

WATER STORAGE TANK & WELL HOUSE RENOVATIONS, LAKE WAPPAPELLO STATE PARK WILLIAMSVILLE, MISSOURI



CIVIL DESIGN, INC.
WBE|DBE

OWNER:

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

DEPARTMENT OF
NATURAL RESOURCES

PROJECT
MANAGEMENT:

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGNER:

CIVIL DESIGN, INC.

PROJECT NUMBER:

X2336-01

SITE NUMBER:

5607

FACILITY NUMBER:

7815607017



SHEET NUMBER:

G-001

1 OF 8 SHEETS
June 21, 2024



5220 Oakland Avenue
St. Louis, MO 63110
314.863.5570



OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

WATER STORAGE TANK &
WELL HOUSE RENOVATIONS

LAKE WAPPAPELLO
STATE PARK
8005 MO-172
WILLIAMSVILLE, MO 63967

PROJECT # X2336-01
SITE # 5607
FACILITY # 7815607017

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 06/21/2024

CAD DWG FILE: XXX
DRAWN BY: MA
CHECKED BY: WK
DESIGNED BY: MW

SHEET TITLE:
**GENERAL
INFORMATION**

SHEET NUMBER:

G-002

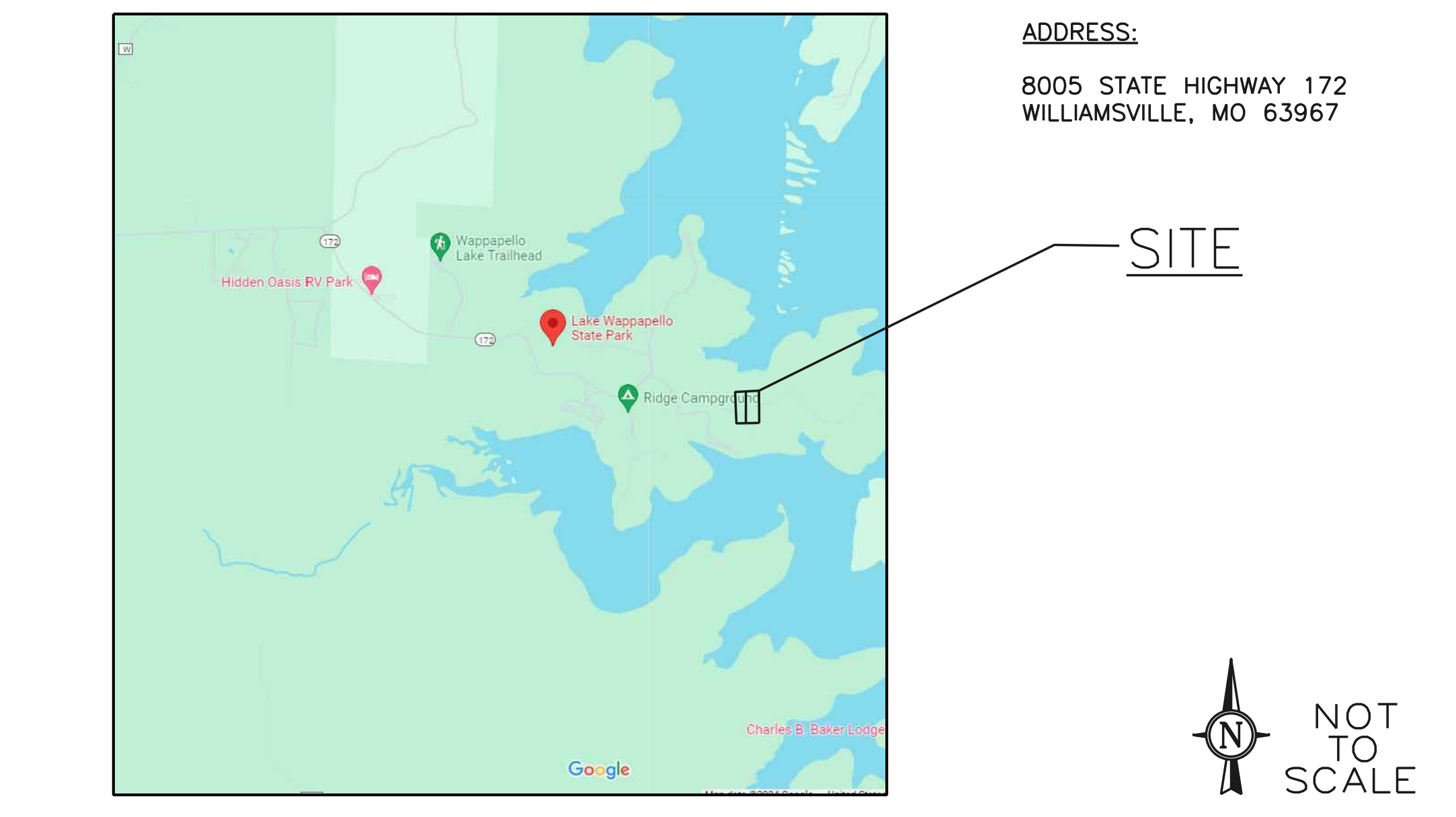
2 OF 8 SHEETS
06/21/2024

SURVEY INFORMATION

SURVEY PERFORMED BY:
CIVIL DESIGN, INC
5220 OAKLAND AVE
ST. LOUIS, MO 63110
SURVEY DATE: 04-09-2024
BASIS OF BEARINGS: MISSOURI EAST ZONE, NAD 1983

BM #1
IRON ROD W/CAP
N: 872183.79'
E: 402183.50'
ELEV: 530.97'

PROJECT LOCATION MAP



UTILITY COMPANIES

CONTACT TYPE:	COMPANY NAME:	CONTACT PHONE:	STREET ADDRESS:
SANITARY:	MISSOURI STATE PARKS	(573) 297-3232	8005 STATE HIGHWAY 172 WILLIAMSVILLE, MO 63967
ELECTRIC/GAS:	AMEREN MISSOURI	(800) 552-7583	PO BOX 790098 ST. LOUIS, MO 63179-0098
WATER:	MISSOURI STATE PARKS	(573) 297-3232	8005 STATE HIGHWAY 172 WILLIAMSVILLE, MO 63967

CIVIL ABBREVIATIONS

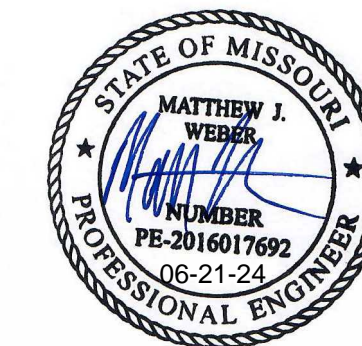
ASPH	ASPHALT	OHE	OVERHEAD ELECTRIC
ADG	ADJUST TO GRADE	ORD	ORDINANCE
BC	BACK OF CURB	OU	OVERHEAD UTILITY
BIT	BITUMINOUS	PB	PLAT BOOK
BK	BOOK	PC	POINT OF CURVATURE
BM	BENCHMARK	PCA	PORTLAND CEMENT ASSOCIATION
BOP	BEGINNING OF PROJECT	PCC	PORTLAND CEMENT CONCRETE
BW	BOTTOM OF WALL	PCH	PIPE CULVERT HEADWALLS
CL	CENTERLINE	PG	PAGE
CI	CURB INLET	PI	POINT OF INTERSECTION
CJ	CONSTRUCTION JOINT	PIV	POST INDICATOR VALVE
CMP	CORRUGATED METAL PIPE	PL	PROPERTY LINE
CO	CLEANOUT	PP	POWER POLE
CONC	CONCRETE	PROP	PROPOSED
CPR	COPPER PIPE	PSI	POUNDS PER SQUARE INCH
CS	COMBINED SEWER	PT	POINT OF TANGENT
CT	COOLING TOWER	PVC	POINT OF VERTICAL CURVE,
D	DEGREE OF CURVE	PVI	POLYVINYL CHLORIDE PIPE
DI	DUCTILE IRON PIPE	PVT	POINT OF VERTICAL INTERSECTION
DIA	DIAMETER	PVMT	PAVEMENT
DIM	DIMENSION	PVT	POINT OF VERTICAL TANGENT
DND	DO NOT DISTURB	R, RAD	RADIUS
DS	DOWNSPOUT	RCP	REINFORCED CONCRETE PIPE
DW	DOMESTIC WATER	RD	ROADWAY
ELEC	ELECTRIC	ROW	RIGHT OF WAY
ELEV	ELEVATION	RTE	ROUTE
EOP	EDGE OF PAVEMENT	SP	SPACES
EX, EXIST	EXISTING	SPEC	SPECIFICATION
EJ	EXPANSION JOINT	SS, SA	SANITARY SEWER
ET	ELECTRIC TRANSFORMER	ST	STORM SEWER
FF	FINISH FLOOR	STA	STATION
FH	FIRE HYDRANT	STL	STEEL PIPE
FL	FLOW LINE	TBA	TO BE ABANDONED
FO	FIBER OPTIC	TBA&F	TO BE ABANDONED AND FILLED
FP	FIRE PROTECTION	TBR	TO BE REMOVED
FW	FIRE WATER	TBR&R	TO BE REMOVED AND REPLACED
G	NATURAL GAS	TBR&S	TO BE REMOVED AND SALVAGED
GM	GAS METER	TC	TOP OF CURB
GV	GAS VALVE	TELE	TELEPHONE
HORIZ	HORIZONTAL	TI	TOP OF INLET
ID	INSIDE DIAMETER	TW	TOP OF WALL
INV	INVERT	TYP	TYPICAL
L	LENGTH OF CURVE	UG	UNDERGROUND
MAX	MAXIMUM	UGE	UNDERGROUND ELECTRIC
MEP	MECHANICAL/ELECTRICAL/PLUMBING	UGT	UNDERGROUND TELEPHONE
MH	MANHOLE	UIP	USE IN PLACE
MIN	MINIMUM	VAC	VACATED
MISC	MISCELLANEOUS	VCP	VITRIFIED CLAY PIPE
MON	MONUMENT	VERT	VERTICAL
N	NORTH	W	WATER
NIC	NOT IN CONTRACT	W/	WITH
NO	NUMBER	WM	WATER METER
NTS	NOT TO SCALE	WV	WATER VALVE
OC	ON CENTER	WWF	WELDED WIRE FABRIC
OD	OUTSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
OH	OVERHEAD		

CIVIL LEGEND

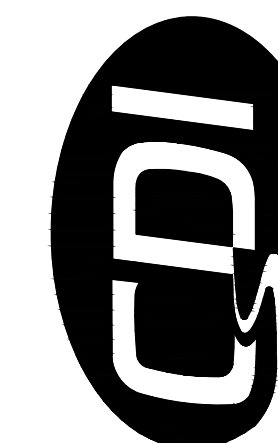
EXISTING:	PROPOSED
●	IRON PIPE/PIN FOUND
●	IRON PIN SET
⊕	CUT CROSS FOUND
⊙	SET IRON PIN WITH CAP (UNLESS NOTED)
"R"	RECORD DISTANCE
"M"	MEASURED DISTANCE
"D"	DEED DISTANCE
☆	EXISTING LIGHT POLE
⊠	EXISTING POWER POLE
⋄	EXISTING GUY WIRE
⊞	EXISTING ELECTRIC METER
⊞	EXISTING FIRE HYDRANT
⊞	EXISTING WATER VALVE
⊞	EXISTING WATER METER
⊞	EXISTING GAS VALVE
⊞	EXISTING GAS METER
⊞	EXISTING CLEANOUT
⊞	EXISTING MANHOLE
⊞	EXISTING BOLLARD
⊞	EXISTING SINGLE POLE SIGN
⊞	EXISTING DOUBLE POLE SIGN
⊞	EXISTING TELEPHONE JUNCTION BOX
⊞	EXISTING POWER JUNCTION BOX
⊞	EXISTING AIR CONDITIONER UNIT
⊞	EXISTING GRATE INLET
⊞	EXISTING BORING
○	EXISTING COLUMN
— x — x —	EXISTING FENCE
— G —	EXISTING GAS LINE
— OE —	EXISTING OVERHEAD ELECTRIC LINE
— W —	EXISTING WATER
— CS —	EXISTING COMBINED SEWER
— E —	EXISTING ELECTRIC
— — — —	PROPERTY LINE
— O — O —	SILTATION FENCE
— ST —	STORM SEWER
— DS —	DOWNSPOUT COLLECTION
— DT —	DRAINTILE COLLECTION
— SS —	SANITARY SEWER
— W —	DOMESTIC WATER
— FW —	FIRE SERVICE WATER
— OHE — OHE —	OVERHEAD ELECTRIC
— UE — UE —	UNDERGROUND ELECTRIC
— UT — UT —	UNDERGROUND TELEPHONE
— UC — UC —	UNDERGROUND CABLE
— FO —	UNDERGROUND FIBEROPTIC
— CWR —	CHILLED WATER RETURN
— CWS —	CHILLED WATER SUPPLY
— G —	NATURAL GAS
— X — X —	FENCE

