

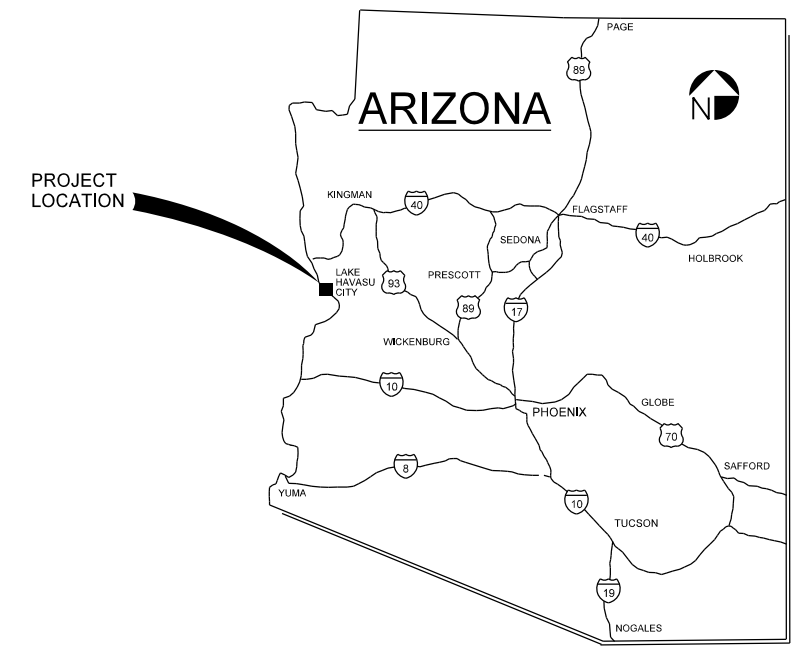
FINAL CONSTRUCTION PLANS FOR THE VADOSE WELL DESIGN & EXPANSION

LHC PROJECT 107015 JUNE 2023

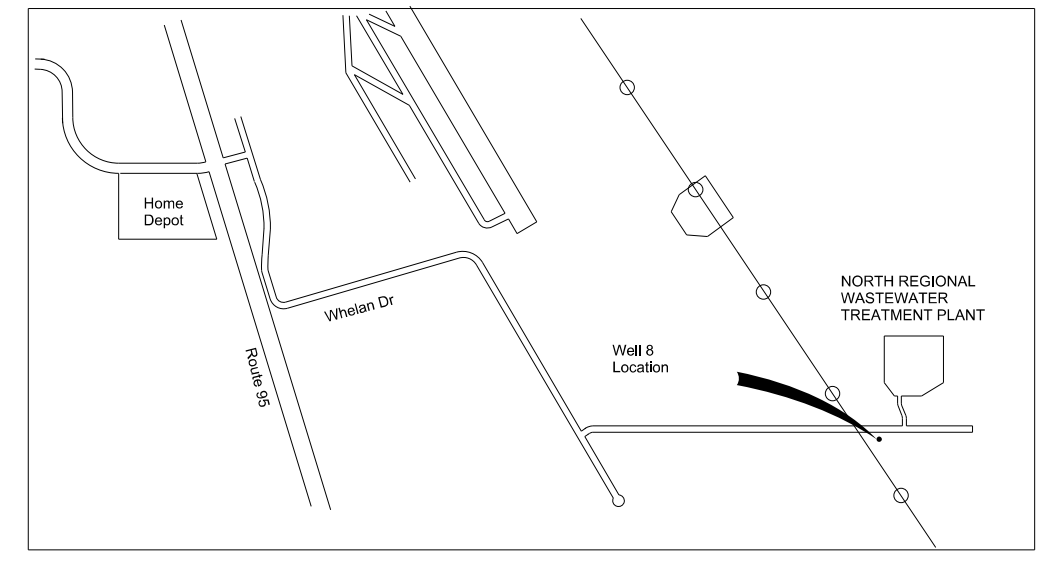


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3	G-3	ABBREVIATIONS
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16	I-1	P&ID DIAGRAMS, DETAILS, ELECTRICAL SYMBOL LEGEND

MAYOR: CAL SHEEHY
 VICE MAYOR: DAVID LANE
 CITY COUNCIL: NANCY CAMPBELL
 JIM DOLAN
 MICHELE LIN
 CAMERON MOSES
 JENI COKE
 CITY MANAGER: JESS KNUDSON
 CITY ENGINEER: GREG FROSLIE, P.E.
 PROJECT MANAGER: JASON HART



VICINITY MAP
NTS



LOCATION MAP
NTS

BASIS OF BEARING:
 HORIZONTAL DATUM: COORDINATES ARE MODIFIED (GROUND)
 AZ STATE PLANE COORDINATES - CENTRAL ZONE (NAD 83).
 VERTICAL DATUM: ELEVATIONS ARE NAVD 88.



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JACOBS
 GENERAL
 TITLE SHEET, SHEET INDEX,
 AND VICINITY MAP

VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 0 1"

DATE	JUNE 2023
PROJ	D3607700
DWG	G-1
SHEET	1 of 16

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GENERAL CONSTRUCTION NOTES

- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED CONSTRUCTION PERMITS AND APPROVALS OF LIKE KIND PRIOR TO START OF CONSTRUCTION.
- THE LOCATION OF BURIED UTILITIES ARE BASED UPON INFORMATION PROVIDED TO THE ENGINEER BY OTHERS AND MAY NOT REFLECT ACTUAL FIELD CONDITIONS. EXISTING BURIED UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL USE ANY MEANS APPROVED BY THE ENGINEER/PROJECT MANAGER TO LOCATE UNDERGROUND UTILITIES INCLUDING, BUT NOT LIMITED TO, ELECTRONIC LOCATING EQUIPMENT AND/OR POT HOLLING. ANY DAMAGE TO ANY OTHER UTILITIES AND/OR COLLATERAL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.
- EXISTING FENCING THAT IS NOT DESIGNATED FOR REMOVAL SHALL NOT BE DISTURBED. ANY FENCING THAT IS DISTURBED OR ALTERED BY THE CONTRACTOR SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. IF THE CONTRACTOR DESIRES TO REMOVE FENCING TO ACCOMMODATE CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL OBTAIN THE OWNER'S WRITTEN PERMISSION BEFORE FENCE IS REMOVED. CONTRACTOR SHALL RESTORE THE FENCE TO ITS ORIGINAL CONDITION AT THE EARLIEST OPPORTUNITY TO THE SATISFACTION OF THE OWNER. WHILE ANY FENCING IS REMOVED, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SECURITY OF THE SITE UNTIL THE FENCE IS RESTORED.
- AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL CLEAN AND PICK UP THE WORK AREA TO THE SATISFACTION OF THE ENGINEER/PROJECT MANAGER. AT NO TIME SHALL THE WORK BE LEFT IN A MANNER THAT COULD ENDANGER THE WORKERS OR THE PUBLIC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY OF ALL WORK, INCLUDING WORK WITHIN TRENCHES WHICH SHALL BE IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
- REFERENCES MADE TO STANDARD SPECIFICATIONS AND STANDARD DRAWINGS REFER TO THE CITY OF LAKE HAVASU, ENGINEERING DIVISION STANDARD DETAILS.
- THE CONTRACTOR SHALL NOT INSTALL ITEMS AS SHOWN ON THESE PLANS WHEN IT IS OBVIOUS THAT FIELD CONDITIONS ARE DIFFERENT THAN SHOWN IN THE PLANS. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER. IN THE EVENT THE CONTRACTOR DOES NOT NOTIFY THE ENGINEER IN A TIMELY MANNER, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY AND EXPENSE FOR ANY REVISIONS NECESSARY, INCLUDING ENGINEERING DESIGN FEES.
- EXISTING SITE IMPROVEMENTS WHICH ARE DAMAGED OR DISPLACED BY THE CONTRACTOR SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION OF THE REPAIRS. REPAIRS SHALL BE ACCEPTED BY THE OWNER PRIOR TO FINAL PAYMENT.
- PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES WITHIN ADJACENT RIGHT-OF-WAYS OR WITHIN PROPERTY NOT OWNED BY THE OWNER OF THE PROJECT SITE, THE CONTRACTOR SHALL ASSURE THAT ALL PERMITS AND PERMISSIONS REQUIRED HAVE BEEN OBTAINED IN WRITING.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST SEVEN (7) DAYS BEFORE BEGINNING ANY CONSTRUCTION ACTIVITY THAT COULD DAMAGE OR DISPLACE SURVEY MONUMENTS, PROPERTY CORNERS, OR PROJECT BENCHMARKS SO THESE ITEMS MAY BE RELOCATED.
- ANY SURVEY MONUMENTS, PROPERTY CORNERS, OR BENCHMARKS THAT ARE NOT IDENTIFIED FOR RELOCATION ARE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE, PROTECT, RELOCATE OR REPLACE, RELOCATION OR REPLACEMENT OF THESE ITEMS SHALL BE DONE BY THE OWNER'S SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
- WHEN ABUTTING NEW PAVEMENT TO EXISTING PAVEMENT, CUT EXISTING PAVEMENT EDGE TO A NEAT, STRAIGHT LINE AS NECESSARY TO REMOVE ANY BROKEN OR CRACKED PAVEMENT AND MATCH NEW PAVEMENT ELEVATION TO EXISTING.
- ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED AND APPROVED PRIOR TO PAVING.
- THE CONTRACTOR SHALL WORK WITHIN EXISTING RIGHT-OF-WAY, PLANNED RIGHT-OF-WAY, OR PLANNED OPEN SPACE AS INDICATED ON THE PLANS. EQUIPMENT TRAFFIC OUTSIDE THESE LIMITS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION OF THE OWNER, CONSTRUCTION MANAGER, OR ENGINEER.
- THE CONTRACTOR SHALL LOCATE UTILITIES AT LEAST FIVE WORKING DAYS BEFORE BEGINNING CONSTRUCTION. AFTER THE UTILITIES ARE SPOTTED, THE CONTRACTOR SHALL EXPOSE ALL PERTINENT UTILITIES TO VERIFY THEIR VERTICAL AND HORIZONTAL LOCATION. IF A CONFLICT EXISTS BETWEEN EXISTING UTILITIES AND PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMAL DELAY.
- THE CONTRACTOR SHALL EXERCISE DUE CARE TO AVOID DISTURBING ANY EXISTING UTILITIES, ABOVE OR BELOW GROUND, UTILITIES THAT ARE DAMAGED BY CARELESS CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL COORDINATE ANY REQUIRED UTILITY INTERRUPTIONS WITH THE OWNER AND AFFECTED UTILITY COMPANY A MINIMUM OF FIVE (5) WORKING DAYS BEFORE THE INTERRUPTION.
- THE CONTRACTOR SHALL MAINTAIN A RECORD DRAWING SET OF PLANS AND PROMPTLY LOCATE ALL UTILITIES, EXISTING OR NEW, IN THEIR CORRECT LOCATION, HORIZONTAL AND VERTICAL. THIS RECORD SET OF DRAWINGS SHALL BE MAINTAINED ON THE PROJECT SITE AND SHALL BE AVAILABLE TO THE OWNER AND ENGINEER AT ANY TIME DURING CONSTRUCTION. RECORD INFORMATION SHALL INCLUDE HORIZONTAL AND VERTICAL COORDINATE CALLOUTS, LINE SIZES, LINE TYPES, BURIAL DEPTHS, AND ALL OTHER PERTINENT INSTALLATION INFORMATION. IN ADDITION ALL ITEMS THAT ARE INSTALLED EXACTLY AS DESIGNED SHALL BE NOTED AS SUCH.
- THE CONTRACTOR SHALL PROVIDE ALL REQUIRED TRAFFIC CONTROL PLANS AND TRAFFIC CONTROL EQUIPMENT. ALL SIGNS, BARRICADES, CHANNELIZATION DEVICES, SIGN FRAMES AND ERECTION OF SUCH DEVICES SHALL CONFORM TO THE REQUIREMENTS OF "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" LATEST EDITION. TRAFFIC CONTROL PLANS SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.

EROSION CONTROL, ENVIRONMENTAL PROTECTION, AND STORM WATER POLLUTION PREVENTION

- THE CONTRACTOR SHALL CONFORM TO ALL LOCAL, AND FEDERAL DUST AND EROSION CONTROL REGULATIONS. THE CONTRACTOR SHALL PREPARE AND OBTAIN ANY DUST CONTROL OR EROSION CONTROL PERMITS FROM THE APPROPRIATE REGULATORY AGENCIES.
- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY BY CONSTRUCTION OF TEMPORARY EROSION CONTROL, BERMS OR INSTALLING SILT FENCES AT THE PROPERTY LINES (OR LIMITS OF CONSTRUCTION WHERE DESIGNATED) AND WETTING SOIL TO PREVENT IT FROM BLOWING.
- ALL WASTE PRODUCTS FROM THE CONSTRUCTION SITE, INCLUDING ITEMS DESIGNED FOR REMOVAL, CONSTRUCTION WASTE, CONSTRUCTION EQUIPMENT WASTE PRODUCTS (OIL, GAS, TIRES, ETC.), DRILLING MUD AND WATER, GARBAGE, GRUBBING, EXCESS CUT MATERIAL, VEGETATIVE DEBRIS, ETC. SHALL BE APPROPRIATELY DISPOSED OF OFFSITE AT NO ADDITIONAL COST TO THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY PERMITS REQUIRED FOR HAUL OR DISPOSAL OF WASTE PRODUCTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE WASTE DISPOSAL SITE COMPLIES WITH APPROPRIATE REGULATIONS REGARDING THE ENVIRONMENT, ENDANGERED SPECIES, AND ARCHAEOLOGICAL RESOURCES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANUP AND REPORTING OF SPILLS OF HAZARDOUS MATERIALS ASSOCIATED WITH THE CONSTRUCTION SITE. HAZARDOUS MATERIALS INCLUDES GASOLINE, DIESEL FUEL, MOTOR OIL, SOLVENTS, CHEMICALS, PAINT, ETC. WHICH MAY BE A THREAT TO THE ENVIRONMENT. THE CONTRACTOR SHALL REPORT THE DISCOVERY OF PAST OR PRESENT SPILLS TO THE ENGINEER.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING SURFACE AND UNDERGROUND WATER CONTACT WITH SURFACE WATER BY CONSTRUCTION EQUIPMENT AND PERSONNEL SHALL BE MINIMIZED. EQUIPMENT MAINTENANCE AND REFUELING OPERATIONS SHALL BE PERFORMED IN AN ENVIRONMENTALLY SAFE MANNER IN COMPLIANCE WITH CITY, COUNTY, STATE, AND EPA REGULATIONS.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING CONSTRUCTION NOISE AND HOURS OF OPERATION AS STATED IN THE SPECIFICATIONS OR IMPOSED BY THE OWNER OR COUNTY AUTHORITIES.

SECTION / DETAIL DESIGNATIONS

SECTION (LETTER) OR DETAIL (NUMERAL) DESIGNATION

ON DRAWING WHERE SECTION OR DETAIL IS TAKEN:

DRAWING NUMBER WHERE SHOWN

DRAWING NUMBER (REPLACED WITH A LINE IF TAKEN AND SHOWN ON SAME SHEET)

SECTION
SCALE
ON DRAWING WHERE SECTION IS SHOWN:
DRAWING NUMBER(S) WHERE TAKEN

DETAIL
SCALE
ON DRAWING WHERE DETAIL IS SHOWN:
DRAWING NUMBER(S) WHERE TAKEN

DRAWING TITLE
SCALE
ON DRAWING WHERE ONLY A TITLE IS REQUIRED WITH NO REFERENCE (eg: ELEVATIONS)

SECTION CALLOUT WHERE SECTION IS ON THE SAME SHEET AND CUT EXTENDS TO A FIXED LIMIT

SECTION CALLOUT WHERE SECTION IS ON ANOTHER SHEET AND CUT EXTENDS THROUGHOUT ENTIRE SHEET

GRID LINE INDICATOR

KEYNOTE NUMBER

REVISION / ADDENDA NUMBER

NORTH ARROW; CAN BE MODIFIED TO INCLUDE MAGNETIC NORTH ALONG WITH PROJECT NORTH

DESIGN DETAIL DESIGNATION

DESIGN DETAIL DESIGNATION (NUMERAL)
SHOWN ON DESIGN DETAIL DRAWING(S)

(1234-567)

- NOTES:**
- ALL DESIGN DETAILS ARE TYPICAL AND MUST BE USED IF DESIGN DETAIL DESIGNATION IS NOT SHOWN
 - THE TERM STANDARD DETAIL, OR A FORM OF IT, IS SYNONOMOUS WITH DESIGN DETAIL. THE DESIGN DETAILS REPRESENT THE CHARACTER AND NATURE OF THE WORK REQUIRED THROUGHOUT THE PROJECT. ALL ASSOCIATED WORK SHALL BE IN ACCORDANCE WITH THE DESIGN DETAILS SHOWN WHETHER THE DETAILS ARE SPECIFICALLY REFERENCED OR NOT.



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REVISION	CHK	APVD
NO.	DATE	DR
DSGN		

K BRAL
R EDWARDS
S METCALF
R STURN

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GENERAL NOTES

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DATE	JUNE 2023
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GENERAL CIVIL NOTES:

- SOURCE OF TOPOGRAPHY SHOWN ON THE CIVIL PLANS ARE BASE MAPS CONDUCTED ON AUGUST 6, 2020 BY CORNERSTONE LAND SURVEYING EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION.
- EXISTING TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN SCREENED AND/OR LIGHT-LINED. NEW FINISH GRADE, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVY-LINED.
- HORIZONTAL DATUM: COORDINATES ARE MODIFIED (GROUND) AZ STATE PLANE COORDINATES - CENTRAL ZONE (NAD 83).
- VERTICAL DATUM: ELEVATIONS ARE NAVD 88.
- MAINTAIN, RELOCATE, OR REPLACE EXISTING SURVEY MONUMENTS, CONTROL POINTS, AND STAKES WHICH ARE DISTURBED OR DESTROYED. PERFORM THE WORK TO PRODUCE THE SAME LEVEL OF ACCURACY AS THE ORIGINAL MONUMENT(S) IN A TIMELY MANNER, AND AT THE CONTRACTOR'S EXPENSE.
- COORDINATES AND DIMENSIONS SHOWN FOR ROADWAY IMPROVEMENTS ARE TO FACE OF CURB OR EDGE OF PAVEMENT, UNLESS SPECIFICALLY SHOWN OTHERWISE.
- STAGING AREA SHALL BE FOR CONTRACTOR'S EMPLOYEE PARKING, CONTRACTOR'S TRAILERS AND ON-SITE STORAGE OF MATERIALS.
- PROVIDE TEMPORARY FENCING AS NECESSARY TO MAINTAIN SECURITY AT ALL TIMES.
- ELEVATIONS SHOWN ARE TO FINISH GRADE UNLESS OTHERWISE SHOWN.
- SLOPE UNIFORMLY BETWEEN CONTOURS AND SPOT ELEVATIONS SHOWN.
- ALL DISTURBED AREAS SHALL BE RESTORED TO MATCH EXISTING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION CONTROL DEVICES DURING CONSTRUCTION.
- CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO POSITIVELY PRECLUDE EROSION MATERIALS FROM LEAVING THE SITE. CONTRACTOR TO SUBMIT EROSION CONTROL PLAN.

