED AT ONE OR MORE NEARBY STANDARD JOINTS PROVIDED THE DEFLECTION IS WITHIN MANUFACTURERS RECOMMENDED
LIMITS.

30. GENERAL NOTE ON PIPELINE GRADES: THE PIPELINE GRADES AND ELEVATIONS SHOWN ON THE PROJECT PROFILES ARE INTENDED TO GIVE THE CONTRACTOR A GENERAL IDEA OF SLOPES THAT WILL BE ENCOUNTERED IN THE INSTALLATION OF THE PIPE. THE DEPTHS SHOWN ON THE PROFILES SHOULD BE CONSIDERED AS MINIMUMS ESPECIALLY UNDER DRAINAGE DITCHES AND ARROYOS. DEPTH INCREASES MAY BE PERMITTED IN SOME LOCATIONS (NOT TO EXCEED 10 FT. IN COVER UNLESS APPROVED BY THE ENGINEER) TO ELIMINATE THE NEED FOR "CALLED FOR" FITTINGS, THE CONTRACTOR IS, HOWEVER, CAUTIONED NOT TO EXCEED THE PIPE MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION. THE CONTRACTOR SHALL DEVISE AND DEMONSTRATE A METHOD TO DETERMINE PIPE DEFLECTION AT A JOINT. PIPE SUBMITTALS ARE TO INCLUDE THE MANUFACTURERS MAX. RECOMMENDED JOINT DEFLECTION. IN FLAT TERRAIN (LESS THAN 1% SLOPE) THE CONTRACTOR WILL BE EXPECTED TO MAINTAIN GRADES NEAR TO THOSE SHOWN ON THE PROJECT DRAWINGS. DEVIATIONS FROM THE GRADES DEPICTED COULD RESULT IN AIR POCKETS OR INADEQUATE PIPE COVER. PIPE IS TO GRADE UPHILL IN ALL LOCATIONS TO EITHER AN AIR RELEASE VALVE OR A RESERVOIR.

31. TR FLEX RESTRAINED JOINT PIPE BY US PIPE OR EQUAL MAY BE USED AS AN EQUAL ALTERNATIVE TO MJ PIPE WITH RESTRAINING GLANDS.



VERTICAL PIPE DEFLECTION (MULTIPLE JOINTS)

NTS

SURVEY NOTES:

1. COORDINATES SHOWN ARE REFERENCED TO CITY OF GALLUP CONTROL SYSTEM WHICH IS BASED ON NMSP NAD 83, WEST ZONE GROUND COORDS. WITH A COMBINED FACTOR OF 0.99968672.
2. BEARINGS SHOWN ARE GRID.
3. ELEVATIONS ARE BASED 1929 NGVD (VERTICAL DATUM)
4. WATER PRESSURE ZONE

	HIGH WATER ELEVATION
COUNTRY CLUB (EXISTG.)	6794'
GAMERCO (THIS PROJECT)	6905'
TRADE MART (EXISTG.)	6733'

DESIGN PARAMETERS (IBC SECTION 1603)

BUILDINGS & RESERVOIRS:

DEAD LOADS:

STEEL	490 LBS/CF
CONCRETE	150 LBS/CF
WATER	62.4LBS/CF

LIVE LOADS:

ROOF (SNOW)	30 LBS/SF
BLDG. FLOOR	100 LBS/SF

WIND LOADS:

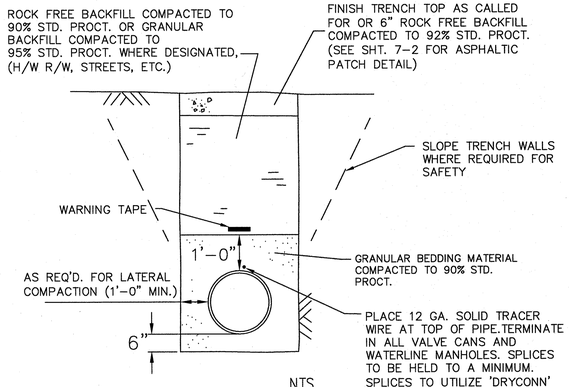
BUILDINGS 20 LBS/SF (VERT. PROJECTION)

SOIL BEARING CAPACITIES, ENGINEERED FILL:
GEOMAT REPORT (9/29/14)

MIN. FOOTING DEPTH OF 2.5 FT.	2500 PSF
FOOTING DEPTH OF 3.0 FT.	3000 PSF

PARTIAL LIST OF INCIDENTALS:

1. INCIDENTAL TO CONSTRUCTION STAKING BID ITEMS - BLUE TOP STAKING FOR SUBGRADE AND BASE COURSE. CONTROL STAKES AS REQUIRED TO PLACE SAW CUTS IN CONCRETE PAVEMENT. MISC. STAKES AND MEASUREMENT FOR DETAILED CONSTRUCTION OF STRUCTURES AND APPURTENANCES.
2. STORM WATER POLLUTION PREVENTION - PERMITS, NOTICES, PLANS, IMPLEMENTATION AND MAINTENANCE OF PLANS UTILIZING EROSION AND SEDIMENT CONTROL DEVICES PROVIDED SHALL BE CARRIED OUT FOR ALL PORTIONS OF THIS PROJECT.
3. LANDSCAPE - REPLACE SHRUBS, TREES, RAILROAD TIES, DECORATIVE GRAVEL AND PLAYGROUND EQUIP. AS REQUIRED.
4. TRAFFIC CONTROL - IMPLEMENTATION OF TRAFFIC CONTROL.
5. BASE COURSE RAISED TO PAVEMENT LEVEL IN DRIVEWAYS AND STREETS FOR PUBLIC TRAVEL PRIOR TO PLACEMENT OF PMBP.
6. LOCAL STANDBY PERSONNEL TO HANDLE 24 HOUR (INCLUDING WEEKENDS) EMERGENCIES.
7. PROPER DISPOSAL OF ALL TRASH, DEBRIS, AND WASTE INCLUDING HAULS TO DISPOSAL SITES AND GRADING.
8. ROCK & OTHER EXCAVATION & LATERAL BACKFILL FOR REINFORCED CONCRETE STRUCTURES.
9. MINOR GRADING, DIKES AND SWALES CALLED FOR ALONG WATER LINE INCLUDING DRESSING AND CLEANUP.
10. PRESSURE TESTING, DISINFECTION, BACTERIOLOGICAL TESTING, FLUSHING, COORDINATION WITH THE CITY NOTIFICATION OF THE PUBLIC FOR WATER LINE WORK. MEANS OF FLUSHING OTHER THAN APPARATUS AND LOCATIONS CALLED FOR.
11. WATER HAULING AS REQUIRED FOR CONSTRUCTION AND DUST CONTROL.
12. EXCAVATION FOR UTILITIES & STRUCTURES FOR LOCATION & GRADE CHECKS AT PROPOSED WATER LINE CROSSINGS AS SHOWN ON PROJECT DRAWINGS AND AS MARKED BY UTILITY COMPANIES..
13. PROTECTION & MAINTENANCE OF PRIVATE & PUBLIC PROPERTY DURING STORMS & RUNOFF THAT MAY BE MORE VULNERABLE TO DAMAGE BECAUSE OF CONSTRUCTION.
14. MEASUREMENTS FOR PAY QUANTITIES.
15. REMOVE AND RE-INSTALL EXISTING TRAFFIC SIGNS, GUARD RAILS AND MAIL BOXES..
16. ADJUSTMENTS DUE TO EXISTING UTILITIES AND STRUCTURES OR TO MAINTAIN POSITIVE SLOPE WITH MINIMUM BURY DEPTH.
17. PROTECTION OF HORIZONTAL AND VERTICAL SURVEY CONTROL MONUMENTS.
18. MOBILIZATION FOR ALL PROJECT LOTS UNLESS OTHERWISE NOTED.
19. HAULING FOR PIPE BEDDING AND BACKFILL.
20. VERTICAL 11.25 & 22.5° ELLS, FITTINGS & MJ PIPE CALLED FOR ON PROJECT DRAWINGS.
21. MJ OR OTHER RESTRAINED JOINT PIPE ON EACH SIDE OF VERTICAL ELLS OR OTHER LOCATIONS CALLED FOR VERSES REGULAR LINE PIPE.
22. EXISTING FENCE REMOVAL AND REPLACEMENT.
23. THE MAINTENANCE OF PROXIMITY REQUIREMENTS & THE REQUIRED CUTTING OF PIPE TO PROVIDE REQUIRED JOINT DISTANCE FROM SEWER LINES AS SHOWN ON MISC. DETAIL SHEETS.
24. BARRIER WALLS AT THE HEAD OF STEEP SLOPES.
25. NMDOT PERMIT REQUIREMENTS INCLUDING NMDOT WORK PERMIT AND INSURANCE.
26. B.N.S.F. PIPELINE REQUIREMENTS INCLUDING B.N.S.F. SAFETY TRAINING PROGRAM.
27. PROJECT SCHEDULE, SUBMITTALS, SHOP DRAWINGS, "LAYING SCHEDULES" AND CUT SHEETS.



NTS

TYPICAL TRENCH DETAIL

NOTES:

1. SEE MISC. CITY DETAIL SHEET 7-2 FOR ROCK EXCAVATION PAY WIDTH WHEN APPLICABLE.
2. SEE SHEET 4-2 FOR STEEP SLOPE CONSTRUCTION WHEN CALLED FOR.
3. MINIMUM TRENCH WIDTH TO BE AS SHOWN ABOVE OR AS RECOMMENDED BY PIPE MANUFACTURER. (THE LARGER OF THE TWO SHALL APPLY)
4. CALLS IN THE PLANS FOR TWO LAYERS OF PLASTIC AROUND PIPE & FITTINGS SHALL MEAN ONE LAYER OF 8 MIL POLYETHYLENE AND ONE LAYER OF V-BIO.

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

UTILITY AND PUBLIC WORKS OFFICIALS:

GALLUP JOINT UTILITIES: SEWER, WATER AND ELECTRIC
P.O. BOX 1270 (863-1289)
GALLUP, NEW MEXICO 87305
ERNIE THOMPSON (863-1209)
WASTEWATER - ROBERT SEKIYA (863-1210)
WATER - MIKE DeCLERQ (863-1209)
RICHARD MATZKE (863-1285)
ELECTRIC

CITY OF GALLUP STREET AND DRAINAGE
PUBLIC WORKS DIRECTOR: STAN HENDERSON
P.O. BOX 1270 (863-1240)
GALLUP, NEW MEXICO 87305

NM GAS COMPANY
IRMA BUSTAMANTE
P.O. BOX 1369 (863-3857)
GALLUP, NEW MEXICO 87305

CENTURY LINK
DANNY STOKES
1205 HWY 53 (728-5464)
ZUNI, NEW MEXICO 87327

COMCAST CABLEVISION OF GALLUP
JOHN ORTIZ
201 S. FIRST STREET (863-9334)
GALLUP, NEW MEXICO 87301

NMDOT, DISTRICT 6
JEFF SANCHEZ, TRAFFIC ENGINEER
1919 PINON DR. (505-285-3200)
MILAN, NEW MEXICO 87021

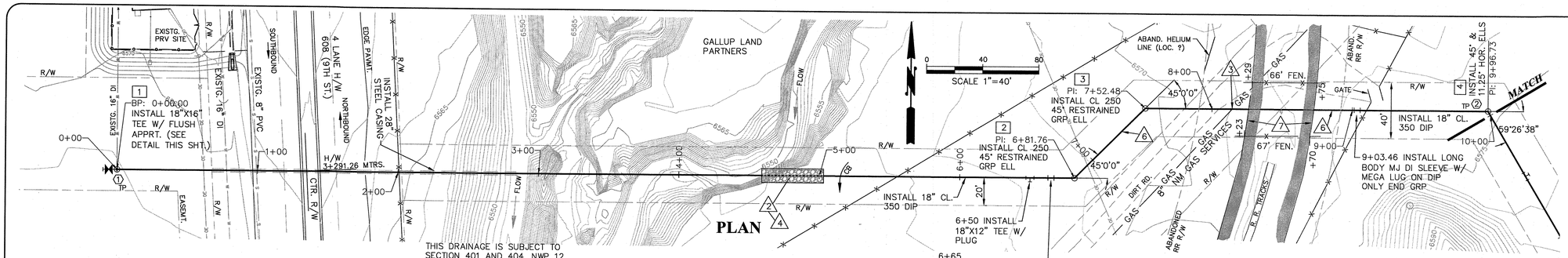
ABBREVIATIONS

PVC	POLYVINYLCHLORIDE PLASTIC PIPE
G.R.P.	GLASS REINFORCED PLASTIC
D.I.P.	DUCTILE IRON PIPE
G.V.	GATE VALVE
MH	MANHOLE
FH	FIRE HYDRANT
S.P.	STANDARD PROCTOR
GALV.	GALVANIZED MATERIAL
ARV	AIR RELEASE STATION (TYPE 1 OR 2)
BF	BUTTERFLY VALVE
MJ	MECHANICAL JOINT
NTS	NOT TO SCALE
R/W, ROW	RIGHTS-OF-WAY
CL	PIPE PRESSURE CLASS
RR	RAILROAD
PI	POINT-OF-INTERSECTION
PVI	POINT-OF-VERTICAL-INTERSECTION
ARV	AIR RELEASE VALVE
HOR	HORIZONTAL
FLG	FLANGED

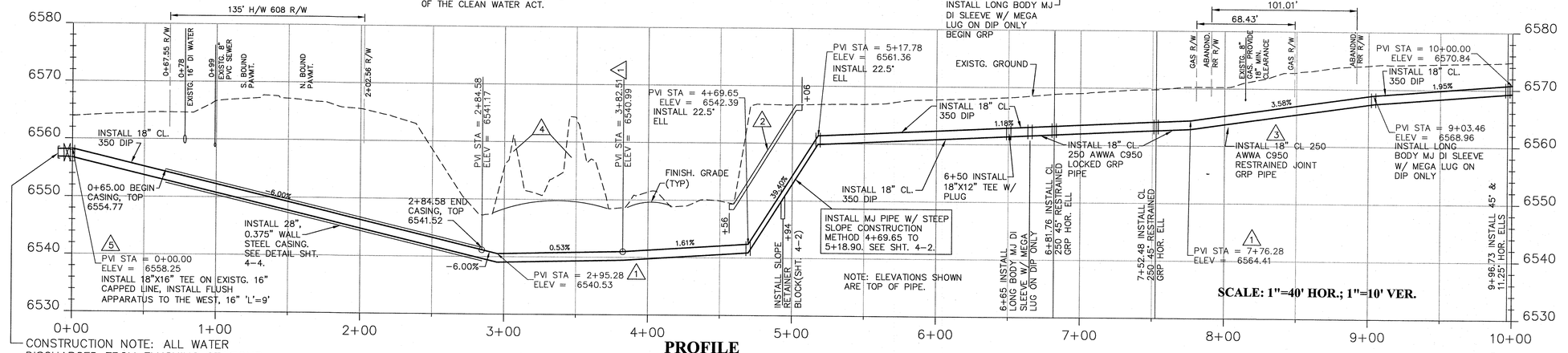
LEGEND:

6880	NEW CONTOUR
6880	EXISTING CONTOUR
BF	NEW BUTTERFLY VALVE
GV	NEW AWWA GATE VALVE
	NEW PIPING W/ VALVE
o 31	TEST HOLE
	DRAINAGE PATH
	BUSH
	EVERGREEN TREE
	DECIDUOUS TREE
	INSTALL WIRE ENCLOSED RIP-RAP, ROCK COVER or GABIONS
13606 CAP	PROPERTY CORNER OR LINE (SURVEYORS CAP)
OE	EXISTG. OVERHEAD ELEC.
W	EXISTG. WATER LINE
	CHAIN LINK FENCING
X	WIRE FENCING
GAS	GAS
UE / UT	UNDER GROUND ELEC., TEL.
	DOWN GUY & POWER POLE
CB	CONTOUR BERM
TP 3	TEST PIT (SEE CONTRACT DOCUMENTS)
6 / 6|4|8	DETAIL '6', SECTION 6, SHOWN ON SHTS. 4 & 8
	SIGN

KURT A. SPOLAR — NEW MEXICO — 17637 — 5-28-16 — LICENSED PROFESSIONAL ENGINEER



PLAN



PROFILE

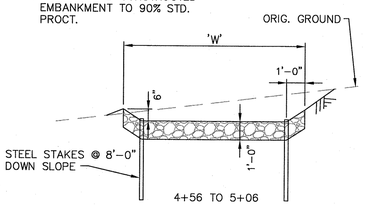
CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. INSTALL WIRE ENCLOSED RIP-RAP ('W'=10') ALONG FINISHED SLOPE (SEE DETAIL THIS SHT. & SHT. 4-5).
3. DETERMINE GRADE OF EXISTING GAS LINE BY CAREFUL EXCAVATION FOR POSSIBLE GRADE ADJUSTMENT.
4. SEE SHT. 4-2 FOR EMBANKMENT CUT DETAILS.
5. CONNECTION OF 18"X16" TEE TO EXISTING 16" CAPPED LINE (NOT IN SERVICE) IS INCIDENTAL TO 18" LINE CONSTRUCTION.
6. INSTALL 18" CL 250 AWWA C950 RESTRAINED JOINT GRP PIPE
7. ARCHEOLOGY SITE LA178688 – MONITORING DURING CONSTRUCTION REQUIRED, (FENCE ROW'S 10' PAST BOUNDARY EACH SIDE UTILIZING TEMPORARY ORANGE PLASTIC TYPE). SEE SHT. 4-2 FOR OTHER SITE LOCATIONS.

COORDINATES THIS SHEET:

1	N: 1657099.83 E: 2449245.47	5 N: 1656562.87 E: 2450566.68
2	N: 1657099.14 E: 2449927.24	6 N: 1656335.80 E: 2450641.37
3	N: 1657149.09 E: 2449977.29	
4	N: 1657148.85 E: 2450221.54	



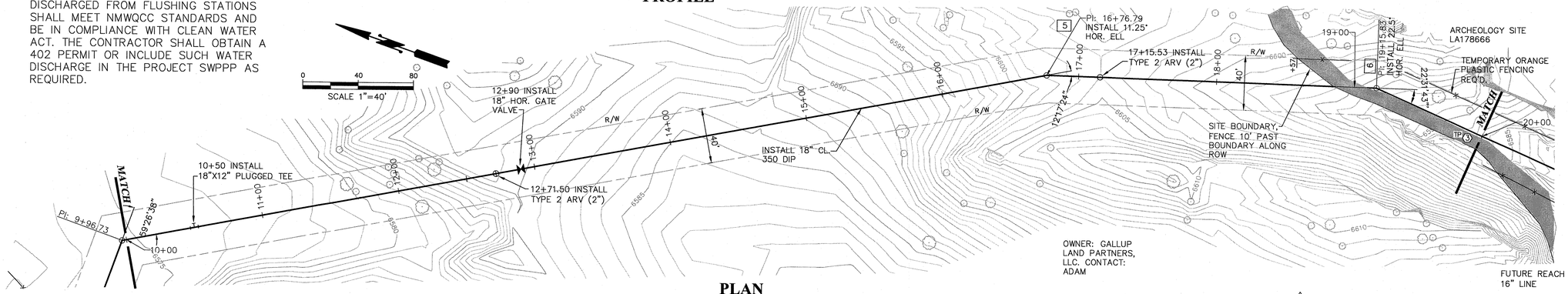
NTS

TYP. SLOPE SECTION–SEE SHT. 4–5

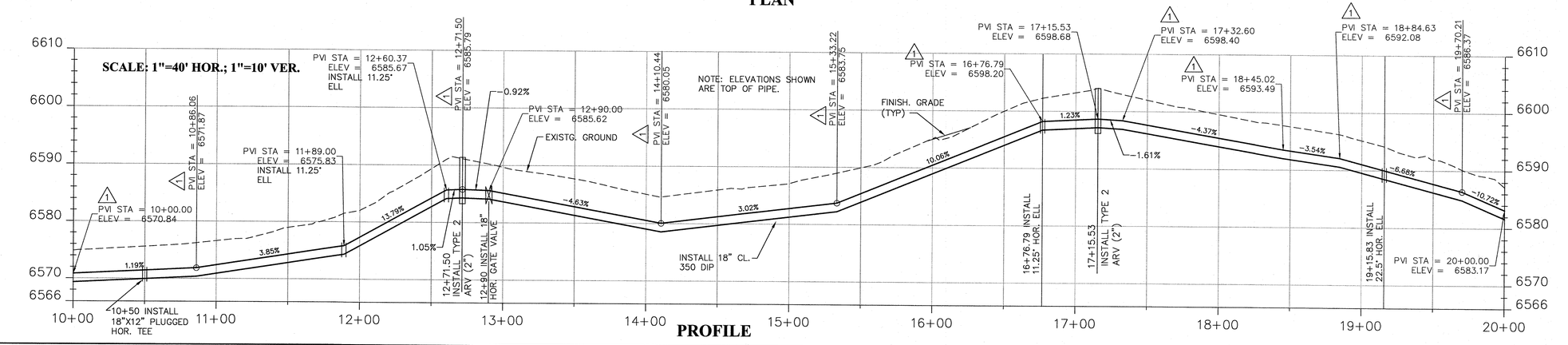
WIRE ENCLOSED RIP-RAP DETAIL

NOTES:

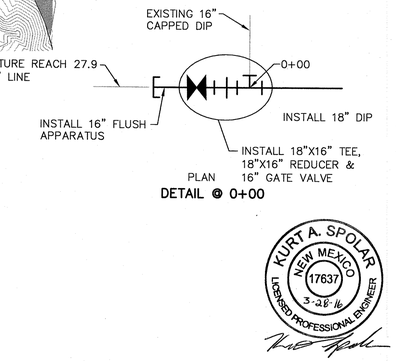
1. *CONTRACTOR TO DEVELOP, SECURE APPROVAL AND IMPLEMENT STORM WATER POLLUTION PREVENTION PLAN AS REQUIRED.*
2. *CONTRACTOR TO PROVIDE INSURANCE CERTIFICATE NAMING NMDOT AS INSURED IN THE AMOUNT OF $1,000,000 PER OCCURRENCE FOR WORK WITHIN HIGHWAY RIGHT-OF-WAY.*



PLAN



PROFILE



DETAIL @ 0+00

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

CAUTION
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NOTICE OF EXTENDED PAYMENT PROVISION: IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

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- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulengineering.com

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

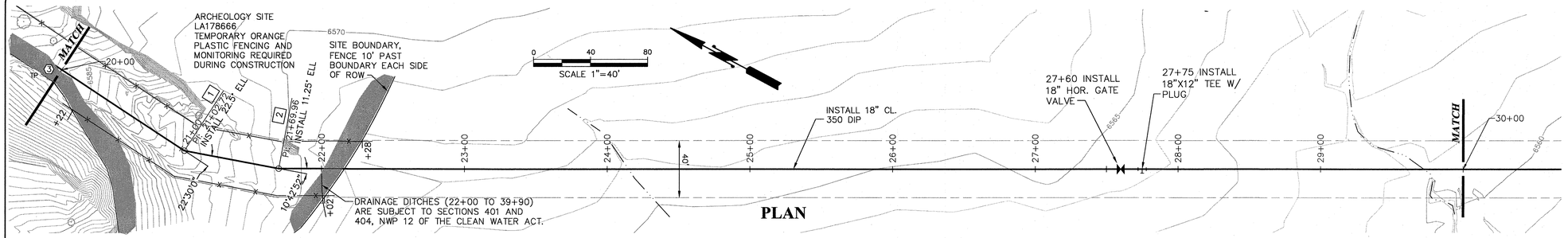
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

BID LOT 1
18" WATERLINE 6A PLAN & PROFILE 0+00 to 20+00

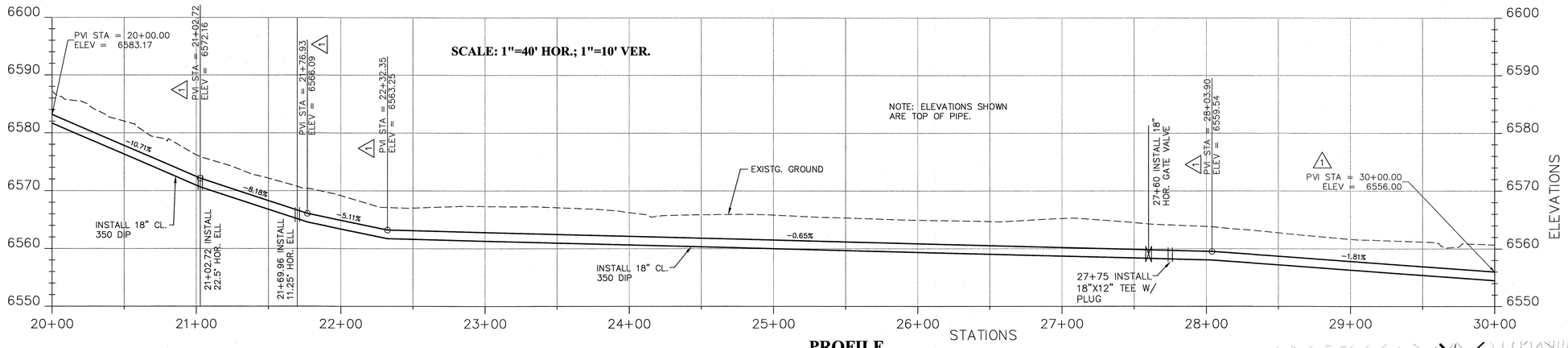
SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2 - 1

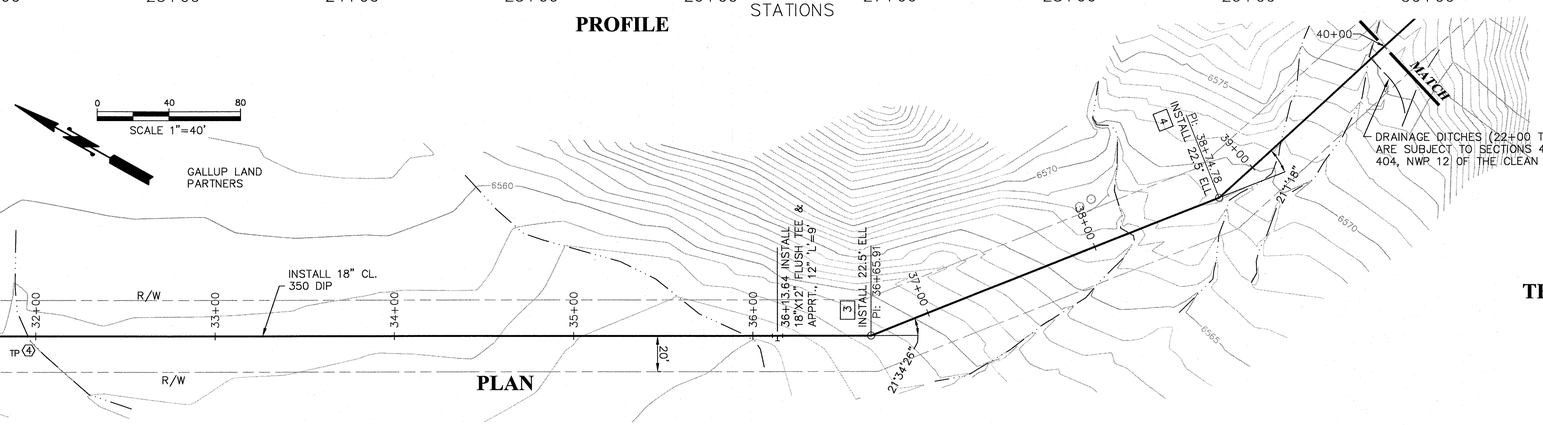
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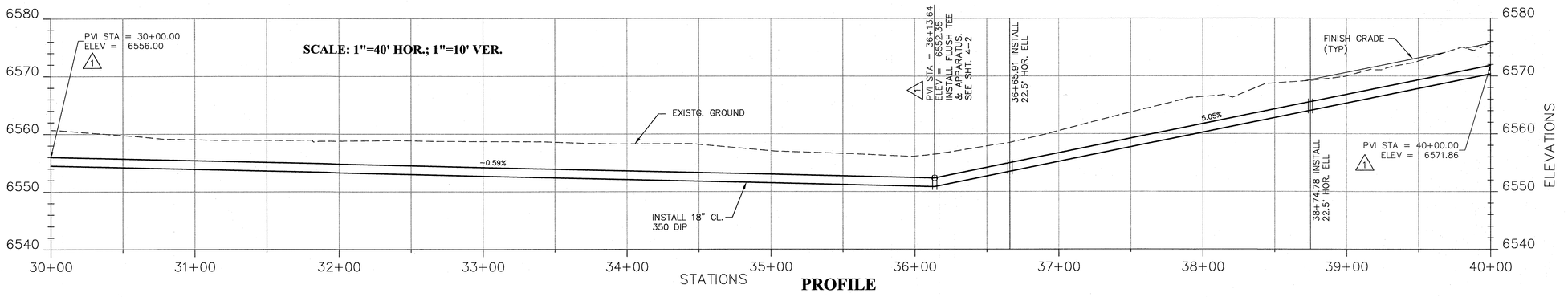
PLAN



PROFILE



PLAN



PROFILE

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

KEYED NOTES:

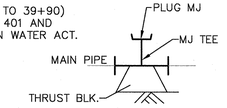
1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS

COORDINATES THIS SHEET:

1	N: 1656149.44 E: 2450627.29	3	N: 1654775.83 E: 2451371.11
2	N: 1656085.56 E: 2450648.27	4	N: 1654642.89 E: 2451532.21

TESTING NOTE:
SEE SHEETS 4-2 & 7-2 FOR GENERAL TESTING & FLUSHING REQUIREMENTS.

CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.

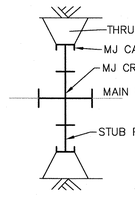


MJ CONNECTIONS TO BE RESTRAINED TYPE

TEE INSTALLATION DETAILS

(FOR FUTURE USE)

TEES AS SHOWN FOR FUTURE USE ARE INCIDENTAL TO PIPELINE CONSTRUCTION



MJ CONNECTIONS TO BE RESTRAINED TYPE

CROSS INSTALLATION DETAILS

(FOR FUTURE USE)

CROSSES AS SHOWN FOR FUTURE USE ARE INCIDENTAL TO PIPELINE CONSTRUCTION

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

ENGINEER-I:_C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depauliengineering.com

for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

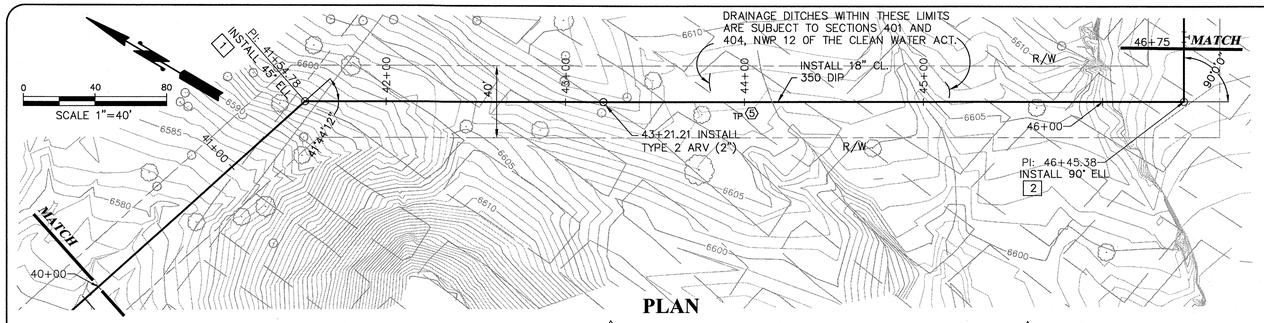
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

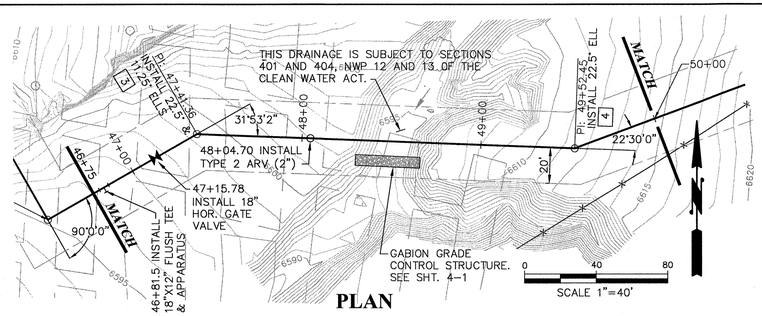
BID LOT 1
18" WATERLINE 6A PLAN & PROFILE 20+00 to 40+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

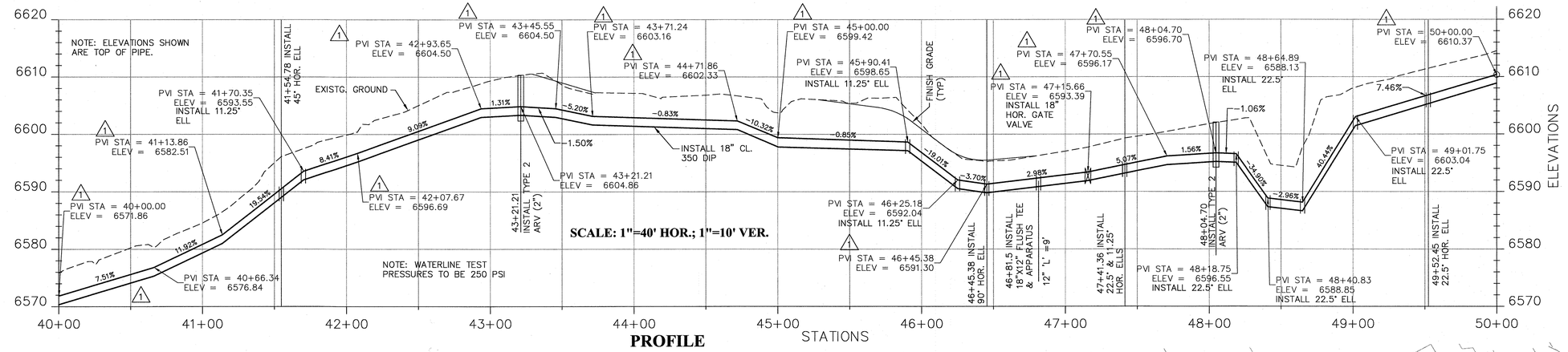
SHEET 2-2



PLAN



PLAN

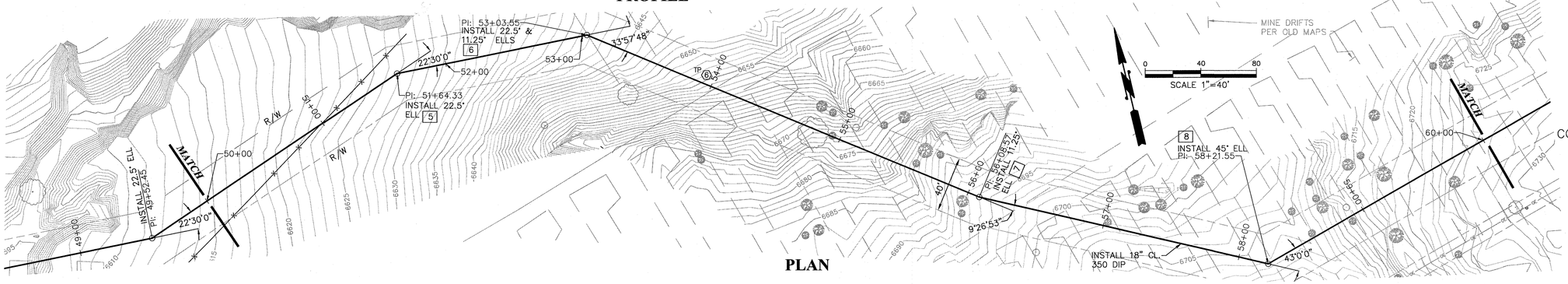


PROFILE

KEYED NOTES:

1 MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.

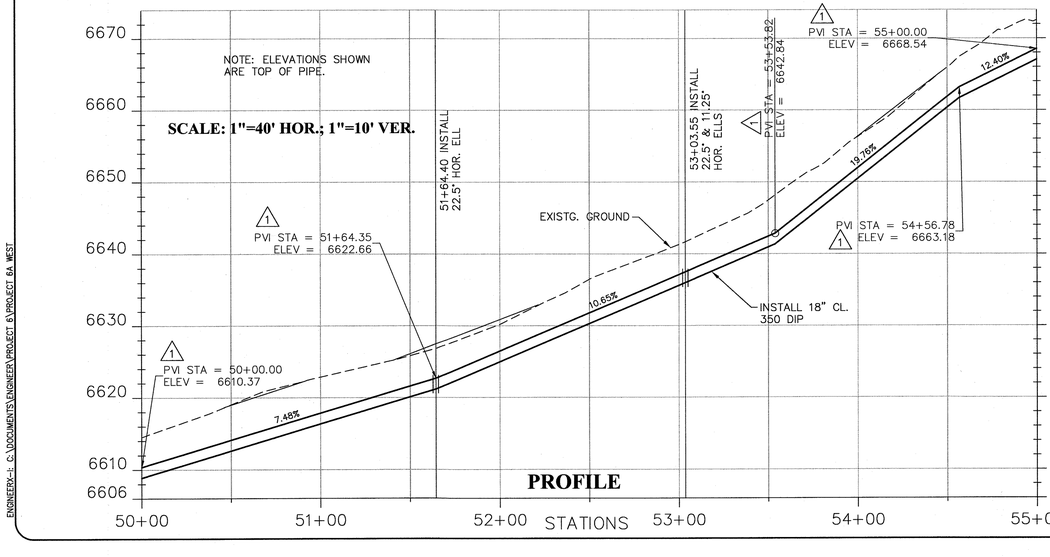
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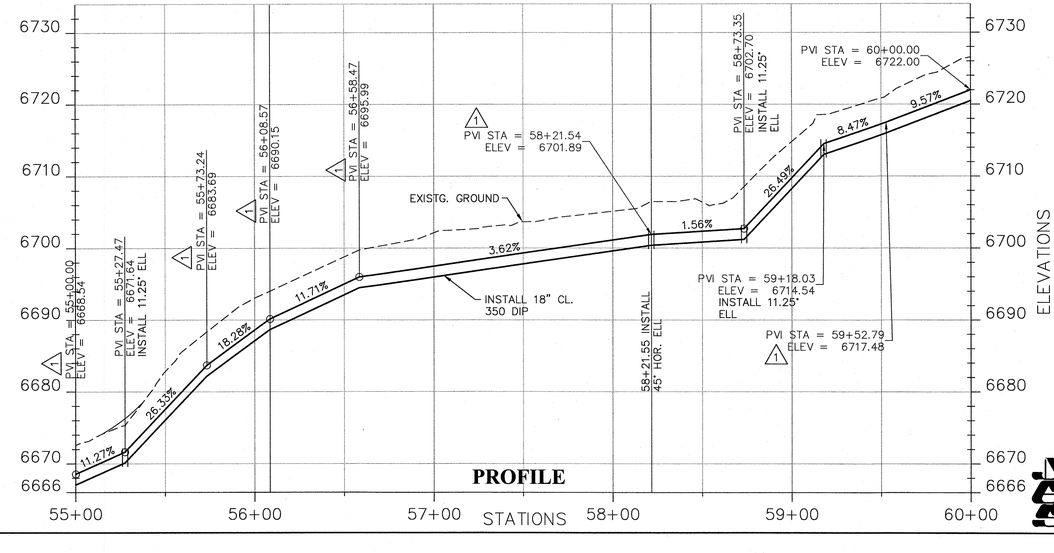
PLAN

COORDINATES THIS SHEET:

1	N: 1654554.00 E: 2451797.71	5	N: 1654241.60 E: 2452534.09
2	N: 1654128.07 E: 2452041.19	6	N: 1654236.42 E: 2452673.20
3	N: 1654175.70 E: 2452124.51	7	N: 1654056.73 E: 2452919.68
4	N: 1654167.85 E: 2452335.46	8	N: 1653961.22 E: 2453110.04



PROFILE



PROFILE

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION
PURSUANT TO NMSA 1978, SECTION 13-1-158 AS AMENDED BY LAWS 2003, CHAPTER 253 AND NMSA 1978, 57-28-5 CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN ITEMIZED REQUEST FROM THE CONTRACTOR

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6
BID LOT 1
18" WATERLINE 6A PLAN & PROFILE
40+00 to 60+00

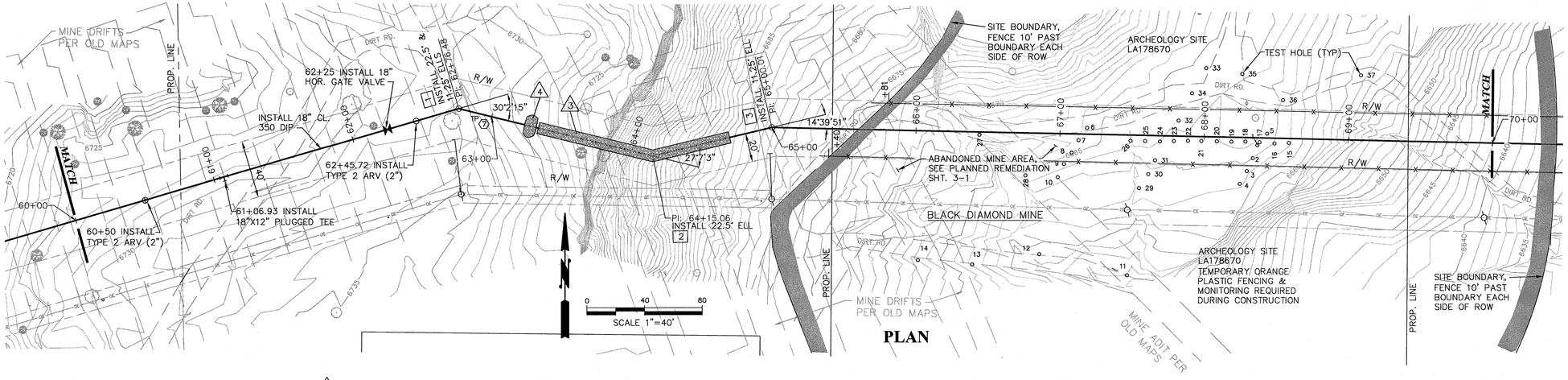
NO. | BY | DATE

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 dpaulisengineering.com

SHEET 2-3

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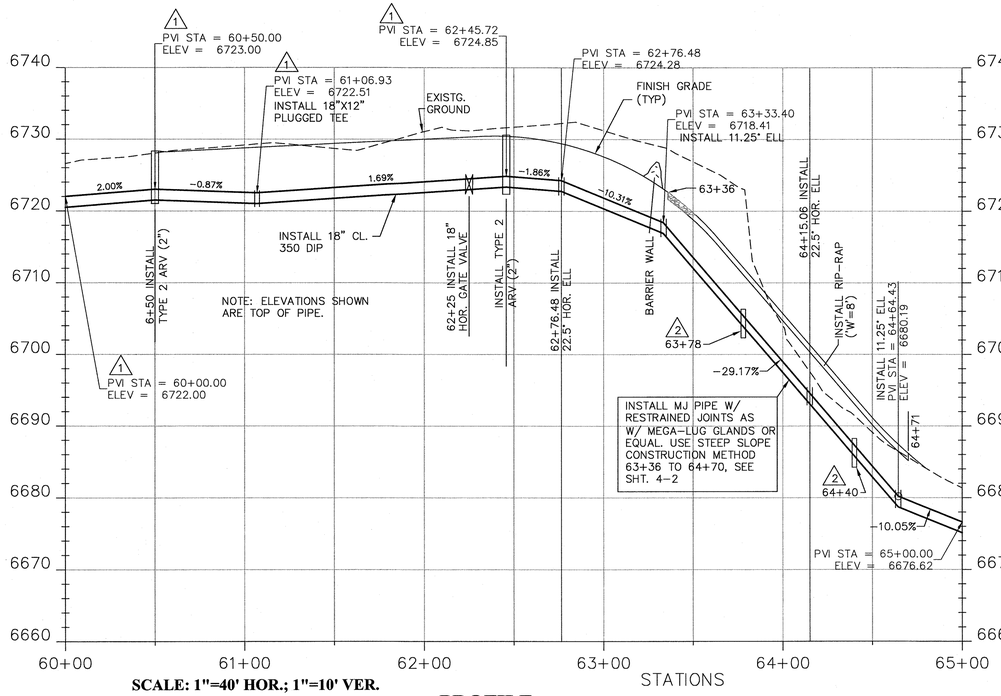
PLAN

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. PLACE RETAINER BLOCK. SEE SHT. 4–2
3. STEEP SLOPE CONST.,'W'=8'–0", SEE SHT. 4–2 FOR PIPELINE CUT DETAILS.
4. PLACE BARRIER WALL. SEE SHT. 4–2

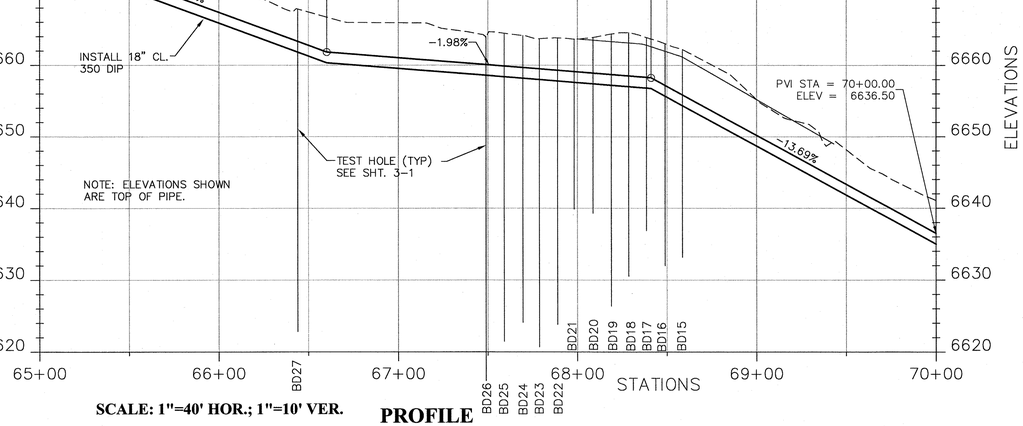
COORDINATES THIS SHEET:

1. N: 1654089.32 E: 2453546.56
2. N: 1654056.53 E: 2453681.21
3. N: 1654076.27 E: 2453763.84



SCALE: 1"=40' HOR.; 1"=10' VER.

PROFILE



SCALE: 1"=40' HOR.; 1"=10' VER.

PROFILE

KURT A. SPOLAR NEW MEXICO 17637 5-28-16 LICENSED PROFESSIONAL ENGINEER

CAUTION
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BID LOT 1

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for the **CITY OF GALLUP** McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

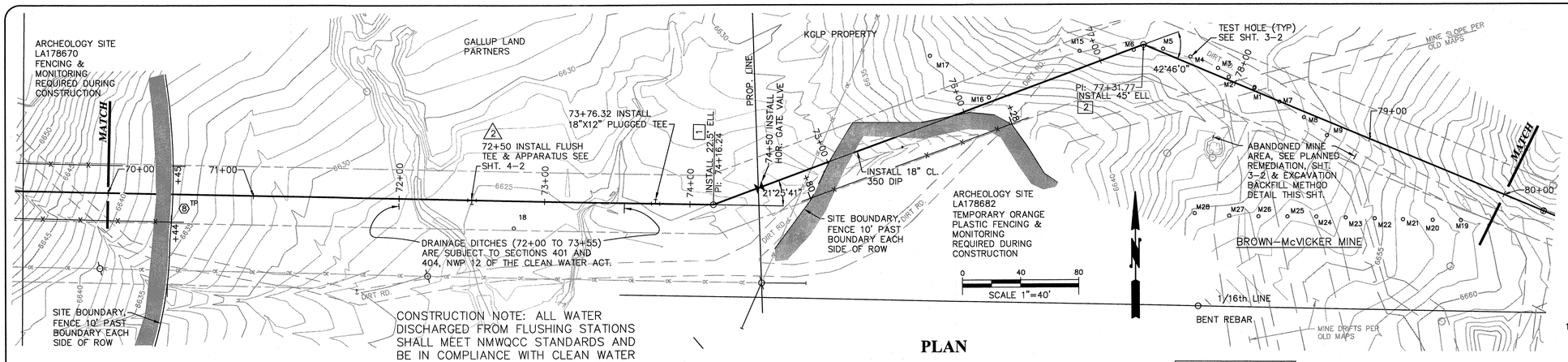
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

18" WATERLINE 6A PLAN & PROFILE
60+00 to 70+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

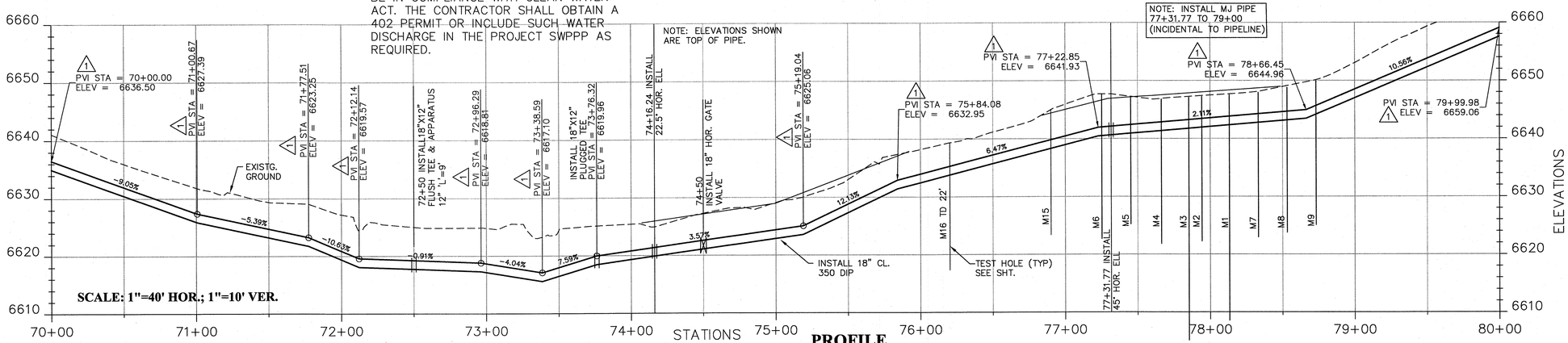
SHEET 2-4

ENGINEER:-I:\ G:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A MEST

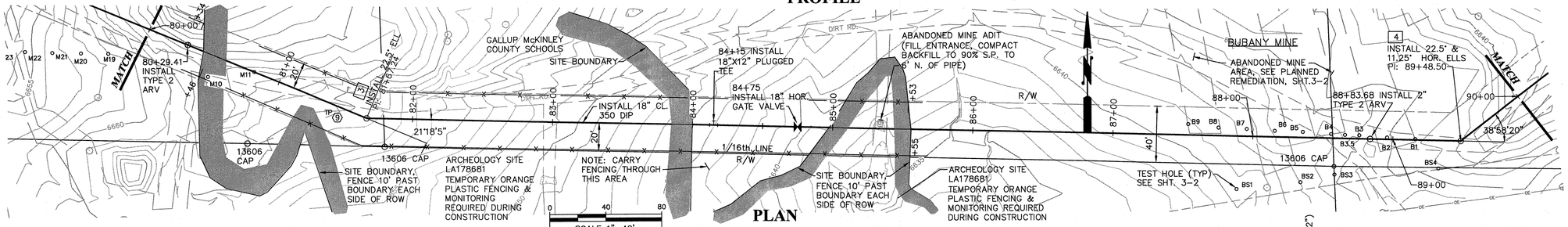


PLAN

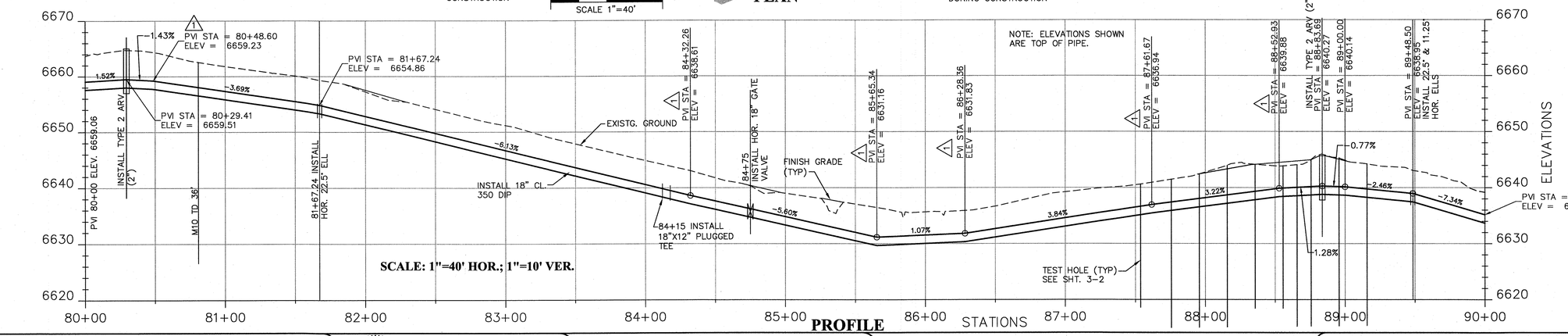
CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.



PROFILE



PLAN



PROFILE

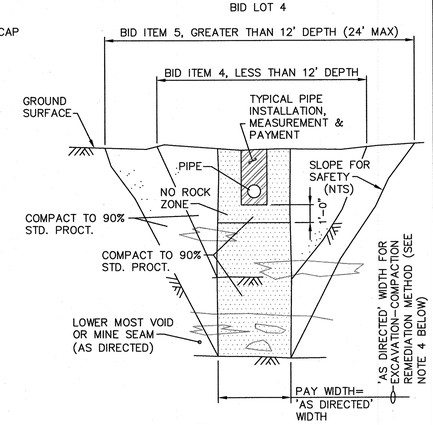
KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. CONTRACTOR TO BE AWARE OF DOWNSTREAM CONDITIONS PRIOR TO CONDUCTING FLUSHING OPERATIONS. SUSTAINED FLUSHING WILL NEED TO BE LIMITED IN SOME AREAS.

COORDINATES THIS SHEET:

1	N: 1654056.61 E: 2454679.85	3	N: 1653998.42 E: 2455378.11
2	N: 1654165.55 E: 2454975.98	4	N: 1653981.14 E: 2456159.17

BID LOT 4



NTS

NOTES:

1. CONTRACTOR MAY WISH TO CONSIDER VARIOUS FORMS OF TRENCH BOX CONSTRUCTION FOR A PORTION OR FOR ALL OF EXCAVATION– BACKFILL METHOD.
2. EXCAVATED MATERIAL MAY BE USED AS BACKFILL, PROVIDED ROCK FRAGMENTS ARE NO LARGER THAN 3 CUBIC FT. AND COMBUSTIBLE MINE WASTE IS LESS THAN 20% BY VOLUME. ROCK TO BE "WALKED IN" PLACE W/ HEAVY EQUIPMENT.
3. SEE SHTS. 3–1,2 FOR ABANDONED MINE REMEDIATION REQUIREMENTS.
4. EXCAVATION WIDTH (EQUALS PAY WIDTH) WILL NORMALLY BE 8'–0" UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
5. CONTRACTOR TO ANTICIPATE ALL WORK ASSOCIATED WITH EXCAVATION & BACKFILL, INCLUDING AREAS OUTSIDE OF PAY WIDTH WHEN ARRIVING AT A UNIT BID PRICE.

EXAMPLE OF PAY QUANTITY CALCULATION:

GIVEN: 16' DEPTH
WIDTH AS DIRECTED, 9'
LENGTH ALONG WATER LINE, 100'
(NEGLECT PIPE TRENCH VOLUME)

PAY QUANTITY=16X9X100/27=533.3 CY

EXCAVATION-BACKFILL METHOD FOR MINE REMEDIATION

KURT A. SPOLAR NEW MEXICO 17637 5-26-16 LICENSED PROFESSIONAL ENGINEER

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION :
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

ENGINEER=L: \DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulengineering.com

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

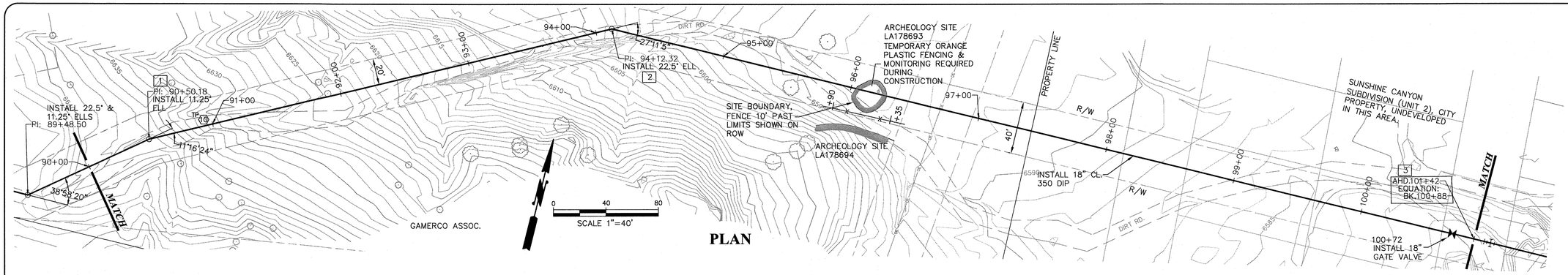
NO.	BY	DATE

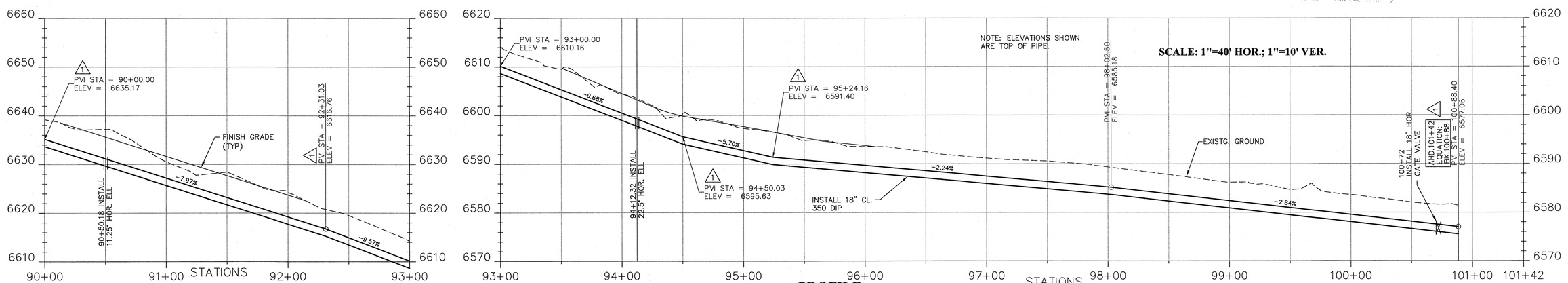
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

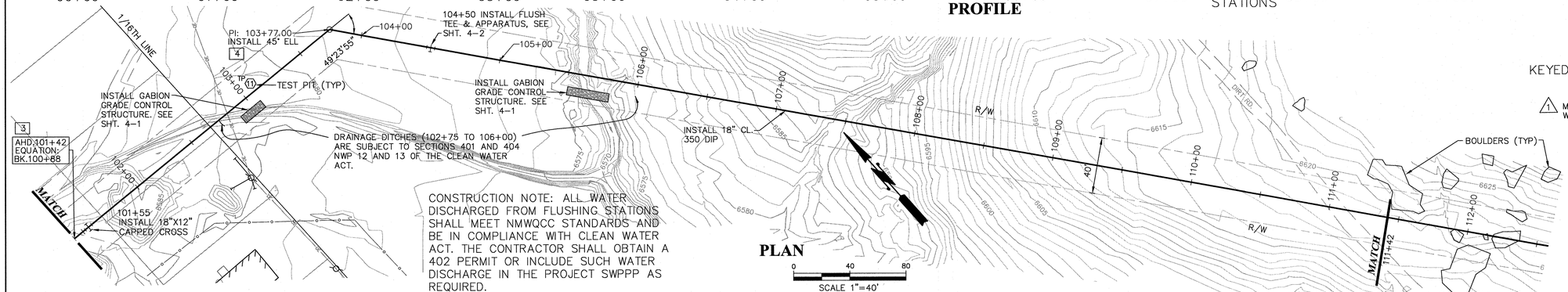
BID LOT 1
18" WATERLINE 6A PLAN & PROFILE
70+00 to 90+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-5





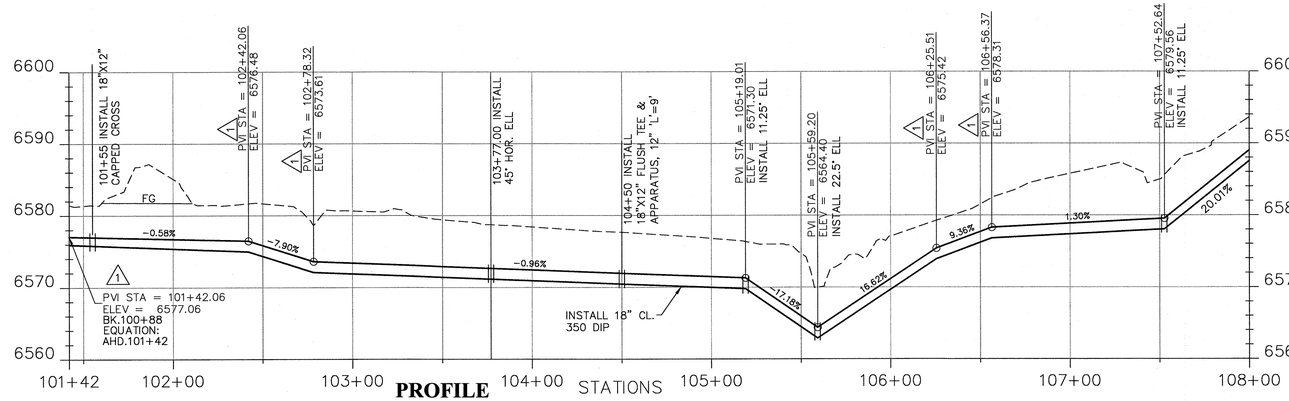


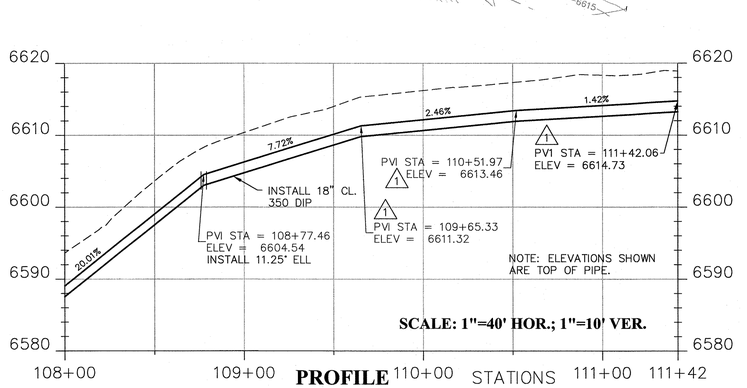
KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.

COORDINATES THIS SHEET:

1	N: 1654043.33 E: 2456239.62	3	N: 1654195.64 E: 2457239.92
2	N: 1654204.53 E: 2456563.90	4	N: 1654192.56 E: 2457474.84





KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

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ENGINEER - C:\DOCUMENTS\ENGINEER\PROJECT 6A\PROJECT 6A WEST

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TEL: (505)863-5440 depaulieengineering.com

for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

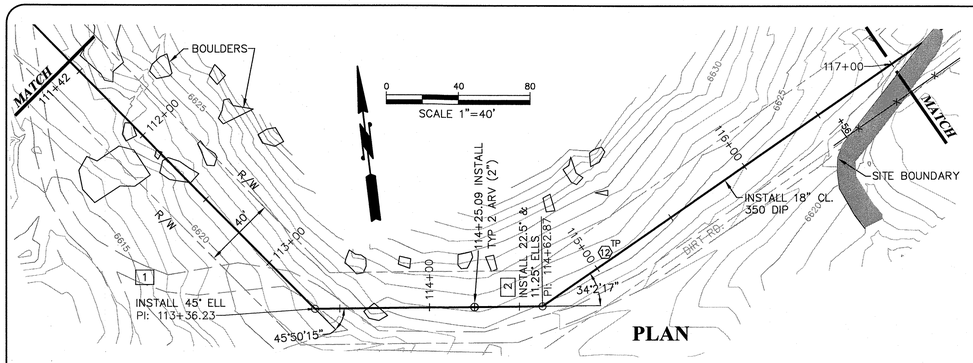
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

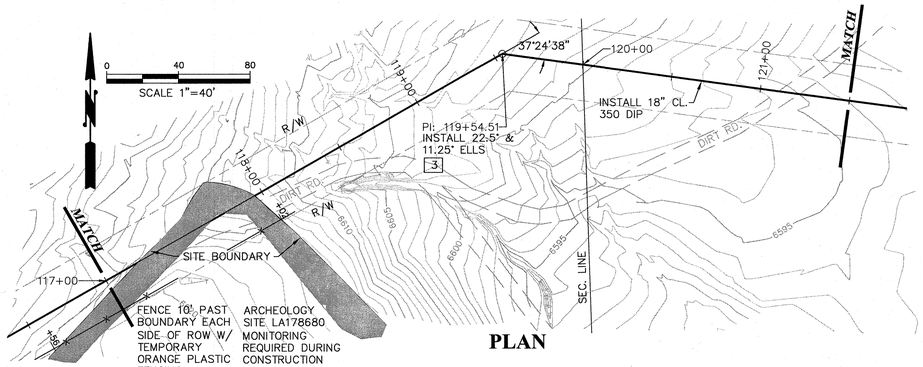
BID LOT 1
18" WATERLINE 6A PLAN & PROFILE
90+00 to 111+42

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-6



PLAN



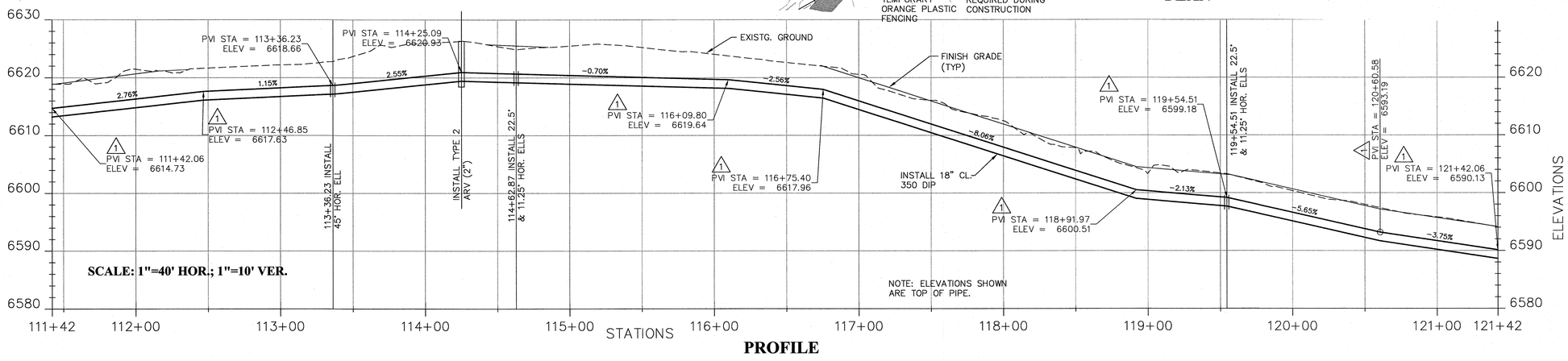
PLAN

KEYED NOTES:

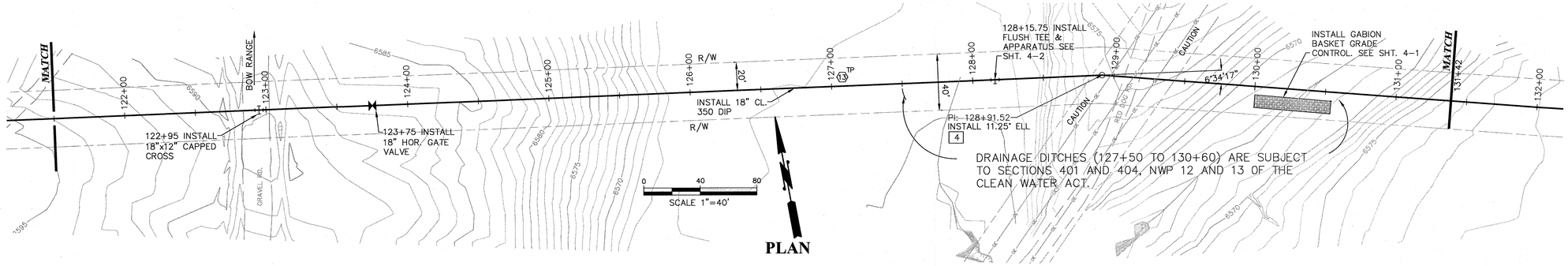
1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.

COORDINATES THIS SHEET:

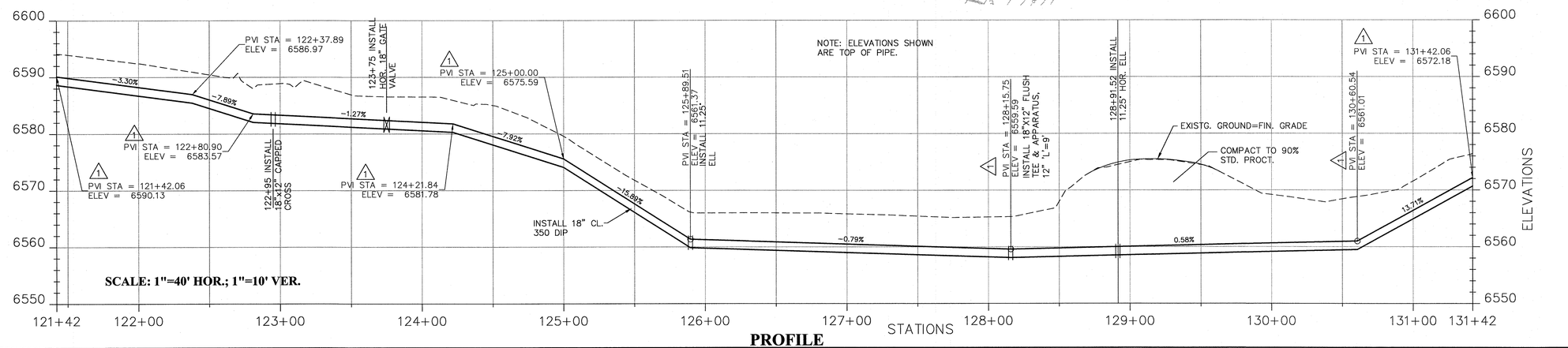
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2	N: 1653446.59 E: 2458215.76	4	N: 1653565.02 E:: 2459571.30



PROFILE



PLAN



PROFILE

CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.

KURT A. SPOLAR NEW MEXICO 17637 LICENSED PROFESSIONAL ENGINEER 3-26-16

CAUTION
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811
BEFORE YOU DIG!

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for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

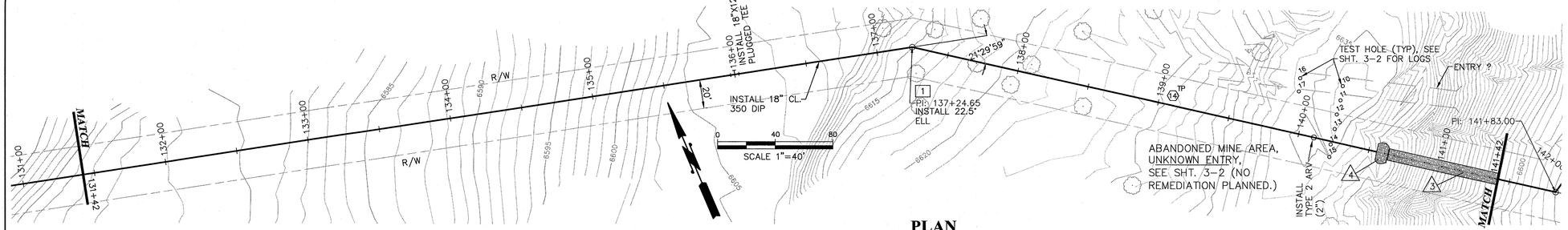
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

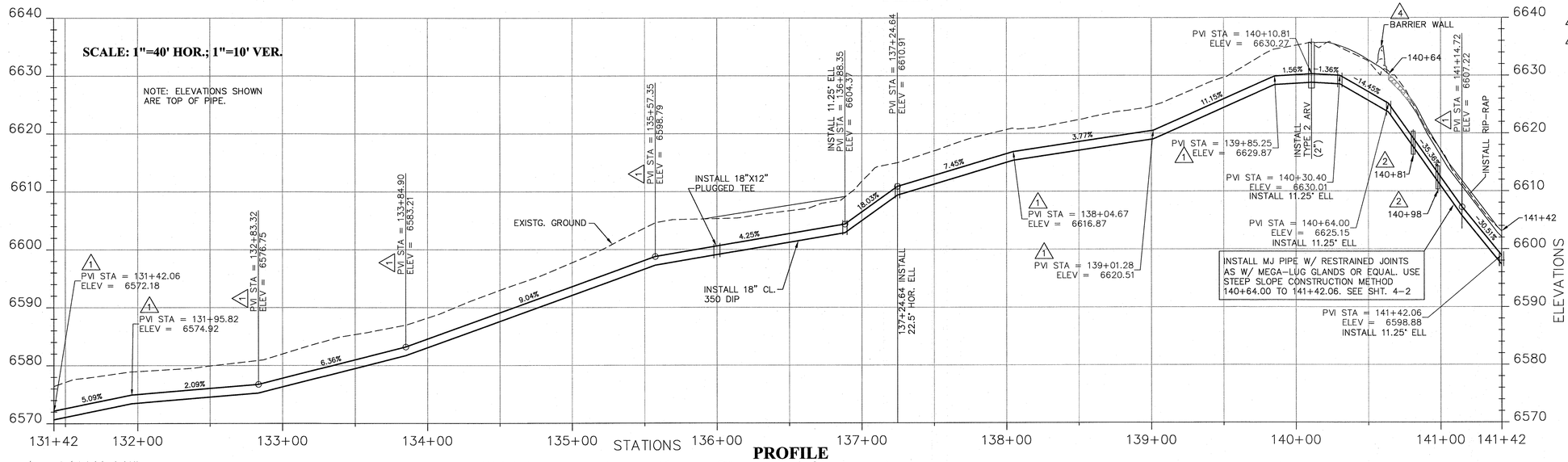
BID LOT 1
18" WATERLINE 6A PLAN & PROFILE
111+42 to 131+42

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-7

ENGINEER=L: \DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST





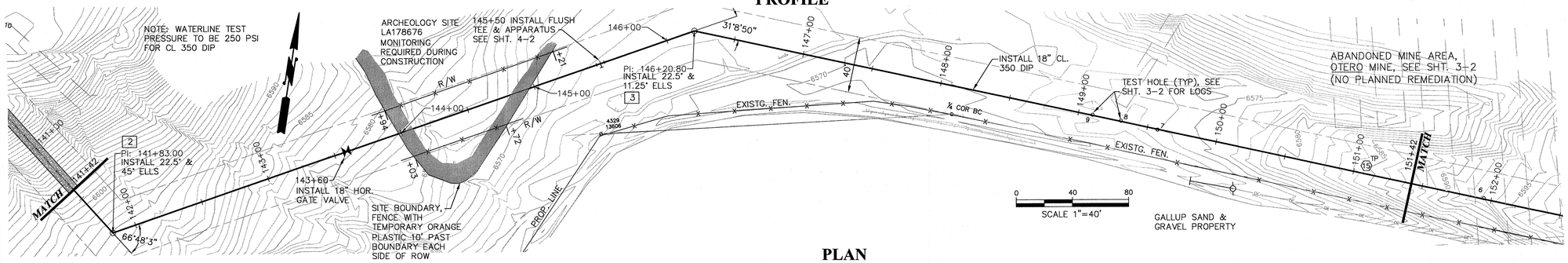
KEYED NOTES:

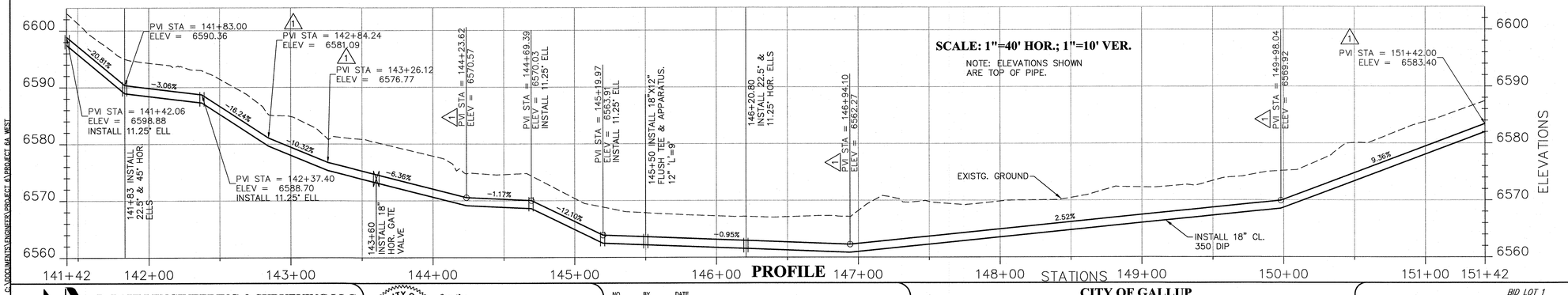
1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. PLACE RETAINER BLOCK. SEE SHT. 4-2. (PLACE AT NEAREST JOINTS W/ BELLS AS DETAILED).
3. STEEP SLOPE CONST.,'W'= 8'-0" SEE SHT. 4-2
4. PLACE BARRIER WALL. SEE SHT. 4-2

COORDINATES THIS SHEET:

1. N: 1653359.83 E: 2460378.76
2. N: 1653091.99 E: 2460750.72
3. N: 1653317.75 E: 2461125.81

CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.







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for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

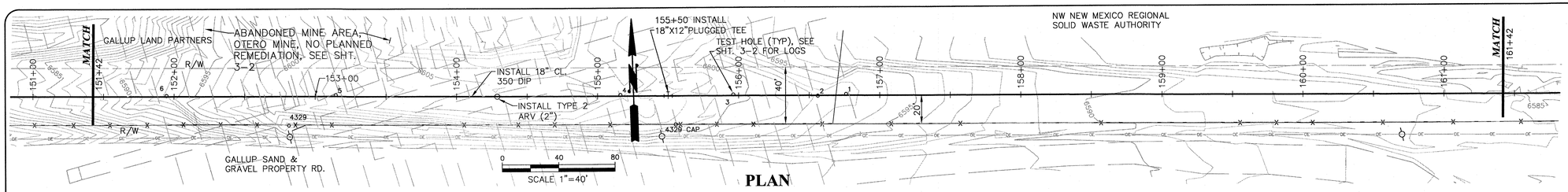
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

BID LOT 1
18" WATERLINE 6A PLAN & PROFILE
131+42 to 151+42

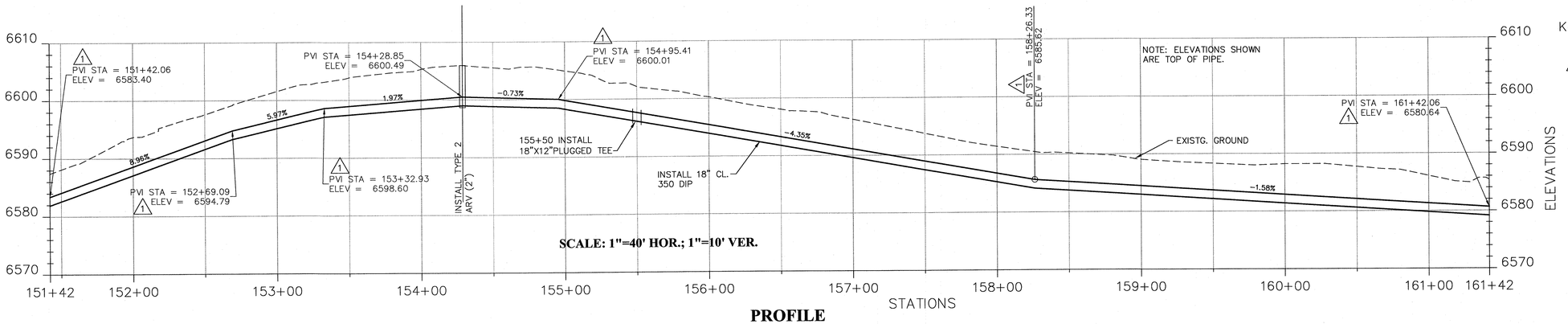
SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-8

ENGINEER's DOCUMENTS\ENGINEER\PROJECT 6A\PROJECT 6A.MEST



PLAN



PROFILE

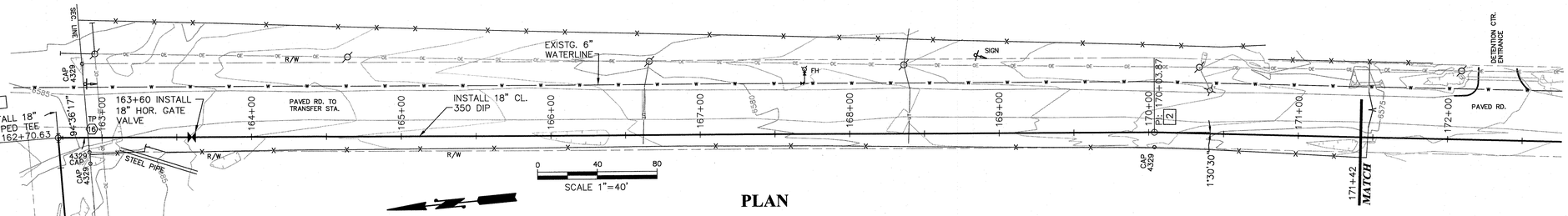
KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.