CIVIL DRAWING INDEX

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G.003	CIVIL GENERAL INFORMATION
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C.201	SITE PLAN
C.501	DETAILS
C.502	DETAILS
C.503	DETAILS



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CIVIL DESIGN, INC.
WBE / DBE
Missouri State Certificate
of Authority #2002006804

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CHECKED BY: WK _____
DESIGNED BY: MW _____

SHEET TITLE:
**GENERAL
INFORMATION**

SHEET NUMBER:

G-003

3 OF 8 SHEETS
06/21/2024

GENERAL NOTES:

- EXISTING TOPOGRAPHIC CONDITIONS, CONTOURS, AND ELEVATIONS ARE BASED UPON A TOPOGRAPHIC SURVEY PERFORMED BY CIVIL DESIGN INC, ON APRIL 9, 2024. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IN WRITING IF EXISTING CONDITIONS DIFFER FROM THAT SHOWN ON PLANS
- THE CONTRACTOR BIDDING THE PROJECT IS RESPONSIBLE FOR VISITING AND INSPECTING THE PROJECT SITE PRIOR TO SUBMITTING A BID.
- ALL CONSTRUCTION ACTIVITIES SHALL BE IN STRICT COMPLIANCE WITH ALL LOCAL, CITY, STATE AND FEDERAL ORDINANCES, WHICHEVER CONTROLS. ALL CONSTRUCTION ACTIVITIES SHALL FOLLOW OSHA REGULATIONS.
- THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL MEASURE AND VERIFY ALL FIGURES AND ELEVATIONS BEFORE PROCEEDING WITH THE WORK. IF ANY INFORMATION IN THE FIELD DIFFERS FROM INFORMATION SHOWN ON THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY. IF DISCREPANCIES ARE OBSERVED AND NOT REPORTED, THE OWNER AND DESIGN TEAM WILL NOT BE RESPONSIBLE FOR THAT PORTION OF THE WORK, AND ANY POSSIBLE RESULTING ERRORS.
- UNLESS SPECIFICALLY SHOWN ON THE PROJECT DOCUMENTS, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND DESIGNATING AREAS OF STAGING, CONTRACTOR PARKING, MATERIALS STORAGE, EARTHWORK SPOILS, ETC. WITH THE OWNER'S REPRESENTATIVE WITHIN THE LIMITS OF THE PROJECT SITE.
- EXISTING VEHICULAR AND PEDESTRIAN TRAFFIC SURROUNDING THE SITE MUST BE MAINTAINED IN A SAFE MANNER. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY SAFETY MEASURES IN ORDER TO PROVIDE PEDESTRIAN AND VEHICULAR SAFETY AT ALL AREAS SURROUNDING THE SITE FROM ALL PROJECT WORK. MEASURES SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE AND SHALL BE PUT IN PLACE PRIOR TO THE COMMENCEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR ANY TEMPORARY TRAFFIC CONTROL AS NEEDED ON THE PROJECT.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING BENCHMARKS AND RELOCATING BENCHMARKS IF NECESSARY. BENCHMARKS SHALL BE RELOCATED TO ORIGINAL ELEVATION. ALL BENCHMARKS SHALL BE RELOCATED OR REPLACED BY A MISSOURI LICENSED SURVEYOR.
- CONTRACTOR IS RESPONSIBLE FOR REPAIRS TO ANY EXISTING CONDITIONS (ON OR OFF SITE) THAT IS DAMAGED DURING CONSTRUCTION SUCH AS, BUT NOT LIMITED TO, DRAINAGE PATTERNS, UTILITIES, LIGHTING, PAVEMENT, SIDEWALKS, CURBS, ETC. REPAIRS SHALL BE PROVIDED TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE OF ANY EXISTING LANDSCAPING THROUGHOUT THE DURATION OF THE PROJECT.
- ALL GROUND SURFACES DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION.
- CONTRACTOR SHALL PROVIDE TEMPORARY COVERS FOR ANY EXCAVATIONS LEFT UNATTENDED FOR ANY PERIOD OF TIME.
- ROCK ENCOUNTERED AT VARIOUS DEPTHS. SEE GEOTECHNICAL REPORT FOR MORE INFORMATION.

GRADING NOTES:

- NO SLOPES SHALL EXCEED 3H:1V.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS DURING COMPACTION OF BACKFILL MATERIALS OVER THE TOP OF STRUCTURES OR PIPES IN ORDER TO PREVENT ANY DAMAGE TO BELOW GRADE STRUCTURES.
- CLEARING TECHNIQUES THAT RETAIN VEGETATION TO THE MAXIMUM EXTENT PRACTICAL SHALL BE USED, AND THE TIME PERIOD FOR DISTURBED AREAS TO BE WITHOUT VEGETATIVE COVER SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.
- WHEN ANY GRADING OCCURS PRIOR TO FINAL GRADING, THE SITE SHALL AT ALL TIMES BE MAINTAINED SUCH THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
- ALL EXCESS EARTHWORK MATERIALS SHALL BE HAULED OFF-SITE AND DISPOSED OF IN A LEGAL MANNER.
- ALL EXCAVATED AREAS ARE TO BE SEEDDED AND/OR SODDED AFTER FINISH GRADING UNLESS OTHERWISE NOTED. HOLD DOWN FINAL GRADE AT ALL AREAS TO BE SODDED/SEEDDED IN ORDER TO ACCEPT A MINIMUM OF 4 INCH TOPSOIL. HOLD SODDED/SEEDDED AREA FINAL GRADE DOWN 1 INCH BELOW TOP OF PAVEMENT ELEVATION.
- THE EXCAVATING CONTRACTOR MUST TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. VERIFY COVER & SEPARATION REQUIREMENTS BY UTILITY CONTRACTORS AND/OR UTILITY COMPANIES SO AS NOT TO CAUSE DAMAGE.
- ALL GRADES AT PROJECT LIMITS SHALL MEET EXISTING GRADES.
- CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS. FINISH GRADE OF SOD/SEED SHALL NOT CREATE A BARRIER FOR DRAINAGE AWAY FROM ANY STRUCTURE.
- EXCESS TOPSOIL FROM STRIPING OPERATIONS, AS WELL AS OTHER PROPOSED FILL MATERIALS, SHALL BE STOCKPILED OUTSIDE OF THE PROPOSED WORK AREA, AND PLACED IN MOUNDS WITH PLASTIC COVERINGS. FASTEN PLASTIC COVERINGS SECURELY SO AS NOT TO ALLOW FOR DISPLACEMENT DURING STRONG WINDS.
- PROVIDE POSITIVE DRAINAGE IN ALL AREAS WITHOUT PONDING. AFTER INSTALLATION, CONTRACTOR TO TEST FOR, AND CORRECT, ANY LOW SPOTS HOLDING WATER IN PAVEMENTS, WALKS, SEED/SOD AREAS.

UTILITY NOTES:

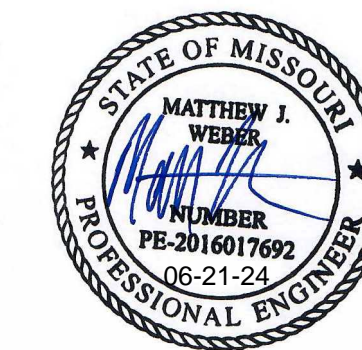
- UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, HYDRO EXCAVATION INVESTIGATION DATA, AND RECORDS ON FILE. IT IS POSSIBLE THAT THERE MAY BE OTHER UTILITIES, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION BEFORE EXCAVATION OF TRENCHING TO AVOID DAMAGE THERETO.
- LOCATE EXISTING UNDERGROUND UTILITIES AND SEWERS IN AREAS OF WORK PRIOR TO STARTING OPERATIONS. WHEN UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF PROTECTION DURING OPERATIONS. SHOULD UNKNOWN UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONTRACTOR SHALL NOTIFY UTILITY OWNER IMMEDIATELY FOR FURTHER DIRECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL NECESSARY WORK AND INSPECTIONS WITH MISSOURI STATE PARKS, AND/OR ALL OTHER UTILITY COMPANIES INVOLVED WITH THIS PROJECT. THE CONTRACTOR SHALL ALSO PAY ANY FEES ASSOCIATED WITH PERMITS, INSPECTIONS AND ANY OTHER CONSTRUCTION RELATED ACTIVITIES.
- ANY UTILITIES SCHEDULE TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF THE OWNER.
- MANHOLES, CATCH BASINS, CLEANOUTS, VALVE BOXES, FRAMES, COVERS AND GRATES REMAINING IN USE SHALL BE PROTECTED AND ADJUSTED TO FINAL GRADES.
- MINIMUM SEPARATION OF NEW AND/OR EXISTING WATER AND/OR SANITARY AND STORM SEWERS SHALL BE 10 FEET HORIZONTAL FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE AND 18 INCHES VERTICAL FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE, NO EXCEPTIONS. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL POTENTIAL UTILITY CROSSING SEPARATIONS PRIOR TO THE START OF PLACING ANY UTILITIES.
- THE CONTRACTOR SHALL COMPLETE ALL UTILITY WORK TO THE APPROPRIATE STANDARDS OF EACH RESPECTIVE UTILITY COMPANY.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE WIDTH OF EACH UTILITY LINE EXCAVATION. CONTRACTOR SHALL ADJUST SIZE OF TRENCH EXCAVATIONS AS REQUIRED ON A CASE BY CASE BASIS TO PROPERLY CONSTRUCT UTILITY SERVICES. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING EXCAVATIONS AS REQUIRED ACCORDING TO ALL FEDERAL, STATE, LOCAL, AND OSHA REGULATIONS.

EROSION AND SEDIMENT CONTROL NOTES:

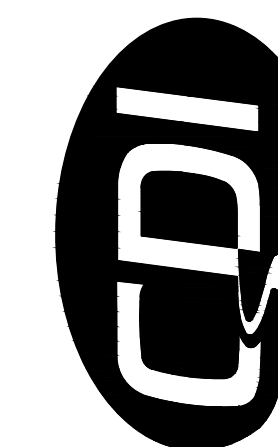
- CONTRACTOR TO PROVIDE TEMPORARY SEEDING OVER ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHICH ARE LEFT INACTIVE FOR 14 DAYS. TEMPORARY SEEDING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- ALL EROSION CONTROL AND SEDIMENTATION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL, INSPECT AND MAINTAIN. THE MAINTENANCE OF THESE EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSIDERED INCIDENTAL TO THE DEVICES THEMSELVES. MAINTENANCE SHALL CONTINUE TO BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE OWNER TAKES OWNERSHIP OF THE IMPROVEMENTS.
- ALL EROSION CONTROL SHALL CONFORM TO THE CONSTRUCTION SPECIFICATIONS.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION.
- A WASHDOWN AREA FOR VEHICLES SHALL BE PROVIDED TO REDUCE THE RISK OF VEHICLES TRACKING SEDIMENT AND DEBRIS.
- PAVED AREAS WITHIN THE PROPERTY LIMITS AND STREETS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEANED DAILY OR MORE FREQUENTLY AS NECESSARY. CLEANING SHALL INCLUDE SCRAPING SIGNIFICANT AMOUNTS OF SOIL AND POWER SWEEPING AS NEEDED TO REMOVE ANY EXCESS MUD, DIRT, OR ROCK TRACKED FROM THE CONSTRUCTION AREA. SEDIMENT SHALL NOT BE ALLOWED TO LEAVE THE SITE AND BE DEPOSITED ON THE CITY STREETS.
- ALL INLETS STRUCTURES RECEIVING DRAINAGE FROM THE PROPOSED DISTURBED AREAS SHALL BE PROTECTED WITH SEDIMENT CONTROL MEASURES TO PREVENT SEDIMENT FROM ENTERING THE STORM SYSTEM AND DISCHARGING TO EXISTING BMP FACILITIES. SEDIMENT CONTROL MEASURES SHALL REMAIN UNTIL THE DISTURBED DRAINAGE AREAS HAVE BEEN PROPERLY STABILIZED.
- EROSION CONTROL MEASURES SHALL BE INSPECTED AND NECESSARY CORRECTIONS SHALL BE MADE WITHIN 24 HOURS OF ANY RAINSTORM RESULTING IN ONE-HALF INCH OF RAIN OR MORE.