GENERAL YARD PIPING AND UTILITIES NOTES:

- EXISTING UNDERGROUND UTILITIES OBTAINED FROM AS-BUILTS AND FROM FIELD SURVEY. CONTRACTOR SHALL FIELD VERIFY DEPTH AND LOCATION PRIOR TO EXCAVATION. PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
- FOR PIPING FLOW STREAM IDENTIFICATION, SEE DRAWING G-4.
- EXISTING PIPING AND EQUIPMENT ARE SHOWN SCREENED AND/OR LIGHT-LINED. NEW PIPING AND EQUIPMENT ARE SHOWN HEAVY-LINED.
- UNLESS OTHERWISE SHOWN ALL PIPING SHALL HAVE A MINIMUM OF 3' COVER.
- ALL PIPES SHALL HAVE A CONSTANT SLOPE BETWEEN INVERT ELEVATIONS UNLESS A FITTING IS SHOWN.
- ALL NEW POTABLE WATER PIPES MUST BE PROPERLY FLUSHED, PRESSURE TESTED, CHLORINATED AND BACTERIOLOGICALLY TESTED, AS SPECIFIED.
- FOR TRENCHING AND BACKFILL, SEE LAKE HAVASU CITY UTILITY TRENCH PATCH DETAIL NO. 200 ON DWG P-5.
- FOR SURFACE RESTORATION OF ASPHALT CONCRETE, SEE LAKE HAVASU CITY UTILITY TRENCH PATCH DETAIL NO. 200 ON DWG P-5.
- MINIMUM ALLOWABLE CLEARANCE BETWEEN PIPES AT CROSSINGS SHALL BE 18" UNLESS SHOWN OTHERWISE. WHEN CLEARANCE BETWEEN PIPE AT CROSSING IS LESS THAN 18" CONTROLLED LOW-STRENGTH MATERIAL IS REQUIRED.
- CONTRACTOR IS TO COORDINATE WITH CITY STAFF TO ALLOW FOR PIPE TO BE GPS'D PRIOR TO BURIAL.

GENERAL NOTE:

- THIS IS A STANDARD LEGEND SHEET. THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.

CIVIL LEGEND

EXISTING	THIS CONTRACT	
		SPOT ELEVATION
		CONTOUR LINE
		EMBANKMENT AND SLOPE
		DRAINAGE WAY OR DITCH
		CATCH BASIN OR INLET
		TRENCH DRAIN
		SIGN
		MANHOLE
		ELECTRICAL MANHOLE
		ELECTRIC HANDHOLE
		POST OR GUARD POST
		GUY ANCHOR
		FIRE HYDRANT
		UTILITY POLE
		LIGHT POLE
		BENCH MARK
		SURVEY CONTROL POINT OR POINT OF INTERSECTION
		BRUSH/TREE LINE
		TREE
		PROPERTY LINE
		CENTER LINE, BUILDING, ROAD, ETC.
		STAGING OR WORK AREA LIMITS
		STRUCTURE, BUILDING OR FACILITY LOCATION POINT - COORDINATES
		BORING LOCATION AND NUMBER
		TEST PIT LOCATION AND NUMBER
		PIEZOMETER LOCATION AND NUMBER
		DEMOLITION
		STRUCTURE, BUILDING OR FACILITY
		ASPHALT CONCRETE PAVEMENT
		GRAVEL SURFACING
		CONCRETE PAVEMENT
		CURB
		CURB AND GUTTER
		SINGLE SWING GATE
		DOUBLE SWING GATE
		SLIDING GATE
		GUARD RAIL
		CHAIN LINK FENCE
		ARCHITECTURAL FENCE
		WIRE FENCE
		CULVERT

YARD PIPING LEGEND

EXISTING	THIS CONTRACT	
		NOMINAL PIPE DIAMETER
		PIPE USE IDENTIFICATION
		PIPING < 12" DIAMETER
		PIPING >= 12" DIAMETER
		EXISTING PIPE TO BE ABANDONED
		EXISTING CONCRETE PAVEMENT TO BE REMOVED
		EXISTING ASPHALT PAVEMENT TO BE REMOVED AND REPLACED
		INDICATOR POST VALVE
		GATE VALVE AND VALVE BOX
		BUTTERFLY VALVE AND VALVE BOX
		PLUG VALVE AND VALVE BOX
		FLEXIBLE COUPLING
		90° ELBOW UP
		90° ELBOW DOWN
		BEND < 90° UP
		BEND < 90° DOWN
		CONCENTRIC REDUCER
		CAP OR PLUG
		CLEANOUT
		FIRE HYDRANT

LINE SIZE AND MATERIAL IDENTIFICATION

(FOR REFERENCE ONLY. SEE SITE AND MECHANICAL DRAWINGS)

	PIPE DIAMETER IN INCHES	CISP	CAST IRON SOIL PIPE
	PIPE MATERIAL ABBREVIATION	CLDI	CEMENT LINED DUCTILE IRON
		CLSTL	CEMENT LINED STEEL
		CU	COPPER
		FRP	FIBERGLASS REINFORCED PLASTIC
		PVC	POLYVINYL CHLORIDE
		SST	STAINLESS STEEL
		STL	STEEL

FLOW STREAM IDENTIFICATION

D	DRAIN
FW	FINISHED WATER
GW	GROUND WATER
SA	SAMPLE



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		R EDWARDS				
		K BRAL				

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GENERAL CIVIL NOTES AND LEGEND

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PIPE AND FITTING SYMBOLS

DOUBLE LINE		SINGLE LINE		DOUBLE LINE		SINGLE LINE	
		EXISTING PIPE				REDUCING BUSHING	
		NEW PIPE				UNION	
		EXISTING PIPE TO BE ABANDONED				CAP	
		EXISTING PIPE TO BE REMOVED				ANCHOR	
		WELDED JOINT				ELBOW, 90 DEGREE	
		GROOVED END JOINT				CROSS	
		FLANGED JOINT				TEE	
		MECHANICAL JOINT & PROPRIETARY RESTRAINED JOINT				ELBOW, 45 DEGREE	
		BELL & SPIGOT JOINT (LEADED)				LATERAL	
		HUB & SPIGOT JOINT (RUBBER GASKET)					
		BALL JOINT					
		ADAPTER SIDE GROOVED END ADAPTER FLANGE					
		FLANGED COUPLING ADAPTER					
		FLEXIBLE COUPLING					
		METAL BELLOWS EXP JOINT					
		ELASTOMER BELLOWS EXP JOINT					
		ELBOW UP					
		ELBOW DOWN					
		TEE UP					
		TEE DOWN					
		LATERAL UP					
		LATERAL DOWN					
		CONCENTRIC REDUCER					
		ECCENTRIC REDUCER					

NOTES:

- ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICATIONS.
- SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.
- EXISTING PIPE AND EQUIPMENT IS SHOWN LIGHT-LINED AND/OR SCREENED AND IS NOTED AS EXISTING. NEW PIPING AND EQUIPMENT IS SHOWN HEAVY-LINED.

VALVE SYMBOLS

SINGLE LINE		DOUBLE LINE	
	GATE		
	KNIFE GATE		OR
	BUTTERFLY		OR
	GLOBE		OR
	BALL		OR
	ECCENTRIC PLUG		OR
	PLUG OR COCK		OR
	NEEDLE		OR
	DIAPHRAGM		OR
	PINCH		OR
	SWING CHECK		OR
	BALL CHECK		OR
	HOSE VALVE (HV- X) OR (V-X) X = NO. IN SPECS		
	SAMPLE		
	MUD		
	PRESSURE RELIEF		
	AIR AND/OR VACUUM RELEASE		
	REGULATED SIDE PRESSURE CONTROL (INTERNAL PILOT)		
	REGULATED SIDE PRESSURE CONTROL (EXTERNAL PILOT)		
	MULTI-PORT VALVE. ARROWS INDICATE FLOW PATTERN. SEATING PORTS ARE IMPLIED BY INDICATED FLOW PATTERN.		
	TELESCOPING SCUM VALVE		

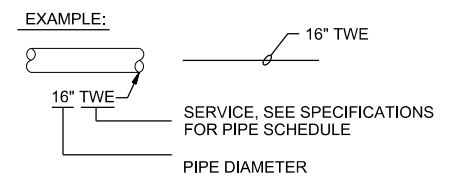
ACTUATOR SYMBOLS

	PNEUMATIC DIAPHRAGM		HYDRAULIC
	PNEUMATIC CYLINDER		MANUAL
	ELECTRIC MOTOR		SOLENOID
			ELECTRO HYDRAULIC

MECHANICAL LEGEND AND NOTES

- GENERIC PIPING NOTES**
- LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS.
 - SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
 - LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. CONTRACTOR SHALL DESIGN SUPPORTS AS SPECIFIED.
 - ALL JOINTS SHALL BE WATERTIGHT. WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL.
 - ALL FLEXIBLE CONNECTORS AND COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
 - SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE DRAWINGS, WHEREVER APPLICABLE. NOT ALL OF THE VARIOUS PIPING COMPONENTS ARE NECESSARILY USED IN THE PROJECT.
 - ALL BURIED PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT EXPOSED FLANGED, WELDED, OR SCREWED PIPING, SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, UNLESS OTHERWISE NOTED.
 - NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS IS ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
 - WHERE A GROOVED END COUPLING IS SHOWN, IT SHALL BE THE RIGID JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER.

PIPING DESIGNATION



NO.	DATE	DR	REVISION	BY	APVD
			CHK	J WILCOX	R EDWARDS
			CHK	Q WANG	K BRAL

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231 SWANSON AVENUE, LAKE HAVASU CITY, AZ 86403
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ENGINEERS INC
107015
LAKE HAVASU CITY, AZ 86403
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Vadose Well Design & Expansion

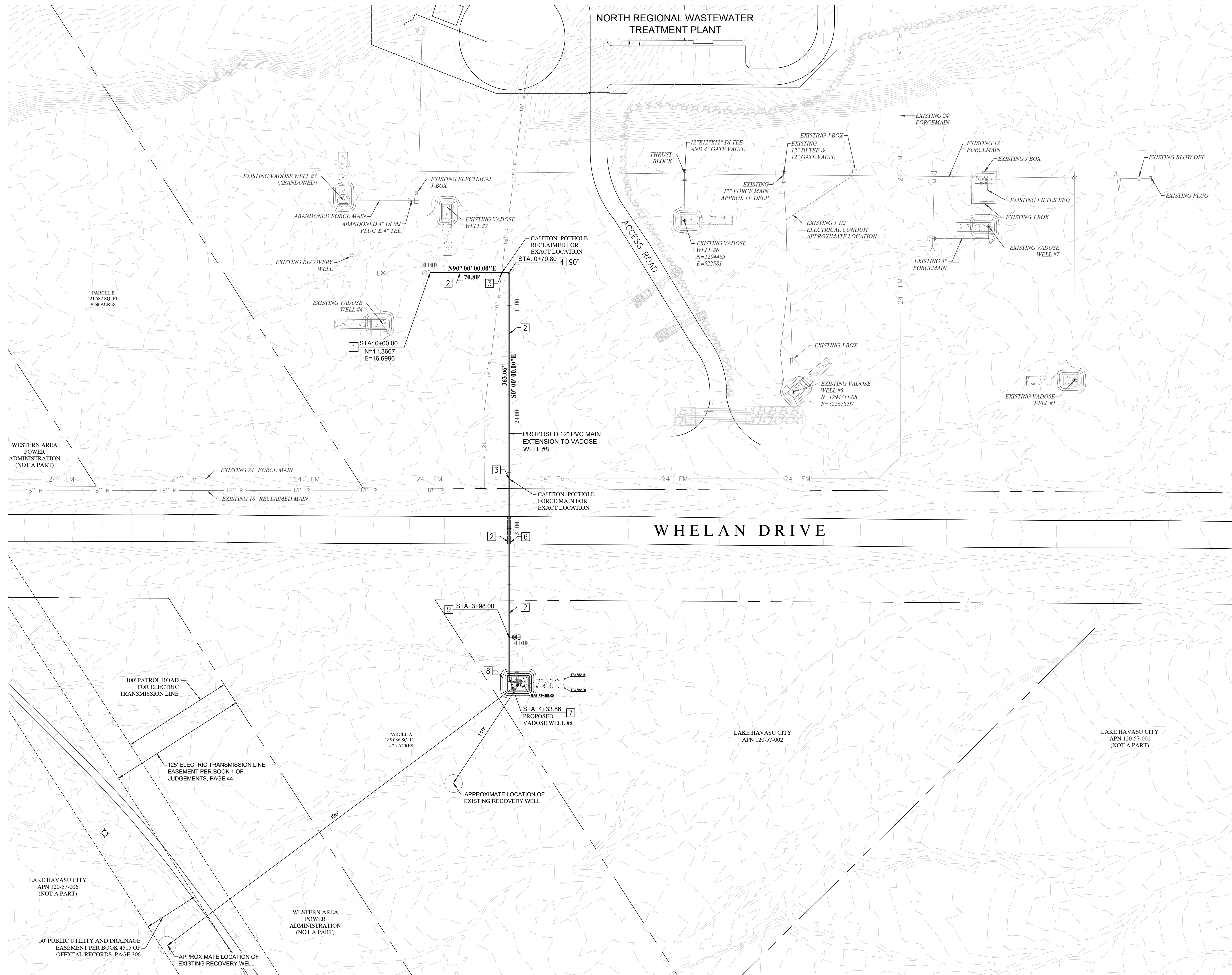
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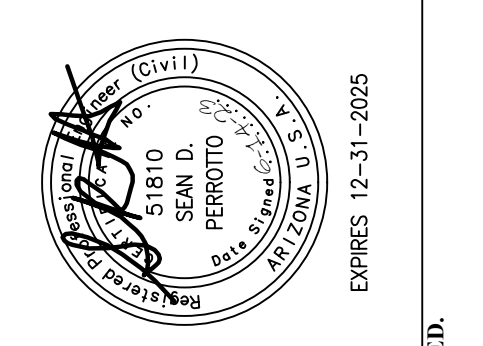
GENERAL MECHANICAL NOTES AND LEGEND

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	JUNE 2023
PROJ	D3607700
DWG	G-5
SHEET	5 of 16



- KEY NOTES:**
- 1 REMOVE EXISTING 12" CAP AND JOIN TO EXISTING.
 - 2 INSTALL 12" PVC C900 DR14 MINIMUM OF 3 FEET OF COVER PER DETAIL 5 AND 200 ON SHEET C-3.
 - 3 CONTRACTOR TO DIG WITH CAUTION AT APPROXIMATE CROSSING LOCATION.
 - 4 INSTALL 12" FITTING, DEGREE PER PLAN PER DETAIL 4 ON SHEET C-3.
 - 5 REFER TO DETAIL 1 ON SHEET C-3 FOR CONNECTION.
 - 6 SAW CUT PAVEMENT AND REPLACE AC PAVEMENT IN KIND.
 - 7 CONSTRUCT VADOSE ZONE WELL PLATFORM PER DETAIL 1 ON SHEET C-3.
 - 8 INSTALL FENCE PER DETAIL 3 ON SHEET C-3.
 - 9 INSTALL 12" TEE PER DETAIL 2 ON SHEET C-3.



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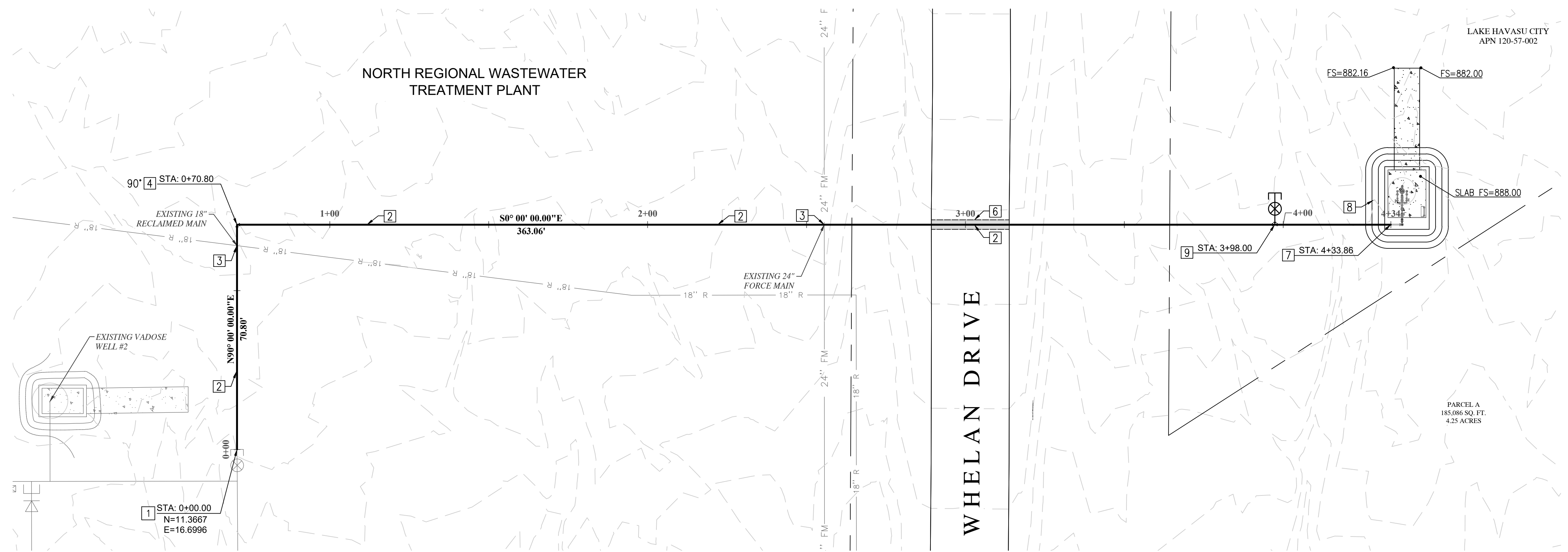
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VADOSE WELL SITE PLAN

1" = 40'
 VERIFY SCALE
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 0 1"

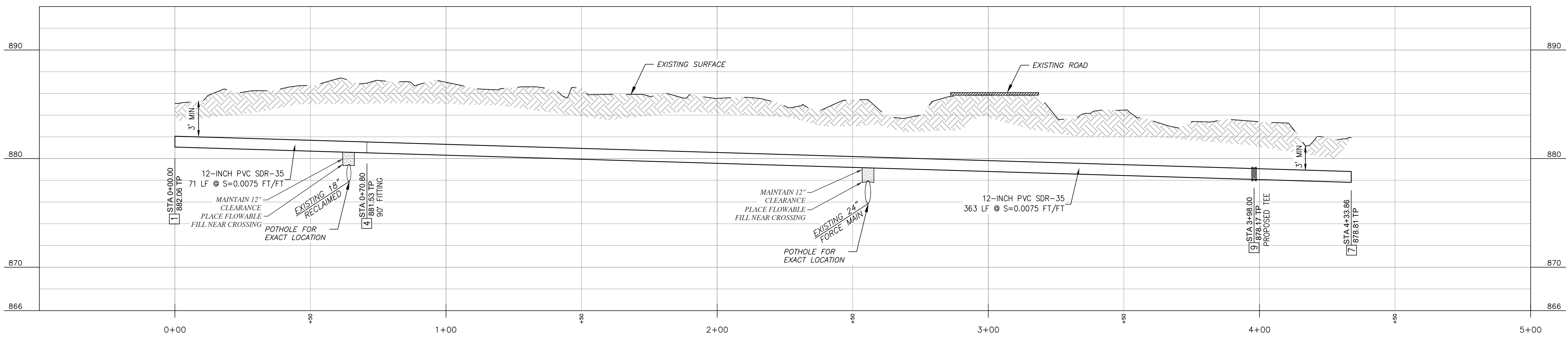
DATE: JUNE 2023
 PROJ: D3607700
 DWG: C-1
 SHEET: 6 of 16

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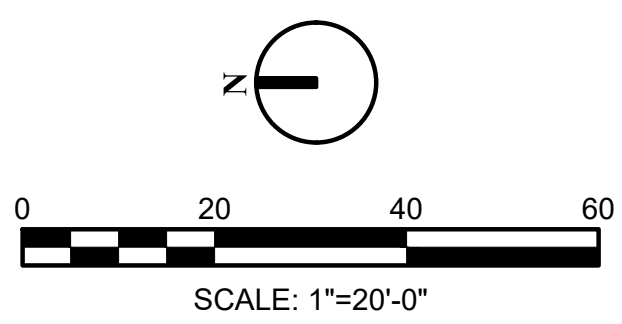


PLAN VIEW

- KEY NOTES:**
- 1 REMOVE EXISTING 12" CAP AND JOIN TO EXISTING.
 - 2 INSTALL 12" PVC C900 DR14 MINIMUM OF 3 FEET OF COVER.
 - 3 CONTRACTOR TO DIG WITH CAUTION AT APPROXIMATE CROSSING LOCATION.
 - 4 INSTALL 12" FITTING; DEGREE PER PLAN.
 - 5 REFER TO DETAIL 1 ON SHEET C-3 FOR CONNECTION.
 - 6 SAW CUT PAVEMENT AND REPLACE AC PAVEMENT IN KIND.
 - 7 CONSTRUCT VADOSE ZONE WELL PLATFORM PER DETAIL 1 ON SHEET C-3.
 - 8 INSTALL FENCE PER DETAIL 3 ON SHEET C-3.
 - 9 INSTALL 12" TEE PER DETAIL 2 ON SHEET C-3.