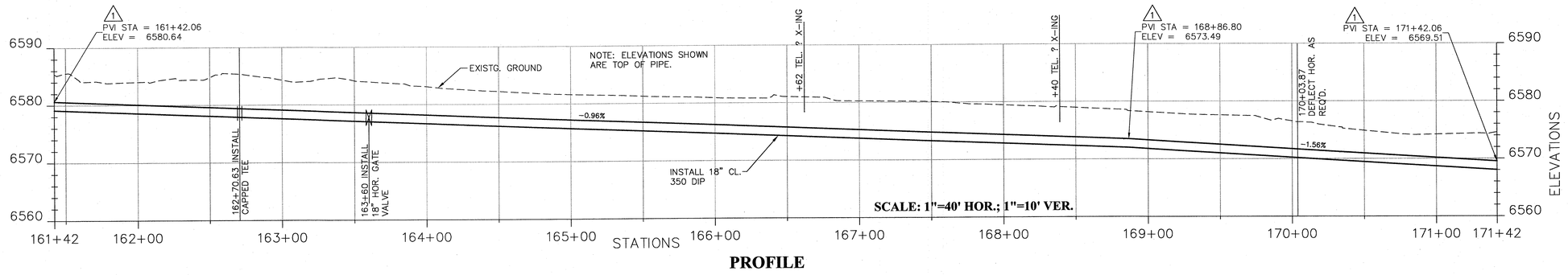
COORDINATES THIS SHEET:

1 N: 1653314.75
E: 2462775.64

2 N: 1652583.98
E: 2462715.44



PLAN



PROFILE

KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

CAUTION
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TEL: (505)863-5440 depauliengineering.com

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

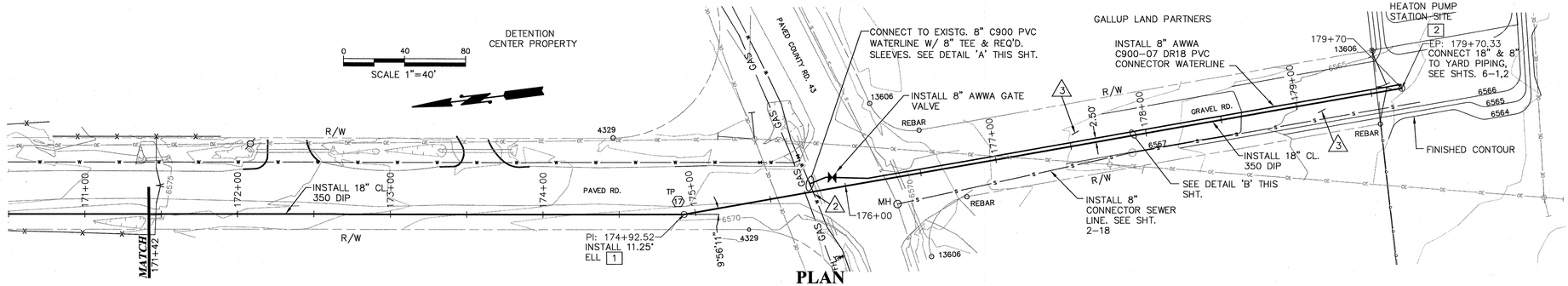
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

BID LOT 1
18" WATERLINE 6A PLAN & PROFILE
151+42 to 171+42

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-9

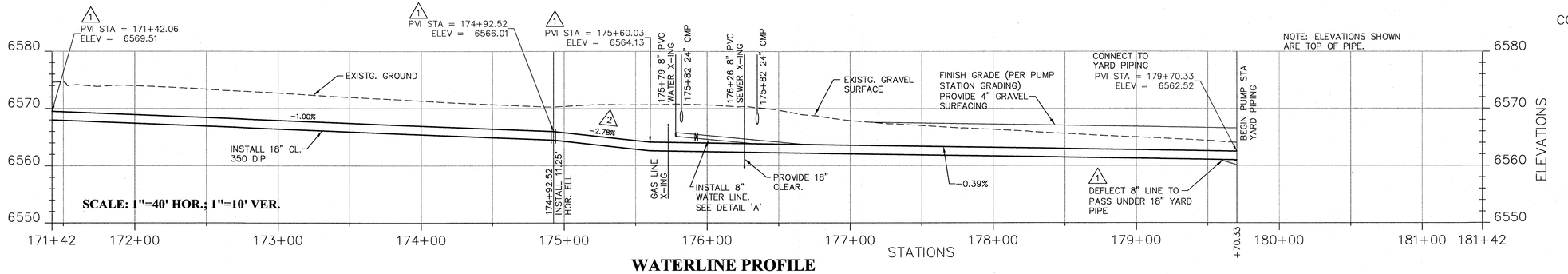
ENGINEER=>L:\DOCUMENTS\ENGINEER PROJECT 6\PROJECT 6A WEST



PLAN

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. VERIFY EXISTG. 8" WATERLINE ELEV. BY CAREFUL EXCAVATION FOR POSSIBLE GRADE ADJUSTMENT ON 18" DIP.
3. PLACE 4" GRAVEL SURFACING TO YARD PIPING CONNECTIONS.

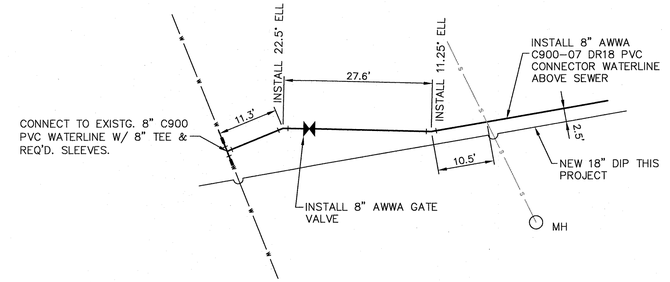


WATERLINE PROFILE

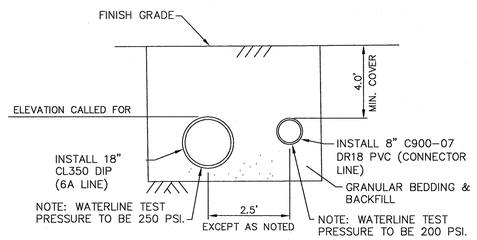
COORDINATES THIS SHEET:

1. N: 1652098.20 E: 2462662.53
2. N: 1651621.40 E: 2462693.52

NOTE:
PROVIDE GRANULAR BEDDING & GRANULAR BACKFILL FOR 8" WATERLINE, 18" WATERLINE & 8" SEWER LINE, 175+00 TO 179+70. REMOVE & REPLACE EXISTING PAVEMENT WITH 6" ASPHALT PAVEMENT & 6" BASE COURSE.



DETAIL 'A'
NTS



DETAIL 'B'
NTS

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

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BID LOT 1

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ENGINEER - C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST

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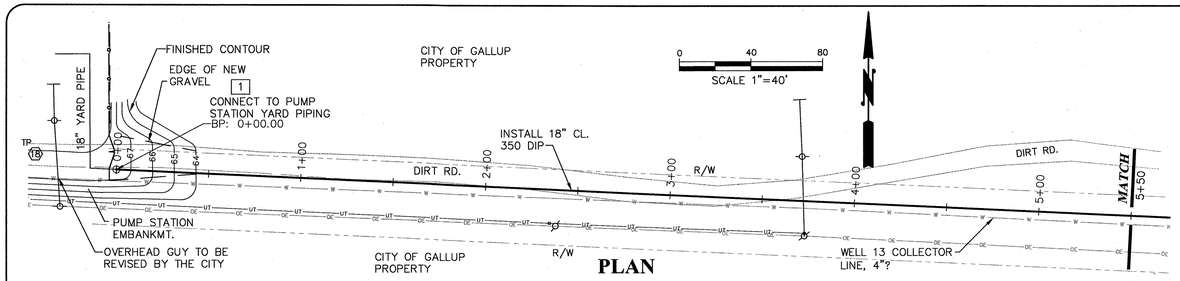
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

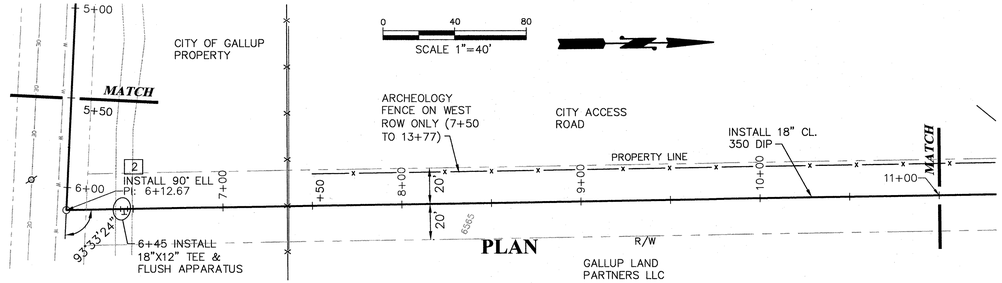
18" WATERLINE 6A PLAN & PROFILE 171+42 to 179+70 (& 8" CONNECTOR WATER LINE)

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

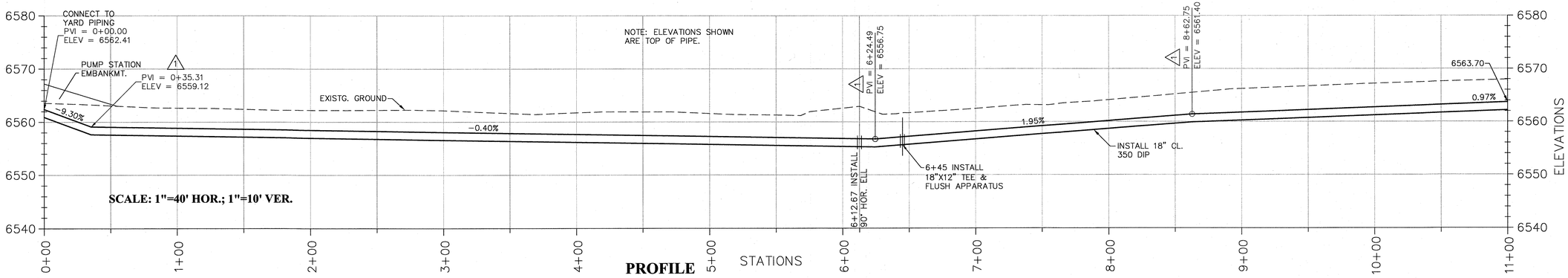
SHEET 2-10



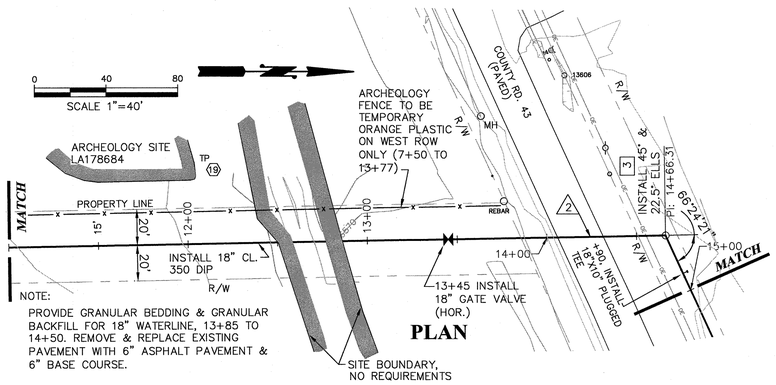
PLAN



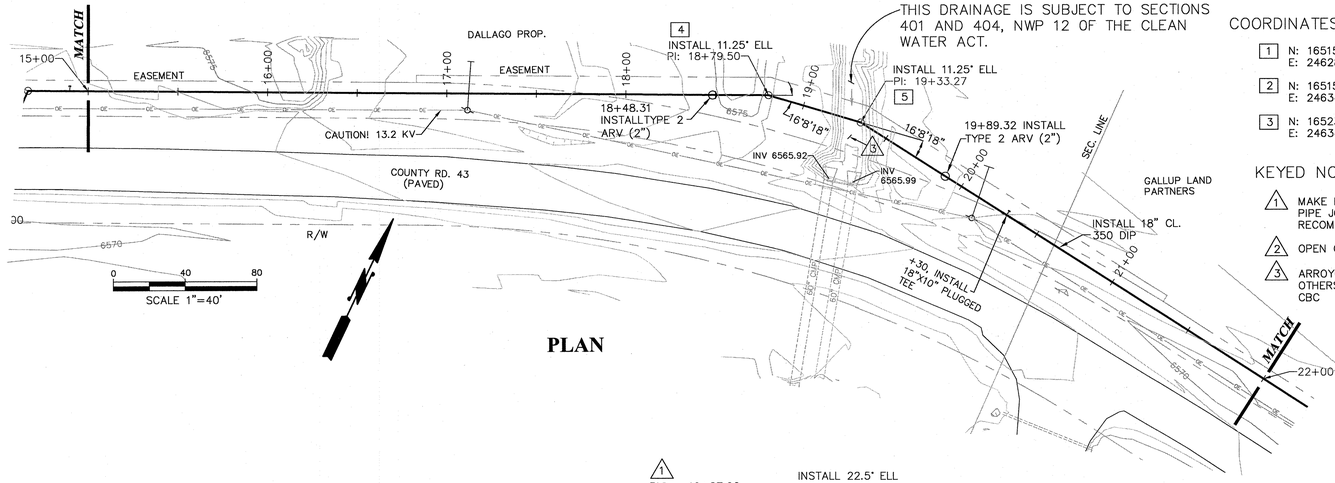
PLAN



PROFILE



PLAN



PLAN

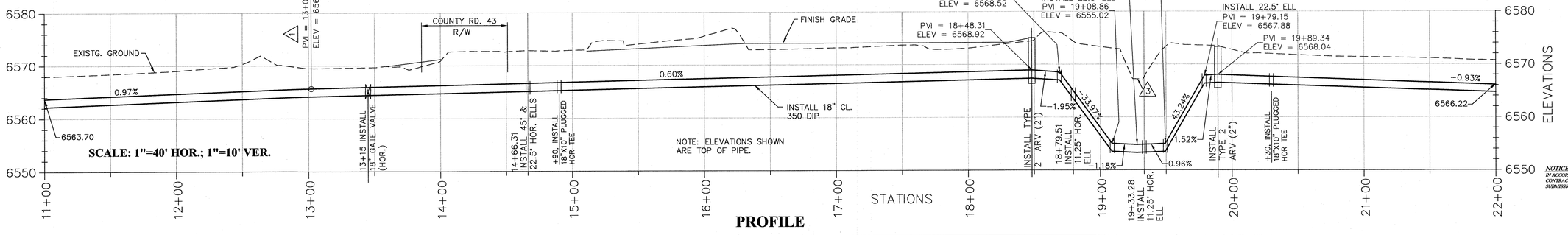
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2	N: 1651517.68 E: 2463462.16	5	N: 1652550.64 E: 2463877.22
3	N: 1652371.20 E: 2463448.14		

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. OPEN CUT CONSTRUCTION.
3. ARROYO TO BE ENLARGED (& LOWERED) BY OTHERS IN THE FUTURE FOR NEW BRIDGE OR CBC

KURT A. SPOLAR NEW MEXICO 17637 3-30-16 LICENSED PROFESSIONAL ENGINEER



PROFILE

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION : IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

ENGINEER\c-i; C:\DOCUMENTS\ENGINEER\PROJECTS 6B

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440, depaulieengineering.com

for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

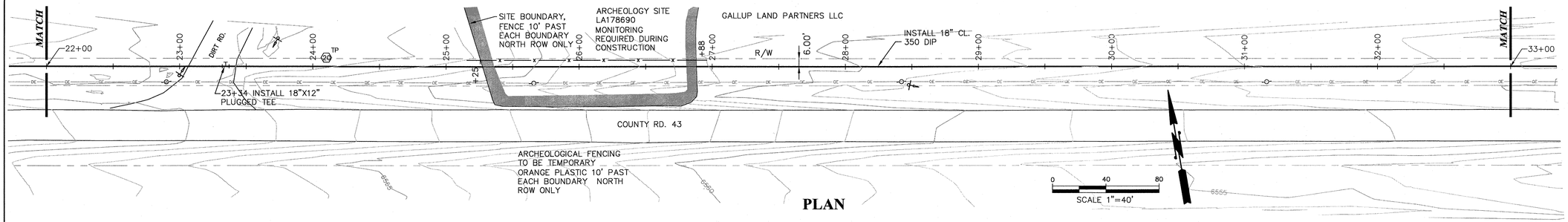
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

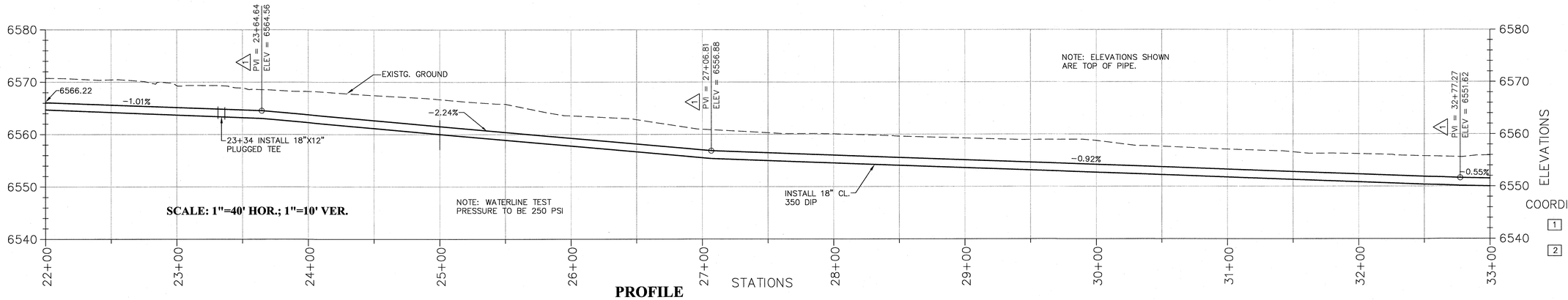
BID LOT 1
18" WATERLINE 6B PLAN & PROFILE
0+00 to 22+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-11



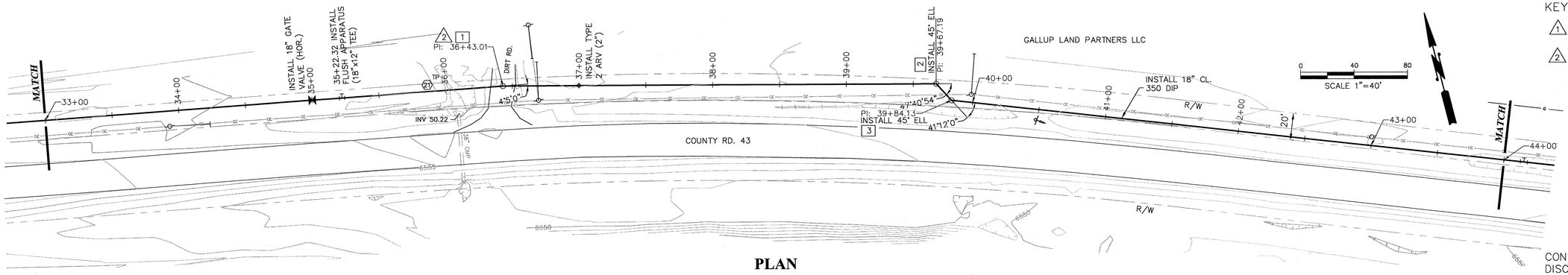
PLAN



PROFILE

COORDINATES THIS SHEET:

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2	N: 1652253.89 E: 2465888.67	

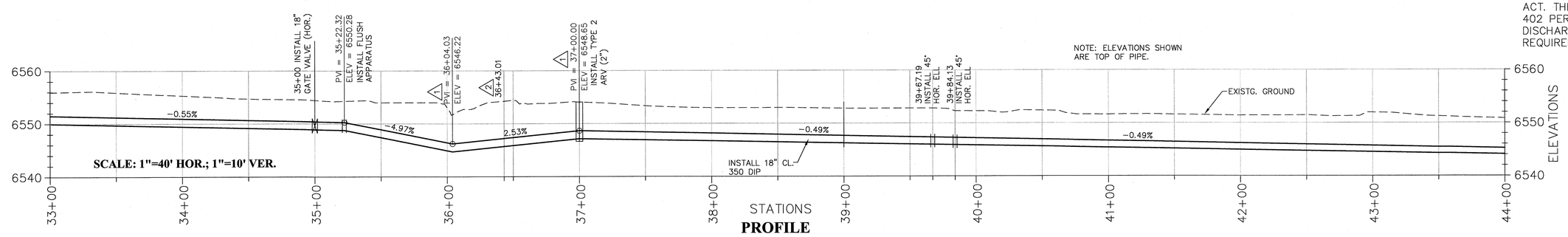


PLAN

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS
2. MAKE REQUIRED HORIZONTAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS

CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWIPP AS REQUIRED.



PROFILE

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

CAUTION
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ENGINEER>--I: C:\DOCUMENTS\ENGINEER\PROJECTS 6B

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for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

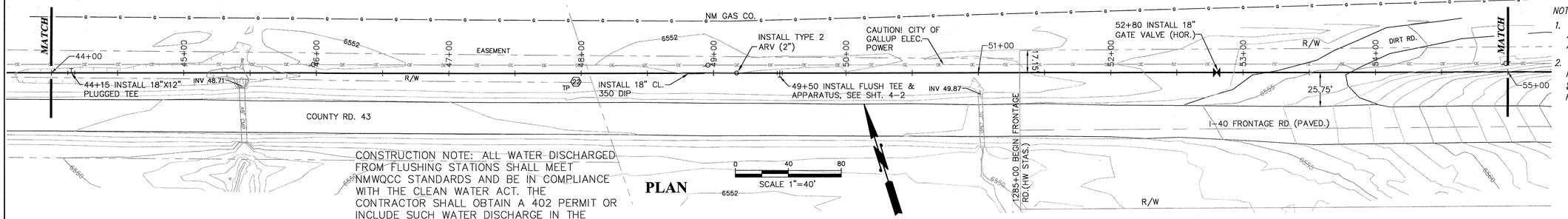
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

BID LOT 1
18" WATERLINE 6B PLAN & PROFILE
22+00 to 44+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-12



PLAN

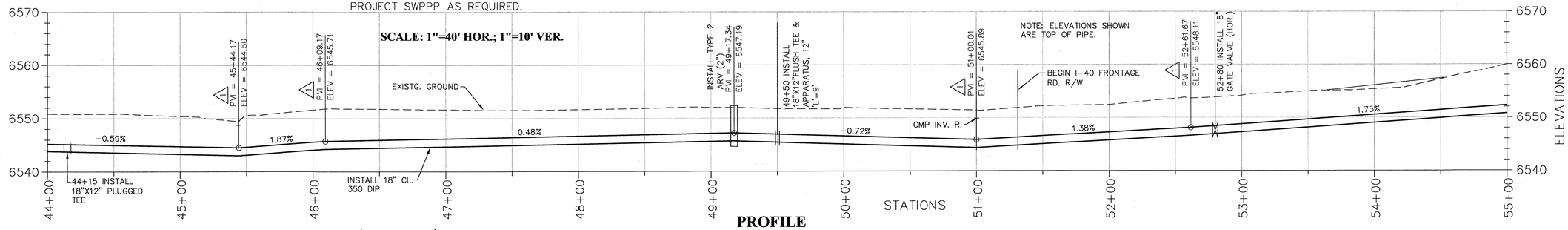
CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH THE CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.

NOTES:

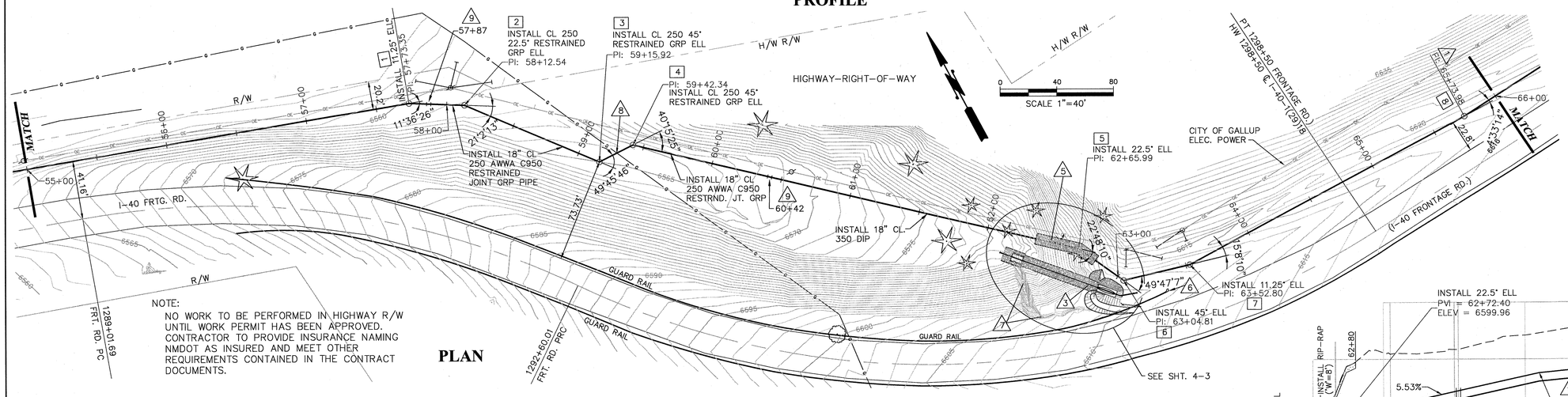
1. *CONTRACTOR TO DEVELOP, SECURE APPROVAL AND IMPLEMENT STORM WATER POLLUTION PLAN AS REQUIRED.*
2. *CONTRACTOR TO PROVIDE INSURANCE CERTIFICATE NAMING NMDOT AS INSURED IN THE AMOUNT OF $1,000,000 PER OCCURRENCE FOR WORK WITHIN HIGHWAY RIGHT-OF-WAY.*

COORDINATES THIS SHEET:

1	N: 1651677.30 E: 2467595.93	5	N: 1651362.69 E: 2467964.05
2	N: 1651657.75 E: 2467629.90	6	N: 1651327.73 E: 2467980.92
3	N: 1651577.47 E: 2467695.03	7	N: 1651315.74 E: 2468027.39
4	N: 1651576.92 E: 2467721.45	8	N: 1651318.34 E: 2468248.55



PROFILE

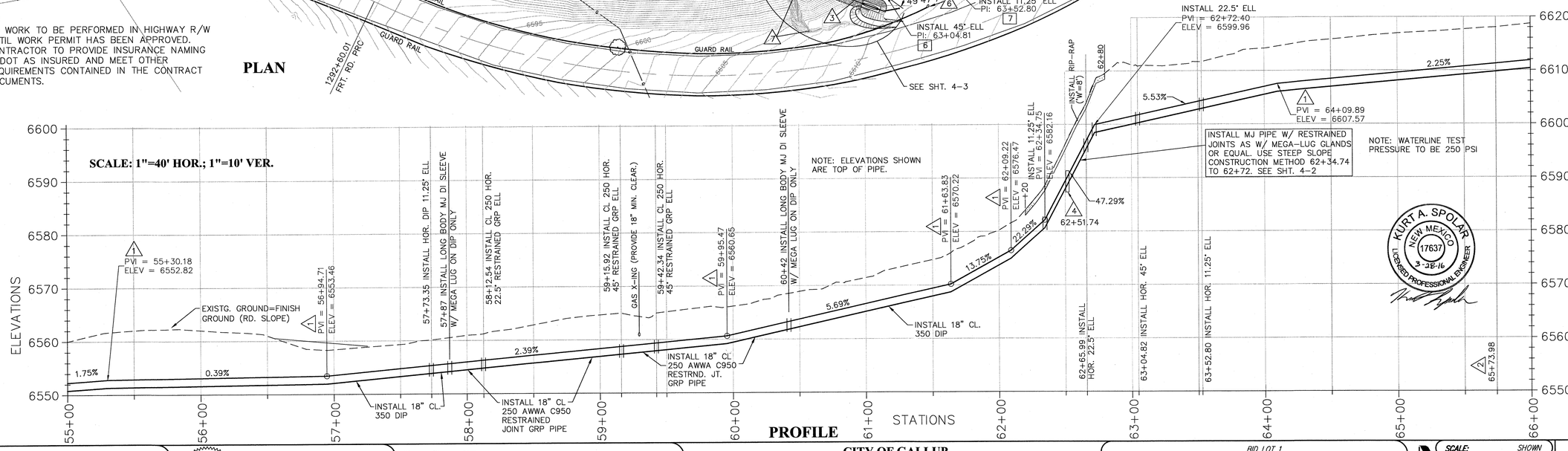


PLAN

NOTE:
NO WORK TO BE PERFORMED IN HIGHWAY R/W UNTIL WORK PERMIT HAS BEEN APPROVED. CONTRACTOR TO PROVIDE INSURANCE NAMING NMDOT AS INSURED AND MEET OTHER REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS.

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS
2. MAKE REQUIRED HORIZONTAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS
3. INSTALL 30" CMP WITH RIP-RAP AND INLET/OUTLET STRUCTURES. SEE SHT. 4-3
4. PLACE RETAINER BLOCK. SEE SHT. 4-2
5. STEEP SLOPE CONST.,'W'=8'-0". SEE SHT. 4-2
6. EXTEND GUARD RAIL AS SHOWN. SEE SHT. 4-2
7. PLACE ROCK EXCAVATED FROM WATERLINE CONST. INTO ERODED CHANNEL.
8. EXPOSE GAS LINE BY CAREFUL EXCAVATION PRIOR TO WATERLINE CONSTRUCTION IN THIS AREA. GRADE CONFLICTS WILL REQUIRE GRADE ADJUSTMENTS. BY THE ENGINEER.
9. INSTALL LONG BODY MJ DI SLEEVE W/ MEGA LUG ON DIP ONLY



PROFILE

CAUTION
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NOTICE OF EXTENDED PAYMENT PROVISION:
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KURT A. SPOLAR NEW MEXICO 17637 5-30-16 LICENSED PROFESSIONAL ENGINEER

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TEL: (505)863-5440 depauliengineering.com

for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

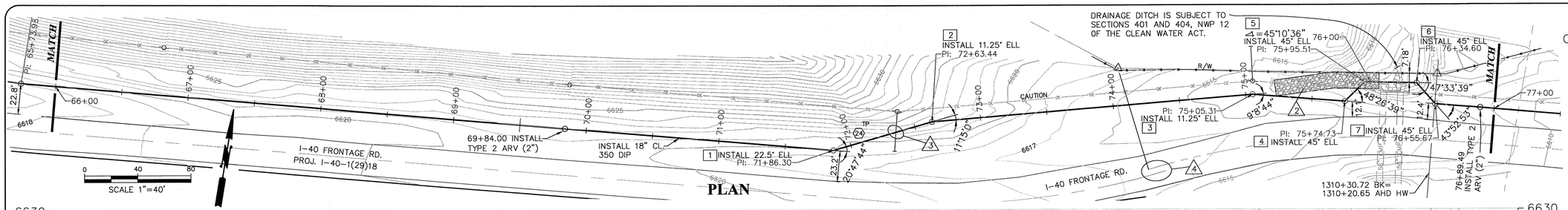
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

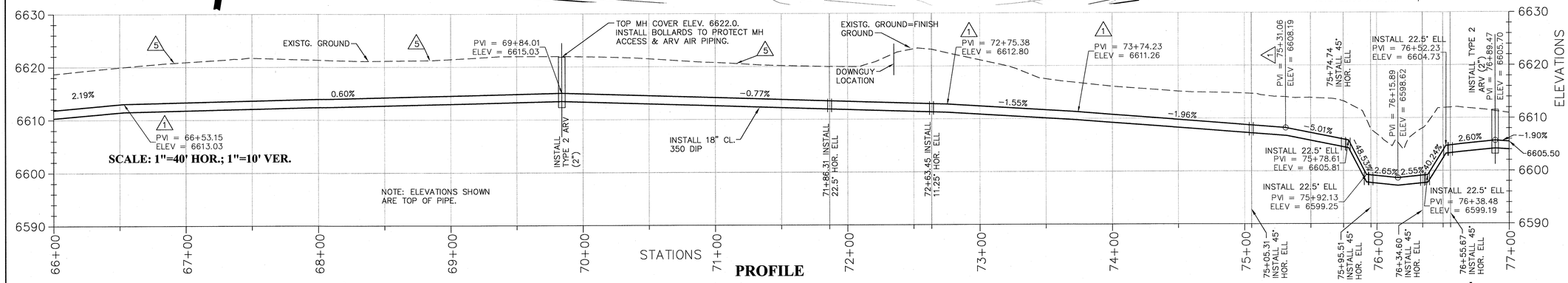
BID LOT 1
18" WATERLINE 6B PLAN & PROFILE
44+00 to 66+00

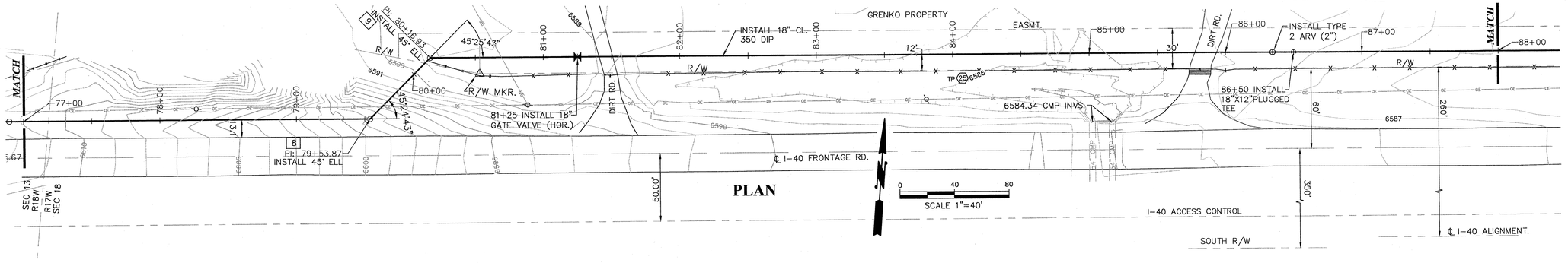
SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

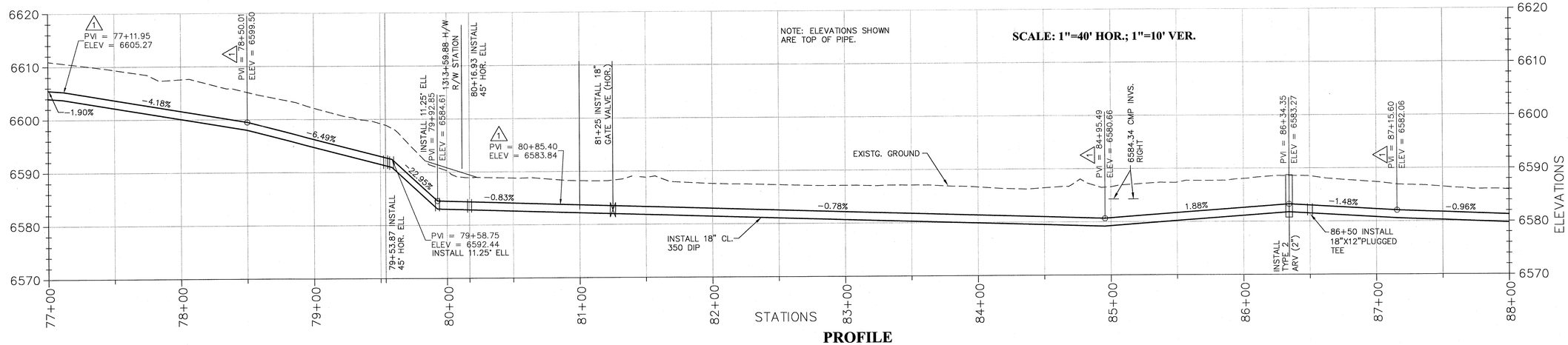
SHEET 2-13

ENGINEER<-I- C:\DOCUMENTS\ENGINEER\PROJECTS 6B









COORDINATES THIS SHEET:

1	N: 1651374.14 E: 2468858.33	6	N: 1651499.33 E: 2469281.42
2	N: 1651407.98 E: 2468927.65	7	N: 1651486.16 E: 2469297.87
3	N: 1651469.66 E: 2469161.52	8	N: 1651513.27 E: 2469594.83
4	N: 1651476.46 E: 2469230.61	9	N: 1651562.02 E: 2469634.84
5	N: 1651493.28 E: 2469242.79		

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. INSTALL 12' WIDE WIRE ENCLOSED RIP-RAP. BLANKET TO GENERALLY CONFORM TO EXISTING CONTOURS.
3. NOTIFY CITY ELECTRIC DEPT. FOR POSSIBLE DOWN-GUY TIE-OFF WHEN TRENCHING IN THIS AREA. PROVIDE 7 DAY AND 48 HR. ADVANCED NOTICE. EXPEDITE COMPACTED BACKFILL.
4. POSSIBLE PROBLEM W/ HW MONUMENTATION, 13'± IN EAST WEST DIRECTION.
5. THIS AREA IN THE HOGBACK CUT IS SUBJECT TO DEPOSITION & SUBSEQUENT REMOVAL & GRADING. CONTRACTOR TO MAINTAIN PIPE GRADES & ELEVATIONS SHOWN.

NOTES:

1. *CONTRACTOR TO PROVIDE THRUST BLOCKS OPPOSITE PLUGGED BRANCH ON TEES (SEE SHT. 7-1)*

KURT A. SPOLAR NEW MEXICO 17637 5-28-16 LICENSED PROFESSIONAL ENGINEER

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ENGINEER=L: C:\DOCUMENTS\ENGINEER\PROJECTS 68

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for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

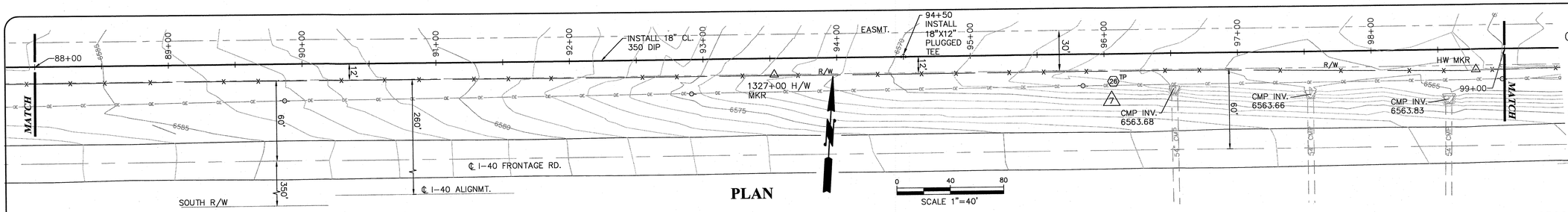
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

BID LOT 1
18" WATERLINE 6B PLAN & PROFILE
66+00 to 88+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-14



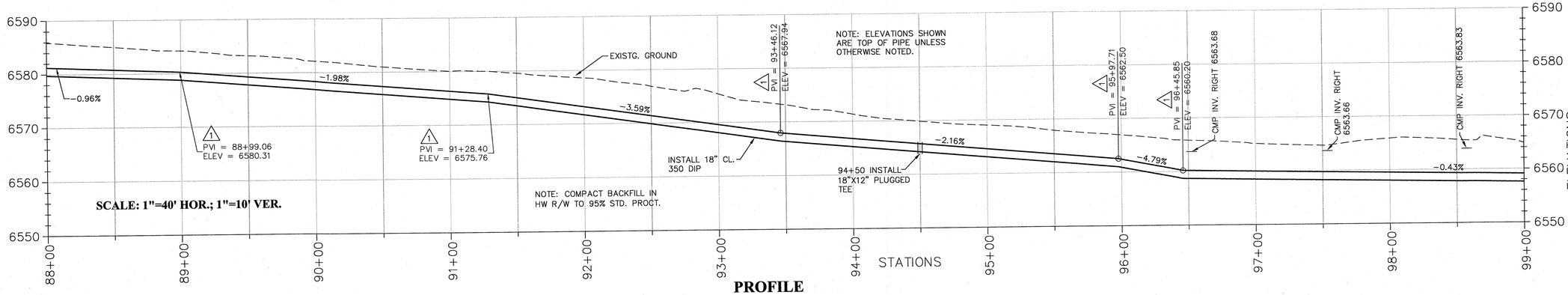
PLAN

COORDINATES THIS SHEET:

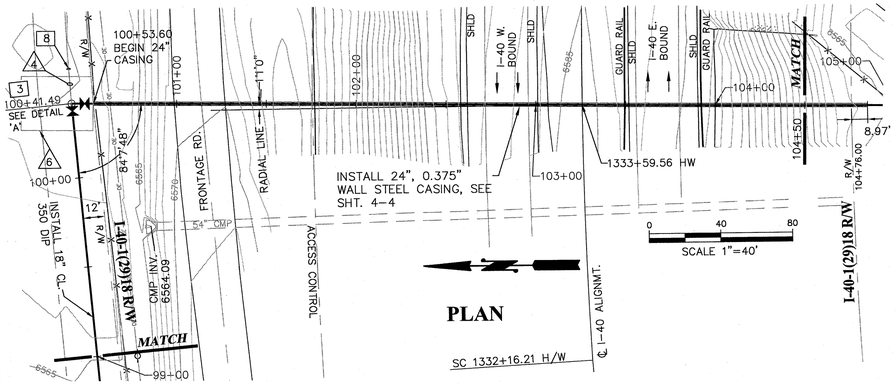
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4	N: 1651286.38 E: 2471645.69	7	N: 1650971.47 E: 2472012.99
5	N: 1651211.74 E: 2471732.75	8	N: 1651746.92 E: 2471670.53

KEYED NOTES:

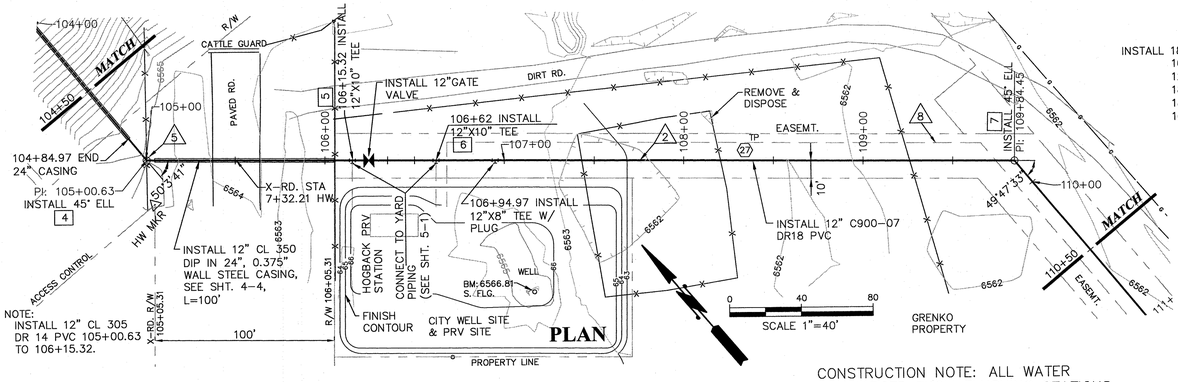
1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. RESERVE PIT TO BE STABILIZED AS PART OF PRV STATION SITE WORK, SEE SHT. 5-1.
3. INSTALL FLUSH TEE & APPARATUS, SEE SHT. 4-2.
4. BEGIN 12" C900-07 DR18 PVC CONST.
5. 30'X40' BORE PIT, APPROX. 8' DEEP
6. TEST PIT, SEE CONTRACT DOCUMENTS
7. PROPOSED POWER LINE BY CITY



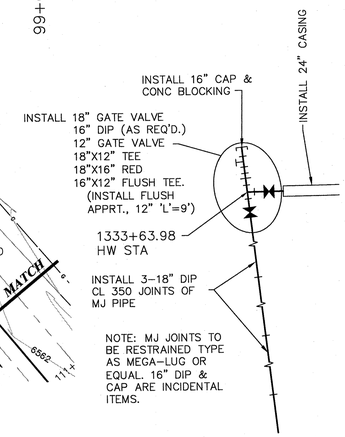
PROFILE



PLAN

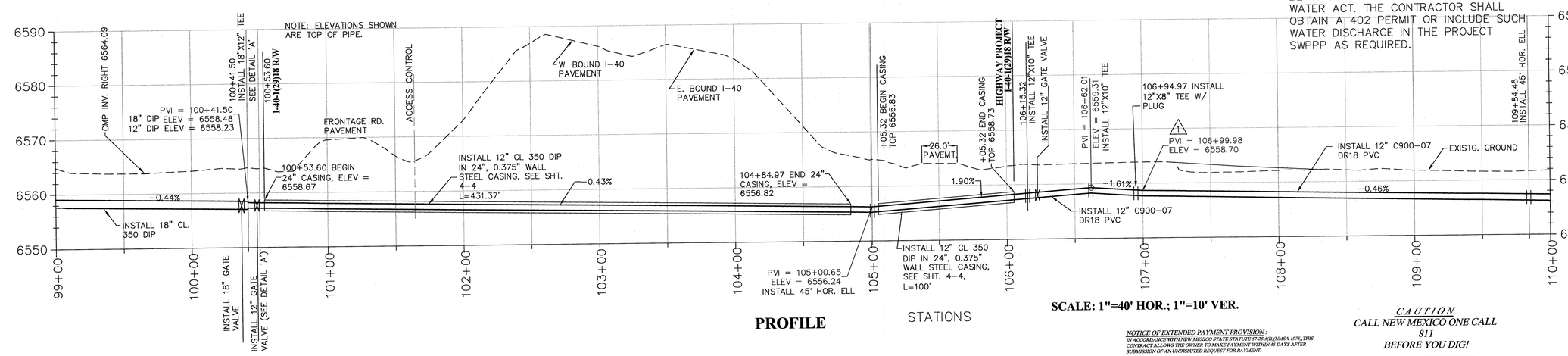


PLAN



DETAIL 'A'

CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH THE CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.



PROFILE

SCALE: 1"=40' HOR.; 1"=10' VER.

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BEFORE YOU DIG!

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2. CONTRACTOR TO PROVIDE INSURANCE CERTIFICATE NAMING NMDOT AS INSURED IN THE AMOUNT OF $1,000,000 PER OCCURRENCE FOR WORK WITHIN HIGHWAY RIGHT-OF-WAY.

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for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

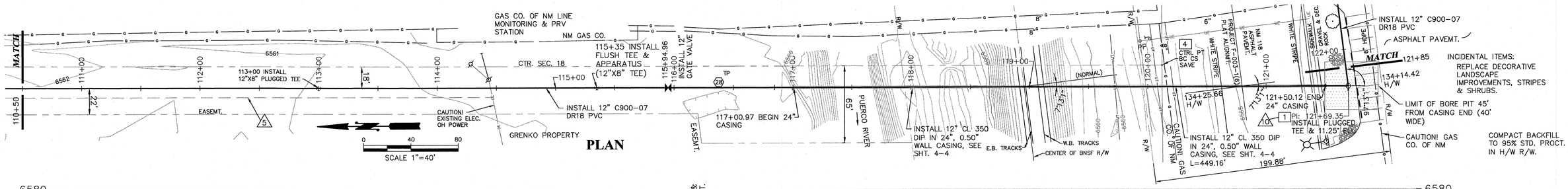
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

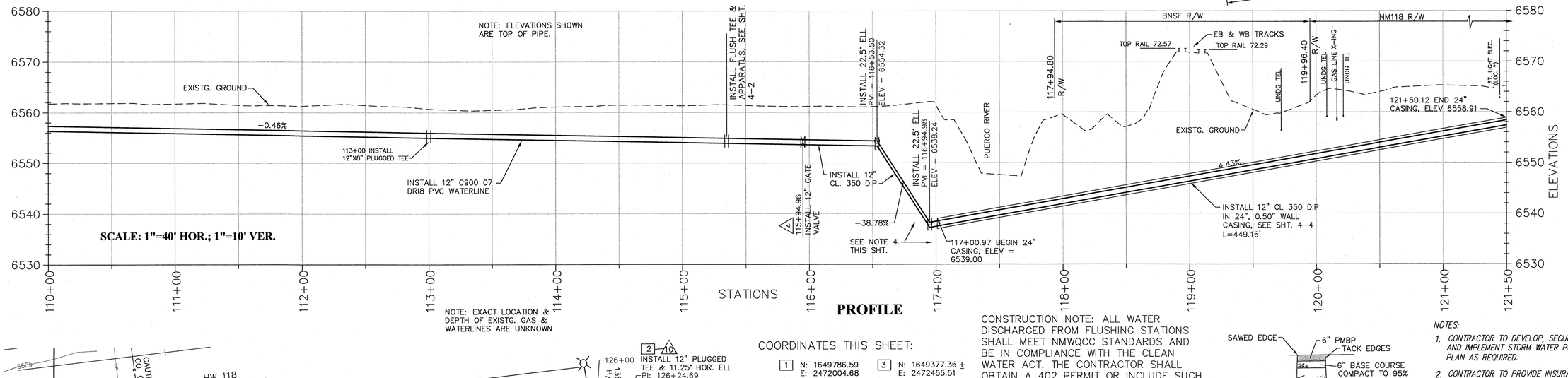
BID LOT 1
12" & 18" WATERLINE 6B PLAN & PROFILE
88+00 to 110+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-15

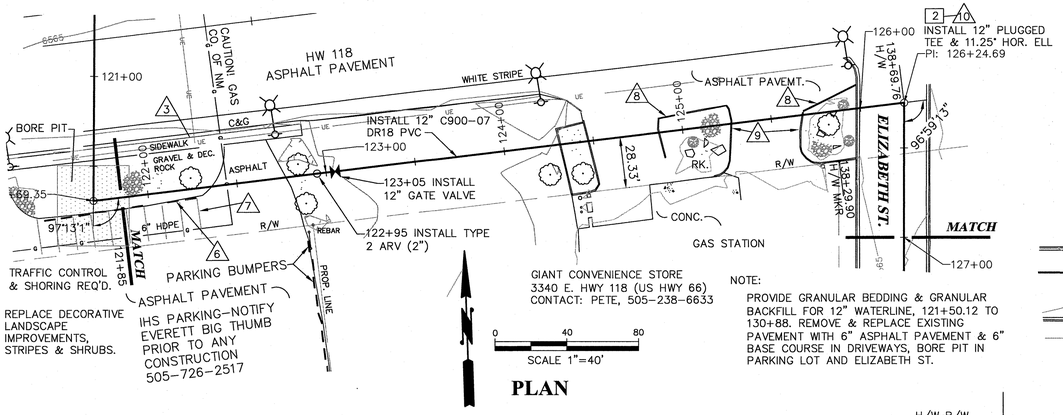
ENGINEER-L: C:\DOCUMENTS\ENGINEER\PROJECTS 6B





NOTE: EXACT LOCATION & DEPTH OF EXISTG. GAS & WATERLINES ARE UNKNOWN

PROFILE

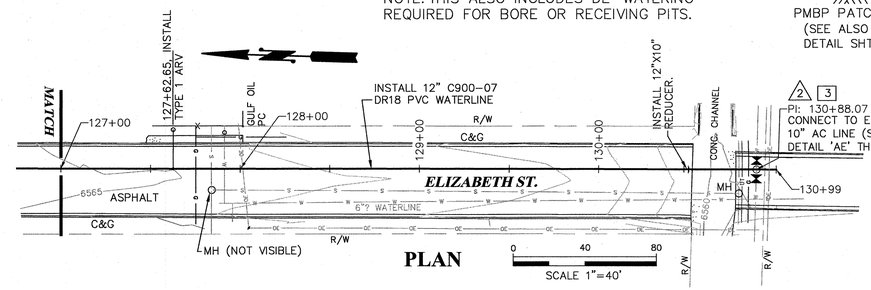


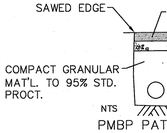
NOTE:
PROVIDE GRANULAR BEDDING & GRANULAR BACKFILL FOR 12" WATERLINE, 121+50.12 TO 130+88. REMOVE & REPLACE EXISTING PAVEMENT WITH 6" ASPHALT PAVEMENT & 6" BASE COURSE IN DRIVEWAYS, BORE PIT IN PARKING LOT AND ELIZABETH ST.

COORDINATES THIS SHEET:

1	N: 1649786.59 E: 2472004.68	3	N: 1649377.36 ± E: 2472455.51
2	N: 1649840.74 E: 2472456.79	4	N: 1649943.68 E: 2472023.78

CONSTRUCTION NOTE: ALL WATER DISCHARGED FROM FLUSHING STATIONS SHALL MEET NMWQCC STANDARDS AND BE IN COMPLIANCE WITH THE CLEAN WATER ACT. THE CONTRACTOR SHALL OBTAIN A 402 PERMIT OR INCLUDE SUCH WATER DISCHARGE IN THE PROJECT SWPPP AS REQUIRED.
NOTE: THIS ALSO INCLUDES DE-WATERING REQUIRED FOR BORE OR RECEIVING PITS.

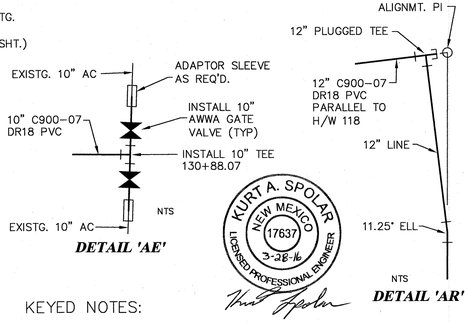




PMBP PATCH DETAIL
(SEE ALSO PATCH DETAIL SHT. 7-2.)

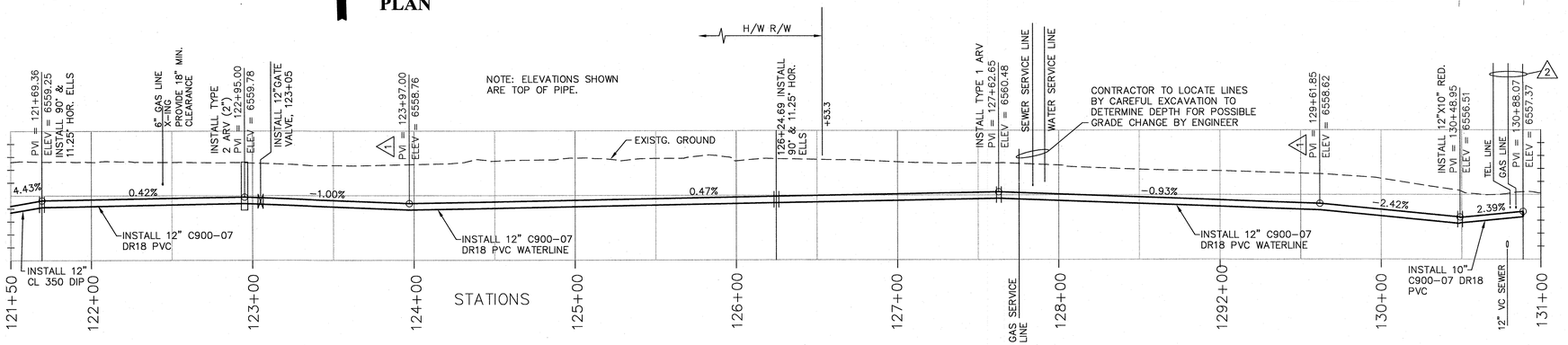
NOTES:

1. *CONTRACTOR TO DEVELOP, SECURE APPROVAL AND IMPLEMENT STORM WATER POLLUTION PREVENTION PLAN AS REQUIRED.*
2. *CONTRACTOR TO PROVIDE INSURANCE CERTIFICATE NAMING NMDOT AS INSURED IN THE AMOUNT OF $1,000,000 PER OCCURRENCE FOR WORK WITHIN HIGHWAY RIGHT-OF-WAY.*
3. CONTRACTOR SHALL BE RESPONSIBLE FOR AC PIPE REMEDIATION AND LEGAL DISPOSAL.
4. 402 PERMIT/DE-WATERING TO BE PERFORMED BY CONTRACTOR.



DETAIL 'AE'

DETAIL 'AR'



SCALE: 1"=40' HOR.; 1"=10' VER.

PROFILE

KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. DETERMINE EXISTG. AC PIPE, GAS & TEL ELEVS. BY CAREFUL EXCAVATION. ADJUST NEW 10" PVC LINE GRADE AS REQUIRED.
3. EXISTG. MONOLITIC SIDEWALK AND C&G
4. BEGIN CL. 350 DIP CONST.
5. PROPOSED POWER LINE BY CITY OF GALLUP THIS PROJECT
6. PARKING BUMPER (SALVAGE & RE-INSTALL).
7. PARKING STRIPE (REPLACE).
8. RAILROAD. TIES
9. CONCRETE CURB
10. SEE DETAIL 'AR' THIS SHT.

NOTICE OF EXTENDED PAYMENT PROVISION :
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

CAUTION
CALL NEW MEXICO ONE CALL 811
BEFORE YOU DIG!

KURT A. SPOLAR — NEW MEXICO — 17637 — 3-28-16 — LICENSED PROFESSIONAL ENGINEER

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440, depaulieengineering.com

for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

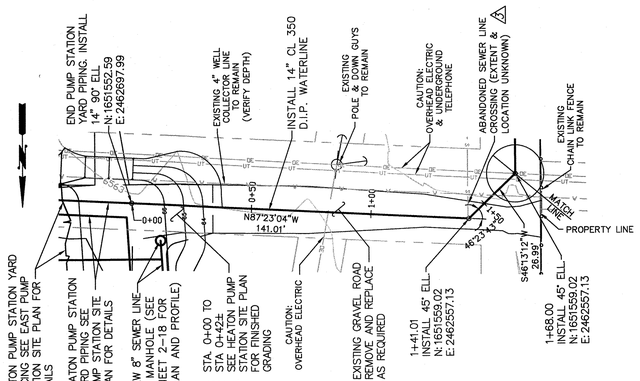
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

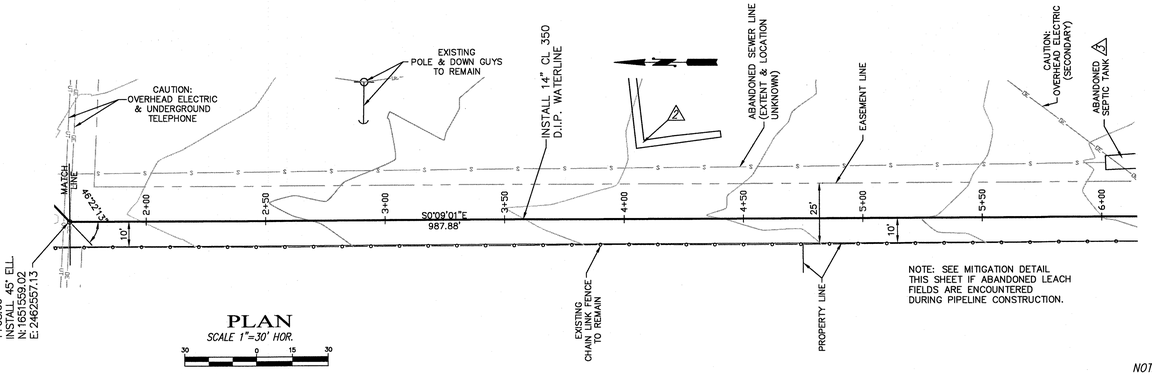
BID LOT 1
12" WATERLINE 6B PLAN & PROFILE
110+00 to 130+88

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

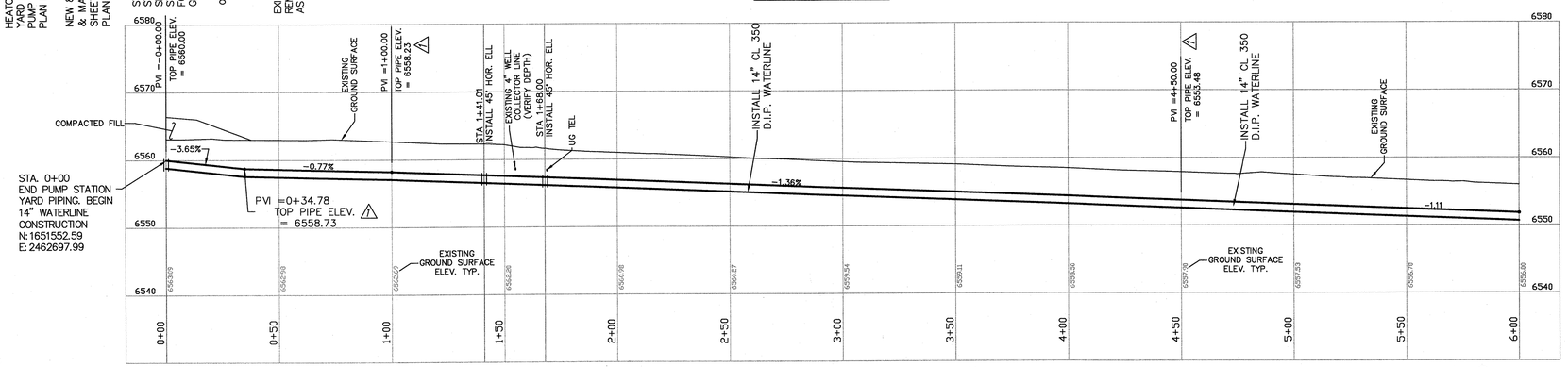
SHEET 2-16

ENGINEER-::\ C:\DOCUMENTS\ENGINEER\PROJECTS 68





PLAN
SCALE 1"=30' HOR.



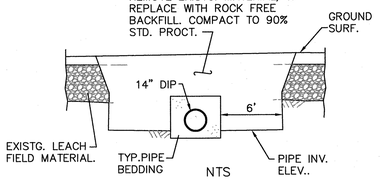
PROFILE
SCALE 1"=30' HOR., 1"=10' VER.

NOTES:

1. *CONTRACTOR TO DEVELOP, SECURE APPROVAL AND IMPLEMENT STORM WATER POLLUTION PREVENTION PLAN AS REQUIRED.*
2. *CONTRACTOR TO PROVIDE INSURANCE CERTIFICATE NAMING NMDOT AS INSURED IN THE AMOUNT OF $1,000,000 PER OCCURRENCE FOR WORK WITHIN HIGHWAY RIGHT-OF-WAY.*

KEYED NOTES THIS SHEET:

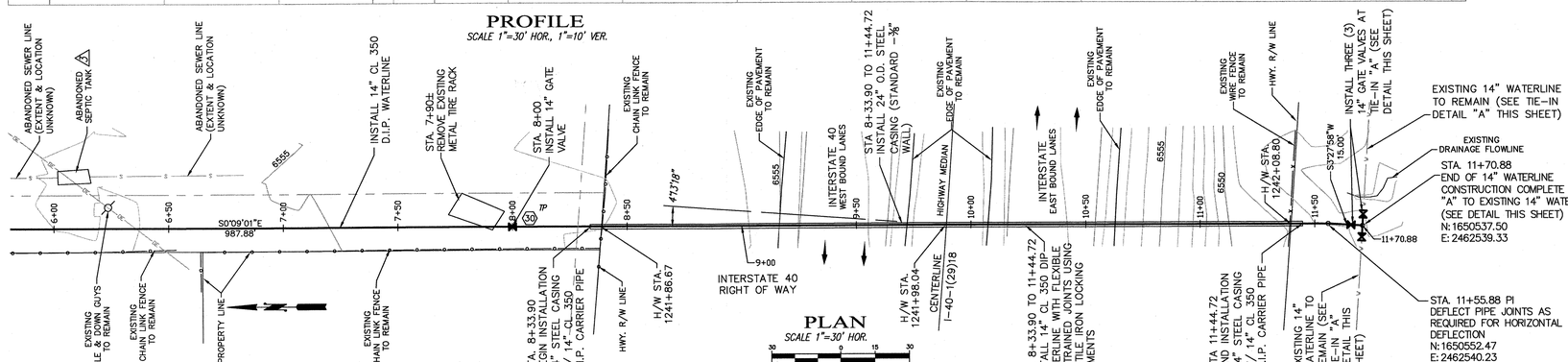
1. *MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS WITHIN MANUFACTURER'S RECOMMENDED LIMITS.*
2. *EXISTG. ABANDONED BRICK PATH. REPLACEMENT NOT REQUIRED.*
3. *SEE MITIGATION DETAIL THIS SHEET IF ABANDONED SEWER OR LEACH FIELDS ARE ENCOUNTERED DURING PIPELINE CONSTRUCTION.*



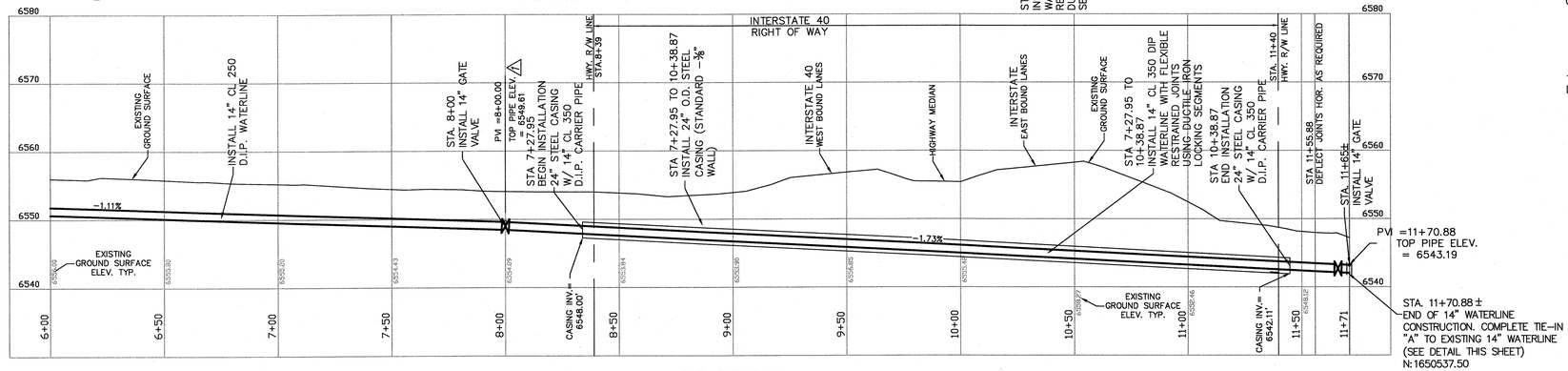
NOTE: MINIMUM MITIGATION WIDTH 5' AND SHALL EXTEND 5' BEYOND LEACH FIELDS.

ABANDONED LEACH FIELD/SEWER LINE MITIGATION DETAIL

NOTE: EXCAVATED MATERIAL SHALL BE STABILIZED WITH LIME (1LB OF LIME PER 1 CY OF MATERIAL) AND TRANSPORT TO SLUDGE INJECTION FIELD NEAR THE CITY'S WWTP (7 MI. TO THE WEST)



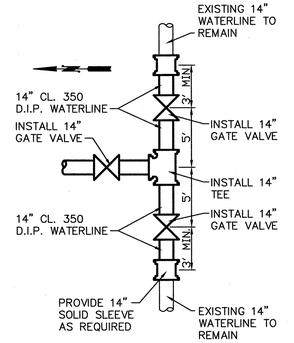
PLAN
SCALE 1"=30' HOR.



PROFILE
SCALE 1"=30' HOR., 1"=10' VER.

CAUTION
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811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
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TIE-IN "A" DETAIL
NOT TO SCALE

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

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for the **CITY OF GALLUP**
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

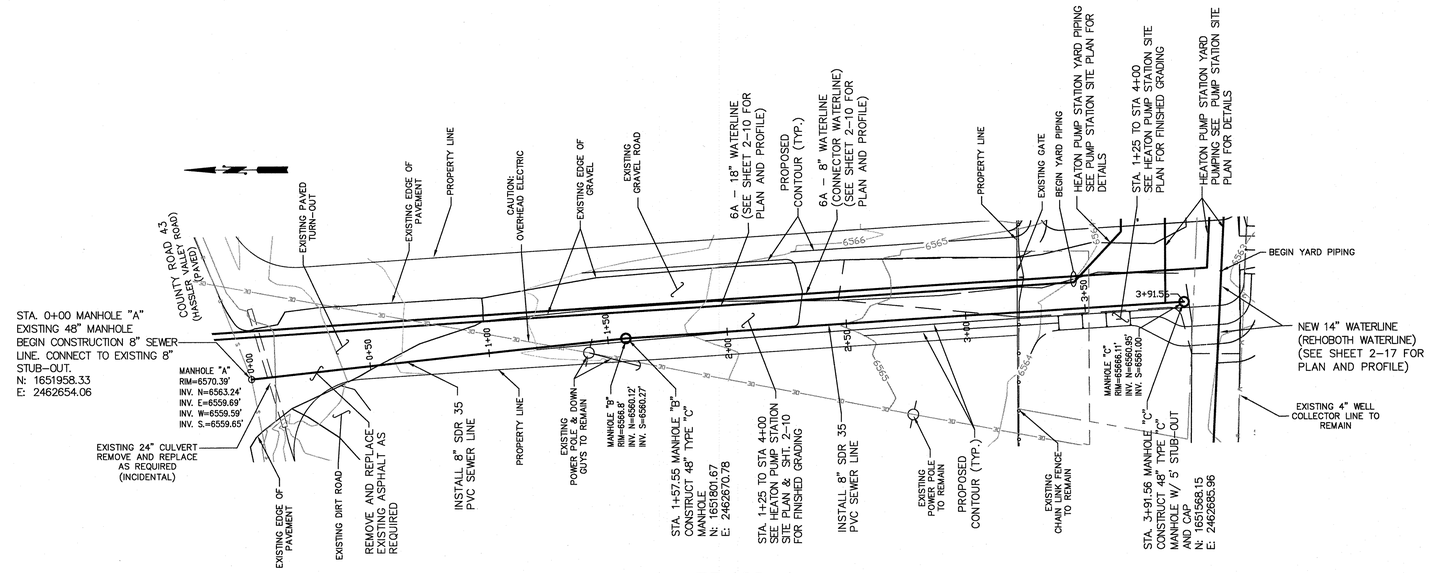
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

REHOBOTH 14" WATERLINE CONNECTOR PLAN & PROFILE 0+00 to 10+64.94

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 2-17

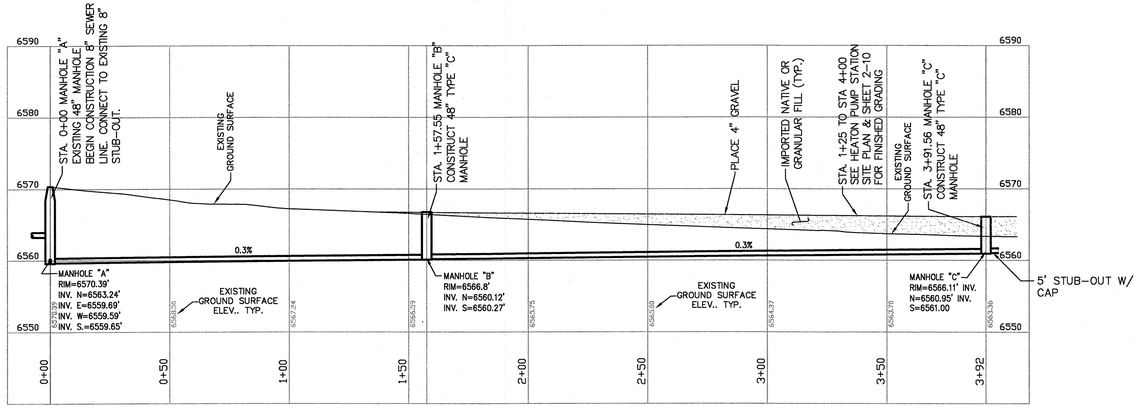
ENGINEER3: C:\Users\Public\Documents\engineer\Project 6\pump prv.dwg



PLAN
SCALE 1"=30' HOR.

NOTES:

1. 4" GRAVEL SURFACING (TO 6A STA 179+70.33) AND ASPHALT PATCH FOR ENTRANCE RD. TO PUMP STATION ARE LOT 1 ITEMS.
2. EMBANKMENT CONSTRUCTION FOR ENTRANCE RD. AND PUMP STATION 1S A LOT 6 ITEM.
3. 8" SEWER LINE CONNECTOR SHOWN HEREON IS A LOT 2 ITEM.
4. 8" WATER LINE CONNECTOR (SHT. 2-10) IS A LOT 2 ITEM.



PROFILE
SCALE 1"=30' HOR., 1"=10' VER.

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KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

CAUTION
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WRIGLEYVILLE: C:\Users\Public\Documents\<engineer>\Project 6

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for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

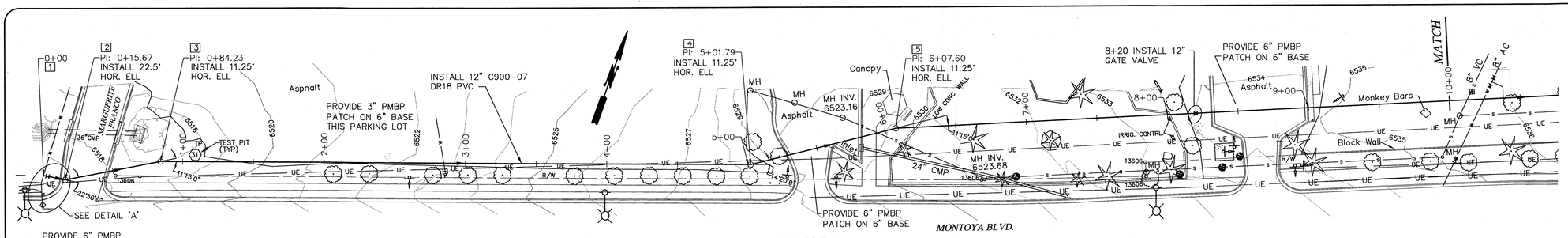
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

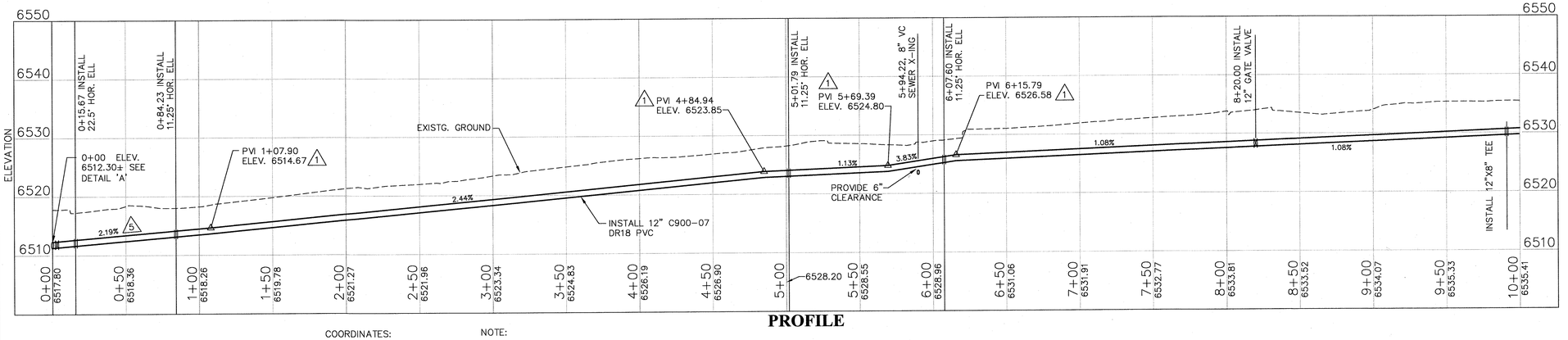
8" SEWER LINE CONNECTOR
PLAN & PROFILE 0+00 to 3+91.56

SCALE:	SHOWN
DATE:	OCT., 2015
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET
2-18



PLAN



PROFILE

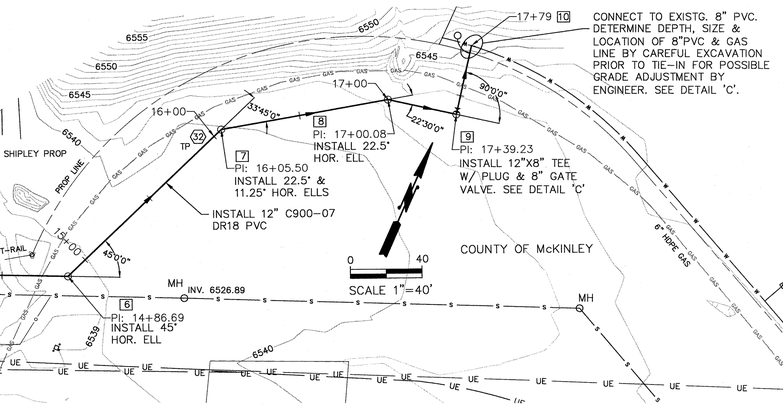
SCALE: 1"=40' HOR.
1"=10' VER.

NOTE:
ELEVATIONS CALLED FOR ARE TOP OF PIPE.

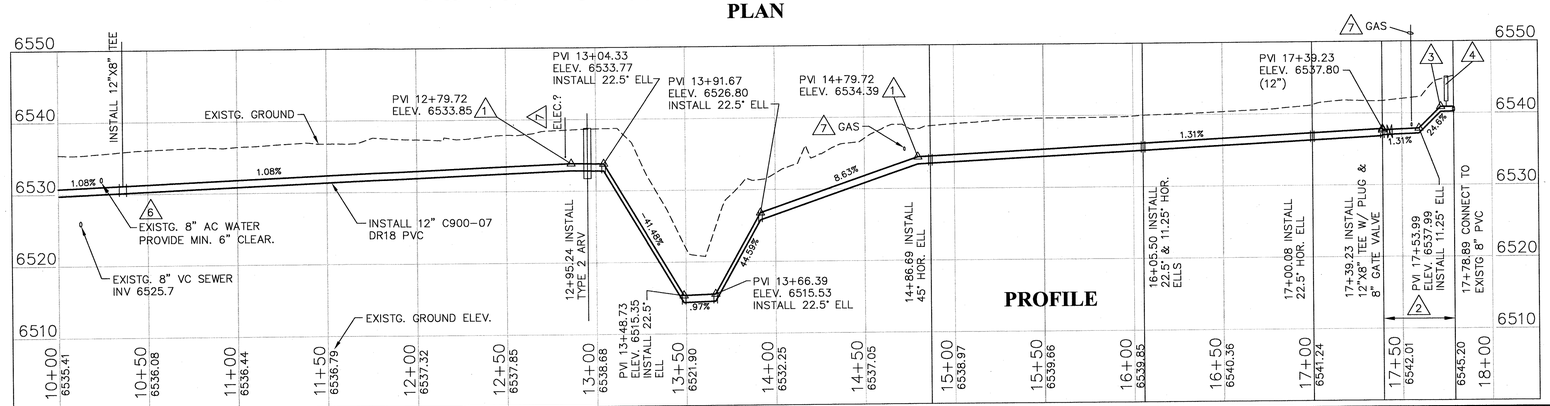
COORDINATES:

1. N: 1651363.66 E: 2456163.75
2. N: 1651365.90 E: 2456179.26
3. N: 1651400.93 E: 2456238.19
4. N: 1651540.17 E: 2456631.85
5. N: 1651599.05 E: 2456719.77
6. N: 1651936.38 E: 2457531.55
7. N: 1652046.21 E: 2457576.90
8. N: 1652098.94 E: 2457655.48
9. N: 1652106.52 E: 2457693.86
10. N: 1652145.41 E: 2457686.09

NOTE:
1. LOCATIONS ARE APPROX.



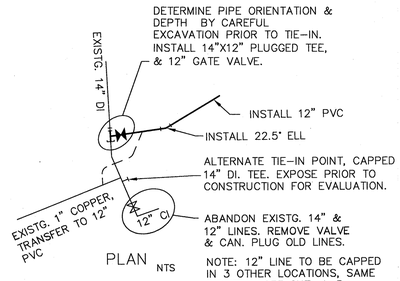
PLAN



PROFILE

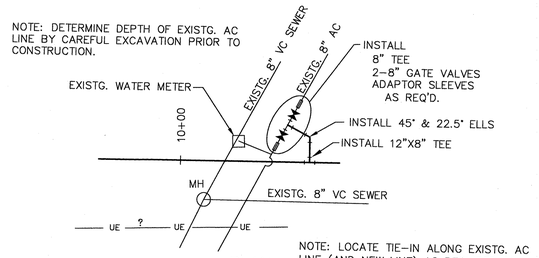
KEYED NOTES:

1. MAKE REQUIRED VERTICAL DEFLECTION AT STD. PIPE JOINTS, WITHIN MANUFACTURERS RECOMMENDED LIMITS.
2. INSTALL 8" C900-07 DR18 PVC.
3. INSTALL 11.25° ELL AT ELEV. EQUAL TO EXISTG. 8" PVC.
4. INSTALL TYPE 1 ARV ON LEVEL 8" PVC.
5. GRADE MAY VARY DEPENDING ON EXISTING LINE ELEV. MAINTAIN UPWARD GRADE TO ARV.
6. VERIFY EXISTING ELEV. OF AC LINE PRIOR TO 12" LINE CONSTRUCTION PAST STATION 5+15.79. ENGINEER MAY BE REQUIRED TO ADJUST GRADE FOR PROPER CLEARANCE BETWEEN WATER LINES WHILE MAINTAINING POSITIVE GRADE TO ARV.
7. DETERMINE DEPTH OF UTILITY LINE BY CAREFUL EXCAVATION PRIOR TO CONSTRUCTION FOR POSSIBLE GRADE ADJUSTMENT BY ENGINEER.



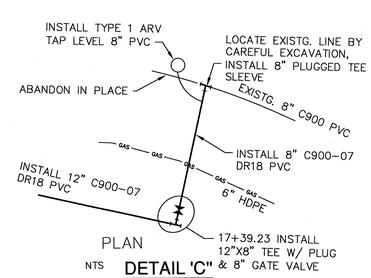
NOTE: 12" LINE TO BE CAPPED IN 3 OTHER LOCATIONS, SAME BID ITEM. SEE SHT. 4-5

DETAIL 'A'



NOTE: LOCATE TIE-IN ALONG EXISTG. AC LINE (AND NEW LINE) AS REQUIRED TO BEST FACILITATE ALL ASPECTS OF PROPER TIE-IN. CONTRACTOR IS RESPONSIBLE FOR REMEDIATION OF AC MATERIAL.