DEMOLITION NOTES:

- THE CONTRACTOR SHALL COORDINATE WORK ASSOCIATED WITH THE REMOVAL, RELOCATION, OR ABANDONMENT OF UTILITIES WITH THE UTILITY COMPANY OR ENTITY HAVING OWNERSHIP OF EACH RESPECTIVE UTILITY. COSTS FOR DISCONNECTION, REMOVAL, AND/OR RELOCATION OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS OR AS NECESSARY TO ALLOW FOR EXECUTION OF THE WORK SHALL BE PAID FOR BY THE CONTRACTOR.
- AREAS SURROUNDING THIS SITE MAY CONTAIN BOTH PEDESTRIAN AND VEHICLE TRAFFIC. ALL NECESSARY CARE SHALL BE TAKEN BY THE CONTRACTOR TO ENSURE THE SAFETY OF THE GENERAL PUBLIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND MAINTAINING SAFE AND EFFICIENT PROJECT LIMITS. THE CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL GUIDELINES WITH REGARDS TO CONSTRUCTION SAFETY THROUGHOUT THE ENTIRE DURATION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY BREACHES OF SAFETY OR DESTRUCTION OF PROPERTY RELATED TO THE CONSTRUCTION OF THIS PROJECT.
- ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF ACCORDING TO ALL FEDERAL, STATE AND LOCAL REGULATIONS. NO DEBRIS SHALL BE BURIED ON SITE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS NOT TO DAMAGE ANY EXISTING SITE FEATURES TO REMAIN. IF ANY DAMAGE OCCURS, THE CONTRACTOR SHALL CONTACT THE OWNERS REPRESENTATIVE IMMEDIATELY. THE CONTRACTOR SHALL REPAIR ALL DAMAGED ITEMS TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SITE CONSTRUCTION FENCE IN THE LOCATIONS SHOWN. DAMAGE TO THE CONSTRUCTION FENCE SHALL BE REPAIRED IMMEDIATELY. SITE VANDALISM SHALL BE REPORTED IMMEDIATELY.
- REMOVAL AND/OR ABANDONMENT OF EXISTING SEWERS SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS AND STATE OF MISSOURI STANDARDS.
- THE CONTRACTOR SHALL ERECT ORANGE PLASTIC CONSTRUCTION FENCING AS SHOWN AROUND THE PROJECT SITE FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR EXACT LOCATIONS OF CONSTRUCTION FENCING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONSTRUCTION FENCING AND FIXING ANY DAMAGE ON A DAILY BASIS. THE CONTRACTOR SHALL ALSO PROVIDE SAFE PEDESTRIAN WALKWAYS ACCORDING TO ALL ST. LOUIS COUNTY, STATE, FEDERAL OR OTHER APPLICABLE STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE PROJECT SITE THROUGHOUT THE SCHEDULE OF THE PROJECT. THE OWNER WILL NOT BE HELD RESPONSIBLE FOR ANY THEFTS OR VANDALISM THAT MAY OCCUR.
- THE OWNER HAS FIRST SALVAGE RIGHTS ON ALL ITEMS REMOVED. CONTRACTOR IS RESPONSIBLE FOR COMMUNICATIONS WITH THE OWNER'S REPRESENTATIVE IN ORDER TO VERIFY AND CONFIRM ALL SALVAGE ITEMS. IF OWNER FORFEITS RIGHTS THEN ALL DEMOLISHED MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF-SITE.
- ALL ITEMS TO BE SALVAGED SHALL BE CAREFULLY REMOVED AND STOCKPILED. THE CONTRACTOR SHALL TAKE SPECIAL CARE IN THE STORAGE OF THESE ITEMS FOR REUSE. THE CONTRACTOR SHALL PLACE/REINSTALL STOCKPILED ITEMS IN LOCATIONS DESIGNATED BY THE OWNERS REPRESENTATIVE.
- ANY RIGHT-OF-WAY OR PROPERTY MONUMENTS REMOVED OR DAMAGED SHALL BE RESTORED BY CONTRACTOR.
- BACKFILL ALL EXCAVATIONS RESULTING FROM THE DEMOLITION WORK TO MEET THE REQUIREMENTS FOR THE PROPOSED USE. FOR ALL UTILITY LINES AND STRUCTURES DESIGNATED TO BE REMOVED, PLACE AND COMPACT BACKFILL WITHIN TRENCH PER THE DESIGNATED UTILITY COMPANY STANDARDS.
- EROSION CONTROL SHALL BE INSTALLED AND IN PLACE PRIOR TO ANY SOIL DISTURBANCE, INCLUDING PAVEMENT REMOVAL. SEE EROSION CONTROL NOTES FOR FURTHER INFORMATION.
- ALL EXISTING SURFACE EXPOSED UTILITIES: MANHOLES, INLETS, CLEANOUTS, VALVE BOXES, ETC. REMAINING IN USE SHALL BE PROTECTED AND ADJUSTED TO FINAL GRADES.
- ANY EXISTING BELOW GRADE DEBRIS OR OBSTACLES ENCOUNTERED WITHIN THE PROPOSED PROJECT SCOPE LIMITS, BUT NOT SPECIFICALLY CALLED OUT ON THE PLANS, SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR FURTHER DIRECTION.



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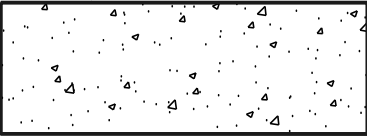


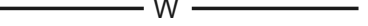


SHEET TITLE:
DEMOLITION PLAN

SHEET NUMBER:

C-101

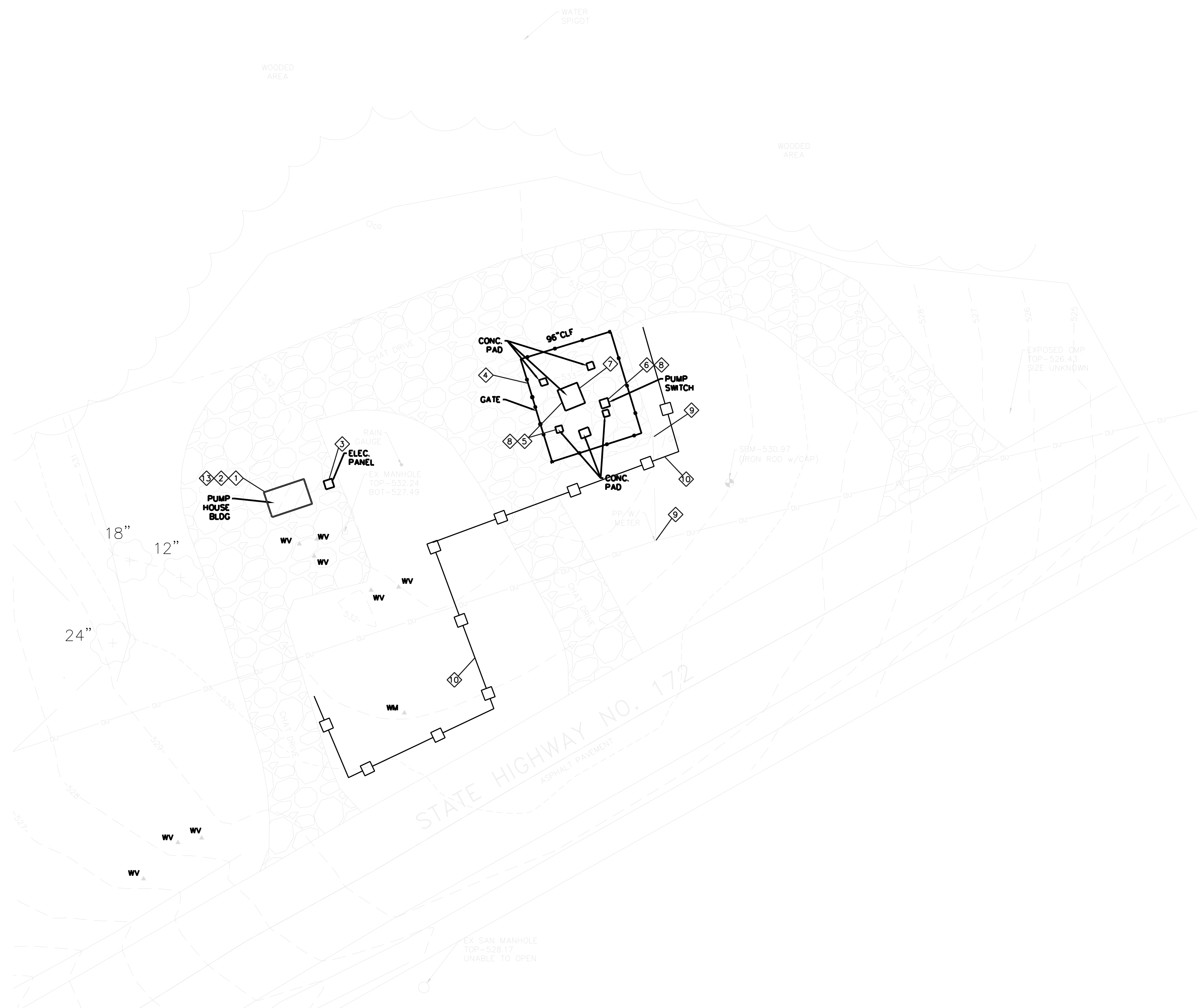
4 OF 8 SHEETS
06/21/2024

LEGEND:

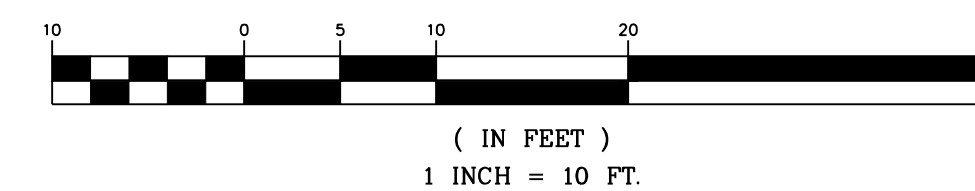
-  CONCRETE PAVEMENT
-  500 PROPOSED CONTOUR
-  500 EXISTING CONTOUR
-  DOMESTIC WATER ONLY
-  SANITARY SEWER
-  UNDERGROUND GAS PIPE

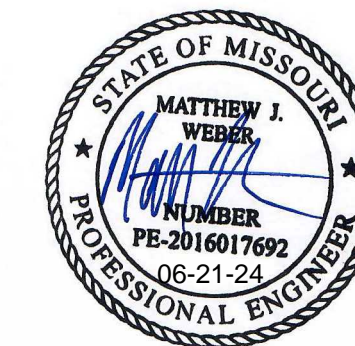
KEYED NOTES:

- 1 REMOVE EXISTING PUMP HOUSE BUILDING.
- 2 EXISTING WELL HEAD, PUMP, AND WATER TREATMENT SYSTEM TO REMAIN IN PLACE.
- 3 ELECTRIC CONTROL PANEL TO BE RELOCATED AND MOUNTED ON PROPOSED PUMP HOUSE BUILDING.
- 4 REMOVE EXISTING 8-FOOT TALL CHAINLINK FENCE.
- 5 REMOVE EXISTING CONCRETE SUPPORT PADS AND WATER TOWER SUPPORT COLUMNS.
- 6 REMOVE EXISTING PUMP SWITCH AND CONTROL PANEL.
- 7 REMOVE EXISTING WATER TOWER AND ALL ASSOCIATED COMPONENTS.
- 8 EXISTING WATER DISTRIBUTION SYSTEM TO REMAIN INTACT AND OPERATIONAL UNTIL PROPOSED IMPROVEMENTS ARE INSTALLED AND FULLY FUNCTIONAL.
- 9 EXISTING IMPROVEMENTS TO REMAIN UNDISTURBED. CONTRACTOR TO REPAIR ANY INCIDENTAL DAMAGE AT THEIR EXPENSE.
- 10 INSTALL APPROXIMATELY 150 LINEAR FEET OF SILT FENCE.
- 11 CONTRACTOR TO VERIFY SIZE AND LOCATION OF ALL EXISTING PRIVATE AND PUBLIC UTILITIES.
- 12 MINIMIZE CLEARING AND GRUBBING OPERATIONS. COORDINATE WITH OWNER PRIOR TO REMOVING ANY TREES LARGER THAN 4" IN DIAMETER.
- 13 REMOVE EXISTING BUILDING FOUNDATION.