PROFILE VIEW
SCALE H:1"=20'; V:1"=5'



EXPRES 12-31-2025

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PLAN & PROFILE

TRICO ENGINEERING, LLC

Vadoses Well Design & Expansion

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LAKE HAVASU CITY, AZ 86403

2386 CULBERT BLVD. LAKE HAVASU CITY, AZ 86403

(908) 952-2500

1" = 20'

VERIFY SCALE

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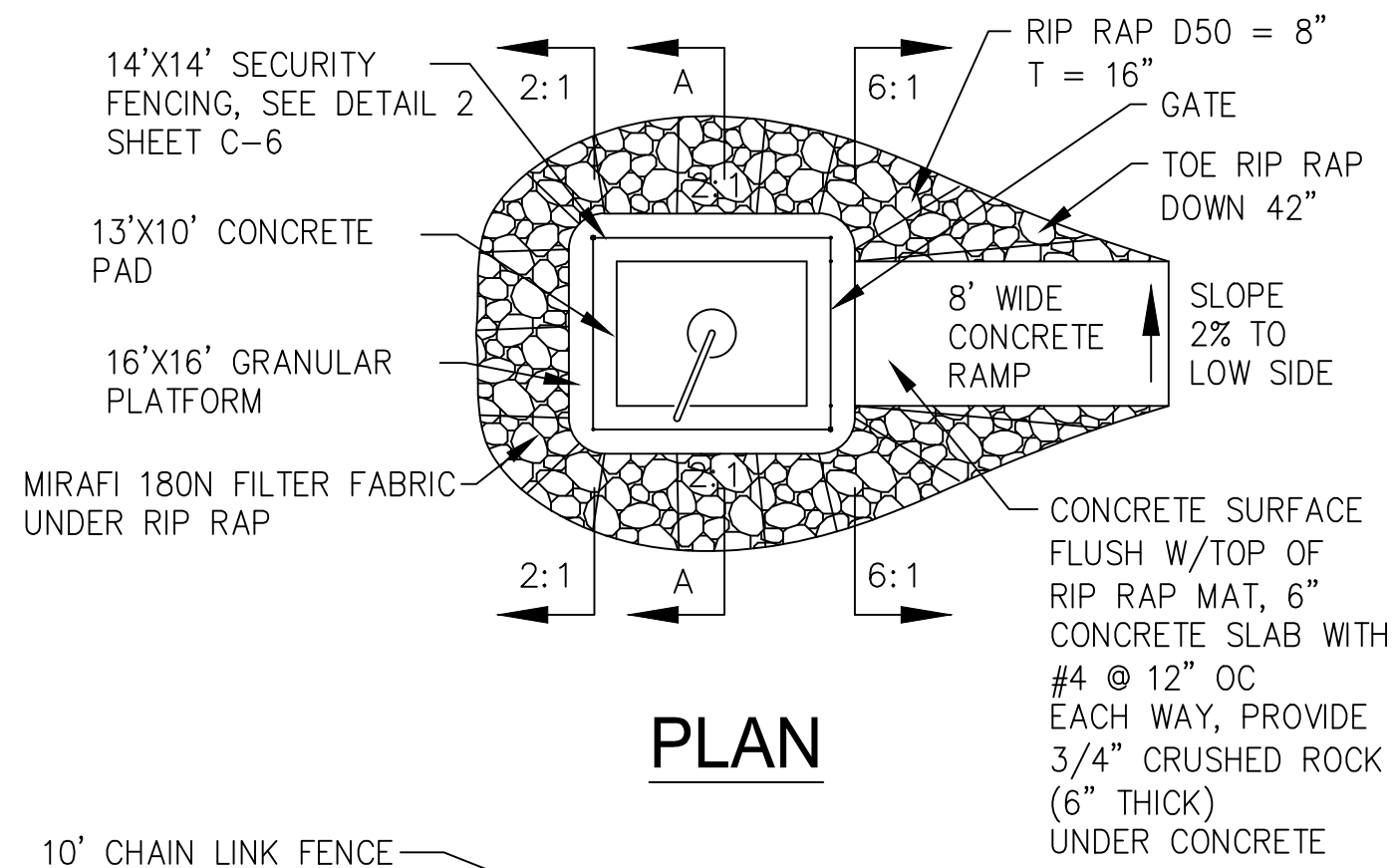
DATE: JUNE 2023

PROJ: D3607700

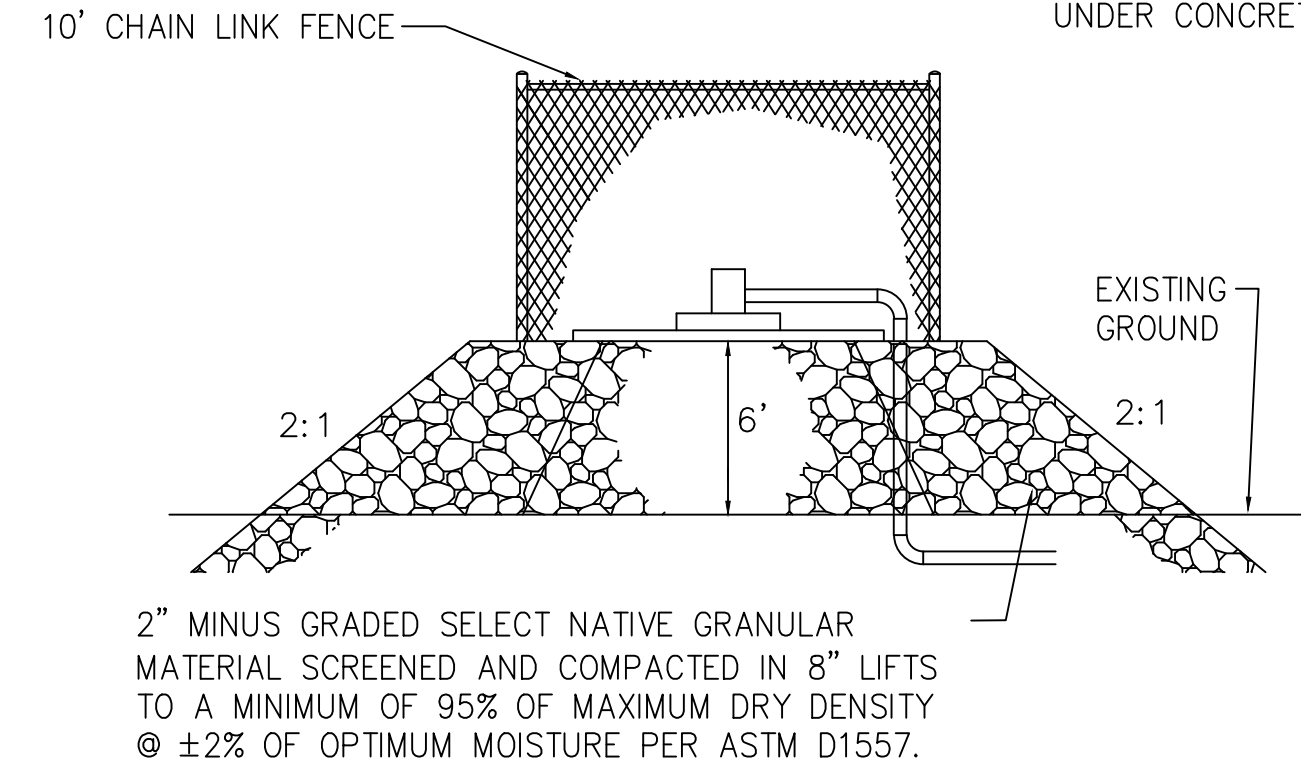
DWG: C-2

SHEET: 7 of 16

A:\Info Engineering LLC\Projects\2023\22-06L_Vadoses Well & Pumps\Info - Jacobs\Info - Jacobs - Lake Zone Well Design\2023\22-06L_Vadoses Well & Pumps.dwg (S:\6/14/2023 - Jacobs) - LP, 6/14/2023 12:59 PM

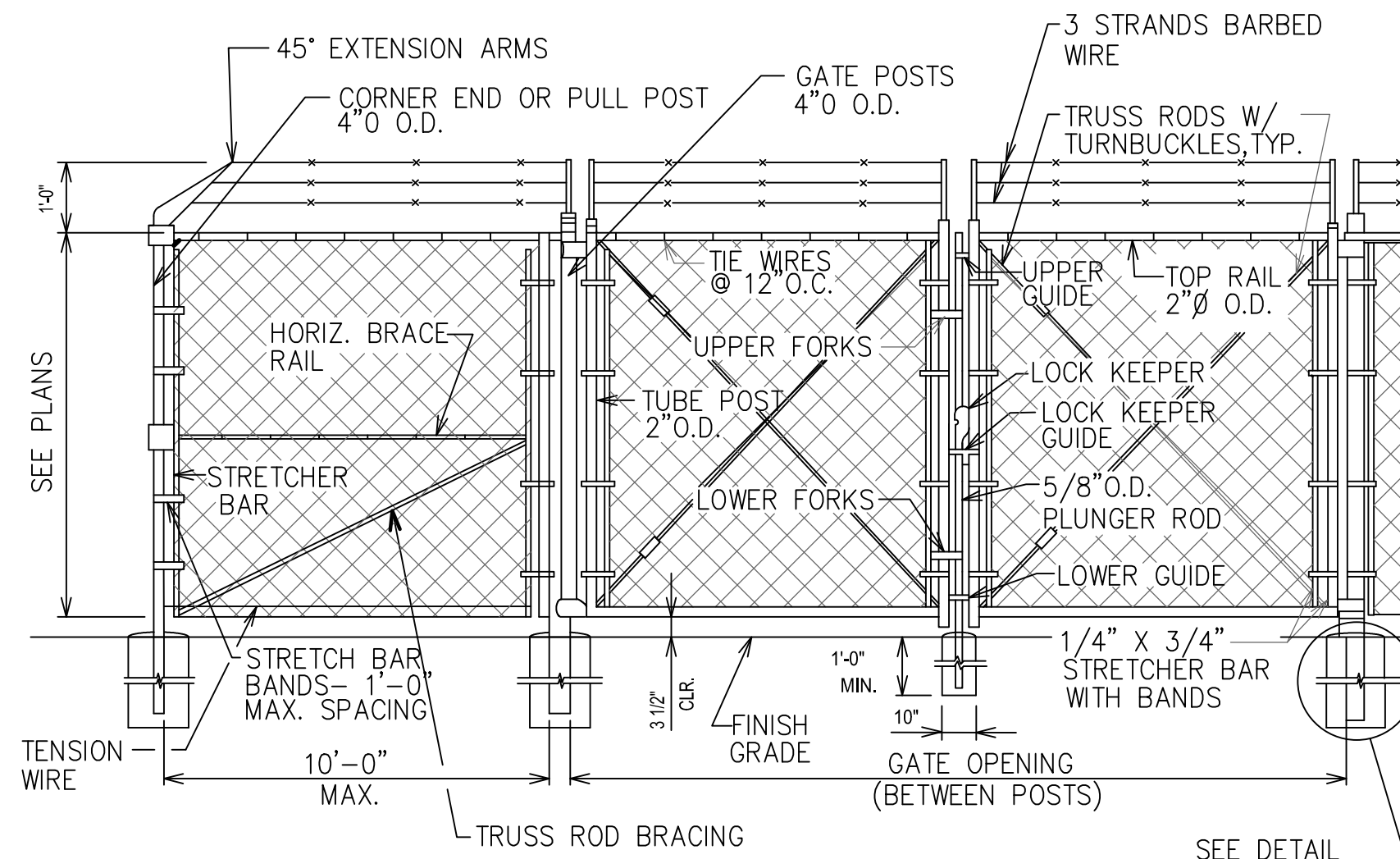


PLAN

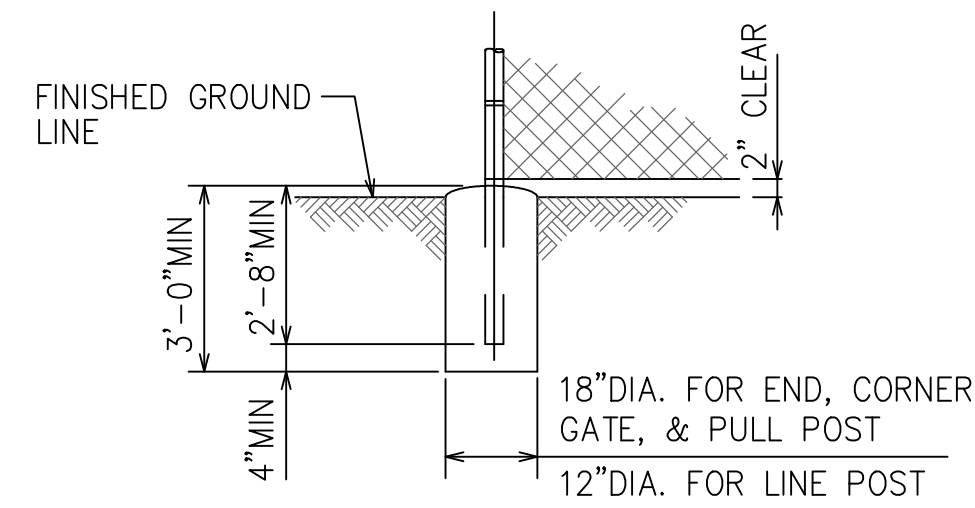


SECTION "A"

1 VADOSE ZONE WELL PLATFORM
N.T.S.

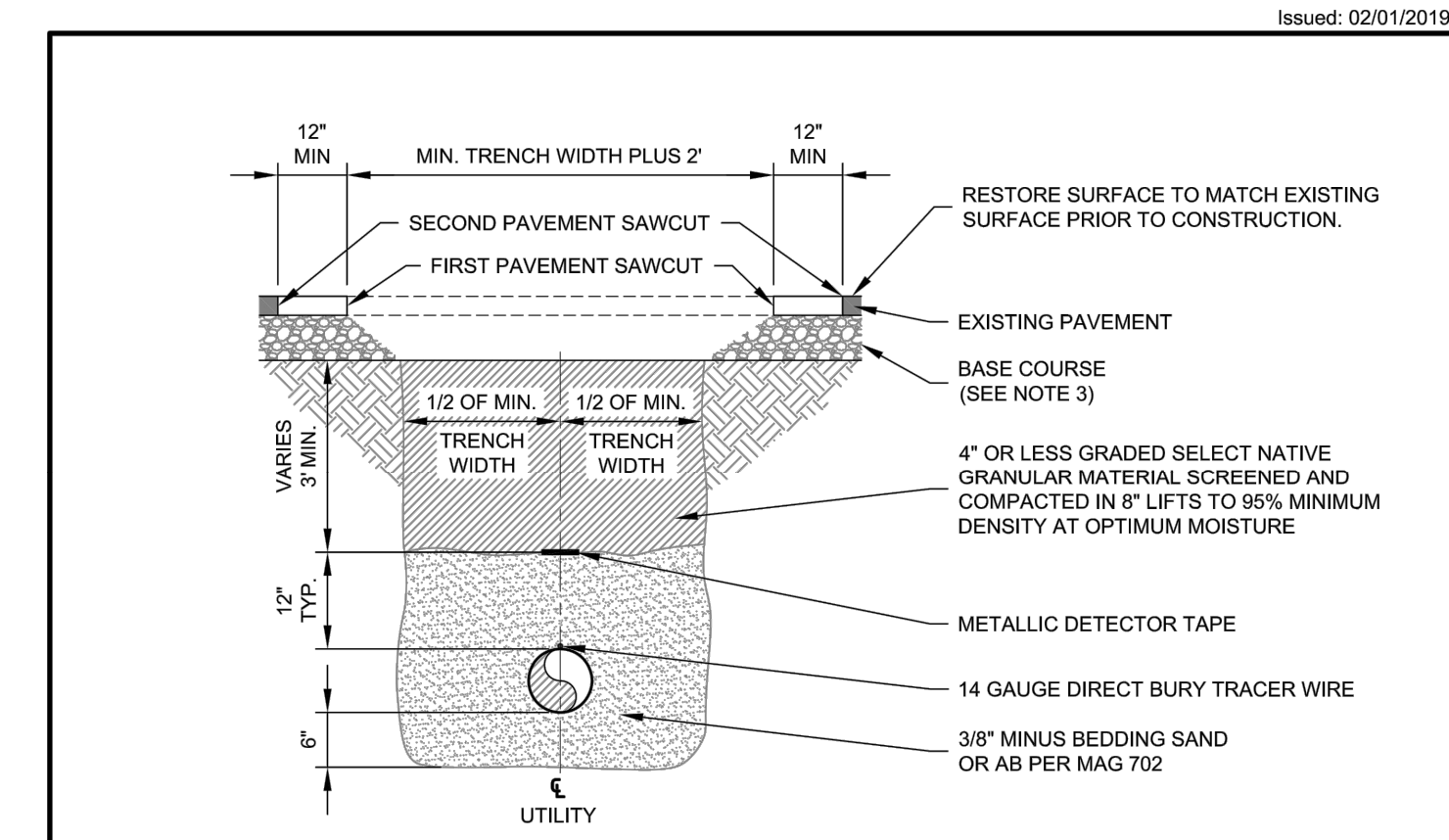


NOTE:
HORIZ. BRACE RAILS AND TRUSS ROD BRACING SHALL BE INSTALLED AT ALL CORNER, END, AND PULL POSTS. FABRIC SHALL BE FASTENED TO LINE POSTS AT NO MORE THAN 14" INTERVALS. TENSION WIRES SHALL BE TIED TO FABRIC WITH 9 GA. WIRE OR II GA. HOG RINGS AT INTERVALS OF 24" MAX.



NOTE:
CONCRETE FOOTINGS WILL BE REQUIRED FOR ALL LINE, CORNER, GATE, END AND PULL POSTS.