DETAIL 'B'



DETAIL 'C'

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

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for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO-GALLUP WATER SUPPLY PROJECT
REACH 27.6

BID LOT 3
12" MONTOYA WATERLINE

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 2-19

ENGINEER2: C:\Documents\Engineer\Proj. 6\ MONTOYA.dwg

TEST HOLE LOGS IN ABANDONED BLACK DIAMOND MINE AREA

NOTE: MINED AND CLOSED IN THE 1890'S

HOLE NO.	DEPTH (FT.)	OBSERVATION (DRILLER)
BD1	18.0 25.0–28	LOST CUTTINGS FIRM, 28.0 TD
BD2	18.0 21.0–? 34.0	LOST CUTTINGS VOID, THEN MIN. RESISTANCE FIRM, 34.0 TD
BD3	14.0–18.0 18.0–? 35.0	MIN. RESISTANCE, VOID, THEN MIN. RESISTANCE FIRM, 35.0 TD
BD4	14.0	LOST CUTTINGS, THEN MIN. RESISTANCE, 25.0' TD
BD5	21.0–? 34.0	VOID, THEN MIN. RESISTANCE FIRM, 34.0 TD
BD6	28.0 37.0–?	LOST CIRCULATION VOID?, 37.0 TD
BD7	35.0 37.0	LOST CIRCULATION, STILL FIRM TD
BD8	0–38.0 38.0	FIRM, NO VOIDS TD
BD9	39.0 46.0	BROKE THROUGH, THEN MIN. RESISTANCE FIRM, TD
BD10	33.0 33.0	LOST CUTTINGS, STILL FIRM TD
BD12	18.0 24.0 35	LOST CIRCULATION FIRMED UP TD
BD13	12.0 36.0	LOST CIRCULATION, STILL FIRM TD
BD14	0–39.0 39.0	ALL ROCK TD

HOLE NO.	DEPTH (FT.)	OBSERVATION (VIDEO)
BD11	3.0–3.7 9.7–10.9 13.4–13.9 14.7–17.0 28.0 35	FRACTURED FRACTURED,VOIDS FRACTURED VOID, THEN BROKEN ROCK FIRM (PER DRILLER) TD (PER DRILLER)
BD15	22–27	PURE VOID, BLOCKED, BROKEN ROCK, TD 29
BD16	21.5–26.5	PURE VOID, BLOCKED, BROKEN ROCK, TD 31
BD17	18–24	BROKEN ROCK W/ SOME VOIDS, TD 27
BD18	5–8 14–18 20–24	BROKEN ROCK BROKEN ROCK W/ VOIDS BROKEN ROCK, VOIDS, TD 34, (DRILLER)
BD19	6–11 18–20 22–27 33–35	FRACTURED ROCK BROKEN ROCK, SOME VOIDS BROKEN ROCK, SOME VOIDS BROKEN, COAL, BUGS, TD 38
BD20	3–24	BUGS, TD 25, (HOLE INTACT)
BD21	8–9	FRACTURES, VOIDS, TD 24
BD22	5–7 32–37	SLIGHTLY BROKEN COAL, TD 40, (HOLE MAINLY INTACT)
BD23	5–7 12–15 18–19 20–23 29–30 33–38	FRACTURES FRACTURES SOME BROKEN FRACTURES BROKEN BROKEN W/ COAL, TD 43
BD24	6–10 14–15 20–23 26–27 32–38	SOME FRACTURES SOME BROKEN ROCK FRACTURES, SOME BROKEN ROCK VOIDS, SOME BROKEN ROCK BROKEN, VOIDS, COAL BITS, TD 40
BD25	8–11 18–21 24–26 36–40	FRACTURES BROKEN, SOME VOIDS BROKEN ROCK, VOIDS BROKEN ROCK, VOIDS, TD 42

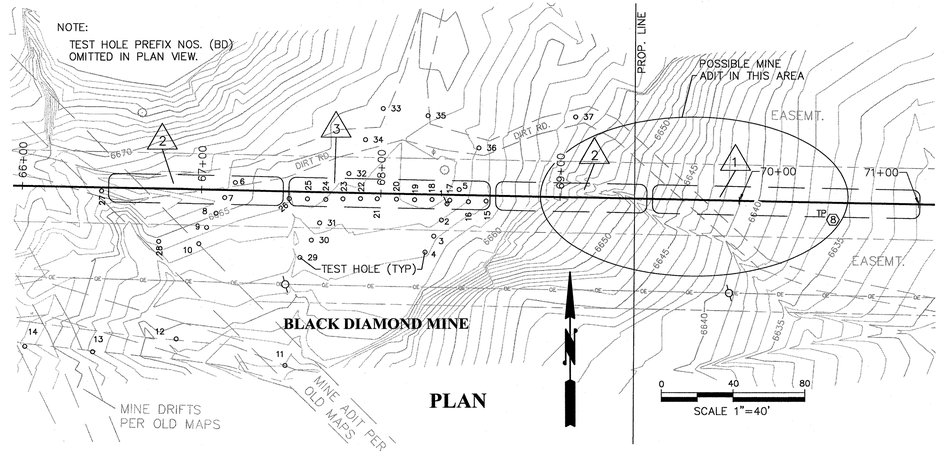
HOLE NO.	DEPTH (FT.)	OBSERVATION (VIDEO)
BD26	8–11 19–23 27–28 37–41	FRACTURES BROKEN W/ SOME VOIDS BROKEN ROCK FRACTURES, BROKEN W/ COAL, TD 48
BD27	21–22 31–32 36–41	SLIGHT FRACTURES SLIGHT FRACTURES BROKEN ROCK W/ VOIDS, TD 44
BD28	15–24 26–29 30–32 38–39 43–46	BROKEN, SOME VOIDS BROKEN, SMALL VOIDS BROKEN, SOME VOIDS BROKEN, SOME VOIDS BROKEN W/ SIGNIFICANT VOID, TD 47
BD29	9–10 25–26 29–31 32–34	BROKEN, SMALL VOIDS FRACTURES, SOME VOIDS BROKEN, SMALL VOIDS BROKEN, SMALL VOIDS, TD 36
BD30	6–7 14–15 18–19 19–21 23–24 27–30 31–36	BROKEN, SMALL VOIDS FRACTURES, SOME VOIDS BROKEN, SMALL VOIDS BROKEN, SMALL VOIDS BROKEN, SMALL VOIDS BROKEN, SOME VOIDS BROKEN W/ VOIDS, TD 39
BD31	10–13 15–16 19–24?	BROKEN, SMALL VOIDS FRACTURES, SOME VOIDS BROKEN W/ VOIDS, BLOCKED, TD 39
BD32	21–22 25–26 29–30 35–40	COAL COAL? LOOSE MATERIAL LOOSE, COAL, TD 42
BD33	24–25 26–28 29–33	SMALL VOIDS BROKEN ROCK, VOIDS BROKEN W/ SIGNIFICANT VOID, TD 40
BD34	13–14 18–20 26–29	BROKEN ROCK BROKEN, SMALL VOIDS BROKEN , VOIDS, BLOCKED, TD 40

HOLE NO.	DEPTH (FT.)	OBSERVATION (VIDEO)
BD35	12–13 28–30 31–37	BROKEN, SMALL VOIDS RAGGED, COAL? RAGGED, COAL?, TD 38
BD36	19–23	PURE VOID, BLOCKED,TD 40
BD37	0–20 20–25	AREAS OF LOOSE MATERIAL LOOSE, BROKEN, BLOCKED, TD 27

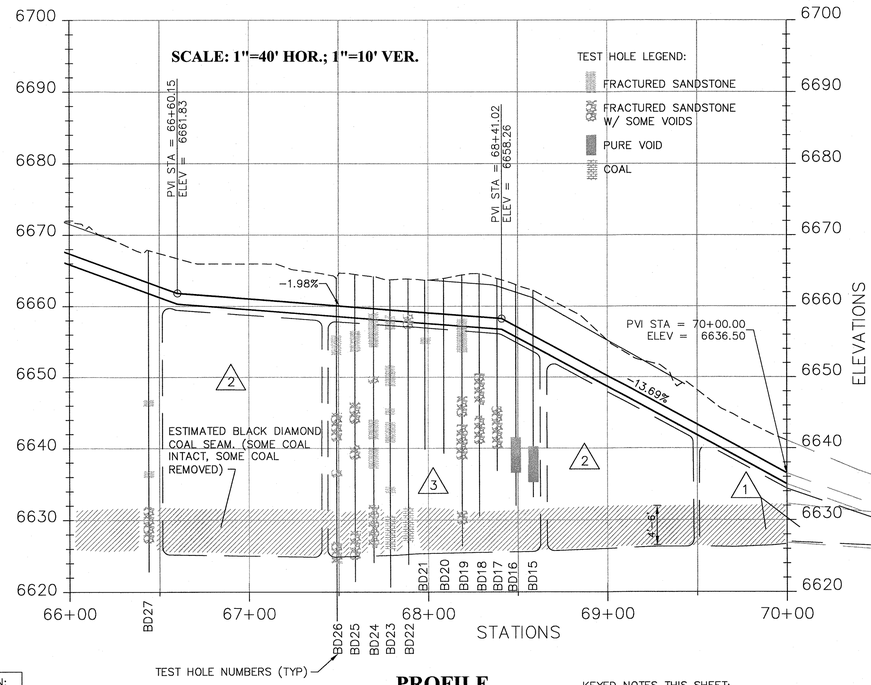
NOTE:
TEST HOLE DIAMETERS:
HOLES BD1 THROUGH BD14 3.5"
HOLES BD15 THROUGH BD37 4.5"

GENERAL GROUTING NOTES:

1. GROUTING TO BE CARRIED OUT TO PROVIDE A STABLE SUBSURFACE FOR PIPELINE. THE DEPTHS AT WHICH GROUTING IS TO BEGIN SHALL BE DETERMINED AFTER REVIEW OF EXPLORATION DRILL HOLE VIDEOS ALONG PIPELINE ALIGNMENT BY THE ENGINEER AND CONTRACTOR. GROUTING OF LARGE VOID AREAS MAY REQUIRE MORE THAN ONE ROW OF DRILL HOLES WITH CONFINING GROUT STACKS AS SHOWN. GROUTING ALONG A SINGLE ROW OF DRILL HOLES MAY BE ADEQUATE IN SOME AREAS PROVIDED THAT VERIFICATION DRILLING SHOWS STABILIZATION FOR AT LEAST A 12' WIDE PATH BENEATH THE PIPELINE. THE INTENT IS TO PROVIDE CONTINUOUS SUBSURFACE STABILIZATION WITHOUT EXCESSIVE FILLING OF VOIDS THAT EXTEND LATERALLY FROM PIPELINE.
2. INITIAL GROUT FOR LARGE VOIDS W/ BROKEN ROCK TO BE OF A CONSISTENCY TO PASS THROUGH BROKEN ROCK ENCOUNTERED. CONSISTENCY OF GROUT TO FOLLOW IN LARGE VOIDS TO BE SUCH AS TO LIMIT TRAVEL AND BUILD HEIGHT WITHIN VOID STRATA. VIDEO CAMERAS TO BE USED TO MONITOR TRAVEL OF THE GROUT. GROUT CONSISTENCY CHARACTERISTICS TO BE EXPERIMENTED WITH ABOVE GROUND.
3. GROUT SHALL NORMALLY BE PLACED AT RELATIVELY LOW PRESSURES WITHIN LARGE LOWER VOIDS. GROUTING EQUIPMENT SHALL HOWEVER, BE CAPABLE OF PUMPING AT HIGHER PRESSURES IF REQUIRED TO MOVE GROUT HORIZONTALLY IN THINNER VOIDS.
4. EXISTING OPEN DRILL HOLES TO BE USED TO THE EXTENT POSSIBLE FOR VIEWING AND GROUTING. (NOS. 15 THROUGH 27 BLACK DIAMOND, NOS. 1 THROUGH 9 McVICKER AND NOS. 1 THROUGH 9 BUBANY) LOCATIONS OF EXISTING HOLES CAN BE PROVIDED BY THE ENGINEER. EXISTING HOLES MAY NEED TO BE CLEANED OUT BY THE CONTRACTOR.
5. GROUT MATERIAL TYPICALLY TO CONSIST OF WATER, CEMENT, SAND, FLYASH AND ADDITIVES SUCH AS ACCELERATORS AND FROTHING AGENTS. 28 DAY STRENGTHS TO BE 200 PSI FOR ANY CONSISTENCY OR COMPOSITION USED. OTHER GROUT MATERIALS PROPOSED TO BE SUBMITTED FOR APPROVAL.
6. ACCURATE TALLIES OF DRILL HOLES AND GROUT PLACED TO BE MAINTAINED DAILY BY THE CONTRACTOR. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF VOIDS ARE ENCOUNTERED THAT ARE TAKING EXCESSIVE AMOUNTS OF GROUT.
7. VERIFICATION DRILLING AND VIDEO VIEWING WILL BE REQUIRED AFTER ADEQUATE SET TIME IN SOME AREAS TO EXAMINE GROUTING RESULTS. ADDITIONAL GROUT PLACEMENT WILL SOMETIMES BE REQUIRED.
8. GROUTING PRESSURES TO BE CONTROLLED AT ALL TIMES AND SHOULD NOT EXCEED OVERBURDEN PRESSURE WITH RESULTING 'BLOWOUTS'.



PLAN



PROFILE

GUIDE LINES FOR BLACK DIAMOND REMEDIATION:

REMEDIATION EFFORTS TO BE LIMITED TO 29 FT. BELOW PIPELINE INVERT SHOWN UNLESS LARGE VOIDS OR SOME PORTION OF MINED SEAMS BEGIN AT THAT DEPTH.

TEST HOLE LOG NOTES:

1. INTERVALS BETWEEN THOSE DESCRIBED IN TEST HOLE LOGS, OTHER THAN AREAS OF FILL, ARE BELIEVED TO BE FORMATION MATERIAL COMPOSED OF SANDSTONE ROCK, SHALE OR SILTSTONE.
2. INTERVALS DESCRIBED BY DRILLER AS HAVING MINIMAL RESISTANCE ARE THOUGHT TO BE EITHER INTERVALS OF BROKEN ROCK BELOW A VOID OR SOFT FORMATION MATERIAL AS SEEN IN SOME OUTCROPS.
3. FRACTURED ROCK OBSERVED ABOVE COAL SEAMS BELIEVED TO BE CAUSED IN GENERAL BY SUBSIDENCE INTO MINE VOIDS ALTHOUGH CONSIDERABLE FRACTURING MAY HAVE OCCURRED NATURALLY.
4. BLACK DIAMOND MINE STRATA DIPS AT A MODEST RATE TO THE NORTH–NORTHWEST IN THIS AREA.

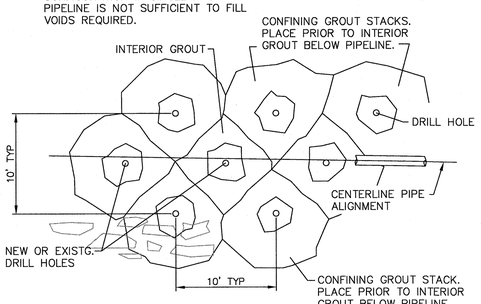
KEYED NOTES THIS SHEET:

1. APPROX. AREA FOR EXPLORATION BY EXCAVATION AND POSSIBLE REMEDIATION BY SUBSEQUENT COMPACTED BACKFILL. (POSSIBLE ENCOUNTER WITH ABANDONED MINE ADIT)
2. APPROX. AREA FOR ADDITIONAL EXPLORATION BY DRILLING AND VIEWING W/ VIDEO CAMERA. REMEDIATION DEEMED NECESSARY TO BE BY GROUTING METHODS W/ ADDITIONAL HOLES AS REQUIRED.
3. AREA W/ EXISTING DRILL HOLES AND VIDEOS TO BE USED IN CONJUNCTION W/ NEW DRILL HOLES AND VIDEOS FOR PLANNING AND SUBSEQUENT REMEDIATION EFFORTS.

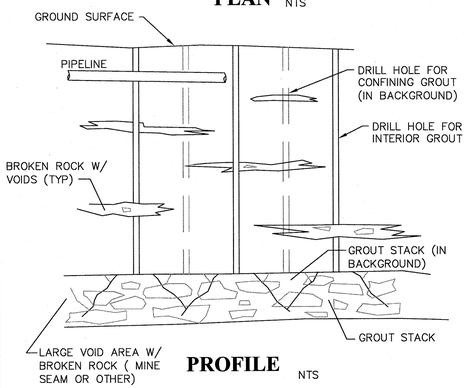
CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION :
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

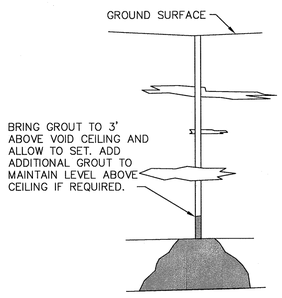
NOTE: DRILL HOLE AND GROUT CONFIGURATION IF SINGLE PASS ALONG PIPELINE IS NOT SUFFICIENT TO FILL VOIDS REQUIRED.



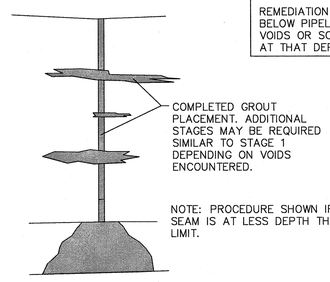
PLAN NTS



PROFILE NTS



GROUT STAGE 1



GROUT STAGE 2 (AND ADDITIONAL IF REQUIRED)

PROFILE NTS

GENERAL GROUT REMEDIATION DETAILS

KURT A. SPOLAR NEW MEXICO 17637 3-30-16 LICENSED PROFESSIONAL ENGINEER

ENGINEER=L: C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depauliengineering.com

for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

BID LOT 4
BLACK DIAMOND MINE REMEDIATION
18" WATERLINE 6A, APPROX. 66+50 TO 71+00

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 3-1

TEST HOLE LOGS IN ABANDONED MINE AREA

ENTERPRISE-BROWN & McVICKERS MINE

MINED 1907–1913

HOLE NO.	DEPTH	OBSERVATION (DRILLER)
M16	0–22.0	ERRATIC DRILL RATE
M12	14.0–22.0 22.0	COAL TD, NO VOIDS
M17	15.0–22.0 22.0	DARK COLOR TD, 0–TD FIRM
M10	0–23 23.0–25.0 25.0	FIRM SOFT, COAL SHOW TD
M11	0–21 21.0–25.0 25.0	FIRM SOFT, POSS. VOID TD
M1	8–11? 11?–38? 39	VOIDS EASY DRILLING TD, LATER PLUGGED @ SURFACE

HOLE NO.	DEPTH	OBSERVATION (VIDEO)
M15	5.5–7.0 8.0–9.0 11.5–13.0 14.0–19.0	LOOSE BROKEN ROCK, SOME VOIDS, LOOSE BROKEN ROCK, VOIDS BROKEN ROCK, TD 22
M6	0 5.7–12.0 13.0–14.0 14.0	WARM, MOIST DRAFT LOOSE SOIL & ROCK BROKEN ROCK, VOIDS HOLE BLOCKED TD 25 FIRM, (DRILLER)
M5	0 6.8–9.0 9.0–10.8 10.8–11.9 12.4–13.4 13.4	WARM , MOIST DRAFT LOOSE BROKEN ROCK LOOSE BROKEN ROCK VOID, BROKEN ROCK HOLE BLOCKED TD 22 (DRILLER)
M4	5.1–7.5 13.5–19.5	LOOSE AREAS COAL, TD 25 (DRILLER)
M3	10.2–13.6 13.6–19.5 19.5–24 24–25	BROKEN, LOOSE BROKEN W/ FINES FINES COAL STREAKS TD 41 (DRILLER)
M2	3.5–7.1 8.5–9.5 10.5–13.7 15.1–20.0 25 TD	BROKEN ROCK, LOOSE BROKEN, SOME VOIDS BROKEN ROCK, VOIDS BROKEN, LOOSE, FINES WATER IN BOTTOM
M7	4.9–5.8 8.4–9.9 11.4–12.1 14.2–14.7 16.6–17.6 18.1–20.0 20.0–22.6 25.0 TD	BROKEN ROCK BROKEN ROCK, VOIDS VOID BROKEN ROCK, VOIDS LOOSE, FINES LOOSE LOOSE, FINES WATER IN BOTTOM
M8	6.4–10.0 10.0–19.0 19.0–21.0	BROKEN ROCK, VOIDS BROKEN ROCK, FRACTURES LOOSE, SOFT TD 25 (DRILLER)
M9	18.3–22.1	UNCONSOLIDATED?, COAL BITS, ROUGH, FILL–UP 25 TD, NO VOIDS (DRILLER)

HOLE NO.	DEPTH	OBSERVATION (VIDEO)
M19	20–26	BROKEN W/ VOIDS, TD 29
M20	6–7 12–13 15–18	FRACTURED LOOSE BROKEN W/ SOME VOIDS TD 19
M21	17–21	BROKEN W/ PURE VOID, TD 25
M22	5–7	SLIGHT BROKEN, LOOSE BROKEN W/ SOME VOIDS, TD 17
M23	16–23	BROKEN, VOIDS, TD 24
M24	8–11 13–16 18–23	BROKEN, VOIDS BROKEN, VOIDS BROKEN W/ SIGNIFICANT VOID, TD 24
M25	6–9 19–25	SOME BROKEN, SOME LOOSE COAL, TD 26
M26	2–6 6–16	BROKEN, LOOSE BROKEN, LARGE VOID, TD 16
M27	13–21 6–16	SOME BROKEN BROKEN, SIGNIFICANT VOID, TD 24
M28	8–12 13–14 16.5–22	SOME BROKEN, CRACKS, VOIDS BROKEN, CRACKS, VOIDS BROKEN W/ VOIDS, TD 23

NOTE:

TEST HOLE DIAMETERS:

BROWN & McVICKERS:
- HOLES 1 THROUGH 18 3.5"
- HOLES 19 THROUGH 28 4.5"

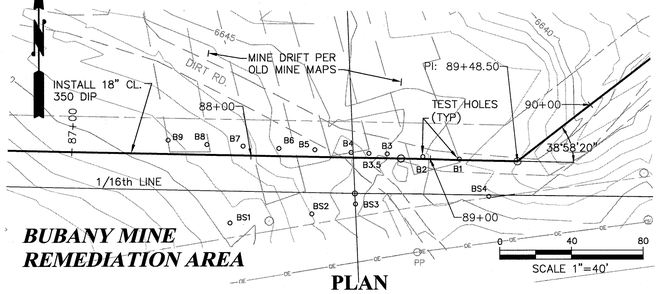
BUBANY:
- HOLES B1 THROUGH B9 4.5"
- HOLES BS1 THROUGH BS4 4.5"

OTERO & UNKNOWN ENTRY
- ALL HOLES 4.5"

BUBANY MINE

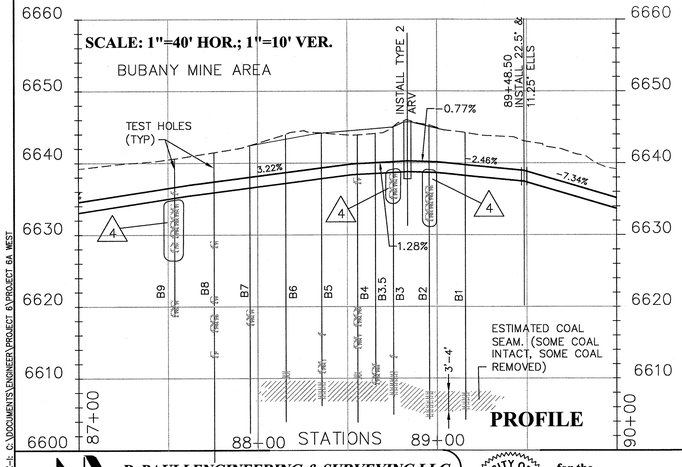
MINED 1920 ?

HOLE NO.	DEPTH	OBSERVATION (VIDEO)
B1	36.0–38.5 40.0	COAL SEAM, NO VOIDS TD
B2	4.0 8.5–13.5 13.5–27.0 37.0–41.0	BOARD IN HOLE BROKEN & VOID SOFT COAL TD (PER DRILLER)
B3	1.4–5.0 6.5–10.0 32.0–35.0 40	FRACTURED ROCK BROKEN, VOIDS COAL TD
B3.5	4.1–4.9 7.4–7.9 32.0–34.5 34	BROKEN, LOOSE LOOSE BROKEN ROCK, VOIDS TD
B4	6.0–6.8 23.9–26.7 27.8–29.8 32.9–34.1 35	BROKEN, VOIDS SOME BROKEN, VOIDS SOME BROKEN, VOIDS COAL, SOME VOIDS TD
B5	27.8–28.2 31.6–33.5 34.5–38.0 40	COAL, SOME VOIDS BROKEN ROCK, VOIDS COAL TD
B6	33.0–35.0 37.0	COAL TD NO VOIDS
B7	22.9–24.5? 42	VOID TD
B8	12.3–13.3 20.0–20.6 22.5–25.0 27.7–28.6 45	BROKEN, SMALL VOIDS BROKEN, SMALL VOIDS BROKEN, SMALL VOIDS BROKEN, SMALL VOIDS TD
B9	4.5–5.01 6.3–11.0 11.6–13.0 19.0–19.5 22	BROKEN, SMALL VOIDS LOOSE, BROKEN SOFT, ROUGH UNCONSOLIDATED? TD
BS1	9.0–10.0 15.8–24.5 40.0	BROKEN, SMALL VOID OCCASIONAL LOOSE ROCK & FINES TD
BS2	16.0–17.0 23.2–25.0 25.0 30	BROKEN, SOME VOIDS VOID, BROKEN ROCK BLOCKED TD
BS3	6.9 9.0 24.1–25.0 26.4–31.0 35.0	BROKEN, SMALL VOID BROKEN, SMALL VOID BROKEN ROCK, VOIDS BROKEN ROCK, VOID MORE FIRM, TD
BS4	34.0–39.0 39.0	COAL TD. NO VOIDS



BUBANY MINE REMEDIATION AREA

PLAN



PROFILE

TEST HOLE LEGEND:

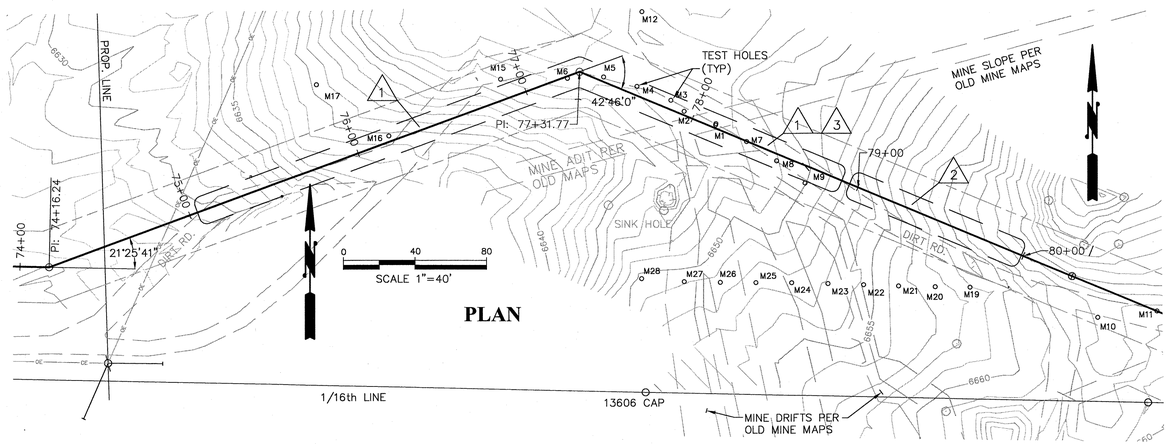
- LOOSE MATERIAL
- FRACTURED SANDSTONE
- FRACTURED SANDSTONE W/ SOME VOIDS
- PURE VOID
- COAL

TEST HOLE LOG NOTES:

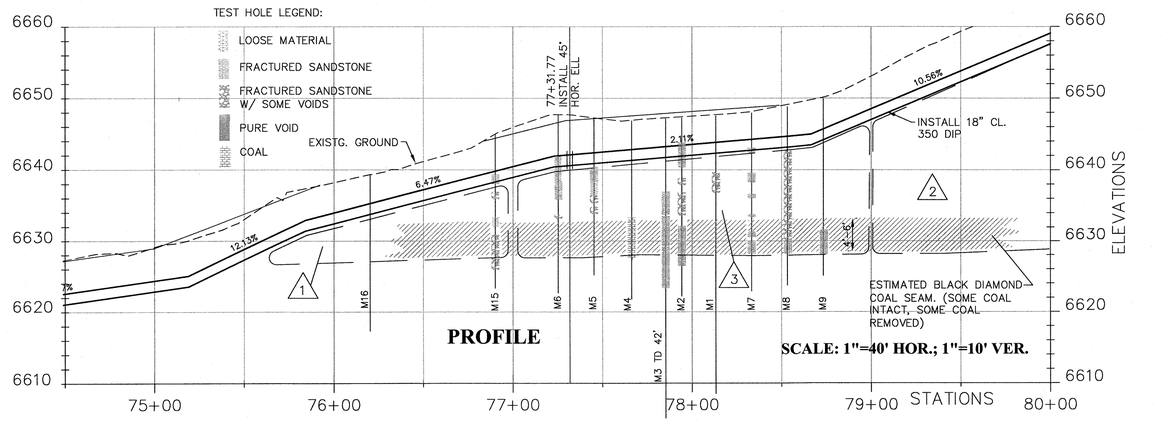
1. INTERVALS BETWEEN THOSE DESCRIBED IN TEST HOLE LOGS ARE BELIEVED TO BE FORMATION MATERIAL COMPOSED OF SANDSTONE ROCK, SHALE OR SILTSTONE. .
2. INTERVALS DESCRIBED BY DRILLER AS HAVING MINIMAL RESISTANCE ARE THOUGHT TO BE EITHER INTERVALS OF BROKEN ROCK BELOW A VOID OR SOFT FORMATION MATERIAL AS SEEN IN SOME OUTCROPS.
3. FRACTURED ROCK OBSERVED ABOVE COAL SEAMS BELIEVED TO BE CAUSED IN GENERAL BY SUBSIDENCE INTO MINE VOIDS ALTHOUGH CONSIDERABLE FRACTURING MAY ALSO HAVE OCCURRED NATURALLY.
4. BLACK DIAMOND MINE STRATA DIPS AT A MODEST RATE TO THE NORTH–NORTHWEST IN THIS AREA. THE WESTERN COMPONENT OF DIP INCREASES AS YOU TRAVERSE WESTWARD. THE DIP OF THE BROWN–McVICKER AND BUBANY SEAMS APPEAR TO BE TO THE NORTH W/ AN EASTERN COMPONENT. THE DIP OF THE UNKNOWN ENTRY SEAM IS TO THE NORTHWEST. THE DIP OF THE OTERO SEAM IS UNKNOWN BUT BELIEVED TO BE NORTHWEST NEAR THE PIPELINE ROUTE..
5. TEST HOLE PROFILES FOR BLACK DIAMOND, BROWN–McVICKERS AND BUBANY MINES ARE SHOWN ONLY FOR TEST HOLES NEAR PIPELINE ALIGNMENT. TEST HOLE PROFILES FOR OTERO AND UNKNOWN ENTRY ARE NOT SHOWN, (TEST HOLE LOGS ONLY).

MINE REMEDIATION NOTES:

1. SEE SHT. 3–1 FOR GENERAL NOTES ON GROUTING PROCEDURES.
2. EXCAVATION, BEDDING AND BACKFILL FOR PIPELINE IN MINE REMEDIATION AREAS (EXCLUDING MINE REMEDIATION WORK) TO CONFORM TO STANDARD PROJECT REQUIREMENTS.
3. EXCAVATION AND BACKFILL METHODS FOR MINE REMEDIATION SHALL IN GENERAL EXTEND TO A FIRM FLOOR OF MINED COAL STRATA.
4. THE LIMITS OF MINE REMEDIATION TYPES (EXCAVATION–BACKFILL VERSES GROUTING) AS WELL AS STARTING AND ENDING POINTS ARE EXPECTED TO BE ADJUSTED DEPENDING ON CONDITIONS ENCOUNTERED. SEE SHT. 2–5 FOR EXCAVATION–BACKFILL METHOD REQUIREMENTS.



PLAN



PROFILE **SCALE: 1"=40' HOR.; 1"=10' VER.**

BROWN & McVICKERS MINE REMEDIATION

GUIDE LINES FOR BROWN & McVICKERS REMEDIATION:

REMEDIATION EFFORTS TO BE LIMITED TO 20 FT. BELOW PIPELINE INVERT UNLESS LARGE VOIDS OR MINED SEAM BEGINS AT THAT DEPTH.

KEYED NOTES THIS SHEET:

1. APPROX. AREA FOR EXPLORATION BY EXCAVATION AND POSSIBLE REMEDIATION BY COMPACTED BACKFILL.
2. APPROX. AREA FOR ADDITIONAL EXPLORATION BY DRILLING AND VIEWING W/ VIDEO CAMERA. REMEDIATION DEEMED NECESSARY TO BE BY GROUTING METHODS W/ ADDITIONAL HOLES AS REQUIRED.
3. AREA W/ EXISTING DRILL HOLES AND VIDEOS TO BE USED IN CONJUNCTION W/ NEW DRILL HOLES AND VIDEOS FOR PLANNING REMEDIATION EFFORTS.
4. STABILIZE LOCAL AREA BY EXCAVATION AND BACKFILL OR BY GROUTING METHODS. EXTEND ALONG PIPELINE AS DIRECTED TO THE EXTENT REQUIRED.

TEST HOLE LOGS IN ABANDONED MINE AREA

OTERO MINE, NO PLANNED REMEDIATION

MINED 1895– 1926? (SEE SHT. 2–8)

HOLE NO.	DEPTH	OBSERVATION (VIDEO)
OT2	0–40	NO VOIDS, TD 40
OT4	0–52.5	NO VOIDS, TD 52.5
OT8	0–31 20–24	NO VOIDS, TD 31 COAL?
OT9	6–7 20–22 31–35	LOOSE COAL? COAL?, TD 39

NOTE: OTERO TEST HOLES 1,3,5,6 AND 7 WERE NOT FILMED BUT SHOWED NO EVIDENCE OF VOIDS DURING DRILLING.

UNKNOWN ENTRY, NO PLANNED REMEDIATION

(SEE SHT. 2–8)

OT10	37–39.5	VOID, TD 39.5
OT11	34–36	DARK, COAL?, TD 38.5
OT12	0–39.5	NO VOIDS, WATER IN BOTT., TD 39.5
OT13	0–47.5 39–44	NO VOIDS, TD 47.5 COAL?
OT14	0–37	NO VOIDS, TD 37
OT15	34–?	COAL?, BLOCKED
OT16	30–31 32–35	COAL? TD 37 VOIDS, BROKEN
OT17	29–35	COAL? TD 39

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

BID LOT 4

DePAULI ENGINEERING & SURVEYING LLC
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307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulienginering.com

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

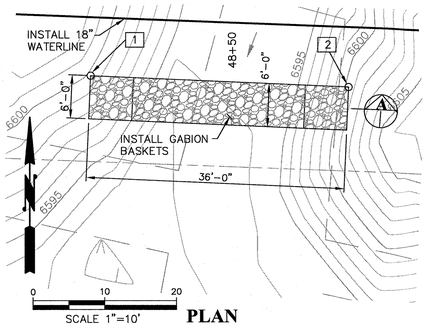
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

McVICKERS MINE REMEDIATION 6A 75+00 to 80+00
BUBANY MINE 6A 87+00 to 90+00
OTERO MINE & UNKNOWN ENTRY 6A 140+00 to 157+00

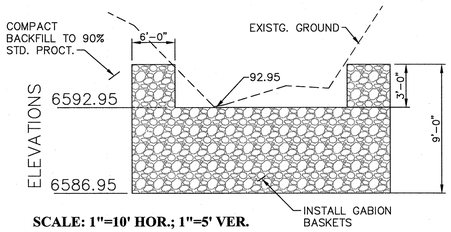
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DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 3-2

ENGINEERX–: C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A_WEST



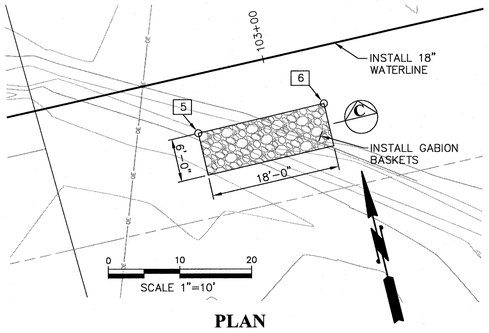
PLAN



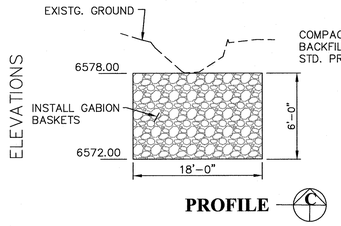
SCALE: 1"=10' HOR.; 1"=5' VER.

PROFILE A

GABION STRUCTURE NEAR 48+50 (6A)



PLAN



PROFILE C

SCALE: 1"=10' HOR.; 1"=5' VER.

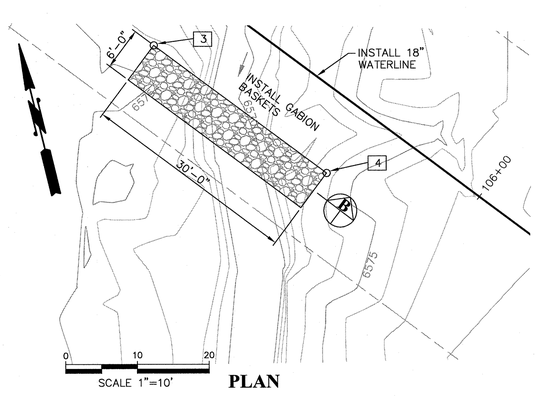
GABION STRUCTURE NEAR 103+00 (6A)

NOTES:

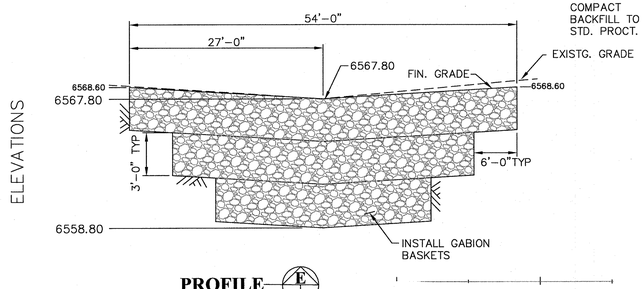
1. MODULAR GABION (WIRE MESH) BASKETS TO CONFORM TO ASTM A974-97 AS BY CONTECH OR EQUAL
2. GABION BASKETS TO SET ON AND AGAINST CLEAN EXCAVATION OR SOIL COMPACTED TO 90 % STD. PROCT. GABION DIMENSIONS MAY BE ADJUSTED BY THE ENGINEER IF ROCK IS ENCOUNTERED.

COORDINATES THIS SHEET:

1	N: 1654164.31 E: 2452213.14	7	N: 1653532.38 E: 2459675.24
2	N: 1654162.73 E: 2452249.11	8	N: 1653518.60 E: 2459727.45
3	N: 1654052.51 E: 2457578.62		
4	N: 1654029.48 E: 2457597.84		
5	N: 1654185.65 E: 2457386.69		
6	N: 1654185.57 E: 2457404.69		



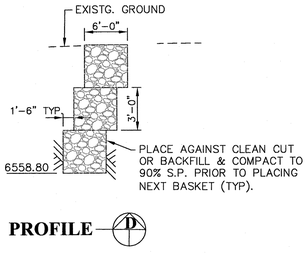
PLAN



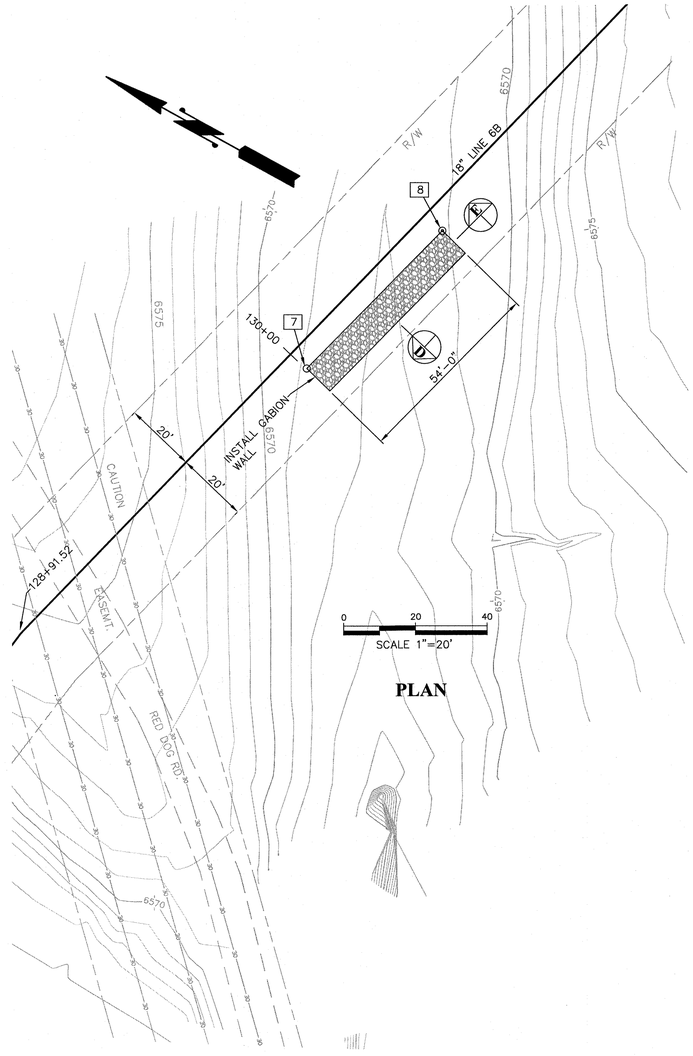
PROFILE E

SCALE: 1"=10' HOR.; 1"=5' VER.

GABION STRUCTURE NEAR 130+00 (6A)

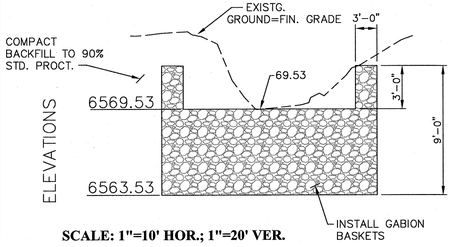


PROFILE D



PLAN

GABION STRUCTURE NEAR 130+00 (6A)



SCALE: 1"=10' HOR.; 1"=20' VER.

PROFILE B

GABION STRUCTURE NEAR 106+00 (6A)

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION :
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITH IN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

KURT A. SPOLAR
NEW MEXICO
17637
LICENSED PROFESSIONAL ENGINEER
2-26-16

ENGINEER's -- C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A_WEST

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depauliengineering.com

for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

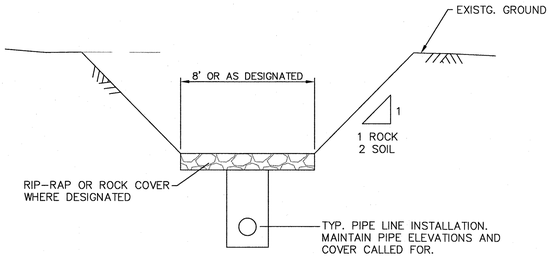
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

ARROYO CROSSING GRADE CONTROL

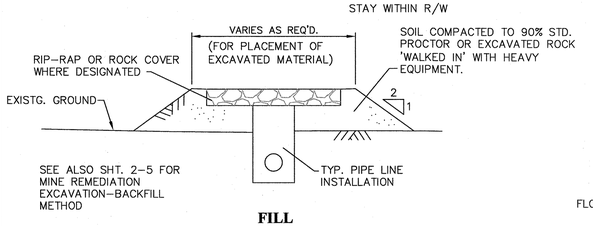
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DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 4-1



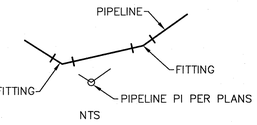
CUT

NOTE:
STAY WITHIN R/W



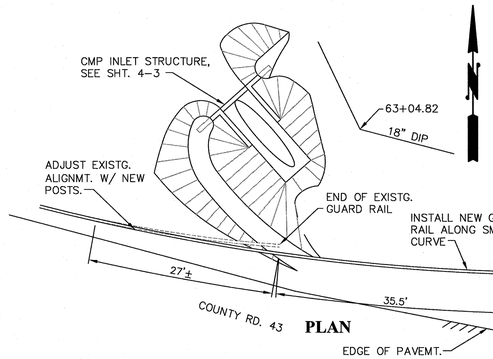
FILL

PIPELINE CUT & FILL DETAILS
NTS

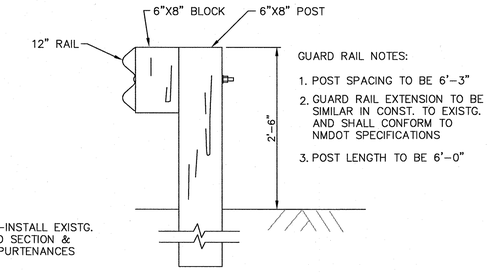


NTS

PIPELINE PI REQUIRING 2 FITTINGS (TYPICAL DETAIL)



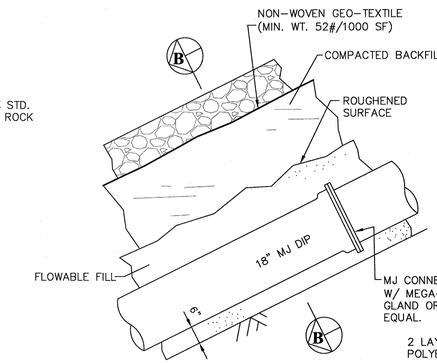
PLAN



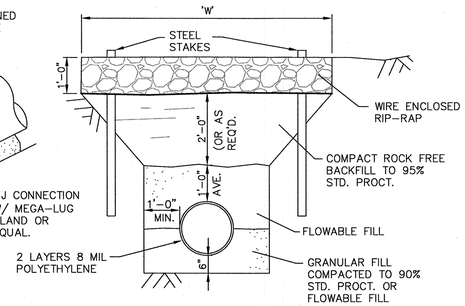
GUARD RAIL DETAIL

GUARD RAIL EXTENSION DETAILS

NOTE: PLACE STAKES AT 8'-0" SPACING DOWN SLOPE



PROFILE



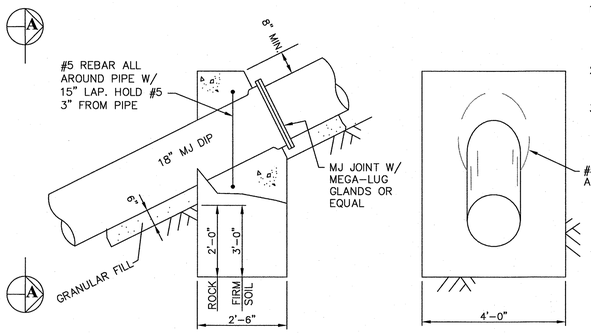
SECTION B-B

NOTE: INSTALL STEEP SLOPE DETAIL WHERE CALLED FOR ON PLAN & PROFILE SHEETS. WIRE ENCLOSED RIP-RAP IS A SEPARATE BID ITEM FROM OTHER STEEP SLOPE ITEMS.

STEEP SLOPE CONSTRUCTION DETAIL
NTS

RETAINER BLOCK NOTES:

1. REVERSE LAYING DIRECTION AS REQ'D FOR SOCKET SHOULDER TO REST ON RETAINER BLOCK AS SHOWN. RETURN TO PREVIOUS LAYING DIRECTION AFTER SLOPE IS TRAVERSED.
2. RETAINER STATIONS CALLED FOR ARE APPROX. PLACE RETAINER BLOCK AT NEAREST MJ JOINT.
3. SOIL TO BE FIRM, IN-SITU OR COMPACTED TO 90% STD. PROCT.

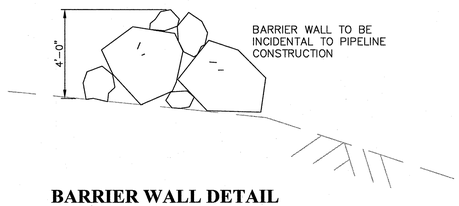


PROFILE

VIEWA-A

SLOPE RETAINER BLOCK DETAIL
NTS

NOTE:
CONSTRUCT BARRIER WALLS TO DETER SURFACE FLOW AND/OR VEHICULAR TRAVEL ALONG SLOPE. CONSTRUCT BARRIER WALLS FROM COMPETENT ROCK EXCAVATED THIS PROJECT FOR PIPELINE CONSTRUCTION. ROCK SIZE TO RANGE FROM 4 TO 30 CUBIC FEET. ROCK SHAPES TO BE VARIABLE. ROCK TO BE PLACED IN A UNIFORM ROW OF CONSISTENT HEIGHT AND TAPPED OCCASIONALLY WITH LOADER OR EXCAVATOR TO INSURE STABILITY. WALL TO BE PLACED ON A FLAT OR MILD SLOPING (10% OR LESS) SURFACE, AT THE BEGINNING OF STEEPER SLOPES. WALL TO EXTEND TO CUT SLOPES ALONG PIPELINE OR AS DIRECTED.



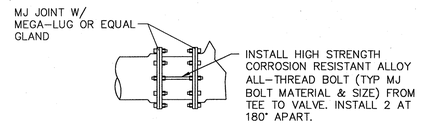
BARRIER WALL DETAIL
(INSTALL WHERE CALLED FOR) NTS

TESTING NOTE:

GATE VALVES AND AIR RELEASE VALVES AS SHOWN ON THE PROJECT DRAWINGS MAY BE USED IF BENEFICIAL IN TESTING PROCEDURES. CONTRACTOR WILL HOWEVER, BE REQUIRED TO FURNISH AND INSTALL EQUIPMENT AND APPARATUS TO COMPLETELY FACILITATE TESTING OF PIPELINE SEGMENTS SELECTED. TESTING WATER WILL TYPICALLY BE INTRODUCED AT THE LOWER END OF A SEGMENT WITH A MEANS OF AIR RELEASE AT THE UPPER END AS WELL AS INTERMEDIATE HIGH POINTS. APPROVED APPARATUS FOR BACKFLOW PREVENTION IS TO BE INSTALLED IF WATER IS TO BE FED FROM THE EXISTING CITY SYSTEM. PRESSURE PUMP (WITH GAUGE) AND CHLORINATION IS ALSO TO BE LOCATED AT THE POINT OF WATER FEED. PIPELINE ORIFICES REQUIRED TO ACCOMPLISH FUNCTIONS ABOVE TO BE TYPICALLY LOCATED WITHIN PORTABLE REMOVABLE PIPE SEGMENTS RATHER THAN WITHIN PERMANENT PIPELINE. TEES WITH TAPPED PLUGS OR FLANGES MAY BECOME PART OF THE PERMANENT PIPELINE IF APPROVED BY THE ENGINEER. TEMPORARY CAPS (WITH THRUST BLOCKS) AND MEANS OF FLUSHING, OTHER THAN AT LOCATIONS CALLED FOR ON PROJECT DRAWINGS, IS TO BE INCIDENTAL TO PIPELINE CONSTRUCTION.

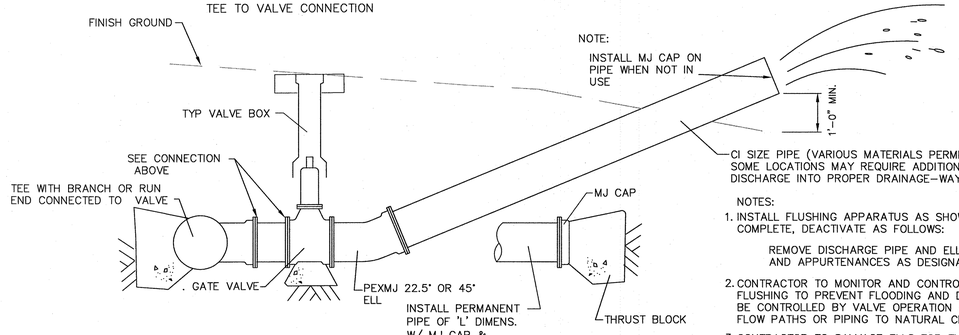
SEE ALSO 'WATERLINE FILLING AND FLUSHING METHODS', SHEET 7-2.

TESTING NOTE



TEE TO VALVE CONNECTION

NOTE:
ALL MJ FITTINGS, EXCEPT AS SHOWN, TO HAVE RESTRAINING GLANDS AS MEGA-LUG OR APPROVED EQUAL. PERMANENT ITEMS TO BE WRAPPED IN 2 LAYERS OF 8 MIL POLYETHYLENE.



NOTES:

1. INSTALL FLUSHING APPARATUS AS SHOWN. AFTER FLUSHING IS COMPLETE, DEACTIVATE AS FOLLOWS:

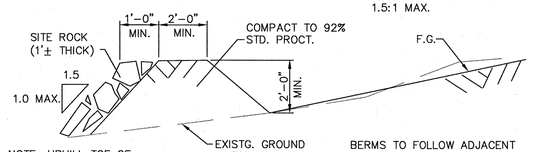
   REMOVE DISCHARGE PIPE AND ELL. INSTALL PERMANENT PIPE AND APPURTENANCES AS DESIGNATED ON THE DRAWINGS.

2. CONTRACTOR TO MONITOR AND CONTROL DOWNSTREAM FLOWS DURING FLUSHING TO PREVENT FLOODING AND DAMAGE TO PROPERTY. FLOWS TO BE CONTROLLED BY VALVE OPERATION AND BY PROVIDING ACCEPTABLE FLOW PATHS OR PIPING TO NATURAL CHANNELS OF ADEQUATE CAPACITY.
3. CONTRACTOR TO SALVAGE ELLS FOR THE CITY AND DELIVER TO WAREHOUSE YARD.
4. CONTRACTOR TO DE-CHLORINATE DISCHARGE UNTIL RESIDUAL IS LESS THAN 1.0 Mg/l.
5. PERMANENT PIPE (AFTER FLUSHING), 12" AND SMALLER, TO BE C900-07 PVC, DR18. LARGER PIPE TO BE CL. 350 DIP.
6. CONTRACTOR TO UTILIZE FLUSHED WATER FOR CONSTRUCTION OF PIPELINE EARTHWORK TO THE EXTENT POSSIBLE.

FLUSH PIPING DETAILS
NTS

VALVE & BOX TO REMAIN IN PLACE AFTER FLUSHING OPERATIONS ARE COMPLETE. COMPACT BACKFILL TO 90% STD. PROCT.

INSTALL CONTOUR BERM AS SHOWN OR AS DIRECTED TO DIVERT SURFACE FLOWS AWAY FROM INSTALLED PIPELINE BACKFILL. FILL SLOPES TO BE 1.5:1 MAX.



NOTE: UPHILL TOE OF BERM TO BE A MIN. OF 4.0' ABOVE PIPE LINE @ X-ING.

BERMS TO FOLLOW ADJACENT NATURAL CONTOURS WITH SLIGHT DOWNWARD TREND TO DAYLIGHT. PLACE IN AREAS AS DIRECTED.

CONTOUR BERM DETAIL ACROSS NEW WATERLINE
NTS

ARCHEOLOGY SITE LIST

SITE	STATION LIMITS RIGHT	LEFT
LINE 6A WEST:		
LA178688	8+23 TO 8+70	8+29 TO 8+75
LA178666	20+22 TO 22+02	18+57 TO 22+28
LA178670	65+40 TO 70+42	65+81 TO 70+45
LA178682	74+80 TO 76+28	NONE
LA178681	80+46 TO 85+55	80+34 TO 85+35
LA178693	95+90 TO 96+35	NONE
LA178680	116+56 TO 118+02	NONE
LA178676	144+03 TO 144+72	143+94 TO 145+21
LINE 6B EAST:		
LA178684	NONE	7+50 TO 13+77
LA178690	NONE	25+26 TO 26+88

NOTE: FENCING CALLED FOR ALONG ROW'S TO EXTEND 10' BEFORE & PAST THE LIMITS SHOWN. FENCING TO BE ORANGE PLASTIC TYPE.

NOTICE OF EXTENDED PAYMENT PROVISION :
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

KURT A. SPOLAR NEW MEXICO 17637 9-28-16 LICENSED PROFESSIONAL ENGINEER

CAUTION
CALL NEW MEXICO ONE CALL 811
BEFORE YOU DIG!

ENGINEER=>: C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST

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307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depauliengineering.com

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

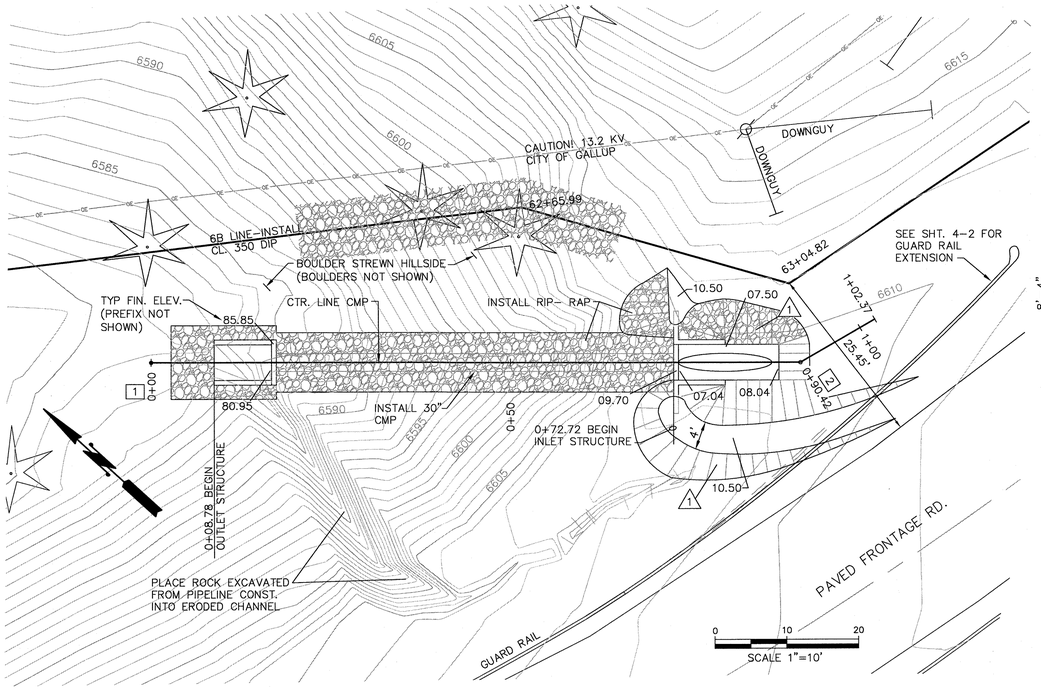
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

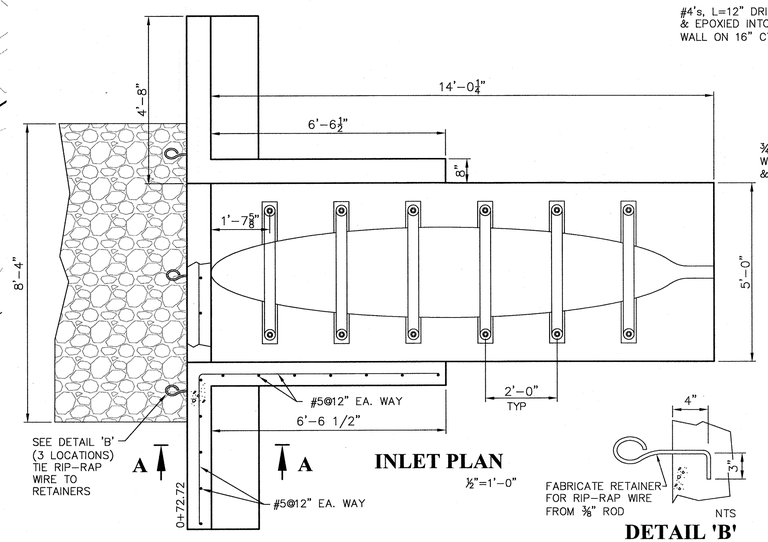
SPECIAL PIPELINE ITEMS
ARCHEOLOGY SITE LIST

SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 4-2



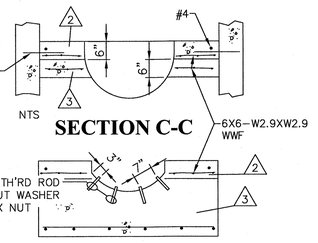
PLAN



INLET PLAN

½"=1'-0"

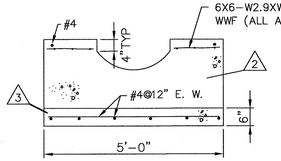
DETAIL 'B'



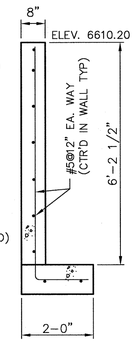
SECTION C-C

DETAIL 'A'

NTS

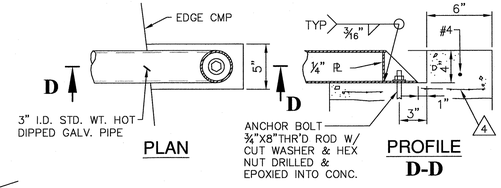


SECTION B-B



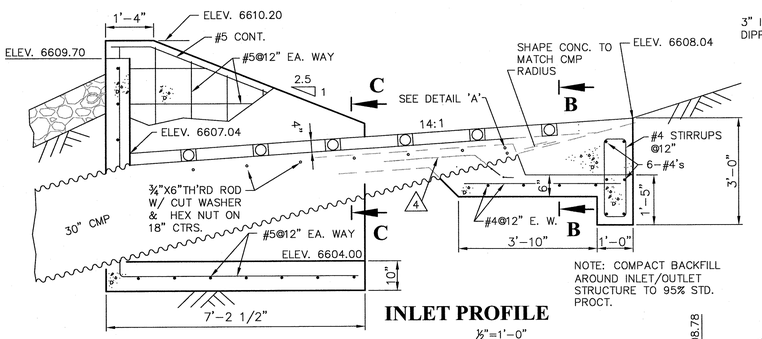
SECTION A-A

½"=1'-0"



GRATE PIPE DETAILS

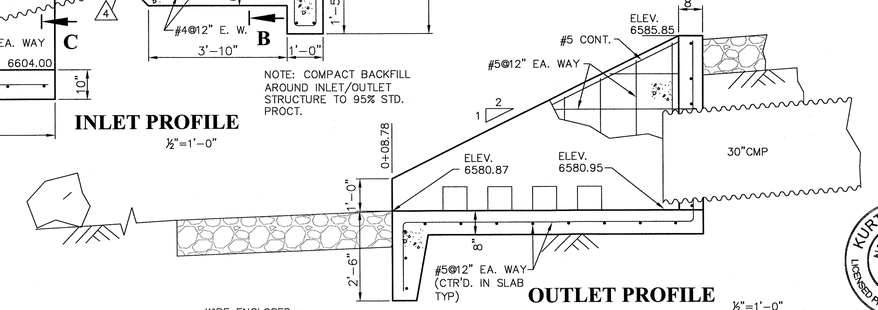
NTS



INLET PROFILE

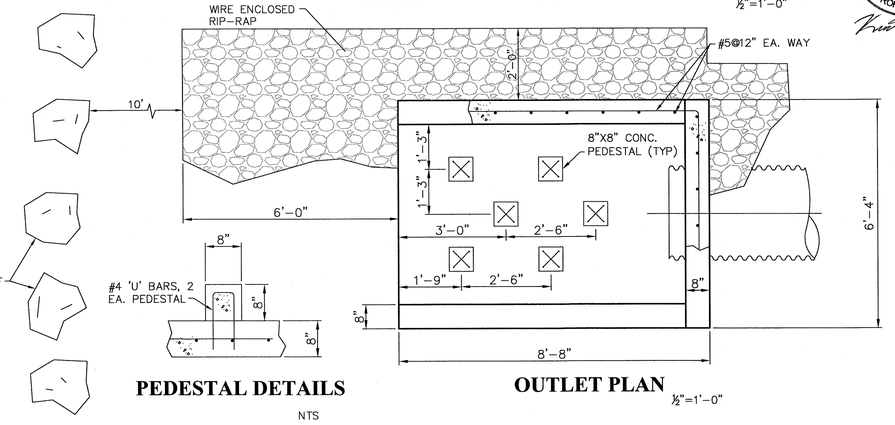
½"=1'-0"

NOTE: COMPACT BACKFILL AROUND INLET/OUTLET STRUCTURE TO 95% STD. PROCT.



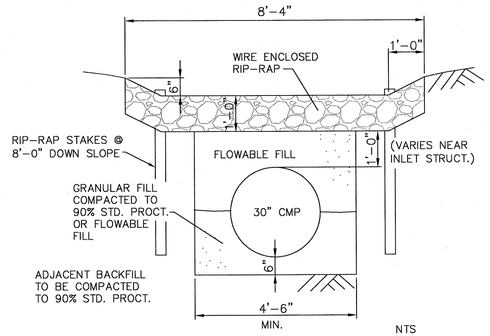
OUTLET PROFILE

½"=1'-0"



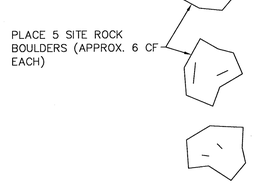
OUTLET PLAN

½"=1'-0"



CMP INSTALLATION DETAILS

NTS



PEDESTAL DETAILS

NTS

PROFILE

COORDINATES THIS SHEET:

[1] N: 1651386.77
E: 2467913.61

[2] N: 1651319.23
E: 2467973.72

KEYED NOTES THIS SHEET:

1. CONSTRUCT EMBANKMENT & CUT SLOPES AS SHOWN. SLOPES ARE VARIABLE WITH 2:1 MAX. COMPACT FILL TO 95% STD. PROCT. MIN. BERM WIDTH TO BE 4'-0".
2. FINAL BLANKET POUR
3. INITIAL BLANKET POUR
4. 6X6-W2.9XW2.9 WWF

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KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

ENGINEER=-I-: C:\DOCUMENTS\ENGINEER\PROJECTS 6B

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for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

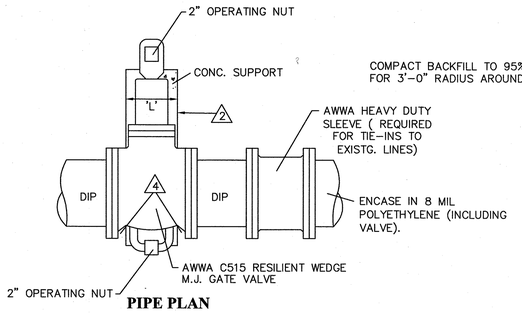
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

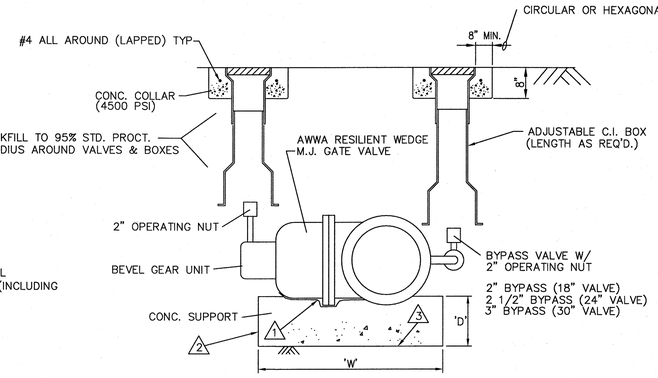
BID LOT 1
CMP RUNDOWN DETAILS NEAR 18" LINE 6B 62+00

SCALE:	SHOWN
DATE:	DEC, 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 4-3

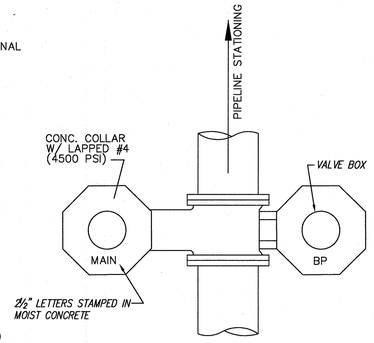


PIPE PLAN



PIPE SECTION

18", 24" & 30" HORIZONTAL VALVE INSTALLATION DETAILS



VALVE BOX PLAN VIEW

KEYED VALVE NOTES THIS SHEET.:

1. 2 LAYERS POLYETHYLENE ENCASEMENT
2. FORMED SURFACE (FORMS MAY REMAIN)
3. NEAT, CLEAN, EXCAVATED SURFACE
4. AVOID BOLTS & FLANGES W/ CONCRETE

VALVE SUPPORT BLOCK SCHEDULE

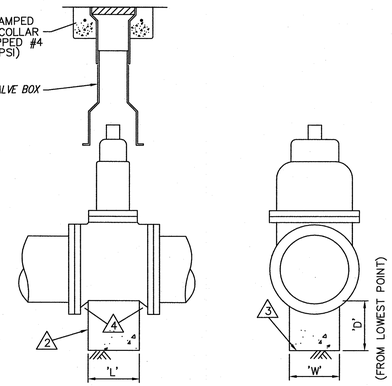
VERTICAL INSTALLATION

DIA.	D	W	L
4"	6"	4"	5"
6"	7"	6"	6"
8"	8"	8"	8"
10"	10"	10"	10"
12"	10"	12"	10"
14"	12"	14"	13"
16"	14"	16"	13"

HORIZONTAL INSTALLATION

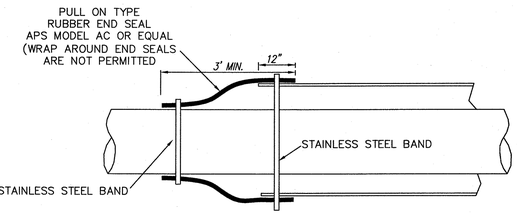
DIA.	D	W	L
16"	14"	46"	13"
18"	16"	52"	14"
24"	16"	66"	17"
30"	18"	80"	25"

NOTE: 'W' DIMENSION FOR HORIZONTAL INSTALLATIONS IS APPROXIMATE. ADJUST AS REQ'D. TO FACILITATE PLACEMENT OF CONCRETE. MINIMUM 'W' TO BE 2XPIPE DIA.



4" THROUGH 16" VERTICAL VALVE INSTALLATION DETAILS

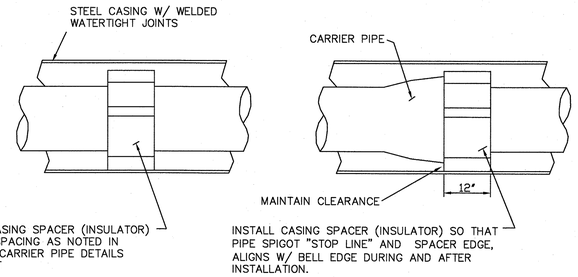
NTS



STEEL/HDPE CASING END DETAIL

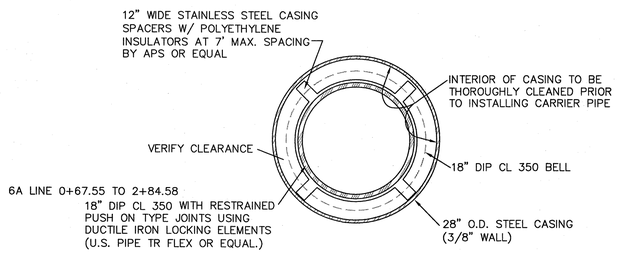
NTS

HDPE CASING WITH FUSION WELDED JOINTS IN OPEN CUT INSTALLATIONS WHEN CALLED FOR.

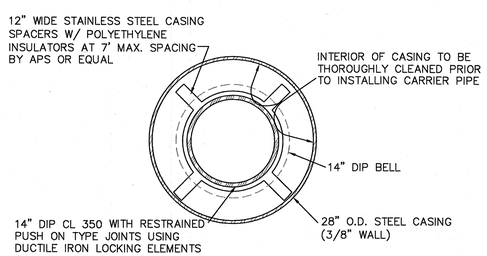


CASING SPACER DETAILS

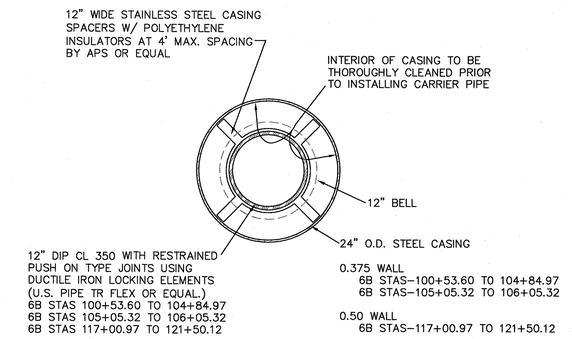
NTS



18" CARRIER PIPE IN
28" O.D. STEEL CASING
NTS



14" CARRIER PIPE IN
28" O.D. STEEL CASING
NTS



12" CARRIER PIPE IN
24" O.D. STEEL CASING
NTS

I-40, 12" X-ING
BNSF, 12" X-ING
X-RD, 12 X-ING

GENERAL NOTE;
SPACERS SHALL CENTER CARRIER PIPE (±1") AND PROVIDE FOR ADEQUATE CLEARANCE OF PIPE BELLS AT CASING INVERT FOR ANY ORIENTATION OF SPACER.

CASING & CARRIER PIPE DETAILS

NTS

KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

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TEL: (505)863-5440 EM: depaulieengineering.com

for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6 A&B

BORE CASING & GATE VALVE SUPPORT DETAILS

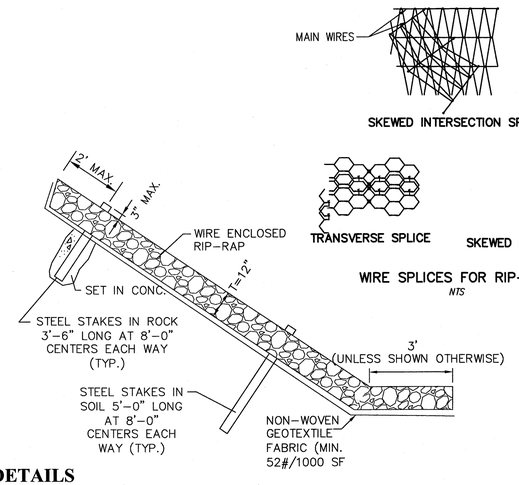
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DATE:	Oct., 2015
DRAWN BY:	KAS DS
CHECKED BY:	MDP DS

SHEET 4 - 4

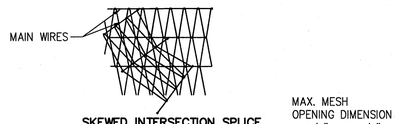
ENGINEER: C:\Users\Public\Documents\engineer\Project 8\proj8 design.dwg

GENERAL WIRE ENCLOSED RIP–RAP NOTES:

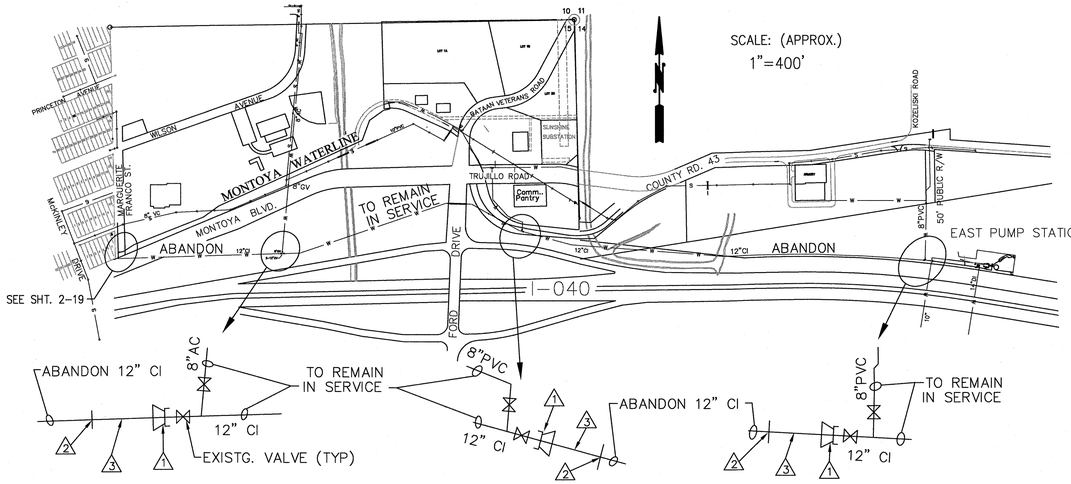
1. WIRE FABRIC FOR RIP–RAP SHALL BE "W" OR HEXAGONAL MESH MEETING THE REQUIREMENTS LISTED IN NMDOT SPECIFICATIONS.
2. STEEL STAKES MAY BE RAILROAD RAILS, WEIGHING NOT LESS THAN 30LBS. PER YARD, 4" O.D. STANDARD STRENGTH GALVANIZED STEEL PIPE OR 4x4x3/8 STEEL ANGLES. STEEL STAKES SHALL PROJECT 3" ABOVE TOP OF RIP–RAP. STEEL STAKES ARE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE WORK AND NO DIRECT MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.
3. IF LENGTH OF SLOPE IS 15' OR LESS, ONLY ONE ROW OF STEEL STAKES 2' FROM THE TOP EDGE OF THE RIP–RAP WILL BE REQUIRED UNLESS OTHERWISE NOTED ON PLANS.
4. T=12" UNLESS OTHERWISE SHOWN ON PLANS. T–18" AT BRIDGES.
5. LONGITUDINAL SPLICES MAY BE MADE WITH ON LAP OF GALVANIZED 9 GAGE TIE WIRE, 9 GAGE GALVANIZED HOG RINGS OR 11 ½ GAGE INTERLOCKING WIRE CLIPS. SPLICES SHALL HAVE A MIN. LAP OF 8"
6. 8' WIDE SECTIONS SHALL HAVE A MIN. OF TWO (2) STEEL STAKES HORIZONTALLY AND @ 8' DOWNSLOPE. STONES TO CONFORM TO NMDOT REQUIREMENTS.



RIP-RAP DETAILS
NTS



WIRE SPLICES FOR RIP–RAP
NTS



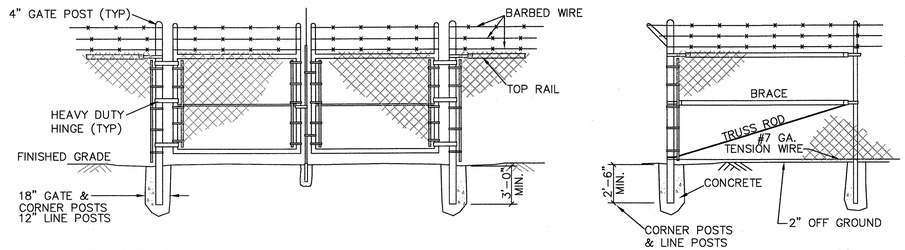
KEYED ABANDONMENT NOTES:

1. INSTALL MJ CAP W/ MEGA–LUG (OR EQUAL) GLAND AND BLOCKING.
2. PLUG W/ CONCRETE OR APPROVED CEMENT BASED PRODUCT.
3. REMOVE PIPE AND COMPACT BACKFILL TO 95% STD. PROCT.

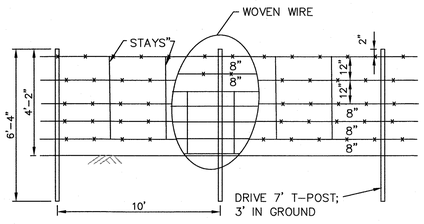
12" CAST IRON LINE ABANDONMENT
(MONTOYA WATERLINE LOT)

CHAIN LINK FENCING NOTES:

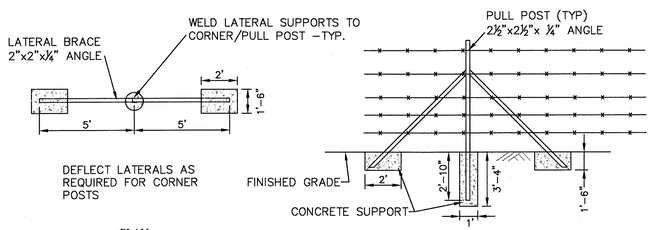
1. INSTALL 1.9" OD LINE POSTS AT 10' MAX. SPACING. CORNER POSTS TO BE 3" OD. (POSTS TO BE MIN. SCHD. 40)
2. INSTALL THREE (3) 12½ GAUGE BARBED WIRE STRANDS ON TOP OF FABRIC AT 6" SPACING ON OVERHANG ARMS.
3. POSTS FOR 4' AND SMALLER GATES TO BE 3" OD. POSTS FOR LARGER GATES TO BE 4" IN DIAMETER. (MIN. SCHD. 40)
4. GATE FRAMES SHALL BE CONSTRUCTED WITH 1.9 O.D. TUBULAR MEMBERS WELDED AT ALL CORNERS OR ASSEMBLED WITH FITTINGS.
5. ALL WELDS SHALL BE GROUND SMOOTH, PRIMED, AND PAINTED WITH TWO (2) COATS OF ZINC RICH PAINT TO MATCH EXISTING METAL.
6. WIRE FABRIC TO BE HOT DIPPED GALVANIZED #9 GAUGE 2" MESH.
7. CONTRACTOR SHALL PROVIDE THE GATE HARDWARE AS FOLLOWS:
   - STRETCHER BARS AND STRETCHER BAR BANDS AND FASTENERS FOR CHAIN LINK FABRIC.
   - LOCKING HASP, LATCH
   - EXTRACTABLE LOCKING ROD AND SLEEVE.
   - A MISC. GATE HARDWARE REQUIRED FOR INSTALLATION.