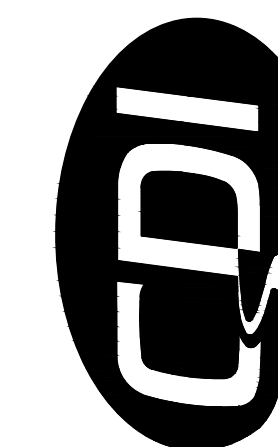


GRAPHIC SCALE





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DEPARTMENT OF
NATURAL RESOURCES
MISSOURI STATE PARKS

WATER STORAGE TANK &
WELL HOUSE RENOVATIONS

LAKE WAPPAPELLO
STATE PARK
8005 MO-172
WILLIAMSVILLE, MO 63967

PROJECT # X2336-01
SITE # 5607
FACILITY # 7815607017

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____

ISSUE DATE: 06/21/2024

CAD DWG FILE: XXX
DRAWN BY: MA
CHECKED BY: WK
DESIGNED BY: MW

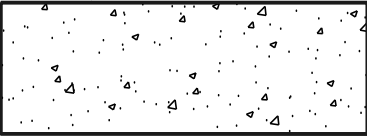


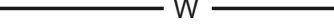


SHEET TITLE:
SITE PLAN

SHEET NUMBER:

C-201

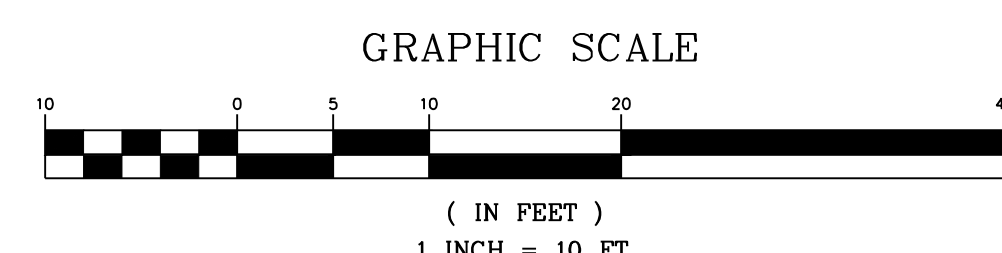
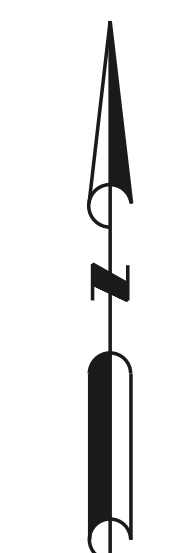
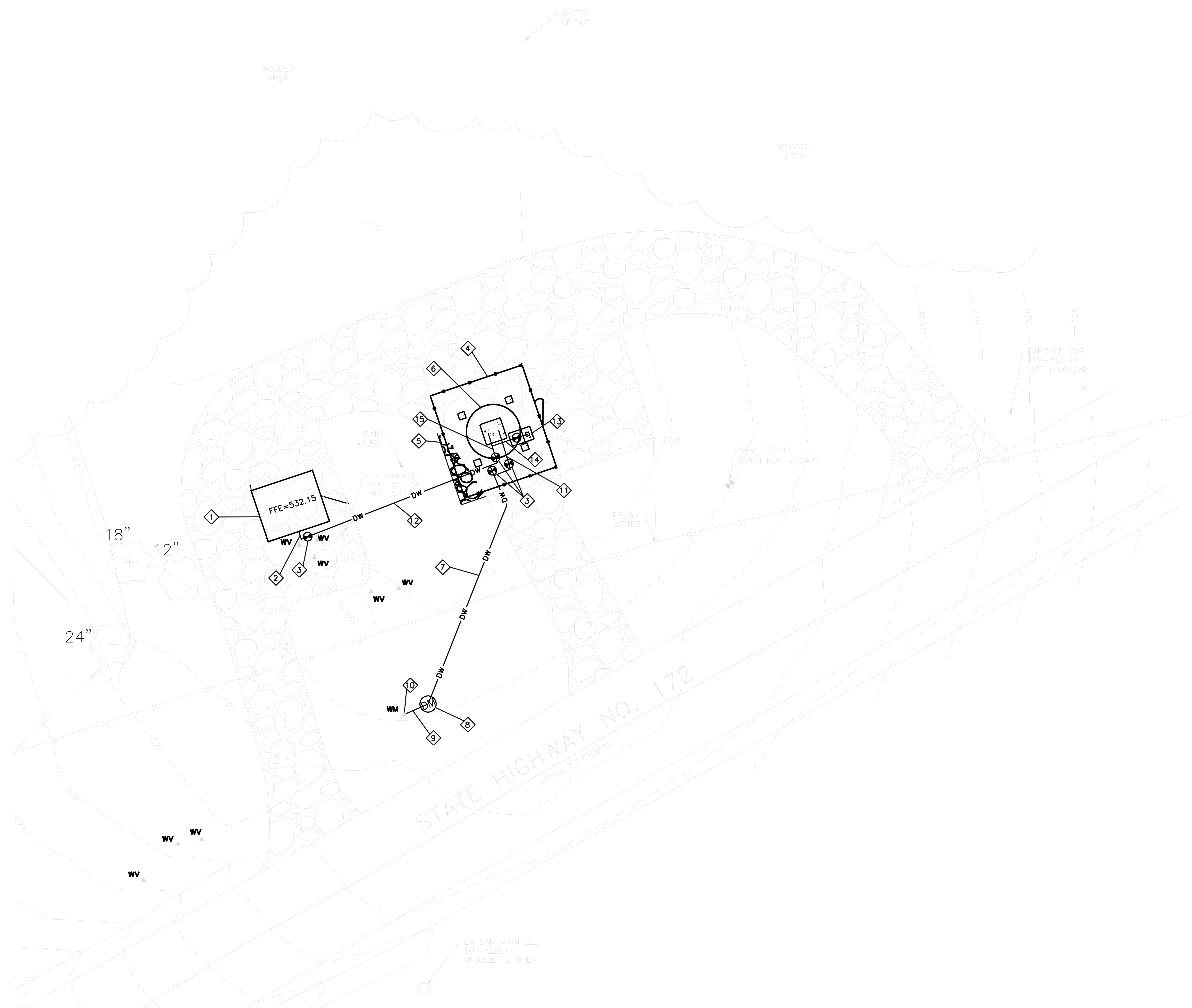
5 OF 8 SHEETS
06/21/2024

LEGEND:

-  CONCRETE PAVEMENT
-  500 PROPOSED CONTOUR
-  500 EXISTING CONTOUR
-  DOMESTIC WATER ONLY
-  SANITARY SEWER
-  UNDERGROUND GAS PIPE

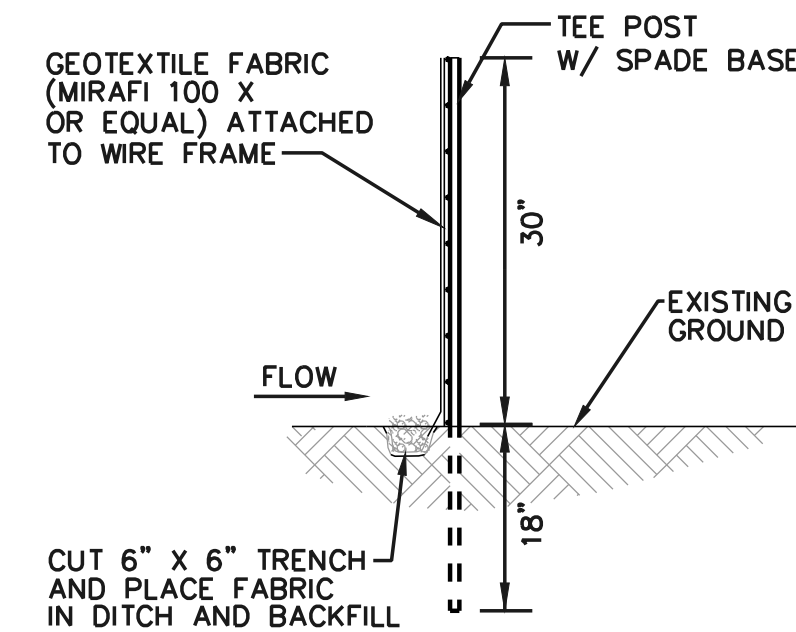
KEYED NOTES:

- 1 INSTALL PRECAST WELLHOUSE BUILDING. EXISTING WELL TO REMAIN IN PLACE. REFER TO SHEET C-503.
- 2 INSTALL APPROXIMATELY 3 LINEAR FEET OF 4-INCH DIAMETER C900 PVC PIPE.
- 3 INSTALL GATE VALVE AND VALVEBOX.
- 4 INSTALL 76 LINEAR FEET OF 6-FOOT TALL CHAINLINK FENCE WITH 5-FOOT WIDE ACCESS GATE.
- 5 INSTALL 9-INCH THICK GRAVEL SURFACE.
- 6 INSTALL 5,000 GALLON ELEVATED WATER TANK. TANK MANUFACTURER TO DESIGN AND PROVIDE ALL WATER TANK COMPONENTS, INCLUDING BUT NOT LIMITED TO FLOAT SWITCHES, PUMP CONTROL PANEL, STRUCTURAL SUPPORTS, STRUCTURAL FOUNDATION, ELEVATED PLATFORM, ACCESS LADDER, AND ALL ASSOCIATED AND NECESSARY PIPING/VALVES.
- 7 INSTALL 48 LINEAR FEET OF 4-INCH DIAMETER C900 PVC PIPE.
- 8 INSTALL WATER METER AND METER VAULT.
- 9 INSTALL APPROXIMATELY 5 LINEAR FEET OF 4-INCH DIAMETER C900 PVC PIPE.
- 10 CONNECT TO EXISTING WATER DISTRIBUTION LINE. CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER DISTRIBUTION LINE.
- 11 INSTALL APPROXIMATELY 11 LINEAR FEET OF 4-INCH DIAMETER C900 PVC PIPE.
- 12 INSTALL APPROXIMATELY 38 LINEAR FEET OF 12-INCH DIAMETER C900 PVC PIPE.
- 13 INSTALL WATER SAMPLING STATION. REFER TO DETAIL ON SHEET C-501.
- 14 INSTALL APPROXIMATELY 7 LINEAR FEET OF 3/4-INCH COPPER PIPE. REFER TO DETAIL ON SHEET C-501.
- 15 INSTALL APPROXIMATELY 6 LINEAR FEET OF 4-INCH DIAMETER C900 PIPE.

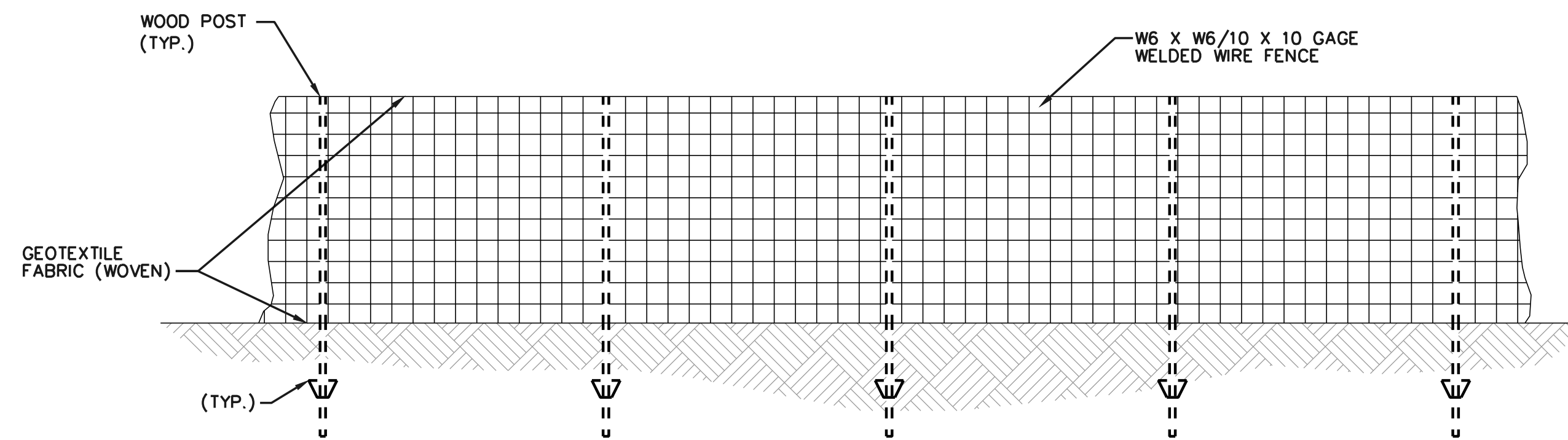


GENERAL NOTES

1. DO NOT SCALE DRAWING. FOLLOW DIMENSIONS.
2. SILTATION CONTROL DEVICES TO REMAIN IN PLACE UNTIL 70% VEGETATIVE GROWTH ENSURES NO FURTHER EROSION OF THE SOIL.
3. SILTATION FENCES SHALL BE INSPECTED PERIODICALLY FOR DAMAGE AND FOR THE AMOUNT OF SEDIMENTATION WHICH HAS ACCUMULATED. REMOVAL OF SEDIMENT WILL BE REQUIRED WHEN IT REACHES 1/2 OF THE HEIGHT OF THE SILTATION FENCE.
4. ATTACHMENT OF WELDED WIRE FENCE AND GEOTEXTILE FABRIC TO BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.