3 FENCE
N.T.S.



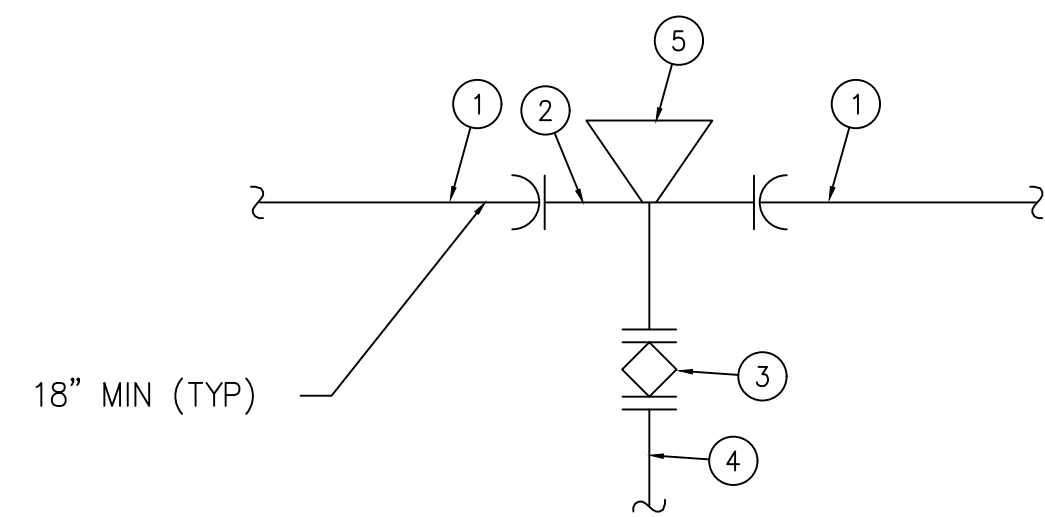
MINIMUM TRENCH WIDTH TABLE				CONCRETE PAVEMENT
PIPE DIAMETER	MINIMUM WIDTH	MINIMUM BETWEEN FIRST SAWCUTS	MINIMUM BETWEEN SECOND SAWCUTS	
<8 IN.	24"	4"	6"	SECOND SAWCUT SHALL BE AT EXISTING JOINTS. SEE NOTE #5
8IN-12IN.	30"	4-6"	6-8"	
12IN-18IN.	36"	5"	7"	
20IN-24IN.	42"	5-6"	7-8"	
24IN-36IN.	1.25 (PIPE OD) PLUS 12IN. PER PLANS	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	
>36IN.	PER PLANS	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	

NOTES:

- ALL SAWCUTS TO BE FULL DEPTH OF PAVEMENT.
- PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL (eg CONCRETE PAVEMENT SHALL BE PATCHED WITH CONCRETE AND EXISTING ASPHALT PAVEMENT WITH ASPHALT).
- FOR ASPHALT PATCHES, BASE COURSE & ASPHALT CONCRETE THICKNESS IS TO MATCH EXISTING BUT IN NO CASE LESS THAN 1" BASE 2" ASPHALT CONCRETE.
- ALL EXISTING VERTICAL ASPHALT JOINTS SHALL BE TACK COATED.
- FINAL CONCRETE PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING JOINT (eg FULL PANEL REMOVAL AND REPLACEMENT).
- TRENCHES ARE SHOWN TO DIAGRAM PATCHING REQUIREMENTS. TRENCHES SHALL BE CONSTRUCTED TO MEET OSHA REQUIREMENTS.
- PAVEMENT REMOVAL BETWEEN FIRST AND SECOND SAW CUT SHALL BE REMOVED AT TIME OF HOT MIX PATCHING. DENSITY TESTING SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND A COPY OF RESULTS SHALL BE PROVIDED TO THE CITY.
- MONITOR & MAINTAIN SURFACE CONDITION AND PERFORM ASPHALT REPAIRS UNDER 1-YEAR WARRANTY PROVIDED THROUGH PERMIT.
- ALL PATCH JOINTS SHOULD BE HENRY ASPHALT RESURFACER SEALED OR APPROVED EQUAL.

<p>LAKE HAVASU CITY</p>	Standard Details	Utility Trench Patch	Scale: N.T.S.
	Roadway Improvements		Detail No. 200

\\lakelake\engineering\Programs\Standards\Developing Public Works Standards\HC Standard Details\HC Series 200 Roadway\DWG\DETAIL_200.dwg



MATERIALS

- 12" (MIN) PVC C900 DR18
- 12"x12"x4" DI TEE, PO X PO X FLG
- 4" GATE VALVE, FLG X PO
- 4" PVC C900 DR18
- THRUST BLOCK PER DETAIL 3, SHEET C-6

NOTE:

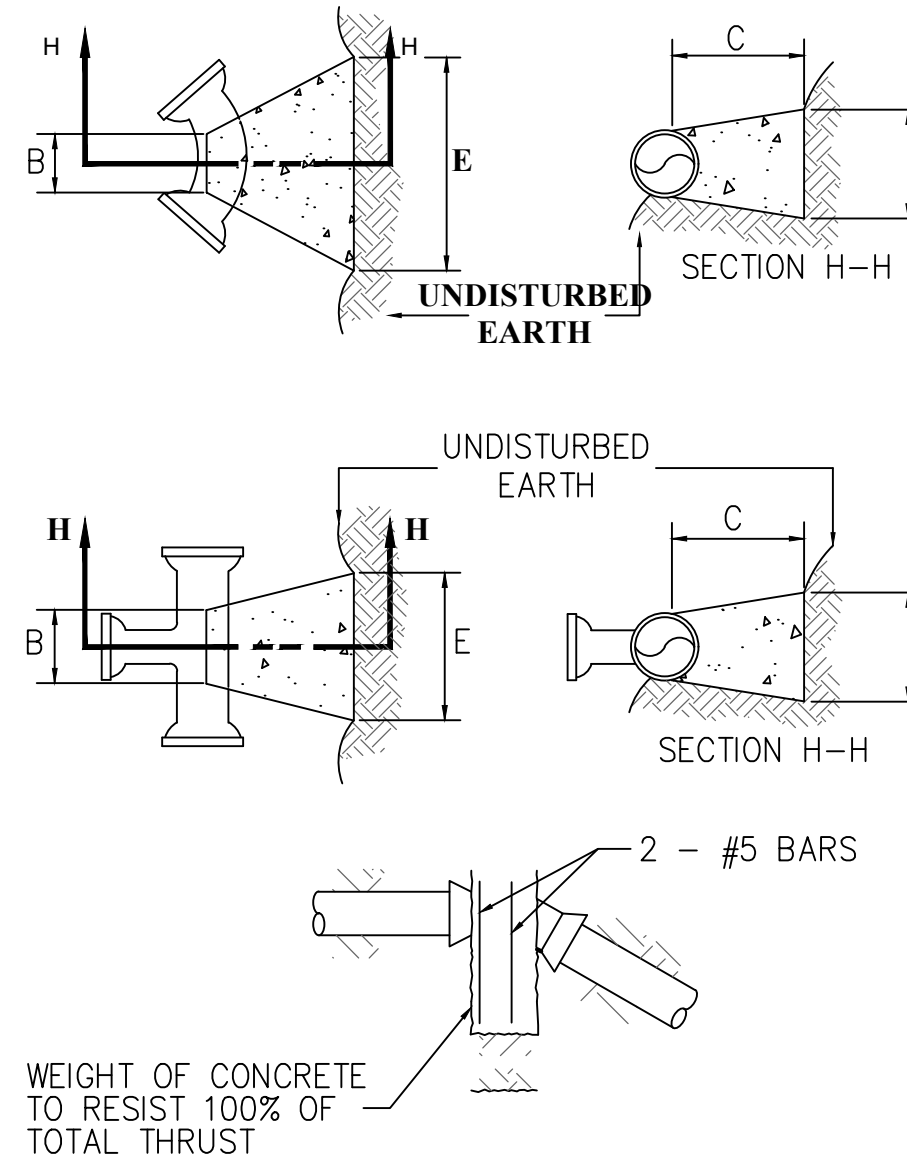
- INSTALL VALVE WELL & COVER PER MAG STD 301 & 391-1.

2 12" TEE CONNECTION
N.T.S.

HORIZONTAL BENDS	B	C	E	F	AREA SF
6" 11 1/2" & 22 1/2"	6"	24"	14"	18"	1.7
6" 45"	6"	24"	26"	18"	3.2
6" 90"	6"	24"	48"	18"	6.0
6" TEE OR PLUG	8"	24"	34"	18"	4.2
8" 11 1/2" & 22 1/2"	8"	24"	18"	24"	2.9
8" 45"	8"	24"	35"	24"	5.8
8" 90"	8"	24"	64"	24"	10.7
8" TEE OR PLUG	8"	24"	45"	24"	7.5
12" 11 1/2" & 22 1/2"	12"	30"	27"	36"	6.6
12" 45"	12"	30"	52"	36"	13.0
12" 90"	12"	30"	96"	36"	24.0
12" TEE OR PLUG	12"	30"	68"	36"	17.0
16" 11 1/2"	12"	36"	24"	36"	5.9
16" 22 1/2"	12"	36"	36"	48"	11.8
16" 45"	12"	36"	69"	48"	23.1
16" 90"	12"	36"	128"	48"	42.7
16" TEE OR PLUG	12"	36"	91"	48"	30.2
18" 11 1/2"	14"	42"	23"	48"	7.5
18" 22 1/2"	14"	42"	45"	48"	14.9
18" 45"	14"	42"	78"	54"	29.2
18" 90"	14"	42"	144"	54"	54.0
18" TEE OR PLUG	14"	42"	102"	54"	38.2
20" 11 1/2"	16"	48"	28"	48"	9.2
20" 22 1/2"	16"	48"	55"	48"	18.4
20" 45"	16"	48"	87"	60"	36.1
20" 90"	16"	48"	160"	60"	66.6
20" TEE OR PLUG	16"	48"	113"	60"	47.1
24" 11 1/2"	18"	54"	32"	60"	13.3
24" 22 1/2"	18"	54"	64"	60"	26.5
24" 45"	18"	54"	104"	72"	51.9
24" 90"	18"	54"	192"	72"	96.0
24" TEE OR PLUG	18"	54"	136"	72"	67.9

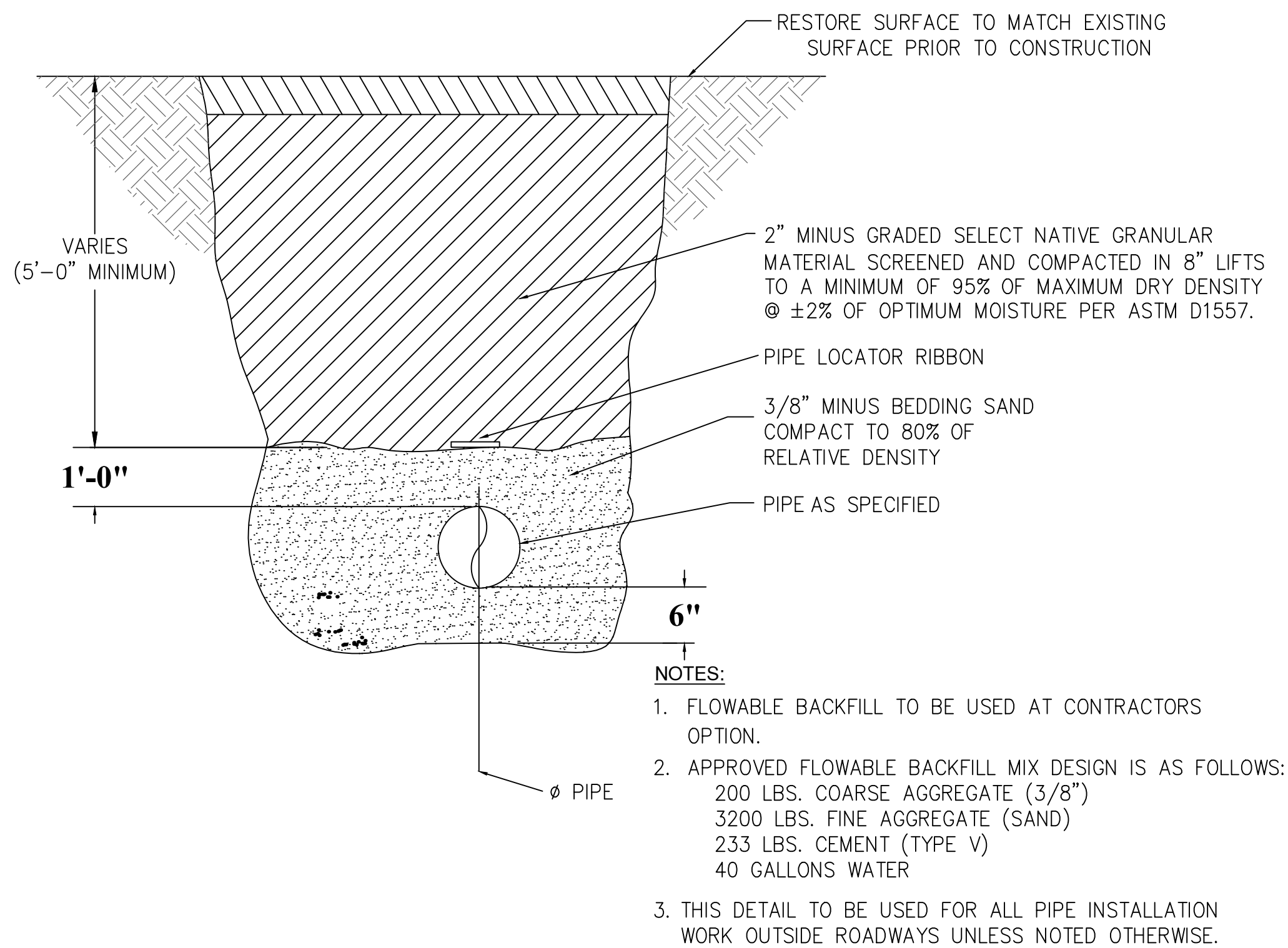
VERTICAL BEND

BLOCK VOLUME FOR VERTICAL BENDS, CY	VERTICAL BEND		
	11-1/4"	22-1/2"	45"
6"	0.5	0.9	1.7
8"	0.8	1.6	3.0
12"	1.8	3.6	6.6
16"	3.2	6.3	11.6
18"	4.1	8.0	14.8
20"	5.0	9.8	18.0
24"	7.2	14.1	26.0



WEIGHT OF CONCRETE TO RESIST 100% OF TOTAL THRUST

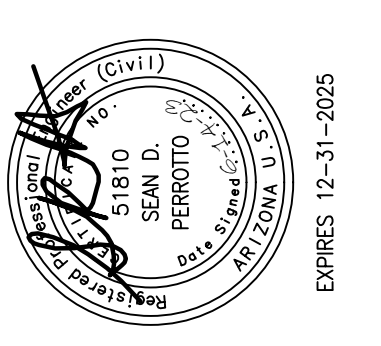
4 TYPICAL THRUST BLOCK FOR FITTINGS AND PLUGS
N.T.S.



NOTES:

- FLOWABLE BACKFILL TO BE USED AT CONTRACTORS OPTION.
- APPROVED FLOWABLE BACKFILL MIX DESIGN IS AS FOLLOWS:
200 LBS. COARSE AGGREGATE (3/8")
3200 LBS. FINE AGGREGATE (SAND)
233 LBS. CEMENT (TYPE V)
40 GALLONS WATER
- THIS DETAIL TO BE USED FOR ALL PIPE INSTALLATION WORK OUTSIDE ROADWAYS UNLESS NOTED OTHERWISE.

5 TYPICAL TRENCH FOR REUSE INSTALLATIONS IN AREAS OUTSIDE ROADWAYS
N.T.S.



NO.	DATE	DR	REVISION	BY
1		S. PEROTTO		APVD
2		J. CULWELL		APVD
3		R. EDWARDS		APVD
4		K. BRAL		APVD

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 DETAILS

N.T.S.

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 0 1"

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 DWG: C-3
 SHEET: 8 of 16

A:\Trico Engineering LLC\Projects\2021\22-06L_Vadose Well & Platform Plans\22-06L_Vadose Well & Platform Plans.dwg - LF, 6/14/2023 10:59 PM

3-INCH TRANSDUCER/VENT TUBE ROTATED FOR CLARITY. SEE PLAN FOR CORRECT ROTATION. TYPE 304 SCH 40 STAINLESS STEEL TO 16 FEET. SCH 80 PVC 16 FEET TO 180 FEET. SLOTTED FROM 20 FEET TO 30 FEET, 110 FEET TO 125 FEET, 135 FEET TO 150 FEET, AND 160 FEET TO 175 FEET, 50 SLOT

4-INCH INJECTION TUBE TYPE 304 SCH 40 STAINLESS STEEL TO 16 FEET. SCH 80 PVC 16 FEET TO 180 FEET. SLOTTED FROM 80 FEET TO 180 FEET. 100-SLOT. CAP THE END.

12-INCH SCH 40 CASING AND SCREEN TYPE 304 STAINLESS STEEL TO 16-FEET

54-INCH CARBON STEEL CONDUCTOR CASING TO 20-FEET. 0.500-INCH WALL

3-INCH GRAVEL PACK INJECTION TUBES (2) SCH 40 TYPE 304 STAINLESS STEEL TO 16 FEET. TRANSITION TO SCH 80 PVC AT 16 FEET. 100 SLOT PVC SCREEN FROM 30 FEET TO 40 FEET. SEE DETAIL 1 FOR ALL TRASITION JOINTS

CEMENT GROUT SURFACE SEAL
COMPACTED NATIVE FILL

16-FEET, BOTTOM OF 3-INCH, 4-INCH, AND 12-INCH STAINLESS STEEL CASING AND TUBES,

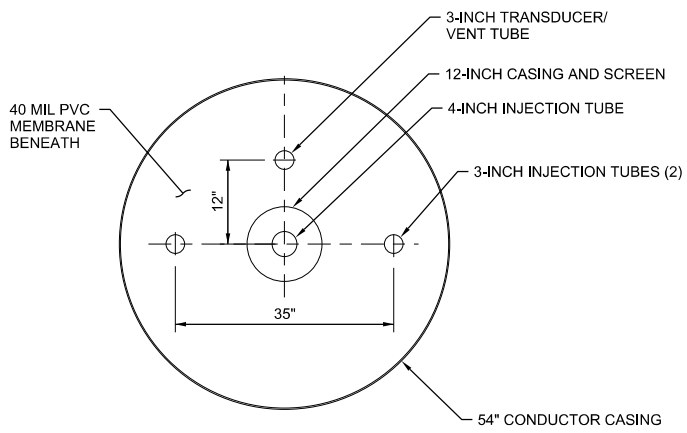
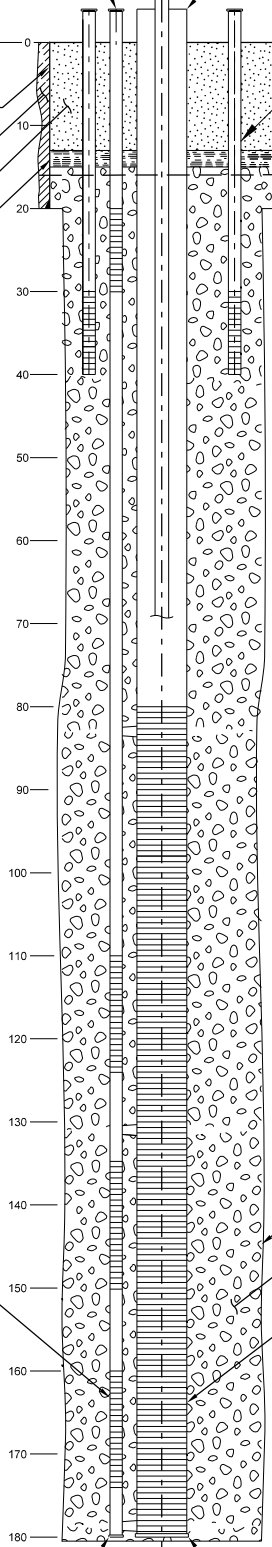
BENTONITE CHIPS, 13 FEET TO 15 FEET

A

B

C

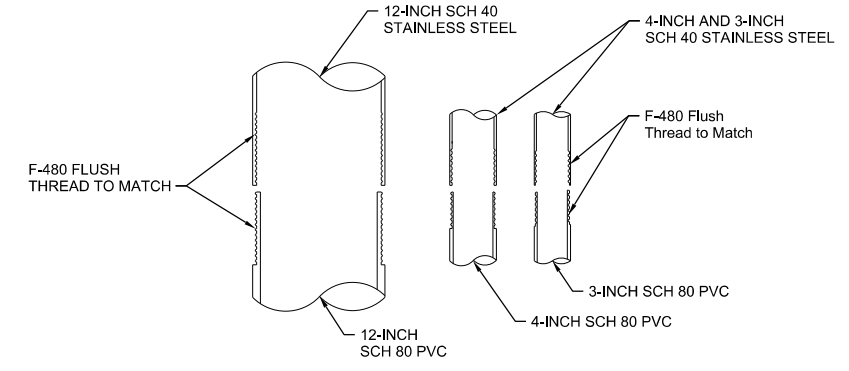
D



PLAN
NTS

NOTE:
ALL DEPTHS SHOWN FROM ORIGINAL GRADE. ADDITIONAL PIPE WILL BE REQUIRED TO EXTEND TUBES THROUGH WELL PLATFORM.