CHAIN LINK FENCE DETAILS
NTS



GENERAL FENCE DETAIL
(SHOWING WOVEN WIRE ALSO)



BARBED WIRE FENCE CORNER AND PULL POST DETAIL

BARBED WIRE FENCE DETAILS
NTS

BARBED WIRE FENCE MATERIALS TO CONFORM TO NMDOT SPECIFICATIONS

WIRE FENCING NOTES:

1. INSTALL NEW METAL POSTS AT 10' SPACING, PULL POSTS AT 350' MAX OR CHANGE OF DIRECTION AND CORNER POSTS AT ALL CORNERS.
2. ALL WELDS SHALL BE GROUND SMOOTH, PRIMED, AND PAINTED WITH TWO (2) COATS OF PAINT TO MATCH EXISTING METAL PAINT.
3. IN LIEU OF WELDING CONTRACTOR MAY AT HIS OPTION FASTEN LATERAL BRACE TO CORNER OF PULL POST WITH ½" GALVANIZED BOLTS INCLUDING LOCKING WASHERS AND NUTS.

NOTE:
SEE PLAN & PROFILE SHEETS FOR ARCHEOLOGICAL SITE LOCATIONS & FENCING REQUIREMENTS. ARCHEOLOGICAL FENCING TO BE ORANGE PLASTIC TYPE HELD SECURELY IN PLACE FOR THE DURATION OF CONSTRUCTION AND REMOVED PRIOR TO PROJECT ACCEPTANCE.

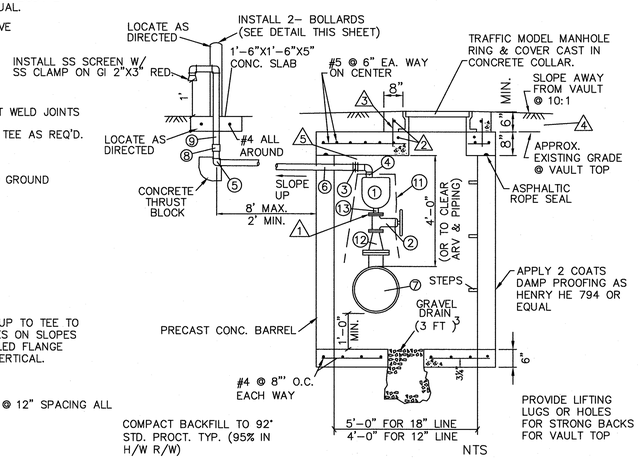
AIR RELEASE FITTING SCHEDULE:

1. 2"AIR RELEASE VALVE AS VAL–MATIC SINGLE BODY 2" COMBINATION VALVE MODEL 202C.2 OR EQUAL.
2. AWWA 2" FLG. RESILIENT WEDGE GATE VALVE
3. 2" PVC UNION
4. SCHD. 80 PVC NIPPLE
5. SCHD. 80 PVC ELL
6. 2" SCHED. 80 PVC, THREADED OR SOLVENT WELD JOINTS
7. 18"X6" M.J.XFLG. TEE OR 12"X4" M.J.XFLG. TEE AS REQ'D.
8. 2" COUPLING
9. 2" GI PIPE WRAPPED W/ TAPECOAT BELOW GROUND
10. ITEM DELETED
11. THERMAXX INSULATING JACKET OR EQUAL
12. 6"X2" OR 4"X2" FLG. REDUCER AS REQ'D.
13. 2" FLG. INLET

KEYED ARV NOTES:

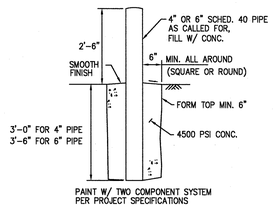
1. PIPING ON EACH SIDE OF TEE TO GRADE UP TO TEE TO PROVIDE AIR TRAP ON HILL TOPS. ARV TEES ON SLOPES MAY BE SLOPED UP TO 6" PROVIDED BEVELED FLANGE FILLERS ARE USED TO MAKE ARV STAND VERTICAL.
2. EXTRA #5 ALL AROUND W/ LAP
3. #4 BARS DRILLED OR CAST INTO TOP (6") @ 12" SPACING ALL AROUND
4. COMPACTED FILL
5. 4" MIN. CLEAR

NOTE: ALL FITTINGS, VALVES, SPECIALS, & PIPING FOR ARV SHALL BE RATED FOR 250 PSI WORKING PRESSURE



NTS

TYPE 2 AIR RELEASE VALVE
(FOR 12" AND 18" PIPELINE)



BOLLARD DETAIL
NTS

NOTE:
INSTALL DIP INSIDE CONC. BARREL AND A MIN. OF 3'–0" OUTSIDE (EACH SIDE) WHEN CONNECTING TO MAINLINE PVC PIPE

KURT A. SPOLAR — NEW MEXICO — 17637 — 3-28-16 — LICENSED PROFESSIONAL ENGINEER

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulieengineering.com

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

FENCING, RIP-RAP, ARV & 12" ABANDONMENT

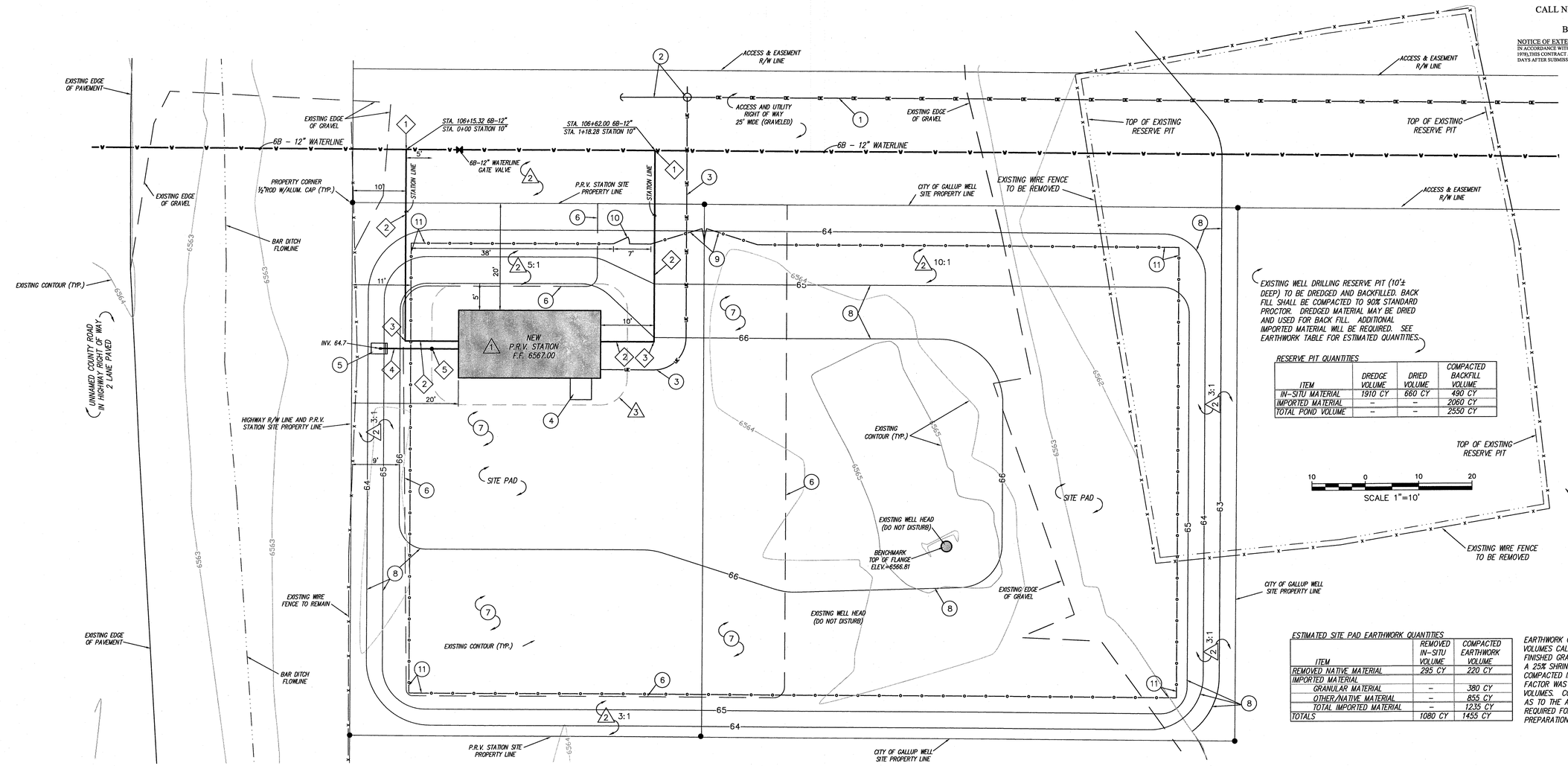
SCALE:	SHOWN
DATE:	DEC., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 4-5

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CAUTION
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EXISTING WELL DRILLING RESERVE PIT (10'± DEEP) TO BE DREDGED AND BACKFILLED. BACK FILL SHALL BE COMPACTED TO 90% STANDARD PROCTOR. DREDGED MATERIAL MAY BE DRIED AND USED FOR BACK FILL. ADDITIONAL IMPORTED MATERIAL WILL BE REQUIRED. SEE EARTHWORK TABLE FOR ESTIMATED QUANTITIES.

RESERVE PIT QUANTITIES

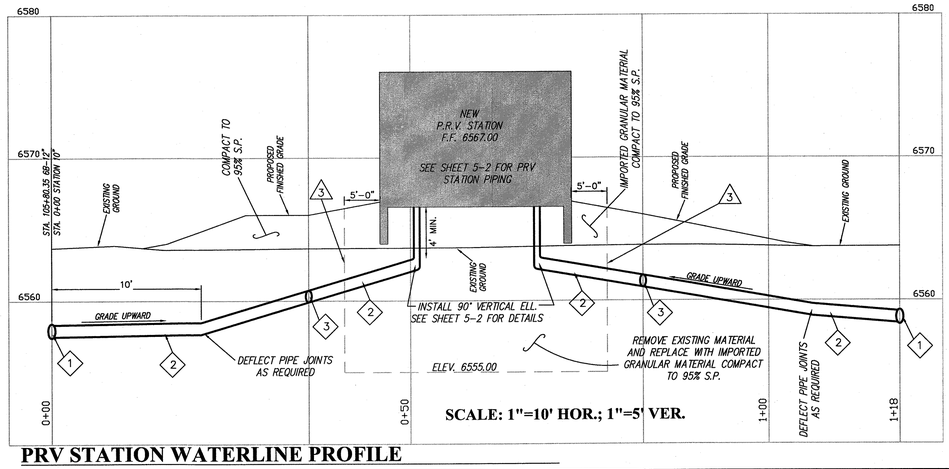
ITEM	DREDGE VOLUME	DRIED VOLUME	COMPACTED BACKFILL VOLUME
IN-SITU MATERIAL	1910 CY	660 CY	490 CY
IMPORTED MATERIAL	–	–	2060 CY
TOTAL POND VOLUME	–	–	2550 CY

ESTIMATED SITE PAD EARTHWORK QUANTITIES

ITEM	REMOVED IN-SITU VOLUME	COMPACTED EARTHWORK VOLUME
REMOVED NATIVE MATERIAL	295 CY	220 CY
IMPORTED MATERIAL		
GRANULAR MATERIAL	–	380 CY
OTHER/NATIVE MATERIAL	–	855 CY
TOTAL IMPORTED MATERIAL	–	1235 CY
TOTALS	1080 CY	1455 CY

EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS SHOWN ON DRAWING. A 25% SHRINKAGE FACTOR FOR WAS USED FOR COMPACTED IN-SITU MATERIAL. NO SHRINKAGE FACTOR WAS USED FOR IMPORTED MATERIAL VOLUMES. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES REQUIRED FOR SITE PAD AND BUILDING FOUNDATION PREPARATION PRIOR TO BIDDING.

PRESSURE REDUCING STATION SITE PLAN
SCALE 1"=10'



SCALE: 1"=10' HOR.; 1"=5' VER.

PRV STATION WATERLINE PROFILE

PRESSURE REDUCING STATION KEYED NOTES:

FITTING AND PIPING KEYED NOTES:

1. 12"x10" TEE INSTALLED WITH 6B–12" WATERLINE CONSTRUCTION. BEGIN YARD PIPING.
2. INSTALL 10" CL 350 DUCTILE IRON PRV STATION WATERLINE
3. INSTALL 10" TEE W/ 1 (ONE) PLUG
4. INSTALL 2" PVC DRAIN LINE
5. INSTALL CLEANOUT

WATERLINE PI COORDS:

PI	NORTHING	EASTING
12"X10" TEE	1651211.74	2471732.75
12"X10" TEE	1651181.35	2471768.19
90° ELL	1651184.56	2471709.45
90° ELL	1651154.17	2471744.89

BUILDING CORNER COORDS:

CORNER	NORTHING	EASTING
NE	1651165.09	2471741.07
NW	1651182.45	2471720.82
SW	1651172.84	2471712.58
SE	1651155.48	2471732.83

CULVERT AND DRAIN PAD INVERT COORDS:

INV.	NORTHING	EASTING	INV ELEV.
DRAIN INV	1651186.63	2471704.83	6564.7

EXISTING WELL HEAD COORDINATES:

	NORTHING	EASTING	ELEV.
SOUTH FLANGE WELL HEAD	1651089.5	2471761.9	6566.81

BUILDING PAD KEYED NOTES:

1. BUILDING PAD SHALL COMPACTED TO 95% STANDARD PROCTOR. MAXIMUM CONSTRUCTION LOOSE LIFT SHALL NOT EXCEED 10".
2. CONSTRUCT PAD SIDE SLOPES AS SHOWN (3:1, 5:1, & 10:1). MAXIMUM SLOPE SHALL BE 3:1.
3. LIMITS OF AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

PRV STATION & WELL PROPERTY CORNER COORDS:

CORNER	NORTHING	EASTING
NE	1651102.61	2471844.67
N	1651167.70	2471768.76
NW	1651210.65	2471718.65
SW	1651134.74	2471653.56
S	1651091.78	2471703.67
SW	1651026.69	2471779.58

FENCE CORNER COORDS:

CORNER	NORTHING	EASTING
NE	1651104.07	2471831.44
NW	1651197.77	2471722.15
SW	1651133.62	2471667.15
SE	1651039.92	2471776.44

NOTES:
1. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL
2. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.

CONSTRUCTION KEYED NOTES:

1. NEW OVERHEAD PRIMARY SINGLE PHASE ELECTRICAL SERVICE BY CITY OF GALLUP
2. NEW PRIMARY POWER/SERVICE POLE AND DOWN GUY WITH TRANSFORMER BY THE CITY OF GALLUP
3. UNDERGROUND ELECTRIC SERVICE FROM POWER POLE TO PRV STATION. SEE SHEET 5–4 FOR DETAILS.
4. INSTALL 4'x4'x4" CONC. STOOP
5. INSTALL NEW DRAIN PAD (SEE DETAIL SHEET 5–2)
6. EDGE OF GRAVELED SURFACE
7. PLACE 4" OF GRAVEL OR BASE COURSE FOR DRIVEWAY AND STATION YARD
8. NEW FINISHED GRADE CONTOURS FOR PRV STATION SITE (TYP.)
9. INSTALL 20' CHAIN LINK (TWO (2)–10' PANELS) ACCESS GATE
10. INSTALL 3' PERSONNEL GATE
11. INSTALL NEW CHAIN LINK FENCE AS SHOWN L=460'± (SEE DETAIL SHEET 7–1)

KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

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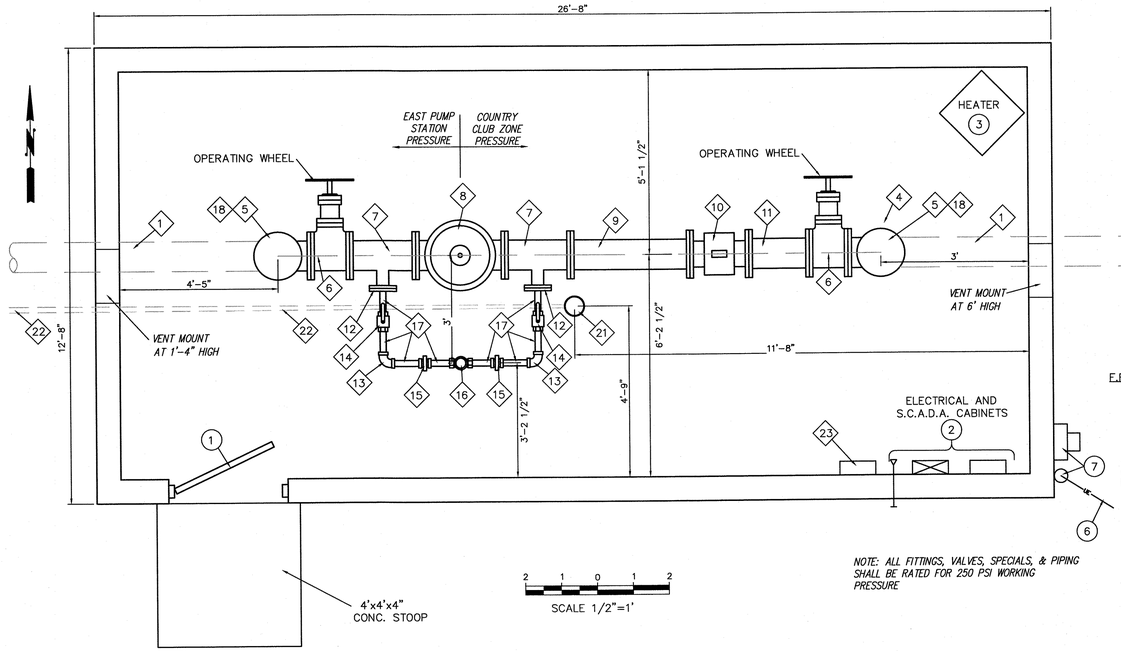
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO-GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION SITE PLAN

SCALE: SHOWN
DATE: DEC. 2015
DRAWN BY: KAS
CHECKED BY: MDP DS

SHEET 5 - 1

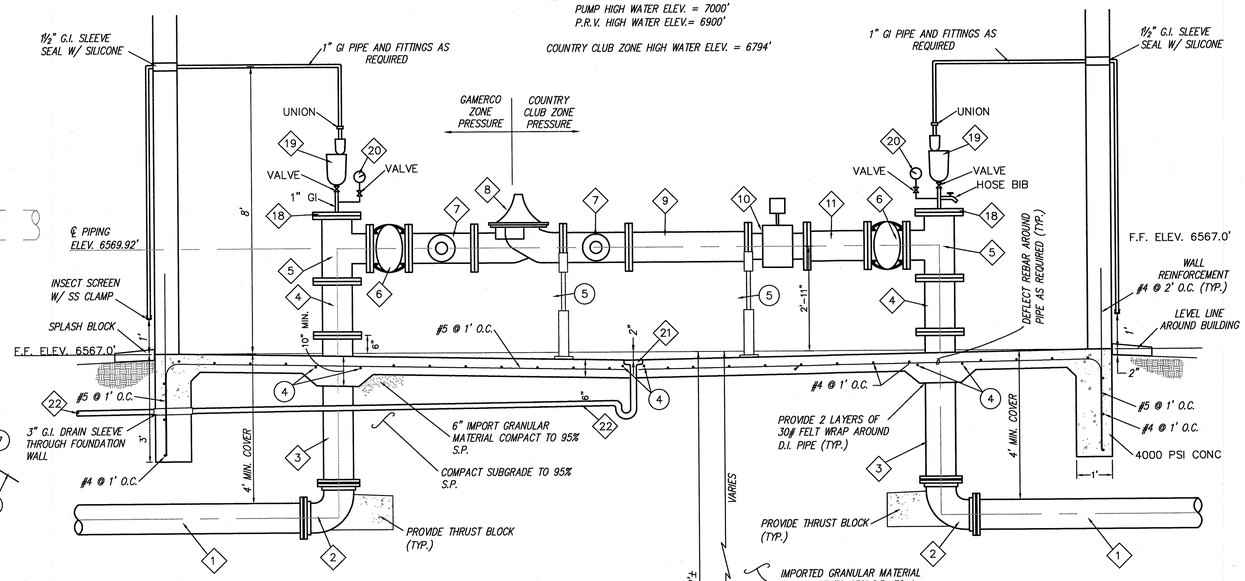


NOTE: ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE

SYSTEM HEADS:

HEATON PUMP STATION
PUMP HIGH WATER ELEV. = 7000'
P.R.V. HIGH WATER ELEV.= 6900'

COUNTRY CLUB ZONE HIGH WATER ELEV. = 6794'



NOTE: ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE

PRESSURE REDUCING STATION PIPING DETAILS (PLAN)
SCALE 1/2"=1'

PRESSURE REDUCING STATION PIPING DETAILS (ELEVATION)
SCALE 1/2"=1'

CAUTION
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PRESSURE REDUCING STATION KEYED NOTES:

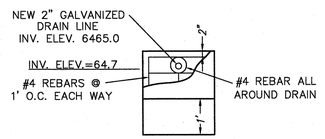
FITTING AND PIPING KEYED NOTES:

1. 10" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MILL. POLYETHYLENE)
2. 10" 90° MJ ELL.
3. 10" FLG'DxPE CL. 350 D.I. SPOOL (WRAP IN TWO LAYERS OF 8 MILL. POLYETHYLENE)
4. 10" FLG'D SPOOL (1'-6" LONG)
5. 10"x10" FLG'D TEE
6. 10" FLG'D RESILIENT WEDGE GATE VALVE (W/ STEM MOUNTED IN HORIZONAL)
7. 10"x4" FLG'D TEE
8. 10" FLG'D PRESSURE REDUCING VALVE CLA-VAL MODEL 90-01 OR EQUAL.
9. 10" FLG'D SPOOL (3'-4" LONG)
10. 10" ELECTROMAGNTIC WATER METER W/ REMOTE DISPLAY, BADGER M2000 MAG METER W/ REMOTE M2000 AMPLIFIER OR EQUAL (CABLE LENGTH AS REQUIRED)
11. 10" FLG'D SPOOL (LENGTH AS REQUIRED) FOR MAG METER
12. 4" BLIND FLANGE TAPPED FOR 2" NPT
13. 2" NPT GALV. STEEL 90° ELL.
14. 2" FULL BORE THREADED END BALL VALVE. JAMESBURY VALUE-LINE OR EQUAL
15. 2" NPT GALV. STEEL UNION AS REQUIRED
16. 2' NPT PRESSURE REDUCING VALVE, CLA-VAL MODEL 990 W/ STANDARD ADJUSTMENT RANGE (70-140 PSI)
17. 2" NPT GALV. STEEL PIPE LENGTH AS REQUIRED
18. 10" TAPPED BLIND FLANGE
19. 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015/22.9 OR EQUAL)
20. LIQUID FILLED 3½" FACE PRESSURE GAUGE BY WIKA OR EQUAL, ONE(1)- 300 TO 0 PSI UPSTREAM GAUGE, ONE(1)-175 TO 0 PSI DOWNSTREAM GAUGE. ALSO PROVIDE ONE (1)- 175 TO 0 PSI SPARE GAUGE
21. HEAVY DUTY OPEN FACE, C.I. FLOOR DRAIN W/ TRAP FOR 2" PIPE
22. 2" SCH. 40 PVC DRAIN
23. FLOW METER DISPLAY UNIT AND AMPLIFIER W/ 4-20 mA OUTPUT AND SCALED PULSE OUTPUT FOR SCADA SYSTEM, BADGER M2000 AMPLIFIER OR EQUAL

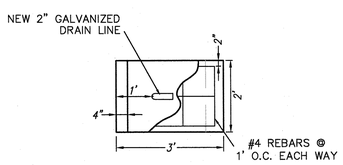
NOTE:
1. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

CONSTRUCTION KEYED NOTES:

1. 3'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO CITY WATER SYSTEM STANDARD.) PAINT AS DIRECTED W/; 2 COATS ALKYD ENAMEL.
2. ELECTRICAL GEAR: PANEL "A", S.C.A.D.A. SYSTEM CABINET AND JUNTION BOX MOUNTED ON WALL SEE ELECTRICAL PLAN SHEET 5-4
3. ELECTRIC UNIT HEATER. "QMARK" #MUH-05-21 WITH #MUHMT2 THERMOSTAT AND #MMB10 WALL MOUNTED BRACKET. MOUNT UP 7'-6" TO TOP OF UNIT, 240V, 1ϕ, 5KW
4. #4 ALL AROUND PIPE W/ LAP
5. ADJUSTABLE PIPE SUPPORTS (2 REQ'D)
6. NEW UNDERGROUND ELECTRIC SERVICE
7. NEW METER, DISCONNECT, AND SERVICE RISER

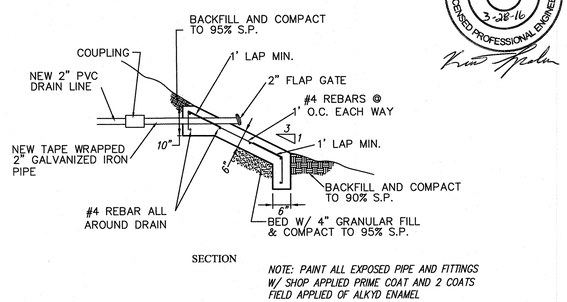


ELEVATION



PLAN

PRESSURE REDUCING STATION DRAIN PAD DETAIL
NTS



SECTION

NOTE: PAINT ALL EXPOSED PIPE AND FITTINGS W/ SHOP APPLIED PRIME COAT AND 2 COATS FIELD APPLIED OF ALKYD ENAMEL

KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

ENGINEER3: c:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg

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for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO-GALLUP WATER SUPPLY PROJECT
REACH 27.6

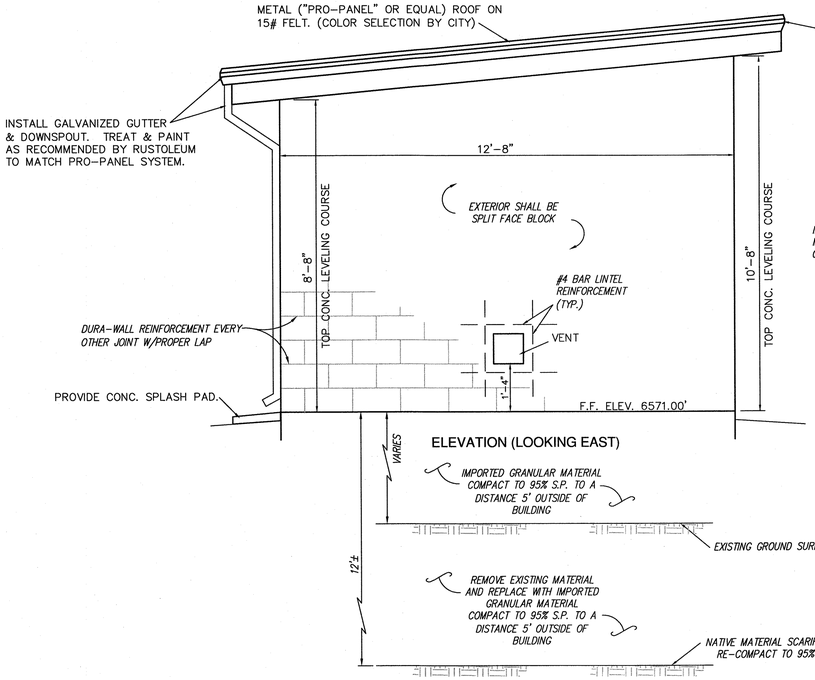
HOGBACK PRESSURE REDUCING STATION PIPING PLAN

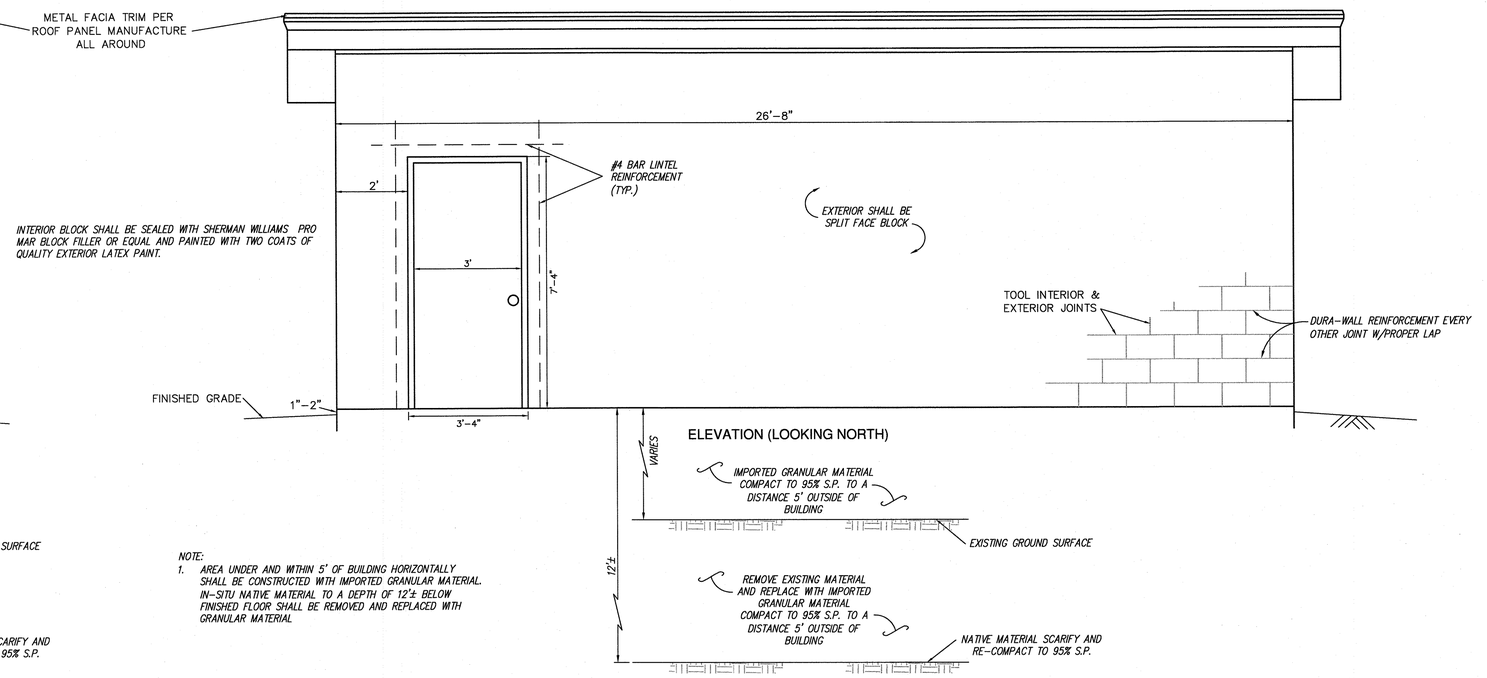
SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 5 - 2

CAUTION
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811
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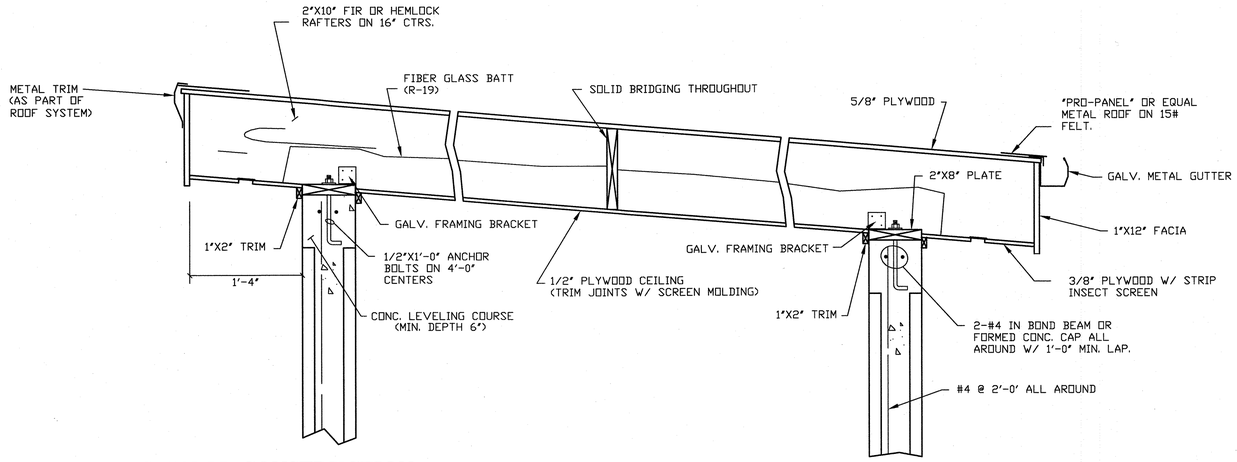
NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITH IN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.





NOTE:
1. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

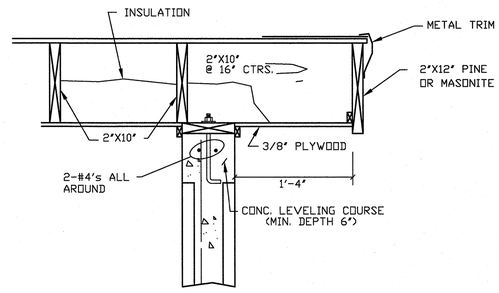
PRESSURE REDUCING BUILDING ELEVATIONS
SCALE 1/2"=1'-O"

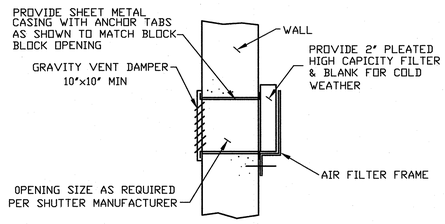


ROOF DETAILS: WOOD CONSTRUCTION
NTS

NOTE: ALL INTERIOR & EXTERIOR WOOD TRIM TO BE PRIMED AND PAINTED W/ 2 COATS OF QUALITY OIL-BASED ENAMEL. PAINT FACIA PRIOR TO PRO-PANEL TRIM INSTALLATION.

ALL PAINT COLORS TO BE SELECTED BY THE CITY.





VENT DETAIL
NTS (2 REQUIRED)

KURT A. SPOLAR NEW MEXICO 17637 3-30-16 LICENSED PROFESSIONAL ENGINEER

ENGINEERS: C:\Users\Public\Documents\engineer\Project 8\proj8 design.dwg

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulieengineering.com

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO-GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION BUILDING DETAILS

SCALE:	SHOWN
DATE:	AUGUST. 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 5 - 3

MECHANICAL/PLUMBING SYMBOL LEGEND

ABBR.	SYMBOL	DESCRIPTION
		EQUIPMENT DESIGNATION
		KEYED NOTES – DEMOLITION
		KEYED NOTES – NEW WORK
DIA	Ø	DIAMETER
T'STAT	T	THERMOSTAT
FD		FLOOR DRAIN
FS		FLOOR SINK
CAP		CAP ON END OF PIPE
POC		POINT OF CONNECTION
DISC		DISCONNECT TO POINT INDICATED
CO, WCO		CLEANOUT, WALL CLEANOUT
GCO, FCO		GRADE, FLOOR CLEANOUT
RD, OFD		ROOF DRAIN, OVERFLOW DRAIN
RD, OFD		ROOF DRAIN, OVERFLOW DRAIN
		RISER DOWN
		RISER UP
		DROP
		RISER UP
		BRANCH – TOP CONNECTION
		BRANCH – BOTTOM CONNECTION
		BRANCH – SIDE CONNECTION
HB		HOSE BIBB
WH		WATER HEATER
EWC		ELECTRIC WATER COOLER
CW		COLD WATER LINE
HW		HOT WATER LINE
RHW		CIRCULATING HOT WATER
V		VENT PIPING
S	S	SOIL OR WASTE LINE
IW	IW	INDIRECT WASTE
G	G	GAS – LOW PRESSURE
MG	MG	GAS – MEDIUM PRESSURE

ABBR.	SYMBOL	DESCRIPTION
VTR		VENT THRU ROOF
GV		GATE VALVE
GL		GLOBE VALVE
CV		CHECK VALVE
PV		PLUG VALVE
TCV–3		CONTROL VALVE (THREE–WAY)
TCV–2		CONTROL VALVE (TWO–WAY)
P & TR		RELIEF VALVE
PRV		PRESSURE REDUCING VALVE
BFV		BUTTERFLY VALVE
NV		NEEDLE VALVE
BV		BALL VALVE
FCV		CIRCUIT SETTER VALVE
STR		STRAINER
UN		UNION
	20/12	RIGID DUCTWORK – FIRST FIGURE IS SIDE SHOWN
		FLEXIBLE DUCTWORK
		DUCT TRANSITION
SA		CEILING SUPPLY AIR OUTLET
RA		CEILING RETURN OR EXHAUST AIR INLET
SA		SIDEWALL SUPPLY AIR OUTLET
RA		SIDEWALL RETURN OR EXHAUST AIR INLET
FC		FLEXIBLE CONNECTION
FD		FIRE DAMPER
S/FD		SMOKE/FIRE DAMPER
MVD		MANUAL VOLUME DAMPER
SD		SPLITTER DAMPER
CFM		CUBIC FEET PER MINUTE
CD		CEILING DIFFUSER
G		GRILLE
SW		SIDEWALL
EAT, LAT		ENTERING, LEAVING AIR TEMPERATURE
WB, DB		WET, DRY BULB TEMPERATURE
FPM		FEET PER MINUTE
RPM		REVOLUTIONS PER MINUTE
"WC		INCHES OF WATER COLUMN
TSP		TOTAL STATIC PRESSURE
ΔP		PRESSURE DROP, PRESSURE DIFFERENCE
ESP		EXTERNAL STATIC PRESSURE

MECHANICAL EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION
UH–1	UNIT HEATER: SHALL BE ELECTRIC RESISTANCE CEILING/WALL MOUNTED, HORIZONTAL UNIT. THE CABINET SHALL BE 18 GAUGE STEEL WITH FACTORY BAKED ENAMEL FINISH AND INDIVIDUAL ADJUSTABLE LOUVERS FOR DIRECTIONAL AIR FLOW. THE ELECTRICAL HEATING BANK SHALL HAVE METAL SHEATH HEATING ELEMENTS AND AUTOMATIC RESET THERMAL OVERLOAD PROTECTION. MOTOR SHALL BE FULLY ENCLOSED CONTINUOUS FAN DUTY, SLEEVE BEARING TYPE WITH THERMAL OVERLOAD PROTECTION AND VIBRATION ISOLATION. FAN BLADE SHALL BE ALUMINUM, DYNAMICALLY BALANCED WITH GUARD. FURNISH COMPLETE WITH WALL MOUNTING BRACKET MMB10. UNIT SHALL BE QMARK OR APPROVED EQUAL. SYMBOL MODEL CFM KW VOLT/PH UH–1 MUH–05–21 356 5 240/1

GENERAL NOTES

A. ALL RECTANGULAR DUCT SIZES SHOWN ARE INSIDE DIMENSIONS. INSTALL 1" INTERIOR ACOUSTIC LINER IN RECTANGULAR ONLY WHERE NOTED. ROUND DUCTS SHALL BE EXTERNALLY INSULATED, UNLESS OTHERWISE NOTED.

B. ALL DUCT SEAMS SHALL BE SEALED AIRTIGHT WITH HIGH PRESSURE DUCT SEALER.

C. PROVIDE ALL NECESSARY FITTINGS FOR RISES AND OFFSETS IN DUCTWORK AND PIPING REQUIRED FOR PROPER INSTALLATION WHETHER OR NOT SHOWN ON DRAWINGS.

D. ALL DUCTWORK INSTALLED IN AREAS WITH CEILING TO BE ROUTED BETWEEN LIGHTS AS MUCH AS POSSIBLE AND INSTALLED AS HIGH AS POSSIBLE.

E. COORDINATE ROOF PENETRATIONS TO AND FROM EQUIPMENT WITH STRUCTURAL DRAWINGS. ROOF OPENINGS SHALL BE LOCATED BETWEEN JOISTS.

F. COORDINATE THE LOCATIONS OF ALL EQUIPMENT WITH ANY PLUMBING LINES AND ELECTRICAL CONDUIT. IN THE EVENT THAT ANY EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL MODIFY AS REQUIRED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT. SHOWING THE PROPOSED CHANGES FOR APPROVAL. THIS SHALL BE DONE AT NO COST TO THE OWNER.

G. ALL THERMOSTATS SHALL BE MOUNTED UP 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED. PROVIDE APPROVED. STEEL VENTILATED LOCKING COVERS WITH GUARDS AT ALL THERMOSTATS. UNLESS OTHERWISE DIRECTED.

MECHANICAL SPECIFICATIONS

1. PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PROVIDE A COMPLETE INSTALLATION AS INDICATED ON THE DRAWINGS AND AS NOTED BELOW.
2. ANY DAMAGE OF EXISTING WORK CAUSED BY NEW WORK UNDER THIS CONTRACT SHALL BE REPAIRED BY THIS CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. COORDINATE ALL WORK PERFORMED UNDER THIS DIVISION WITH WORK OF OTHER TRADES. THIS CONTRACTOR IS RESPONSIBLE FOR ENSURING A WELL COORDINATED EFFORT WITH OTHER TRADES AND A COMPLETE INSTALLATION OF THE SATISFACTION OF THE OWNER.
4. THE CONTRACTOR SHALL PREPARE THREE COPIES OF O&M MANUALS INCLUDING APPROVED SHOP DRAWINGS, CONTROL AS–BUILTS, AND TEST AND BALANCE REPORTS AT THE COMPLETION OF THE PROJECT.
5. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODES AND STANDARDS REQUIRED BY THE LOCAL AUTHORITY AND AS SPECIFIED HEREIN.
6. THIS CONTRACTOR SHALL PROVIDE, PROCURE, AND PAY FOR ALL PERMITS, SERVICES, METERS, LICENSES, FEES, ETC. REQUIRED FOR PERFORMANCE FOR WORK UNDER THIS CONTRACT. UPON COMPLETION OF THE WORK, DELIVER TO THE OWNER ALL CERTIFICATIONS OF APPROVAL SIGNED BY THE CONTROLLING AUTHORITIES.
7. PENETRATIONS REQUIRED FOR PIPING, DUCTWORK, AND EQUIPMENT HAVE BEEN INDICATED ON THE DRAWINGS; ANY ADDITIONAL PENETRATIONS REQUIRED SHALL BE PROVIDED WITH DUE CARE AND CONSIDERATION FOR THE WORK OF OTHER TRADES AND FOR THE APPEARANCE AND INTEGRITY OF THE BUILDING. THE CONTRACTOR SHALL COORDINATE ALL CUTTING AND PATCHING/PENETRATIONS WORK WITH THE ENGINEER. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR WORK THAT IS IN ADDITION TO, OR IS DIFFERENT FROM THE DRAWINGS.
8. ALL DUCTWORK SHALL BE ASTM A525 AND ASTM A527 GALVANIZED STEEL SHEET, LOCK FORMING QUALITY, HAVING G90 ZINC COATING IN CONFORMANCE WITH ASTM A90. CONSTRUCT DUCTWORK TO NFPA 90A AND SMACNA HVAC DUCT AND CONSTRUCTION STANDARDS. DUCTWORK SHALL BE 2 INCH PRESSURE CLASS LOW PRESSURE DUCTWORK.
9. ALL MECHANICAL EQUIPMENT SHALL BE SUBMITTED FOR REVIEW FOR ENGINEERING REVIEW AND COMMENT.

DAVID C. GRAHAM STATE OF NEW MEXICO 13658 REGISTERED PROFESSIONAL ENGINEER 12/16/2015

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITH IN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

T&D SERVICES
Transmission & Distribution Services
Consulting Engineers & Surveyors
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TEL.: (505)863–5440 depaulliengineering

for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

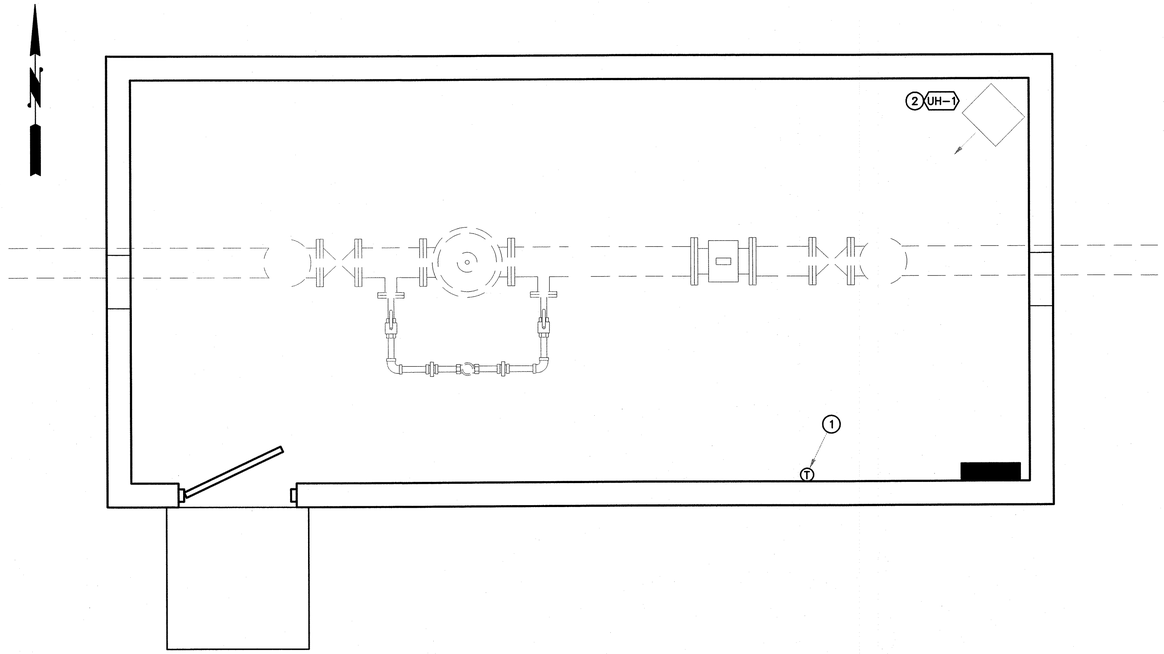
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION GENERAL NOTES

SCALE:	SHOWN
DATE:	MARCH 2014
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 5-4

Z:\PROJECTS\2014\141458 HOGBACK PRV STATION\CADD\DRAWINGS\141458 5–4.DWG



PRESSURE REDUCING STATION MECHANICAL PLAN

SCALE 1/2"=1'

KEYED NOTES

1 INSTALL PROGRAMMABLE THERMOSTAT, THERMOSTAT SHALL ENERGIZE UNIT HEATER WHEN TEMPERATURE IS 42'F OR BELOW (ADJUSTABLE).

2 ELECTRIC UNIT HEATER, UH-1. SEE MECHANICAL EQUIPMENT SCHEDULE, SHEET 5-4. UNIT SHALL BE MOUNTED WITH WALL BRACKET, MOUNT AT 7'-6" TO TOP OF UNIT. PROVIDE WITH WALL MOUNTED THERMOSTAT AS SHOWN. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

Z:\PROJECTS\2014\114058 HOGBACK PRV STATION\CAD\DRAWINGS\114058 5-5.DWG

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for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION MECHANICAL PLAN

DAVID C. GRAHAM — STATE OF NEW MEXICO — 13658 — REGISTERED PROFESSIONAL ENGINEER — 12/16/2015

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SCALE:	SHOWN
DATE:	MARCH 2014
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 5-5

GENERAL NOTES

A. THE CONTRACTOR SHALL FAMILIARIZE THEMSELF WITH THE PROJECT PRIOR TO THE BID OPENING, TO ALLOW THEM TO SUBMIT A COMPLETE BID WITHIN THE SCOPE OF THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS ARISING DURING THE BID PERIOD, IN REGARD TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF THE WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.

B. THE WORK INDICATED ON THE ELECTRICAL SITE PLAN AND THE POWER RISER DIAGRAM IS THE RESULT OF INITIAL CONTACT BY THE DESIGN ENGINEER WITH THE LOCAL ELECTRICAL UTILITY COMPANY. ADDITIONAL WORK MAY BE REQUIRED. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL REQUIREMENTS OF THE ELECTRICAL SERVICE WITH THE LOCAL ELECTRICAL UTILITY COMPANY AND PROVIDE, PRIMARY AND SECONDARY TRENCHING, CONDUITS, CONCRETE ENCASEMENT (WHERE APPLICABLE), PULL BOXES, BACKFILL AND PATCHING. ALL ASSOCIATED WORK REQUIRED FOR INSTALLATION OF THE ELECTRICAL SERVICE AND SYSTEMS BY THE LOCAL ELECTRICAL UTILITY INCLUDING FIELD COORDINATION AND ROUTING WITH THE UTILITY COMPANY IS THAT OF THE ELECTRICAL CONTRACTOR AND SHALL BE INCLUDED IN THE CONTRACTOR'S BID WITHOUT EXCEPTION.

C. IT WILL BE THE CONTRACTOR'S OBLIGATION TO INCLUDE, IN THEIR BID, THE COSTS FOR INSTALLING JUNCTION BOXES, PROVIDING MISCELLANEOUS COVERS, WORK WITH OTHER DISCIPLINES WHERE THE CONTRACT INVOLVES ELECTRICAL POWER OR CONTROL CONNECTIONS, SWITCHES, ETC. ALL OF THIS WORK SHALL BE PART OF THIS CONTRACT.

D. LOCATION OF EQUIPMENT AND OTHER DEVICES SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

E. THE CONDUIT RUNS, AS SHOWN ON PLANS, INDICATE APPROXIMATE ROUTING. EXACT LOCATION OF CONDUIT RUNS SHALL BE AS FIELD CONDITIONS DICTATE.

F. CONTRACTOR SHALL INSTALL PULL AND JUNCTION BOXES WHEREVER REQUIRED BY N.E.C. OR JOB CONDITIONS. ALL NEW WIRING SHALL BE TAGGED AT ALL PULL BOXES, JUNCTION BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS. ACTION CRAFT, BRADY OR APPROVED EQUAL.

G. SHOULD CONTRACTOR AT ANY TIME NOTICE THAT THE ACTUAL FIELD CONDITIONS DO NOT CORRESPOND TO THE INFORMATION GIVEN ON THE DRAWINGS, THEN IT WILL BE THEIR RESPONSIBILITY TO NOTIFY THE ENGINEER FOR CLARIFICATION, PRIOR TO COMMENCING SUCH WORK.

H. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL TRADES FOR THE EXACT LOCATION OF EQUIPMENT AND APPURTENANCES THAT REQUIRE ELECTRICAL CONNECTIONS.

I. CONTRACTOR SHALL MAKE AS-BUILT DRAWINGS DOCUMENTING ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. PROVIDE UPDATED TYPEWRITTEN DIRECTORIES FOR ALL PANELS AND LABEL ALL PANELS WITH PLASTIC LAMINATED NAMEPLATES.

J. INSTALL BLANK DEVICE PLATES ON ALL UNUSED JUNCTION BOXES IN FINISHED AREAS.

K. ALL ELECTRICAL AND SCADA WIRING SHALL BE ROUTED IN CONDUIT.

L. WHEREVER REQUIRED, FURNISH AND INSTALL ON WALL OR CEILING FREESTANDING UNISTRUT CHANNELS, ANGLE IRONS OR ANY OTHER SUPPORT STRUCTURE WITH THREADED ROD HANGERS AS REQUIRED FOR THE SUPPORT OF ELECTRICAL EQUIPMENT OF ANY KIND TO ENSURE PROPER INSTALLATION.

M. ALL NEW WIRING SHALL BE COPPER.

N. ALL HOME RUN CIRCUITING TO PANELS SHALL BE .75" CONDUIT, MINIMUM.

O. ALL SUB-SLAB SCADA CIRCUITING SHALL BE IN 1" CONDUIT MINIMUM

P. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL TIE HANDLES ON ALL CIRCUIT BREAKERS SHARING A NEUTRAL CONDUCTOR PER THE NEC.

Q. MOUNTING HEIGHTS INDICATED ON THE DRAWINGS ARE APPROXIMATE. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OTHER TRADES FOR EXACT HEIGHT REQUIRED. THIS REQUIREMENT ALSO APPLIES TO THE LOCATION OF WALL BOXES FOR HVAC SENSORS, T-STATS, ETC. ANY THIS NOTE APPLIES TO ALL ELECTRICAL SHEETS IN THESE DRAWINGS: OUTLET DEVICES THAT HAVE TO BE RELOCATED DUE TO COUNTERTOP TYPE CONFLICTS WILL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

FIXTURE SCHEDULE HOGBACK

TYPE	VOLT	MANUFACTURER NUMBER	FIXTURE DESCRIPTION	QTY OF LAMPS	LAMP TYPE	MOUNTING
A	120	BEACON #TRV-D-24NB-55-5K-T3-UNV-GENI-XX-PEC-OCS-BBT	WALL MOUNTED LED OUTDOOR FIXTURE WITH OCCUPANCY SENSOR AND PHOTO-CELL	***	55W LED	WALL 8'-0" AFF
B	120	COLUMBIA #KL4-228-U-EP-U-KLWG4	INDUSTRIAL FLUORESCENT FIXTURE WITH WIREGUARD	2	28W T5	PENDENT MOUNTED FROM STRUCTURE 11'-0" AFF TO BOTTOM OF FIXTURE USING UNISTRUT .

NOTES:
1. FIXTURES WITH CATALOG INFORMATION LISTED ABOVE ARE USED AS A BASES OF QUALITY AND PERFORMANCE. SUBSTITUTIONS/PRIOR APPROVALS SHALL COMPLY WITH SCHEDULE AND SPECIFICATIONS. IF THE FIXTURE(S) PROPOSED FOR SUBSTITUTION DO NOT COMPLY, IN OUR OPINION, THEY WILL BE REJECTED.

2. THERE IS ADDITIONAL INFORMATION IN SPECIFICATION SECTION 701.0500 THAT SHALL BE FOLLOWED.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
⬭	KEYED NOTE SYMBOL – ELECTRICAL.
⬡	MECHANICAL EQUIPMENT DESIGNATION – SEE MECHANICAL EQUIPMENT SCHEDULE.
WP	WEATHERPROOF.
AC	ABOVE COUNTER (6" UNLESS NOTED OTHERWISE).
AL	ABOVE LAVATORY (6" UNLESS NOTED OTHERWISE).
AFF	ABOVE FINISH FLOOR.
A	CEILING FIXTURE AND OUTLET. TYPE AS INDICATED IN FIXTURE SCHEDULE.
B	BRACKET FIXTURE AND OUTLET. TYPE AS INDICATED IN FIXTURE SCHEDULE.
	CEILING MOUNTED DOUBLE FACE EXIT FIXTURE (SELF-TESTING/SELF-DIAGNOSTICS) AND OUTLET WITH DIRECTIONAL ARROWS AS INDICATED. TYPE "EXIT" AS INDICATED IN FIXTURE SCHEDULE.
	CEILING MOUNTED SINGLE FACE EXIT FIXTURE (SELF-TESTING/SELF-DIAGNOSTICS) AND OUTLET WITH DIRECTIONAL ARROWS AS INDICATED. TYPE "EXIT" AS INDICATED IN FIXTURE SCHEDULE.
	WALL BRACKET OR RECESSED EXIT FIXTURE (SELF-TESTING/SELF-DIAGNOSTICS) AND OUTLET WITH DIRECTIONAL ARROWS AS INDICATED. TYPE "EXIT" AS INDICATED IN FIXTURE SCHEDULE.
C	FLUORESCENT FIXTURE AND OUTLET. TYPE AS INDICATED IN FIXTURE SCHEDULE.
	LIGHT FIXTURES INDICATED WITH SHADING ARE CONNECTED TO EMERGENCY POWER SOURCE WITH SELF-TESTING/SELF-DIAGNOSTICS. BODINE #B50ST (1350 LUMENS) BATTERY PACK OR APPROVED EQUAL. PROVIDE ALL MOUNTING HARDWARE REQUIRED FOR A COMPLETE INSTALLATION, COORDINATE WITH LIGHTING MFR.
$	SINGLE POLE WALL SWITCH. FLUSH MOUNTED UP 44" UNLESS OTHERWISE INDICATED. (LOWER CASE LETTER, WHEN USED, DENOTES FIXTURES CONTROLLED).
$3	THREE-WAY WALL SWITCH. FLUSH MOUNTED UP 44" UNLESS OTHERWISE INDICATED. (LOWER CASE LETTER, WHEN USED, DENOTES FIXTURES CONTROLLED).
$T	THERMAL SWITCH. WEATHERPROOF IF INSTALLED OUTSIDE. FLUSH MOUNTED UP 44" UNLESS OTHERWISE INDICATED.
	JUNCTION BOX FLUSH IN WALL. HEIGHT AS INDICATED FOR CONNECTION TO EQUIPMENT.
	20 AMP DUPLEX CONVENIENCE RECEPTACLE, UP 18" OR AS INDICATED.
	20 AMP GROUND FAULT INTERRUPTING DUPLEX CONVENIENCE RECEPTACLE, UP 18" OR AS INDICATED.
WP	20 AMP WEATHERPROOF GROUND FAULT INTERRUPTING DUPLEX CONVENIENCE RECEPTACLE, UP 18" OR AS INDICATED. COVER TO BE CAST ALUMINUM "HUBBELL" #WP26M OR EQUAL.
	SPECIAL CABINET, TELEPHONE TYPE OR AS NOTED.
	BRANCH CIRCUIT PANEL, SEE PANEL SCHEDULE FOR CHARACTERISTICS.
	MOTOR CONNECTION WITH HP INDICATED.
	MOTOR CONNECTION FOR FRACTIONAL HP MOTOR (LESS THAN 1/3 HP). PROVIDE THERMAL O.L. SWITCH ADJACENT TO ALL MOTORS UNLESS SWITCH IS SHOWN ELSEWHERE ON PLAN.
	MOTOR STARTER, SIZE AND POLES FOR MOTOR FURNISHED.
30/3	DISCONNECT SWITCH, NON-FUSED, SUBSCRIPT INDICATES SWITCH AMPERAGE AND NUMBER OF POLES, BE NEMA 4 IF INSTALLED OUTDOORS. VOLTAGE RATING AS REQUIRED BY SYSTEM.
30/3/20	DISCONNECT SWITCH, FUSED, SUBSCRIPT INDICATES SWITCH AMPERAGE, NUMBER OF POLES AND FUSE SIZE. TO BE NEMA 4 IF INSTALLED OUTDOORS. PROVIDE FUSES AT 125% F.L.A. OF UNIT UNLESS OTHERWISE INDICATED. VOLTAGE RATING AS REQUIRED BY SYSTEM.
	COMBINATION MOTOR STARTER, SIZE AND POLES FOR MOTOR FURNISHED/DISCONNECT SWITCH.
	BRANCH CIRCUIT CONDUIT IN WALL OR CEILING WITH CONDUCTORS INDICATED.
	BRANCH CIRCUIT CONDUIT UNDER FLOOR OR UNDERGROUND WITH CONDUCTORS INDICATED.
A-2,4	HOME RUN CONDUIT TO PANEL WITH BRANCH CIRCUIT NUMBERS INDICATED. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.
	POWER CONDUIT, CONDUCTORS TYPICALLY SHOWN AT CIRCUIT BEGINNING ONLY. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.
2 2	LIGHTING CONDUIT, CONDUCTORS TYPICALLY SHOWN AT CIRCUIT BEGINNING ONLY. SWITCH LEGS SHOWN AS REQUIRED FOR CLARITY. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.
2	TIC MARKS REPRESENT NEUTRAL, HOT, SWITCH LEG AND GROUND CONDUCTORS RESPECTIVELY. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER
12-16-2015

CAUTION
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307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulengineering

for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE

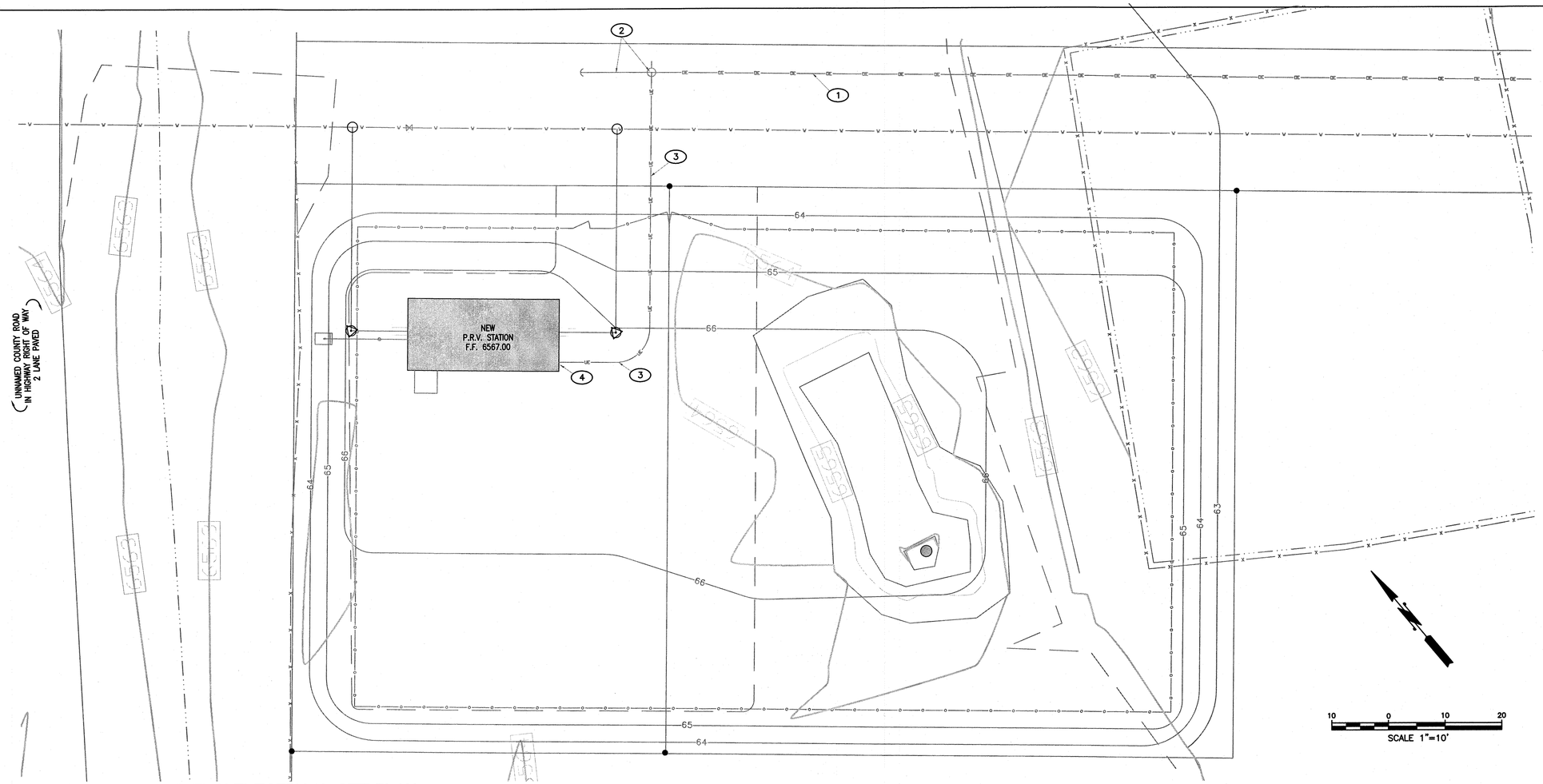
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

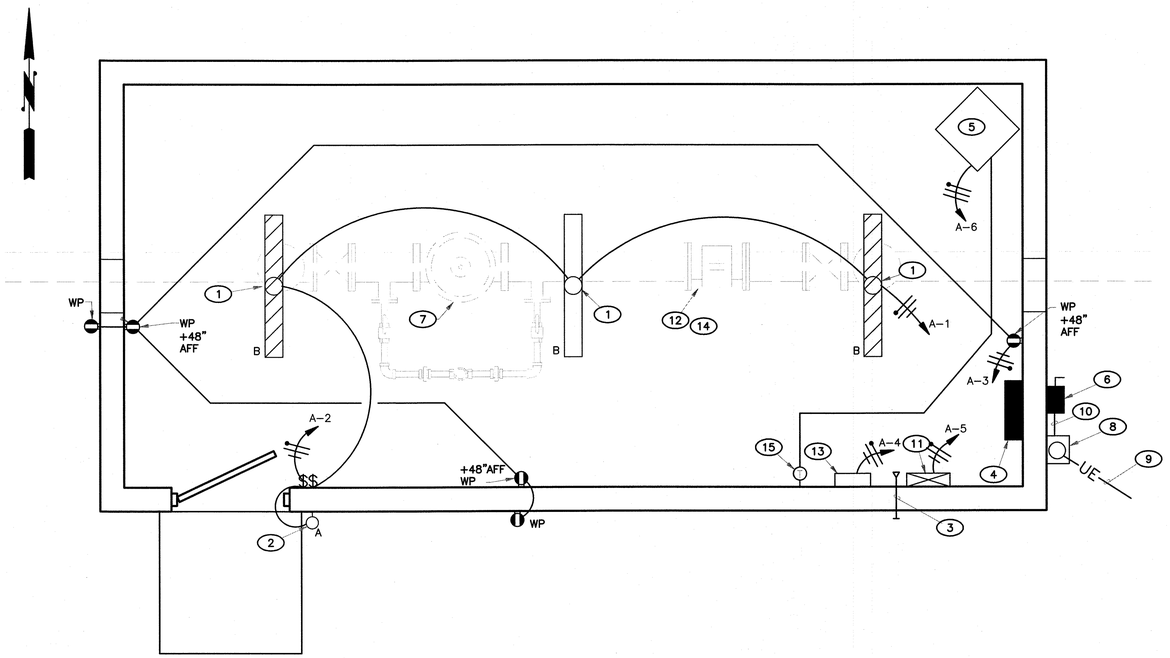
HOGBACK PRESSURE REDUCING STATION GENERAL NOTES

SCALE:	SHOWN
DATE:	MARCH 2014
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 5-6

Z:\PROJECTS\2014\114058 HOGBACK PRV STATION\CADD\DRAWINGS\114058 5-6.DWG


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PRESSURE REDUCING STATION ELECTRICAL PLAN

SCALE 1/2"=1'

GENERAL NOTES:

A. ELECTRICAL SERVICE (NEW POLE AND UNDERGROUND SERVICE TO METER) TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR.

B. ALL ELECTRICAL WORK SHALL CONFORM TO THE NEC ELECTRIC CODE AND THE CITY OF GALLUP REQUIREMENTS.

C. RADIO ANTENNAS ARE TO BE INSTALL AS REQUIRED. ANTENNAS ARE NOT SHOWN HEREON.

D. SEE SPECIAL SYSTEMS PLAN FOR ADDITIONAL SCADA SYSTEMS INFORMATION.

KEYED NOTES

1. 4' LONG 4 LAMP CEILING MOUNT FLUORESCENT FIXTURE WITH TUBE GUARDS AND WIRE BASKETS.
2. WALL MOUNTED OUTSIDE FIXTURE.
3. 1 1/2" PVC WALL SLEEVE FOR COMMUNICATION SERVICE
4. PANEL "A" 120/240V, SINGLE PHASE, 100 AMP MAIN LUGS, WITH EIGHT (8) EACH 20 A – 1 POLE BREAKERS AND ONE (1) EACH 30 A – 2 POLE BREAKER (A-6) FOR HEATER PROVIDE 1 #6 BARE COPPER GROUND
5. ELECTRIC UNIT HEATER. "QMARK" #MUH-05-21 WITH WALL MOUNTED THERMOSTAT AS SHOWN AND #MMB10 WALL MOUNTED BRACKET. MOUNT UP 7'-6" TO TOP OF UNIT, 240V, 1ϕ, 5KW
6. 100 A – 2 POLE, NEMA-3R DISCONNECT FUSED AT 100 AMPS (SEE POWER RISER DIAGRAM)
7. PRESSURE REDUCING VALVE.
8. 100 AMP METER BASE PER UTILITY REQUIRMENTS
9. 3 #2 THWN PLUS 1 #6 GROUND IN 2-1/2" SCH 40 ELECTRICAL CONDUIT INCLUDING 90° SWEEPS FROM SERVICE POLE.
10. 3 #2 THWN PLUS 1 #6 GROUND IN 2" CONDUIT
11. SCADA SYSTEM AND COMMUNICATION CENTER
12. FLOW METER (SEE PIPING PLAN)
13. FLOW METER REMOTE DISPLAY WITH OUTPUT FOR SCADA REQUIREMENTS
14. FLOW METER CABLE (LENGTH AS REQUIRED) TO METER REMOTE DISPLAY
15. QMARK WALL MOUNTED THERMOSTAT FOR HEATER. RUN 18 GAUGE WIRING IN 1/2" CONDUIT.

KENNETH W. ADAMS NEW MEXICO 16008 REGISTERED PROFESSIONAL ENGINEER
12-16-2015

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TEL: (505)863-5440 depaulieengineering

for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE

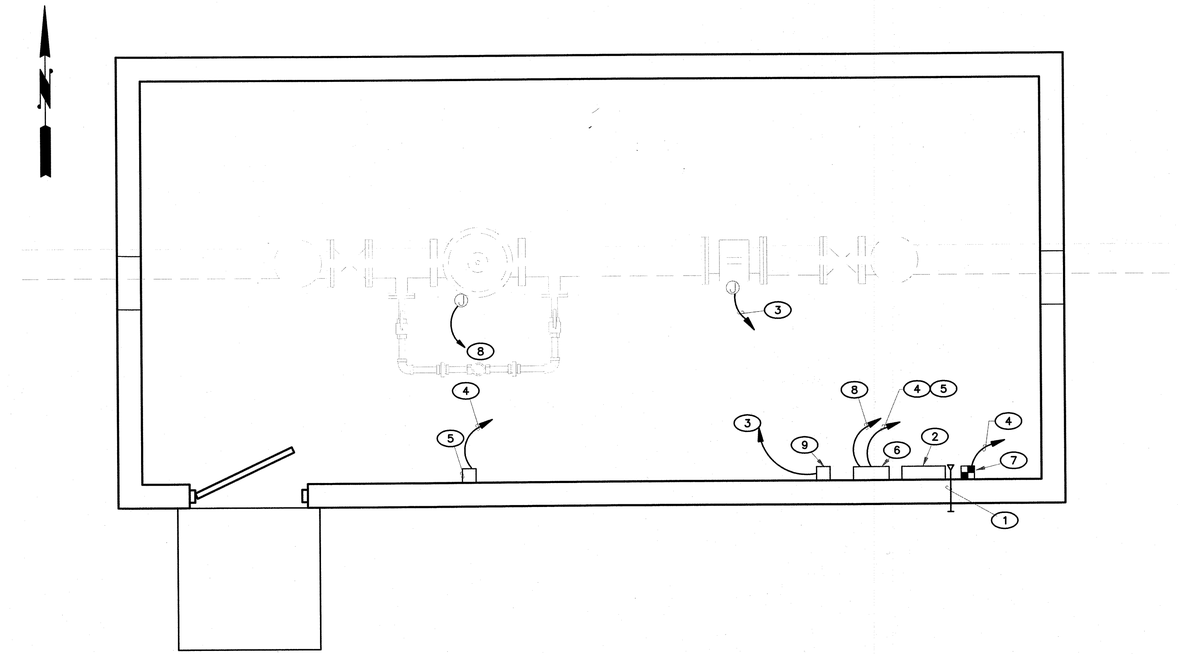
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION POWER PLAN

SCALE:	SHOWN
DATE:	MARCH 2014
DRAWN BY:	T&D
CHECKED BY:	KA

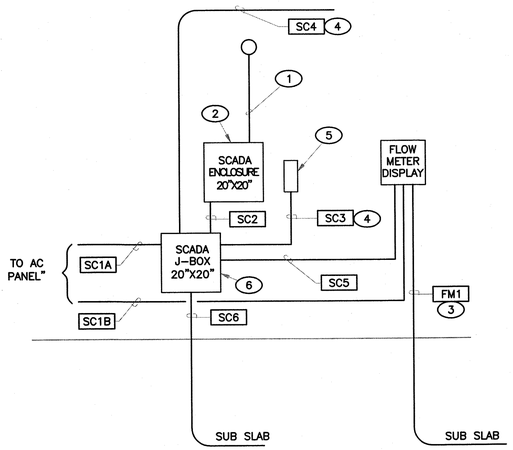
SHEET 5-8

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PRESSURE REDUCING STATION SPECIAL SYSTEMS PLAN

SCALE 1/2"=1'



SCADA RISER DIAGRAM

KEYED NOTES

1. 1 1/2" PVC WALL SLEEVE FOR COMMUNICATION SERVICE
2. SCADA SYSTEM AND COMMUNICATION CENTER (SEE REQUIREMENTS BELOW).
3. FLOW METER CABLE (LENGTH AS REQUIRED) IN 1" CONDUIT (SUB-SLAB) TO METER REMOTE DISPLAY
4. SCADA CONTROL WIRING – 16 GAUGE SHIELDED CABLE IN 1/2" CONDUIT FROM SENSOR TO SCADA SYSTEM AS REQUIRED.
5. ON-SITE TOGGLE SWITCH.
6. SCADA SYSTEM JUNCTION BOX.
7. DOOR SWITCH FOR SITE SECURITY PER SCADA REQUIREMENTS
8. PRESSURE REDUCING VALVE STATUS TO SCADA LENGTH AS REQUIRED.
9. FLOW METER REMOTE DISPLAY WITH OUTPUT FOR SCADA REQUIREMENTS.

SCADA REQUIREMENTS

THE CITY CURRENTLY UTILIZES A SCADA SYSTEM BY MOTOROLA FOR SUPERVISORY CONTROL AND DATA ACQUISITION OF WATER PRODUCTION FACILITIES. RTU UNITS ARE LOCATED AT FACILITIES AND IN THE WELL FIELDS WITH RADIO COMMUNICATION TO TWO NETWORKED COMPUTER STATIONS IN THE CITY.

THIS PROJECT CONSISTS OF INSTALLING A COMPATIBLE RTU UNIT AT THE P.R.V. STATION COMPLETE WITH ALL APPURTENANCES AND HARDWARE TO PROVIDE FUNCTIONS DESCRIBED BELOW. ALL SENSORS, RELAYS, TERMINAL STRIPS AND WIRING SHALL BE PROPERLY INTERFACED WITH FLOW METER DISPLAY AND OTHER ELECTRICAL EQUIPMENT AS REQUIRED. REQUIRED SOFTWARE PROGRAMMING BY EXPERIENCED PERSONNEL SHALL ALSO BE REQUIRED TO MAKE THE SCADA SYSTEM FOR THE P.R.V. STATION FUNCTIONAL.

REQUIREMENTS FOR P.R.V. STATION SCADA SYSTEM:

ITEM		
SUPERVISORY CONTROL:		
RESET TOTALIZER		
DATA ACQUISITION:		
SITE POWER	ON – OFF	
SECURITY	OK – BREACHED	
FLOW RATE	GPM (4–20mA)	
TOTAL FLOW	GALLONS (PULSE)	
PRV STATUS	OPEN – CLOSED	

THE RTU SHALL CONTAIN BATTERIES, A POWER SUPPLY/CHARGER MODULE, A CPU MODULE, MODULES FOR DIGITAL I/O AND AN ANALOG NODULE WITHIN A NEMA 4, WALL MOUNTED ENCLOSURE. MODULES FOR 16 DIGITAL INPUT, 16 DIGITAL OUTPUT AND 8 ANALOG INPUT SHALL BE PROVIDED.

THE RTU UNIT PROVIDED SHALL BE SELECTED BY CITY. COMMUNICATION–ALARM DIALER TO BE WIRELESS WITH A BATTERY BACKUP. (IF REQUIRED FOR SCADA ALARMS.)

SEE ALSO SPECIFICATIONS 702.000 AND 703.000

SCADA CONDUIT / WIRE SCHEDULE

CONDUIT NAME	FROM	TO	PURPOSE	SIZE	WIRE/CABLE	SUB SLAB
SC1A	SCADA J-BOX	AC PANEL	120 VAC POWER CKT A-5	3/4" EMT	2#12 + #12G	-
SC1B	FLOW METER	AC PANEL	120 VAC POWER CKT A-4	1" EMT	2#12 + #12G	
SC2	SCADA J-BOX	SCADA ENCLOSURE	WIRE CHASE	(2) 2" EMT	VARIES	-
SC3	SCADA J-BOX	ON-SITE SWITCH	STATUS	1/2" EMT	2C#16SH CABLE	-
SC4	SCADA J-BOX	DOOR ALARM	STATUS	1/2" EMT	2C#16SH CABLE	-
SC5	SCADA J-BOX	FLOW METER DISPLAY	4-20 mA FLOW/COUNTER	3/4" EMT	FLOW METER CABLE	-
SC6	SCADA J-BOX	PRESSURE REDUCING VALVE	STATUS	3/4" RGD/PVC	2C#16SH CABLE	YES
FM1	FLOW METER	FLOW METER DISPLAY	4-20 mA FLOW/COUNTER	3/4" RGD/PVC	FLOW METER CABLE	YES

KENNETH W. ADAMS NEW MEXICO 16008 REGISTERED PROFESSIONAL ENGINEER
12-16-2015

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for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION SPECIAL SYSTEMS PLAN

SCALE:	SHOWN
DATE:	MARCH 2014
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 5-8A

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PANEL : **A**

LOCATION :

DWG REF :

DWG NO :

N

SERVICE : 240/120V, 1PH, 3W

MAINS RATING : 100 AMP

MAINS OPTIONS : MAIN LUGS ONLY

INTERRUPTING RATING : 10,000 AIC

CABINET : SURFACE MOUNTED, NEMA 4, 12 POLES

ACCESSORIES : NEUTRAL BAR, GROUND BAR

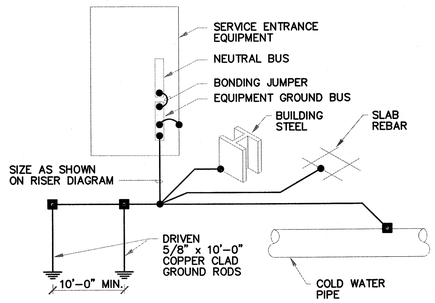
CCT NO.	LOAD DESCRIPTION	CABLE SIZE	BKR SIZE	LOAD (KVA)	PHASE A		PHASE B	LOAD (KVA)	BKR SIZE	CABLE SIZE	LOAD DESCRIPTION	CCT NO
1	INTERIOR LIGHTS	(2)-#12#12G	20A/1P	1.00	2.0			1.00	20A/1P	(2)-#12#12G	EXTERIOR LIGHTS	2
3	OUTLETS	(2)-#12#12G	20A/1P	1.00			1.2	0.20	20A/1P	(2)-#12#12G	FLOW METER AND DISPLY	4
5	SCADA SYSTEM	(2)-#12#12G	20A/1P	0.50	3.0			2.50	30A/2P	(3)-#10#10G	HEATER	6
7	SPARE		20A/1P				2.5	2.50	100AF	***	***	8
9	SPARE		20A/1P		0.0				20A/1P		SPARE	10
11							0.0					12
					5.0	3.7						
					KVA	LL VOLTS	AMPS					
					8.7	240	36					

NOTE :

14.9%	-14.9%		PHASE UNBALANCE
41.7	30.8		PHASE AMPS

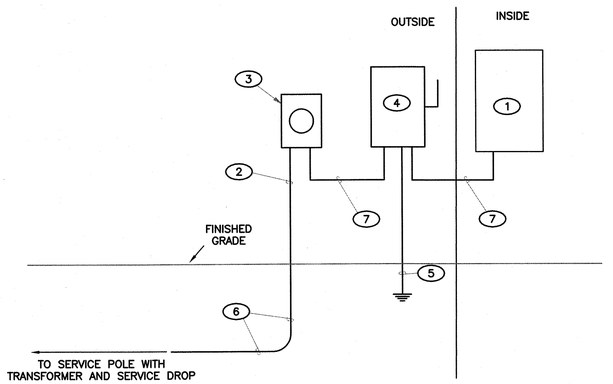
KEYED NOTES

1. PANEL "A" 120/240V, SINGLE PHASE, 100 AMP MAIN LUGS, WITH EIGHT (8) EACH 20 A – 1 POLE BREAKERS AND ONE (1) EACH 30 A – 2 POLE BREAKER (A–6) FOR HEATER PROVIDE 1 #6 BARE COPPER GROUND
2. 3 #2 THWN PLUS 1 #6 GROUND IN 2–1/2" RIGID METALLIC CONDUIT. TAPE WRAP BURIED PORTION TO 6" ABOVE FINISHED GRADE PER UTILITY REQUIREMENTS.
3. 100 AMP METER BASE PER UTILITY BASE
4. MAIN SERVICE DISCONNECT, 100 A – 2P + SN, NEMA–3R, FUSED AT 100 AMPS
5. 1 #6 BARE COPPER IN 1/2" CONDUIT
6. 3 #2 THWN PLUS 1 #6 GROUND IN 2–1/2" SCH 40 ELECTRICAL CONDUIT INCLUDING 90° SWEEPS FROM SERVICE POLE.
7. 3 #2 THWN PLUS 1 #6 GROUND IN 2" CONDUIT



SERVICE GROUNDING DETAIL

SCALE: NONE



POWER RISER DIAGRAM

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER

12-16-2015

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TEL: (505)863-5440 depauliengineering

for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

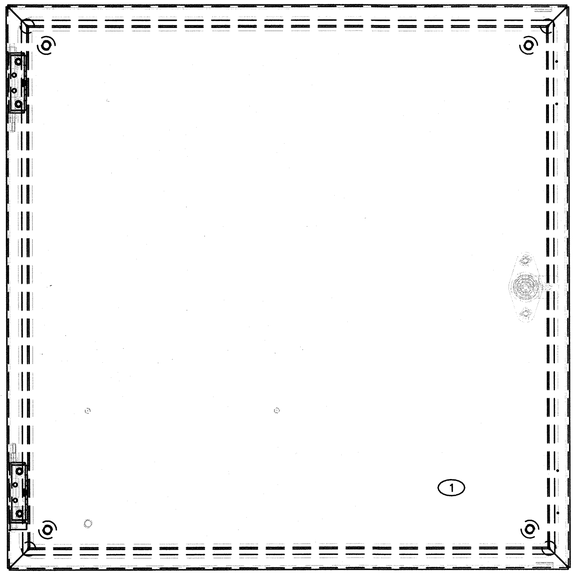
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION POWER RISER

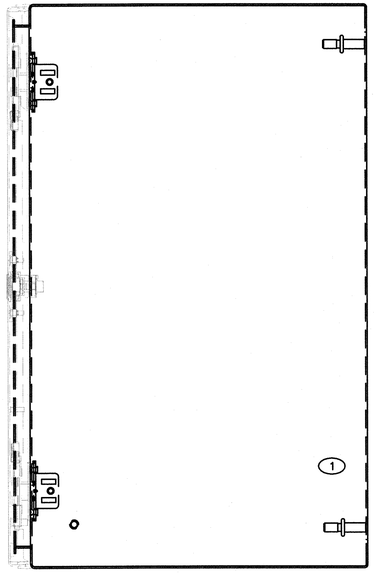
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DATE:	MARCH 2014
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 5-9

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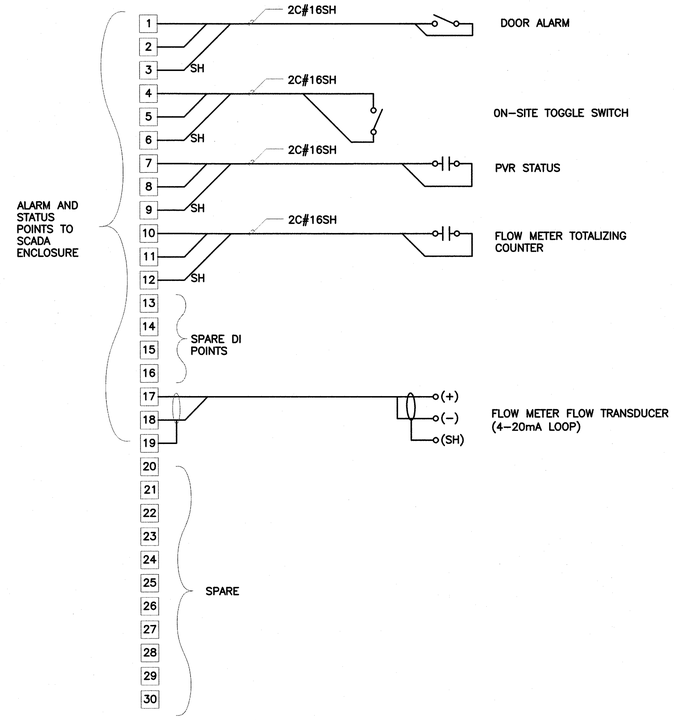


FRONT VIEW 1'-8"



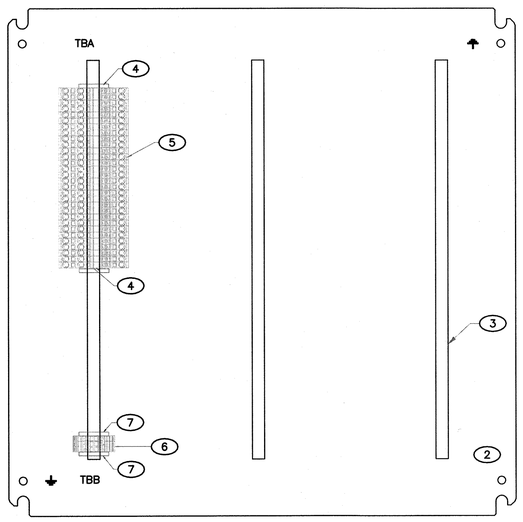
SIDE VIEW 1'-0"

TBA



NOTES:

ALL ENCLOSURES, BACK PANELS, CABLE SHIELDS SHALL BE BONDED TO A SUITABLE EQUIPMENT GROUND.
CONTRACTOR TO ARRANGE SCADA J-BOX, TOGGLE SWITCHES AND OTHER DEVICES AT A SUITABLE HEIGHT AND ALLOW FOR CLEAR AREA AROUND THE J-BOX FOR INSTALLATION OF THE SCADA ENCLOSURE AND FLOW METER DISPLAY.