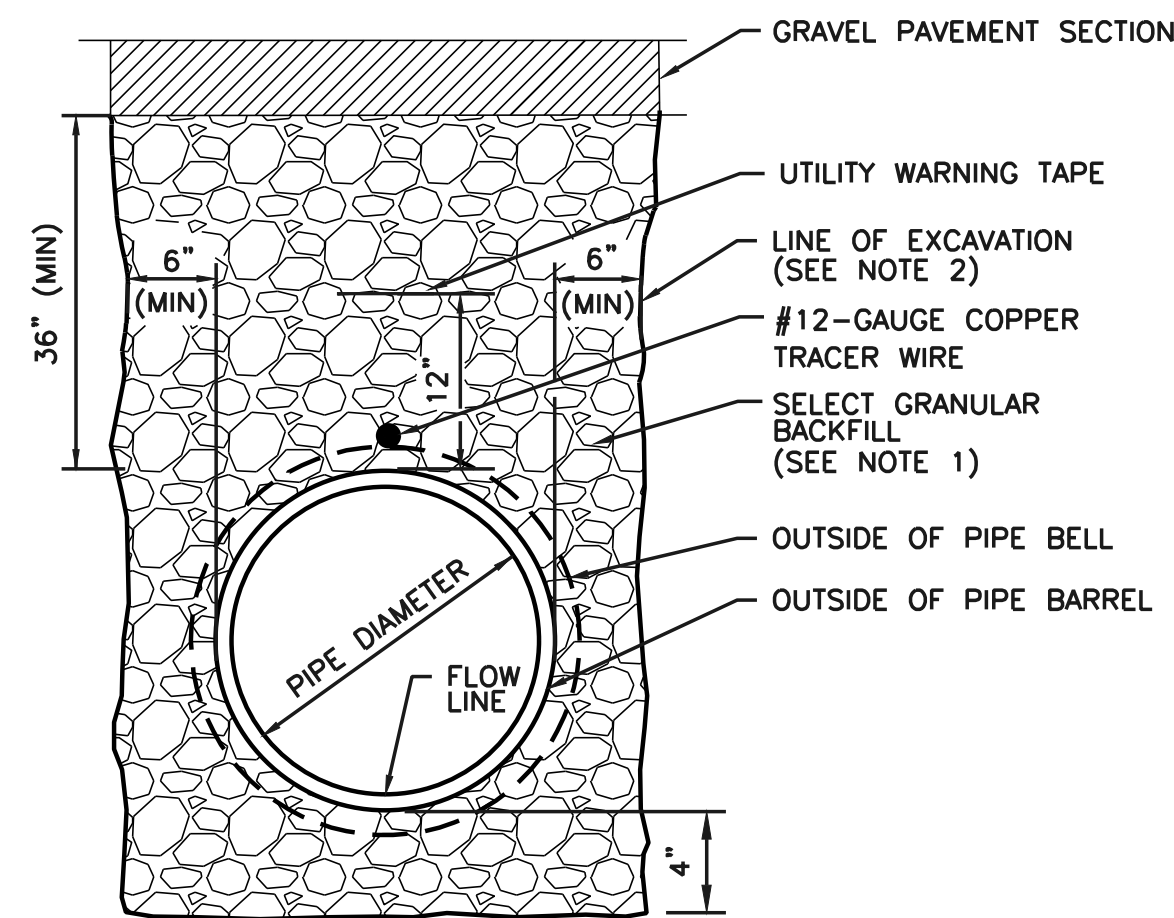
SECTION B-B



SECTION A-A

PLAN

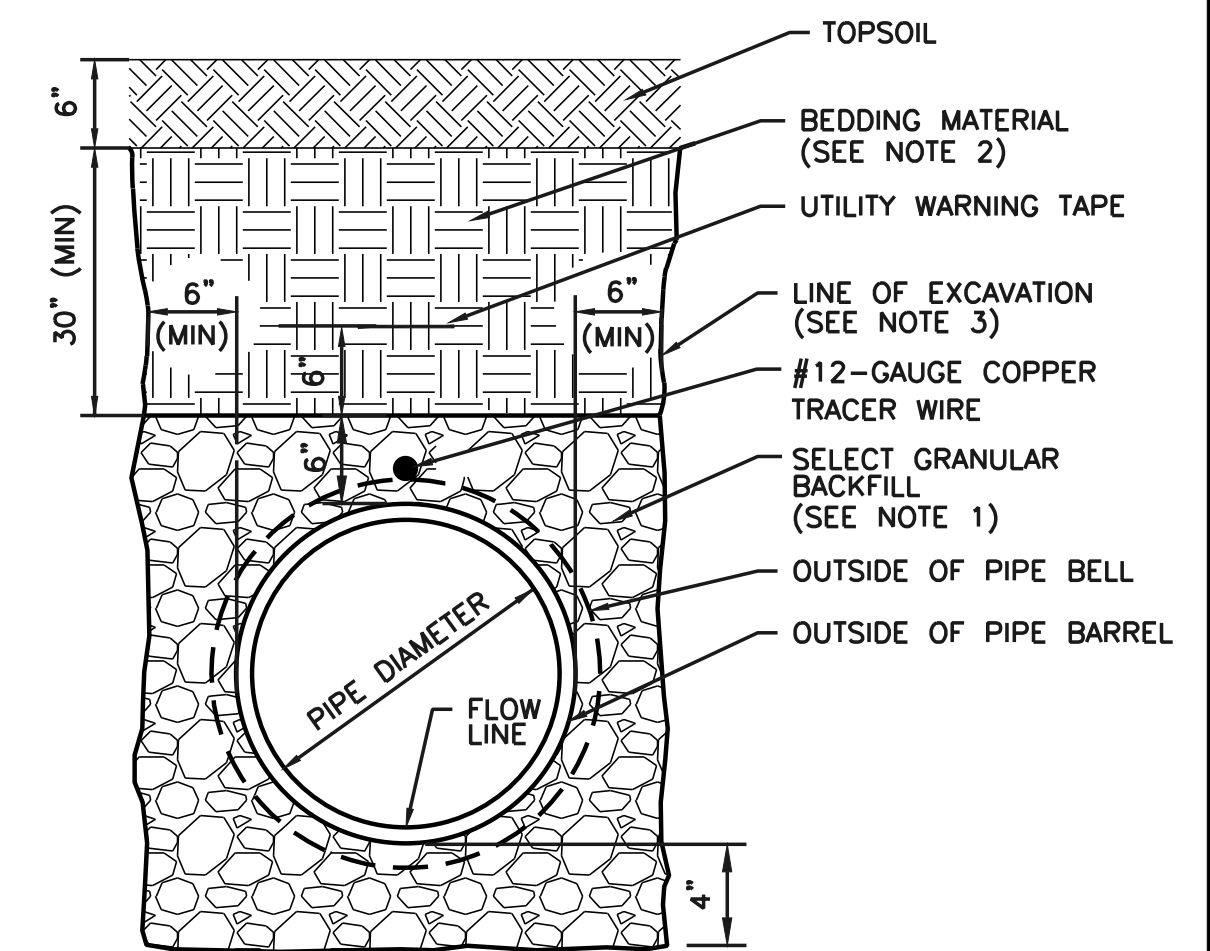
A SILT FENCE
NOT TO SCALE



NOTES:

1. SELECT GRANULAR BACKFILL SHALL CONSIST OF CRUSHED LIMESTONE AND SCREENINGS. COMPACT BACKFILL TO 95% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST. (ASTM D 1557)
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BENCHING TRENCH EXCAVATIONS IN ACCORDANCE WITH ALL LOCAL, STATE, FEDERAL AND OSHA REQUIREMENTS.
3. INSTALL TRACER WIRE PER SPECIFICATIONS.

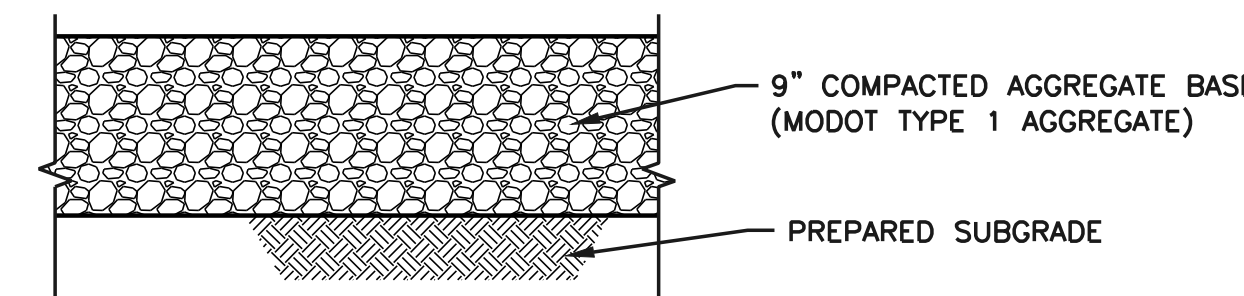
B UTILITY TRENCH - UNDER DRIVE
NOT TO SCALE



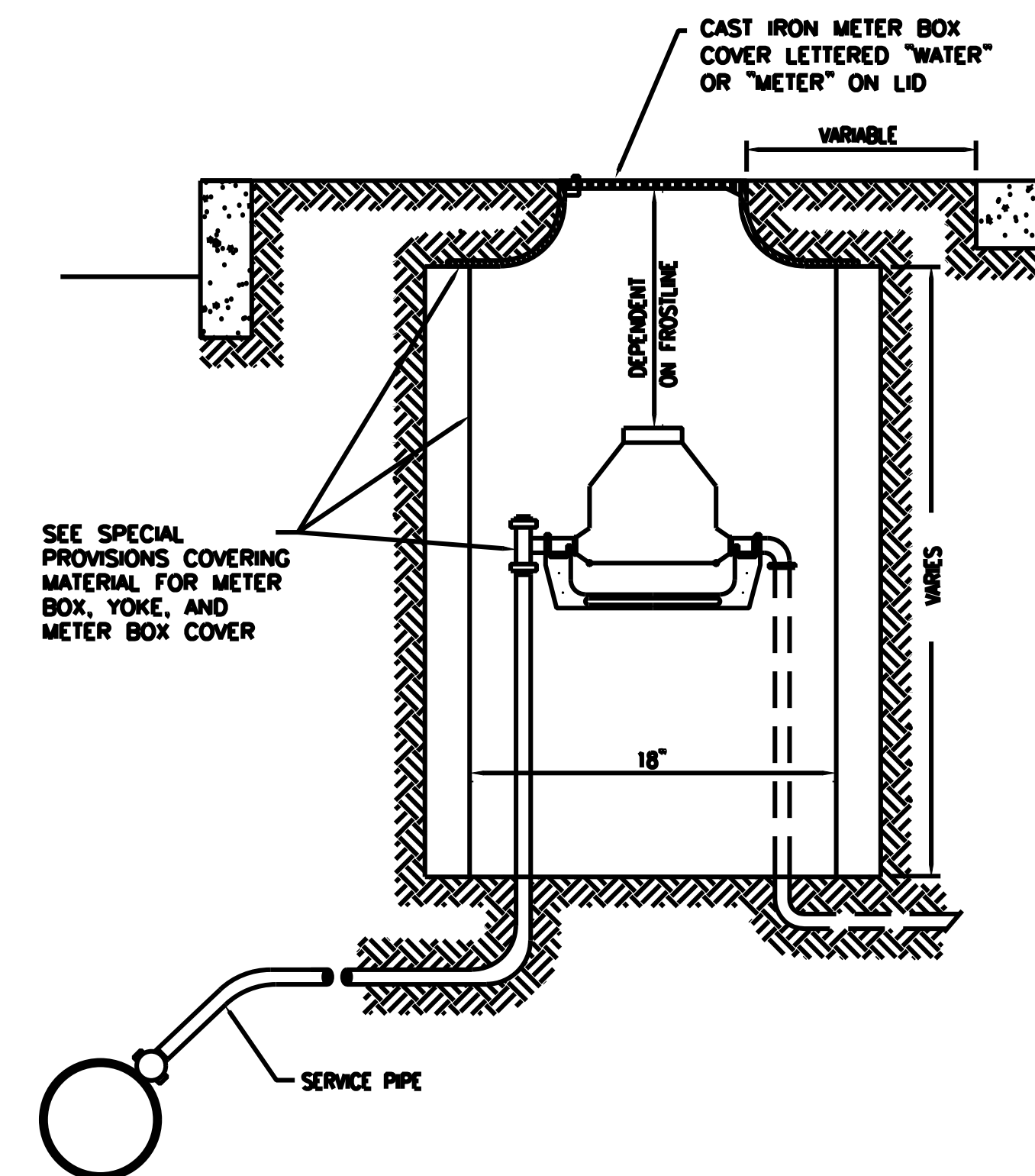
NOTES:

1. SELECT GRANULAR BACKFILL SHALL CONSIST OF CRUSHED LIMESTONE AND SCREENINGS. COMPACT BACKFILL TO 95% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST. (ASTM D 1557)
2. COMPACT BEDDING MATERIAL UNDER LAWNS TO 85% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST. (ASTM D 1557)
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND BENCHING TRENCH EXCAVATIONS IN ACCORDANCE WITH ALL LOCAL, STATE, FEDERAL AND OSHA REQUIREMENTS.
4. INSTALL TRACER WIRE PER SPECIFICATIONS.