WELL 8 WELL CONSTRUCTION DIAGRAM
NTS



1 STAINLESS STEEL TO PVC TRANSITION
NTS



NO.	DATE	DR	REVISION	BY	APVD
		K BRAL	CHK	K BRAL	K BRAL
					R EDWARDS

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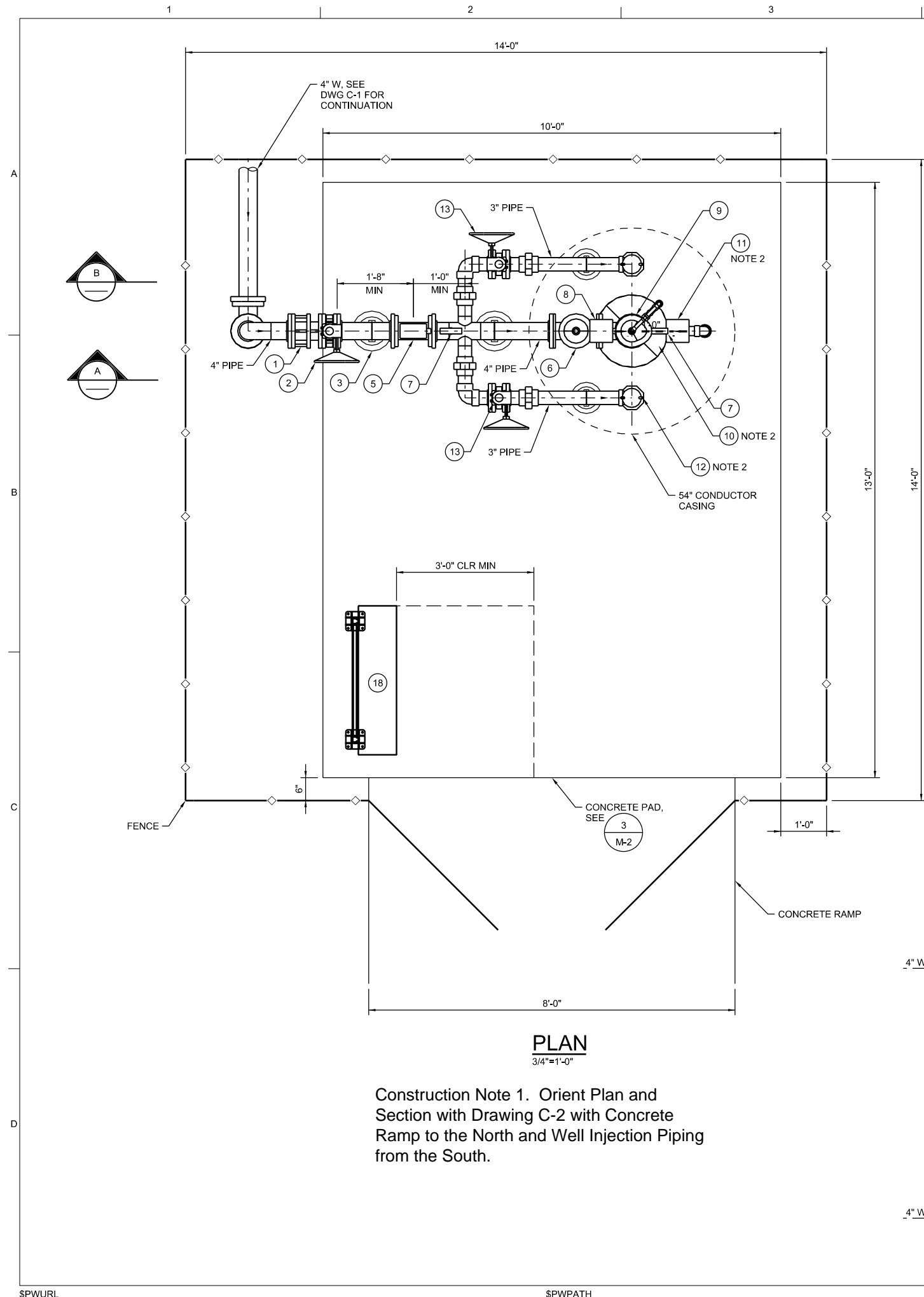
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WELL 8 CONSTRUCTION

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DWG	C-4
SHEET	9 of 16



Construction Note 1. Orient Plan and Section with Drawing C-2 with Concrete Ramp to the North and Well Injection Piping from the South.

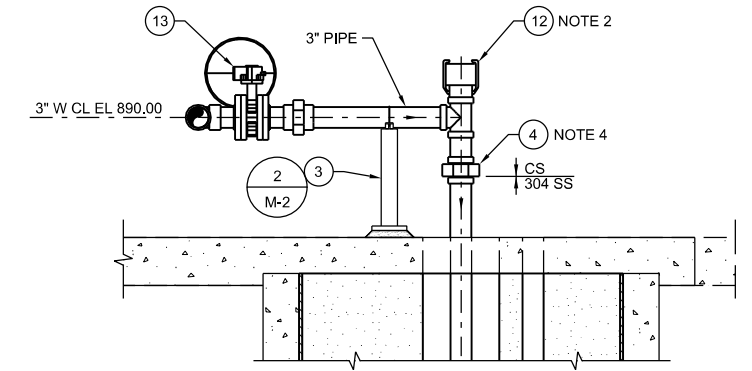
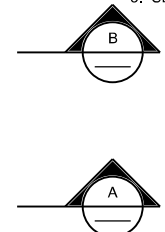
NOTES

- FOR 54" CONDUCTOR CASING, 12-INCH CASING, 4-INCH INJECTION PIPE, 3-INCH INJECTION PIPES AND 3-INCH TRANSDUCER / VENT PIPE, SEE DWG C-4. ALL PIPE STUB UPS FROM BELOW GRADE SHALL BE 304 STAINLESS STEEL.
- WELL HEAD PIPING ALL PIPES 1/2-INCH TO 3-INCH SHALL BE CARBON STEEL SCH40 THREADED OR FLANGED AS SHOWN, 4-INCH PIPE SHALL BE CARBON STEEL SCH40, FLANGED WITH ANSI CLASS 150 FLANGES, PER SPECIFICATION 02550.
- PROVIDE FLANGE INSULATION KIT BETWEEN DIFFERENT METAL PIPING MATERIALS AND BELOW GRADE TRANSITIONS.
- PROVIDE 3-INCH DIELECTRIC UNIONS BETWEEN CARBON STEEL PIPE AND STAINLESS STEEL PIPE.
- SEE SPECIFICATION 09900 FOR PROTECTIVE COATING REQUIREMENT.

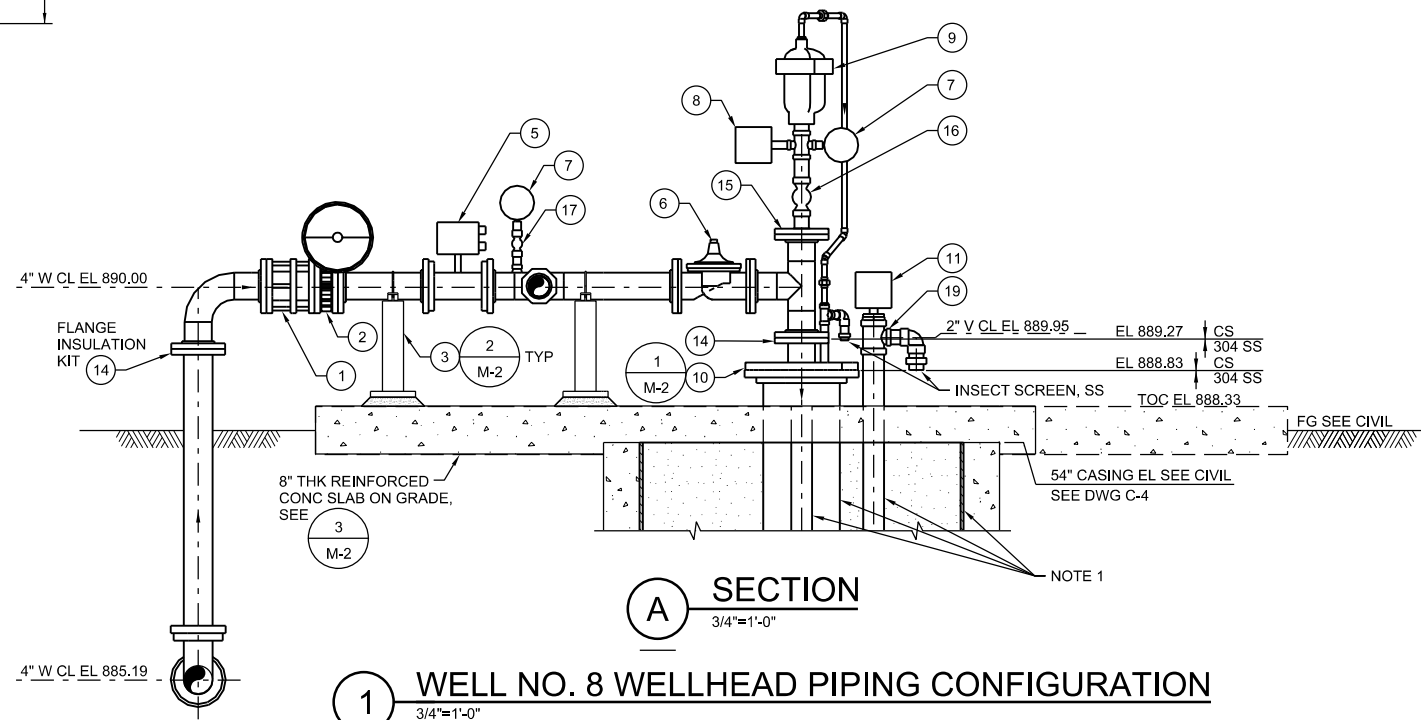
BILL OF MATERIALS

NO.	DESCRIPTION
1	4" DISMANTLING JOINT, CS
2	4" FLANGED BUTTERFLY VALVE
3	PIPE SUPPORT, SEE DETAIL 2 ON M-2
4	3" DIELECTRIC UNION
5	4" MAGNETIC FLOW METER, FLANGED
6	4" PRESSURE REDUCING VALVE, CLA-VAL MODEL 690-01
7	PI - PRESSURE INDICATOR, 1/2" NTP, 4 1/2" DIAL, 0 - 30 PSI
8	PIT - PRESSURE TRANSMITTER, 1/2" NTP
9	2" AIR AND VACUUM VALVE
10	12" WELL FLANGE, SPLIT, SEE DETAIL 1 ON M-2
11	LIT - SOUNDING TUBE LEVEL TRANSDUCER
12	3" QUICK CONNECT FEMALE NTP WITH PLUG, 304 SS
13	3" BUTTERFLY VALVE
14	4" FLANGE INSULATION KIT
15	4" BLIND FLANGE WITH 2" NTP COUPLING, CS
16	2" BALL VALVE, NTP, BRASS
17	1/2" BALL VALVE, NTP, BRASS
18	ELECTRICAL PANEL AND FLOW TRANSMITTER
19	3" x 3" x 2" TEE, 304 SS, NTP

NTP = NATIONAL PIPE THREAD
CS = CARBON STEEL
SS = STAINLESS STEEL



B SECTION
3/4"=1'-0"



A SECTION
3/4"=1'-0"

1 WELL NO. 8 WELLHEAD PIPING CONFIGURATION
3/4"=1'-0"



NO.	DATE	DR	REVISION	CHK	BY	APVD
		Q WANG		J WILCOX		K BRAL
					R EDWARDS	

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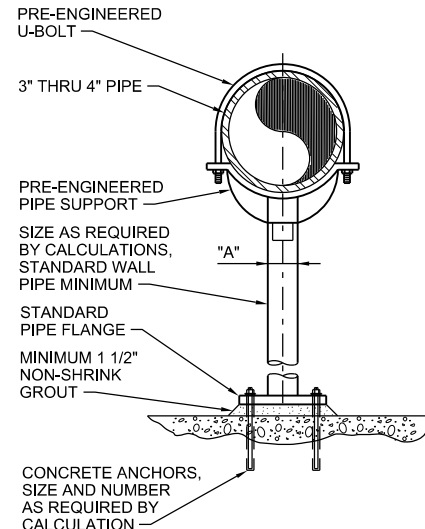
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Vadose Well Design & Expansion

Jacobs
MECHANICAL
PLAN & SECTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

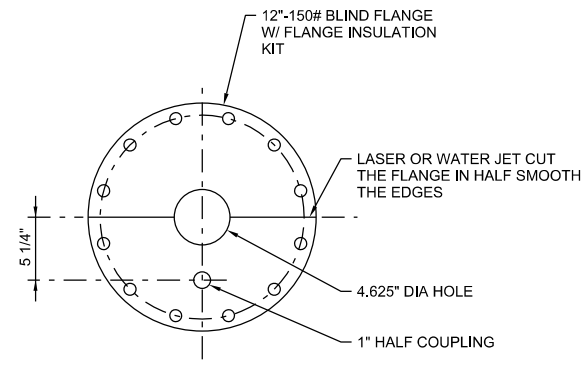
DATE	JUNE 2023
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DWG	M-1
SHEET	10 of 16



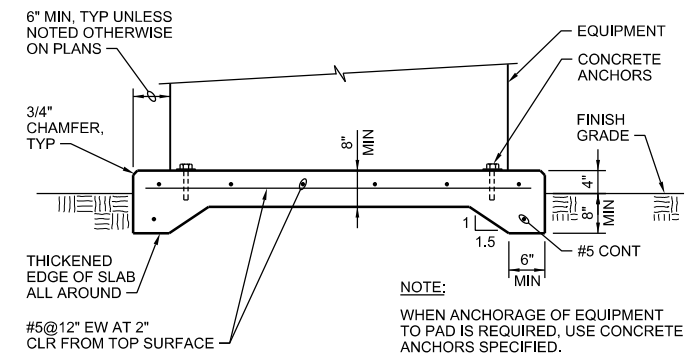
PIPE SIZE	"A" MINIMUM NOMINAL PIPE SIZE
3"	2-1/2"
4"	3"

NOTE:
SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.

1 PIPE SADDLE SUPPORT PEDISTAL
TYPE - NON-ADJUSTABLE
NTS
M-1



2 WELL FLANGE
1 1/2"=1'-0"
M-1



NOTE:
WHEN ANCHORAGE OF EQUIPMENT TO PAD IS REQUIRED, USE CONCRETE ANCHORS SPECIFIED.

3 CONCRETE PAD
NTS
M-1

NOTE

SEE DWG M-1 FOR BILL OF MATERIALS AND GENERAL NOTES.



NO.	DATE	DR	CHK	BY
		Q WANG	J WILCOX	K BRAL
			R EDWARDS	

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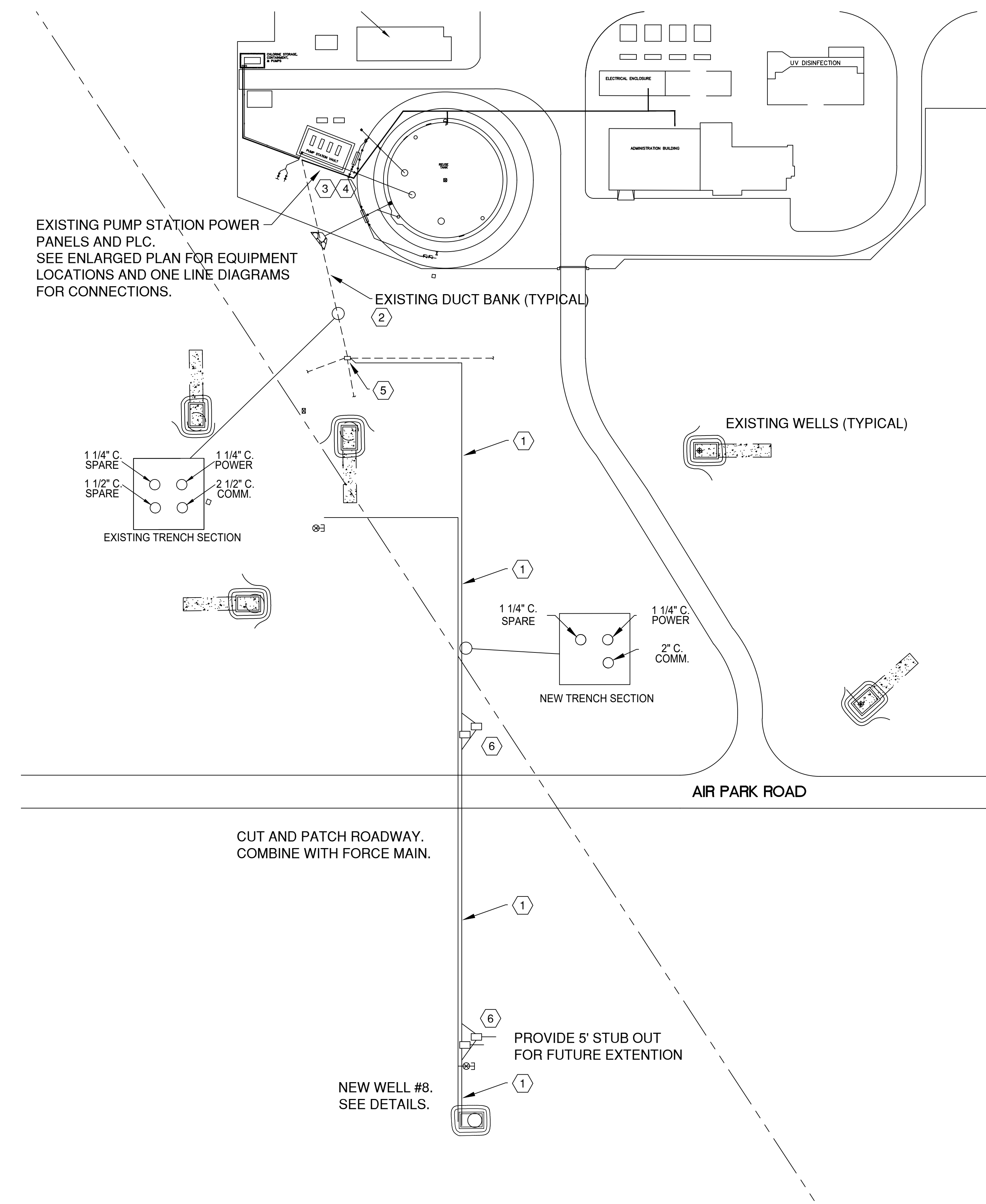
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MECHANICAL
DETAILS

VERIFY SCALE
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PROJ D3607700
DWG M-2
SHEET 11 of 16

FILENAME: 008-M-002_107015.dgn PLOT DATE: 2023/06/16 PLOT TIME: 10:03:41 AM



SITE PLAN NOTES:

- ① NEW DUCT BANK TO WELL FIELD. FOLLOW FORCE MAIN ROUTE. PLACE DUCTS TO SIDE OF FORCE MAIN, APPROXIMATE 5' OFFSET, FIELD COORDINATE. SEE TRENCH AND CONCRETE CAP DETAIL.
- ② EXISTING DUCT BANK TO PUMP STATION PLC AND POWER PANEL SOURCES. INSTALL NEW FIBER OPTIC CABLE IN EXISTING SPARE 1 1/4" DUCT. INSTALL NEW POWER CIRCUIT IN EXISTING SPARE 1 1/4" DUCT.
- ③ PROVIDE CONNECTION TO POWER SOURCE LOCATED IN PUMP STATION PANEL. SEE POWER ONE-LINE DIAGRAM.
- ④ PROVIDE CONNECTION TO PLC NETWORK AT EXISTING PUMP STATION PLC. SEE PLC ONE-LINE DIAGRAM.
- ⑤ EXISTING PULL BOX FOR POWER AND CONTROL CONDUIT RUNS. INTERCEPT DUCTBANK AT EXISTING PULLBOX. THIS IS A COMBINED POWER AND COMMUNICATION.
- ⑥ PROVIDE NEW PULLBOXES. SEPARATE POWER AND FIBER OPTIC. SEE DETAIL.