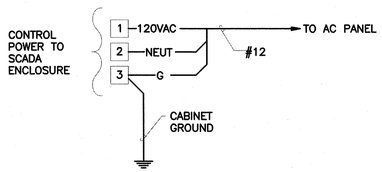


BACK PANEL

BILL OF MATERIALS

ITEM	QTY	MANUFACTURER	DESCRIPTION	PART NUMBER
1	1	HOFFMAN	20 X 20 X12 ENCLOSURE	CSD202012
2	1	HOFFMAN	BACK PANEL FOR ENCLOSURE	CP2020
3	3	PHOENIX	DIN RAILS (35mm/7.5mm)	801733
4	4	PHOENIX	END BLOCKS	3030491
5	96	PHOENIX	TERMINAL BLOCKS (ST4)	3031393
6	3	PHOENIX	TERMINAL BLOCKS (UT4)	3044102
7	2	PHOENIX	END BLOCKS	3047208

TBB



NOTES: SITE POWER FAILURE ALARM IS INTERNAL TO THE SCADA UNIT

SCADA CONNECTION DETAILS

SCADA J-BOX DETAILS

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER
12-16-2015

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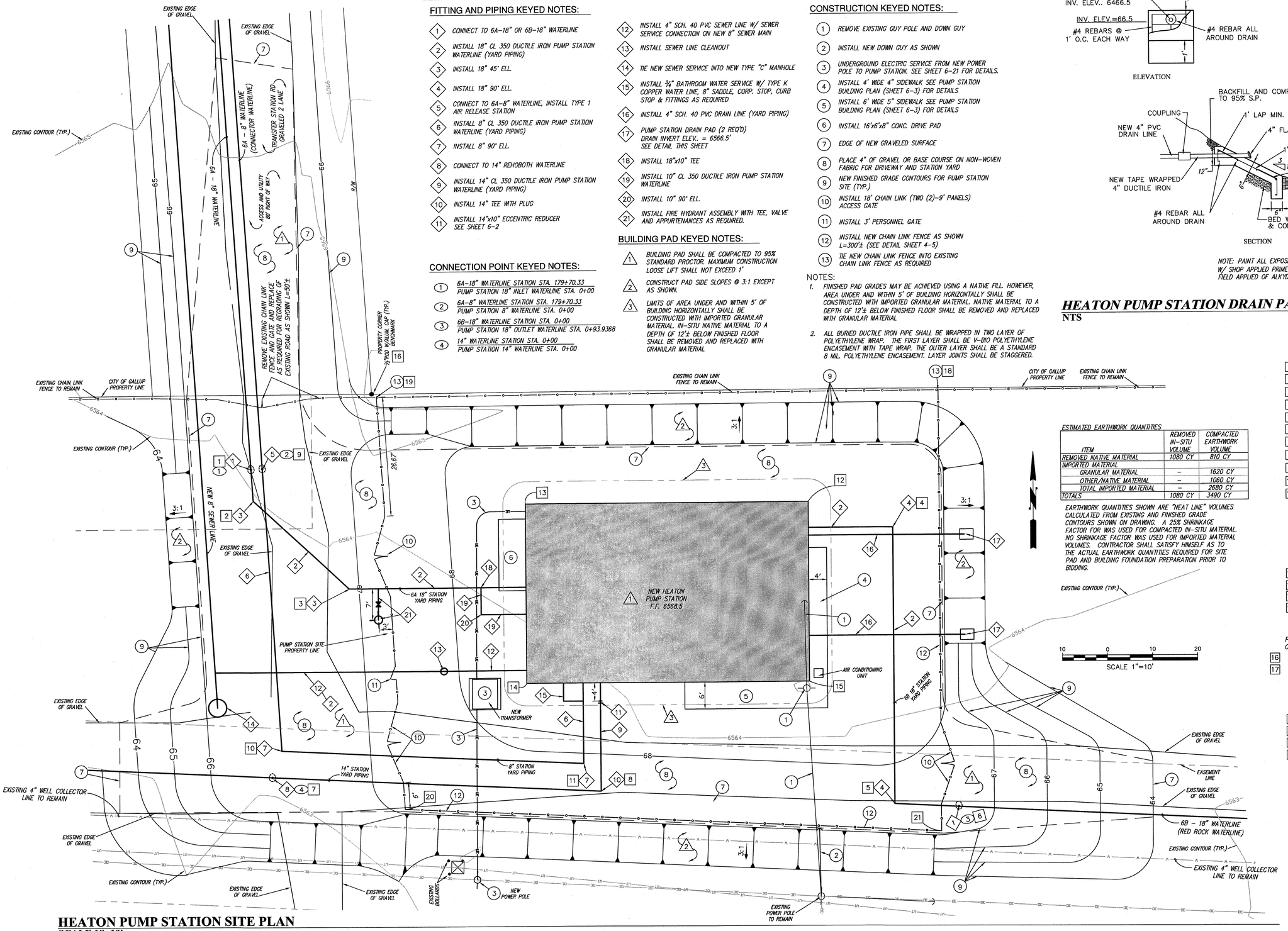
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HOGBACK PRESSURE REDUCING STATION SCADA SCEME

SCALE:	SHOWN
DATE:	MARCH 2014
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 5-10

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HEATON PUMP STATION SITE PLAN
SCALE 1"=10'

HEATON PUMP STATION KEYED NOTES:

FITTING AND PIPING KEYED NOTES:

1. CONNECT TO 6A-18" OR 6B-18" WATERLINE
2. INSTALL 18" CL 350 DUCTILE IRON PUMP STATION WATERLINE (YARD PIPING)
3. INSTALL 18" 45° ELL.
4. INSTALL 18" 90° ELL.
5. CONNECT TO 6A-8" WATERLINE, INSTALL TYPE 1 AIR RELEASE STATION
6. INSTALL 8" CL 350 DUCTILE IRON PUMP STATION WATERLINE (YARD PIPING)
7. INSTALL 8" 90° ELL.
8. CONNECT TO 14" REHOBOTH WATERLINE
9. INSTALL 14" CL 350 DUCTILE IRON PUMP STATION WATERLINE (YARD PIPING)
10. INSTALL 14" TEE WITH PLUG
11. INSTALL 14"x10" ECCENTRIC REDUCER SEE SHEET 6-2
12. INSTALL 4" SCH. 40 PVC SEWER LINE W/ SEWER SERVICE CONNECTION ON NEW 8" SEWER MAIN
13. INSTALL SEWER LINE CLEANOUT
14. TIE NEW SEWER SERVICE INTO NEW TYPE "C" MANHOLE
15. INSTALL ¾" BATHROOM WATER SERVICE W/ TYPE K COPPER WATER LINE, 8" SADDLE, CORP. STOP, CURB STOP & FITTINGS AS REQUIRED
16. INSTALL 4" SCH. 40 PVC DRAIN LINE (YARD PIPING)
17. PUMP STATION DRAIN PAD (2 REQ'D) DRAIN INVERT ELEV. = 6566.5' SEE DETAIL THIS SHEET
18. INSTALL 18"x10" TEE
19. INSTALL 10" CL 350 DUCTILE IRON PUMP STATION WATERLINE
20. INSTALL 10" 90° ELL.
21. INSTALL FIRE HYDRANT ASSEMBLY WITH TEE, VALVE AND APPURTENANCES AS REQUIRED.

CONNECTION POINT KEYED NOTES:

1. 6A-18" WATERLINE STATION STA. 179+70.33 / PUMP STATION 18" INLET WATERLINE STA. 0+00
2. 6A-8" WATERLINE STATION STA. 179+70.33 / PUMP STATION 8" WATERLINE STA. 0+00
3. 6B-18" WATERLINE STATION STA. 0+00 / PUMP STATION 18" OUTLET WATERLINE STA. 0+93.9368
4. 14" WATERLINE STATION STA. 0+00 / PUMP STATION 14" WATERLINE STA. 0+00

BUILDING PAD KEYED NOTES:

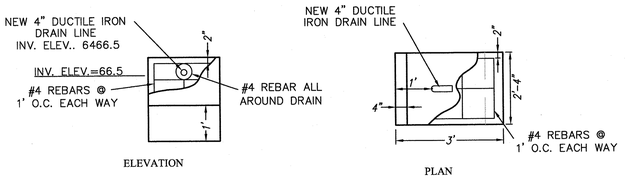
1. BUILDING PAD SHALL BE COMPACTED TO 95% STANDARD PROCTOR. MAXIMUM CONSTRUCTION LOOSE LIFT SHALL NOT EXCEED 1'
2. CONSTRUCT PAD SIDE SLOPES @ 3:1 EXCEPT AS SHOWN.
3. LIMITS OF AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

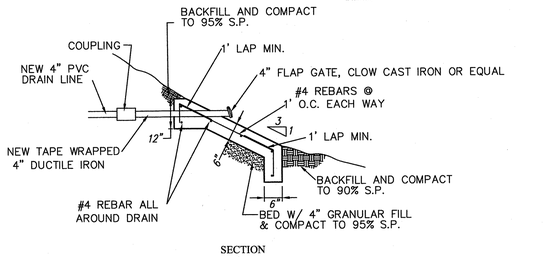
CONSTRUCTION KEYED NOTES:

1. REMOVE EXISTING GUY POLE AND DOWN GUY
2. INSTALL NEW DOWN GUY AS SHOWN
3. UNDERGROUND ELECTRIC SERVICE FROM NEW POWER POLE TO PUMP STATION. SEE SHEET 6-21 FOR DETAILS.
4. INSTALL 4' WIDE 4" SIDEWALK SEE PUMP STATION BUILDING PLAN (SHEET 6-3) FOR DETAILS
5. INSTALL 6' WIDE 5" SIDEWALK SEE PUMP STATION BUILDING PLAN (SHEET 6-3) FOR DETAILS
6. INSTALL 16'x6'x8" CONC. DRIVE PAD
7. EDGE OF NEW GRAVELED SURFACE
8. PLACE 4" OF GRAVEL OR BASE COURSE ON NON-WOVEN FABRIC FOR DRIVEWAY AND STATION YARD
9. NEW FINISHED GRADE CONTOURS FOR PUMP STATION SITE (TYP.)
10. INSTALL 18' CHAIN LINK (TWO (2)-9' PANELS) ACCESS GATE
11. INSTALL 3' PERSONNEL GATE
12. INSTALL NEW CHAIN LINK FENCE AS SHOWN L=300'± (SEE DETAIL SHEET 4-5)
13. TIE NEW CHAIN LINK FENCE INTO EXISTING CHAIN LINK FENCE AS REQUIRED

NOTES:

1. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL
2. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.





NOTE: PAINT ALL EXPOSED PIPE AND FITTINGS W/ SHOP APPLIED PRIME COAT AND 2 COATS FIELD APPLIED OF ALKYD ENAMEL

HEATON PUMP STATION DRAIN PAD DETAIL
NTS

ESTIMATED EARTHWORK QUANTITIES

ITEM	REMOVED IN-SITU VOLUME	COMPACTED EARTHWORK VOLUME
REMOVED NATIVE MATERIAL	1080 CY	810 CY
IMPORTED MATERIAL		
GRANULAR MATERIAL	–	1620 CY
OTHER/NATIVE MATERIAL	–	1060 CY
TOTAL IMPORTED MATERIAL	–	2680 CY
TOTALS	1080 CY	3490 CY

EARTHWORK QUANTITIES SHOWN ARE "NEAT LINE" VOLUMES CALCULATED FROM EXISTING AND FINISHED GRADE CONTOURS SHOWN ON DRAWING. A 25% SHRINKAGE FACTOR FOR WAS USED FOR COMPACTED IN-SITU MATERIAL. NO SHRINKAGE FACTOR WAS USED FOR IMPORTED MATERIAL VOLUMES. CONTRACTOR SHALL SATISFY HIMSELF AS TO THE ACTUAL EARTHWORK QUANTITIES REQUIRED FOR SITE PAD AND BUILDING FOUNDATION PREPARATION PRIOR TO BIDDING.

WATERLINE HORIZONTAL PI COORDS:

PI	NORTHING	EASTING
1 6A TIE-IN	1651621.40	2462693.52
2 18" 45° ELL.	1651614.35	2462693.98
3 18" 45° ELL.	1651594.58	2462715.16
4 18" 90° ELL.	1651607.80	2462835.67
5 18" 90° ELL.	1651546.29	2462835.91
6 6B TIE-IN	1651545.64	2462850.13
7 14" TIE-IN	1651552.59	2462697.99
8 14" 90° ELL	1651549.26	2462770.85
9 8" TIE-IN	1651621.56	2462696.01
10 8" 90° ELL.	1651558.49	2462700.11
11 8" 90° ELL.	1651555.44	2462767.00

NOTE: VERTICAL PI COORDS. NOT SHOWN HERE

BUILDING CORNER COORDS:

CORNER	NORTHING	EASTING
12 NE	1651613.57	2462816.98
13 NW	1651613.32	2462754.31
14 SW	1651573.32	2462754.47
15 SE	1651573.57	2462817.14

PUMP STATION PROPERTY CORNER COORDS:

CORNER	NORTHING	EASTING	ELEV.
16 NW	1651638.15	2462720.32	6564.91
17 NOT USED			

FENCE CORNER COORDS:

CORNER	NORTHING	EASTING
18 NE	1651638.2±	2462845.9±
19 NW	1651637.5±	2462721.4±
20 SW	1651545.44	2462727.39
21 SE	1651540.18	2462846.27

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

KURT R. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL.: (505)863-5440 depaulieengineering

for the **CITY OF GALLUP**
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE

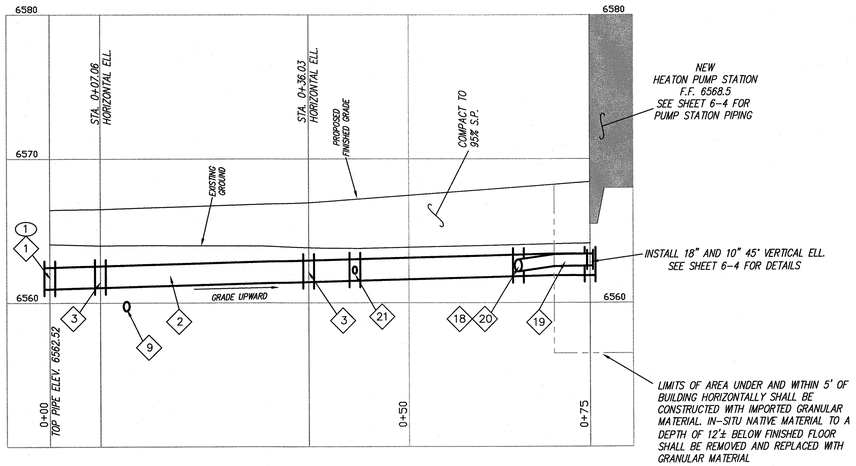
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION SITE PLAN

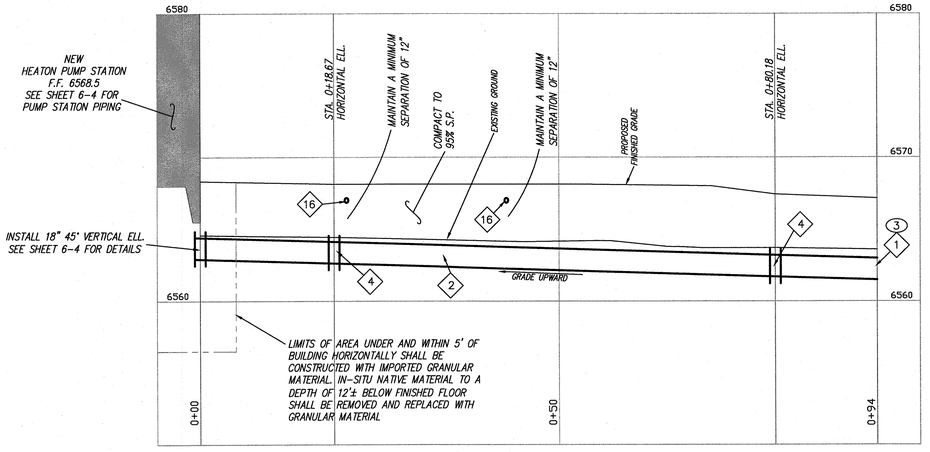
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DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6 - 1

ENGINEER3: C:\Users\Public\Documents\engineer\Project 8\pro8 design.dwg

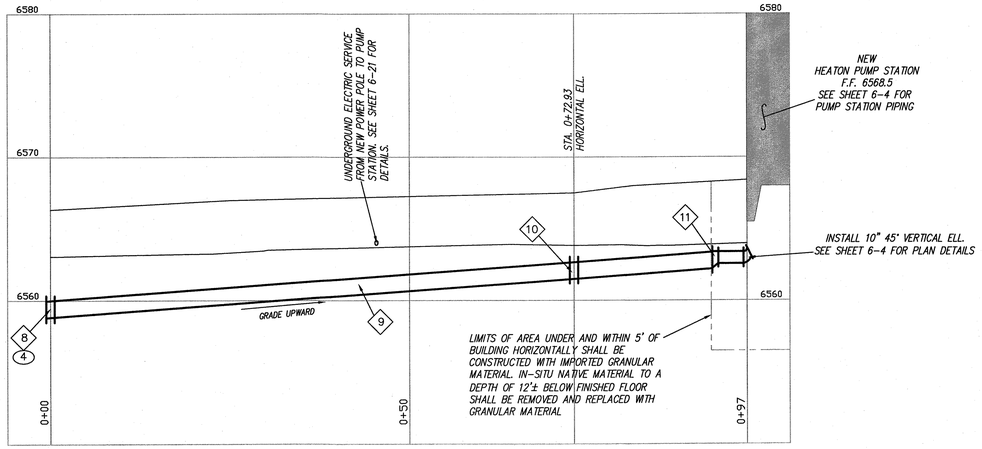


HEATON PUMP STATION 18" 6A YARD PIPING PROFILE
SCALE: 1"=10' HOR.; 1"=5' VER.

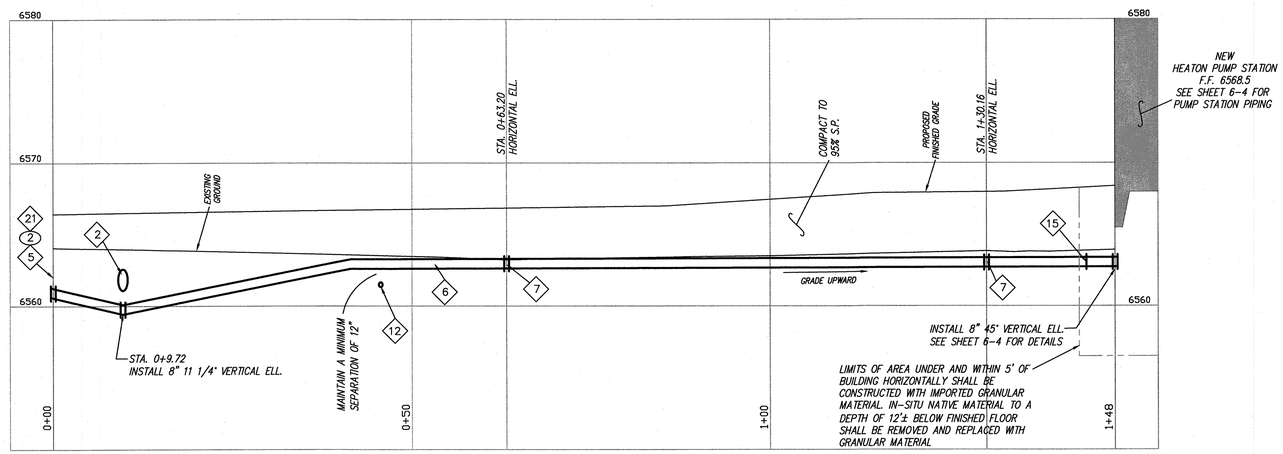


HEATON PUMP STATION 18" 6B YARD PIPING PROFILE
SCALE: 1"=10' HOR.; 1"=5' VER.

NOTES:
1. FINISHED PAD GRADES MAY BE ACHIEVED USING A NATIVE FILL. HOWEVER, AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL AND NATIVE MATERIAL, TO A DEPTH OF 12'± BELOW FINISHED FLOOR, SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL
2. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.



HEATON PUMP STATION 14" YARD PIPING PROFILE
SCALE: 1"=10' HOR.; 1"=5' VER.



HEATON PUMP STATION 8" YARD PIPING PROFILE
SCALE: 1"=10' HOR.; 1"=5' VER.

PRESSURE REDUCING STATION KEYED NOTES:

FITTING AND PIPING KEYED NOTES:

1. CONNECT TO 6A-18" OR 6B-18" WATERLINE
2. INSTALL 18" CL 350 DUCTILE IRON PUMP STATION WATERLINE
3. INSTALL 18" HORIZONTAL 45° ELL.
4. INSTALL 18" 90° ELL.
5. CONNECT TO 6A-8" WATERLINE
6. INSTALL 8" CL 350 DUCTILE IRON PUMP STATION WATERLINE
7. INSTALL 8" 90° ELL.
8. CONNECT TO 14" REHOBOTH WATERLINE
9. INSTALL 14" CL 350 DUCTILE IRON PUMP STATION WATERLINE
10. INSTALL 14" TEE WITH PLUG.
11. INSTALL 14"x10" ECCENTRIC REDUCER
12. INSTALL 4" SCH. 40 PVC SEWER LINE
15. INSTALL ¾" BATHROOM WATER SERVICE W/ TYPE K COPPER WATER LINE, 8" SADDLE, CORP. STOP. & FITTINGS AS REQUIRED
16. INSTALL 4" SCH. 40 PVC DRAIN LINE (YARD PIPING)
18. 20. INSTALL 18"x10" TEE AND 10" 90° ELL. SEE SITE PLAN (SHEET 6-1) FOR LAYOUT
19. INSTALL 10" CL 350 DUCTILE IRON PUMP STATION WATERLINE
21. INSTALL FIRE HYDRANT ASSEMBLY WITH TEE, VALVE AND APPURTANANCES AS REQUIRED.

CONNECTION POINT KEYED NOTES:

1. 6A-18" WATERLINE STATION STA. 179+70.33 / PUMP STATION 18" INLET WATERLINE STA. 0+00
2. 6A-8" WATERLINE STATION STA. 179+70.33 / PUMP STATION 8" WATERLINE STA. 0+00
3. 6B-18" WATERLINE STATION STA. 0+00 / PUMP STATION 18" OUTLET WATERLINE STA. 0+68
4. 14" WATERLINE STATION STA. 0+00 / PUMP STATION 8" WATERLINE STA. 0+00

CAUTION
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KURT A. SPOLAR — NEW MEXICO — 17637 — 3-28-16 — LICENSED PROFESSIONAL ENGINEER

ENGINEER: C:\Users\Public\Documents\engineer\Project 8\proj8 design.dwg

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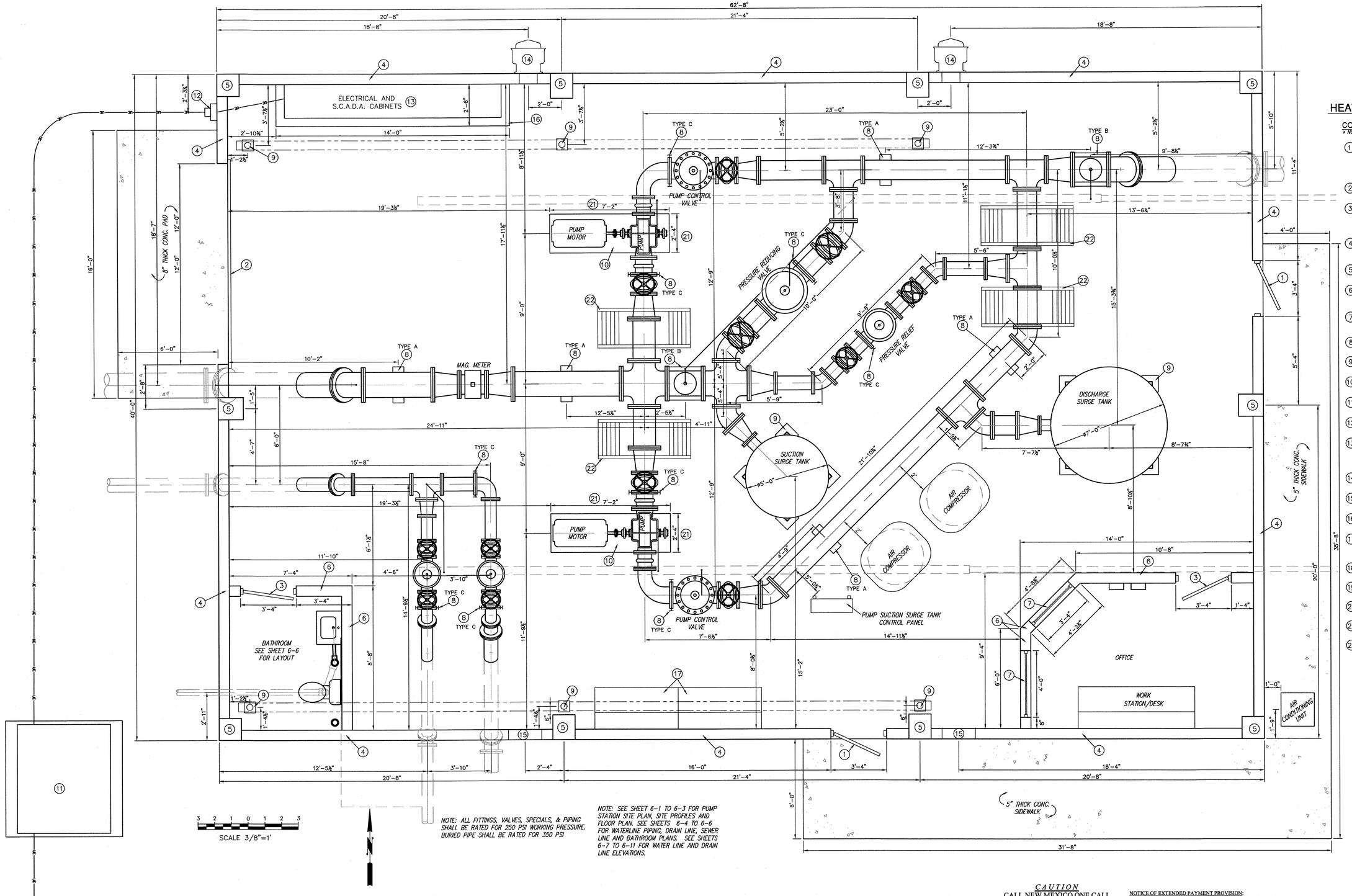
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CITY OF GALLUP
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HEATON PUMP STATION YARD PIPING PROFILES

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6 - 2



HEATON PUMP STATION

CONSTRUCTION KEYED NOTES:

* NOT SHOWN ON THIS SHEET

1. 3'-0"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO CITY WATER SYSTEM STANDARD.) PAINT AS DIRECTED W/ 2 COATS ALKYD ENAMEL.
2. 12'Wx10'H INSULATED ROLL UP TYPE SERVICE DOOR
3. 3'-0"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, AND HARDWARE. PAINT AS DIRECTED W/; 2 COATS ALKYD ENAMEL.
4. EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16
5. WALL AND CORNER SUPPORT COLUMNS (SEE DETAIL SHEETS 6-13 THROUGH 6-15
6. INTERIOR 8" NOMINAL CMU BLOCK WALL, 8'-0" HIGH, SEE DETAIL SHEET 6-14
7. OFFICE WINDOW, ¼" TEMPERED GLAZED GLASS IN STOREFRONT FRAME ANCHOR TO BLOCK WALL SEE DETAIL SHEET 6-18
8. PIPE SUPPORT PEDESTAL TYPE NOTED SEE DETAILS ON SHEET 6-15
9. BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)
10. PUMP PEDESTAL (SEE DETAILS ON SHEET 6-15)
11. NEW ELECTRICAL TRANSFORMER W/ PAD
12. NEW ELECTRICAL METER , DISCONNECT, AND SECONDARY ELECTRICAL SERVICE
13. ELECTRICAL GEAR: PANEL "A", S.C.A.D.A. SYSTEM CABINET AND JUNCTION BOX MOUNTED ON ELECTRICAL PAD AND WALL SEE ELECTRICAL PLAN SHEET 6-21 TO 6-25
14. WALL MOUNTED EXHAUST FAN. MOUNT TOP UNIT 10'-0" ABOVE FLOOR.
15. WALL MOUNTED MOTORIZED INLET DAMPER
16. CONCRETE ELECTRICAL PAD SEE DETAIL SHEET 6-15
17. HEAVY DUTY 30"x60" ADJUSTABLE HEIGHT STEEL WORK BENCH WITH SHELF & LOCKING DRAWER (LK GOODWIN CO. WA360-DS-AL OR EQUAL) TWO (2) REQUIRED
18. CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)
19. PIPING FLOOR PENETRATION (SEE DETAIL SHEET 6-15)
20. SURGE TANK CONTROL PANEL STAND (SEE DETAIL SHEET 6-18)
21. VERIFY DIMENSIONS WITH PUMP MANUFACTURER REQUIRMENTS.
22. FIBERGLASS 75" CLIMBING ANGLE OSHA CROSSOVER LADDER; FIBERGRATE GRATE CROSSOVER LADDER W/ 57" PLATFORM HEIGHT OR EQUAL (4 REQUIRED)

KURT A. SPOLAR NEW MEXICO 17637 LICENSED PROFESSIONAL ENGINEER 3-28-16

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HEATON PUMP STATION BUILDING FLOOR PLAN

SCALE 3/8"=1'

ENGINEER3: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg

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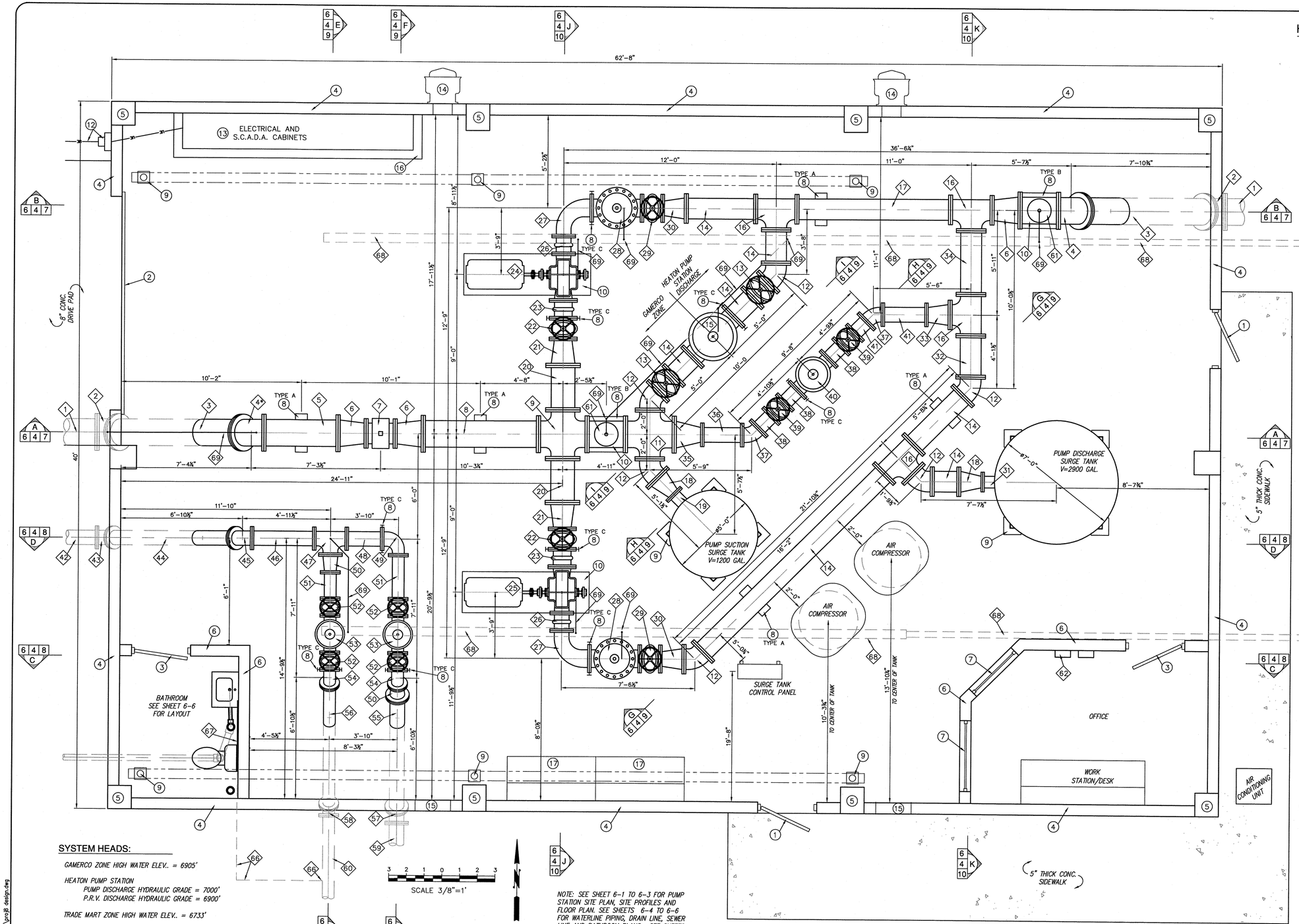
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CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
BUILDING FLOOR PLAN

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6 - 3



SYSTEM HEADS:

GAMERCO ZONE HIGH WATER ELEV.. = 6905'

HEATON PUMP STATION
PUMP DISCHARGE HYDRAULIC GRADE = 7000'
P.R.V. DISCHARGE HYDRAULIC GRADE = 6900'

TRADE MART ZONE HIGH WATER ELEV.. = 6733'

COUNTRY CLUB ZONE HIGH WATER ELEV.. = 6794'

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NOTE: SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.

NOTE: ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE. BURIED PIPE SHALL BE RATED FOR 350 PSI. BURIED PIPING SHALL HAVE RESTRAINED MJ JOINTS AND INTERIOR PIPING SHALL HAVE FLANGED JOINTS UNLESS OTHERWISE NOTED.

NOTE: ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.

NOTE: DRAIN/WASTE DISCHARGE LINE FOR AIR RELEASE VALVE VENTS AND VALVE DRAINS TO ATMOSPHERE SHALL BE NEATLY RUN ALONG STATION PIPING TO TRENCH DRAIN AS SHOWN. DRAIN LINES SHALL BE ATTACHED TO STATION PIPING OR FLOOR WITH HIGH QUALITY MATERIALS IN A WORKMANSHIP MANNER. SUPPORTS SHALL BE AT EACH END AND HAVE A MAXIMUM SPACING OF 2'.

KURT A. SPOLAR — NEW MEXICO — 17637 — 3-28-16 — LICENSED PROFESSIONAL ENGINEER

HEATON PUMP STATION WATER PIPING PLAN
SCALE 3/8"=1'

HEATONPUMP STATION KEYED NOTES:

WATER LINE FITTING AND PIPING KEYED NOTES:

* NOT SHOWN ON THIS SHEET

1. 18" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
2. 18" 45° MJ ELL
3. 18" FLG'DxPE CL. 350 D.I. SPOOL (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
4. 18" 45° FLG'D ELL
4* 18" 45° FLG'D ELL W/ TAPPED BOSS FOR AIR RELEASE ASSEMBLY
5. 18" FLG'D SPOOL (4'-2" LONG)
6. 18"x14" FLG'D REDUCER
7. 14" ELECTROMAGNTIC WATER METER W/ REMOTE DISPLAY, BADGER M2000 MAG METER W/ REMOTE M2000 AMPLIFIER OR EQUAL (CABLE LENGTH AS REQUIRED)
8. 18" FLG'D SPOOL (6'-6" LONG)
9. 18"x16" FLG'D CROSS
10. 18"x10" FLG'D BASE TEE
11. 18"x14" FLG'D CROSS
12. 14" 45° FLG'D ELL
13. 14" FLG'D RESILIENT WEDGE GATE VALVE
14. 14" FLG'D SPOOL (LENGTH AS REQUIRED)
15. 14" FLG'D PRESSURING REDUCING VALVE W/ SOLENOID SHUT-OFF CLA-VAL MODEL 93-01
16. 14" FLG'D TEE
17. 14" FLG'D SPOOL (8'-8" LONG)
18. 14"x8" FLG'D REDUCER
19. PUMP SUCTION SURGE TANK W/ 8" FLANGE CONNECT TO 14"x8" REDUCER AS REQUIRED
20. 16" FLG'D SPOOL (LENGTH AS REQUIRED)
21. 16"x12" FLG'D REDUCER
22. 12" FLG'D RESILIENT WEDGE GATE VALVE
23. 12" STEEL FLANGED EXPANSION JOINT (L=12") PROCO STYLE 242 (250 PSI RATED)
24. 12"x10" HORIZONTAL SPLIT CASE PUMP CLOCKWISE ROTATION
25. 12"x10" HORIZONTAL SPLIT CASE PUMP COUNTER-CLOCKWISE ROTATION
26. 10" STEEL FLANGED EXPANSION JOINT (L=12") PROCO STYLE 242 (250 PSI RATED)
27. 10"x12" LONG RADIUS REDUCING FLANGED 90° ELL
28. 12" SOLENOID CONTROLLED BOOSTER PUMP CONTROL VALVE (CLA-VAL 60-08 OR EQUAL)
29. 12" FLG'D RESILIENT WEDGE GATE VALVE
30. 12"X14" FLG'D REDUCER
31. PUMP DISCHARGE SURGE TANK W/ 8" FLANGE CONNECTION TO 14"x8" REDUCER AS REQUIRED
32. 14" FLG'D SPOOL (2'-4" LONG)
33. 14"x10" FLG'D REDUCER
34. 14" FLG'D SPOOL (3'-7" LONG)
35. 16"x10" FLG'D REDUCER
36. 10" FLG'D SPOOL (2'-3" LONG)
37. 10" FLG'D 45° ELL
38. 10" FLG'D SPOOL (12" LONG)
39. 10" FLG'D RESILIENT WEDGE GATE VALVE
40. 10" FLG'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01 W/ LIMIT SWITCH OR EQUAL
41. 10" FLG'D SPOOL (LENGTH AS REQUIRED)
42. 10" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
43. 10" 45° MJ ELL
44. 10" FLG'DxPE CL. 350 D.I. SPOOL (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
45. 10" 45° FLG'D ELL
46. 10" FLG'D SPOOL (3'-6" LONG)
47. 10" FLG'D TEE W/ TAPPED BOSS FOR AIR RELEASE VALVE ASSEMBLY
48. 10" FLG'D SPOOL (2'-0" LONG)
49. 10"x8" FLG'D SHORT RADIUS REDUCING 90° ELL
50. 10"x8" FLG'D REDUCER
51. 8" FLG'D SPOOL (LENGTH AS REQUIRED)
52. 8" FLG'D RESILIENT WEDGE GATE VALVE
53. 8" FLG'D PRESSURE REDUCING VALVE WITH LOW-FLOW BYPASS CLA-VAL MODEL 90-48 OR EQUAL
54. 8" FLG'D 45° ELL WITH PLUGGED 1" TAPPED BOSS
55. 10" FLG'DXPE CL. 350 D.I. SPOOL (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
56. 8" FLG'DXPE CL. 350 D.I. SPOOL (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
57. 10" 45° MJ ELL
58. 8" 45° MJ ELL
59. 10" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
60. 8" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
61. 10" BLIND FLANGE TAPPED AS REQUIRED FOR AIR RELEASE VALVE ASSEMBLY
62. FLOW METER DISPLAY UNIT AND AMPLIFIER W/ 4-20 mA OUTPUT AND SCALED PULSE OUTPUT FOR SCADA SYSTEM, BADGER M2000 AMPLIFIER OR EQUAL
63* 2" DUAL BODY COMBINATION AIR VALVE * (VAL-MATIC 202C.3 OR EQUAL) SEE SHEET 6-8
64* LIQUID FILLED PRESSURE GAUGE, MIKA 213.53 OR EQUAL, PRESSURE RANGE AS NOTED. PROVIDE ONE (1) ADDITIONAL - 0 TO 200 PSI SPARE GAUGE
65* 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 1015.22.9 OR EQUAL) SEE SHEET 6-8
66. ¾" SOFT TYPE K COPPER LINE WITH DOUBLE STRAP BRASS SADDLE, CORPORATION STOP, AND CURB STOP FOR BATHROOM POTABLE WATER SERVICE
67. ¾" RIGID TYPE K COPPER LINE WITH VALVES, FITTINGS AND WALL PENETRATIONS AS REQUIRED FOR BATHROOM POTABLE WATER SERVICE
68. TRENCH DRAIN SYSTEM SEE SHEETS 6-5 & 6-11 FOR DRAIN LINE DETAILS
69. DRAIN/WASTE DISCHARGE LINES ATTACH TO STATION PIPING PER NOTE THIS SHEET. SEE SHEETS 6-7 THROUGH 6-10

CONSTRUCTION KEYED NOTES:

1. 3'-0"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO CITY WATER SYSTEM STANDARD.) PAINT AS DIRECTED W/ 2 COATS ALKYD ENAMEL.
2. 12'Wx10'H INSULATED ROLL UP TYPE SERVICE DOOR
3. 3'-0"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, AND HARDWARE. PAINT AS DIRECTED W/: 2 COATS ALKYD ENAMEL.
4. EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL. SEE DETAILS SHEETS 6-13 THROUGH 6-16
5. WALL AND CORNER SUPPORT COLUMNS (SEE DETAIL SHEETS 6-13 THROUGH 6-15)
6. INTERIOR 8" NOMINAL CMU BLOCK WALL, 8'-0" HIGH, SEE DETAIL SHEET 6-14
7. OFFICE WINDOW, ¼" TEMPERED GLAZED GLASS IN STOREFRONT FRAME ANCHOR TO BLOCK WALL. SEE DETAIL SHEET 6-18
8. PIPE SUPPORT PEDESTAL TYPE NOTED SEE DETAILS ON SHEET 6-15
9. BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)
10. PUMP PEDESTAL (SEE DETAILS ON SHEET 6-15)
12. NEW ELECTRICAL METER , DISCONNECT, AND SECONDARY ELECTRICAL SERVICE
13. ELECTRICAL GEAR: PANEL "A", S.C.A.D.A. SYSTEM CABINET AND JUNCTION BOX MOUNTED ON ELECTRICAL PAD AND WALL SEE ELECTRICAL PLAN SHEET 6-21 TO 6-23
14. WALL MOUNTED EXHAUST FAN. MOUNT TOP UNIT 10'-0" ABOVE FLOOR.
15. WALL MOUNTED MOTORIZED INLET DAMPER
16. CONCRETE ELECTRICAL PAD SEE DETAIL SHEET 6-15
17. HEAVY DUTY 30"x60" ADJUSTABLE HEIGHT STEEL WORK BENCH WITH SHELF & LOCKING DRAWER (LK GOODWIN CO. WA360-DS-AL OR EQUAL) TWO (2) REQUIRED

DePAULI ENGINEERING & SURVEYING LLC
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307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulienginering

for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE

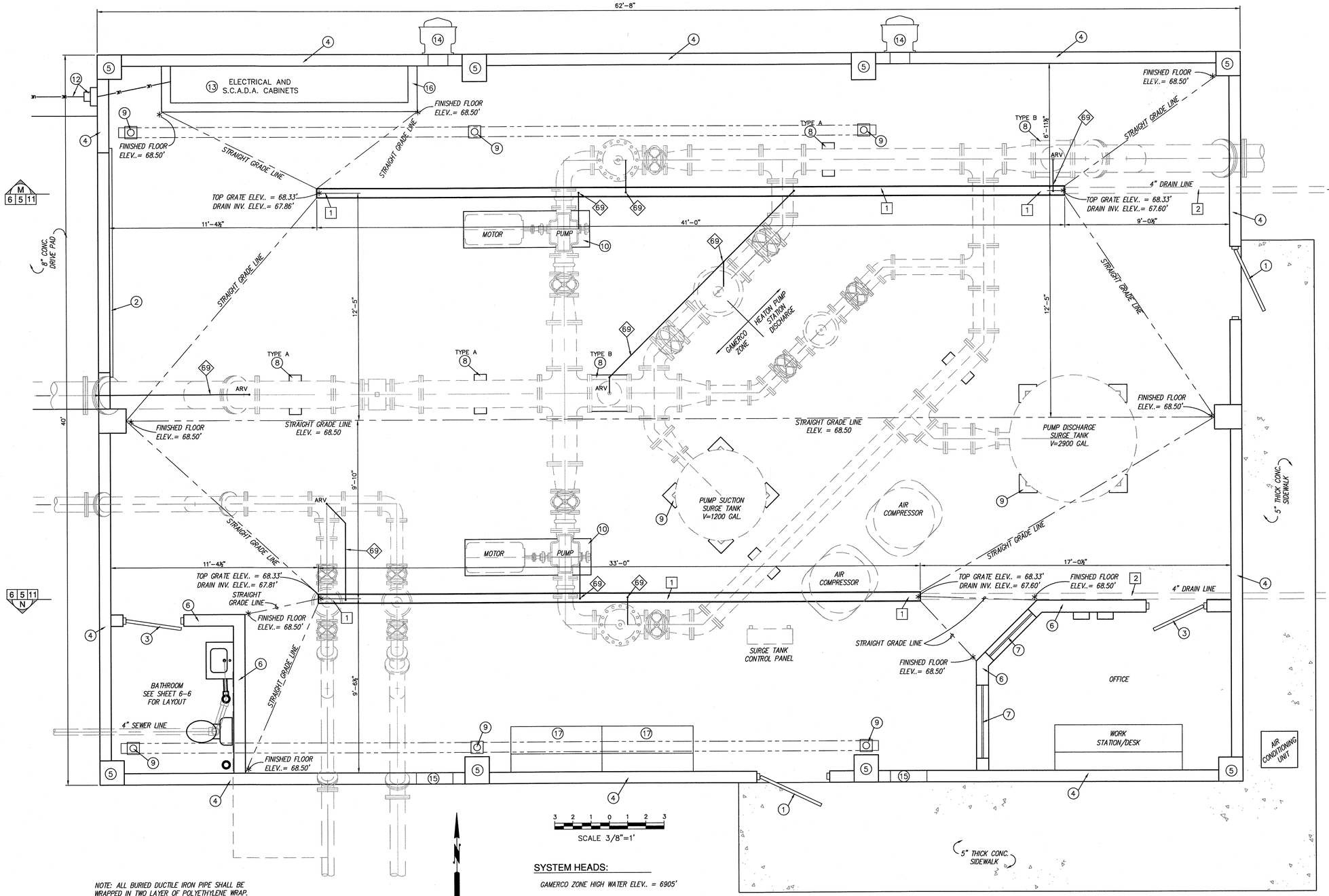
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION WATER PIPING PLAN

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6 - 4

ENGINEER:S C:\Users\Public\Documents\engineer\Project 81\pro38_design.dwg



SCALE 3/8"=1'

NOTE: ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

SYSTEM HEADS:

GAMERCO ZONE HIGH WATER ELEV.. = 6905'

HEATON PUMP STATION
PUMP DISCHARGE HYDRAULIC GRADE = 7000'
P.R.V. DISCHARGE HYDRAULIC GRADE = 6900'

TRADE MART ZONE HIGH WATER ELEV.. = 6733'

COUNTRY CLUB ZONE HIGH WATER ELEV.. = 6794'

NOTE: SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.

NOTE: ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE. BURIED PIPE SHALL BE RATED FOR 350 PSI. BURIED PIPING SHALL HAVE RESTRAINED MJ JOINTS AND INTERIOR PIPING SHALL HAVE FLANGED JOINTS UNLESS OTHERWISE NOTED

NOTE: DRAIN/WASTE DISCHARGE LINE FOR AIR RELEASE VALVE VENTS AND VALVE DRAINS TO ATMOSPHERE SHALL BE NEATLY RUN ALONG STATION PIPING TO TRENCH DRAIN AS SHOWN. DRAIN LINES SHALL BE ATTACHED TO STATION PIPING OR FLOOR WITH HIGH QUALITY MATERIALS IN A WORKMANSHIP MANNER. SUPPORTS SHALL BE AT EACH END AND HAVE A MAXIMUM SPACING OF 2'.

HEATON PUMP STATION KEYED NOTES:

DRAIN LINE AND SEWER LINE FITTING AND PIPING KEYED NOTES:

* NOT SHOWN ON THIS SHEET

[1] PRE-SLOPED POLYPROPYLENE TRENCH DRAIN SYSTEM W/ H20 LOAD RATED DUCTILE IRON FRAME AND ALL CONNECTIONS AND APPURTENANCES. WATTS DEAD LEVEL D OR EQUAL.

[2] 4" SCH. 40 PVC DRAIN LINE. GRADE FROM TRENCH DRAIN TO PUMP STATION DRAIN PAD.

CONSTRUCTION KEYED NOTES:

* NOT SHOWN ON THIS SHEET

(1) 3'-8"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, HARDWARE AND LOCK. (LOCK TO BE KEYED TO CITY WATER SYSTEM STANDARD.) PAINT AS DIRECTED W/ 2 COATS ALKYD ENAMEL.

(2) 12'Wx10'H INSULATED ROLL UP TYPE SERVICE DOOR

(3) 3'-0"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, AND HARDWARE. PAINT AS DIRECTED W/ 2 COATS ALKYD ENAMEL.

(4) EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16

(5) WALL AND CORNER SUPPORT COLUMNS (SEE DETAIL SHEETS 6-13 THROUGH 6-15)

(6) INTERIOR 8" NOMINAL CMU BLOCK WALL, 8'-0" HIGH, SEE DETAIL SHEET 6-14

(7) OFFICE WINDOW ¼" TEMPERED GLAZED GLASS IN STOREFRONT FRAME ANCHOR TO BLOCK WALL. SEE DETAIL SHEET 6-18

(8) PIPE SUPPORT PEDESTAL TYPE NOTED SEE DETAILS ON SHEET 6-15

(9) BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)

(10) PUMP PEDESTAL (SEE DETAILS ON SHEET 6-15)

(11) NEW ELECTRICAL TRANSFORMER W/ PAD

(12) NEW ELECTRICAL METER , DISCONNECT, AND SECONDARY ELECTRICAL SERVICE

(13) ELECTRICAL GEAR: PANEL "A", S.C.A.D.A. SYSTEM CABINET AND JUNCTION BOX MOUNTED ON ELECTRICAL PAD AND WALL SEE ELECTRICAL PLAN SHEET 6-21 TO 6-25

(14) WALL MOUNTED EXHAUST FAN. MOUNT TOP UNIT 10'-0" ABOVE FLOOR.

(15) WALL MOUNTED MOTORIZED INLET DAMPER

(16) CONCRETE ELECTRICAL PAD SEE DETAIL SHEET 6-16

(17) HEAVY DUTY 30"x60" ADJUSTABLE HEIGHT STEEL WORK BENCH WITH SHELF & LOCKING DRAWER (LK GOODWIN CO. WA360-DS-AL OR EQUAL) TWO (2) REQUIRED

(18) CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)

(19) PIPING FLOOR PENETRATION (SEE DETAIL SHEET 6-15)

(20) SURGE TANK CONTROL PANEL STAND (SEE DETAIL SHEET 6-18)

WATER LINE FITTING AND PIPING KEYED NOTES:

[69] DRAIN/WASTE DISCHARGE LINES ATTACH TO STATION PIPING PER NOTE THIS SHEET. SEE SHEETS 6-7 THROUGH 6-10.

KURT A. SPOLAR NEW MEXICO 17637 3-30-15 LICENSED PROFESSIONAL ENGINEER

HEATON PUMP STATION DRAIN LINE AND SEWER PIPING PLAN

SCALE 3/8"=1'

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulieengineering

for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

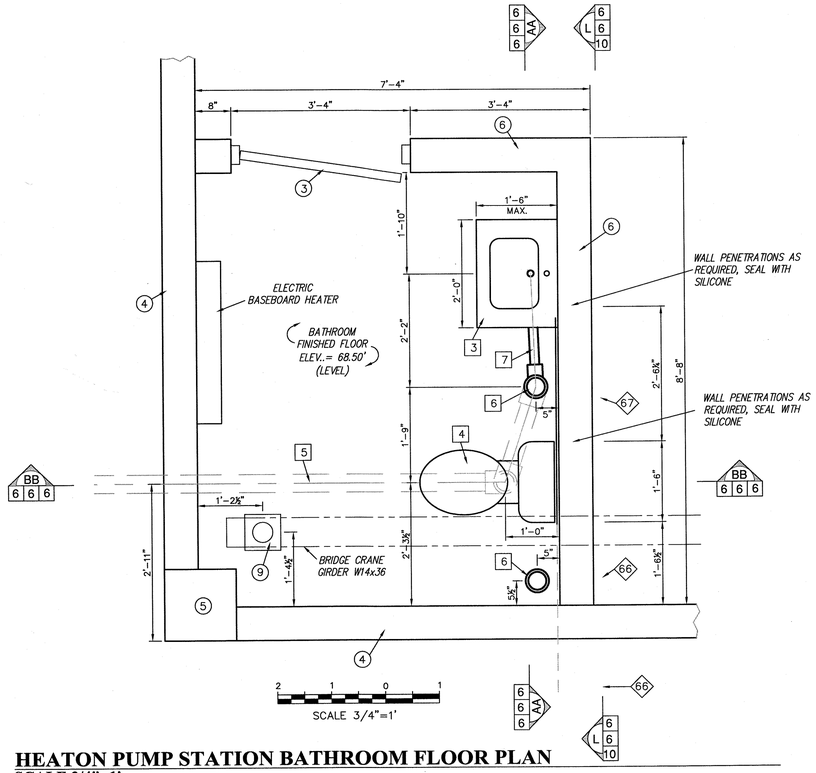
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
FLOOR DRAIN SYSTEM PLAN

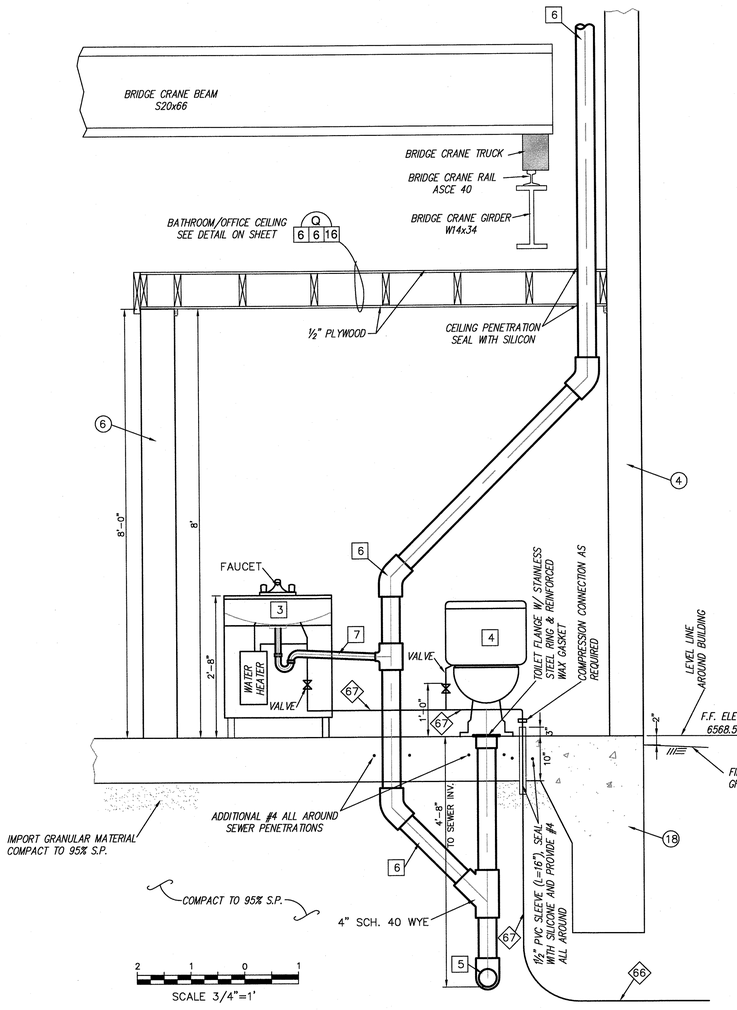
SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6 - 5

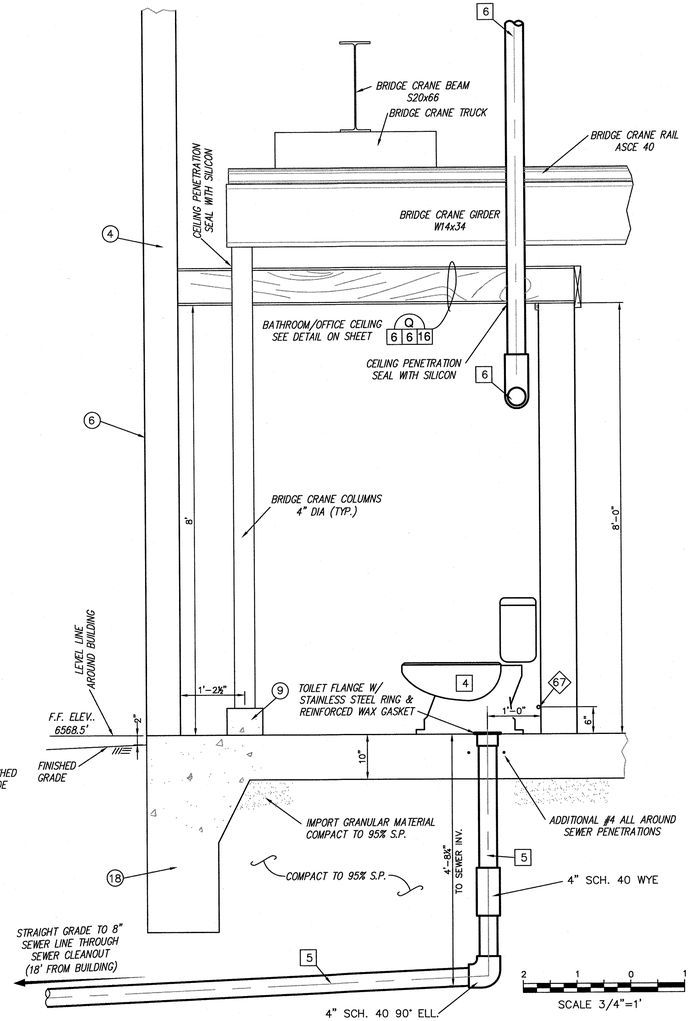
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HEATON PUMP STATION BATHROOM FLOOR PLAN
SCALE 3/4"=1'



AA 6 6 6 HEATON PUMP STATION BATHROOM ELEVATION "AA"
SCALE 3/4"=1'



BB 6 6 6 HEATON PUMP STATION BATHROOM ELEVATION "BB"
SCALE 3/4"=1'

HEATON PUMP STATION KEYED NOTES:

DRAIN LINE AND SEWER LINE FITTING AND PIPING KEYED NOTES:
* NOT SHOWN ON THIS SHEET

1. PRE-SLOPED POLYPROPYLENE TRENCH DRAIN SYSTEM W/ H20 LOAD RATED DUCTILE IRON FRAME AND ALL CONNECTIONS AND APPURTENANCES. WATTS DEAD LEVEL D OR EQUAL.
2. 4" SCH. 40 PVC DRAIN LINE. GRADE FROM TRENCH DRAIN TO PUMP STATION DRAIN PAD.
3. STAINLESS STEEL VANITY W/ SINK, FAUCET, INSTANTANEOUS WATER HEATER, COPPER PIPING, GATE VALVES AND CONNECTIONS TO ¾" COPPER WATER SERVICE LINES AT WALL PENETRATIONS AS REQUIRED
4. VITREOUS CHINA ELONGATED TOILET WITH HEAVY DUTY PLASTIC TOILET SEAT
5. 4" SCH. 40 PVC SEWER LINE WITH FITTINGS AS REQUIRED.
6. 4" SCH. 40 PVC DRAIN LINE VENT PIPING & FITTING ATTACH TO WALL AS REQUIRED
7. 17 GAUGE 15½"x6" LAVATORY, DRAIN, P-TRAP, AND SCH. 40 PVC DRAIN PIPING & FITTING AS REQUIRED FOR CONNECTION TO VENT LINE (SEE ELEVATION "AA" FOR DETAILS)

WATER LINE FITTING AND PIPING KEYED NOTES:

66. ¾" SOFT TYPE K COPPER LINE WITH DOUBLE STRAP BRASS SADDLE, CORPORATION STOP, AND CURB STOP FOR BATHROOM POTABLE WATER SERVICE
67. ¾" RIGID TYPE K COPPER LINE WITH VALVES, FITTINGS AND PENETRATIONS AS REQUIRED FOR BATHROOM POTABLE WATER SERVICE

CONSTRUCTION KEYED NOTES:

3. 3'-0"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, AND HARDWARE. PAINT AS DIRECTED W/; 2 COATS ALKYD ENAMEL.
4. EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16
5. WALL AND CORNER SUPPORT COLUMNS (SEE DETAIL SHEETS 6-13 THROUGH 6-15)
6. INTERIOR 8" NOMINAL CMU BLOCK WALL, 8'-0" HIGH, SEE DETAIL SHEET 6-14
9. BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)
18. CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)

SYSTEM HEADS:

GAMERCO ZONE HIGH WATER ELEV. = 6905'

HEATON PUMP STATION
PUMP DISCHARGE HYDRAULIC GRADE = 7000'
P.R.V. DISCHARGE HYDRAULIC GRADE = 6900'

TRADE MART ZONE HIGH WATER ELEV. = 6733'

COUNTRY CLUB ZONE HIGH WATER ELEV.. = 6794'

NOTE: ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.

NOTE: SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.

NOTE: ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE. BURIED PIPE SHALL BE RATED FOR 350 PSI. BURIED PIPING SHALL HAVE RESTRAINED MJ JOINTS AND INTERIOR PIPING SHALL HAVE FLANGED JOINTS UNLESS OTHERWISE NOTED

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

ENGINEER: C:\Users\Public\Documents\engineer\Project 8\proj8 design.dwg

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for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

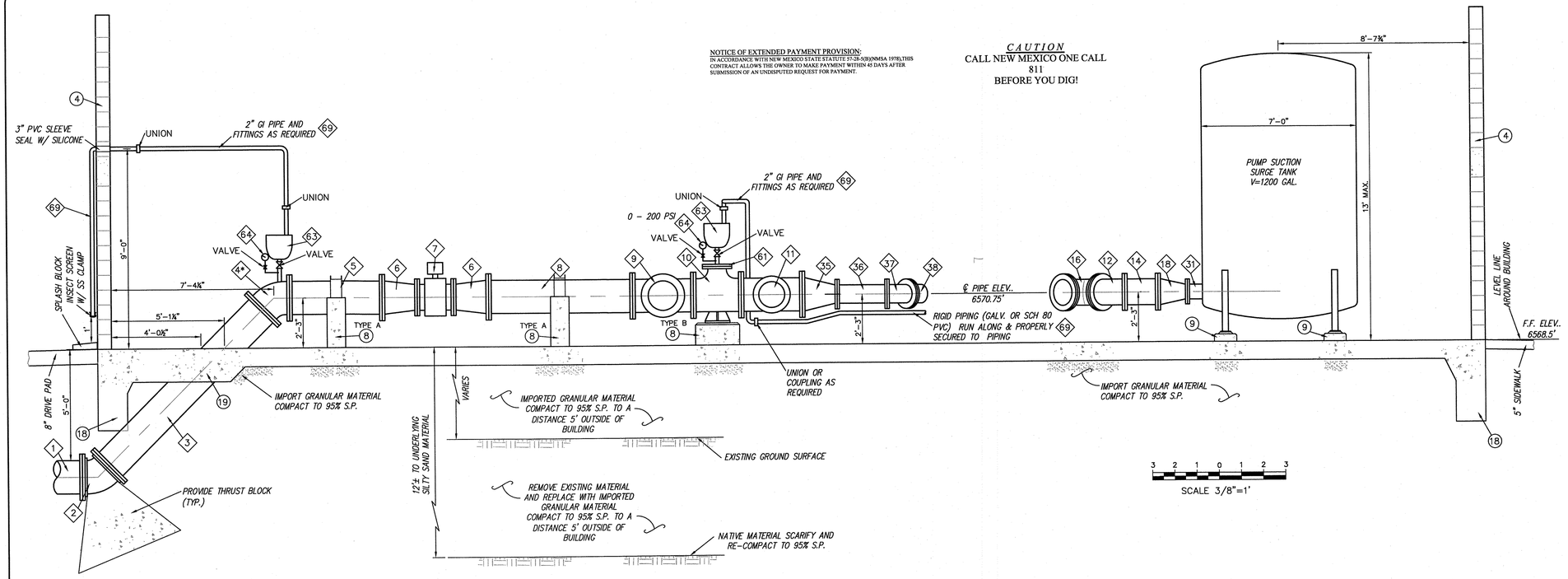
HEATON PUMP STATION
BATHROOM PLAN & ELEVATIONS

SCALE:	SHOWN
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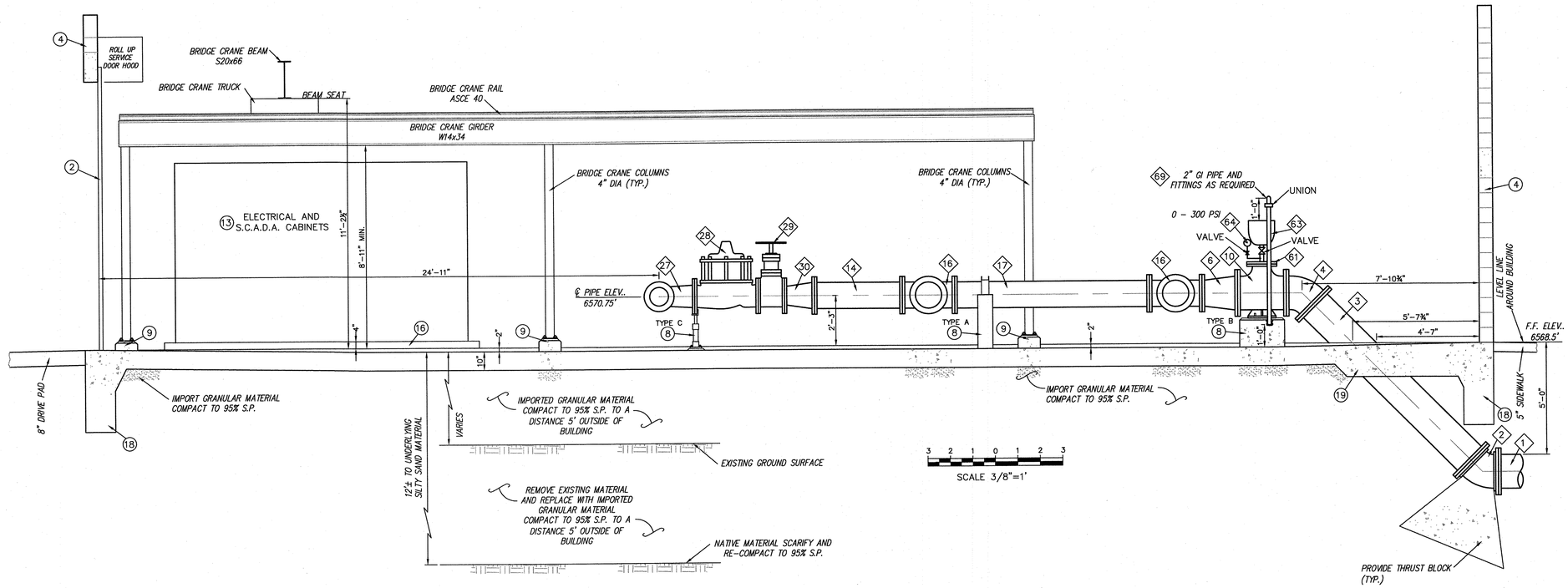
SHEET 6 - 6

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A 6 4 7 HEATON PUMP STATION WATER PIPING ELEVATION "A"
SCALE 3/8"=1'



B 6 4 7 HEATON PUMP STATION WATER PIPING ELEVATION "B"
SCALE 3/8"=1'

HEATON PUMP STATION KEYED NOTES:

WATER LINE FITTING AND PIPING KEYED NOTES:

1. 16" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
2. 16" 45° MJ ELL.
3. 16" FLG'D x PE CL. 350 D.I. SPOOL, FLG. x PE (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
4. 16" 45° FLG'D ELL.
4*. 16" 45° FLG'D ELL. W/ TAPPED BOSS FOR AIR RELEASE ASSEMBLY
5. 16" FLG'D SPOOL (4'-2" LONG)
6. 16"x14" FLG'D REDUCER
7. 14" ELECTROMAGNTIC WATER METER W/ REMOTE DISPLAY, BADGER M2000 MAG METER W/ REMOTE M2000 AMPLIFIER OR EQUAL (CABLE LENGTH AS REQUIRED)
8. 16" FLG'D SPOOL (6'-6" LONG)
9. 16"x16" FLG'D CROSS
10. 16"x10" FLG'D BASE TEE
11. 16"x14" FLG'D CROSS
12. 14" 45° FLG'D ELL.
14. 14" FLG'D SPOOL (LENGTH AS REQUIRED)
16. 14" FLG'D TEE
17. 14" FLG'D SPOOL (8'-8" LONG)
27. 10"x12" LONG RADIUS REDUCING 90° ELL.
28. 12" SOLENOID CONTROLLED BOOSTER PUMP CONTROL VALVE (CLA-VAL 60-08 OR EQUAL)
29. 12" FLG'D RESILIENT WEDGE GATE VALVE
30. 12"x14" FLG'D REDUCER
31. PUMP DISCHARGE SURGE TANK W/ 8" FLANGE CONNECTION TO 14"x8" REDUCER AS REQUIRED
35. 18"x10" FLG'D REDUCER
36. 10" FLG'D SPOOL (2'-3" LONG)
37. 10" FLG'D 45° ELL.
38. 10" FLG'D SPOOL (12" LONG)
61. 10" BLIND FLANGE TAPPED AS REQUIRED FOR AIR RELEASE VALVE ASSEMBLY
63. 2" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 202C.3 OR EQUAL) SEE SHEET 6-8
64. LIQUID FILLED PRESSURE GAUGE, WIKA 213.53 OR EQUAL, PRESSURE RANGE AS NOTED. PROVIDE ONE (1) ADDITIONAL - 0 TO 200 PSI SPARE GAUGE
69. DRAIN/WASTE DISCHARGE LINES ATTACH TO STATION PIPING PER NOTE THIS SHEET. SEE SHEETS 6-7 THROUGH 6-10

NOTES:
1. SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.
2. ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE. BURIED PIPE SHALL BE RATED FOR 350 PSI. BURIED PIPING SHALL HAVE RESTRAINED MJ JOINTS AND INTERIOR PIPING SHALL HAVE FLANGED JOINTS UNLESS OTHERWISE NOTED
3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.
4. DRAIN/WASTE DISCHARGE LINE FOR AIR RELEASE VALVE VENTS AND VALVE DRAINS TO ATMOSPHERE SHALL BE NEATLY RUN ALONG STATION PIPING TO TRENCH DRAIN AS SHOWN. DRAIN LINES SHALL BE ATTACHED TO STATION PIPING OR FLOOR WITH HIGH QUALITY MATERIALS IN A WORKMANSHIP MANNER. SUPPORTS SHALL BE AT EACH END AND HAVE A MAXIMUM SPACING OF 2'.
5. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

CONSTRUCTION KEYED NOTES:

2. 12'Wx10'H INSULATED ROLL UP TYPE SERVICE DOOR
4. EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16
8. PIPE SUPPORT PEDESTAL TYPE NOTED SEE DETAILS ON SHEET 6-15
9. BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)
13. ELECTRICAL GEAR: PANEL "A", S.C.A.D.A. SYSTEM CABINET AND JUNCTION BOX MOUNTED ON ELECTRICAL PAD AND WALL SEE ELECTRICAL PLAN SHEET 6-21 TO 6-25
16. CONCRETE ELECTRICAL PAD SEE DETAIL SHEET 6-15
18. CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)
19. PIPING FLOOR PENETRATION (SEE DETAIL SHEET 6-15)

SYSTEM HEADS:

GAMERCO ZONE HIGH WATER ELEV.. = 6905'

HEATON PUMP STATION
PUMP DISCHARGE HYDRAULIC GRADE = 7000'
P.R.V. DISCHARGE HYDRAULIC GRADE = 6900'

TRADE MART ZONE HIGH WATER ELEV.. = 6733'

COUNTRY CLUB ZONE HIGH WATER ELEV.. = 6794'

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

ENGINEERS: C:\Users\Public\Documents\engineer\Project_8\proj8_design.dwg

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NO.	BY	DATE

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NAVAJO GALLUP WATER SUPPLY PROJECT
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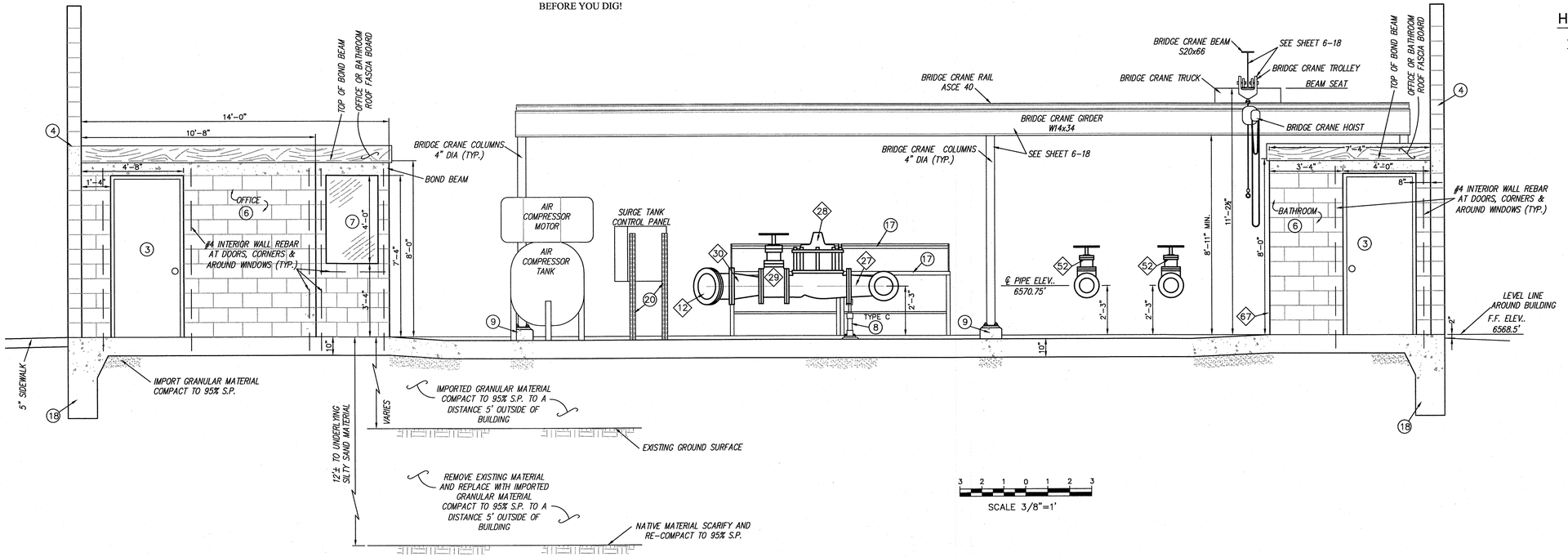
HEATON PUMP STATION
WATER PIPING ELEVATIONS

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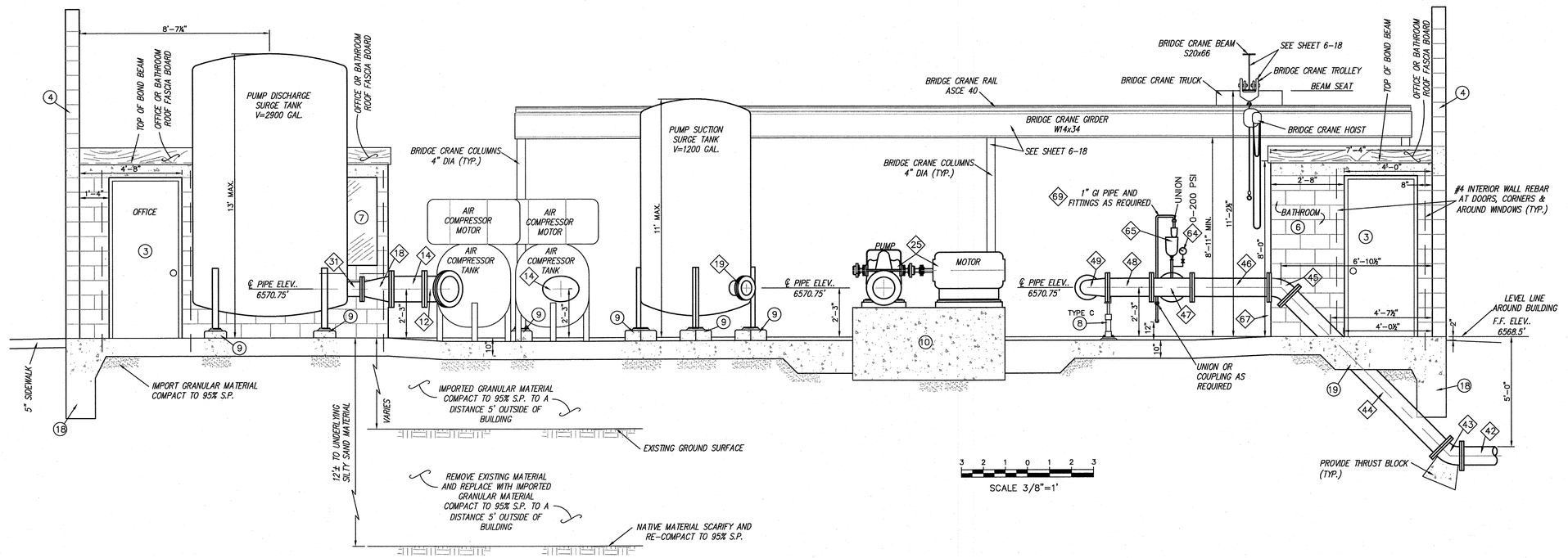
SHEET 6 - 7

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C 648 HEATON PUMP STATION WATER PIPING ELEVATION "C"
SCALE 3/8"=1'