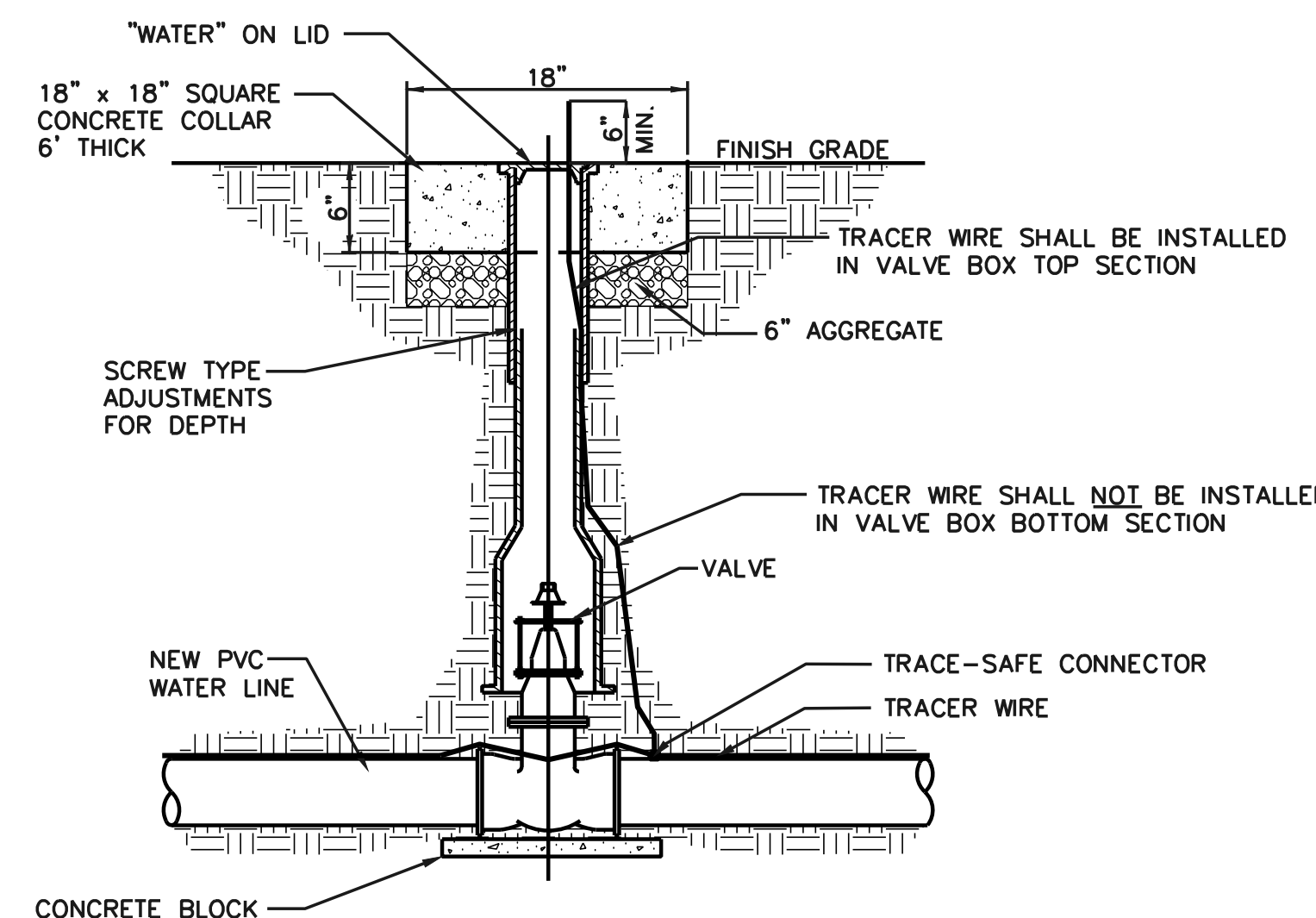
C UTILITY TRENCH - UNDER LAWN
NOT TO SCALE



D GRAVEL PAVEMENT SECTION
NOT TO SCALE



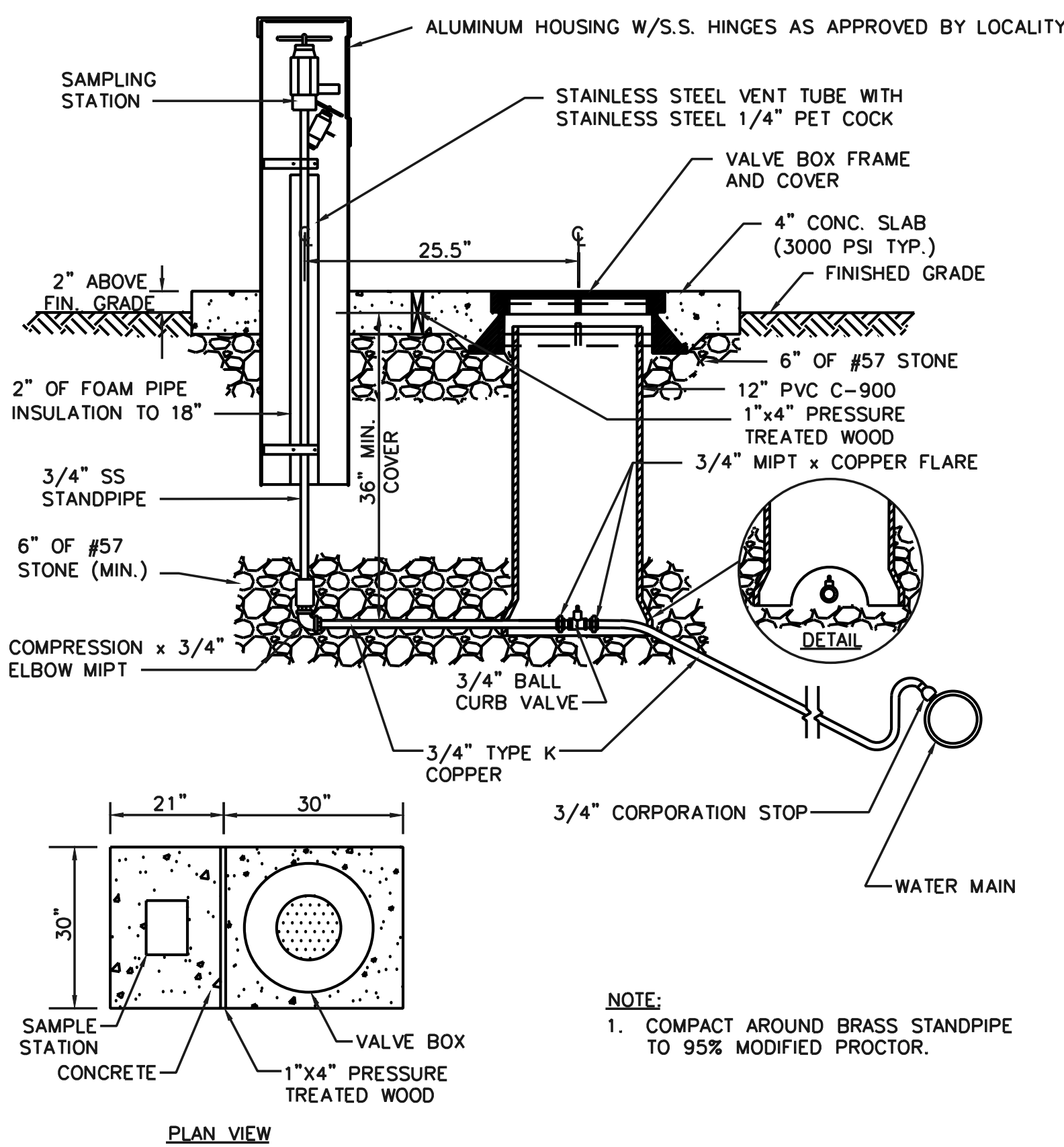
G TYPICAL SINGLE METER BOX INSTALLATION
NOT TO SCALE



NOTES:

1. USE SPECIFIC VALVE BOX STABILIZER/ADAPTER DESIGNED FOR VALVE TYPE, MANUFACTURER, AND SIZE.
2. ALL 'DEAD END' VALVE INSTALLATIONS SHALL HAVE TRACER WIRE BROUGHT TO GRADE AS SHOWN IN THE ABOVE DETAIL.

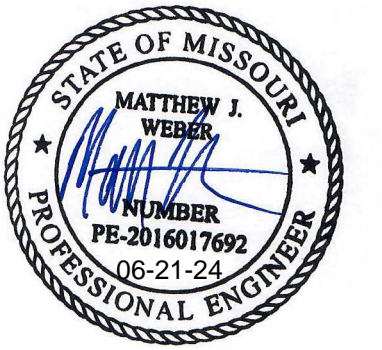
F TYPICAL VALVE & VALVEBOX INSTALLATION
NOT TO SCALE



NOTE:

1. COMPACT AROUND BRASS STANDPIPE TO 95% MODIFIED PROCTOR.

E WATER SAMPLING STATION
NOT TO SCALE



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WATER STORAGE TANK &
WELL HOUSE RENOVATIONS

LAKE WAPPAPELLO
STATE PARK
8005 MO-172
WILLIAMSVILLE, MO 63967

PROJECT # X2336-01
SITE # 5607
FACILITY # 7815607017

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 06/21/2024

CAD DWG FILE: XXX
DRAWN BY: MA
CHECKED BY: WK
DESIGNED BY: MW

SHEET TITLE:
DETAILS

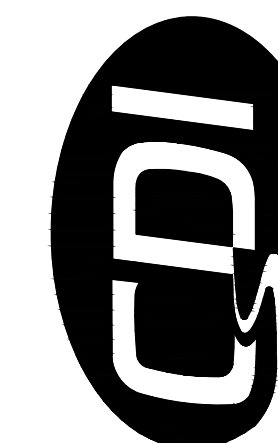
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C-501