1
E-1

OVERALL ELECTRICAL PLAN



NO.	DATE	DSGN	DR	CHK	REVISION	BY
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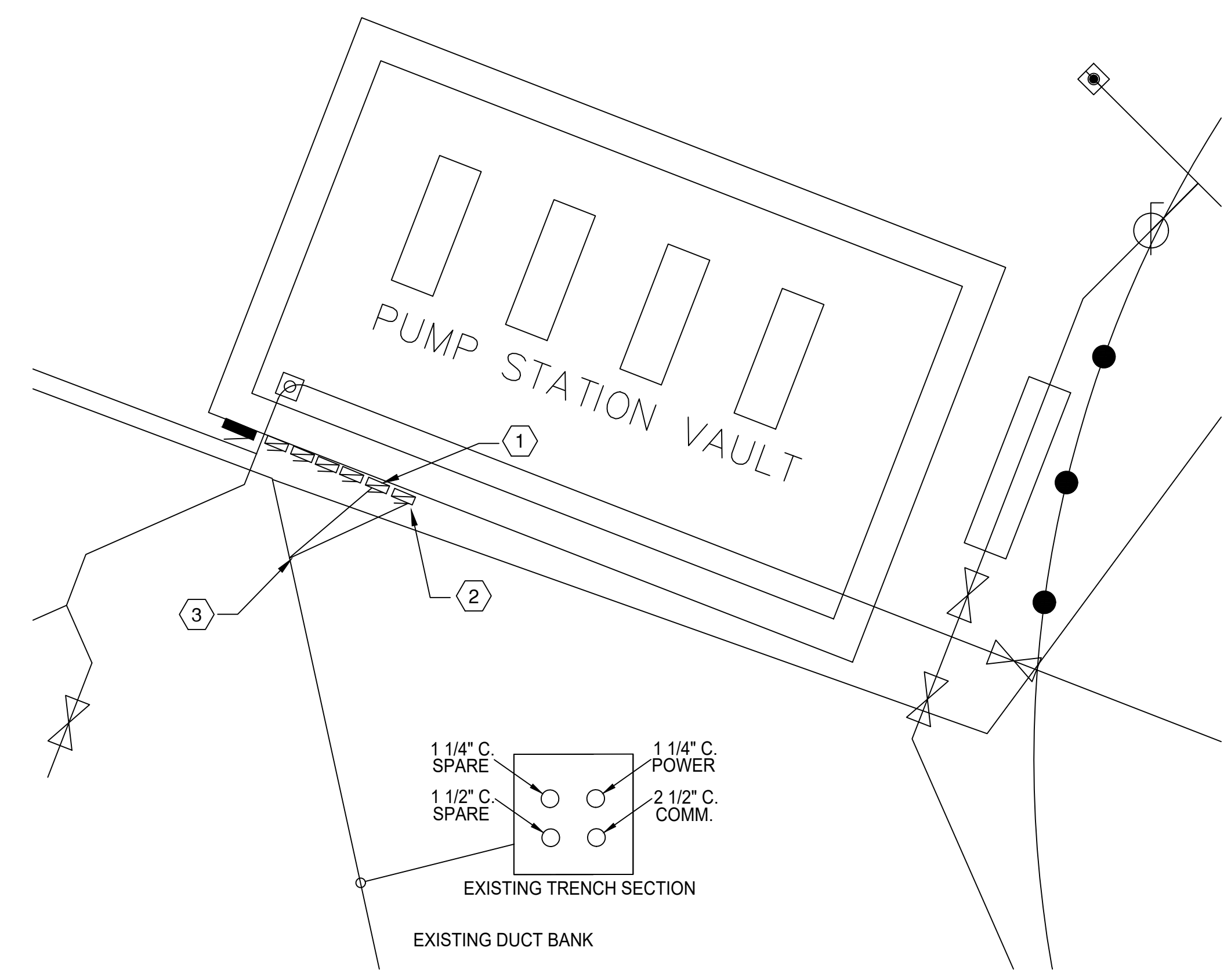
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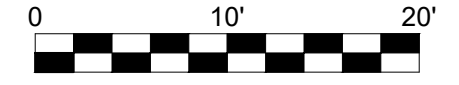
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ELECTRICAL
OVERALL ELECTRICAL SITE PLAN

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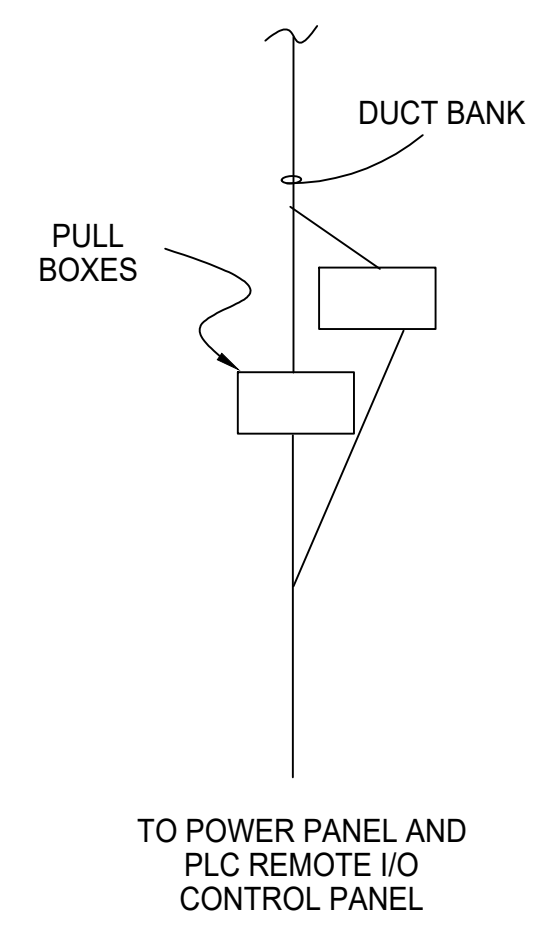
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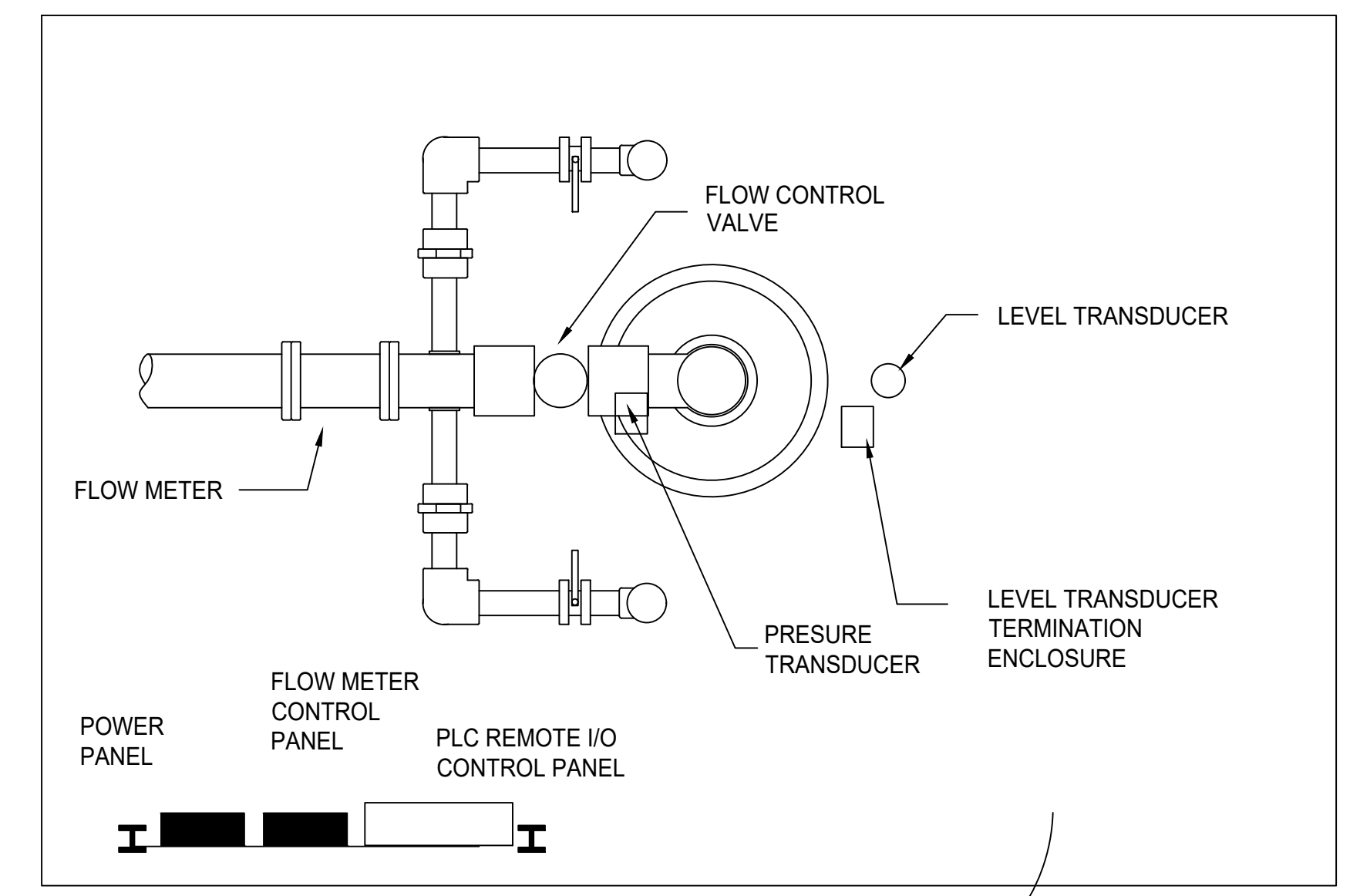
1 ENLARGED ELECTRICAL PLAN - PUMP STATION
E-2



- PUMP STATION PLAN NOTES**
- ① EXISTING PLC CABINET. PROVIDE CONNECTION INTO FIBER OPTIC NETWORK IN EXISTING PLC CABINET. SEE FIBER OPTIC ONE-LINE DIAGRAM.
 - ② EXISTING PANEL P1. 120/208V 3PH. INSTALL 40A-2P BREAKER IN SPACE ALLOTTED. PROVIDE CONNECTION TO NEW POWER FEEDER. SEE POWER ONE-LINE DIAGRAM.
 - ③ INTERCEPT EXISTING SAND ENCASED DUCT BANK. PROVIDE NEW POWER AND FIBER OPTIC CONDUIT AND CONNECT TO EXISTING DUCT TO PULL BOX.



TO POWER PANEL AND PLC REMOTE I/O CONTROL PANEL



CONCRETE SLAB SEE CIVIL DETAILS

2 WELL HEAD PLAN
E-2 NO SCALE

- NOTES:**
- SEE CIVIL AND MECHANICAL FOR DETAILS AND PIPING DIMENSIONS. NOTE THAT THE WELL HEAD AND SLAB IS BUILT UP TO A HIGHER ELEVATION THAN SURROUNDING NATIVE GROUND ELEVATION.
 - SEE ONE-LINE DIAGRAMS FOR CONDUIT AND CONDUCTOR REQUIREMENTS.
 - ROUTE PVC CONDUIT BELOW CONCRETE SLAB FROM DEVICES TO CONTROL PANELS. EMERGE THROUGH CONCRETE WITH RIGID STEEL CONDUIT (MASTIC WRAPPED). COORDINATE LOCATIONS TO AVOID TRIP HAZZARDS AND POTENTIAL PHYSICAL DAMAGE.
 - PROVIDE SEPARATE STRUT SUPPORT OF ABOVE GRADE RIGID STEEL CONDUIT AND BOXES.



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			R. BURNSTAD		

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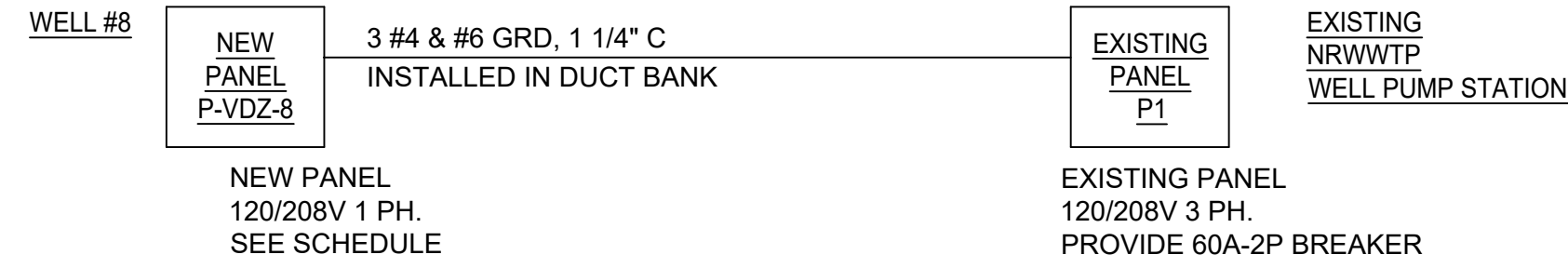
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JACOBS ELECTRICAL
ENLARGED PLANS, DETAILS

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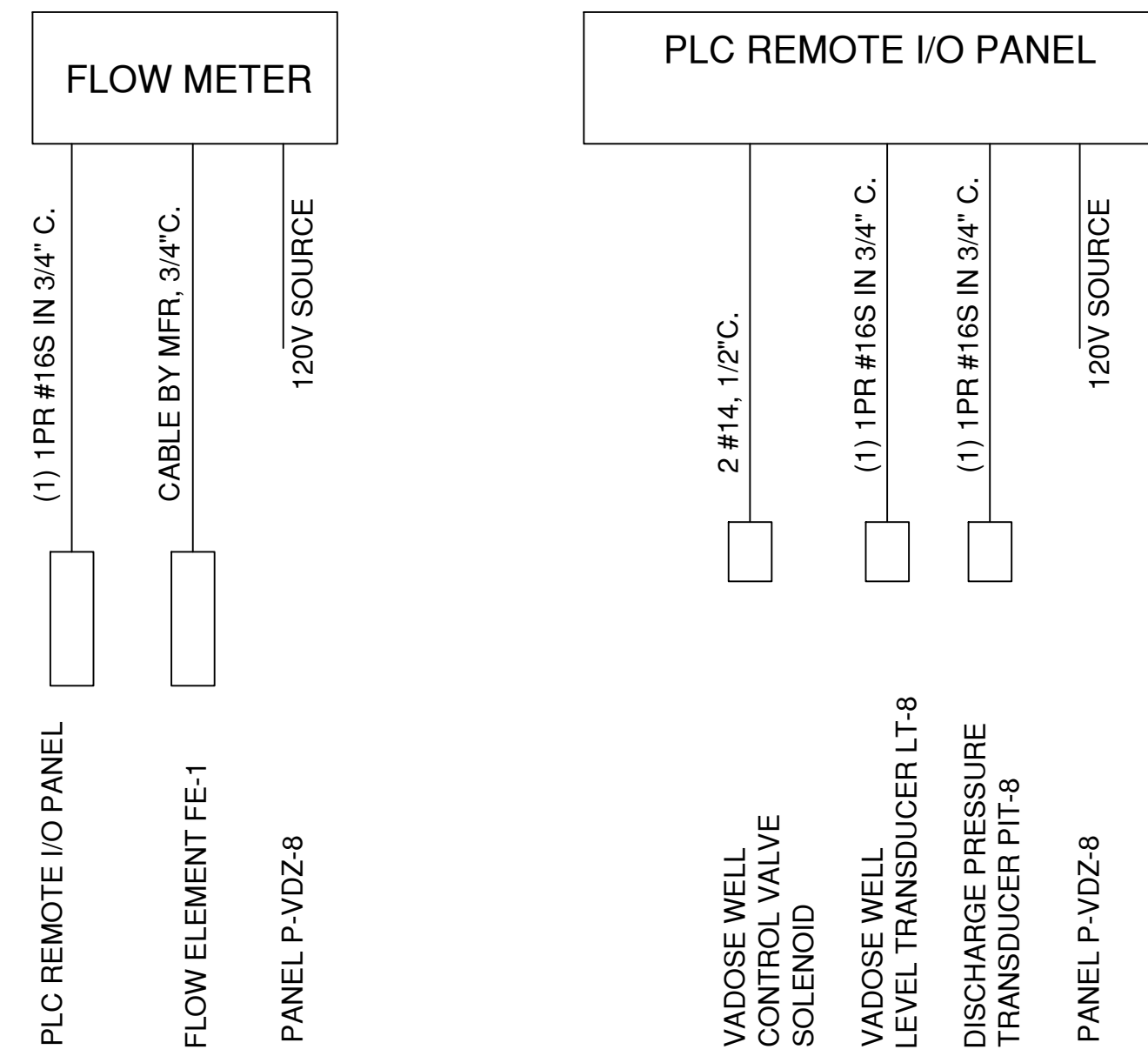


POWER SUPPLY: 120/208 VAC, 1PH, 3W
 BUS RATING: 100A, 10K A.I.C.
 MAIN BREAKER - MLO

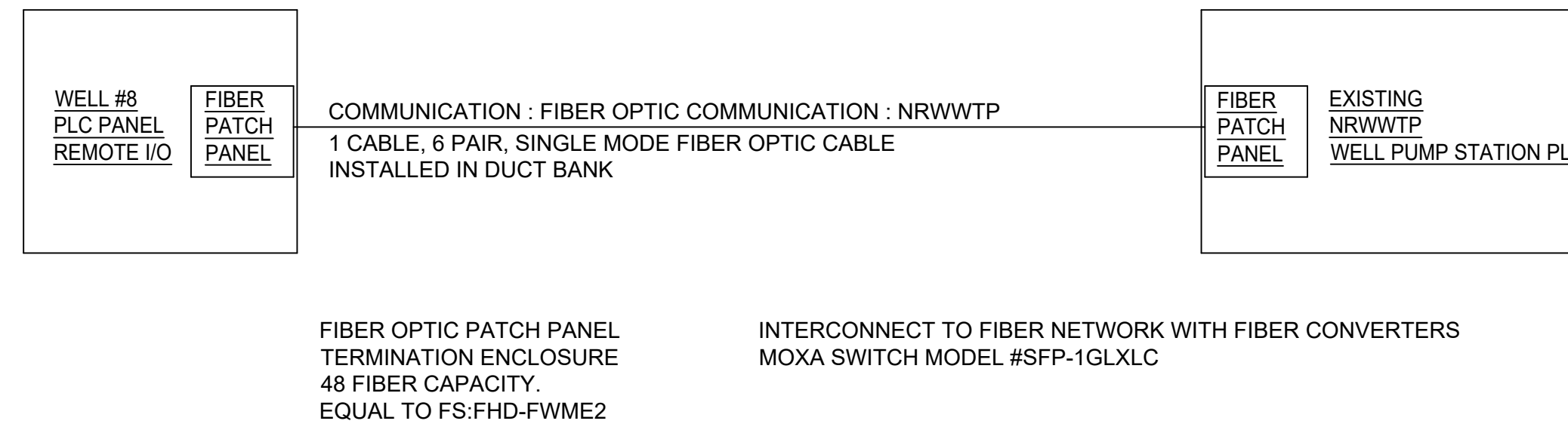
LOCATION: EXTERIOR WP NEMA 4
 MOUNTING: SURFACE
 NAME: P-VDZ-8

DESCRIPTION	CCT BKR AMP	CCT No	PHASE			CCT No	CCT BKR AMP	DESCRIPTION
			A	B				
SPARE - FUTURE WELL	30/2	1	•			2	20/1	CONVENIENCE OUTLETS
		3	•			4	20/1	PLC CONTROL PANEL
		5	•			6	20/1	VALVE POWER
SPARE - FUTURE WELL	30/2	7	•			8	20/1	FLOW METER POWER
		9	•			10	20/1	SPARE
SPARE - FUTURE WELL	30/2	11	•			12	20/1	SPARE