D 648 HEATON PUMP STATION WATER PIPING ELEVATION "D"
SCALE 3/8"=1'

HEATON PUMP STATION KEYED NOTES:

WATER LINE FITTING AND PIPING KEYED NOTES:

12	14" 45° FLG'D ELL.
14	14" FLG'D SPOOL (LENGTH AS REQUIRED)
18	14"x8" FLG'D REDUCER
19	PUMP SUCTION SURGE TANK W/ 8" FLANGE CONNECT TO 14"x8" REDUCER AS REQUIRED
25	12"x10" HORIZONTAL SPLIT CASE PUMP COUNTER-CLOCKWISE ROTATION
27	10"x12" LONG RADIUS REDUCING 90° ELL.
28	12" SOLENOID CONTROLLED BOOSTER PUMP CONTROL VALVE (CLA-VAL 60-08 OR EQUAL)
29	12" FLG'D RESILIENT WEDGE GATE VALVE
30	12"X14" FLG'D REDUCER
31	PUMP DISCHARGE SURGE TANK W/ 8" FLANGE CONNECTION TO 14"x8" REDUCER AS REQUIRED
42	10" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
43	10" 45° MJ ELL.
44	10" FLG'D×PE CL. 350 D.I. SPOOL (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
45	10" 45° FLG'D ELL.
46	10" FLG'D SPOOL (3'-6" LONG)
47	10" FLG'D TEE W/ TAPPED BOSS FOR AIR RELEASE VALVE ASSEMBLY
48	10" FLG'D SPOOL (2'-0" LONG)
49	10"x8" FLG'D SHORT RADIUS REDUCING 90° ELL.
52	8" FLG'D RESILIENT WEDGE GATE VALVE
64	LIQUID FILLED PRESSURE GAUGE, WIKA 213.53 OR EQUAL, PRESSURE RANGE AS NOTED. PROVIDE ONE (1) ADDITIONAL – 0 TO 200 PSI SPARE GAUGE
65	1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL) SEE SHEET 6-8
67	¾" RIGID TYPE K COPPER LINE WITH VALVES, FITTINGS AND WALL PENETRATIONS AS REQUIRED FOR BATHROOM POTABLE WATER SERVICE
69	DRAIN/WASTE DISCHARGE LINES ATTACH TO STATION PIPING PER NOTE THIS SHEET. SEE SHEETS 6-7 THROUGH 6-10

NOTES:
1. SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.
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3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.
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5. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

CONSTRUCTION KEYED NOTES:

3	3'-0"x7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, AND HARDWARE. PAINT AS DIRECTED W/ 2 COATS ALKYD ENAMEL.
4	EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16
6	INTERIOR 8" NOMINAL CMU BLOCK WALL, 8'-0" HIGH, SEE DETAIL SHEET 6-14
7	OFFICE WINDOW ¼" TEMPERED GLAZED GLASS IN STOREFRONT FRAME ANCHOR TO BLOCK WALL. SEE DETAIL SHEET 6-18
8	PIPE SUPPORT PEDESTAL TYPE NOTED SEE DETAILS ON SHEET 6-15
9	BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)
10	PUMP PEDESTAL (SEE DETAILS ON SHEET 6-15)
17	HEAVY DUTY 30"x60" ADJUSTABLE HEIGHT STEEL WORK BENCH WITH SHELF & LOCKING DRAWER (LK GOODWIN CO. WA360-DS-AL OR EQUAL) TWO (2) REQUIRED
18	CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)
19	PIPING FLOOR PENETRATION (SEE DETAIL SHEET 6-15)
20	SURGE TANK CONTROL PANEL STAND (SEE DETAIL SHEET 6-16)

SYSTEM HEADS:

GAMERCO ZONE HIGH WATER ELEV.. = 6905'

HEATON PUMP STATION
PUMP DISCHARGE HYDRAULIC GRADE = 7000'
P.R.V. DISCHARGE HYDRAULIC GRADE = 6900'

TRADE MART ZONE HIGH WATER ELEV.. = 6733'

COUNTRY CLUB ZONE HIGH WATER ELEV.. = 6794'

KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

ENGINEER3: c:\Users\Public\Documents\engineer\Project 8\proB_design.dwg

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulliengineering

for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

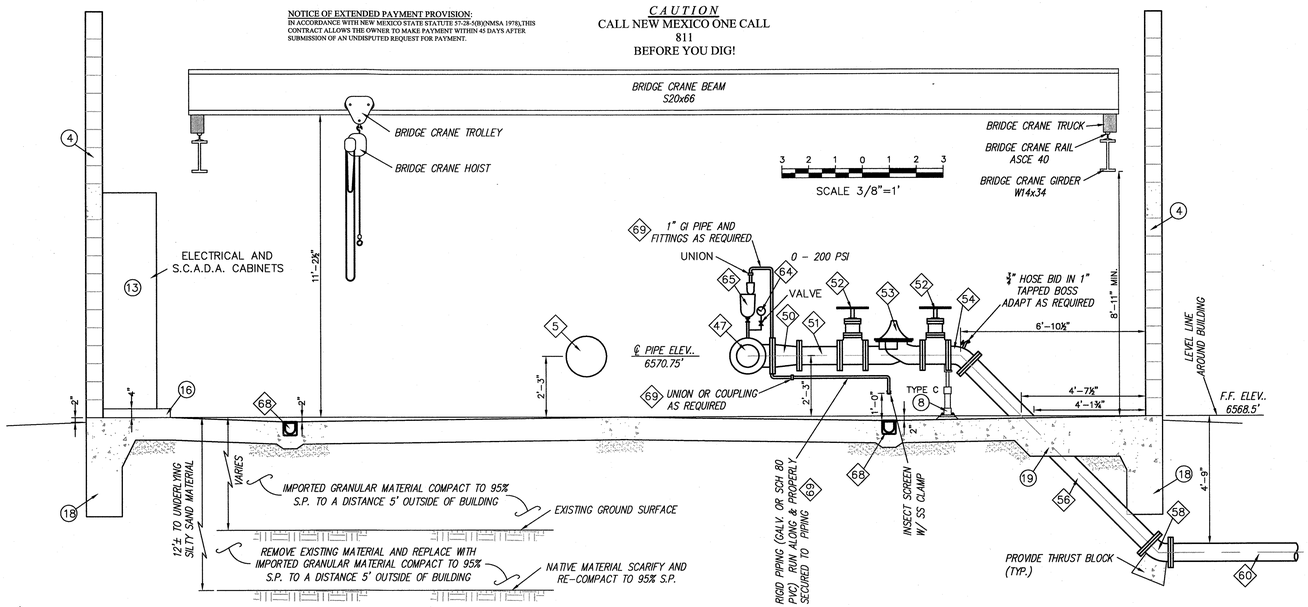
HEATON PUMP STATION WATER PIPING ELEVATIONS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

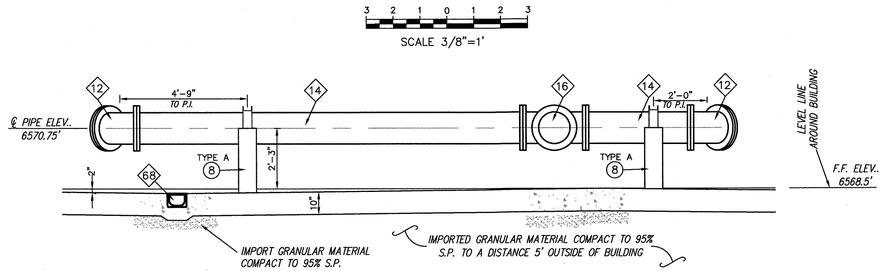
SHEET 6 - 8

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

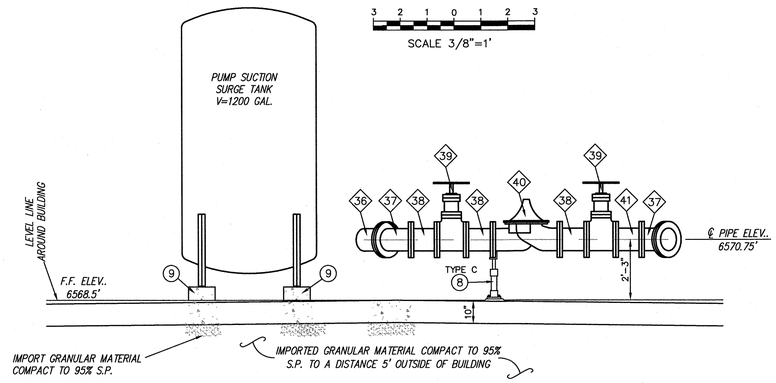
CAUTION
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811
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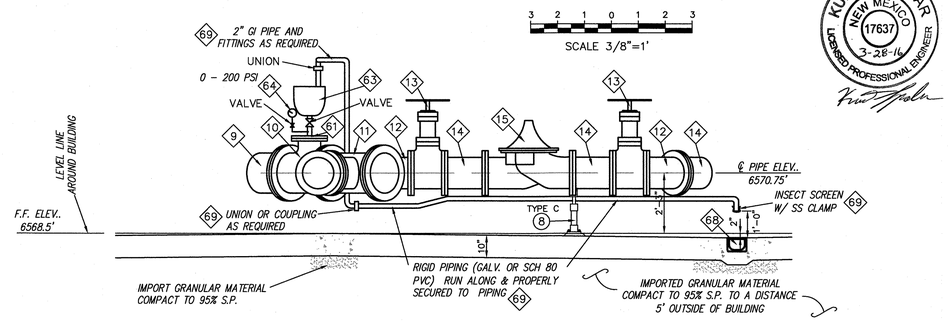
E 6 4 9 HEATON PUMP STATION WATER PIPING ELEVATION "E"
SCALE 3/8"=1'

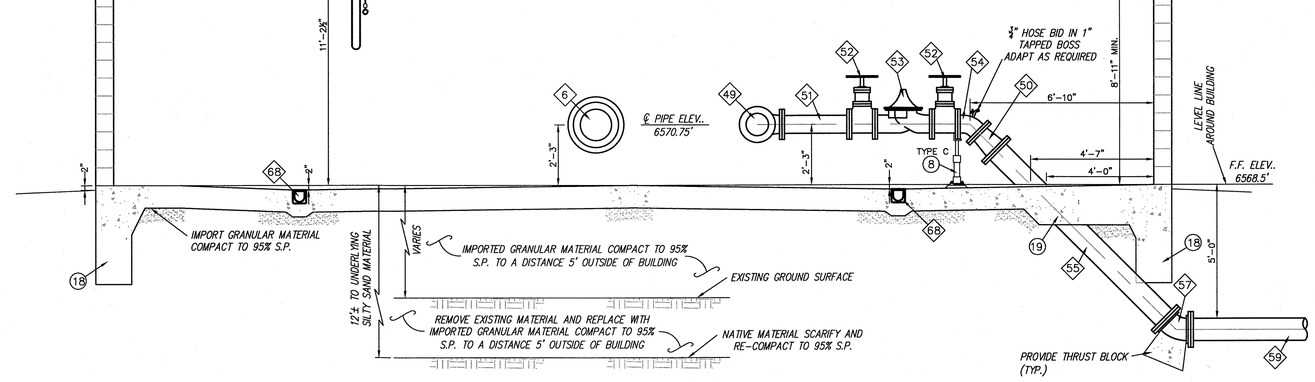


G 6 4 9 HEATON PUMP STATION WATER PIPING ELEVATION "G"
SCALE 3/8"=1'



H 6 4 9 HEATON PUMP STATION WATER PIPING ELEVATION "H"
SCALE 3/8"=1'





F 6 4 9 HEATON PUMP STATION WATER PIPING ELEVATION "F"
SCALE 3/8"=1'

I 6 4 9 HEATON PUMP STATION WATER PIPING ELEVATION "I"
SCALE 3/8"=1'

HEATON PUMP STATION KEYED NOTES:

WATER LINE FITTING AND PIPING KEYED NOTES:

5. 18" FLG'D SPOOL (4'-2" LONG)
6. 18"x14" FLG'D REDUCER
9. 18"x16" FLG'D CROSS
10. 18"x10" FLG'D BASE TEE
11. 18"x14" FLG'D CROSS
12. 14" 45° FLG'D ELL
13. 14" FLG'D RESILIENT WEDGE GATE VALVE
14. 14" FLG'D SPOOL (LENGTH AS REQUIRED)
15. 14" FLG'D PRESSURING REDUCING VALVE W/ SOLENOID SHUT-OFF CLA-VAL MODEL 93-01
16. 14" FLG'D TEE
36. 10" FLG'D SPOOL (2'-3" LONG)
37. 10" FLG'D 45° ELL
38. 10" FLG'D SPOOL (12" LONG)
39. 10" FLG'D RESILIENT WEDGE GATE VALVE
40. 10" FLG'D PRESSURE RELIEF VALVE CLA-VAL MODEL 50-01 OR EQUAL
41. 10" FLG'D SPOOL (LENGTH AS REQUIRED)
47. 10" FLG'D TEE W/ TAPPED BOSS FOR AIR RELEASE VALVE ASSEMBLY
49. 10"x8" FLG'D SHORT RADIUS REDUCING 90° ELL.
50. 10"x8" FLG'D REDUCER
51. 8" FLG'D SPOOL (LENGTH AS REQUIRED)
52. 8" FLG'D RESILIENT WEDGE GATE VALVE
53. 8" FLG'D PRESSURE REDUCING VALVE WITH LOW-FLOW BYPASS CLA-VAL MODEL 90-48 OR EQUAL
54. 8" FLG'D 45° ELL. WITH PLUGGED 1" TAPPED BOSS
55. 10" FLG'D/XPE CL. 350 D.I. SPOOL (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
56. 8" FLG'D/XPE CL. 350 D.I. SPOOL (WRAP BURIED PORTION IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
57. 10" 45° MJ ELL.
58. 8" 45° MJ ELL.
59. 10" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
60. 8" CL. 350 D.I. PIPE (WRAP IN TWO LAYERS OF 8 MIL. POLYETHYLENE)
61. 10" BLIND FLANGE TAPPED AS REQUIRED FOR AIR RELEASE VALVE ASSEMBLY
63. 2" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 202C.3 OR EQUAL) SEE SHEET 6-6
64. LIQUID FILLED PRESSURE GAUGE, WIKA 213.53 OR EQUAL, PRESSURE RANGE AS NOTED. PROVIDE ONE (1) ADDITIONAL - 0 TO 200 PSI SPARE GAUGE
65. 1" DUAL BODY COMBINATION AIR VALVE (VAL-MATIC 101S/22.9 OR EQUAL) SEE SHEET 6-8
66. TRENCH DRAIN SYSTEM SEE SHEETS 6-5 & 6-11 FOR DRAIN LINE DETAILS
69. DRAIN/WASTE DISCHARGE LINES ATTACH TO STATION PIPING PER NOTE THIS SHEET. SEE SHEETS 6-7 THROUGH 6-10

CONSTRUCTION KEYED NOTES:

4. EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16
8. PIPE SUPPORT PEDESTAL TYPE NOTED SEE DETAILS ON SHEET 6-15
9. BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)
13. ELECTRICAL GEAR: PANEL "A", S.C.A.D.A. SYSTEM CABINET AND JUNCTION BOX MOUNTED ON ELECTRICAL PAD AND WALL SEE ELECTRICAL PLAN SHEET 6-21 TO 6-25
16. CONCRETE ELECTRICAL PAD SEE DETAIL SHEET 6-15
18. CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)
19. PIPING FLOOR PENETRATION (SEE DETAIL SHEET 6-15)

NOTES:

1. SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.
2. ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE. BURIED PIPE SHALL BE RATED FOR 350 PSI. BURIED PIPING SHALL HAVE RESTRAINED MJ JOINTS AND INTERIOR PIPING SHALL HAVE FLANGED JOINTS UNLESS OTHERWISE NOTED
3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.
4. DRAIN/WASTE DISCHARGE LINE FOR AIR RELEASE VALVE VENTS AND VALVE DRAINS TO ATMOSPHERE SHALL BE NEATLY RUN ALONG STATION PIPING TO TRENCH DRAIN AS SHOWN. DRAIN LINES SHALL BE ATTACHED TO STATION PIPING OR FLOOR WITH HIGH QUALITY MATERIALS IN A WORKMANSHIP MANNER. SUPPORTS SHALL BE AT EACH END AND HAVE A MAXIMUM SPACING OF 2'.
5. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

SYSTEM HEADS:

GAMERCO ZONE HIGH WATER ELEV. = 6905'

HEATON PUMP STATION
PUMP DISCHARGE HYDRAULIC GRADE = 7000'
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for the **CITY OF GALLUP**
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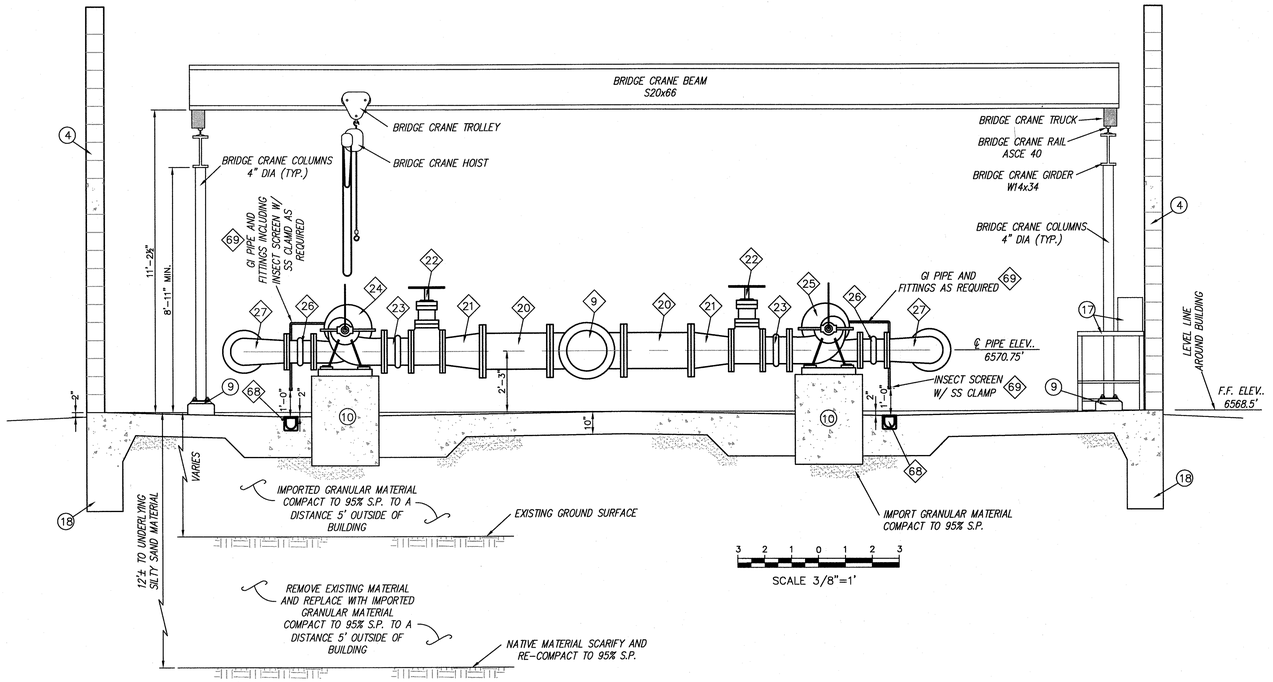
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
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HEATON PUMP STATION WATER PIPING ELEVATIONS

SCALE:	SHOWN
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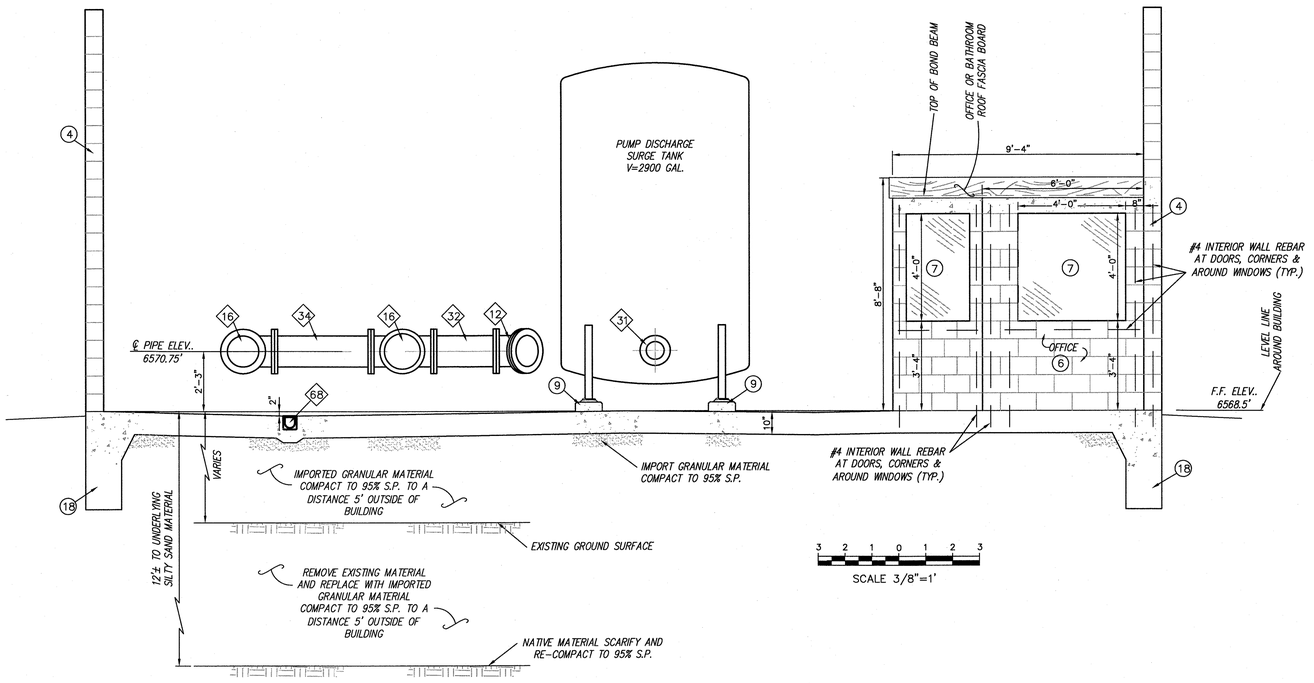
SHEET 6 - 9

ENGINEER'S: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg



J — HEATON PUMP STATION WATER PIPING ELEVATION "J"

6 | 4 | 10 SCALE 3/8"=1'



K — HEATON PUMP STATION WATER PIPING ELEVATION "K"

6 | 4 | 10 SCALE 3/8"=1'

HEATON PUMP STATION KEYED NOTES:

WATER LINE FITTING AND PIPING KEYED NOTES:

- (9) 18"x16" FLG'D CROSS
- (12) 14" 45° FLG'D ELL
- (16) 14" FLG'D TEE
- (20) 16" FLG'D SPOOL (LENGTH AS REQUIRED)
- (21) 16"x12" FLG'D REDUCER
- (22) 12" FLG'D RESILIENT WEDGE GATE VALVE
- (23) 12" STEEL FLANGED EXPANSION JOINT (L=12") PROCO STYLE 242 (250 PSI RATED)
- (24) 12"x10" HORIZONTAL SPLIT CASE PUMP CLOCKWISE ROTATION
- (25) 12"x10" HORIZONTAL SPLIT CASE PUMP COUNTER-CLOCKWISE ROTATION
- (26) 10" STEEL FLANGED EXPANSION JOINT (L=12") PROCO STYLE 242 (250 PSI RATED)
- (27) 10"x12" LONG RADIUS REDUCING 90° ELL
- (31) PUMP DISCHARGE SURGE TANK W/ 8" FLANGE CONNECTION TO 14"x8" REDUCER AS REQUIRED
- (32) 14" FLG'D SPOOL (2'-4" LONG)
- (34) 18"x10" FLG'D REDUCER
- (66) ¾" SOFT TYPE K COPPER LINE WITH DOUBLE STRAP BRASS SADDLE AND CORPORATION STOP FOR BATHROOM POTABLE WATER SERVICE
- (67) ¾" RIGID TYPE K COPPER LINE WITH VALVES, FITTINGS AND WALL PENETRATIONS AS REQUIRED FOR BATHROOM POTABLE WATER SERVICE
- (68) TRENCH DRAIN SYSTEM SEE SHEETS 6-5 & 6-11 FOR DRAIN LINE DETAILS
- (69) DRAIN/WASTE DISCHARGE LINES ATTACH TO STATION PIPING PER NOTE THIS SHEET. SEE SHEETS 6-7 THROUGH 6-10

NOTES:

1. SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.
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3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.
4. DRAIN/WASTE DISCHARGE LINE FOR AIR RELEASE VALVE VENTS AND VALVE DRAINS TO ATMOSPHERE SHALL BE NEATLY RUN ALONG STATION PIPING TO TRENCH DRAIN AS SHOWN. DRAIN LINES SHALL BE ATTACHED TO STATION PIPING OR FLOOR WITH HIGH QUALITY MATERIALS IN A WORKMANSHIP MANNER. SUPPORTS SHALL BE AT EACH END AND HAVE A MAXIMUM SPACING OF 2'.
5. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

CONSTRUCTION KEYED NOTES:

- (4) EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16
- (6) INTERIOR 8" NOMINAL CMU BLOCK WALL, 8'-0" HIGH, SEE DETAIL SHEET 6-14
- (7) OFFICE WINDOW, ¼" TEMPERED GLAZED GLASS IN STOREFRONT FRAME ANCHOR TO BLOCK WALL. SEE DETAIL SHEET 6-18
- (8) PIPE SUPPORT PEDESTAL TYPE NOTED SEE DETAILS ON SHEET 6-15
- (9) BRIDGE CRANE OR SURGE TANK PEDESTAL (SEE DETAILS ON SHEET 6-15 AND 6-18)
- (10) PUMP PEDESTAL (SEE DETAILS ON SHEET 6-15)
- (17) HEAVY DUTY 30"x60" ADJUSTABLE HEIGHT STEEL WORK BENCH WITH SHELF & LOCKING DRAWER (LK GOODWIN CO. WA360-DS-AL OR EQUAL) TWO (2) REQUIRED
- (18) CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)

SYSTEM HEADS:

GAMERCO ZONE HIGH WATER ELEV.. = 6905'

HEATON PUMP STATION
PUMP DISCHARGE HYDRAULIC GRADE = 7000'
P.R.V. DISCHARGE HYDRAULIC GRADE = 6900'

TRADE MART ZONE HIGH WATER ELEV.. = 6733'

COUNTRY CLUB ZONE HIGH WATER ELEV.. = 6794'

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17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

NOTICE OF EXTENDED PAYMENT PROVISION:
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CAUTION
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BEFORE YOU DIG!

ENGINEER3: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg

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NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

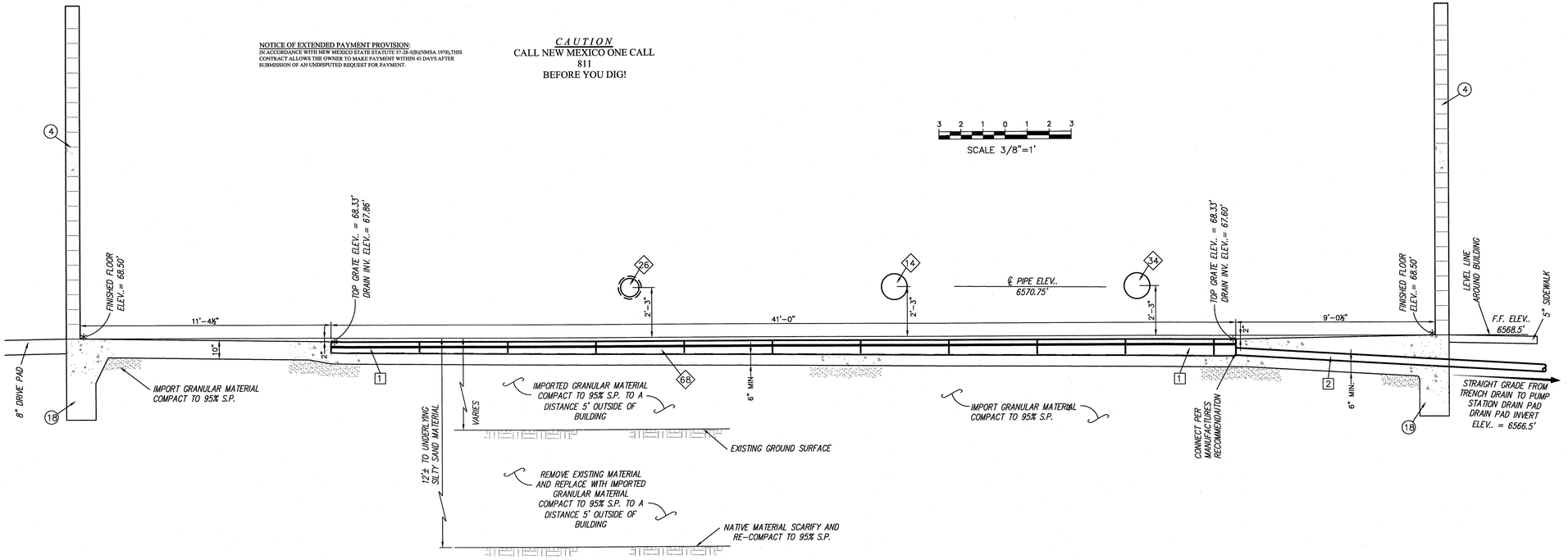
HEATON PUMP STATION WATER PIPING ELEVATIONS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

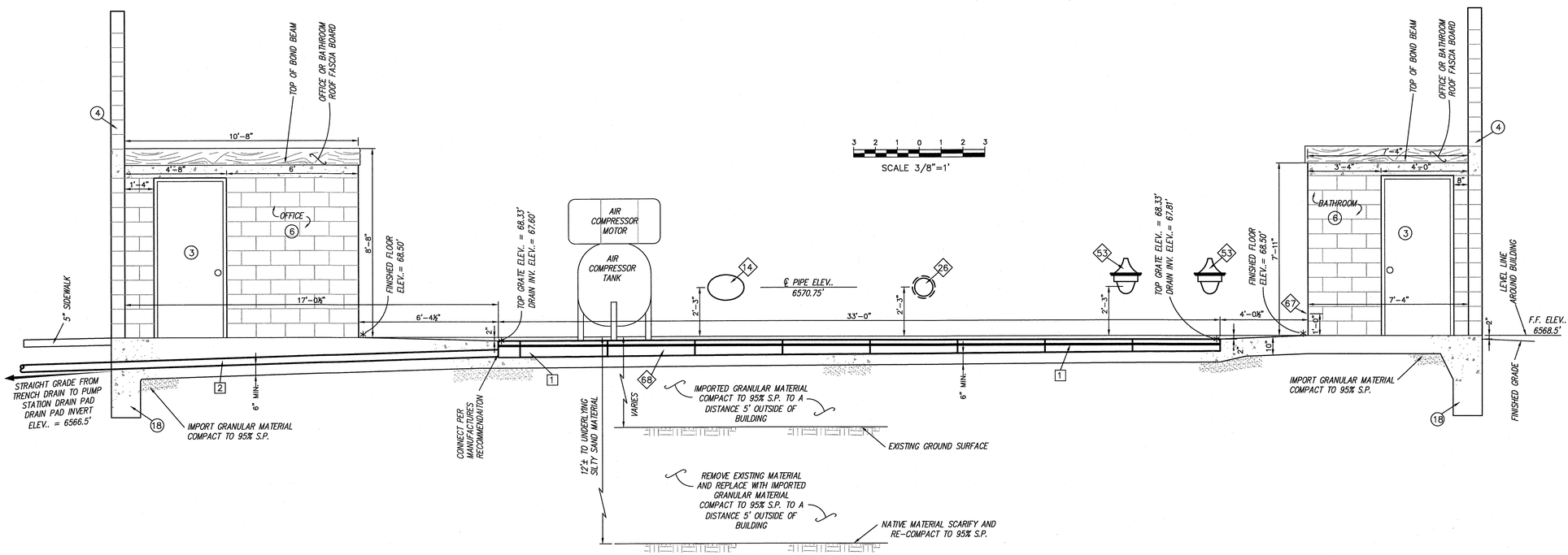
SHEET 6 - 10

NOTICE OF EXTENDED PAYMENT PROVISION:
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HEATON PUMP STATION WATER PIPING ELEVATION "M"
M 6 5 11 SCALE 3/8"=1'



HEATON PUMP STATION WATER PIPING ELEVATION "N"
N 6 5 11 SCALE 3/8"=1'

HEATON PUMP STATION KEYED NOTES:

WATER LINE FITTING AND PIPING KEYED NOTES:

- 14 — 14" FLG'D SPOOL (LENGTH AS REQUIRED)
- 26 — 10" STEEL FLANGED EXPANSION JOINT (L=12") PROCO STYLE 242 (250 PSI RATED)
- 34 — 14" FLG'D SPOOL (3'-7" LONG)
- 53 — 8" FLG'D PRESSURE REDUCING VALVE WITH LOW-FLOW BYPASS CLA-VAL MODEL 90-48 OR EQUAL
- 67 — ¾" RIGID TYPE K COPPER LINE WITH VALVES, FITTINGS AND WALL PENETRATIONS AS REQUIRED FOR BATHROOM POTABLE WATER SERVICE
- 68 — TRENCH DRAIN SYSTEM SEE SHEETS 6-5 & 6-11 FOR DRAIN LINE DETAILS

DRAIN LINE AND SEWER LINE FITTING AND PIPING KEYED NOTES:

* NOT SHOWN ON THIS SHEET

- 1 — PRE-SLOPED POLYPROPYLENE TRENCH DRAIN SYSTEM W/ H20 LOAD RATED DUCTILE IRON FRAME AND ALL CONNECTIONS AND APPURTENANCES. WATTS DEAD LEVEL D OR EQUAL.
- 2 — 4" SCH. 40 PVC DRAIN LINE. GRADE FROM TRENCH DRAIN TO PUMP STATION DRAIN PAD.

CONSTRUCTION KEYED NOTES:

- 3 — 3'-0"X7'-0" FLUSH METAL DOOR AND FRAME. PROVIDE DOOR STOP, THRESHOLD, DOOR CLOSURE, AND HARDWARE. PAINT AS DIRECTED W/; 2 COATS ALKYD ENAMEL.
- 4 — EXTERIOR 8" NOMINAL SPLIT FACE CMU BLOCK WALL SEE DETAILS SHEETS 6-13 THROUGH 6-16
- 6 — INTERIOR 8" NOMINAL CMU BLOCK WALL, 8'-0" HIGH, SEE DETAIL SHEET 6-14
- 18 — CONCRETE FOUNDATION (SEE DETAIL SHEET 6-13)

NOTES:
1. SEE SHEET 6-1 TO 6-3 FOR PUMP STATION SITE PLAN, SITE PROFILES AND FLOOR PLAN. SEE SHEETS 6-4 TO 6-6 FOR WATERLINE PIPING, DRAIN LINE, SEWER LINE AND BATHROOM PLANS. SEE SHEETS 6-7 TO 6-11 FOR WATER LINE AND DRAIN LINE ELEVATIONS.
2. ALL FITTINGS, VALVES, SPECIALS, & PIPING SHALL BE RATED FOR 250 PSI WORKING PRESSURE. BURIED PIPE SHALL BE RATED FOR 350 PSI. BURIED PIPING SHALL HAVE RESTRAINED MJ JOINTS AND INTERIOR PIPING SHALL HAVE FLANGED JOINTS UNLESS OTHERWISE NOTED
3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO LAYER OF POLYETHYLENE WRAP. THE FIRST LAYER SHALL BE V-BIO POLYETHYLENE ENCASEMENT WITH TAPE WRAP. THE OUTER LAYER SHALL BE A STANDARD 8 MIL. POLYETHYLENE ENCASEMENT. LAYER JOINTS SHALL BE STAGGERED.
4. DRAIN/WASTE DISCHARGE LINE FOR AIR RELEASE VALVE VENTS AND VALVE DRAINS TO ATMOSPHERE SHALL BE NEATLY RUN ALONG STATION PIPING TO TRENCH DRAIN AS SHOWN. DRAIN LINES SHALL BE ATTACHED TO STATION PIPING OR FLOOR WITH HIGH QUALITY MATERIALS IN A WORKMANSHIP MANNER. SUPPORTS SHALL BE AT EACH END AND HAVE A MAXIMUM SPACING OF 2'.
5. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

SYSTEM HEADS:

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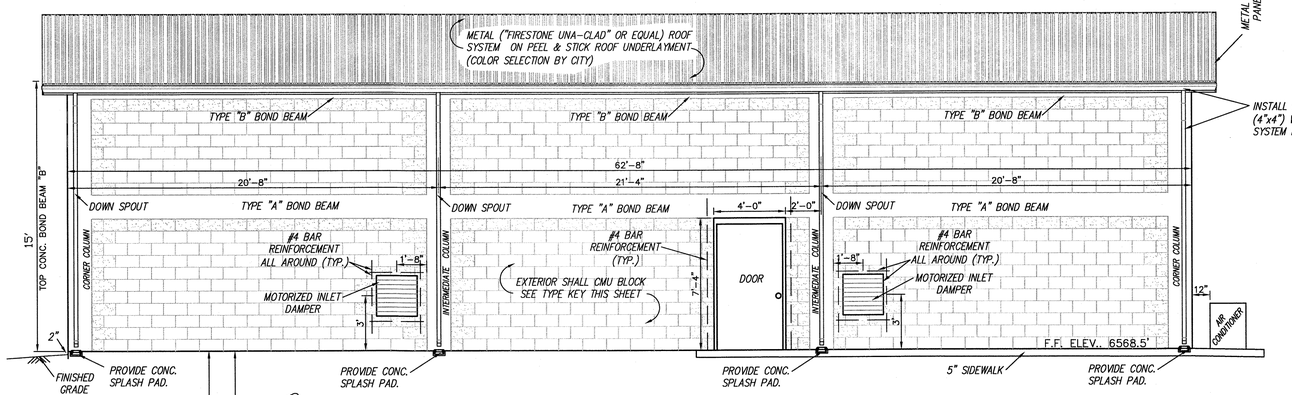
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
INTERIOR FLOOR DRAIN PROFILES

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6 - 11

ENGINEERS: C:\Users\Public\Documents\engineer\Project 6\proj6_design.dwg



ELEVATION (LOOKING NORTH)

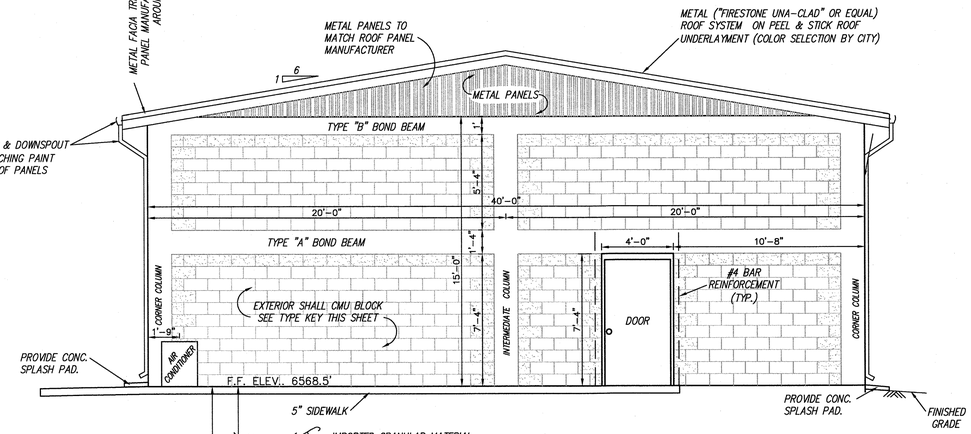
CONSTRUCTION NOTES:

1. CONTINUOUS DUROWAL REINFORCEMENT SHALL BE PLACED IN EVERY OTHER HORIZONTAL JOINT WITH PROPER LAP
2. INTERIOR AND EXTERIOR JOINTS SHALL BE TOOLED
3. BOND BEAMS AND STRUCTURAL COLUMNS ARE FORMED REINFORCED CONCRETE.
4. SEE SHEET 6-13 THROUGH 6-15 FOR STRUCTURAL COLUMNS AND BOND BEAM DETAILS
8. SEE SHEET 4-5 FOR BOLLARD DETAIL
9. SEE SHEET 6-16 TO MASONRY CONSTRUCTION SEQUENCE
10. AREA UNDER AND WITHIN 5' OF BUILDING HORIZONTALLY SHALL BE CONSTRUCTED WITH IMPORTED GRANULAR MATERIAL. IN-SITU NATIVE MATERIAL TO A DEPTH OF 12'± BELOW FINISHED FLOOR SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL

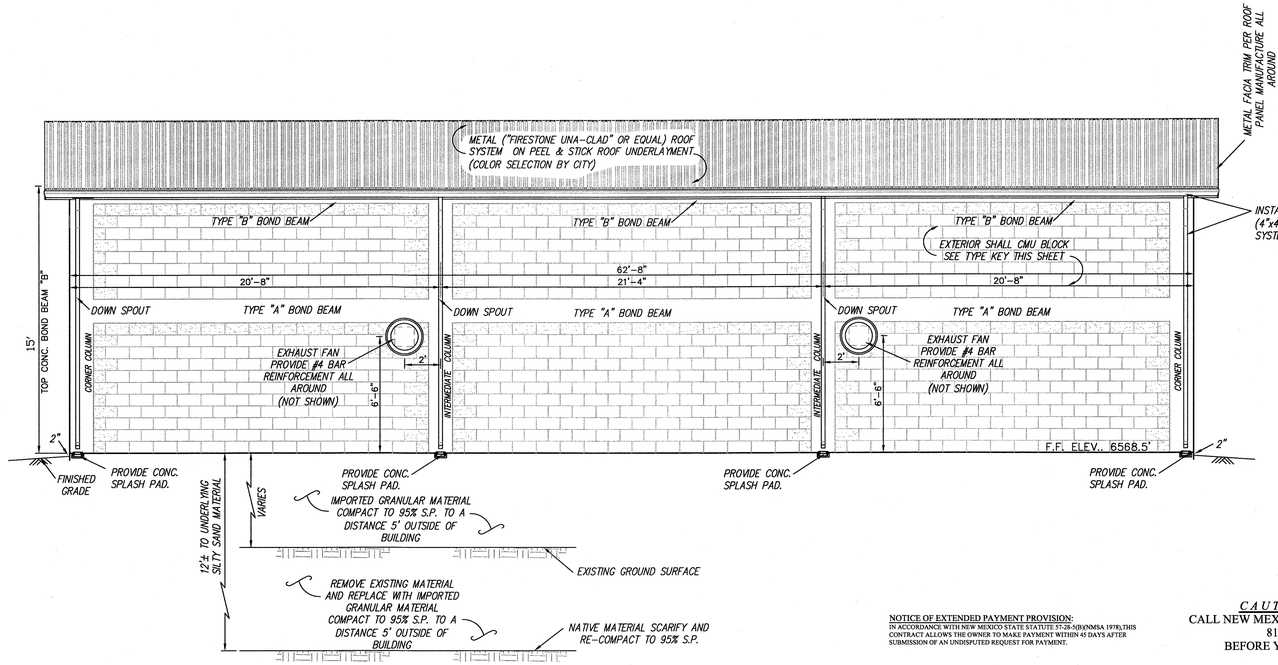
CMU BLOCK TYPE KEY:

1. SPLIT FACE BLOCK WITH SMOOTH INTERIOR SURFACE AND ROUGH EXTERIOR SURFACE (COLOR TO BE SELECTED BY CITY)

2. SMOOTH FACE (STANDARD) BLOCK – SMOOTH INTERIOR AND EXTERIRO SURFACES (COLOR TO MATCH SPLIT FACE BLOCK)



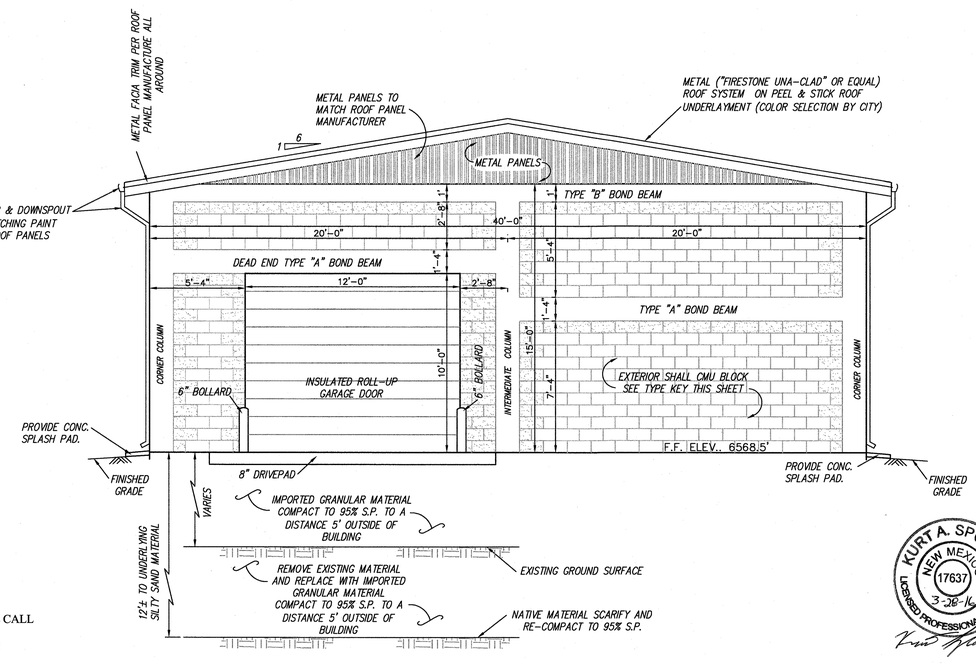
ELEVATION (LOOKING WEST)



ELEVATION (LOOKING SOUTH)

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(D)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!



ELEVATION (LOOKING EAST)

KURT A. SPOLAR
NEW MEXICO
17637
3-26-16
LICENSED PROFESSIONAL ENGINEER

EAST PUMP STATION BUILDING ELEVATIONS

SCALE 1/4"=1'-0"

ENGINEER: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg

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- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulieengineering

for the
CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

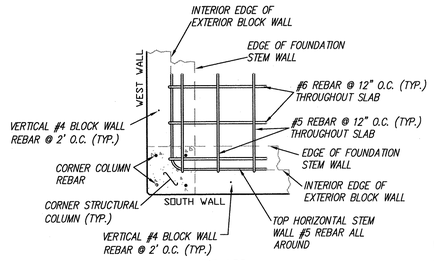
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

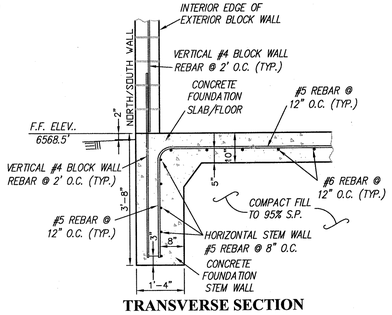
HEATON PUMP STATION BUILDING ELEVATIONS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

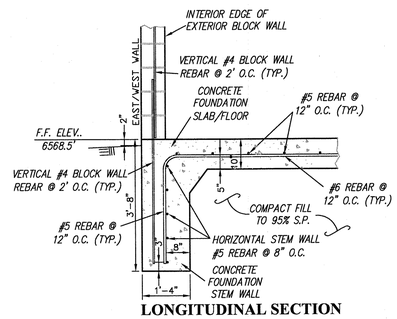
SHEET 6-12



PLAN

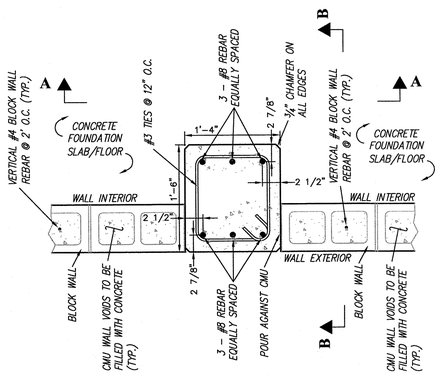


TRANSVERSE SECTION

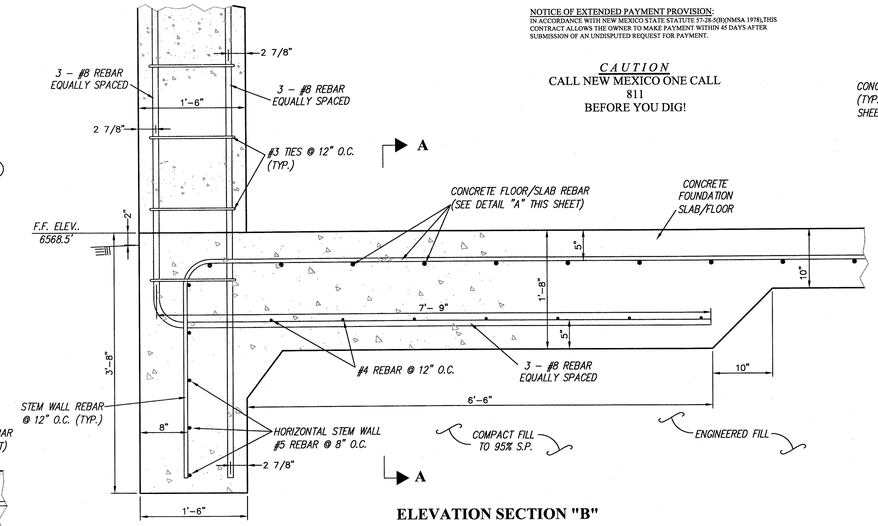


LONGITUDINAL SECTION

(A) FOUNDATION & SLAB DETAILS
SCALE 1/2"=1'-0"



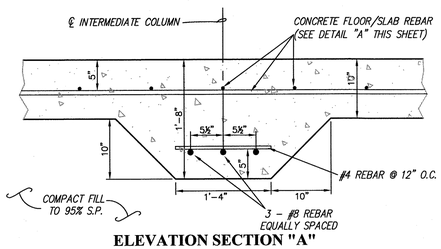
TYPICAL PLAN SECTION



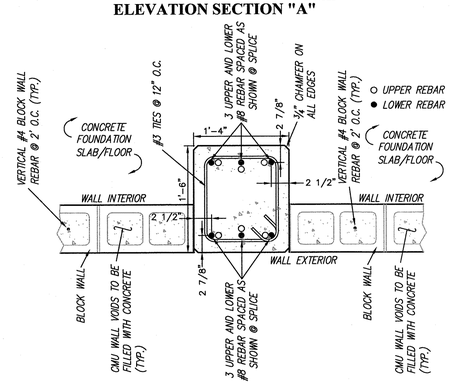
ELEVATION SECTION "B"

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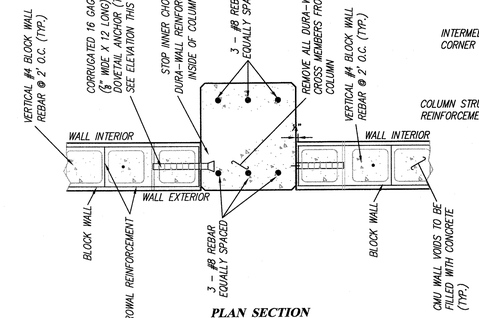


ELEVATION SECTION "A"

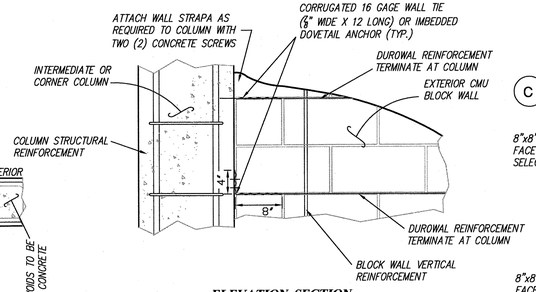


PLAN SECTION @ REBAR SPLICES

(B) INTERMEDIATE STRUCTURAL COLUMNS & FOOTING DETAIL
SCALE 1"=1'-O"



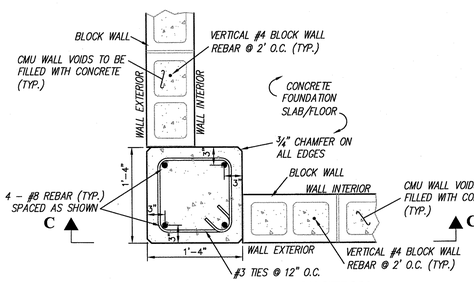
PLAN SECTION



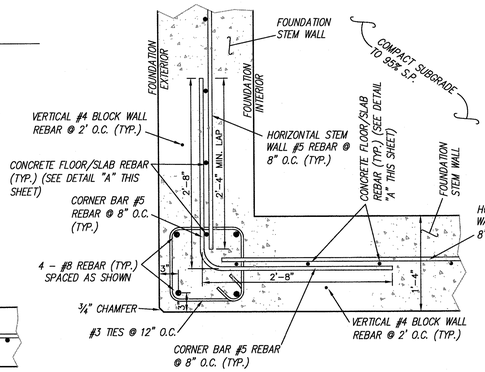
ELEVATION SECTION

SECTIONS @ BLOCK WALL DUR0WAL REINFORCEMENT

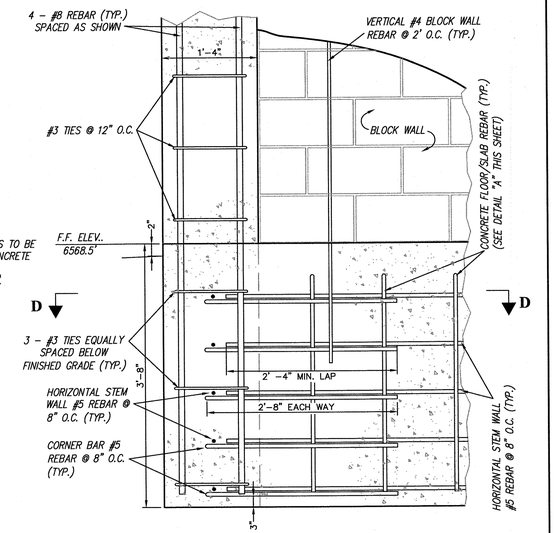
(B) INTERMEDIATE STRUCTURAL COLUMNS & FOOTING DETAIL
SCALE 1"=1'-O"



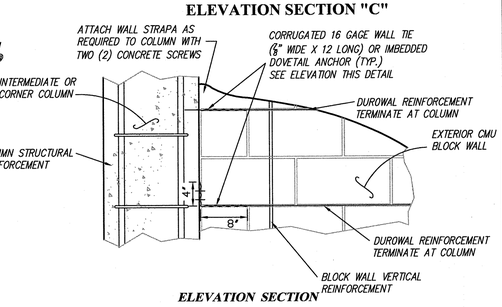
TYPICAL PLAN SECTION



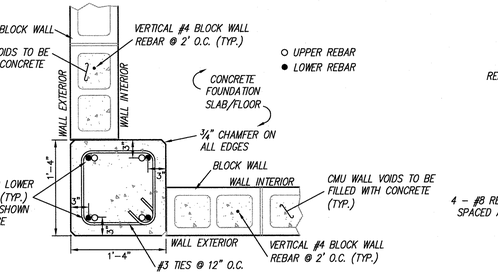
PLAN SECTION "D" @ FOUNDATION STEM WALL



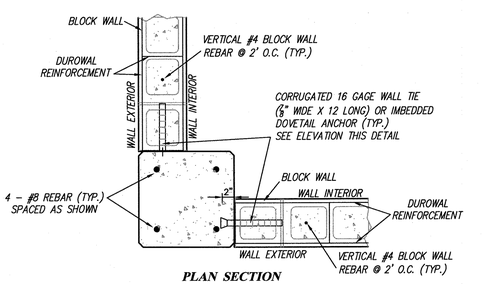
ELEVATION SECTION "C"



ELEVATION SECTION



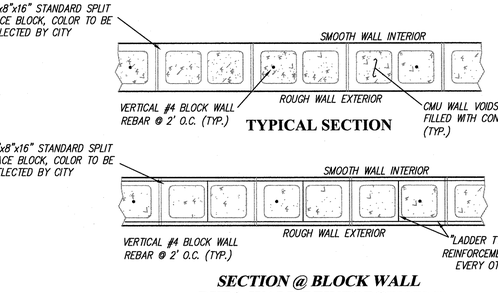
PLAN SECTION @ REBAR SLICE



PLAN SECTION

(C) CORNER STRUCTURAL COLUMNS DETAIL
SCALE 1"=1'-O"

BLOCK WALL DURO-WALL REINFORCEMENT



TYPICAL SECTION

SECTION @ BLOCK WALL DURA-WALL REINFORCEMENT

DETAIL A THROUGH D CONSTRUCTION NOTES:

1. ALL REBAR JOINTS AND SPLICES SHALL HAVE A MINIMUM LAP OF 40 BAR DIAMETERS UNLESS OTHERWISE SHOWN.
2. ALL REBAR SHALL BE PLACED IN THE MIDDLE OF SLABS AND WALLS UNLESS OTHERWISE SHOWN.
3. ALL FOUNDATION AND COLUMN, CONCRETE SHALL BE 4500 PSI.
4. ALL CMU WALL INFILL GROUT SHALL BE 4500 PSI.
5. DUROWAL REINFORCEMENT SHALL BE HOT GALVANIZED WITH CONNECTING RODS SPACED AT 16". REINFORCEMENT SHALL BE PLACED CONTINUOUSLY IN EVERY OTHER HORIZONTAL JOINT WITH AN 8" MIN. LAP AT ALL SPLICES.
6. IF COLUMN AND BEAMS ARE FORMED AND PLACED WITH CMU WALLS IN PLACE; SMOOTH FACED CMU BLOCK (INTERIOR AND EXTERIOR) SHALL BE USED AT COLUMNS, BEAMS DOORS, FANS, AND LOUVERS AS ILLUSTRATED ON BUILDING ELEVATIONS SHEET 6-12.

KURT A. SPOLAR
NEW MEXICO
17637
3-28-16
LICENSED PROFESSIONAL ENGINEER

(D) GENERAL EXTERIOR BLOCK WALL DETAIL
SCALE 1"=1'-O"

ENGINEER3: c:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg

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for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

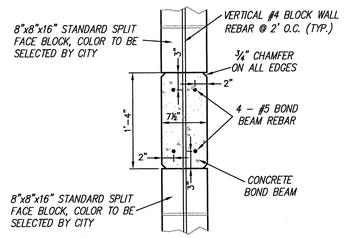
HEATON PUMP STATION
STRUCTURAL DETAILS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

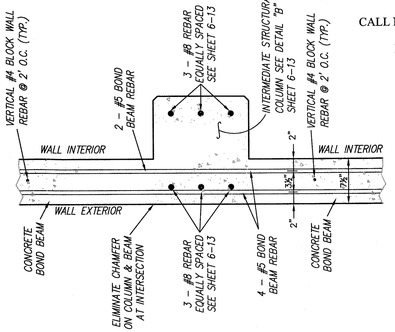
SHEET 6-13

CAUTION
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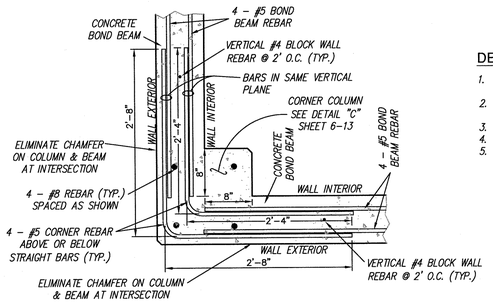
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TYPICAL VERTICAL SECTION



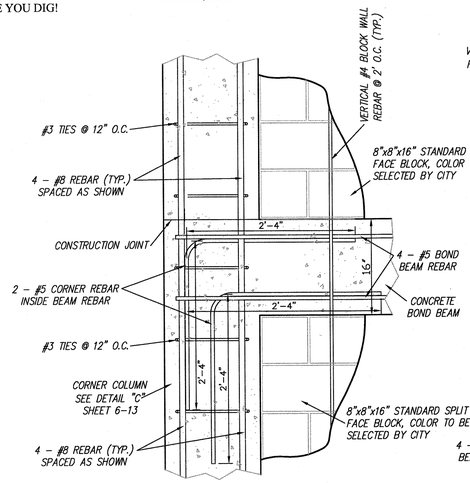
PLAN SECTION @ INTERMEDIATE STRUCTURAL COLUMN



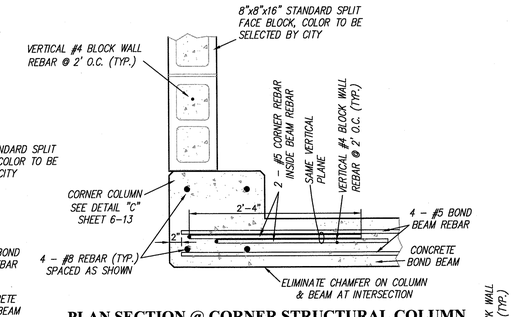
PLAN SECTION @ CORNER STRUCTURAL COLUMN

DETAIL E THROUGH H CONSTRUCTION NOTES:

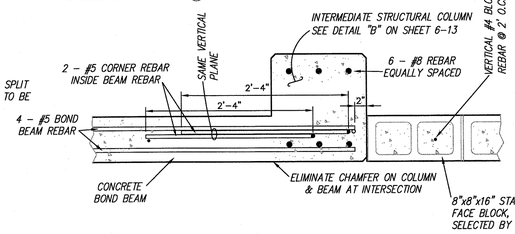
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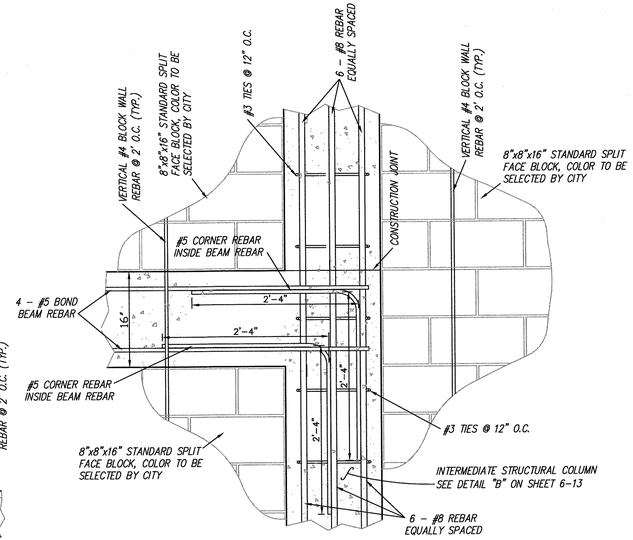
ELEVATION SECTION @ CORNER STRUCTURAL COLUMN



PLAN SECTION @ CORNER STRUCTURAL COLUMN

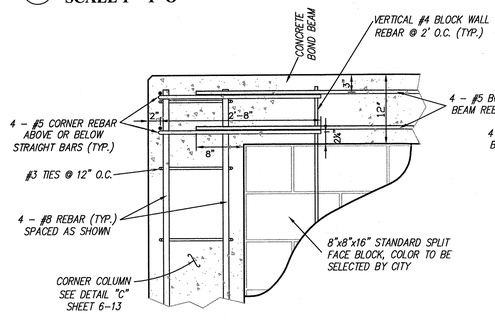


PLAN SECTION @ INTERMEDIATE STRUCTURAL COLUMN

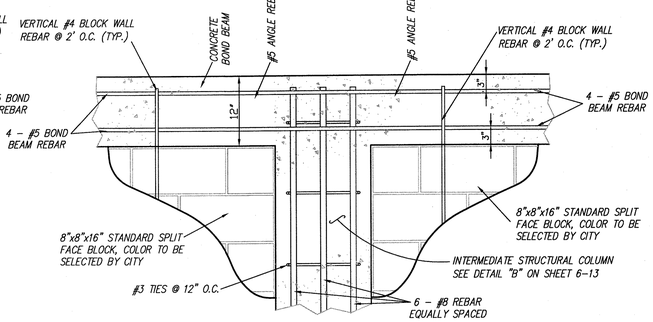


ELEVATION SECTION @ INTERMEDIATE STRUCTURAL COLUMN

E TYPE "A" BOND BEAM DETAILS
SCALE 1"=1'-O"

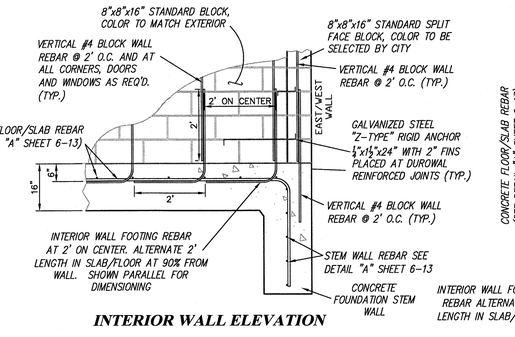


ELEVATION SECTION @ CORNER STRUCTURAL COLUMN

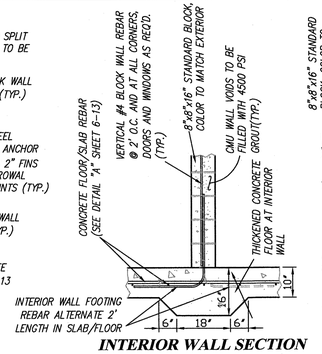


ELEVATION SECTION @ INTERMEDIATE STRUCTURAL COLUMN

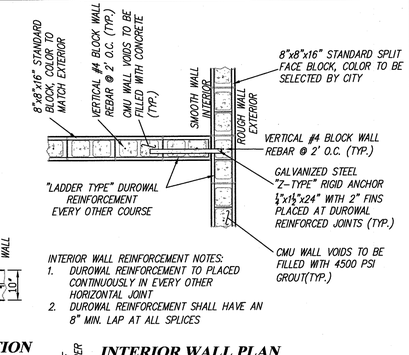
G TYPE "A" BOND BEAM DEAD END DETAILS @ WEST END OF BUILDING
SCALE 1"=1'-O"



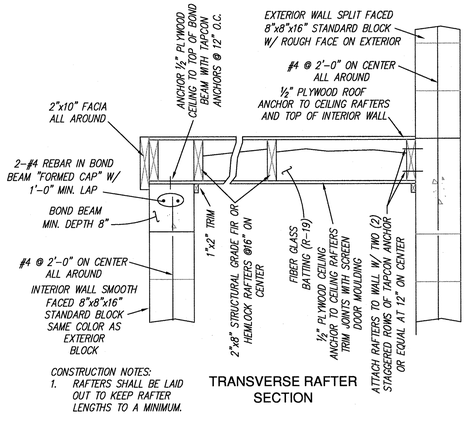
INTERIOR WALL ELEVATION



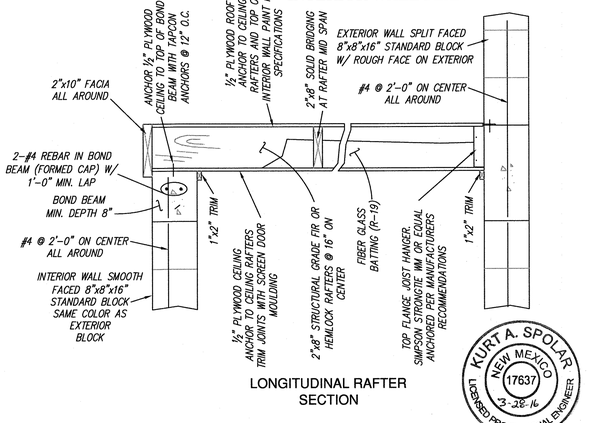
INTERIOR WALL SECTION



INTERIOR WALL PLAN

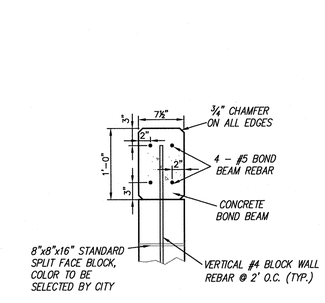


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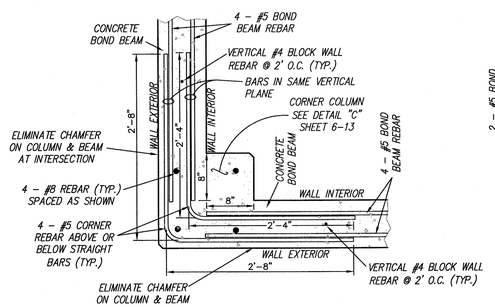


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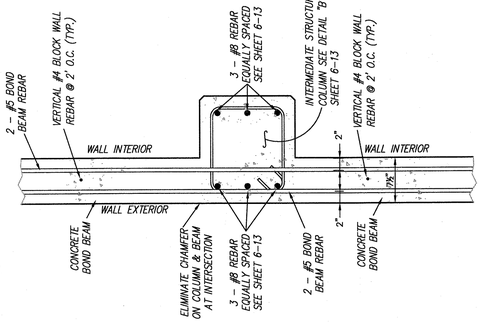
F TYPE "B" BOND BEAM DETAILS
SCALE 1"=1'-O"



TYPICAL SECTION



PLAN SECTION @ CORNER STRUCTURAL COLUMN



PLAN SECTION @ INTERMEDIATE STRUCTURAL COLUMN

H INTERIOR WALL AND CEILING DETAILS
SCALE 1/2"=1'-O"

DePAULI ENGINEERING & SURVEYING LLC
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307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulliengineering

for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

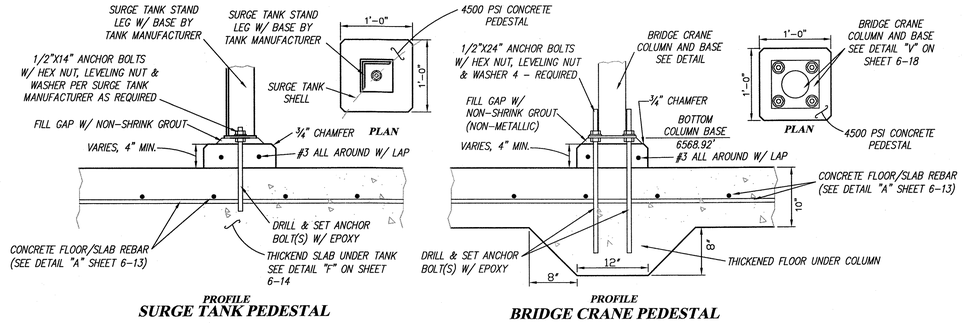
CITY OF GALLUP
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REACH 27.6

HEATON PUMP STATION
STRUCTURAL DETAILS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

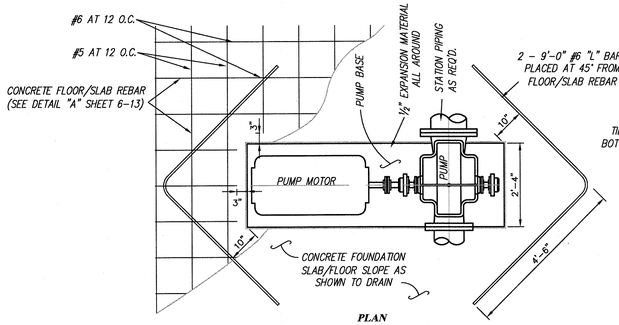
SHEET 6-14

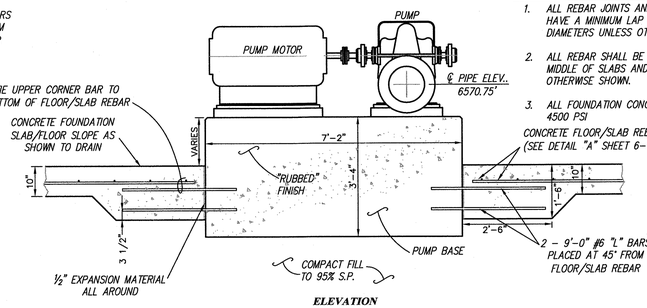
ENGINEER's: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg



(I) BRIDGE CRANE/SURGE TANK PEDESTAL DETAILS

SCALE 1"=1'-O"



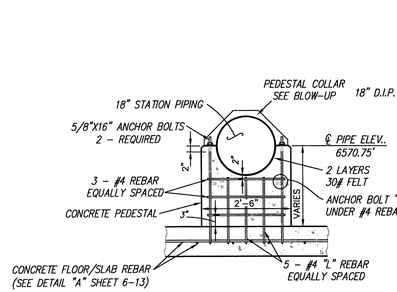


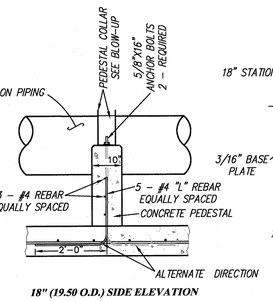
CONSTRUCTION NOTES:

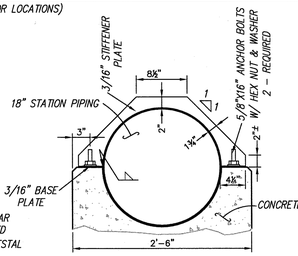
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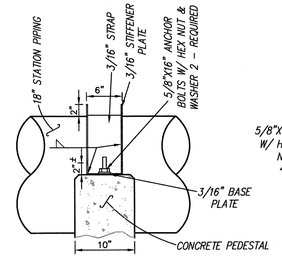
(M) THICKENED FLOOR/SLAB @ PUMP BASE DETAILS

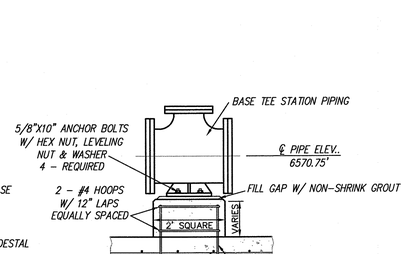
SCALE 1/2"=1'-O" *(SEE SHEETS 6-3 AND 6-4 FOR LOCATIONS)*

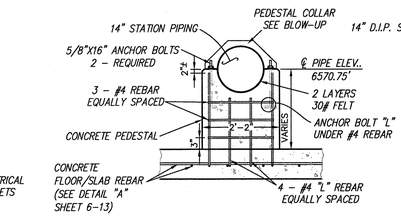


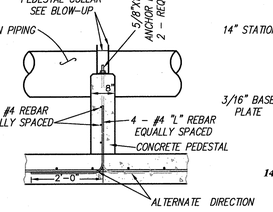


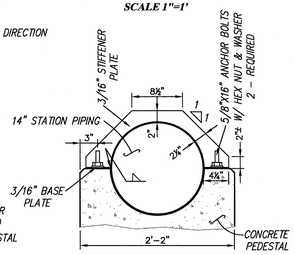


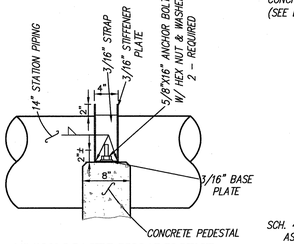


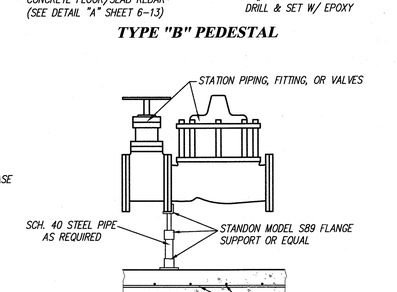












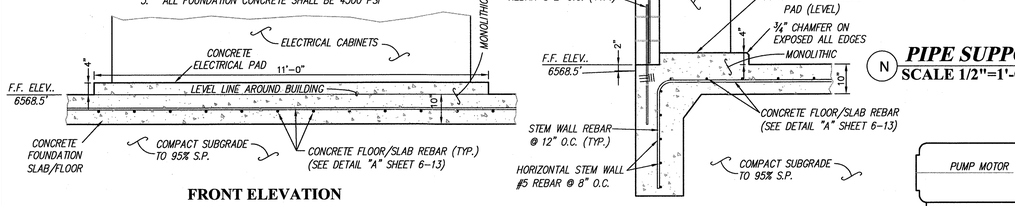
CONSTRUCTION NOTES:

1. ALL REBAR JOINTS AND SPLICES SHALL HAVE A MINIMUM LAP OF 40 BAR DIAMETERS UNLESS OTHERWISE SHOWN.
2. ALL REBAR SHALL BE PLACED IN THE MIDDLE OF SLABS AND WALLS UNLESS OTHERWISE SHOWN.
3. ALL CONCRETE PEDESTALS SHALL BE 4500 PSI CONCRETE AND WITH ¾" CHAMFERED EXPOSED EDGES.
4. PEDESTAL COLLARS TO PAINT W/ SAME SYSTEM AS STATION PIPING.

TYPE "A" PEDESTAL

(J) SURGE TANK THICKENED FLOOR/SLAB DETAIL

SCALE 1/2"=1'-O"

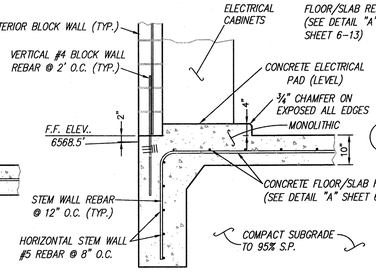


CONSTRUCTION NOTES:

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2. ALL REBAR SHALL BE PLACED IN THE MIDDLE OF SLABS AND WALLS UNLESS OTHERWISE SHOWN.
3. ALL FOUNDATION CONCRETE SHALL BE 4500 PSI

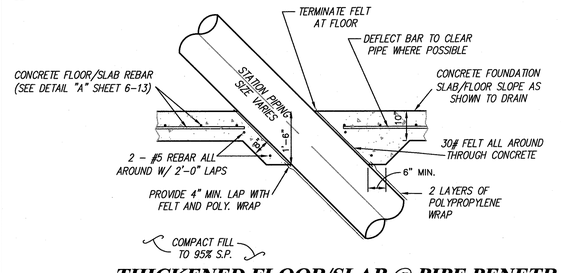
(N) PIPE SUPPORT PEDESTAL DETAILS

SCALE 1/2"=1'-O" *(SEE SHEETS 6-3 AND 6-4 FOR LOCATIONS)*



(K) CONCRETE ELECTRICAL/SWITCH GEAR PAD DETAILS

SCALE 1/2"=1'-O"

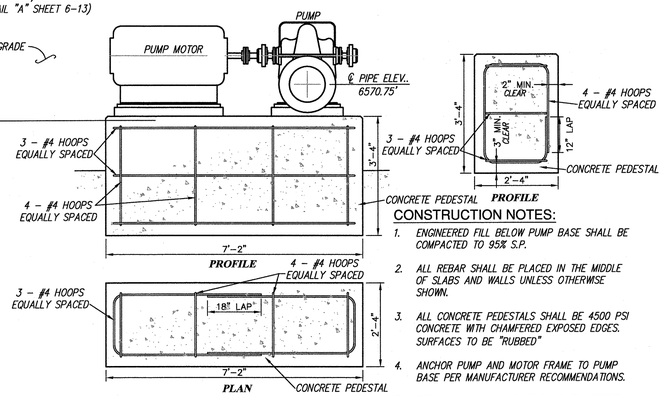


CONSTRUCTION NOTES:

1. ALL REBAR JOINTS AND SPLICES SHALL HAVE A MINIMUM LAP OF 40 BAR DIAMETERS UNLESS OTHERWISE SHOWN.
2. ALL REBAR SHALL BE PLACED IN THE MIDDLE OF SLABS AND WALLS UNLESS OTHERWISE SHOWN.
3. ALL FOUNDATION CONCRETE SHALL BE 4500 PSI

(O) PUMP BASE DETAILS

SCALE 1/2"=1'-O" *(SEE SHEETS 6-3 AND 6-4 FOR LOCATIONS)*

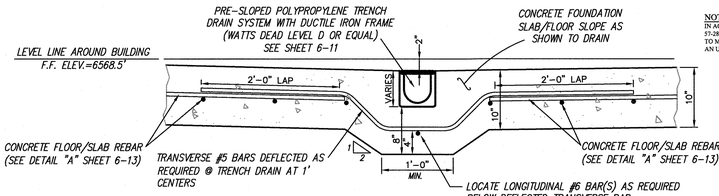


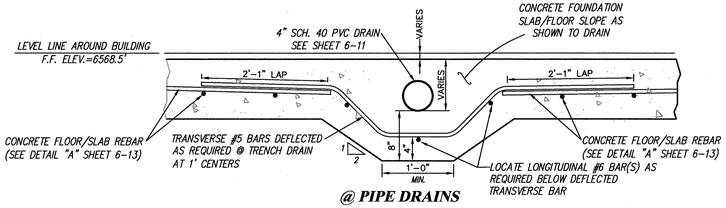
CONSTRUCTION NOTES:

1. ENGINEERED FILL BELOW PUMP BASE SHALL BE COMPACTED TO 95% S.P.
2. ALL REBAR SHALL BE PLACED IN THE MIDDLE OF SLABS AND WALLS UNLESS OTHERWISE SHOWN.
3. ALL CONCRETE PEDESTALS SHALL BE 4500 PSI CONCRETE WITH CHAMFERED EXPOSED EDGES. SURFACES TO BE "RUBBED"
4. ANCHOR PUMP AND MOTOR FRAME TO PUMP BASE PER MANUFACTURER RECOMMENDATIONS.
5. CONCRETE PEDESTAL DIMENSIONS TO VERIFIED WITH PUMP MANUFACTURER.