6 OF 8 SHEETS
06/21/2024



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STATE PARK
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REVISION: _____
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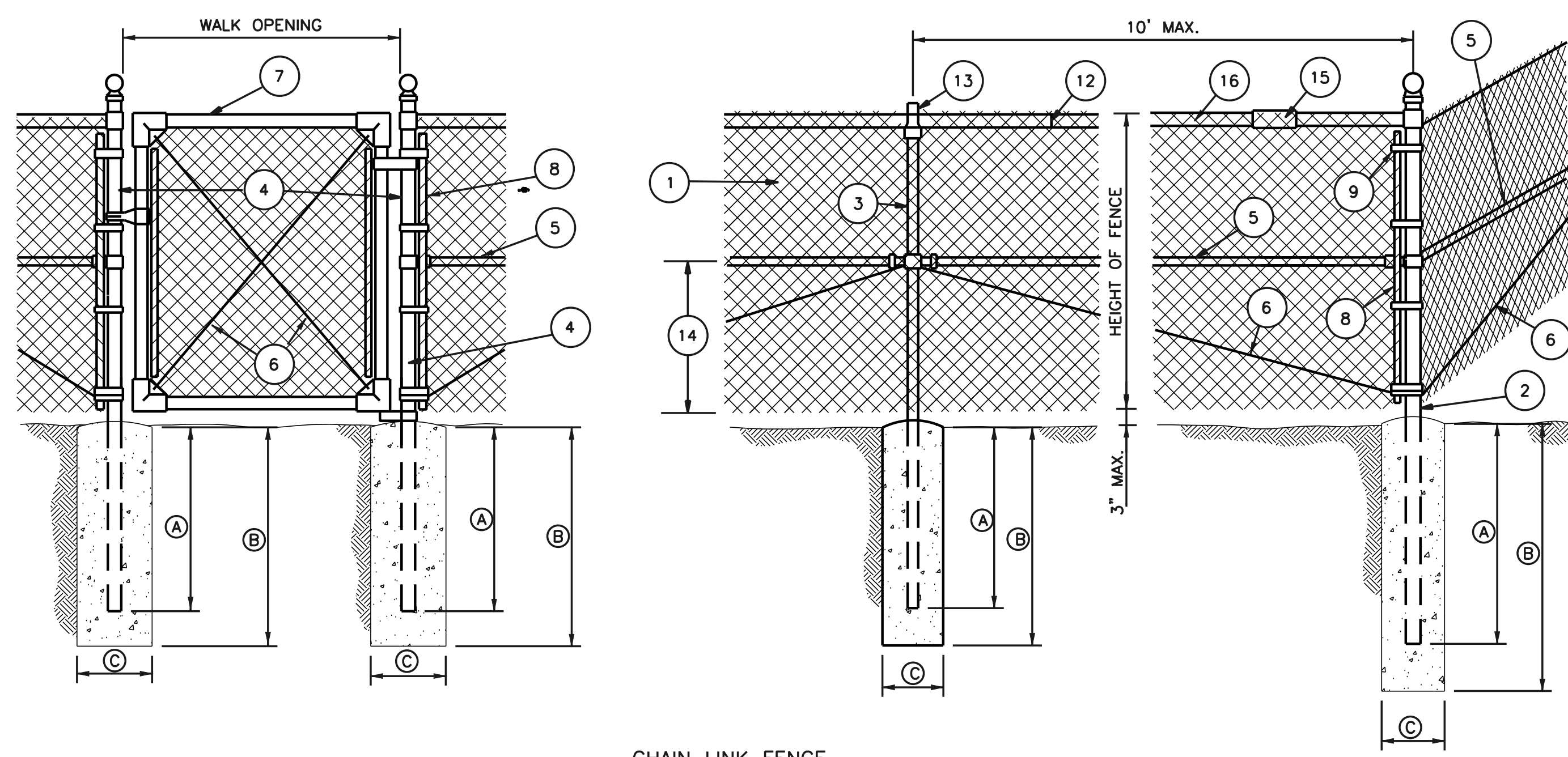
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DRAWN BY: MA
CHECKED BY: WK
DESIGNED BY: MW

SHEET TITLE:
DETAILS

SHEET NUMBER:

C-502

7 OF 8 SHEETS
06/21/2024



CHAIN LINK FENCE

LEGEND

- ① FABRIC
- ② END, CORNER OR PULL POST
- ③ LINE POST
- ④ GATE POST
- ⑤ BRACE
- ⑥ TRUSS ROD
- ⑦ GATE FRAME
- ⑧ STRETCHER BAR
1/4" x 3/4" PLATE
- ⑨ STRETCHER BAR BAND
- ⑩ END OR CORNER CLAMP
- ⑪ POST TOPS
(OTHER THAN LINE POSTS)
- ⑫ FABRIC TIES
- ⑬ LINE POST TOPS
- ⑭ ONE-HALF FABRIC HEIGHT
OR AS RECOMMENDED BY
MANUFACTURER
- ⑮ EXPANSION SLEEVE
- ⑯ TOP RAIL

DESCRIPTION	HEIGHT OF FENCE	
	SIZE (IN.)	#/FT.
② END, CORNER, & PULLPOST	ROUND	2 1/2" 5.79
	①	36"
	⑥ x ③	42" x 12"
③ LINE POST	ROUND	2" 3.65
	H-SECT	5" x 1.95" 3.26
	①	36"
	⑥ x ③	42" x 10"
④ GATE POST (SINGLE GATE OR 1 LEAF OF DOUBLEWIDTH)	6' AND LESS	2 1/2" DIA. 5.79
	13' AND LESS	3 1/2" DIA. 9.10
	18' AND LESS	6" DIA. 18.97
	OVER 18'	8" DIA. 24.70
⑤ BRACE	1 1/4" DIA.	2.27
⑥ TRUSS ROD	3/8"	
⑦ GATE FRAME	1 1/2" DIA.	2.72

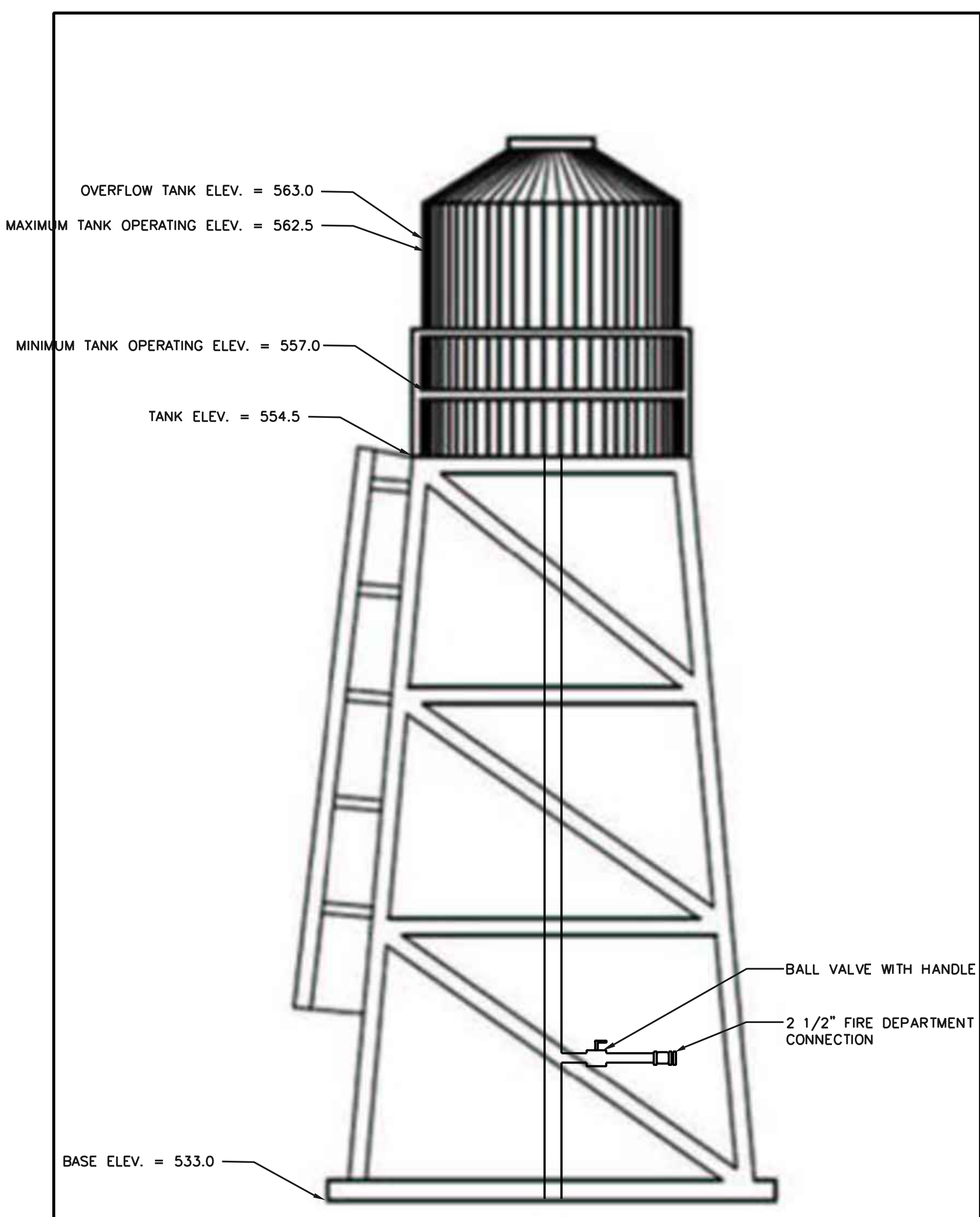
POSTS, BRACES, RAILS AND GATE FRAME MEMBERS MAY BE STEEL WITH ZINC PLUS ORGANIC COATING WITH THE WEIGHT AND WALL THICKNESS MEETING THE FOLLOWING REQUIREMENTS FOR THE RESPECTIVE SIZE.

PIPE SIZE (IN.)	MIN. WEIGHT (LBS./FT.)	MIN. WALL THICKNESS (IN.)
1 1/4	1.82	0.110
1 1/2	2.28	0.120
2	3.12	0.130
2 1/2	4.64	0.160
3 1/2	6.56	0.160

GENERAL NOTES

1. DO NOT SCALE DRAWING. FOLLOW DIMENSIONS.
2. MATERIAL SHALL BE VINYL COATED STEEL FENCING.
3. WEIGHTS OF MATERIAL SHOWN IN TABLE ARE FOR STEEL. SIZES SHOWN ARE APPLICABLE FOR ALL MATERIALS.
4. PULL POST SHALL AS SHARP BREAKS IN VERTICAL GRADE OR AT APPROXIMATE 500' SPACINGS ON STRAIGHT RUNS OR AS DIRECTED BY THE ENGINEER.
5. DRILLED HOLES C IN SOLID ROCK SHALL PROVIDE A DIAMETER OF NOT LESS THAN TWO INCHES GREATER THAN THE MAXIMUM TRANSVERSE DIMENSION OF THE POST SECTION.
6. CONCRETE FOR FOOTINGS SHALL BE CLASS B. A QUICK SETTING POLYURETHANE FOAM MAY BE USED IN LIEU OF CONCRETE FOR LINE POST OR LINE POST MAY BE DRIVEN AS SHOWN ON THE PLANS.
7. GATE STOPS AND THE DIRECTION SWING SHALL MATCH EXISTING.