1 POWER ONE-LINE DIAGRAM
 E-3 NO SCALE



2 ELECTRICAL EQUIPMENT ONE-LINE DIAGRAMS
 E-3 NO SCALE



3 FIBER OPTIC CONNECTION ONE-LINE DIAGRAM
 E-3 NO SCALE



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		J. KATH	R. BURNSTAD		J. KATH

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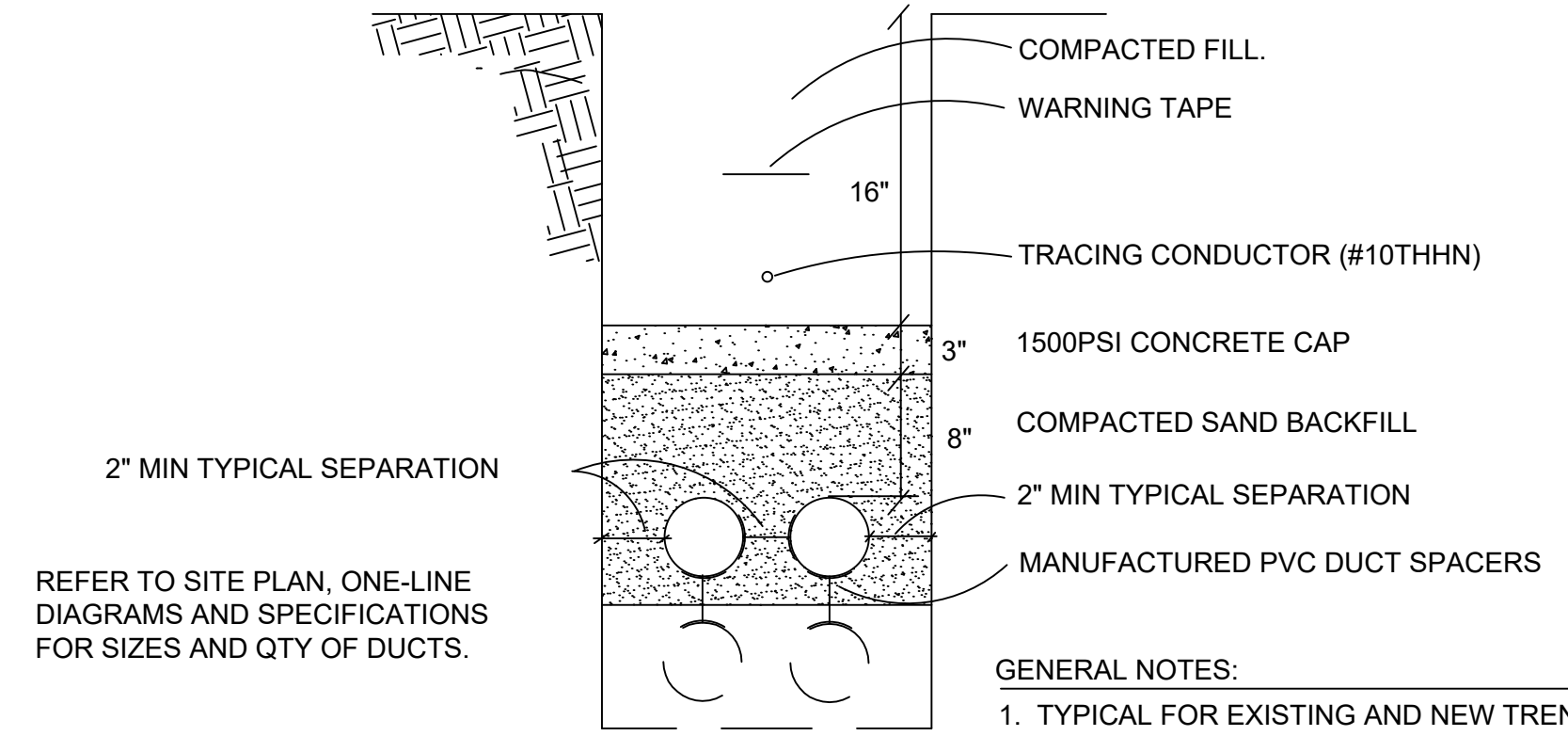
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 ELECTRICAL ONE-LINE DIAGRAMS

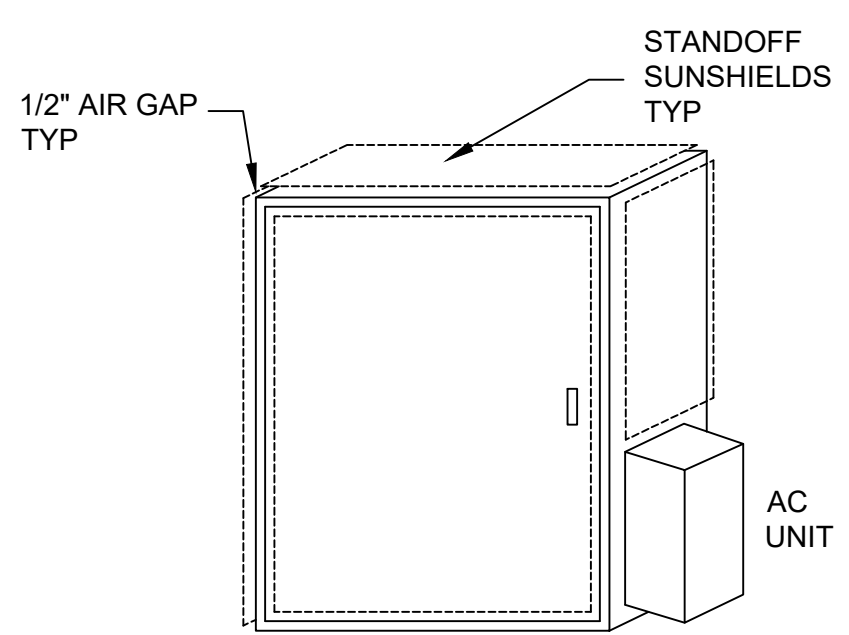
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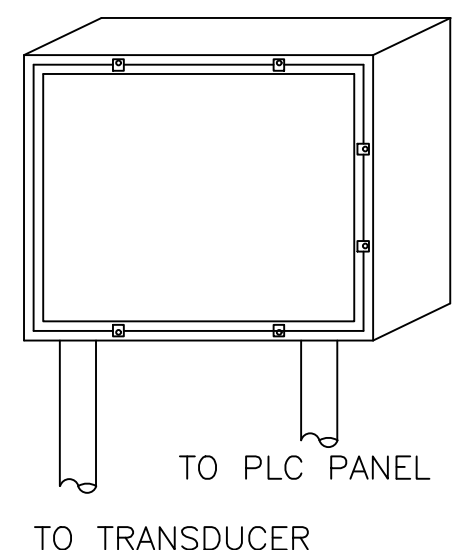


1 TRENCH DETAIL
E-4 NO SCALE



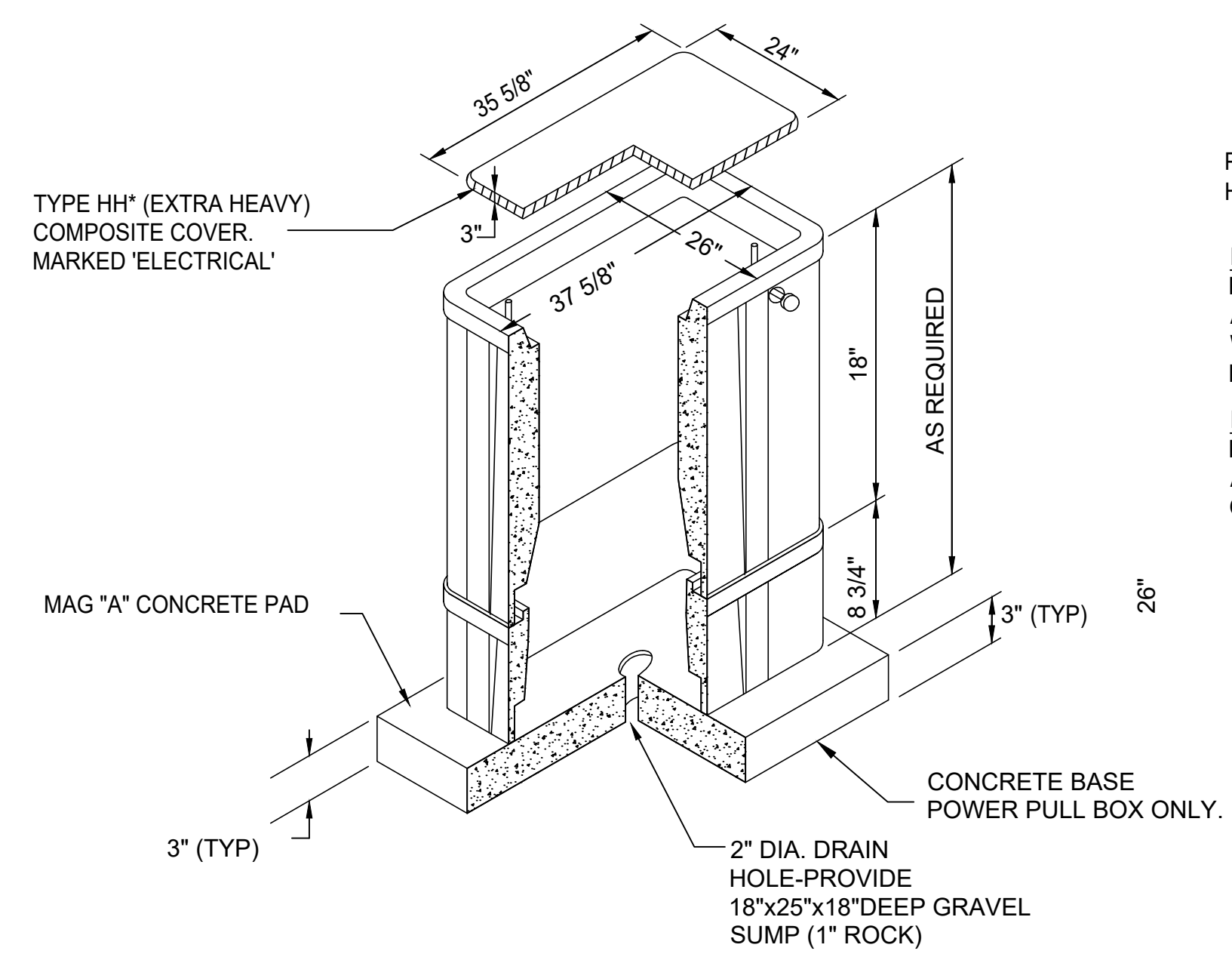
- ENCLOSURE STANDOFF SUNSHIELD DETAIL**
- 1 NEMA 4/12 ENCLOSURE, WHITE. PROVIDE WHITE PANEL STANDOFF SUNSHIELD PANELS. (4 EACH).
 - (1) TOP PANEL
 - (2) SIDE PANELS
 - (1) FRONT-DOOR PANEL
 - (0) REAR PANEL (NORTH FACING)
 - STRUT SUPPORT RACK MOUNT PANEL.
 - ALL CONDUIT TO ENTER BOTTOM OF ENCLOSURE.
 - ENCLOSURE TO BE SIZED PER PLC PANEL FABRICATOR.

3 PLC REMOTE I/O ENCLOSURE SUNSHIELD DETAIL
E-4 NO SCALE



4 WELL LEVEL TRANSDUCER TRANSITION ENCLOSURE
E-4 NO SCALE

- ENCLOSURE SIZED TO CONTAIN TRANSDUCER CABLE TERMINATION MODULE.**
- TERMINATION MODULE BY MANUFACTURER. TERMINATE TRANSDUCER CABLE TO SHIELDED 4-20mA CABLE.**
- STRUT SUPPORT RACK MOUNT ENCLOSURE SEPARATE FROM CONDUIT STUBS.**
- ALL CONDUIT TO ENTER BOTTOM OF ENCLOSURE. PROVIDE RIGID STEEL CONDUIT FOR ALL ABOVE GROUND LOCATIONS.**
- ENCLOSURE TO BE SIZED TO CONTAIN TRANSDUCER CABLE TERMINATION MODULE.**

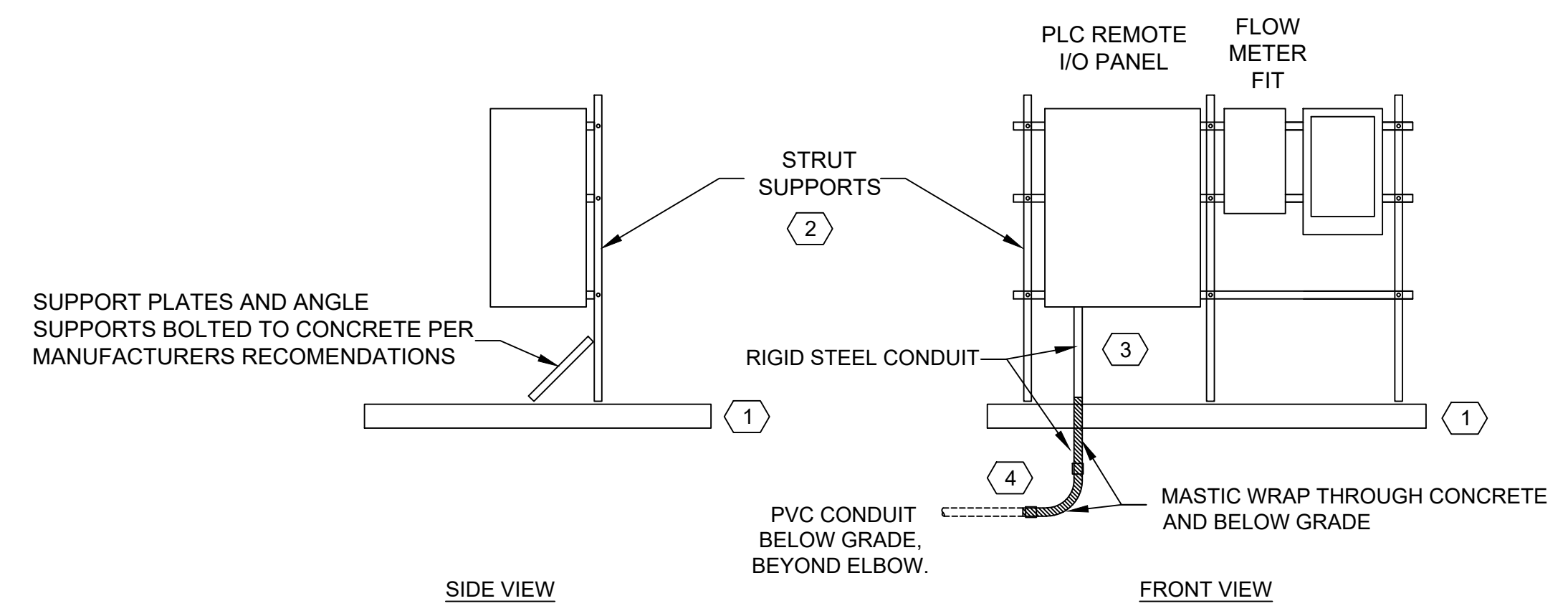


2 IN-GROUND PULLBOX DETAIL
E-4 NO SCALE

PULL BOXES TO BE POLYMER CONCRETE TYPE WITH EXTRA* HEAVY DUTY COVERS. HH RATED.

POWER PULLBOX NOTES: 24" X 36"
PROVIDE CONCRETE SOLID BASE.
ALL CONDUIT ENTRIES SHALL TERMINATE IN THE SIDES OF THE BOX WITH END BELLS INSTALLED FLUSH WITH INSIDE WALL OF BOX OR HANDHOLE. SAW CUT KNOCKOUTS.

FIBER OPTIC PULLBOX NOTES: 36" X 36"
PROVIDE AGGREGATE BASE (NO CONCRETEBASE)
ALL CONDUIT ENTRIES SHALL BE SWEEP UP THROUGH THE FLOOR OF THE PULLBOX. LOOP MINIMUM 50' EXCESS LENGTH IN PULLBOX.



5 ELECTRICAL EQUIPMENT ELEVATION DETAILS
E-4 NO SCALE

- ELECTRICAL EQUIPMENT ELEVATION DETAIL NOTES**
- 1 CONCRETE WELL TOP SLAB. SEE CIVIL PLANS.
 - 2 STRUT RACK SUPPORT FOR PANELS. PROVIDE ADDITIONAL STRUT SUPPORT UNDER PANEL AS NECESSARY.
 - 3 CONDUIT TO ENTER BOTTOM OF PANELS WHENEVER POSSIBLE.
 - 4 TRANSITION FROM BELOW GROUND PVC CONDUIT TO RIGID STEEL CONDUIT WITH RSC ELLBOW. MASTIC WRAP BELOW GRADE RSC TO 1" ABOVE CONCRETE SLAB.



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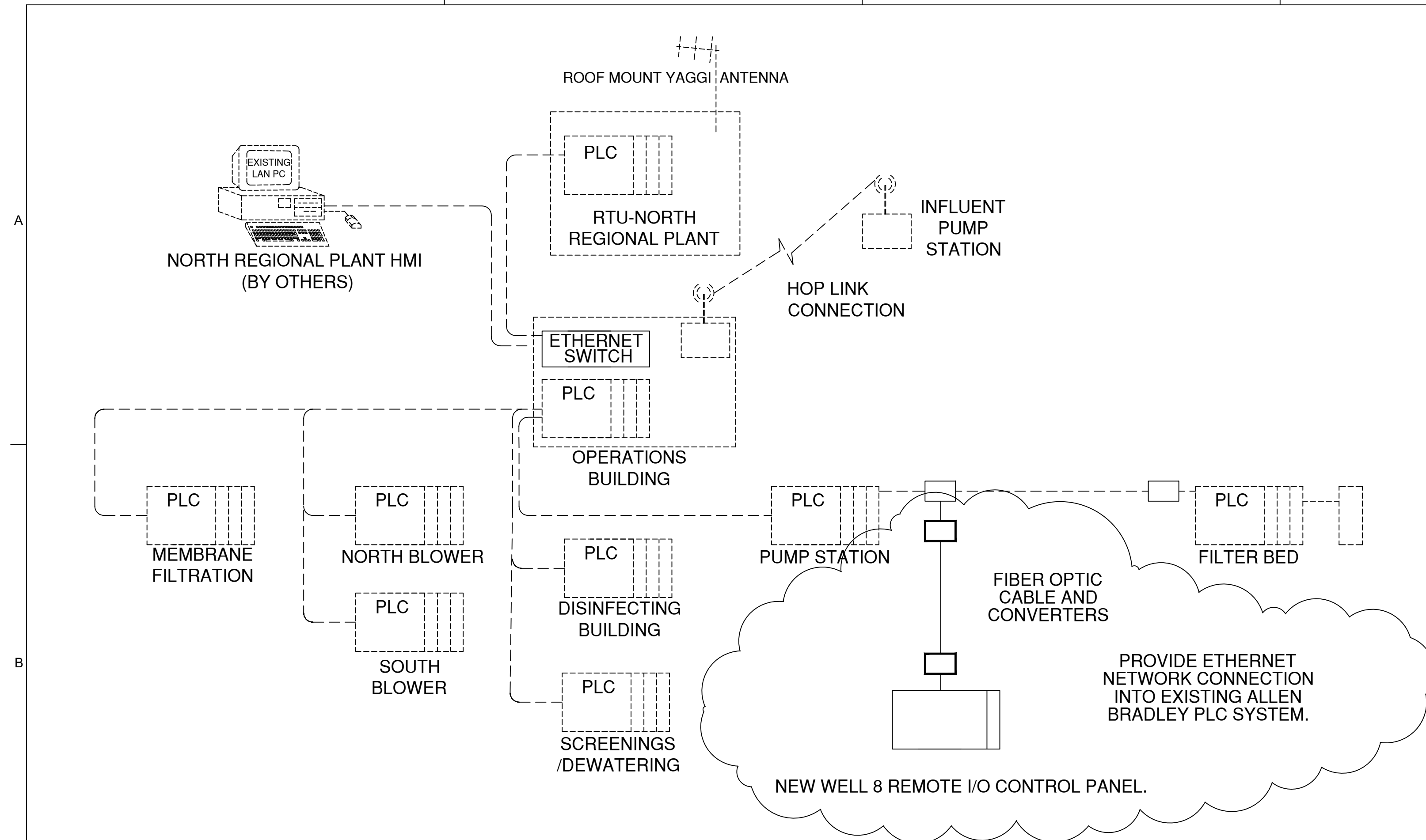
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ELECTRICAL DETAILS