(P) THICKENED FLOOR/SLAB @ TRENCH AND PIPE DRAINS

SCALE 1"=1'-O" *(SEE SHEETS 6-5 AND 6-11 FOR LAYOUT AND LOCATIONS)*





NOTICE OF EXTENDED PAYMENT PROVISION: IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5.D(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

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ENGINEER: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg

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307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulienginering

for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

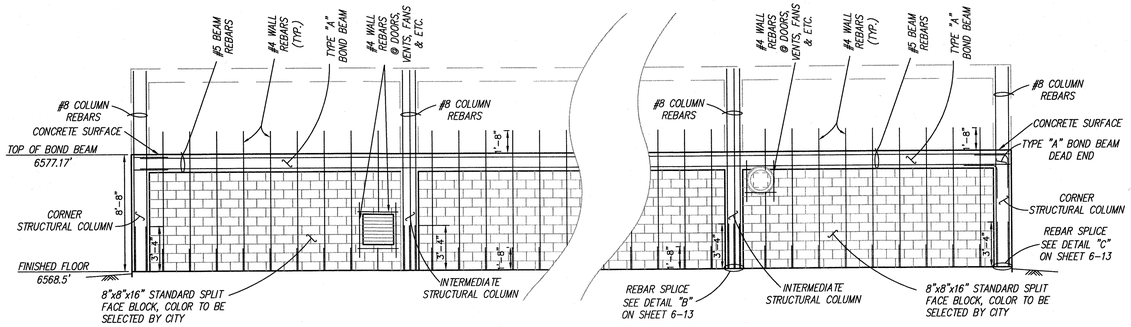
NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
STRUCTURAL DETAILS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

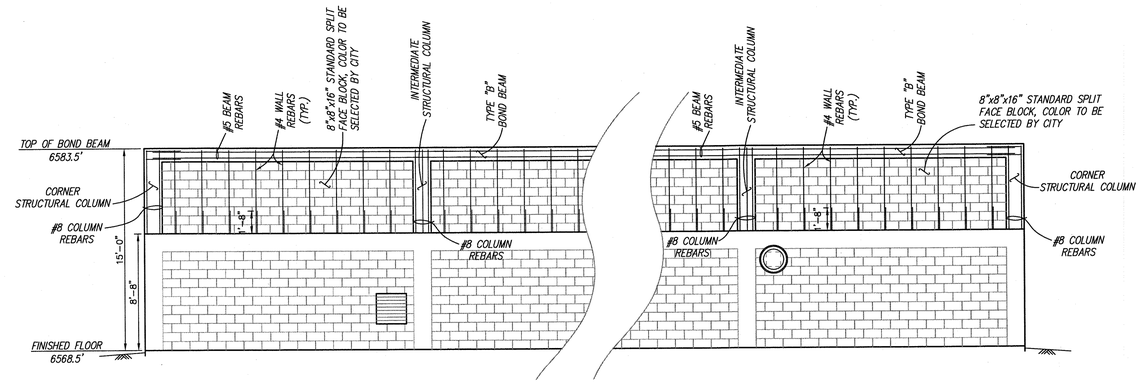
SHEET 6-15



SOUTH WALL (LOOKING NORTH)

NORTH WALL (LOOKING SOUTH)

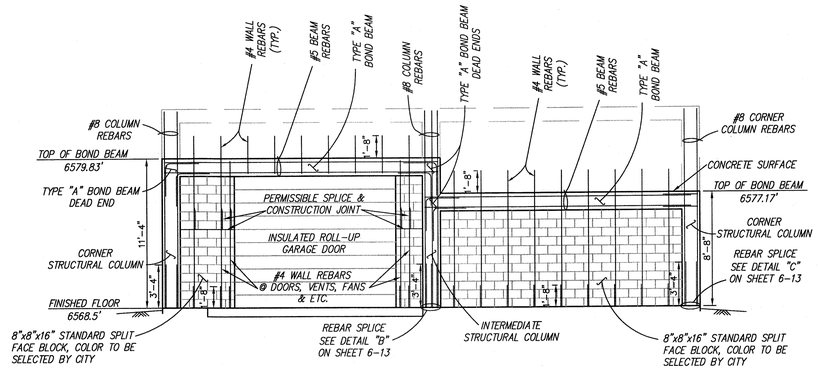
FIRST PLACEMENT ELEVATION - NORTH AND SOUTH WALLS



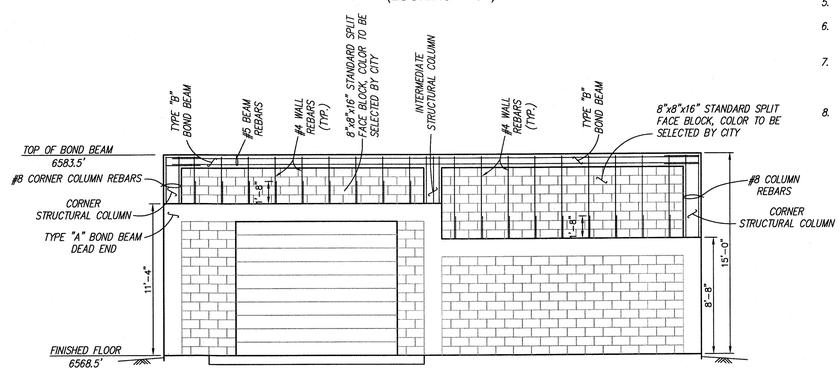
SOUTH WALL (LOOKING NORTH)

NORTH WALL (LOOKING SOUTH)

SECOND PLACEMENT ELEVATION - NORTH AND SOUTH WALLS



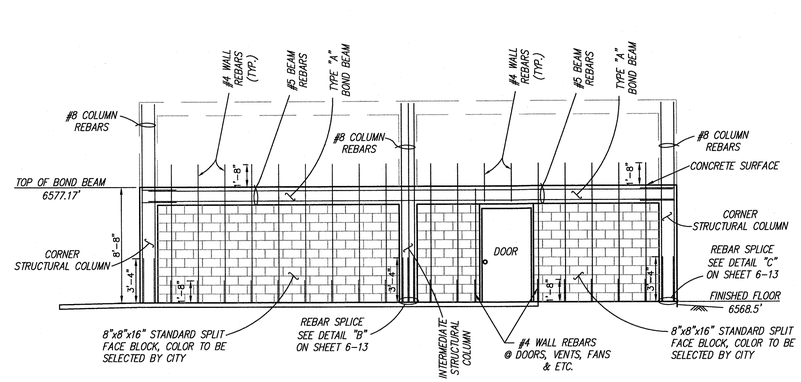
FIRST PLACEMENT ELEVATION - WEST WALL
(LOOKING EAST)



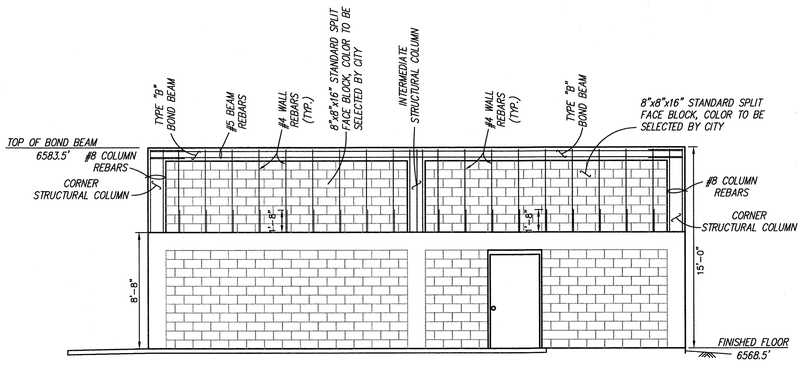
SECOND PLACEMENT ELEVATION - WEST WALL
(LOOKING EAST)

CONSTRUCTION NOTES:

1. DIMENSIONS AND ARRANGEMENTS SHOWN FOR REINFORCING STEEL PLACEMENT TO BE ADHERED TO SO THAT CLEARANCE FOR CONCRETE PLACEMENT IS ASSURED AND STRUCTURAL STRENGTH IS ACHIEVED
2. ADDITIONAL SPLICE IN REBAR ARE PERMISSIBLE. ALL LAPS SHALL BE A MINIMUM OF 40 BAR DIAMETERS
3. CONTINUOUS DUROWAL REINFORCEMENT SHALL BE PLACED IN EVERY OTHER HORIZONTAL JOINT WITH PROPER LAP
4. INTERIOR AND EXTERIOR JOINTS SHALL BE TOOLED
5. BOND BEAMS AND STRUCTURAL COLUMNS ARE FORMED REINFORCED CONCRETE.
6. SEE SHEET 6-13 THROUGH 6-15 FOR STRUCTURAL COLUMNS AND BOND BEAM DETAILS
7. EXISTING SUB-GRADE MATERIAL SHALL BE REMOVED AND REPLACED TO MINIMUM DEPTH OF 10' BELOW FINISHED FLOOR (AS SHOWN) TO A MINIMUM OF DISTANCE 5' HORIZONTALLY FROM BUILDING.
8. IF COLUMN AND BEAMS ARE FORMED AND PLACED WITH CMU WALLS IN PLACE (AS SHOWN HEREON); SMOOTH FACED CMU BLOCK (INTERIOR AND EXTERIOR) SHALL BE USED AT COLUMNS, BEAMS DOORS, FANS, AND LOUVERS AS ILLUSTRATED ON BUILDING ELEVATIONS SHEET 6-12.



FIRST PLACEMENT ELEVATION - EAST WALL
(LOOKING WEST)



SECOND PLACEMENT ELEVATION - EAST WALL
(LOOKING WEST)

Q GENERAL REBAR LAYOUT AND CONSTRUCTION JOINT DETAILS

SCALE 3/16"=1'-O"

KURT A. SPOLAR — NEW MEXICO — 17637 — 3-31-14 — LICENSED PROFESSIONAL ENGINEER

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ENGINEER: c:\Users\Public\Documents\engineer\Project 8\pro8_design.dwg

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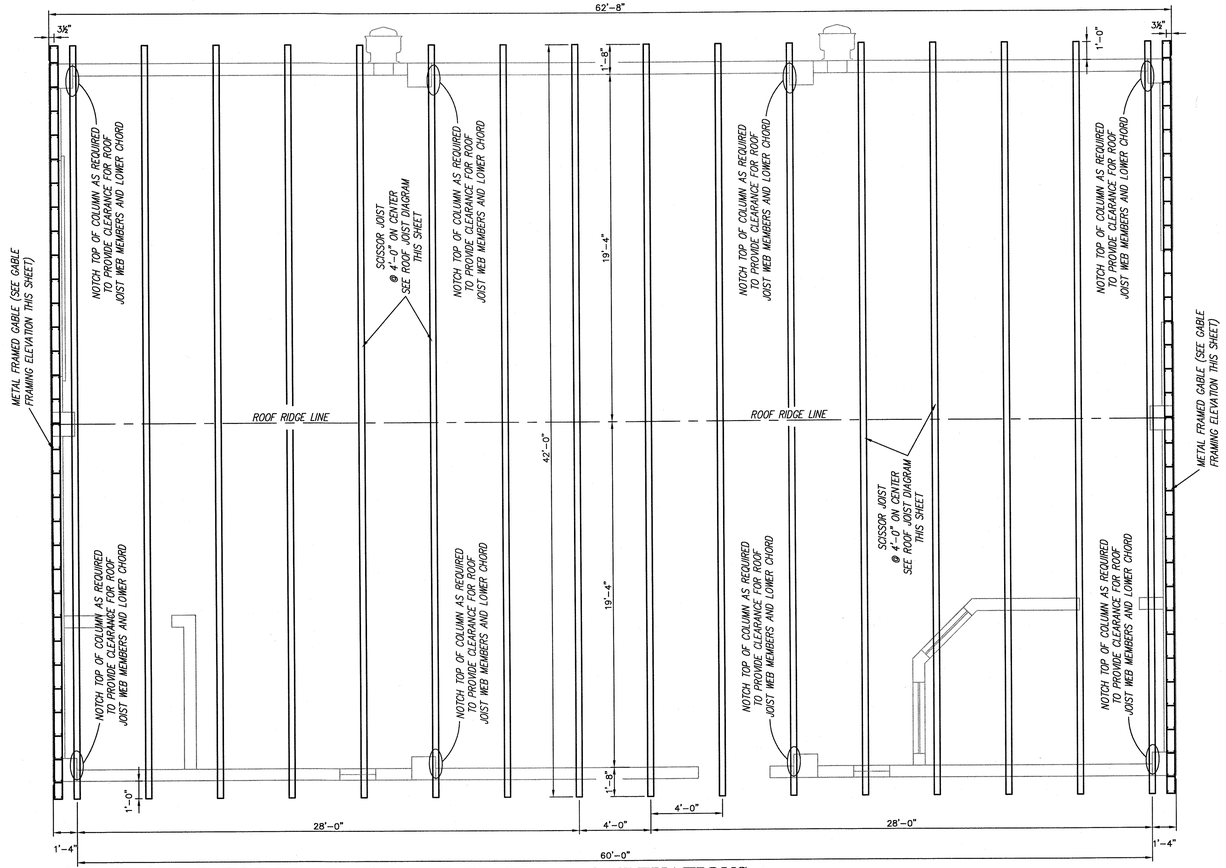
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

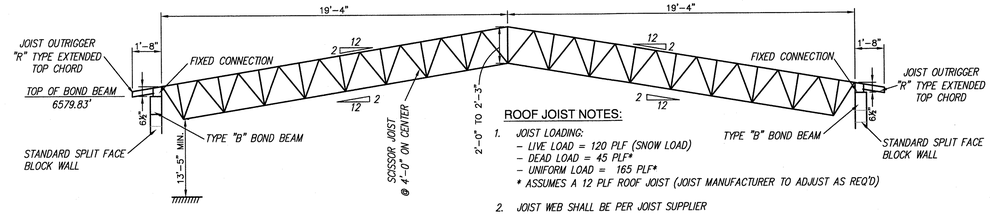
HEATON PUMP STATION
STRUCTURAL DETAILS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6-16

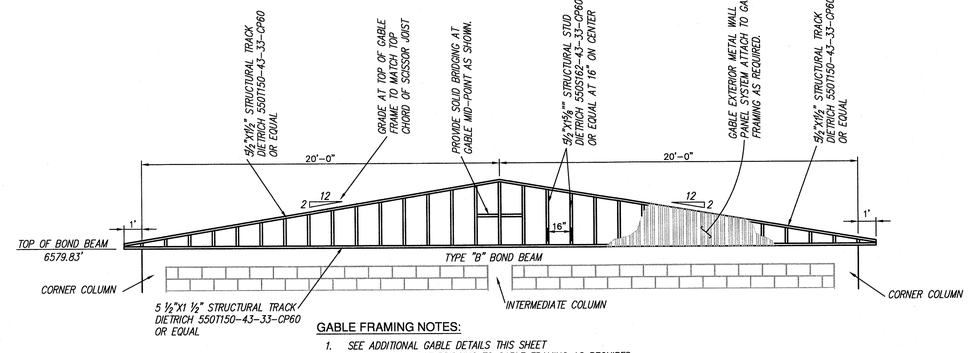


R ROOF JOIST AND GABLE FRAMING PLANS, DIAGRAMS & ELEVATIONS
SCALE 1/4"=1'-0"



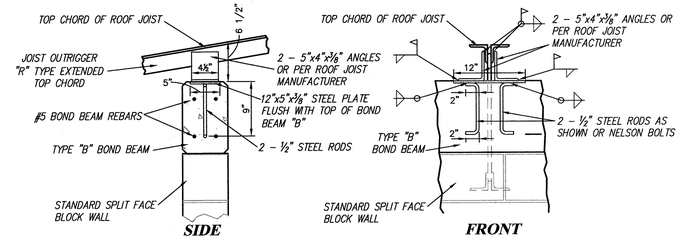
ROOF JOIST NOTES:
1. JOIST LOADING:
   - LIVE LOAD = 120 PLF (SNOW LOAD)
   - DEAD LOAD = 45 PLF*
   - UNIFORM LOAD = 165 PLF*
   * ASSUMES A 12 PLF ROOF JOIST (JOIST MANUFACTURER TO ADJUST AS REQ'D)
2. JOIST WEB SHALL BE PER JOIST SUPPLIER
3. JOIST BRIDGING TO BE PROVIDED AND INSTALLED PER JOIST SUPPLIER BEFORE ATTACHING TO WALLS OR GABLE FRAMING AS REQUIRED.

ROOF JOIST DIAGRAM

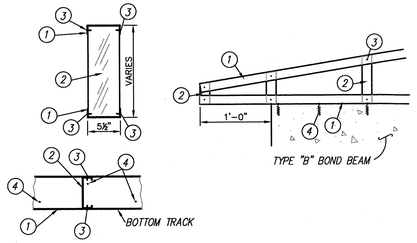


GABLE FRAMING NOTES:
1. SEE ADDITIONAL GABLE DETAILS THIS SHEET
2. THIS ATTACH JOIST BRIDGING TO GABLE FRAMING AS REQUIRED.
3. PROVIDE AND INSTALL SOLID BRIDGING PER MANUFACTURER RECOMMENDATIONS.
4. FRAMING SHALL BE FASTENED WITH #10-16 x 5/8 HWH SD SELF-TAPING SCREWS PER MANUFACTURERS RECOMMENDATIONS AND COMPLIANT WITH AISI S100-07 NASPEC WITH THE 2010 SUPPLEMENT AND IBC 2012
5. TRACK SHALL BE FASTENED TO CONCRETE BOND BEAM WITH ¼"X1¼" HEX HEAD CONCRETE ANCHOR AT 8" ON CENTER. TAPCON BLUE CLIMASEAL HW4-114 OR EQUAL
6. GABLE EXTERIOR METAL WALL PANEL SYSTEM SHALL BE BY THE SAME MANUFACTURER AND MATCH THE METAL ROOFING SYSTEM.
7. GABLE SHALL BE INSULATED WITH 5" TO 6" OF SPRAY ON EXPANDING INSULATION BY ICYNENE OR EQUAL APPLIED ON INTERIOR SURFACES.

GABLE FRAMING ELEVATION

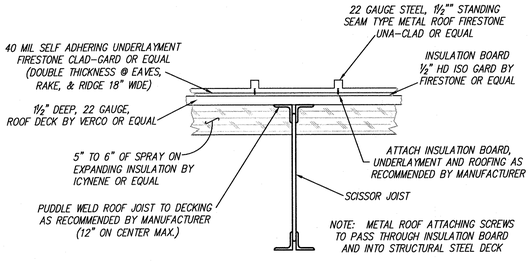


ROOF JOIST ANCHOR PLATES
SCALE 1"=1'-0"

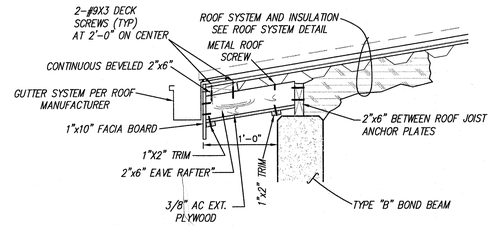


1. ⅝"X1½" STRUCTURAL TRACK DIETRICH 550T150-43-33-CP60 OR EQUAL WITH INSULATING PAD
2. ⅝"X1⅝" STRUCTURAL STUD DIETRICH 550S162-43-33-CP60 OR EQUAL AT 16" ON CENTER
3. #10-16 x 5/8 HWH SD SELF-TAPING SCREWS PER MANUFACTURERS RECOMMENDATIONS AND COMPLIANT WITH AISI S100-07 NASPEC WITH THE 2010 SUPPLEMENT AND IBC 2012
4. ¼"X1¼" HEX HEAD CONCRETE ANCHOR AT 8" ON CENTER AS SHOWN. TAPCON BLUE CLIMASEAL HW4-114 OR EQUAL

S GABLE FRAMING DETAILS
SCALE 1/2"=1'-0"

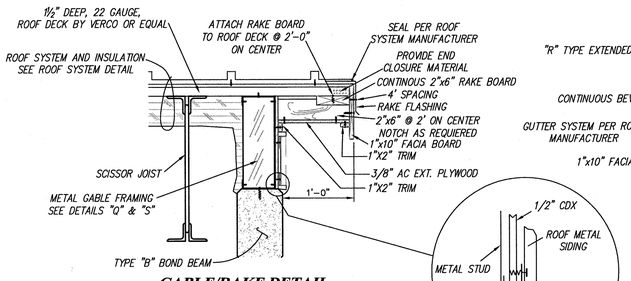


ROOF SYSTEM DETAIL

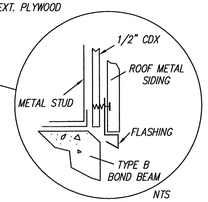


EAVE DETAIL BETWEEN ROOF JOISTS

T ROOF, RAKE AND EAVE DETAILS
SCALE 1/2"=1'-0"

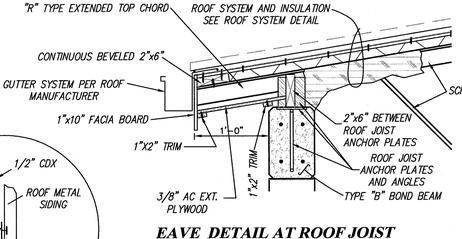


GABLE/RAKE DETAIL

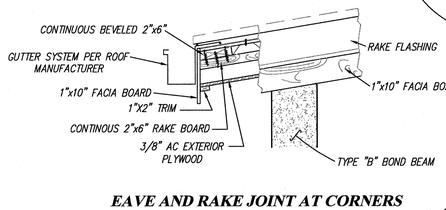


NTS

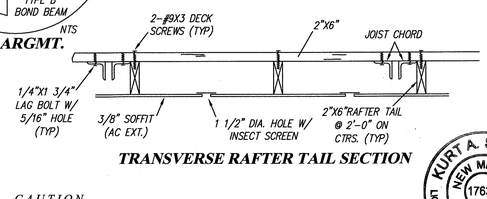
ENLARGMT.



EAVE DETAIL AT ROOF JOIST



EAVE AND RAKE JOINT AT CORNERS



TRANSVERSE RAFTER TAIL SECTION

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ENGINEER: C:\Users\Public\Documents\wnginuex\Project 8\proj8 design.dwg

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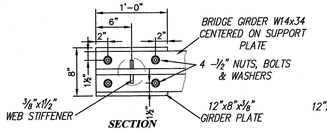
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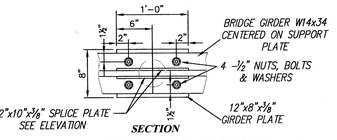
HEATON PUMP STATION
ROOF, GABLE, EAVE AND RAKE DETAILS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6-17

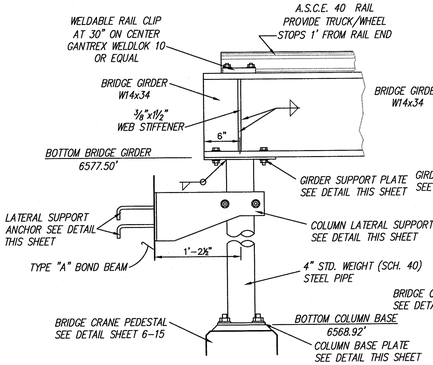


END COLUMN SUPPORT PLATE
SCALE 1"=1'-O"



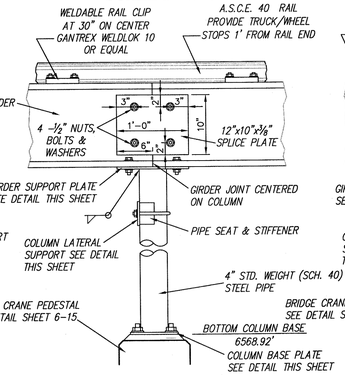
MIDDLE COLUMN SUPPORT PLATE
SCALE 1"=1'-O"

COLUMN NOTES:
1. INSTALL RAIL CLIPS AND TRUCK STOPS PER CRANE MANUFACTURERS RECOMMENDATIONS.
2. DRILL HOLES IN SUPPORT PLATES, GIRDER WEB, AND BOTTOM FLANGE AS REQUIRED



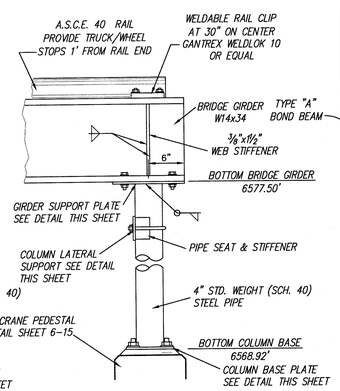
ELEVATION

WEST END COLUMN
SCALE 1"=1'-O"



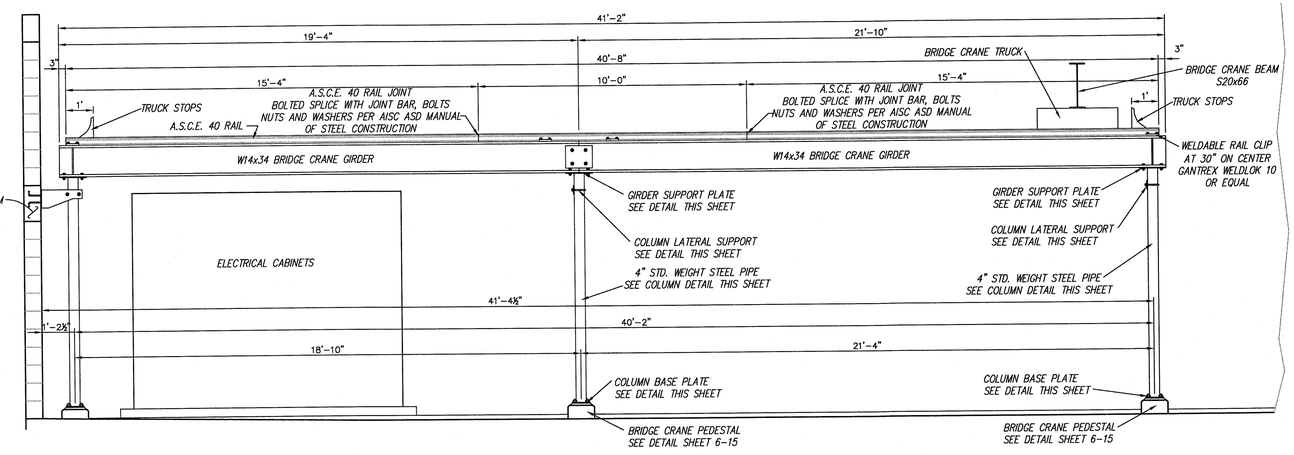
ELEVATION

MIDDLE COLUMN
SCALE 1"=1'-O"

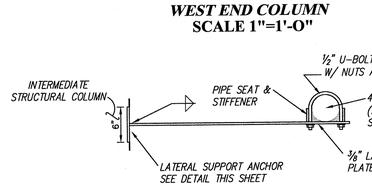


ELEVATION

EAST END COLUMN
SCALE 1"=1'-O"

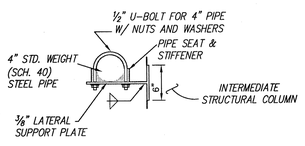


BRIDGE CRANE LONGITUDINAL ELEVATION
SCALE 3/8"=1'-O"



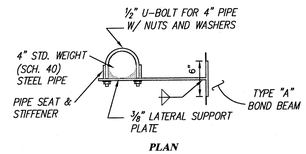
PLAN

NORTH SIDE COLUMN LATERAL SUPPORTS
SCALE 1"=1'-O"



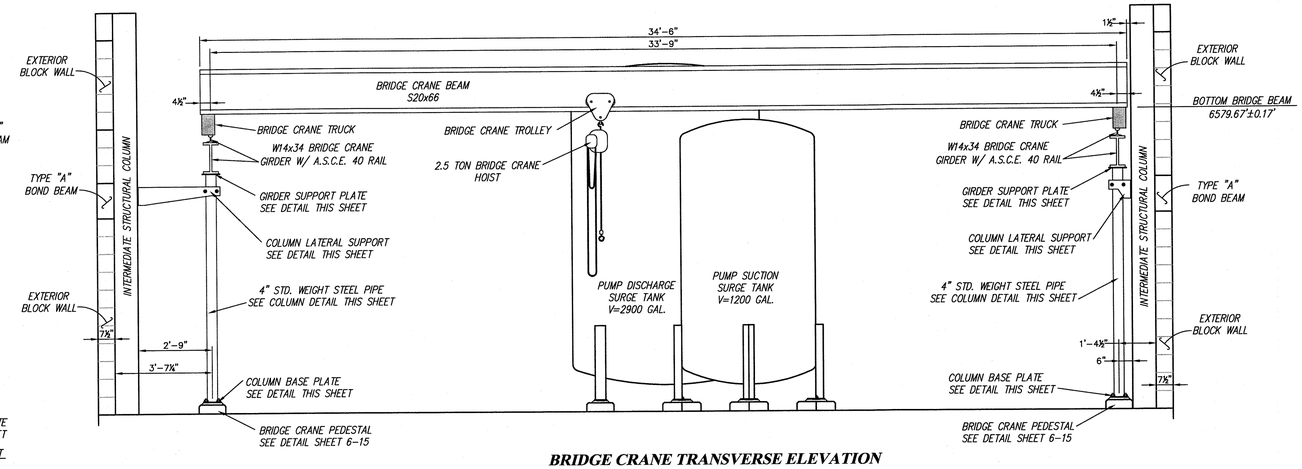
PLAN

SOUTH SIDE COLUMN LATERAL SUPPORTS
SCALE 1"=1'-O"

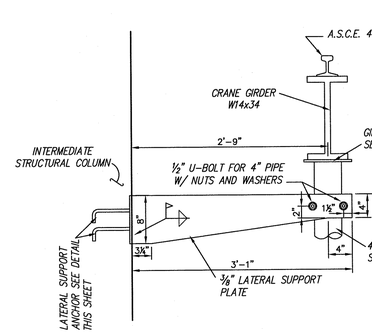


PLAN

WEST END COLUMN LATERAL SUPPORTS
SCALE 1"=1'-O"

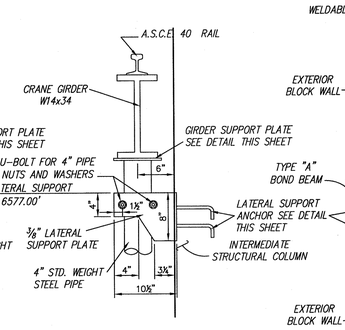


BRIDGE CRANE TRANSVERSE ELEVATION
SCALE 3/8"=1'-O"



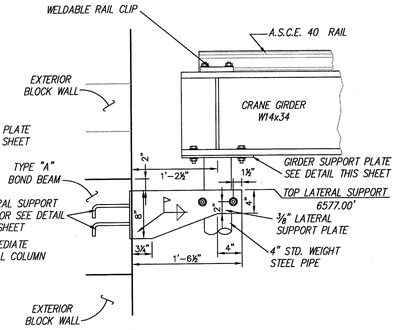
ELEVATION

NORTH SIDE COLUMN LATERAL SUPPORTS
SCALE 1"=1'-O"



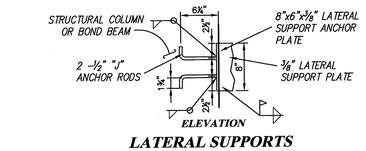
ELEVATION

SOUTH SIDE COLUMN LATERAL SUPPORTS
SCALE 1"=1'-O"



ELEVATION

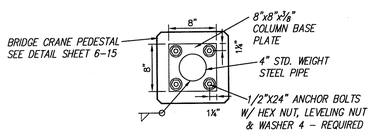
WEST END COLUMN LATERAL SUPPORTS
SCALE 1"=1'-O"



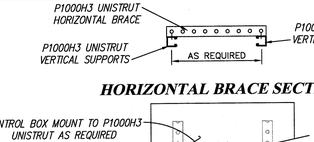
ELEVATION

LATERAL SUPPORTS ANCHOR
SCALE 1"=1'-O"

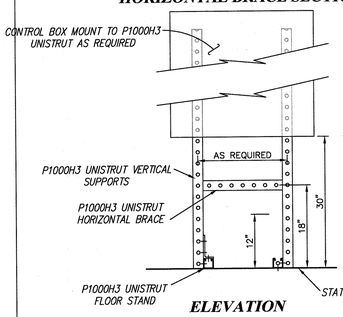
LATERAL SUPPORT & COLUMN BASE NOTES:
1. DRILL HOLES IN SUPPORT PLATES AS REQUIRED TO FIT COLUMNS
2. DRILL HOLES IN ANCHOR PLATES AS REQUIRED TO FASTEN TO FORMS
3. PLACE ANCHOR PLATES IN CTR. OF INTERMEDIATE COLUMNS (EXCEPT WEST END SUPPORT)



COLUMN BASE PLATE
SCALE 1"=1'-O"



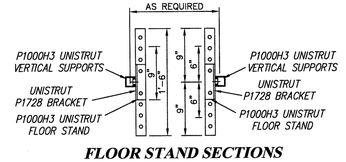
HORIZONTAL BRACE SECTION



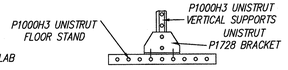
ELEVATION

CONTROL PANEL STAND
NTS

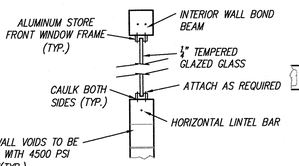
CONTROL PANEL STAND NOTES:
1. STAND WIDTH SHALL BE AS REQUIRED TO MATCH MANUFACTURES PANEL MOUNTS.
2. HARDWARE AND FASTENERS DESIGNED FOR USE WITH UNISTRUT COMPONENTS SHALL BE USED AS ALL STAND CONNECTION.
3. EACH FLOOR STAND SHALL BE ANCHORED TO FLOOR WITH EIGHT ¼" TAPCON HEX HEAD MAXI-SET ANCHORS OR EQUAL INCLUDING ALL HARDWARE INCLUDING WASHERS FOR USE WITH UNISTRUT COMPONENTS.



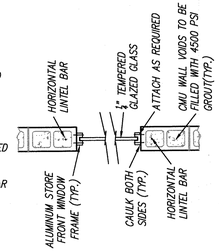
FLOOR STAND SECTIONS



FLOOR STAND ELEVATION



INTERIOR WINDOW ELEVATION



INTERIOR WINDOW PLAN

WINDOW DETAIL
W
NTS

CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(9)(b)(i)A 1978,THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

BRIDGE CRANE GIRDER DETAILS
U
SCALE AS SHOWN

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depauliengineering

for the CITY OF GALLUP
McKinley COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
BRIDGE CRANE AND CONTROL PANEL STAND DETAILS

SCALE:	SHOWN
DATE:	AUGUST 2014
DRAWN BY:	KAS
CHECKED BY:	MDP DS

SHEET 6-18

ENGINEER2: C:\Users\Public\Documents\engineer\Project 8\pro8 design.dwg

GENERAL NOTES

A. ALL RECTANGULAR DUCT SIZES SHOWN ARE INSIDE DIMENSIONS. INSTALL 1" INTERIOR ACOUSTIC LINER IN RECTANGULAR ONLY WHERE NOTED. ROUND DUCTS SHALL BE EXTERNALLY INSULATED, UNLESS OTHERWISE NOTED.

B. ALL DUCT SEAMS SHALL BE SEALED AIRTIGHT WITH HIGH PRESSURE DUCT SEALER.

C. PROVIDE ALL NECESSARY FITTINGS FOR RISES AND OFFSETS IN DUCTWORK AND PIPING REQUIRED FOR PROPER INSTALLATION WHETHER OR NOT SHOWN ON DRAWINGS.

D. ALL DUCTWORK INSTALLED IN AREAS WITH CEILING TO BE ROUTED BETWEEN LIGHTS AS MUCH AS POSSIBLE AND INSTALLED AS HIGH AS POSSIBLE.

E. COORDINATE ROOF PENETRATIONS TO AND FROM EQUIPMENT WITH STRUCTURAL DRAWINGS. ROOF OPENINGS SHALL BE LOCATED BETWEEN JOISTS.

F. COORDINATE THE LOCATIONS OF ALL EQUIPMENT WITH ANY PLUMBING LINES AND ELECTRICAL CONDUIT. IN THE EVENT THAT ANY EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL MODIFY AS REQUIRED. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT. SHOWING THE PROPOSED CHANGES FOR APPROVAL. THIS SHALL BE DONE AT NO COST TO THE OWNER.

G. ALL THERMOSTATS SHALL BE MOUNTED UP 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED. PROVIDE APPROVED. STEEL VENTILATED LOCKING COVERS WITH GUARDS AT ALL THERMOSTATS. UNLESS OTHERWISE DIRECTED.

MECHANICAL SPECIFICATIONS

1. PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PROVIDE A COMPLETE INSTALLATION AS INDICATED ON THE DRAWINGS AND AS NOTED BELOW.
2. ANY DAMAGE OF EXISTING WORK CAUSED BY NEW WORK UNDER THIS CONTRACT SHALL BE REPAIRED BY THIS CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. COORDINATE ALL WORK PERFORMED UNDER THIS DIVISION WITH WORK OF OTHER TRADES. THIS CONTRACTOR IS RESPONSIBLE FOR ENSURING A WELL COORDINATED EFFORT WITH OTHER TRADES AND A COMPLETE INSTALLATION OF THE SATISFACTION OF THE OWNER.
4. THE CONTRACTOR SHALL PREPARE THREE COPIES OF O&M MANUALS INCLUDING APPROVED SHOP DRAWINGS, CONTROL AS-BUILTS, AND TEST AND BALANCE REPORTS AT THE COMPLETION OF THE PROJECT.
5. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODES AND STANDARDS REQUIRED BY THE LOCAL AUTHORITY AND AS SPECIFIED HEREIN.
6. THIS CONTRACTOR SHALL PROVIDE, PROCURE, AND PAY FOR ALL PERMITS, SERVICES, METERS, LICENSES, FEES, ETC. REQUIRED FOR PERFORMANCE FOR WORK UNDER THIS CONTRACT. UPON COMPLETION OF THE WORK, DELIVER TO THE OWNER ALL CERTIFICATIONS OF APPROVAL SIGNED BY THE CONTROLLING AUTHORITIES.
7. PENETRATIONS REQUIRED FOR PIPING, DUCTWORK, AND EQUIPMENT HAVE BEEN INDICATED ON THE DRAWINGS; ANY ADDITIONAL PENETRATIONS REQUIRED SHALL BE PROVIDED WITH DUE CARE AND CONSIDERATION FOR THE WORK OF OTHER TRADES AND FOR THE APPEARANCE AND INTEGRITY OF THE BUILDING. THE CONTRACTOR SHALL COORDINATE ALL CUTTING AND PATCHING/PENETRATIONS WORK WITH THE ENGINEER. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR WORK THAT IS IN ADDITION TO, OR IS DIFFERENT FROM THE DRAWINGS.
8. ALL DUCTWORK SHALL BE ASTM A525 AND ASTM A527 GALVANIZED STEEL SHEET, LOCK FORMING QUALITY, HAVING G90 ZINC COATING IN CONFORMANCE WITH ASTM A90. CONSTRUCT DUCTWORK TO NFPA 90A AND SMACNA HVAC DUCT AND CONSTRUCTION STANDARDS. DUCTWORK SHALL BE 2 INCH PRESSURE CLASS LOW PRESSURE DUCTWORK.
9. ALL MECHANICAL EQUIPMENT SHALL BE SUBMITTED FOR REVIEW FOR ENGINEERING REVIEW AND COMMENT.

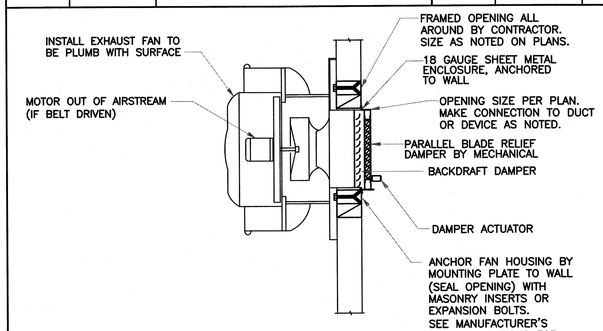
MECHANICAL/PLUMBING SYMBOL LEGEND

ABBR.	SYMBOL	DESCRIPTION
		EQUIPMENT DESIGNATION
		KEYED NOTES – DEMOLITION
		KEYED NOTES – NEW WORK
DIA	Ø	DIAMETER
T'STAT	T	THERMOSTAT
FD		FLOOR DRAIN
FS		FLOOR SINK
CAP		CAP ON END OF PIPE
POC		POINT OF CONNECTION
DISC		DISCONNECT TO POINT INDICATED
CO, WCO		CLEANOUT, WALL CLEANOUT
GCO, FCO		GRADE, FLOOR CLEANOUT
RD, OFD		ROOF DRAIN, OVERFLOW DRAIN
RD, OFD		ROOF DRAIN, OVERFLOW DRAIN
		RISER DOWN
		RISER UP
		DROP
		RISER UP
		BRANCH – TOP CONNECTION
		BRANCH – BOTTOM CONNECTION
		BRANCH – SIDE CONNECTION
HB		HOSE BIBB
WH		WATER HEATER
EWC		ELECTRIC WATER COOLER
CW		COLD WATER LINE
HW		HOT WATER LINE
RHW		CIRCULATING HOT WATER
V		VENT PIPING
S	—S—	SOIL OR WASTE LINE
IW	— IW —	INDIRECT WASTE
G	— G —	GAS – LOW PRESSURE
MG	—MG—	GAS – MEDIUM PRESSURE

ABBR.	SYMBOL	DESCRIPTION
VTR		VENT THRU ROOF
GV		GATE VALVE
GL		GLOBE VALVE
CV		CHECK VALVE
PV		PLUG VALVE
TCV-3		CONTROL VALVE (THREE-WAY)
TCV-2		CONTROL VALVE (TWO-WAY)
P & TR		RELIEF VALVE
PRV		PRESSURE REDUCING VALVE
BFV		BUTTERFLY VALVE
NV		NEEDLE VALVE
BV		BALL VALVE
FCV		CIRCUIT SETTER VALVE
STR		STRAINER
UN		UNION
20/12		RIGID DUCTWORK – FIRST FIGURE IS SIDE SHOWN
		FLEXIBLE DUCTWORK
		DUCT TRANSITION
SA		CEILING SUPPLY AIR OUTLET
RA		CEILING RETURN OR EXHAUST AIR INLET
SA		SIDEWALL SUPPLY AIR OUTLET
RA		SIDEWALL RETURN OR EXHAUST AIR INLET
FC		FLEXIBLE CONNECTION
FD		FIRE DAMPER
S/FD		SMOKE/FIRE DAMPER
MVD		MANUAL VOLUME DAMPER
SD		SPLITTER DAMPER
CFM		CUBIC FEET PER MINUTE
CD		CEILING DIFFUSER
G		GRILLE
SW		SIDEWALL
EAT, LAT		ENTERING, LEAVING AIR TEMPERATURE
WB, DB		WET, DRY BULB TEMPERATURE
FPM		FEET PER MINUTE
RPM		REVOLUTIONS PER MINUTE
"WC		INCHES OF WATER COLUMN
TSP		TOTAL STATIC PRESSURE
△P		PRESSURE DROP, PRESSURE DIFFERENCE
ESP		EXTERNAL STATIC PRESSURE

MECHANICAL EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION
EF-1 AND EF-2	EXHAUST FAN: CENTRIFUGAL TYPE WALL EXHAUSTER WITH SPUN ALUMINUM HOUSING, STAINLESS STEEL FASTENINGS, PRE-LUBRICATED BALL BEARING DRIVE, VIBRATION ISOLATORS, ALL ALUMINUM WHEEL AND HUB DYNAMICALLY AND STATICALLY BALANCED, BELT DRIVE BACKDRAFT DAMPERS, BIRD SCREEN, DISCONNECT SWITCH, ALUMINUM WIRING POST, WIRING TO JUNCTION BOX. SELECTION BASED ON GREENHECK OR APPROVED EQUAL. SYMBOL MODEL CFM SP HP FRPM VOLT/PH EF-1 CWB-180-7 3600 0.5 3/4 1119 115/1 EF-2 CWB-180-7 3600 0.5 3/4 1119 115/1
AC-1 (OUTDOOR UNIT)	HEAT PUMP UNIT: AIR COOLED, HERMETICALLY SEALED RECIPROCATING COMPRESSOR, RESILIENTLY MOUNTED WITH INTERNAL SPRING ISOLATION, COMPLETE WITH TOTALLY ENCLOSED, DIRECT DRIVE FAN MOTOR, ALUMINUM-ALLOY FIN, FACTORY OR FIELD FEATURES/ACCESSORIES SHALL INCLUDE CRANKCASE HEATER, LOW AMBIENT TEMPERATURE CONTROLS, SNOW STAND, AND WIND BAFFLES. UNIT BASED ON MITSUBISHI OR APPROVED EQUAL. SYMBOL MODEL CAPACITY CLG/HTG MBH MCA SEER VOLT/PH AC-1 MXZ-3B24NA-1 25.5/30.6 18 17.5 240/1
AC-1 (INDOOR UNITS)	AIR CONDITIONING EVAPORATOR: DUCTLESS, WALL MOUNTED DIRECT EXPANSION REFRIGERATED COOLING. THE UNIT SHALL BE INSULATED HIGH IMPACT POLYSTYRENE, WITH FACTORY SUPPLIED CLEANABLE FILTER AND PROVISIONS FOR HANGING. FANS SHALL BE FORWARD CURVED. MOTORS SHALL BE RESILIENT MOUNTED, THREE-SPEED, THERMAL OVERLOAD PROTECTED, PERMANENT SPLIT CAPACITOR TYPE. COILS SHALL BE COPPER TUBE, ALUMINUM FIN. SYSTEM SHALL BE CONTROLLED BY REMOTE CONTROL MICROPROCESSOR WITH SENSOR UNIT MOUNTED. PROVIDE DISCONNECT. FACTORY OR FIELD INSTALLED FEATURES/ACCESSORIES SHALL INCLUDE AUTOMATIC FAN SPEED CONTROL, COIL FREEZE PROTECTION, LOW AMBIENT OPERATION, WALL MOUNT KIT. PROVIDE UNIT WITH CONDENSATE PUMP. POWER PUMP FROM UNIT AND INTEGRATE OVERFLOW SWITCH TO TURN UNIT OFF IF PUMP FAILURE OCCURS. UNIT BASED ON MITSUBISHI OR APPROVED EQUAL. SYMBOL MODEL CFM CAPACITY CLG/HTG MBH MCA VOLT/PH AC-1 MSZ-FE12NA-8 388 – 738 12/13.6 1.0 240/1
UH-1 THRU UH-4	UNIT HEATER: SHALL BE ELECTRIC RESISTANCE CEILING/WALL MOUNTED, HORIZONTAL UNIT. THE CABINET SHALL BE 18 GAUGE STEEL WITH FACTORY BAKED ENAMEL FINISH AND INDIVIDUAL ADJUSTABLE LOUVERS FOR DIRECTIONAL AIR FLOW. THE ELECTRICAL HEATING BANK SHALL HAVE METAL SHEATH HEATING ELEMENTS AND AUTOMATIC RESET THERMAL OVERLOAD PROTECTION. MOTOR SHALL BE FULLY ENCLOSED CONTINUOUS FAN DUTY, SLEEVE BEARING TYPE WITH THERMAL OVERLOAD PROTECTION AND VIBRATION ISOLATION. FAN BLADE SHALL BE ALUMINUM, DYNAMICALLY BALANCED WITH GUARD. FURNISH COMPLETE WITH WALL MOUNTING BRACKET. UNIT SHALL BE REZNOR EGHB OR APPROVED EQUAL. SYMBOL MODEL CFM KW VOLT/PH UH-1 EGHB 700 10 480/3 UH-2 EGHB 700 10 480/3 UH-3 EGHB 700 10 480/3 UH-4 EGHB 700 10 480/3
L-1 AND L-2	INTAKE LOUVER: 18 GA. GALVANIZED STEEL CONSTRUCTION, 6" DEEP WITH 45 DEGREE STATIONARY BLADES, STEEL BIRD SCREEN, FLANGED FRAME WITH EXTENDED SEAL IF NEEDED AND FACTORY APPLIED BAKED ENAMEL FINISH. PROVIDE MOTORIZED DAMPER AND ALL REQUIRED HARDWARE INSTALL DAMPER ON INSIDE OF LOUVER. SIZE SHOWN ON PLANS. GREENHECK ESK-602 OR APPROVED EQUAL.
BB-1	BASEBOARD RADIATION: ELECTRIC ELEMENT IN 20 GAUGE STEEL HOUSING WITH SNAP ON FRONT COVER, VANDAL PROOF SCREW FASTENERS AND A FACTORY APPLIED BAKED ENAMEL FINISH, COMPLETE WITH THERMAL OVERLOAD PROTECTORS, INTEGRAL JUNCTION BOX AND INTEGRAL THERMOSTAT WITH SCREW DRIVER SLOTTED SHAFT FOR TAMPERPROOF SETTING. UNIT SHALL BE QMARK OR APPROVED EQUAL. SYMBOL MODEL LENGTH WATTS BTUH VOLT/PH BB-1 QMKC25126W 2'-6" 500 1700 120/1



SIDE WALL EXHAUST FAN DETAIL

SCALE: NONE

DAVID C. GRAHAM — STATE OF NEW MEXICO — 13658 — REGISTERED PROFESSIONAL ENGINEER — 12/16/2016

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION: IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978), THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

T&D SERVICES
Transmission & Distribution Services
Consulting Engineers & Surveyors
9550 San Mateo Blvd. NE Suite G
Albuquerque, NM 87113
www.t-d-services.com

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ENGINEERS: C:\Users\Public\Documents\projnet\Project 8\proj8 design.dwg

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
102 WEST HILL AVENUE GALLUP, NM 87301
TEL: (505)863-5440 DES@CNETCO.COM

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

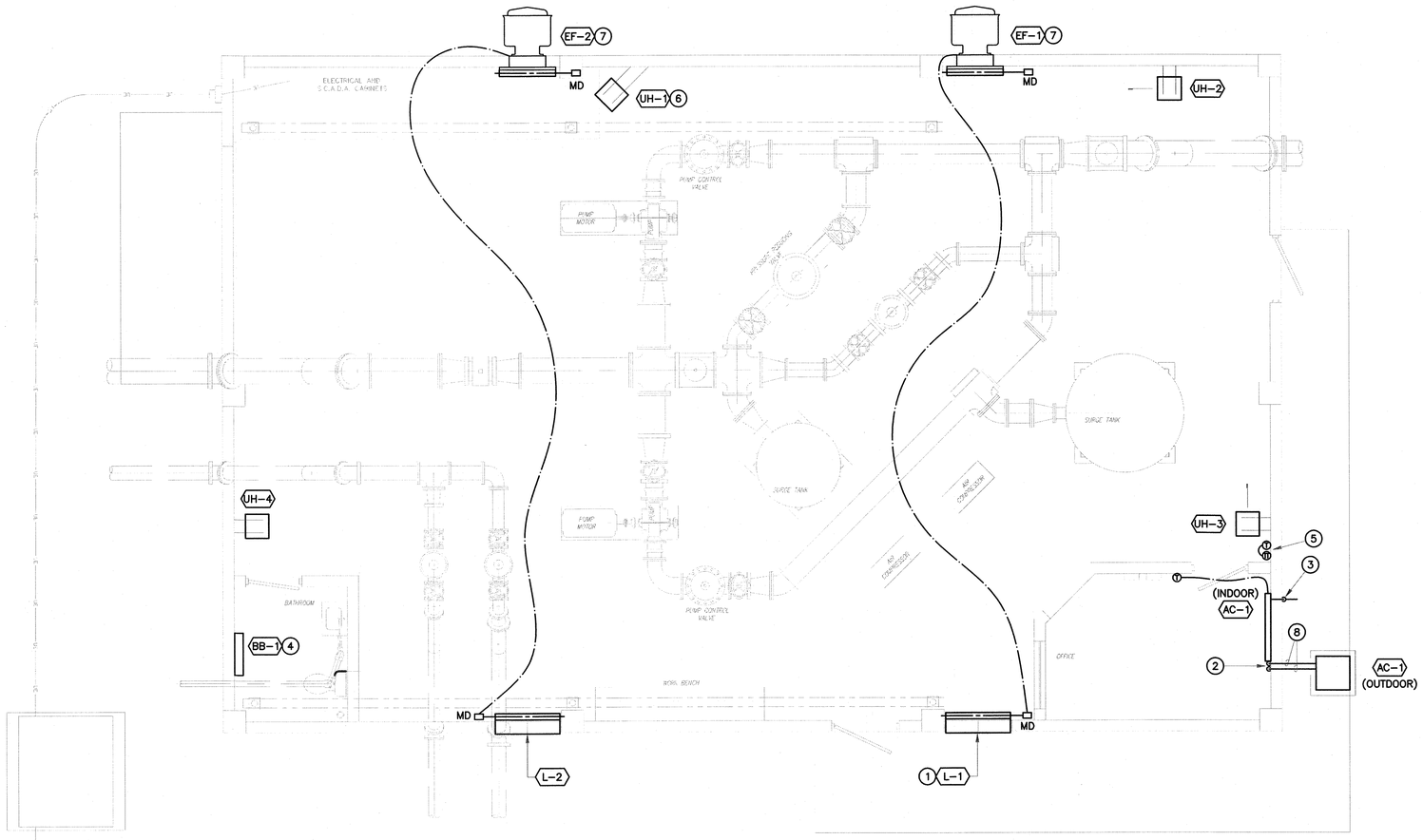
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
MECH. EQUIP. SCHEDULE, GENERAL NOTES, SPECS. AND SYMBOL LEGEND

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-19



PUMP STATION MECHANICAL PLAN

SCALE 1/4" = 1'-0"

0 0.5" 1' 2' 5' 10'

1/4" = 1'-0"

KEYED NOTES

1 INSTALL 48" X 32" INTAKE LOUVER WITH MOTORIZED DAMPER. DAMPER SHALL BE INTERLOCKED WITH EXHAUST FANS, SO LOUVER WILL OPEN WHEN EXHAUST FAN IS ENERGIZED. TYPICAL OF 2.

2 REFRIGERATION PIPING FROM GROUND MOUNTED HEAT PUMP THRU WALL WITH WEATHER TIGHT SEAL AND UP ON WALL TO WALL MOUNTED EVAPORATOR, AC-1. SEE MECHANICAL EQUIPMENT SCHEDULE, SHEET 6-19. CONTRACTOR SHALL PROVIDE REFRIGERATION LINE SETS AND ALL REQUIRED EQUIPMENT FOR A COMPLETE AND OPERATING SYSTEM.

3 5/8" CONDENSATE DRAIN UP FROM CONDENSATE PUMP THRU WALL AND DOWN ON EXTERIOR WALL TO 12" ABOVE GRADE WITH TURNDOWN.

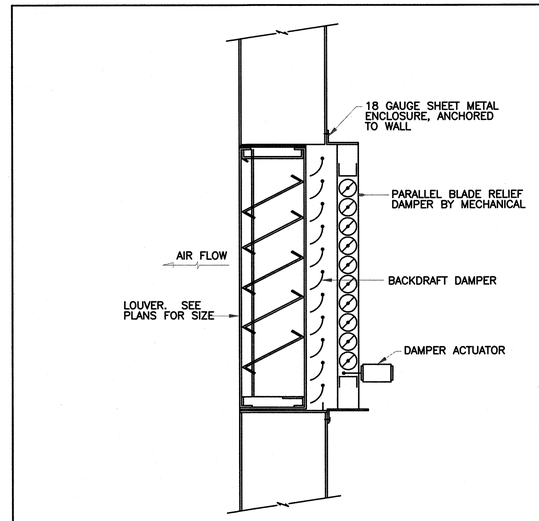
4 ELECTRIC BASEBOARD HEATER, SEE MECHANICAL EQUIPMENT SCHEDULE, SHEET 6-19. INTEGRAL THERMOSTAT WITH BASEBOARD HEATER SHALL CONTROL ELECTRIC HEATER.

5 INSTALL PROGRAMMABLE THERMOSTAT WITH AUTO CHANGE OVER FROM HEATING TO COOLING. THERMOSTAT SHALL ENERGIZE UNIT HEATS (TOTAL 4) WHEN TEMPERATURE IS 42°F OR BELOW (ADJUSTABLE). THERMOSTAT SHALL ENERGIZE EXHAUST FANS (TOTAL 2) WHEN TEMPERATURE IS 78°F OR ABOVE (ADJUSTABLE). MOTORIZED DAMPERS (TOTAL 4) SHALL OPEN WHEN EXHAUST FANS ARE ON AND CLOSE WHEN EXHAUST FANS ARE OFF. INSTALL 4-HOUR TWIST TIMER TO OVERRIDE THERMOSTAT AND ENERGIZE EXHAUST FANS ON WHEN TWIST TIMER IS ACTIVATED. INSTALL PROGRAMMABLE THERMOSTAT AND 4-HOUR TWIST TIMER 48" A.F.F.

6 ELECTRIC UNIT HEATER, UH-1. SEE MECHANICAL EQUIPMENT SCHEDULE, SHEET 6-19 UNIT SHALL BE MOUNTED TO WALL, CONTRACTOR SHALL COORDINATE EXACT LOCATION TO AVOID OVERHEAD CRANE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

7 INSTALL SIDEWALL MOUNTED EXHAUST FAN PER DETAIL ON SHEET 6-19.

8 PROVIDE UNISTRUT PIPE SUPPORT CLAMPS MIDWAY FROM OUTDOOR AC-1 TO WALL PENETRATION.



LOUVER/DAMPER DETAIL

SCALE: NONE

DAVID C. GRAHAM STATE OF NEW MEXICO 13658 REGISTERED PROFESSIONAL ENGINEER 12/16/2015

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NOTICE OF EXTENDED PAYMENT PROVISION: IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978), THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

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for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
MECHANICAL PLAN

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-20

ENGINEER'S C:\Users\Public\Documents\engineer\Project 8\proj8 design.dwg

GENERAL NOTES

A. THE CONTRACTOR SHALL FAMILIARIZE THEMSELF WITH THE PROJECT PRIOR TO THE BID OPENING, TO ALLOW THEM TO SUBMIT A COMPLETE BID WITHIN THE SCOPE OF THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS ARISING DURING THE BID PERIOD, IN REGARD TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF THE WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.

B. THE WORK INDICATED ON THE ELECTRICAL SITE PLAN AND THE POWER RISER DIAGRAM IS THE RESULT OF INITIAL CONTACT BY THE DESIGN ENGINEER WITH THE LOCAL ELECTRICAL UTILITY COMPANY. ADDITIONAL WORK MAY BE REQUIRED. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL REQUIREMENTS OF THE ELECTRICAL SERVICE WITH THE LOCAL ELECTRICAL UTILITY COMPANY AND PROVIDE, PRIMARY AND SECONDARY TRENCHING, CONDUITS, CONCRETE ENCASEMENT (WHERE APPLICABLE), PULL BOXES, BACKFILL AND PATCHING. ALL ASSOCIATED WORK REQUIRED FOR INSTALLATION OF THE ELECTRICAL SERVICE AND SYSTEMS BY THE LOCAL ELECTRICAL UTILITY INCLUDING FIELD COORDINATION AND ROUTING WITH THE UTILITY COMPANY IS THAT OF THE ELECTRICAL CONTRACTOR AND SHALL BE INCLUDED IN THE CONTRACTOR'S BID WITHOUT EXCEPTION.

C. IT WILL BE THE CONTRACTOR'S OBLIGATION TO INCLUDE, IN THEIR BID, THE COSTS FOR INSTALLING JUNCTION BOXES, PROVIDING MISCELLANEOUS COVERS, WORK WITH OTHER DISCIPLINES WHERE THE CONTRACT INVOLVES ELECTRICAL POWER OR CONTROL CONNECTIONS, SWITCHES, ETC. ALL OF THIS WORK SHALL BE PART OF THIS CONTRACT.

D. LOCATION OF EQUIPMENT AND OTHER DEVICES SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

E. THE CONDUIT RUNS, AS SHOWN ON PLANS, INDICATE APPROXIMATE ROUTING. EXACT LOCATION OF CONDUIT RUNS SHALL BE AS FIELD CONDITIONS DICTATE.

F. CONTRACTOR SHALL INSTALL PULL AND JUNCTION BOXES WHEREVER REQUIRED BY N.E.C. OR JOB CONDITIONS. ALL NEW WIRING SHALL BE TAGGED AT ALL PULL BOXES, JUNCTION BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS. ACTION CRAFT, BRADY OR APPROVED EQUAL.

G. SHOULD CONTRACTOR AT ANY TIME NOTICE THAT THE ACTUAL FIELD CONDITIONS DO NOT CORRESPOND TO THE INFORMATION GIVEN ON THE DRAWINGS, THEN IT WILL BE THEIR RESPONSIBILITY TO NOTIFY THE ENGINEER FOR CLARIFICATION, PRIOR TO COMMENCING SUCH WORK.

H. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL TRADES FOR THE EXACT LOCATION OF EQUIPMENT AND APPURTENANCES THAT REQUIRE ELECTRICAL CONNECTIONS.

I. CONTRACTOR SHALL MAKE AS-BUILT DRAWINGS DOCUMENTING ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. PROVIDE UPDATED TYPEWRITTEN DIRECTORIES FOR ALL PANELS AND LABEL ALL PANELS WITH PLASTIC LAMINATED NAMEPLATES.

J. INSTALL BLANK DEVICE PLATES ON ALL UNUSED JUNCTION BOXES IN FINISHED AREAS.

K. ALL ELECTRICAL AND SCADA WIRING SHALL BE ROUTED IN CONDUIT.

L. ALL SUB-SLAB SCADA CIRCUITING TO DEVICES SHALL BE 1.0" CONDUIT MINIMUM.

M. WHEREVER REQUIRED, FURNISH AND INSTALL ON WALL OR CEILING FREESTANDING UNISTRUT CHANNELS, ANGLE IRONS OR ANY OTHER SUPPORT STRUCTURE WITH THREADED ROD HANGERS AS REQUIRED FOR THE SUPPORT OF ELECTRICAL EQUIPMENT OF ANY KIND TO ENSURE PROPER INSTALLATION.

N. ALL NEW WIRING SHALL BE COPPER.

O. ALL HOME RUN CIRCUITING TO PANELS SHALL BE .75" CONDUIT, MINIMUM.

P. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL TIE HANDLES ON ALL CIRCUIT BREAKERS SHARING A NEUTRAL CONDUCTOR PER THE NEC.

Q. MOUNTING HEIGHTS INDICATED ON THE DRAWINGS ARE APPROXIMATE. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OTHER TRADES FOR EXACT HEIGHT REQUIRED. THIS REQUIREMENT ALSO APPLIES TO THE LOCATION OF WALL BOXES FOR HVAC SENSORS, T-STATS, ETC. ANY THIS NOTE APPLIES TO ALL ELECTRICAL SHEETS IN THESE DRAWINGS: OUTLET DEVICES THAT HAVE TO BE RELOCATED DUE TO COUNTERTOP TYPE CONFLICTS WILL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

FIXTURE SCHEDULE HEATON

TYPE	VOLT	MANUFACTURER NUMBER	FIXTURE DESCRIPTION	QTY OF LAMPS	LAMP TYPE	MOUNTING
A	120	COLUMBIA #KL4-228-U-EP-U-KLWG4	INDUSTRIAL FLUORESCENT FIXTURE WITH WIREGUARD	2	28W T5	PENDENT MOUNTED FROM STRUCTURE 12'-0" AFF TO BOTTOM OF FIXTURE USING UNISTRUT .
B	120	COLUMBIA #4PS24-228-SM-FA-A12-EP-U	2 X 4 SURFACE TROFFER WITH FLUSH ALUM. DOOR	2	28W T5	SURFACE
C	120	BEACON #TRV-D-24NB-55-5K-T3-UNV-GENI-XX-PEC-OCS-BBT	WALL MOUNTED LED OUTDOOR FIXTURE WITH OCCUPANCY SENSOR AND PHOTO-CELL	***	55W LED	WALL 8'-0" AFF
EXIT	120	DUAL-LITE #SE-S-R-B-E-I	EXIT FIXTURE WITH SELF DIAGNOSTICS FEATURE WITH ARROWS, MOUNTING AND SIDES AS SHOWN.	***	FURINISHED WITH FIXTURE	ON WALL 6" ABOVE DOOR

NOTES:
1. FIXTURES WITH CATALOG INFORMATION LISTED ABOVE ARE USED AS A BASES OF QUALITY AND PERFORMANCE. SUBSTITUTIONS/PRIOR APPROVALS SHALL COMPLY WITH SCHEDULE AND SPECIFICATIONS. IF THE FIXTURE(S) PROPOSED FOR SUBSTITUTION DO NOT COMPLY, IN OUR OPINION, THEY WILL BE REJECTED.

2. THERE IS ADDITIONAL INFORMATION IN SPECIFICATION SECTION 701.0500 THAT SHALL BE FOLLOWED.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
⬭	KEYED NOTE SYMBOL – ELECTRICAL.
⬡	MECHANICAL EQUIPMENT DESIGNATION – SEE MECHANICAL EQUIPMENT SCHEDULE.
WP	WEATHERPROOF.
AC	ABOVE COUNTER (6" UNLESS NOTED OTHERWISE).
AL	ABOVE LAVATORY (6" UNLESS NOTED OTHERWISE).
AFF	ABOVE FINISH FLOOR.
A	CEILING FIXTURE AND OUTLET. TYPE AS INDICATED IN FIXTURE SCHEDULE.
B	BRACKET FIXTURE AND OUTLET. TYPE AS INDICATED IN FIXTURE SCHEDULE.
	CEILING MOUNTED DOUBLE FACE EXIT FIXTURE (SELF-TESTING/SELF-DIAGNOSTICS) AND OUTLET WITH DIRECTIONAL ARROWS AS INDICATED. TYPE "EXIT" AS INDICATED IN FIXTURE SCHEDULE.
	CEILING MOUNTED SINGLE FACE EXIT FIXTURE (SELF-TESTING/SELF-DIAGNOSTICS) AND OUTLET WITH DIRECTIONAL ARROWS AS INDICATED. TYPE "EXIT" AS INDICATED IN FIXTURE SCHEDULE.
	WALL BRACKET OR RECESSED EXIT FIXTURE (SELF-TESTING/SELF-DIAGNOSTICS) AND OUTLET WITH DIRECTIONAL ARROWS AS INDICATED. TYPE "EXIT" AS INDICATED IN FIXTURE SCHEDULE.
C	FLUORESCENT FIXTURE AND OUTLET. TYPE AS INDICATED IN FIXTURE SCHEDULE.
	LIGHT FIXTURES INDICATED WITH SHADING ARE CONNECTED TO EMERGENCY POWER SOURCE WITH SELF-TESTING/SELF-DIAGNOSTICS. BODINE #B50ST (1350 LUMENS) BATTERY PACK OR APPROVED EQUAL. PROVIDE ALL MOUNTING HARDWARE REQUIRED FOR A COMPLETE INSTALLATION, COORDINATE WITH LIGHTING MFR.
S_a	SINGLE POLE WALL SWITCH. FLUSH MOUNTED UP 44" UNLESS OTHERWISE INDICATED. (LOWER CASE LETTER, WHEN USED, DENOTES FIXTURES CONTROLLED).
S_{3a}	THREE-WAY WALL SWITCH. FLUSH MOUNTED UP 44" UNLESS OTHERWISE INDICATED. (LOWER CASE LETTER, WHEN USED, DENOTES FIXTURES CONTROLLED).
S_T	THERMAL SWITCH. WEATHERPROOF IF INSTALLED OUTSIDE. FLUSH MOUNTED UP 44" UNLESS OTHERWISE INDICATED.
S_L	LIMIT SWITCH FURNISHED WITH VALVE.
(S)	SOLINOID FURNISHED WITH VALVE.
J	JUNCTION BOX FLUSH IN WALL. HEIGHT AS INDICATED FOR CONNECTION TO EQUIPMENT.
	20 AMP DUPLEX CONVENIENCE RECEPTACLE, UP 18" OR AS INDICATED.
	20 AMP GROUND FAULT INTERRUPTING DUPLEX CONVENIENCE RECEPTACLE, UP 18" OR AS INDICATED.
WP	20 AMP WEATHERPROOF GROUND FAULT INTERRUPTING DUPLEX CONVENIENCE RECEPTACLE, UP 18" OR AS INDICATED. COVER TO BE CAST ALUMINUM "HUBBELL" #WP26M OR EQUAL.
	SPECIAL CABINET, TELEPHONE TYPE OR AS NOTED.
	BRANCH CIRCUIT PANEL, SEE PANEL SCHEDULE FOR CHARACTERISTICS.
(2)	MOTOR CONNECTION WITH HP INDICATED.
(F)	MOTOR CONNECTION FOR FRACTIONAL HP MOTOR (LESS THAN 1/3 HP). PROVIDE THERMAL O.L. SWITCH ADJACENT TO ALL MOTORS UNLESS SWITCH IS SHOWN ELSEWHERE ON PLAN.
⊠	MOTOR STARTER, SIZE AND POLES FOR MOTOR FURNISHED.
30/3	DISCONNECT SWITCH, NON-FUSED, SUBSCRIPT INDICATES SWITCH AMPERAGE AND NUMBER OF POLES, BE NEMA 4 IF INSTALLED OUTDOORS. VOLTAGE RATING AS REQUIRED BY SYSTEM.
30/3/20	DISCONNECT SWITCH, FUSED, SUBSCRIPT INDICATES SWITCH AMPERAGE, NUMBER OF POLES AND FUSE SIZE. TO BE NEMA 4 IF INSTALLED OUTDOORS. PROVIDE FUSES AT 125% F.L.A. OF UNIT UNLESS OTHERWISE INDICATED. VOLTAGE RATING AS REQUIRED BY SYSTEM.
	COMBINATION MOTOR STARTER, SIZE AND POLES FOR MOTOR FURNISHED/DISCONNECT SWITCH.
	BRANCH CIRCUIT CONDUIT IN WALL OR CEILING WITH CONDUCTORS INDICATED.
	BRANCH CIRCUIT CONDUIT UNDER FLOOR OR UNDERGROUND WITH CONDUCTORS INDICATED.
A-2,4	HOME RUN CONDUIT TO PANEL WITH BRANCH CIRCUIT NUMBERS INDICATED. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.
	POWER CONDUIT, CONDUCTORS TYPICALLY SHOWN AT CIRCUIT BEGINNING ONLY. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.
2221	LIGHTING CONDUIT, CONDUCTORS TYPICALLY SHOWN AT CIRCUIT BEGINNING ONLY. SWITCH LEGS SHOWN AS REQUIRED FOR CLARITY. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.
121	TIC MARKS REPRESENT NEUTRAL, HOT, SWITCH LEG AND GROUND CONDUCTORS RESPECTIVELY. CONTRACTOR SHALL PROVIDE TIE HANDLES FOR ALL BREAKERS SHARING NEUTRAL CONDUCTORS PER NEC.

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER
12-16-2015

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NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978), THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

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for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON ELECTRICAL SYMBOL LEGEND, FIXTURE SCHEDULE AND GENERAL NOTES

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-21

ENGINEER'S: c:\Users\Public\Documents\engineer\Project 8\proj8 design.dwg

KEYED NOTES

1 PAD MOUNTED SERVICE TRANSFORMER. REFER TO POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.

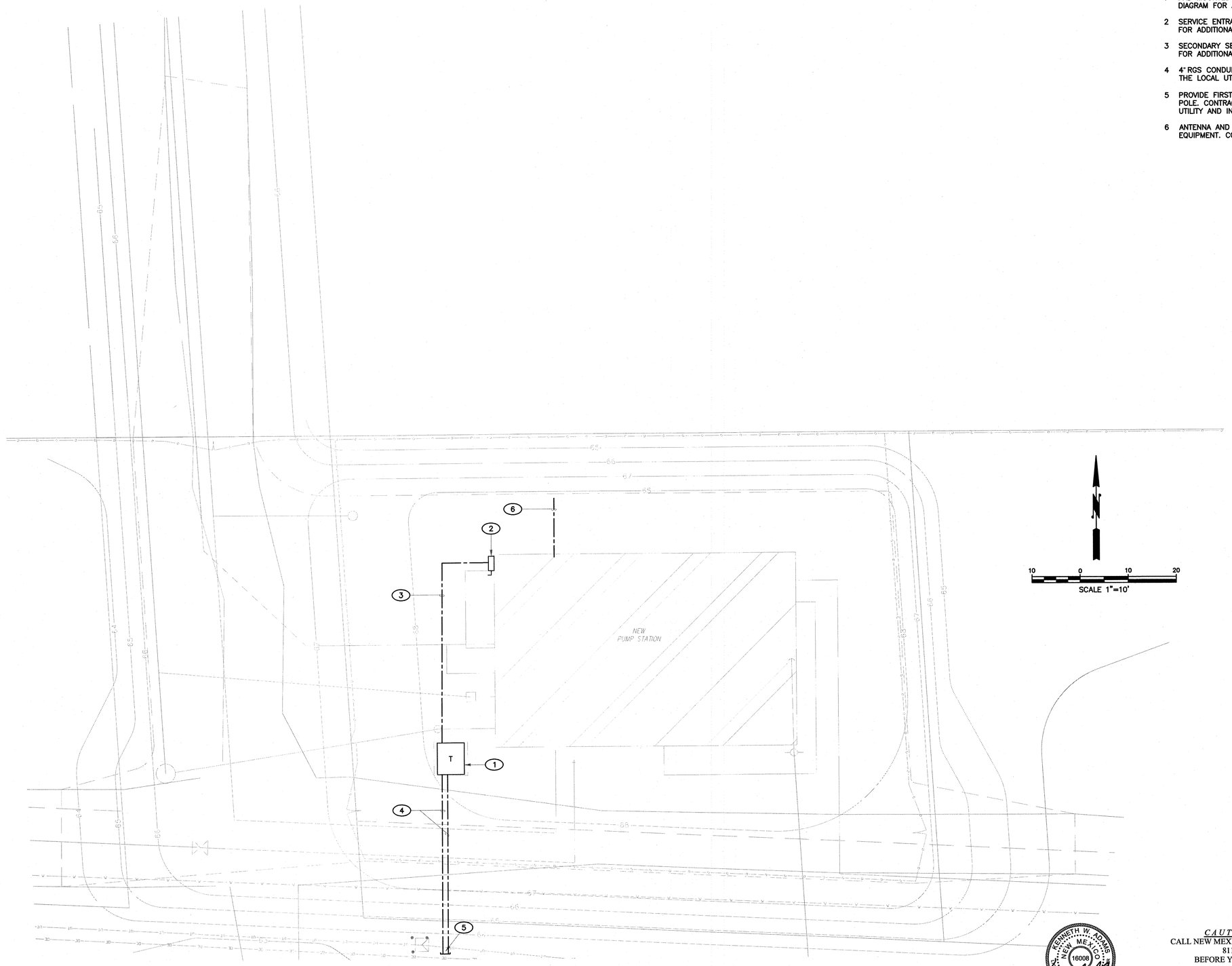
2 SERVICE ENTRANCE EQUIPMENT. REFER TO POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.

3 SECONDARY SERVICE FEEDER. REFER TO POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.

4 4" RGS CONDUIT 36" DEEP TO POLE FOR PRIMARY FEEDER BY THE LOCAL UTILITY COMPANY. PROVIDE SPARE 4" CONDUIT.

5 PROVIDE FIRST 10' OF CONDUIT WITH STAND-OFF BRACKETS AT POLE. CONTRACTOR TO CONFIRM RISER POLE LOCATION WITH UTILITY AND INSTALL RACEWAYS PER UTILITY REQUIREMENTS.

6 ANTENNA AND TRANSDUCER CABLES TO TANK MOUNTED EQUIPMENT. CONTRACTOR TO VERIFY REQUIRED LENGTHS.



PUMP STATION ELECTRICAL SITE PLAN
SCALE 1"=10'

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER
12-16-2015

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HEATON PUMP STATION
ELECTRICAL SITE PLAN

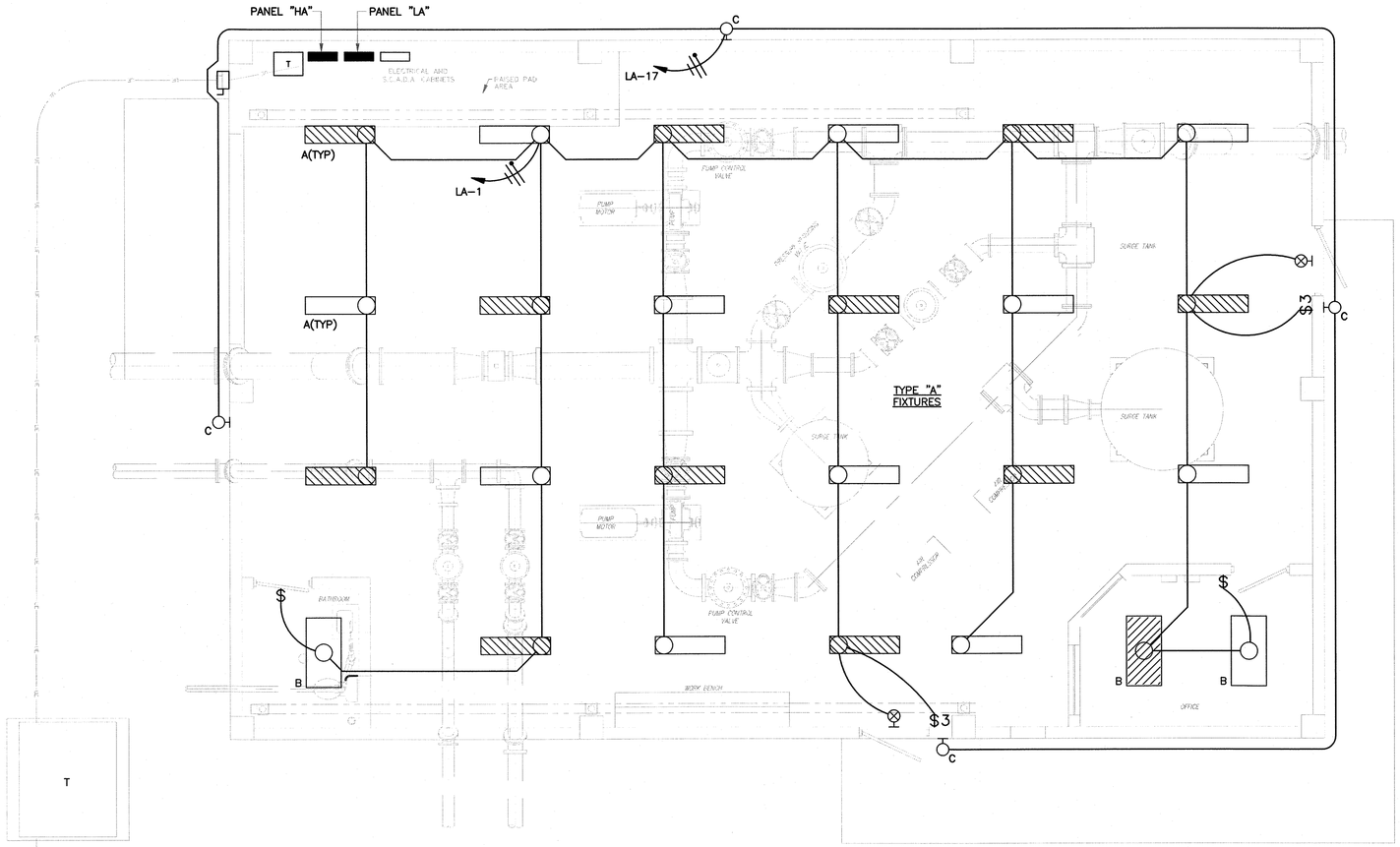
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DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-22

ENGINEERS: C:\Users\Public\Documents\engineer\Project 6\proj6_design.dwg

GENERAL NOTES

A. ALL EXPOSED CONDUIT RUNS SHALL BE RUN NEATLY AND RUN PARALLEL AND PERPENDICULAR TO BUILDING LINES.



PUMP STATION LIGHTING PLAN
SCALE 1/4" = 1'-0"

0 6"1' 2' 5' 10'
1/4" = 1'-0"

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12-16-2015

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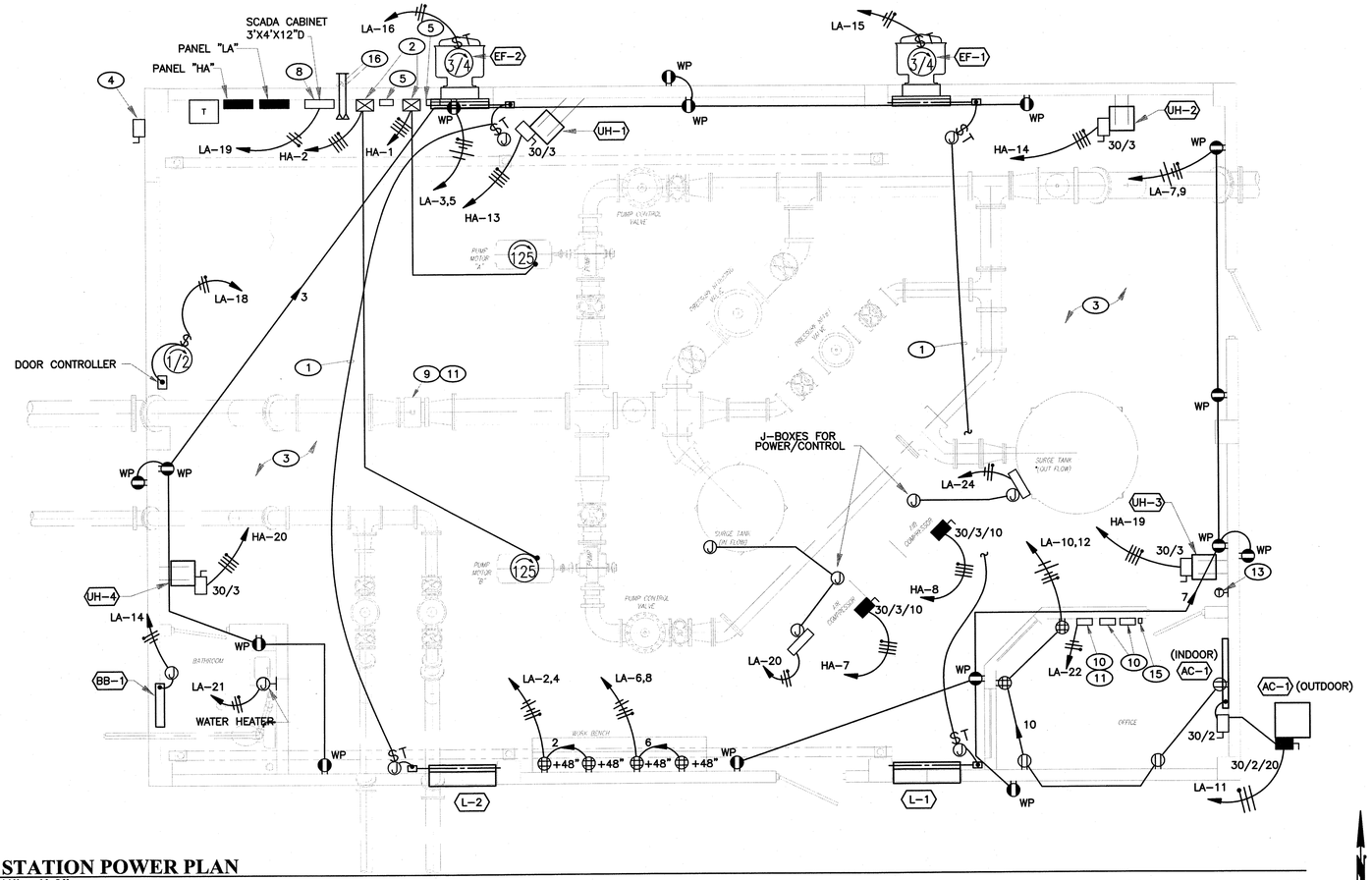
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
LIGHTING PLAN

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-23

ENGINEERS: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg



PUMP STATION POWER PLAN
SCALE 1/4" = 1'-0"

0 6" 1' 2' 5' 10'
1/4" = 1'-0"

KEYED NOTES

1 INTERLOCK LOUVER "L-1" (ON SAME CIRCUIT) WITH EF-1 SO WHEN EF-1 IS ENERGIZED LOUVER WILL OPEN. LIKEWISE WITH EF-2 AND L-2.