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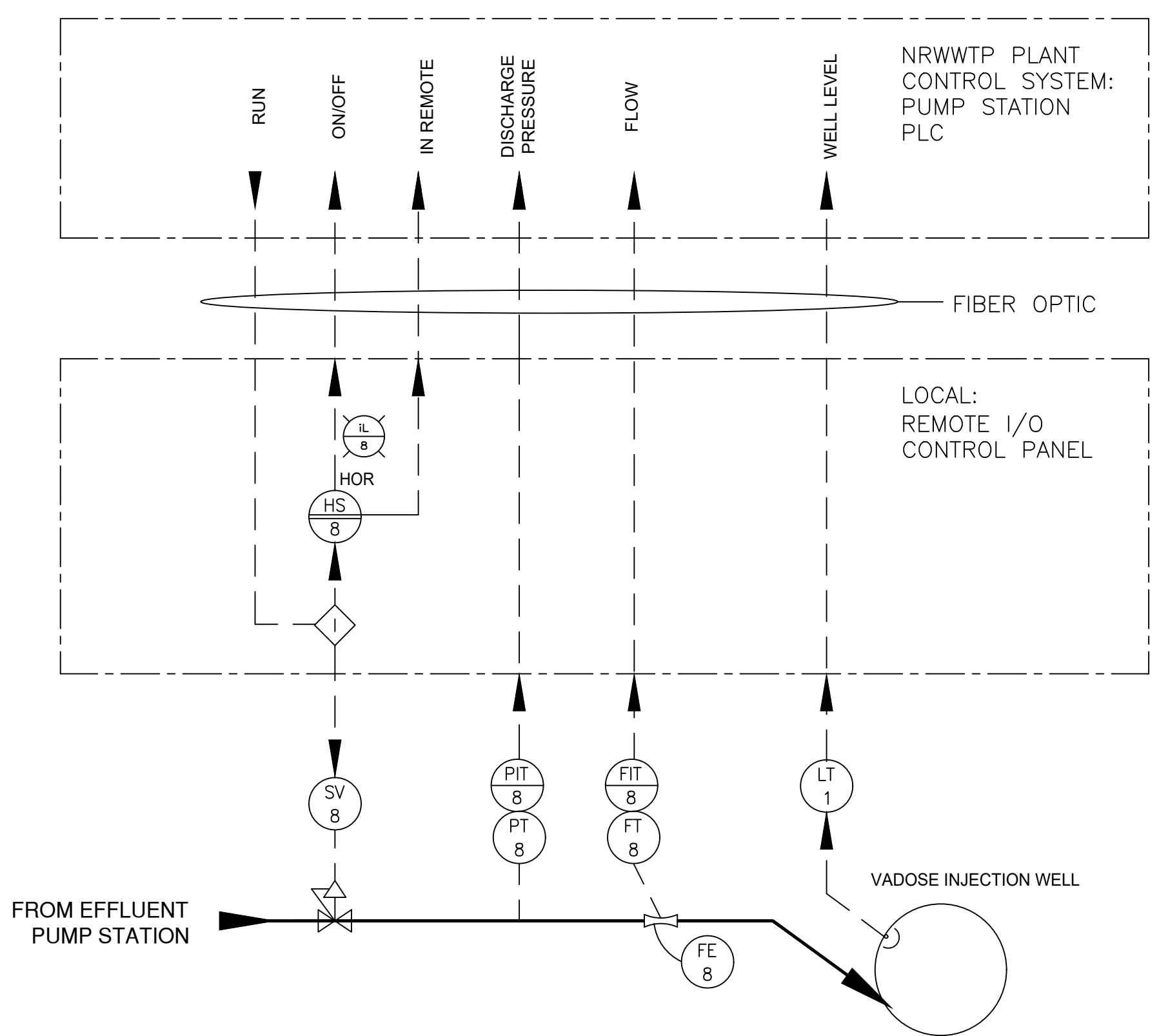
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1 NORTH REGIONAL WASTE WATER TREATMENT PLANT INSTRUMENTATION DIAGRAMS

1-1

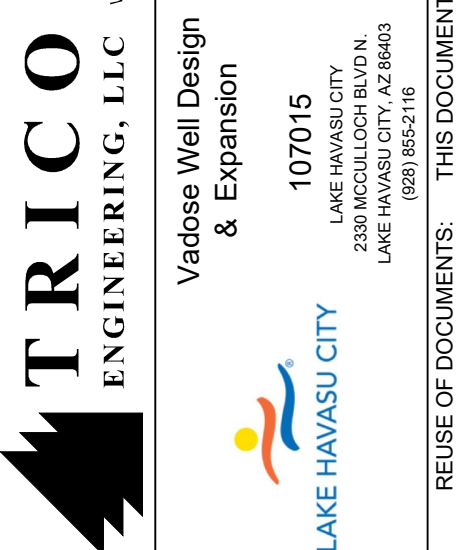


2 PROCESS AND INSTRUMENTATION DIAGRAMS

1-1 TYPICAL EACH VADOSE



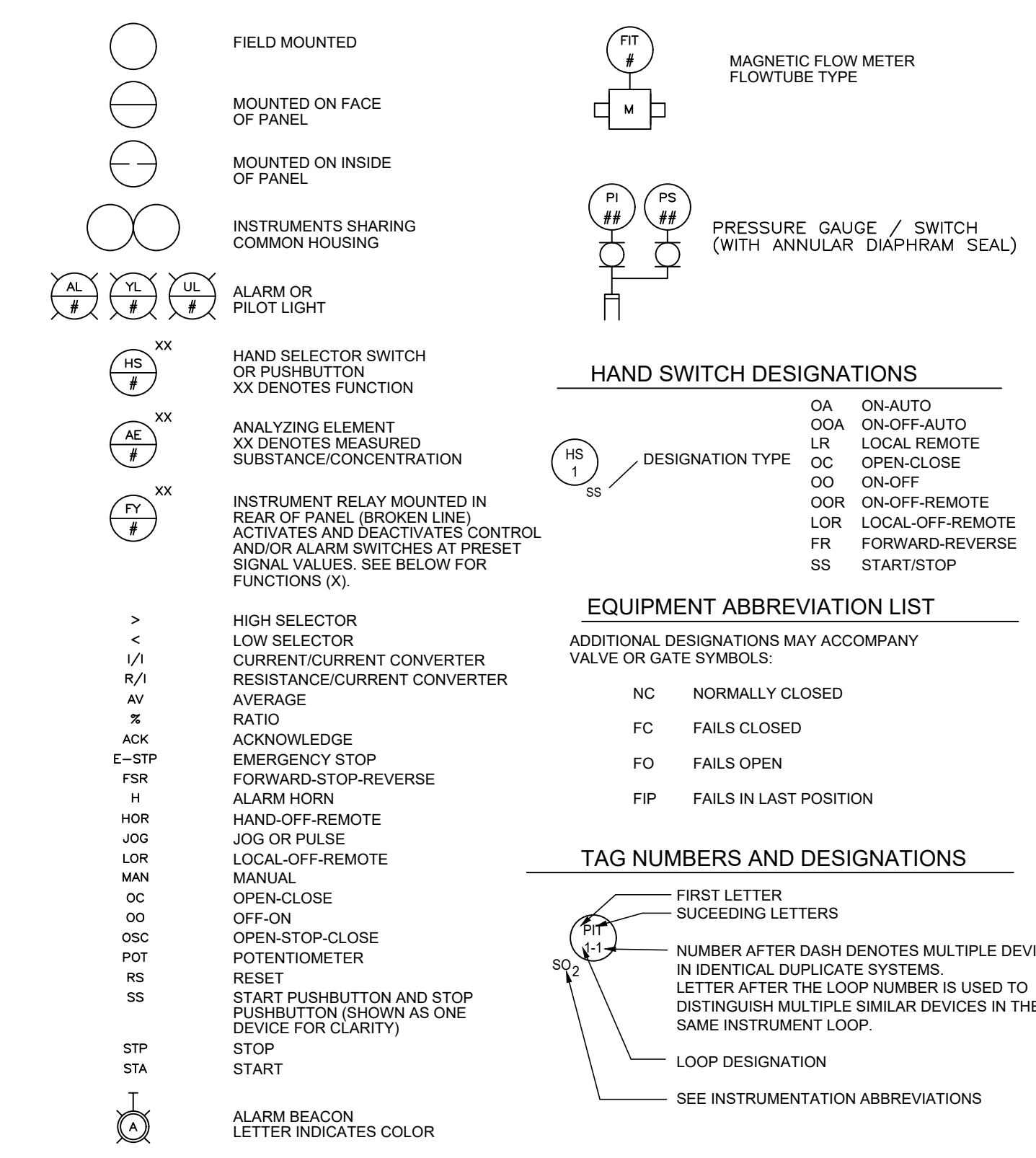
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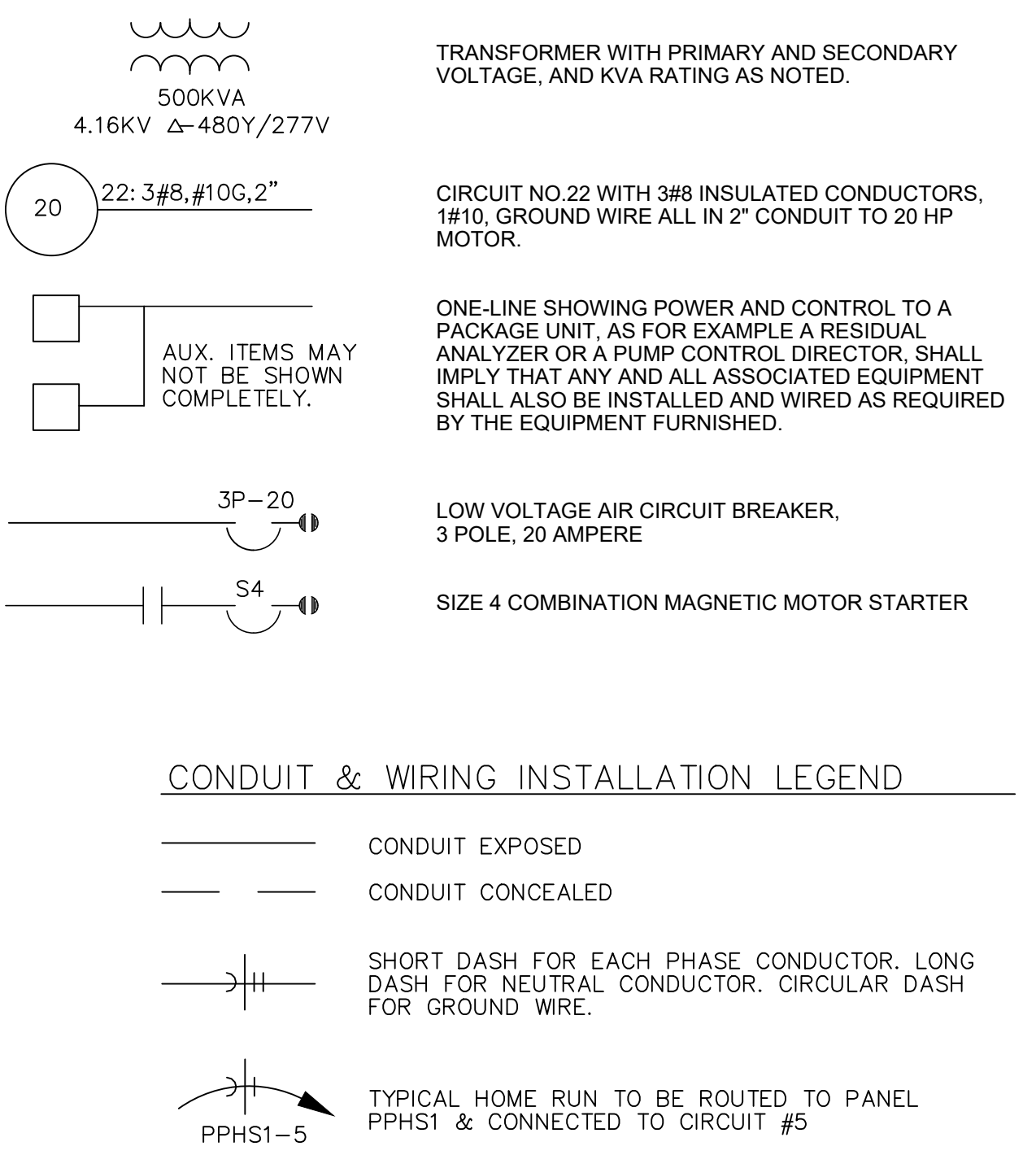
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ELECTRICAL SYMBOL LEGEND

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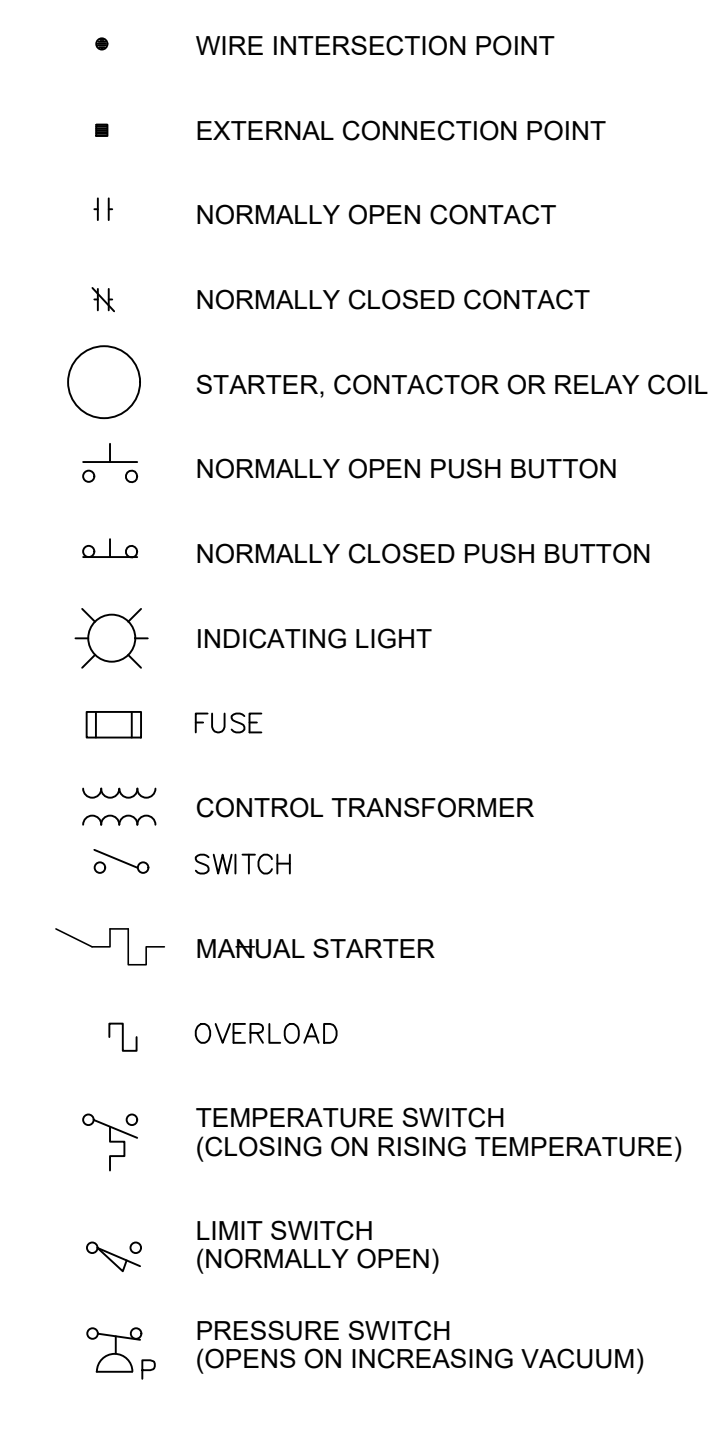
STANDARD SYMBOLS AND DESIGNATIONS



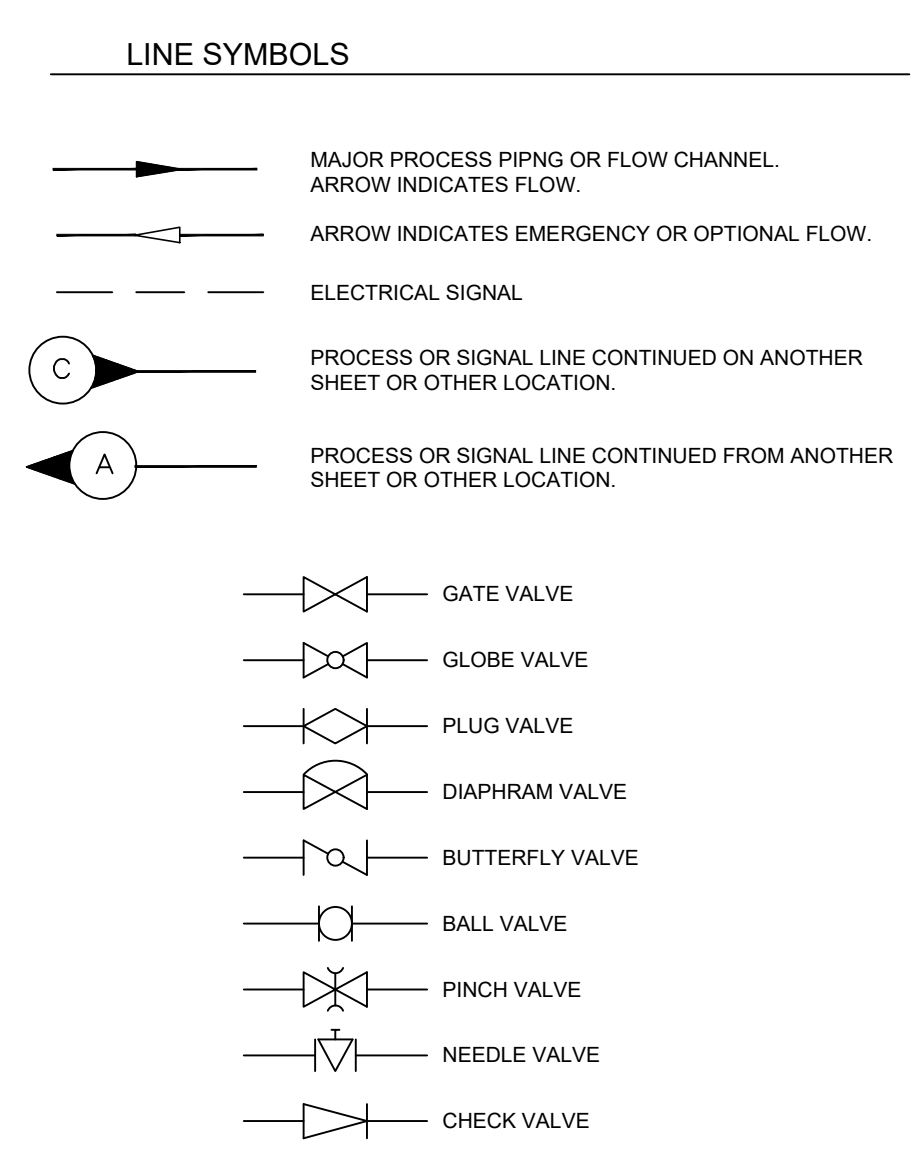
STANDARD ONE LINE DIAGRAM LEGEND



STANDARD SCHEMATIC DRAWINGS



STANDARD CONTROL SYSTEM LEGEND



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