2 PROVIDE A SOFT-START NEMA SIZE 5 STARTER IN NEMA 1 COMBINATION ENCLOSURE FOR PUMP AND EXTEND TO CIRCUIT AS INDICATED.

3 ALL RECEPTACLES IN THIS ROOM SHALL BE 48" A.F.F.

4 SERVICE DISCONNECT SWITCH. REFER TO POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.

5 NOT USED

6 NOT USED.

7 NOT USED

8 SCADA SYSTEM AND COMMUNICATION CENTER (SEE REQUIREMENTS)

9 FLOW METER (SEE PIPING PLAN)

10 FLOW METER REMOTE DISPLAY WITH OUTPUT FOR SCADA REQUIREMENTS

11 FLOW METER CABLE (LENGTH AS REQUIRED) IN 3/4" CONDUIT TO METER REMOTE DISPLAY AND SCADA SYSTEM (SUB SLAB) LENGTH AS REQUIRED

12 NOT USED.

13 QMARK WALL MOUNTED THERMOSTAT FOR HEATER. RUN 18 GAUGE WIRING IN 1/2" CONDUIT.

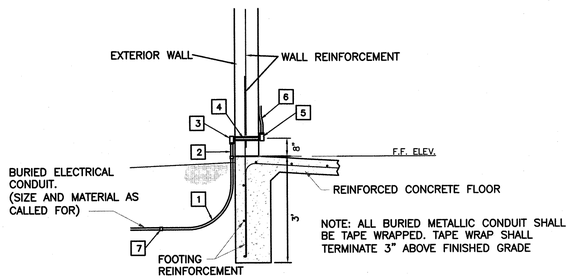
14 SCADA CONTROL WIRING -2C 16 GAUGE SHIELDED CABLE IN 1/2" CONDUIT FROM SENSOR TO SCADA SYSTEM AS REQUIRED.

15 "ON-SITE" TOGGLE SWITCH 24VAC RATED.

16 (2) 2" PVC WALL SLEEVE FOR COMMUNICATION SERVICE. (SEE WALL PENETRATION DETAIL)

GENERAL NOTES

A. ALL EXPOSED CONDUIT RUNS SHALL BE NEAT AND INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING LINES.



ELECTRICAL WALL PENETRATION KEYED NOTES

1 G.R.C. 90° LONG SWEEP ELBOW, SIZE AS CALLED FOR BURIED CONDUIT ON SITE PLAN AND BUILDING LAYOUT.

2 G.R.C. ELECTRICAL CONDUIT, SIZE AS CALLED FOR BURIED CONDUIT ON SITE PLAN AND BUILDING LAYOUT

3 GALVANIZED CONDULET AS REQUIRED, SIZE AS CALLED FOR ON BURIED CONDUIT ON SITE PLAN AND BUILDING LAYOUT

4 G.R.C. ELECTRICAL CONDUIT (SIZE AS CALLED FOR BURIED CONDUIT ON SITE PLAN) IN GALVANIZED WALL SLEEVE. SIZE SLEEVE AS REQUIRED TO FIT CONDUIT AND CONDULET CONNECTIONS. SEAL PENETRATION W/ SILICONE

5 CONDULET OR JUNCTION BOX AS REQUIRED, SIZE AND/OR REDUCTION AS CALLED FOR ON SITE PLAN AND BUILDING LAYOUT

6 EMT CONDUIT AS REQUIRED FOR CONTROL WIRING.

7 CONNECT/ADAPT TO BURIED ELECTRICAL CONDUIT AS REQUIRED OR SEAL WITH THREADED CAP OR PLUG

ELECTRICAL WALL PENETRATION DETAIL
SCALE: 1"=2'

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER
12-16-2015

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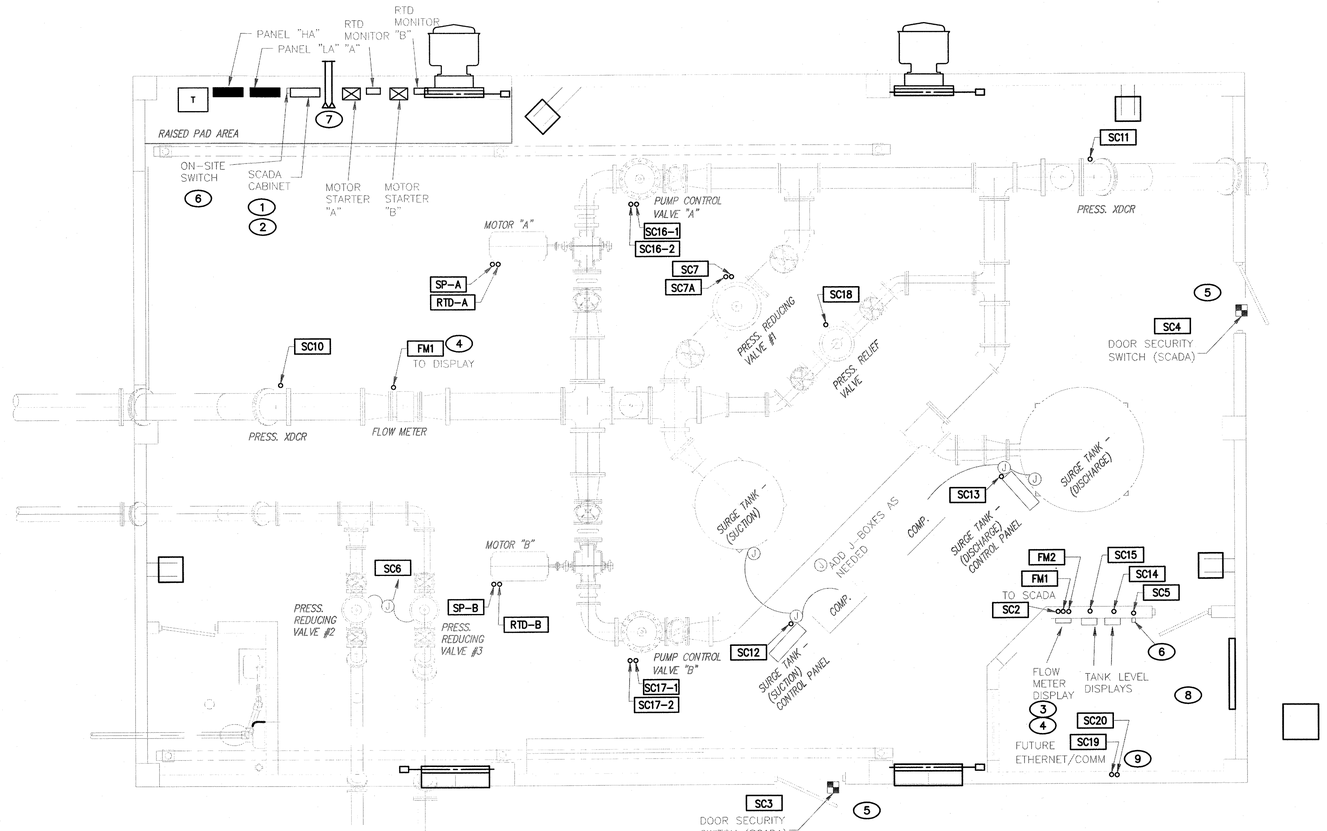
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
POWER PLAN

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-24

ENGINEER: C:\Users\Public\Documents\engineer\Project 8\proj8 design.dwg



PUMP STATION SPECIAL SYSTEMS
SCALE 1/4" = 1'-0"

0 6" 1' 2' 5' 10'
1/4" = 1'-0"

KEYED NOTES

1 SCADA SYSTEM JUNCTION BOX.

2 SCADA SYSTEM AND COMMUNICATION CENTER (SEE REQUIREMENTS)

3 FLOW METER REMOTE DISPLAY WITH OUTPUT FOR SCADA REQUIREMENTS

4 FLOW METER CABLE (LENGTH AS REQUIRED)

5 SCADA CONTROL WIRING 2C 16 GAUGE SHIELDED CABLE IN 1/2" CONDUIT FROM SENSOR TO SCADA SYSTEM AS REQUIRED.

6 "ON-SITE" TOGGLE SWITCH 24 VDC RATED. (2 PLACES)

7 (2) 2" PVC WALL SLEEVE FOR COMMUNICATION SERVICE. SEE WALL PENETRATION DETAIL FOR ADDITIONAL INFORMATION.

8 CONTRACTOR TO SUPPLY SUITABLE FLUSH MOUNTED ENCLOSURES WITH MUD RINGS, COVERS, ETC. AS NEEDED TO ALLOW FOR FUTURE COMM/DATA CIRCUITS. LOCATE ENCLOSURES ~18" A.F.F.

9 CONTRACTOR TO VERIFY DISPLAY/SWITCH MOUNTING HEIGHTS WITH OWNER PRIOR TO INSTALLATION.

GENERAL NOTES

A. ALL EXPOSED CONDUIT RUNS SHALL BE NEAT AND INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING LINES.

SCADA REQUIREMENTS

THE CITY CURRENTLY UTILIZES A SCADA SYSTEM BY MOTOROLA FOR SUPERVISORY CONTROL AND DATA ACQUISITION OF WATER PRODUCTION FACILITIES. RTU UNITS ARE LOCATED AT FACILITIES AND IN THE WELL FIELDS WITH RADIO COMMUNICATION TO TWO NETWORKED COMPUTER STATIONS IN THE CITY.

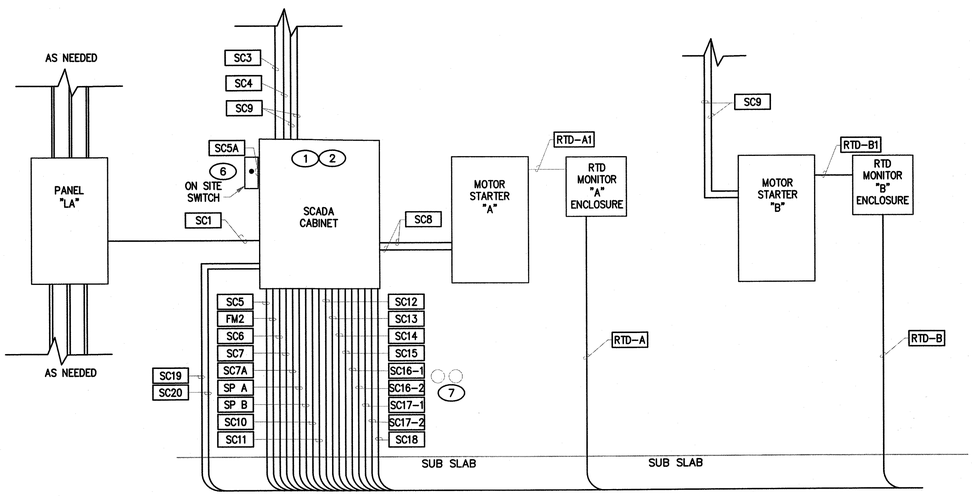
THIS PROJECT CONSISTS OF INSTALLING A COMPATIBLE RTU UNIT AT THE PUMP STATION COMPLETE WITH ALL APPURTENANCES AND HARDWARE TO PROVIDE FUNCTIONS DESCRIBED BELOW. ALL SENSORS, RELAYS, TERMINAL STRIPS AND WIRING SHALL BE PROPERLY INTERFACED WITH FLOW METER DISPLAY AND OTHER ELECTRICAL EQUIPMENT AS REQUIRED. REQUIRED SOFTWARE PROGRAMMING BY EXPERIENCED PERSONNEL SHALL ALSO BE REQUIRED TO MAKE THE SCADA SYSTEM FOR THE PUMP. STATION FUNCTIONAL.

THE RTU SHALL CONTAIN BATTERIES, A POWER SUPPLY/CHARGER MODULE, A CPU MODULE, MODULES FOR DIGITAL I/O AND AN ANALOG NODULE WITHIN A NEMA 4, WALL MOUNTED ENCLOSURE. MODULES FOR 24 DIGITAL INPUT, 16 DIGITAL OUTPUT AND 8 ANALOG INPUT SHALL BE PROVIDED.

THE RTU UNIT PROVIDED SHALL BE SELECTED BY CITY.

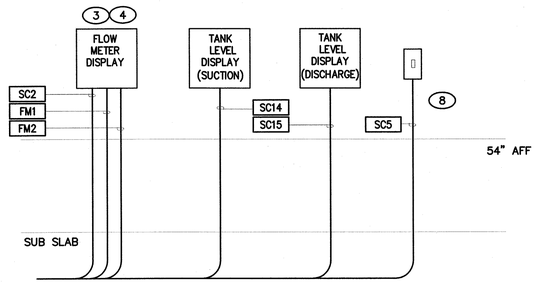
COMMUNICATION-ALARM DIALER TO BE WIRELESS WITH A BATTERY BACKUP. (IF REQUIRED FOR SCADA ALARMS.)

SEE ALSO SPECIFICATIONS 702.000 AND 703.000



CONCEPTUAL SCADA RISER DIAGRAM
SCALE: N.T.S.

(ACTUAL ROUTING WILL VARY)



CONTRACTOR TO SUPPLY SUITABLE FLUSH MOUNTED ENCLOSURES FOR CONDUIT ENTRY WITH MUD RINGS ETC. AS NEEDED TO NEATLY INTERFACE WITH THE VARIOUS DISPLAY TYPES BEING USED.

OFFICE AREA DISPLAYS/CONTROLS
N.T.S.

(ACTUAL ROUTING WILL VARY)

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER 12-16-2015

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NOTICE OF EXTENDED PAYMENT PROVISION: IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978), THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

T&D SERVICES
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TEL: (505)863-5440 DES@CNETCO.COM

for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
SPECIAL SYSTEMS & SCADA PLANS

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-24A

ENGINEER: C:\Users\Public\Documents\wrgisnwv\Project 8\proj8 design.dwg

HEATON SCADA CONDUIT / WIRE SCHEDULE

CONDUIT NAME	FROM	TO	PURPOSE	SIZE	WIRE/CABLE	SUB SLAB
SC1	SCADA CABINET	PANEL 'LA'	120 VAC POWER CKT LA-19	3/4" EMT	2#12 + #12G	-
SC2	FLOW METER REMOTE DISPLAY	PANEL 'LA'	120 VAC POWER CKT LA-22	1" RGD/PVC	2#12 + #12G	YES
FM1	FLOW METER	FLOW METER REMOTE DISPLAY	4-20 mA FLOW/COUNTER	1" RGD/PVC	FLOW METER CABLE	YES
FM2	SCADA CABINET	FLOW METER DISPLAY	4-20 mA FLOW/COUNTER	1" RGD/PVC	FLOW METER CABLE	YES
SC3	SCADA CABINET	DOOR SECURITY SWITCH - SOUTH	24 VDC STATUS	1/2" EMT	2C#16SH CABLE	-
SC4	SCADA CABINET	DOOR SECURITY SWITCH - EAST	24 VDC STATUS	1/2" EMT	2C#16SH CABLE	-
SC5	SCADA CABINET	ON-SITE OFFICE SWITCH	24 VDC STATUS	1" RGD/PVC	2C#16SH CABLE	YES
SC5A	SCADA CABINET	ON-SITE SWITCH	24 VDC STATUS	ON SCADA CABINET	2C#16SH CABLE	-
SC6	SCADA CABINET	PRESSURE REDUCING VALVE #2/#3	24 VDC STATUS	1" RGD/PVC	(2) 2C#16SH CABLES	YES
SC7	SCADA CABINET	PRESSURE REDUCING VALVE #1	24 VDC STATUS	1" RGD/PVC	2C#16SH CABLE	YES
SC7A	SCADA CABINET	PRESSURE REDUCING VALVE #1	120 VAC CONTROLS	1" RGD/PVC	2#12 + #12G	YES
SC8	SCADA CABINET	MOTOR STARTER - PUMP "A"	STATUS/CONTROL	(2) 1 1/2" EMT	VARIES - SEE SCHEMATICS	-
SC9	SCADA CABINET	MOTOR STARTER - PUMP "B"	STATUS/CONTROL	(2) 1 1/2" EMT	VARIES - SEE SCHEMATICS	-
SC10	SCADA CABINET	PRESSURE TRANSDUCER - SUCTION	4-20 mA Signal	1" RGD/PVC	2C#16SH CABLE	YES
SC11	SCADA CABINET	PRESSURE TRANSDUCER - DISCHARGE	4-20 mA Signal	1" RGD/PVC	2C#16SH CABLE	YES
SC12	SCADA CABINET	SURGE TANK CONTROL PANEL - SUCTION SIDE	24 VDC STATUS	1" RGD/PVC	(2) 2C#16SH CABLES	YES
SC13	SCADA CABINET	SURGE TANK CONTROL PANEL - DISCHARGE SIDE	24 VDC STATUS	1" RGD/PVC	(2) 2C#16SH CABLES	YES
SC14	SCADA CABINET	OFFICE DESK AREA	TANK LEVEL DISPLAY - SUCTION	1" RGD/PVC	2C#16SH CABLE	YES
SC15	SCADA CABINET	OFFICE DESK AREA	TANK LEVEL DISPLAY - DISCHARGE	1" RGD/PVC	2C#16SH CABLE	YES
SC16-1	SCADA CABINET	PUMP CONTROL VALVE "A"	24 VDC STATUS - LIMIT SWITCH	1" RGD/PVC	2C#16SH CABLE	YES
SC16-2	SCADA CABINET	PUMP CONTROL VALVE "A"	120 VAC CONTROLS	1" RGD/PVC	2#12 + #12G	YES
SC17-1	SCADA CABINET	PUMP CONTROL VALVE "B"	24 VDC STATUS - LIMIT SWITCH	1" RGD/PVC	2C#16SH CABLE	YES
SC17-2	SCADA CABINET	PUMP CONTROL VALVE "B"	120 VAC CONTROLS	1" RGD/PVC	2#12 + #12G	YES
SC18	SCADA CABINET	PRESSURE RELIEF VALVE	24 VDC STATUS	1" RGD/PVC	2C#16SH CABLE	YES
SC19	SCADA CABINET	OFFICE DESK AREA	COMM/ETHERNET	1 1/2" RGD/PVC	PULL STRING	YES
SC20	SCADA CABINET	OFFICE DESK AREA	COMM/ETHERNET	1 1/2" RGD/PVC	PULL STRING	YES
RTD-A	MOTOR "A"	RTD ENCLOSURE "A"	RTDs	1 1/2" RGD/PVC	SHIELDED TRIAD CABLE (6) RUNS	YES
RTD-A1	MOTOR STARTER - PUMP "A"	RTD ENCLOSURE "A"	STATUS/CONTROL	3/4" EMT	VARIES - SEE SCHEMATICS	YES
RTD-B	MOTOR "B"	RTD ENCLOSURE "B"	RTDs	1 1/2" RGD/PVC	SHIELDED TRIAD CABLE (6) RUNS	YES
RTD-B1	MOTOR STARTER - PUMP "B"	RTD ENCLOSURE "B"	STATUS/CONTROL	3/4" EMT	VARIES - SEE SCHEMATICS	YES
SP A	SCADA CABINET	MOTOR "A"	SCADA SPARE	1" RGD/PVC	PULL STRING	YES
SP B	SCADA CABINET	MOTOR "B"	SCADA SPARE	1" RGD/PVC	PULL STRING	YES

NOTE: CONDUIT LIST IS ONLY FOR SCADA/CONTROL ITEMS - CONDUITS FOR POWER ARE NOT IDENTIFIED HERE AND WILL NEED TO BE SEPARATELY ACCOUNTED FOR BY THE CONTRACTOR (SUB-SLAB AND/OR OTHERWISE). CONTRACTOR TO UTILIZE SEPARATE CONDUITS FOR AC CONDUCTORS AND DC CONDUCTORS.

RTD CABLES: BELDEN 8770 (SHIELDED TRIAD CABLE) OR EQUIVALENT - 6 RUNS PER MOTOR FOR RTD SIGNALS

PULL STRINGS SHALL BE INSTALLED IN ALL EMPTY CONDUIT RUNS

SCADA FIELD CONNECTION ARRANGEMENT

(SCADA CONTRACTOR TO ADD TO/REARRANGE AS NEEDED)

T.B.D. – TO BE DETERMINED BY OWNER & AVAILABLE ALARMS

TBA (24 VDC)

STATION DIGITAL SIGNALS IN

1, 2	DOOR SECURITY SWITCH (SOUTH)	CLOSED – SECURE OPEN – ALARM
3, 4	DOOR SECURITY SWITCH (EAST)	CLOSED – SECURE OPEN – ALARM
5, 6	ON–SITE SWITCH (OFFICE)	CLOSED – ONSITE OPEN – OFFSITE
7, 8	ON–SITE SWITCH (CABINET)	CLOSED – ONSITE OPEN – OFFSITE
9, 10	PUMP CONTROL VALVE "A" LIMIT SWITCH	CLOSED – OPEN VALVE OPEN – CLOSED VALVE
11, 12	PUMP CONTROL VALVE "B" LIMIT SWITCH	CLOSED – OPEN VALVE OPEN – CLOSED VALVE
13, 14	PRESSURE RELIEF VALVE LIMIT SWITCH	CLOSED – OPEN VALVE OPEN – CLOSED VALVE
15, 16	PRESSURE REDUCING VALVE #1 LIMIT SWITCH	CLOSED – OPEN VALVE OPEN – CLOSED VALVE
17, 18	PRESSURE REDUCING VALVE #2 LIMIT SWITCH	CLOSED – OPEN VALVE OPEN – CLOSED VALVE
19, 20	PRESSURE REDUCING VALVE #3 LIMIT SWITCH	CLOSED – OPEN VALVE OPEN – CLOSED VALVE
21, 22	SURGE TANK CONTROL PANEL ALARM#1 (SUCTION)	CLOSED – T.B.D. OPEN – T.B.D.
23, 24	SURGE TANK CONTROL PANEL ALARM#2 (SUCTION)	CLOSED – T.B.D. OPEN – T.B.D.
25, 26	SURGE TANK CONTROL PANEL ALARM#1 (DISCHARGE)	CLOSED – T.B.D. OPEN – T.B.D.
27, 28	SURGE TANK CONTROL PANEL ALARM#2 (DISCHARGE)	CLOSED – T.B.D. OPEN – T.B.D.

STATION ANALOG SIGNALS IN

30 (+), 31 (–), 32 (SH)	FLOW METER DATA TO SCADA	
33 (+), 34 (–), 35 (SH)	PRESSURE TRANSDUCER 4–20 mA SIGNAL (SUCTION)	
36 (+), 37 (–), 38 (SH)	PRESSURE TRANSDUCER 4–20 mA SIGNAL (DISCHARGE)	
39 (+), 40 (–), 41 (SH)	HEATON TANK LEVEL DISPLAY (SUCTION)	
42 (+), 43 (–), 44 (SH)	HEATON TANK LEVEL DISPLAY (DISCHARGE)	

STATION ANALOG SIGNALS OUT – TO OFFICE

47 (+), 48 (–), 49 (SH)	HEATON TANK LEVEL DISPLAY – SUCTION	
50 (+), 51 (–), 52 (SH)	HEATON TANK LEVEL DISPLAY – DISCHARGE	

60

TBB (120 VAC)

1 (COM), 2 (H), 3 (A)	HOA SWITCH POSITION	PUMP "A" STATUS/ALARMS
4	NORMAL	
6	UP–TO–SPEED	
8	FAULT	
10	ALARM – SUMMARY	
12 (COM), 13 (H), 14 (A)	HOA SWITCH POSITION	PUMP "B" STATUS/ALARMS
15	NORMAL	
17	UP–TO–SPEED	
19	FAULT	
21	ALARM – SUMMARY	
23	ALARM – RTD MONITOR "A" (ALRM1)	RTD MONITOR "A"/"B" ALARMS
25	ALARM – RTD MONITOR "B" (ALRM2)	

60

TBC

DIN RAIL, TERMINAL BLOCKS, ETC. FOR CONTROL RELAYS, AS NEEDED

KENNETH W. ADAMS NEW MEXICO 16008 PROFESSIONAL ENGINEER

12-16-2015

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102 WEST HILL AVENUE GALLUP, NM 87301
TEL: (505)863-5440 DES@CNETCO.COM

for the CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
SCADA J-BOX DETAILS/CONTROL SCH.

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-24B

PANEL **HA**

LOCATION : HEATON
DWG REF :
DWG NO :

N

SERVICE : 480V, 3PH, 3W
MAINS RATING : 400 AMP
MAINS OPTIONS : MAIN LUGS ONLY
INTERRUPTING RATING : 22,000 AIC
CABINET : SURFACE MOUNTED, NEMA 1, DOOR-IN-DOOR, 42 POLES
ACCESSORIES : GROUND BAR

CCT NO.	LOAD DESCRIPTION	CABLE SIZE	BKR SIZE	LOAD (KVA)	PHASE A	PHASE B	PHASE C	LOAD (KVA)	BKR SIZE	CABLE SIZE	LOAD DESCRIPTION	CCT NO
1	PUMP A	(3)-#4/0#4G	225A/3P	41.43	41.4				225A/3P	(3)-#4/0#4G	PUMP B	2
3	***	***	225AF	41.43		41.4			225AF	***	(REDUNTANT)	4
5	***	***	***	41.43			41.4		***	***	***	6
7	SURGE TANK AIR COMPRESSOR (IN FLOW)	(3)-#12#12G	15A/3P	2.02	4.0			2.02	15A/3P	(3)-#12#12G	SURGE TANK AIR COMPRESSOR (OUTFLOW)	8
9	***	***	100AF	2.02		4.0		2.02	100AF	***	***	10
11	***	***	***	2.02			4.0	2.02	***	***	***	12
13	UNIT HEATER UH-1	(3)-#12#12G	20A/3P	3.33	6.7			3.33	20A/3P	(3)-#12#12G	UNIT HEATER UH-2	14
15	***	***	100AF	3.33		6.7		3.33	100AF	***	***	16
17	***	***	***	3.33			6.7	3.33	***	***	***	18
19	UNIT HEATER UH-3	(3)-#10#12G	20A/3P	3.33	6.7			3.33	20A/3P	(3)-#12#12G	UNIT HEATER UH-4	20
21	***	***	100AF	3.33		6.7		3.33	100AF	***	***	22
23	***	***	***	3.33			6.7	3.33	***	***	***	24
25	SPACE				0.0						SPACE	26
27	***	***	***			0.0			***	***	***	28
29	***	***	***				0.0		***	***	***	30
31	SPACE				0.0						SPACE	32
33	***	***	***			0.0			***	***	***	34
35	***	***	***				0.0		***	***	***	36
37	SPACE				0.0						SPACE	38
39	***	***	***			14.0		14.05	70A/2P	(2)-#4#8G	PANEL 'LA'	40
41	***	***	***				13.5	13.52	100AF	***	***	42
					58.8	72.8	72.3					
					KVA	LL VOLTS	AMPS					
					204.0	480	245					

NOTE :

-13.5%	7.1%	6.4%	PHASE UNBALANCE

PANEL **LA**

LOCATION : HEATON
DWG REF :
DWG NO :

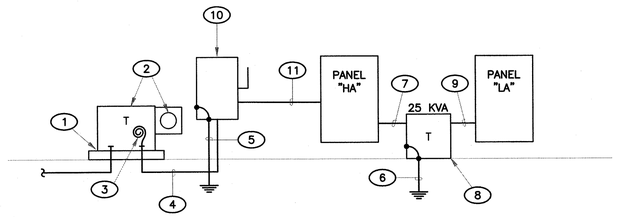
N

SERVICE : 240/120V, 1PH, 3W (THRU 25 KVA XFMR)
MAINS RATING : 225 AMP
MAINS OPTIONS : 150AT / 225AF MAIN CIRCUIT BREAKER
INTERRUPTING RATING : 22,000 AIC
CABINET : SURFACE MOUNTED, NEMA 1, DOOR-IN-DOOR, 30 POLES
ACCESSORIES : NEUTRAL BAR, GROUND BAR

CCT NO.	LOAD DESCRIPTION	CABLE SIZE	BKR SIZE	LOAD (KVA)	PHASE A	PHASE B	LOAD (KVA)	BKR SIZE	CABLE SIZE	LOAD DESCRIPTION	CCT NO
1	LIGHTING	(2)-#12#12G	20A/1P	1.75	3.0		1.20	20A/1P	(2)-#12#12G	RECEPTACLES	2
3	RECEPTACLES	(2)-#12#12G	20A/1P	0.72		1.9	1.20	20A/1P	(2)-#12#12G	RECEPTACLES	4
5	RECEPTACLES	(2)-#12#12G	20A/1P	0.72	1.9		1.20	20A/1P	(2)-#12#12G	RECEPTACLES	6
7	RECEPTACLES	(2)-#12#12G	20A/1P	0.72		1.9	1.20	20A/1P	(2)-#12#12G	RECEPTACLES	8
9	RECEPTACLES	(2)-#12#12G	20A/1P	0.54	1.7		1.20	20A/1P	(2)-#12#12G	RECEPTACLES	10
11	AC-1	(2)-#10#10G	30A/2P	2.16		3.4	1.20	20A/1P	(2)-#12#12G	RECEPTACLES	12
13	***	***	100AF	2.16	2.7		0.50	20A/1P	(2)-#12#12G	BASEBOARD HEATER	14
15	EXHAUST FAN EF-1 AND LOUVER L-1	(2)-#10#10G	30A/1P	1.66		3.3	1.66	30A/1P	(2)-#10#10G	EXHAUST FAN EF-2 AND LOUVER L-2	16
17	EXTERIOR LIGHTING	(2)-#12#12G	20A/1P	0.20	1.4		1.18	20A/1P	(2)-#12#12G	OVERHEAD DOOR OPERATOR	18
19	SCADA CONTROL PANEL POWER	(2)-#12#12G	20A/1P	1.00		2.0	1.00	20A/1P	(2)-#12#12G	SURGE TANK CONTROL (IN FLOW)	20
21	HOT WATER HEATER	(2)-#10#10G	30A/1P	2.40	3.4		1.00	20A/1P	(2)-#12#12G	FLOW METER POWER	22
23	SPARE		20A/1P			1.0	1.00	20A/1P	(2)-#12#12G	SURGE TANK CONTROL (OUT FLOW)	24
25	SPACE				0.0					SPACE	26
27	SPACE					0.0				SPACE	28
29	SPACE				0.0					SPACE	30
					14.0	13.5					
					KVA	LL VOLTS	AMPS				
					27.6	240	115				

NOTE :

1.9%	-1.9%		PHASE UNBALANCE
117.1	112.6		PHASE AMPS



POWER RISER DIAGRAM - HEATON

SCALE: NONE

HEATON PUMP STATION

LOAD SUMMARY 480V- 3PH, 3W Softec Systems, shortcir ver. 1.1

PANEL or SWBD.	KVA LOAD
PANEL HA	243.4
TOTAL KVA =	**243.4** KVA
TOTAL AMPS =	**293** AMPS

400 AMP SERVICE

SHORT CIRCUIT AVAILABILITY

BASED ON MAXIMUM BUILDING TRANSFORMER S.C. LET THROUGH WITH UNLIMITED PRIMARY SHORT CIRCUIT CURRENT (S.C.C.).

ASSUME BUILDING TRANSFORMER = 225 KVA
TRANSFORMER IMPEDANCE (% Z) = 1.20 %

S.C.C.. AVAILABLE AT TRANSFORMER SECONDARY = 22,554 A
S.C.C.. AVAILABLE AT LINE SIDE OF PANEL "HA" = 19,068 A
S.C.C.. AVAILABLE AT LIND SIDE OF PANEL "LA" = 16,277 A

ALL PANELBOARDS SHALL HAVE AIC RATING AND BRACING AS CALLED FOR IN THE PANEL SCHEDULES.

KEYED NOTES

1 CONTRACTOR SHALL PROVIDE AND INSTALL A CONCRETE TRANSFORMER PAD PER LOCAL UTILITY COMPANY REQUIREMENTS.

2 LOCAL UTILITY COMPANY TRANSFORMER AND METER PER UTILITY REQUIREMENTS

3 CONTRACTOR SHALL PROVIDE SECONDARY CONDUCTORS AND LEAVE COILED UP FOR CONNECTION BY UTILITY, PER UTILITY REQUIREMENTS

4 3–500 KCMIL IN 3.5" CONDUIT.

5 1#1/0 BSD COPPER SERVICE GROUNDS IN 1" CONDUIT. REFER TO SERVICE GROUNDING DETAIL FOR ADDITIONAL INFORMATION.

6 1#6 BSD COPPER SERVICE GROUNDS IN .75" CONDUIT. REFER TO SERVICE GROUNDING DETAIL FOR ADDITIONAL INFORMATION.

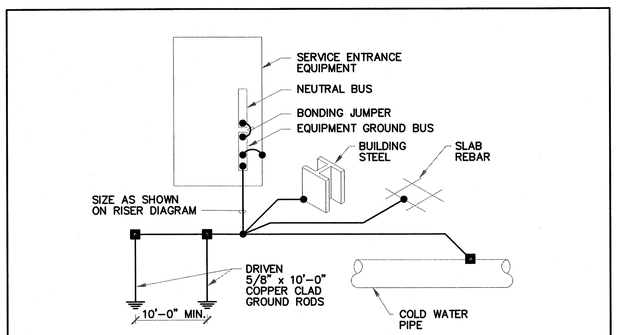
7 2#4, 1#6G IN 1" CONDUIT.

8 PROVIDE AND INSTALL A 25 KVA, 480V PRIMARY TO 120/240V, 1PH, 3W SECONDARY FLOOR MOUNTED COPPER WOUND DRY–TYPE TRANSFORMER.

9 3#1/0, 1#6G IN 1.5" CONDUIT.

10 PROVIDE AND INSTALL A 400 AMP, 480V, NEMA 3R, SERVICE RATED FUSIBLE DISCONNECT SWITCH WITH 400 AMP CURRENT–LIMITING FUSES.

11 3–500 KCMIL, 1#2G IN 3.5" CONDUIT.



SERVICE GROUNDING DETAIL

SCALE: NONE

KENNETH W. ADAMS NEW MEXICO 16008 REGISTERED PROFESSIONAL ENGINEER
12-16-2015

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NOTICE OF EXTENDED PAYMENT PROVISION:
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for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

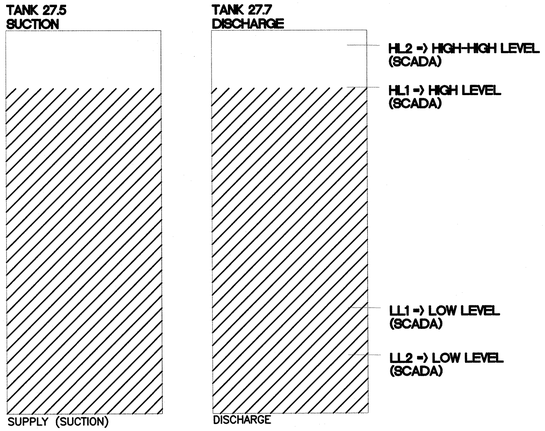
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
POWER RISER DIAGRAM, DETAIL, LOAD SUMMARY & PANEL SCHEDULES

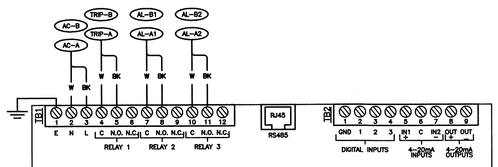
SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-25



REMOTE TANKS

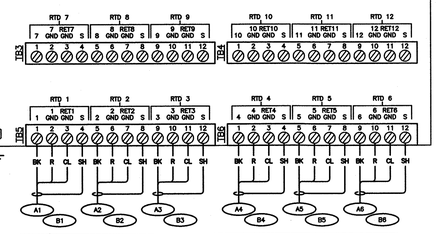
LEVEL SENSORS TO SCADA CONTROL BY OTHERS



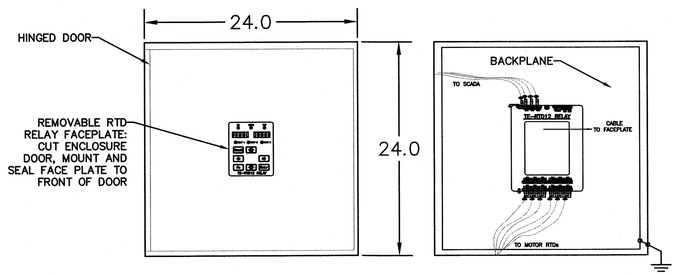
(TYPICAL WIRING DIAGRAM FOR "A" OR "B" DEVICE)

MOTOR RTD MONITOR RELAY

MOTORTRONICS TE-RTD12 WITH
DOOR MOUNTING MOUNTING KIT FOR DISPLAY UNIT
#TE RTD12-KP12-PTB-KIT



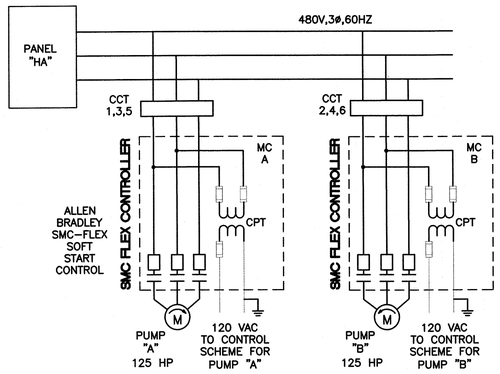
MOTOR 'A'/'B' RTD SIGNALS (6 RTDs PER MOTOR)

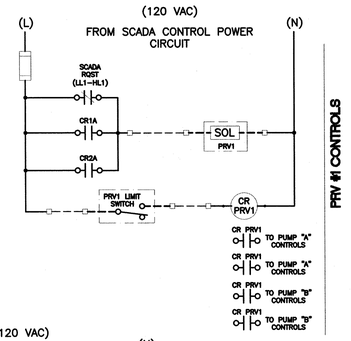


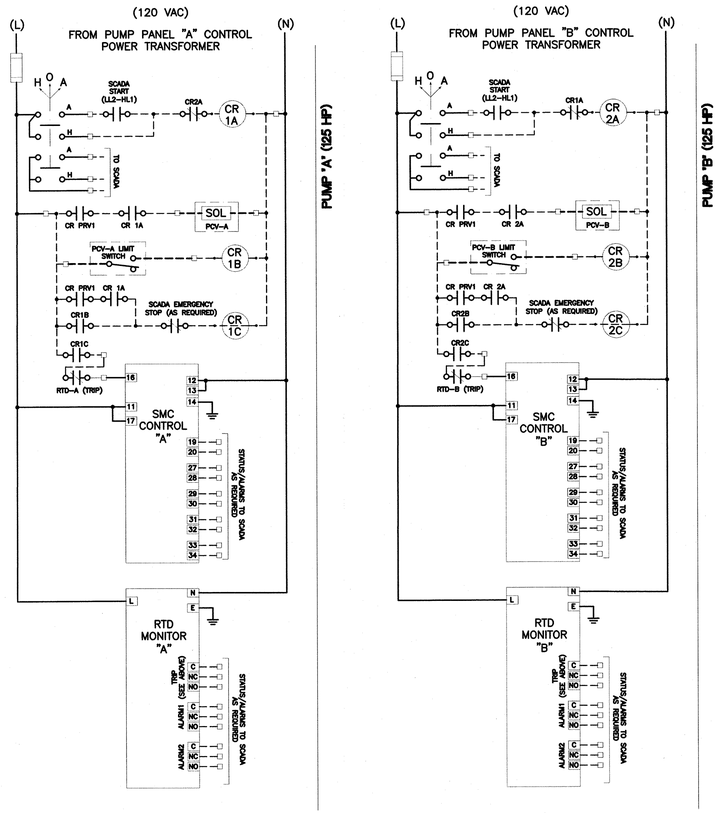
24x24x8 NEMA 1 ENCLOSURE
FRONT DOOR

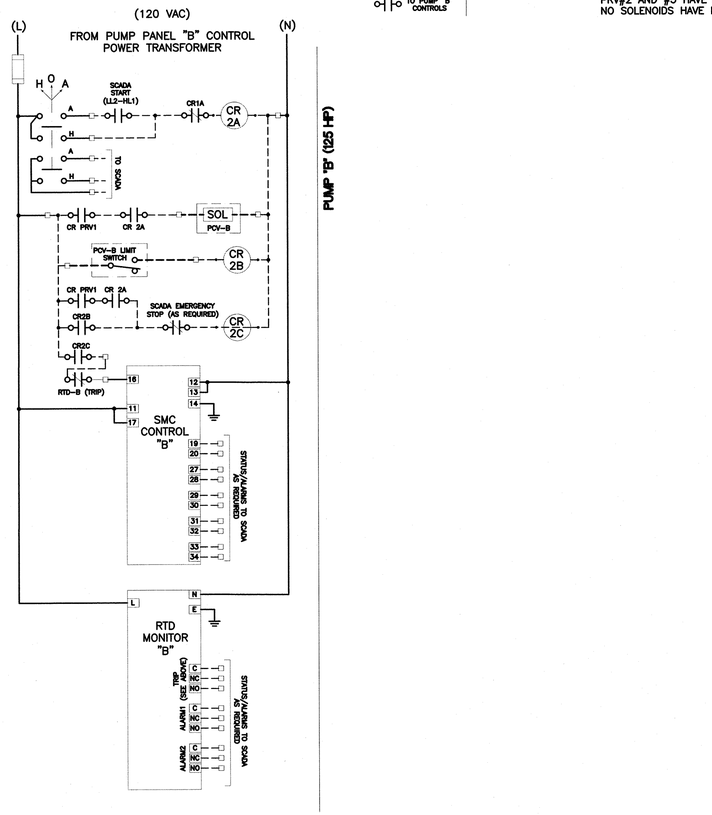
24x24x8 NEMA 1 ENCLOSURE
BACKPLANE PANEL/RTD MONITOR MOUNTING

RTD ENCLOSURE DETAILS/LAYOUT (2 REQUIRED)









PUMP OPERATION DESCRIPTION

HEATON PUMP STATION – SCADA CONTROL (PER HYDRAULIC DESIGN)

GENERAL ARRANGEMENT: SINGLE PUMP CONTROL WITH ALTERNATING STARTS

NORMAL OPERATING CONDITION: MOTOR/PUMP A AND B DE-ENERGZIED; PUMP CONTROL VALVE (PCV) A AND B CLOSED; PRESSURE REDUCING VALVE (PRV) CLOSED AND FLOW FROM DISCHARGE TANK SUPPLIES FEED DEMANDS.

AS TANK LEVEL DECLINES TO THE LOW LEVEL INDICATION (LL1) SCADA DE-ENERGIZES THE PRV SOLENOID THEREBY OPENING THE PRV. ADDITIONAL FLOW FILLS THE DISCHARGE TANK UNTIL THE HIGH LEVEL 1 (HL1) IS INDICATED AT WHICH POINT THE PRV IS CLOSED AGAIN BY SCADA (SCADA RQST (LL1-HL1) CONTACT).

THIS PROCESS CONTINUES UNLESS THE DEMAND IS SUCH THAT SCADA RECEIVES A LOW LEVEL 2 (LL2) INDICATION WHICH THEN REQUIRES ONE OF THE STATION PUMPS TO ASSIST WITH FILLING THE DISCHARGE TANK. SCADA ISSUES A MOTOR START COMMAND THAT CLOSES THE PRV AND BEGINS OPENING THE PCV BY ENERGIZING THE PCV SOLENOID. THE PRV IS HELD CLOSED UNTIL THE MOTOR START COMMAND IS REMOVED WHEN HIGH LEVEL 1 (HL1) IS REACHED. THE MOTOR CONTINUES TO RUN UNTIL THE PCV LIMIT SWITCH INDICATES IT IS CLOSED AT WHICH POINT IT SHUTS DOWN. THE PRV WILL REMAIN CLOSED UNTIL THE LL1 INDICATION IS RECEIVED AGAIN AS PER THE NORMAL OPERATING CONDITION NOTED ABOVE. SCADA CONTROL WILL ALTERNATIVELY SELECT WHICH MOTOR TO RUN DURING AN LL2 CONDITION BASED ON THE LAST MOTOR RUN.

A BLOCKING SIGNAL IS SENT TO THE ALTERNATE PUMP CONTROL TO ONLY ALLOW ONE PUMP MOTOR TO RUN REGARDLESS OF THE HAND-OFF-AUTO CONTROL SWITCH POSITIONS.

SHOULD THE DISCHARGE TANK REACH THE HIGH LEVEL 2 (HL2) SCADA WILL CLOSE THE PRV AND DISABLE ALL PUMP OPERATION.

HIGH PRESSURE EMERGENCY STOP VIA PRESSURE RELIEF VALVE
IF THE DISCHARGE PRESSURE IN HEATON PUMP STATION OPENS THE PRESSURE RELIEF VALVE ALL PUMPS STOP UNDER IMMEDIATE SHUT DOWN, THE PRV IS DE-ENERGIZED TO ALLOW IT TO OPEN AND THE PCV IS CLOSED. ALARM IS SENT. ALL PUMPS ARE LOCKED OUT UNTIL HIGH PRESSURE ALARM IS CLEARED.

PUMP ALARMS AND FAULTS
IF AN ALARM OR FAULT FOR A GIVEN PUMP IS RECEIVED FROM ITS MOTOR CONTROLLER OR ASSOCIATED RTD MONITOR THE GIVEN PUMP SHALL BE LOCKED OUT UNTIL CLEARED AT PUMP STATION. (NOTE: CITY PERSONNEL WILL HAVE TO MANUALLY CLEAR ELECTRICAL ALARMS AND FAULTS DUE TO ELECTRICAL OUTAGES.)

PRV#2 AND #3 HAVE LIMIT SWITCHES TO INDICATE THEIR OPEN/CLOSED POSITIONS, BUT NO SOLENOIDS HAVE BEEN INSTALLED.

NOTES:

ALTERNATING START WITH NO MORE THAN ONE PUMP TO BE RUNNING AT ANY TIME. ALTERNATING PUMP SELECTION WILL BE ACCOMPLISHED BY PROGRAMMING IN THE SCADA SYSTEM.

NOTE THAT THE PUMP NOT BEING RUN HAS ITS CONTROL DISABLED TO PREVENT STARTING WHETHER BY HAND OR AUTOMATIC.

THE PRESSURE REDUCING VALVE (PRV) SOLENOID IS ENERGIZED TO CLOSE. LIMIT SWITCH IS SHOWN WITH THE PRV IN THE OPEN POSITION.

THE PUMP CONTROL VALVE (PCV) SOLENOID IS ENERGIZED TO OPEN. LIMIT SWITCH IS SHOWN WITH PCV IN THE CLOSED POSITION.

THERE IS ADDITIONAL INFORMATION IN SPECIFICATION SECTION 702.00 AND 703.000 THAT SHALL BE FOLLOWED.



CAUTION
CALL NEW MEXICO ONE CALL
811
BEFORE YOU DIG!

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978), THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

T&D SERVICES
Transmission & Distribution Services
Consulting Engineers & Surveyors
9550 San Mateo Blvd. NE Suite G
Albuquerque, NM 87113
www.t-d-services.com

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DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
102 WEST HILL AVENUE GALLUP, NM 87301
TEL: (505)863-5440 DES@CNETCO.COM

for the
CITY OF GALLUP
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

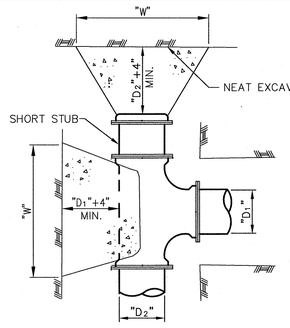
CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

HEATON PUMP STATION
SCADA DIAGRAMS AND SCHEMES

SCALE:	SHOWN
DATE:	MAY 2015
DRAWN BY:	T&D
CHECKED BY:	KA

SHEET 6-26

ENGINEER'S: C:\Users\Public\Documents\engineer\Project 8\proj8_design.dwg

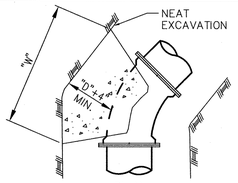


CAPPED TEE

PLAN

NOTE: HIGHLY SATURATED OR UNCONSOLIDATED SOILS MAY REQUIRE AN INCREASE IN THRUST BLOCK SIZE. VERIFY W/ PROJECT ENGINEER.

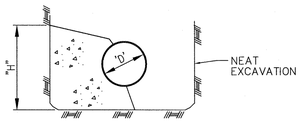
NOTE: BACKFILL SHALL NOT BE PLACED UNTIL THRUST BLOCK CONCRETE HAS FIRMLY SET.



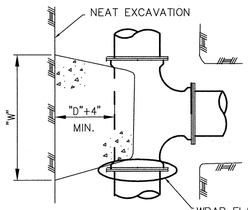
PLAN

TYPICAL ELL

NOTE: PROVIDE "MEGALUG" OR EQUAL GLANDS FOR MJ CONNECTIONS.

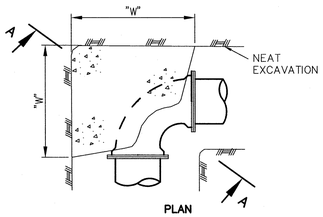


SECTION A–A



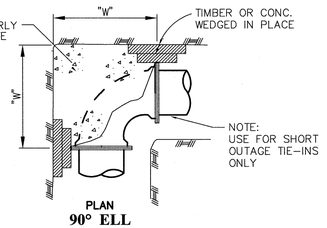
PLAN

TYPICAL TEE



PLAN

90° ELL



PLAN

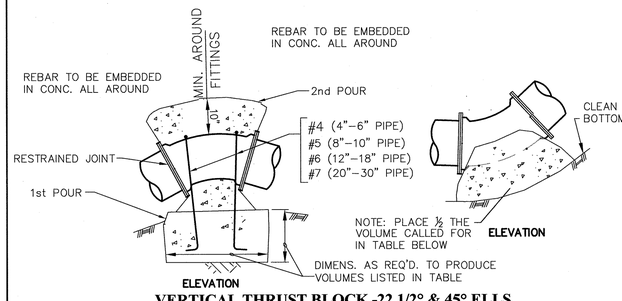
90° ELL

MINIMUM THRUST BLOCK DIMENSIONS FOR HORIZONTAL FITTINGS

PIPE "D"	TEE		90° ELL		45° ELL		22 1/2° – 11 1/4° ELL	
	"W"	"H"	"W"	"H"	"W"	"H"	"W"	"H"
4"	14"	10"	14"	10"	12"	10"	12"	10"
6"	18"	14"	18"	14"	16"	12"	14"	10"
8"	24"	16"	22"	16"	18"	16"	16"	14"
10"	30"	30"	30"	30"	24"	16"	18"	12"
12"	32"	32"	32"	32"	30"	18"	20"	14"
14"	36"	36"	36"	36"	32"	24"	24"	16"
16"	48"	36"	48"	36"	36"	26"	30"	18"
18"	50"	38"	50"	38"	38"	28"	32"	20"
24"	58"	40"	58"	40"	40"	30"	36"	26"
30"	66"	46"	66"	46"	48"	34"	44"	34"

NTS

HORIZ. THRUST BLOCK DETAILS



ELEVATION

ELEVATION

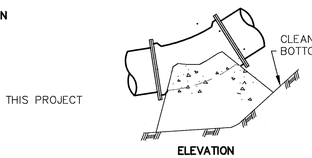
VERTICAL THRUST BLOCK -22 1/2° & 45° ELLS

SEE GENERAL NOTES FOR LIMITATIONS ON VERTICAL FITTING DEFLECTIONS THIS PROJECT AND RESTRAINT REQUIREMENTS FOR ELLS & ADJACENT PIPE.

VERTICAL THRUST BLOCK VOLUMES (FT^3)

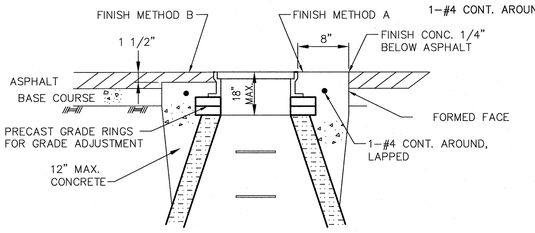
PIPE SIZE	45° ELL	22½° ELL	11¼° ELL
4"	8	4	–
6"	14	8	–
8"	25	13	–
10"	40	21	10
12"	60	31	17
14"	85	45	26
16"	115	58	33
18"	125	64	39
24"	150	76	45
30"	180	89	55

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!



ELEVATION

VERTICAL THRUST BLOCK -11 1/4° ELLS

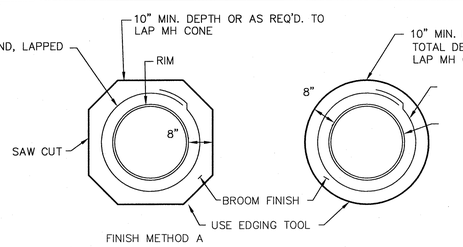


TOP OF RING ELEVATION TO BE SET BY ENGINEER OR AS SHOWN ON P&P SHEETS.

SAW CUT ASPHALT, RAISE RIM & POUR CONC. COLLAR AFTER ASPHALT PAVING IS COMPLETE, (WHEN CALLED FOR.)

SEWER MANHOLE RIM DETAILS

NTS

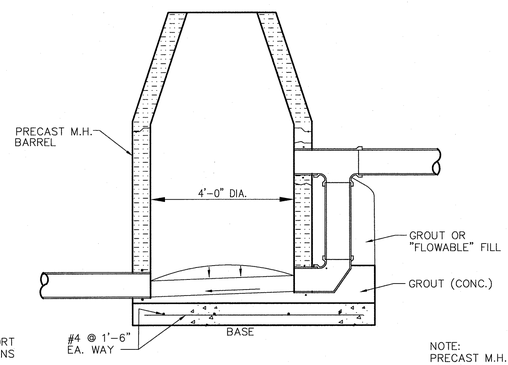


WHEN ASPHALT PAVING IS COMPLETE, SAW CUT ASPHALT, REMOVE PAVEMT., RAISE (OR LOWER) RIM & POUR

POUR CIRCULAR COLLAR IN UNPAVED AREAS AND WHEN COLLAR IS POURED PRIOR TO FINAL PAVING (FINISH METHOD "B")

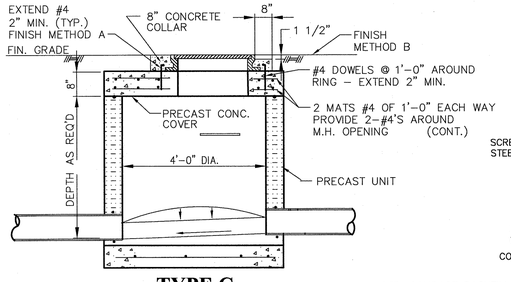
MANHOLE RIM COLLAR PLAN DETAIL

NTS



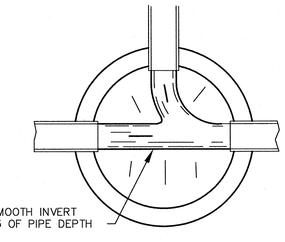
TYPE B
TYPICAL SEWER DROP MANHOLE

NTS

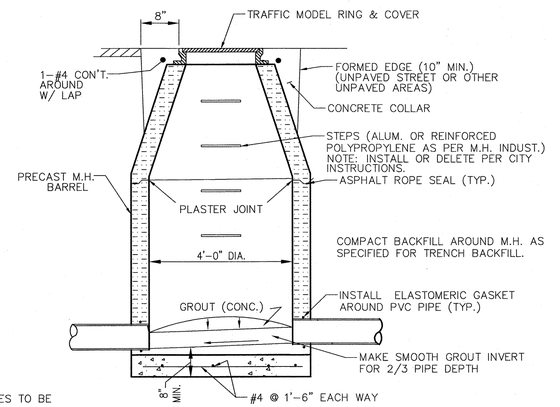


TYPE C
FLAT TOP MANHOLE

NTS



TYPICAL SEWER MANHOLE INVERT PLAN

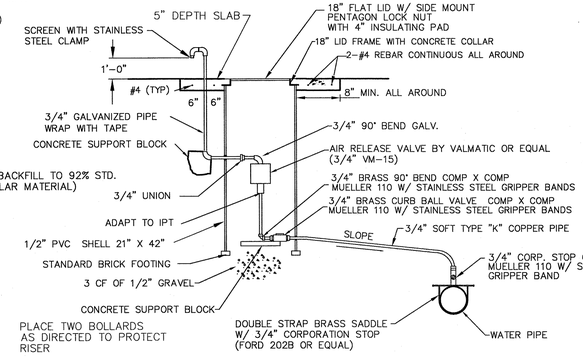


NOTE: PRECAST M.H. CONES TO BE ECCENTRIC TYPE

TYPE A
TYPICAL SEWER MANHOLE

NTS

NOTE: INVERT GROUT TO BE 4500 PSI CONCRETE

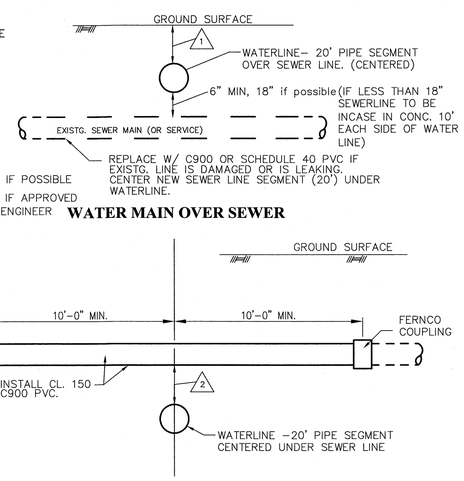


NOTE: COMPACT BACKFILL TO 92% STD. PROCTOR (GRANULAR MATERIAL)

TYPE 1 AIR RELEASE DETAIL

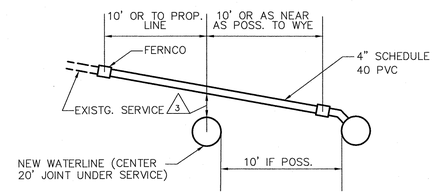
NTS (NONE THIS PROJECT)

NOTICE OF EXTENDED PAYMENT PROVISION:
IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

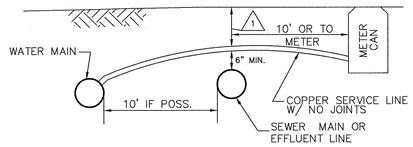


WATER MAIN OVER SEWER

WATER MAIN UNDER SEWER



SEWER SERVICE CROSSING



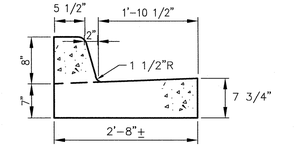
WATER SERVICE CROSSING

PROXIMITY OF WATER AND SEWER LINES: WHENEVER POSSIBLE IT IS DESIRABLE TO LAY PARALLEL WATER AND SEWER MAINS AT LEAST 10 FEET APART HORIZONTALLY WITH THE WATERLINE AT A HIGHER ELEVATION THAN THE SEWER. WHEN WATER AND SEWER LINES CROSS EACH OTHER, THE WATERLINE SHALL BE AT LEAST 18" ABOVE THE SEWER, OTHERWISE THE CROSSINGS SHALL CONFORM TO DETAILS ABOVE. ALL WATER SERVICE LINES SHALL CROSS ABOVE SEWER MAINS.

WATER & SEWER CROSSING DETAILS

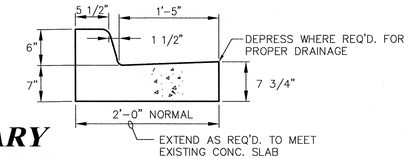
NTS

KURT A. SPOLAR NEW MEXICO 17637 3-26-16 LICENSED PROFESSIONAL ENGINEER



8" CURB & GUTTER SECTION

NTS



CURB & GUTTER STONES SHALL HAVE MAX. 10' LENGTH WITH EXPANSION MATERIAL EVERY THIRD JOINT UNLESS OTHERWISE NOTED.

6" CURB & GUTTER SECTION

PRELIMINARY 30% SUBMITTAL FEBRUARY 2016

ENGINEER\–I: C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulieengineering.com

for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

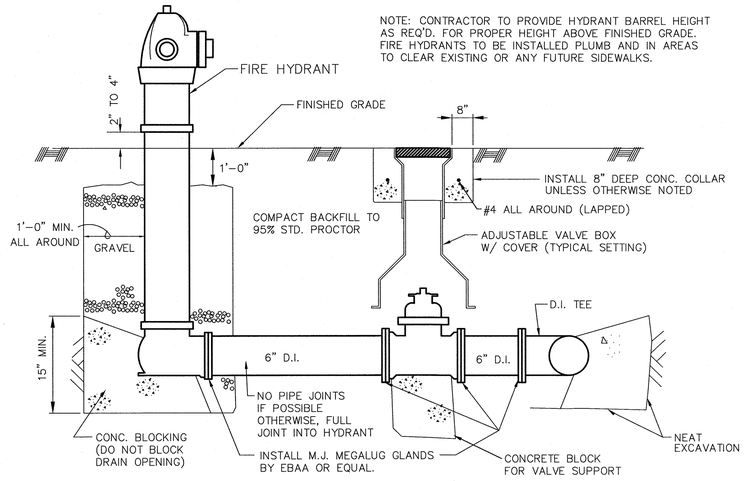
NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

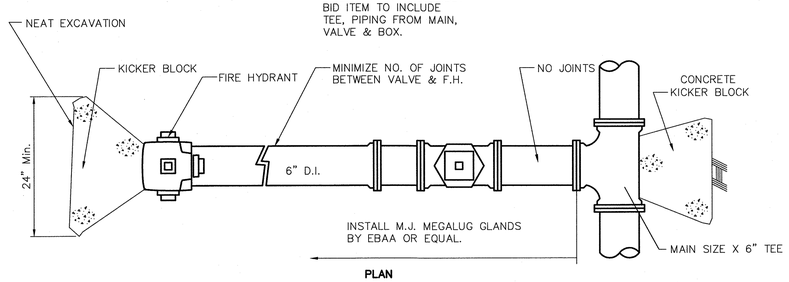
MISCELLANEOUS CITY DETAILS

SCALE:	SHOWN
DATE:	OCT., 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 7-1



ELEVATION

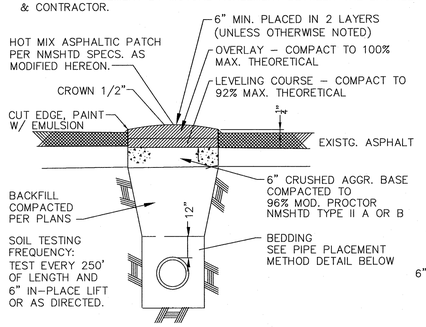


PLAN

FIRE HYDRANT DETAILS

NTS

HOT MIX ASPHALTIC MATERIAL TO CONFORM NMSHTD SPECIFICATIONS PROVIDED HOWEVER THAT MIX SHALL CONTAIN ADDITIONAL FINES & ASPHALTIC CEMENT BY MUTUAL AGREEMENT BETWEEN THE ENGINEER & CONTRACTOR.



MAXIMUM PAVING PATCH PAY WIDTH

ACTUAL WIDTH BASED ON TRENCH WIDTH GOVERNED BY SAFETY REQUIREMENTS. PATCHING REQ'D. BECAUSE OF CARELESS CONSTRUCTION NOT ELIGIBLE FOR PAYMENT.

ASPHALTIC PATCH DETAIL

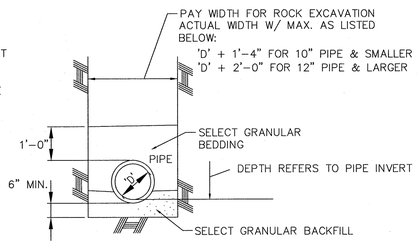
NTS

EXAMPLE OF ROCK PAY QUANTITY CALCULATION:

GIVEN: 5' DEPTH OF ROCK
WIDTH FOR 24" PIPE, 4'
LENGTH ALONG WATER LINE, 100'

PAY QUANTITY=5X4X100/27=74 CY

NOTE: CONTRACTOR TO ANTICIPATE ALL WORK REQUIRED TO EXCAVATE ROCK INCLUDING AREAS OUTSIDE OF PAY WIDTH (SUCH AS SLOPES FOR SAFETY) WHEN ARRIVING AT A UNIT BID PRICE.



ROCK EXCAVATION DETAIL

NTS

WATERLINE FILLING AND FLUSHING METHODS

LINES SHALL BE FILLED W/ CHLORINE SOLUTION, PRESSURE TESTED, FLUSHED TO LOWER RESIDUAL AND THEN TESTED FOR BIOLOGICAL CONFORMANCE PRIOR TO ANY TIE-INS BY EITHER OF THE FOLLOWING METHODS. CONTRACTOR TO BE RESPONSIBLE FOR APPARATUS REQUIRED INCLUDING METHODS OF PIPE & FITTING RESTRAINT UNDER PRESSURE.

METHOD 1 – FILL THE LINE WITH PRE-MIXED CHLORINE SOLUTION FROM CLEAN WATER TANKER. NOTE: CHLORINE CONCENTRATE MAY BE INTRODUCED WHILE PUMPING WATER INTO LINE IF CONTINUED DISBURSEMENT IS ASSURED. AFTER PRESSURE TEST AND 24 HOUR CONTACT PERIOD, REPLACE CHLORINATED WATER WITH LOW RESIDUAL WATER BY PUMPING FROM CLEAN WATER TANKER. COMPLETE BIOLOGICAL SAMPLING AND TESTING AFTER 48 HRS. TIE-IN TO CITY SYSTEM WHEN TEST RESULTS ARE ACCEPTABLE. FLUSH LINES WITH CITY PRESSURE.

METHOD 2 – CONNECT TO NEW MAIN AND EXISTING CITY MAIN WITH A LINE EQUIPPED WITH 2 CHECK VALVES AND A MANUAL VALVE OR WITH A STANDARD COMMERCIAL BACKFLOW PREVENTOR. (NOTE: THE CONNECTING LINE AND ACCESSORIES ARE USUALLY OF A SMALLER SIZE THAN THE MAINS.) FILL THE NEW MAIN THROUGH THE CONNECTING LINE WHILE INTRODUCING A SEPARATE CHLORINE CONCENTRATE FEED. CLOSE THE VALVE AND DISCONNECT THE CONNECTING LINE. COMPLETE PRESSURE TESTING AND 24 HOUR CONTACT PERIOD. RECONNECT THE LINE AND FLUSH TO ACCEPTABLE RESIDUAL FROM THE CITY MAIN. CLOSE THE VALVE AND DISCONNECT THE CONNECTING LINE. CONDUCT BIOLOGICAL SAMPLING FOR TESTING AFTER 48 HRS. TIE-IN TO CITY MAIN WHEN TEST RESULTS ARE ACCEPTABLE. FLUSH LINES TO ACHIEVE SCOURING VELOCITY WITH CITY PRESSURE.

NOTE: REFERENCE TO PUBLISHED SPECIFICATIONS ARE FOR LATEST REVISION THEREOF.

WATER AND SEWER SPECIFICATIONS

A. SANITARY SEWER LINE AND APPURTENANCES

1. PVC SEWER PIPE: PVC SEWER PIPE SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS D-3034 WITH A MINIMUM SDR-35. PIPE CONNECTIONS SHALL BE BELL-SPIGOT WITH RUBBER RING AND SHALL BE WATER TIGHT AT 15 PSI HYDROSTATIC HEAD.
2. MANHOLES AND APPURTENANCES:
   A. MANHOLES SHALL BE CONSTRUCTED FROM APPROVED PRECAST BARREL AND CONE SECTIONS MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
   B. MANHOLE FRAMES AND COVERS SHALL BE CAST IRON, SOLID LID, TRAFFIC MODEL AND SHALL CONFORM TO ASTM A48-36C.
3. SEWER SERVICE LATERALS:
   A. PVC SERVICE WYE, SDR-35 (GXGXG) – GASKET
   B. PVC SADDLE TEE SDR-35 (RUBBER SEAL TO MAIN X G BRANCH) WITH STAINLESS STEEL BANDS.
   C. PVC SCHD. 40 PIPE, ASTM D-1785 WITH RUBBER RING JOINTS OR SOLVENT WELD.
   D. CONNECTION TO EXISTING SERVICE LINES, FERNCO ELASTOMERIC SLEEVES WITH STAINLESS STEEL BANDS.
4. HYDROSTATIC (EXFILTRATION) TESTING: COMPLETED SEWER LINES BETWEEN MANHOLES TO BE SUBJECTED TO MINIMUM 4 FT. OF HEAD FOR 2 HOUR PERIOD. LEAKAGE TO BE 1 GALLON OR LESS. MAXIMUM PERMISSIBLE LOSS IN MANHOLES FOR 2 HOUR PERIOD IS 5 GALLONS.

B. WATER LINES AND APPURTENANCES FOR POTABLE WATER

1. DUCTILE IRON: DUCTILE IRON FOR WATER LINES SHALL BE OF THE SIZE AND CLASS SPECIFIED, CEMENT LINED AND SHALL CONFORM TO AWWA C104 AND C151. JOINTS FOR DUCTILE IRON PIPE SHALL BE RUBBER RING "PUSH-ON" OR AS SPECIFIED ON THE DRAWINGS. DUCTILE IRON PIPE SHALL BE WRAPPED IN TWO (2) LAYER OF 8 MIL POLYETHYLENE PER AWWA C105.
2. PVC: 1.5" TO 3.0" PVC – PRODUCT STANDARD ASTM 2241, IPS SIZE, SLIP JOINT W/ SDR CLASS CALLED FOR.
   4" TO 12" PVC – TO MEET AWWA STANDARD C900-07 W/ CAST IRON OD SIZE, RUBBER RING "PUSH ON" TYPE GASKET JOINTS AND DR CLASS CALLED FOR.
   14" TO 48" PVC – TO MEET AWWA STANDARD C905 W/ CAST IRON OD SIZE, RUBBER RING "PUSH ON" TYPE GASKET JOINTS AND DR CLASS CALLED FOR.
3. FITTINGS AND SPECIALS: FITTINGS AND SPECIALS SHALL BE DUCTILE IRON CEMENT LINED MECHANICAL JOINT DUCTILE IRON CONFORMING TO AWWA C104 AND C110 WITH RETAINER GLANDS. FITTINGS FOR 1.5" TO 3.0"PVC IPS LINES TO BE SCHD. 80 SOLVENT WELD PVC.
4. GATE VALVES: GATE VALVES 2" AND LARGER SHALL BE EPOXY COATED, IRON BODY, RESILIENT WEDGE, NON-RISING STEM VALVES RATED FOR 250 PSI AND SHALL CONFORM TO AWWA C-509 OR C515. VALVES 2" OR LESS IN DIAMETER SHALL BE HIGH QUALITY ALL BRASS GATE VALVES (OR BRASS BODY W/ SS BALL WHEN CALLED FOR). VALVE BOXES SHALL BE DUCTILE IRON, ADJUSTABLE LENGTH TYPE. CONNECTIONS FOR 4" AND LARGER GATE VALVES TO BE MECHANICAL JOINT WITH STAINLESS STEEL TRIM UNLESS OTHERWISE NOTED.
5. FIRE HYDRANTS: FIRE HYDRANTS SHALL HAVE A 6" DIAMETER INLET WITH 5 1/4" VALVE OPENING AND SHALL BE RATED FOR 150 PSI MAX. WORKING PRESSURE. CONNECTIONS FOR FIRE HYDRANTS SHALL BE MECHANICAL JOINT AND SHALL CONFORM TO AWWA C502. FIRE HYDRANTS SHALL BE MUELLER CENTURION A 423. HYDRANTS TO BE SUPER CENTURION 250.
6. TESTING AND DISINFECTION OF WATER LINES AND APPURTENANCES:
   A. TESTING OF WATER LINES: ALL WATER LINES SHALL BE TESTED AFTER INSTALLATION IN ACCORDANCE WITH AWWA SPECIFICATION C600, PROVIDED ALLOWABLE LINE LEAKAGE SHALL NOT BE MORE THAN NDP $^{D^{3/5}}$/7400 GALLONS PER HOUR WHERE N = NUMBER OF JOINTS, D = PIPE DIAMETER IN INCHES AND P = TEST PRESSURE IN PSI.

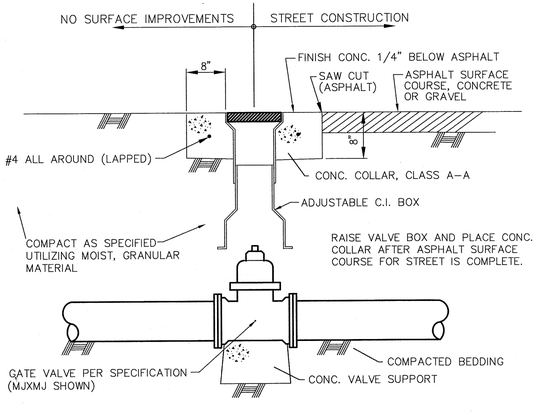
AVERAGE TEST PRESSURE (PSI)	ALLOWABLE LEAKAGE PER 100 JOINTS (GALLONS/HR.) PIPE DIMENSION									
	6"	8"	10"	12"	14"	16"	18"	24"	30"	
200	1.15	1.53	1.91	2.29	2.68	3.06	3.44	4.56	5.73	
250	1.28	1.71	2.14	2.56	2.99	3.42	3.85	5.13	6.41	

   B. DISINFECTION OF WATER LINES: COMPLETED LINES SHALL BE TREATED WITH CHLORINE SOLUTION OF NOT LESS THAN 50 PARTS PER MILLION KEPT IN CONTACT FOR AT LEAST 24 HOURS. AFTER THE 24 HOUR PERIOD, THE LINE SHALL BE FLUSHED UNTIL THE RESIDUAL CHLORINE HAS BEEN REDUCED TO CITY OF GALLUP SYSTEM RESIDUAL. WATER IN THE NEW LINE SHALL BE SAMPLED BY THE CONTRACTOR FOR BIOLOGICAL TESTING AFTER A PERIOD OF 48 HRS. REQUIRED TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. TESTS TO INDICATE COMPLIANCE WITH CITY STANDARDS PRIOR TO TYING-IN.

   DISINFECTION PROCEDURES SHALL BE IN ACCORDANCE W/ AWWA C651 SPECIFICATIONS AND AS MODIFIED HEREON.

   CHLORINE SOLUTION SHALL NORMALLY BE INTRODUCED AT THE LOWEST ELEVATION OF THE WATER LINE. THE SOLUTION SHALL BE PUMPED INTO THE LINE IN SUCH A MANNER AS TO PREVENT TRAPPING AIR. CONTRACTOR SHALL PROVIDE FILLING, SAMPLING AND AIR RELEASE TAPS AS REQUIRED.

   LIQUID CHLORINE CONCENTRATE OR GAS SHALL BE USED FOR CHLORINE SOLUTION. POWDER CHLORINE CONCENTRATE WILL NOT BE PERMITTED.
   (SEE WATER LINE FILLING AND FLUSHING METHODS)
7. WATER SERVICE LINES:
   A. CORP. STOP – CC TAPERED INLET BY COMPRESSION FITTING AS MUELLER 110 WITH STAINLESS STEEL GRIPPER BAND.
   B. SERVICE LINE – TYPE "K" SOFT DRAWN COPPER 3/4" MIN.
   C. 1/8TH OR 1/4 BENDS – COMPRESSION OR TO CORP STOP. (W/ SS GRIPPER BAND)
   D. COUPLINGS – COMPRESSION BY COMPRESSION. (W/ SS GRIPPER BAND)
   E. SADDLES TO BE BRASS, DOUBLE STRAP AS FORD 202BS OR EQUAL. MAINTAIN 2' MIN. BETWEEN PIPE END TAP.

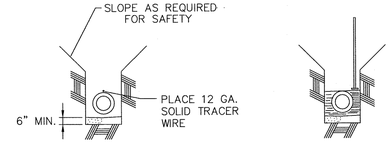


TYPICAL VERTICAL GATE VALVE SETTING

NTS

CAUTION
CALL NEW MEXICO ONE CALL 811 BEFORE YOU DIG!

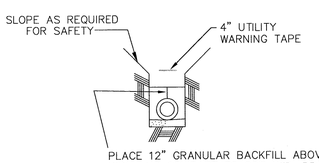
NOTICE OF EXTENDED PAYMENT PROVISION: IN ACCORDANCE WITH NEW MEXICO STATE STATUTE 57-28-5(B)(NMSA 1978),THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.



PLACE PIPE ON FIRM ACCURATELY GRADED COMPACTED GRANULAR MATERIAL 6" MINIMUM THICKNESS COMPACTED TO 90% STD. PROCT. CUT OUT FOR BELL.

PLACE 8"-10" LOOSE LAYERS SELECT BACKFILL, NEAR OPTIMUM MOISTURE CONTENT AND COMPACT, EACH LAYER UNTIL NEAR TOP OF PIPE. USE CAUTION TO AVOID DISTURBING PIPE ALIGNMENT.

PLACEMENT STEP 1



PLACEMENT STEP 2

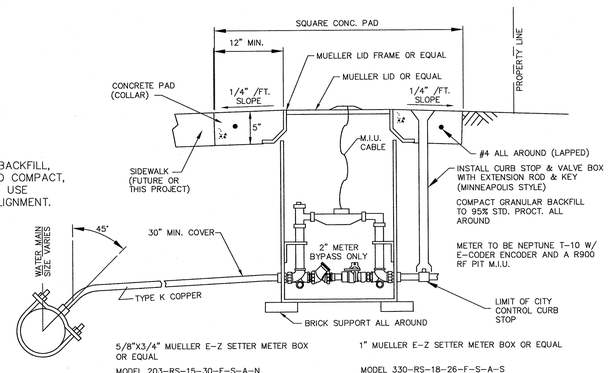
PLACEMENT STEP 4

TEST FREQUENCIES TO BE DETERMINED BY THE ENGINEER

DEPICTED ABOVE ARE ACCEPTABLE METHODS FOR PLACING PIPE

PIPE PLACEMENT METHOD

NTS



5/8"X3/4" MUELLER E-Z SETTER METER BOX OR EQUAL

MODEL 203-RS-15-30-F-S-A-N
15" BOX DIA.
30" BOX DEPTH
LOCKWING ANGLE BALL VALVE (FULL PORT)
A.S.S.E. DUAL CHECK
ALUM. BOTT.

700097 LID FRAME
282924 LID
790162 PAD

MUELLER SHUT OFF VALVE (CURB STOP)
MODEL H-15159

MUELLER VALVE BOX
MODEL H-10332

MUELLER EXTENSION ROD
MODEL 82863

1" MUELLER E-Z SETTER METER BOX OR EQUAL

MODEL 330-RS-18-26-F-S-A-S
18" BOX DIA.
26" BOX DEPTH
LOCKWING ANGLE BALL VALVE (FULL PORT)
A.S.S.E. DUAL CHECK
ALUM. BOTT.

70098 LID FRAME
282925 LID
790163 PAD

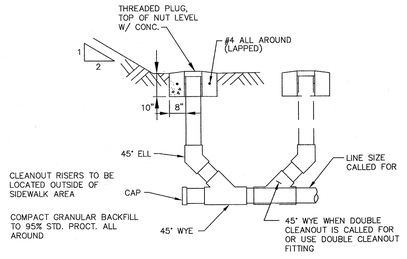
2" MUELLER E-Z SETTER METER BOX OR EQUAL

MUELLER-550-VB-27-36-F-B-A-N

70098 LID FRAME
282925 LID
790165 PAD
BYPASS REQUIRED

WATER SERVICE METER BOX DETAILS

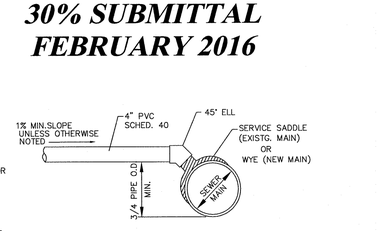
5/8"x3/4" - 1" AND 2" SIZE
NTS (NONE THIS PROJECT)



SEWER SERVICE CLEANOUT DETAILS

SCHED. 40 PVC
NTS

PRELIMINARY
30% SUBMITTAL
FEBRUARY 2016



SEWER SERVICE CONNECTION

NTS

KURT A. SPOLAR NEW MEXICO 17637 3-28-16 LICENSED PROFESSIONAL ENGINEER

DePAULI ENGINEERING & SURVEYING LLC
- CIVIL ENGINEERS AND LAND SURVEYORS -
307 SOUTH 4th STREET GALLUP, NM 87301
TEL: (505)863-5440 depaulieengineering.com

for the **CITY OF GALLUP**
McKINLEY COUNTY, NEW MEXICO

NO.	BY	DATE	

CITY OF GALLUP
NAVAJO GALLUP WATER SUPPLY PROJECT
REACH 27.6

MISCELLANEOUS CITY DETAILS

SCALE:	SHOWN
DATE:	APRIL, 2015
DRAWN BY:	DS
CHECKED BY:	MDP KAS

SHEET 7-2

ENGINEER'S -- C:\DOCUMENTS\ENGINEER\PROJECT 6\PROJECT 6A WEST