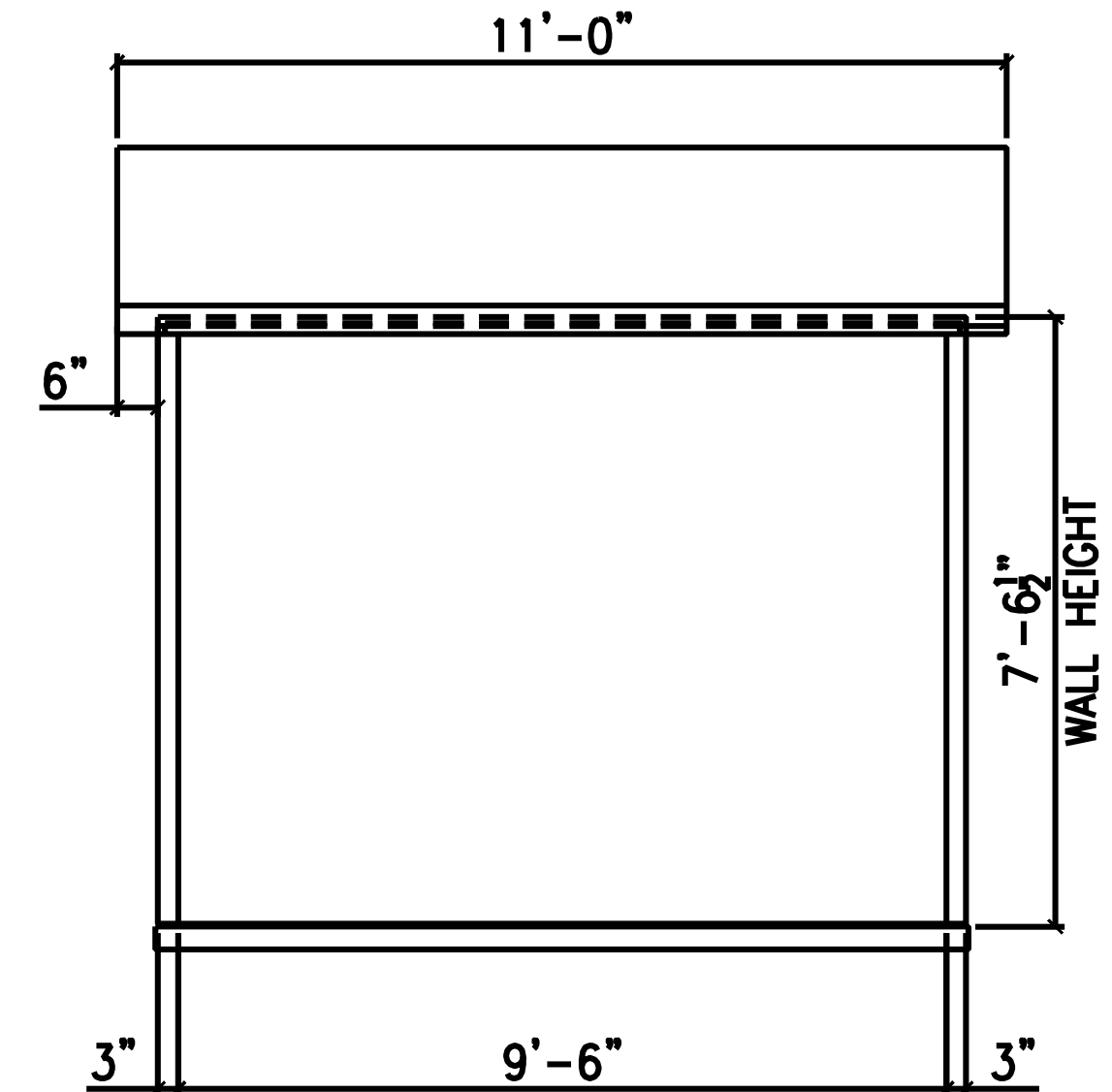
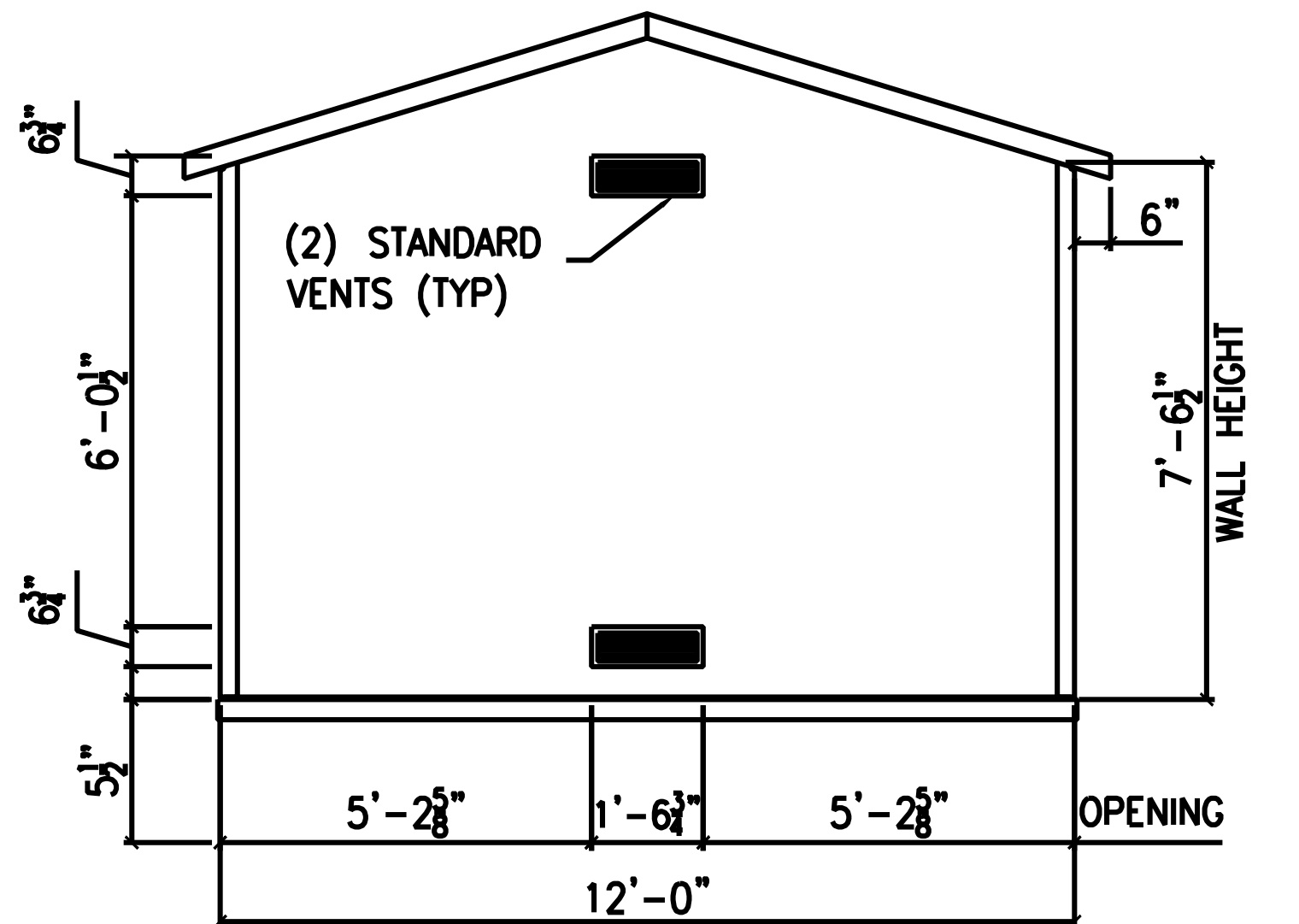
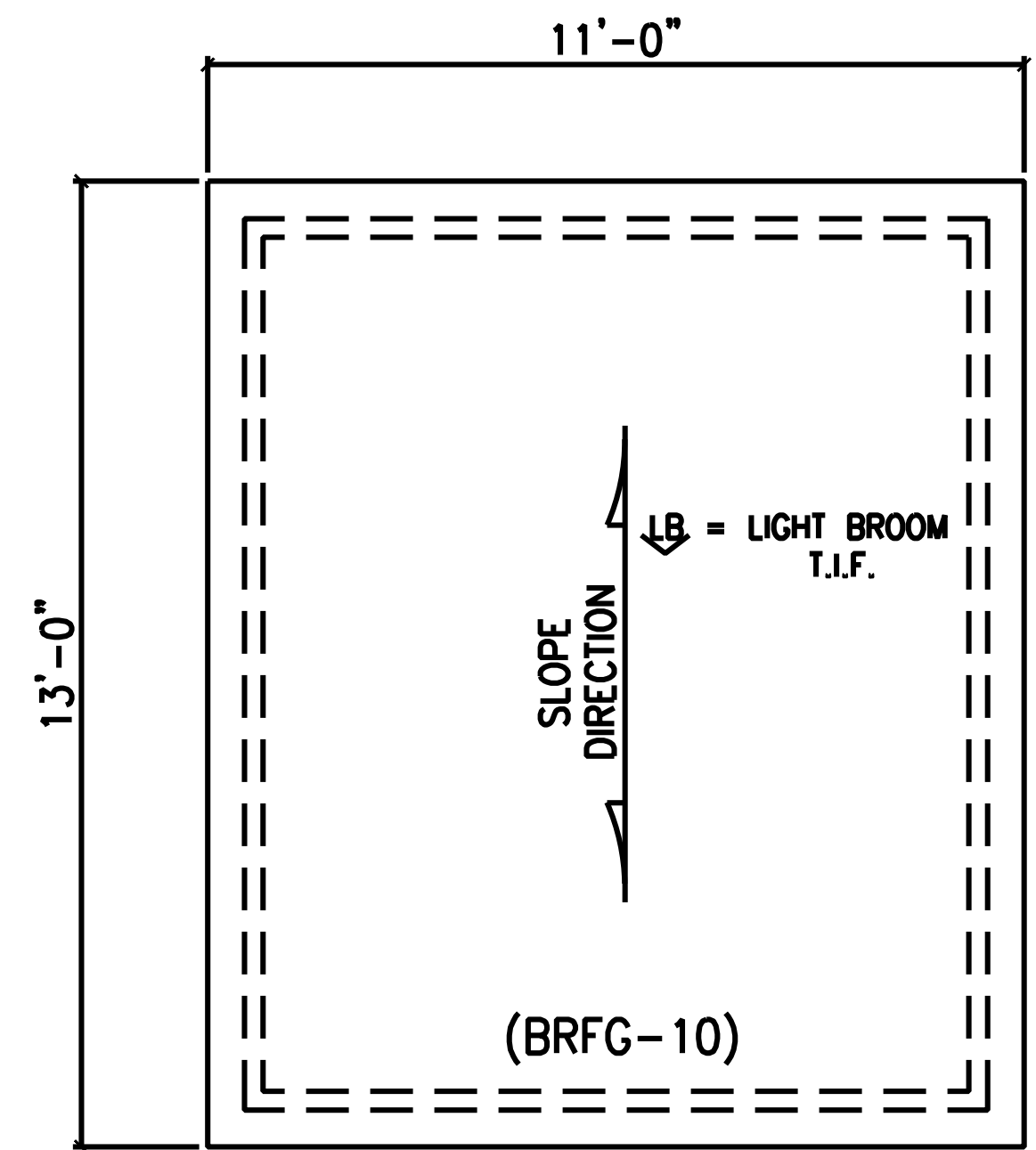
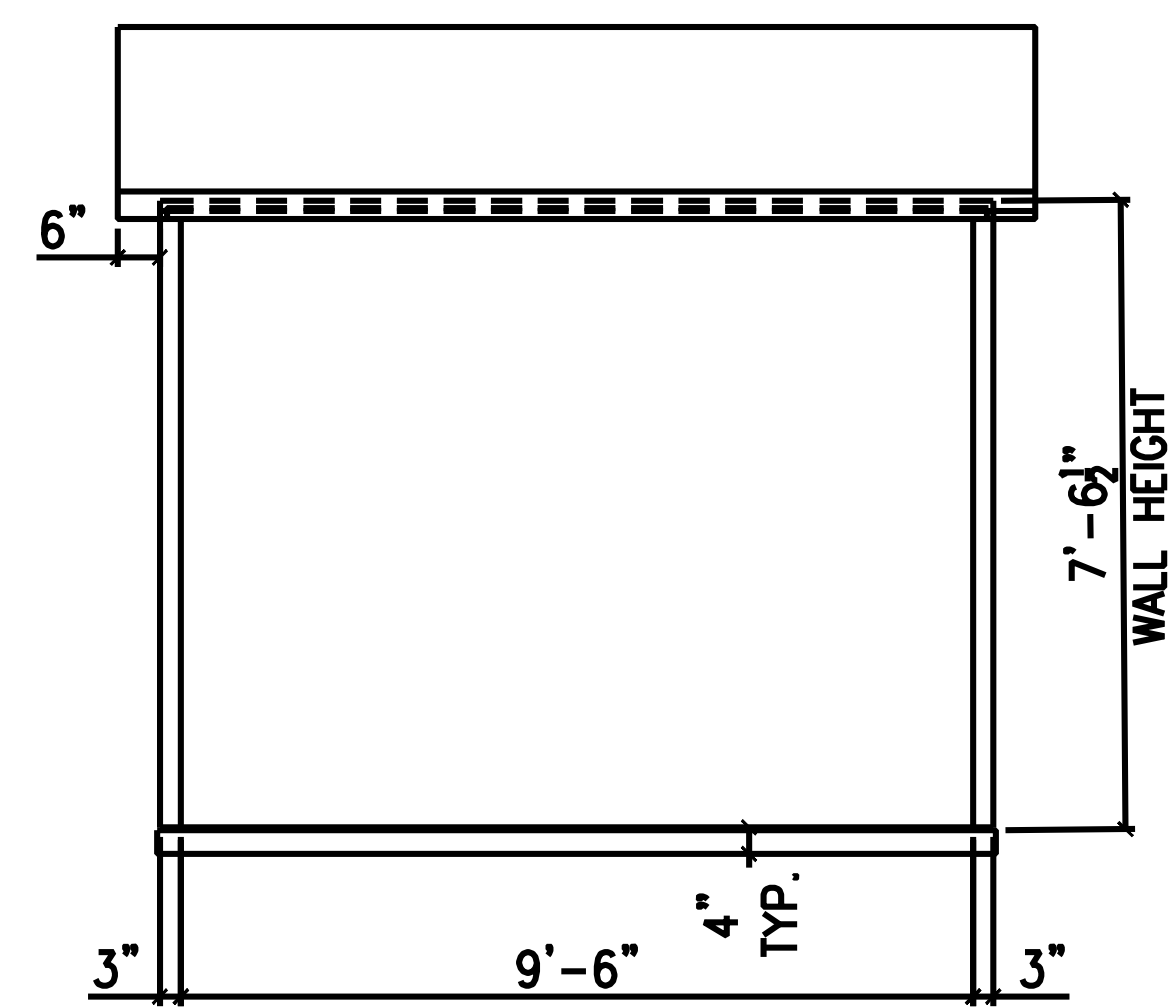
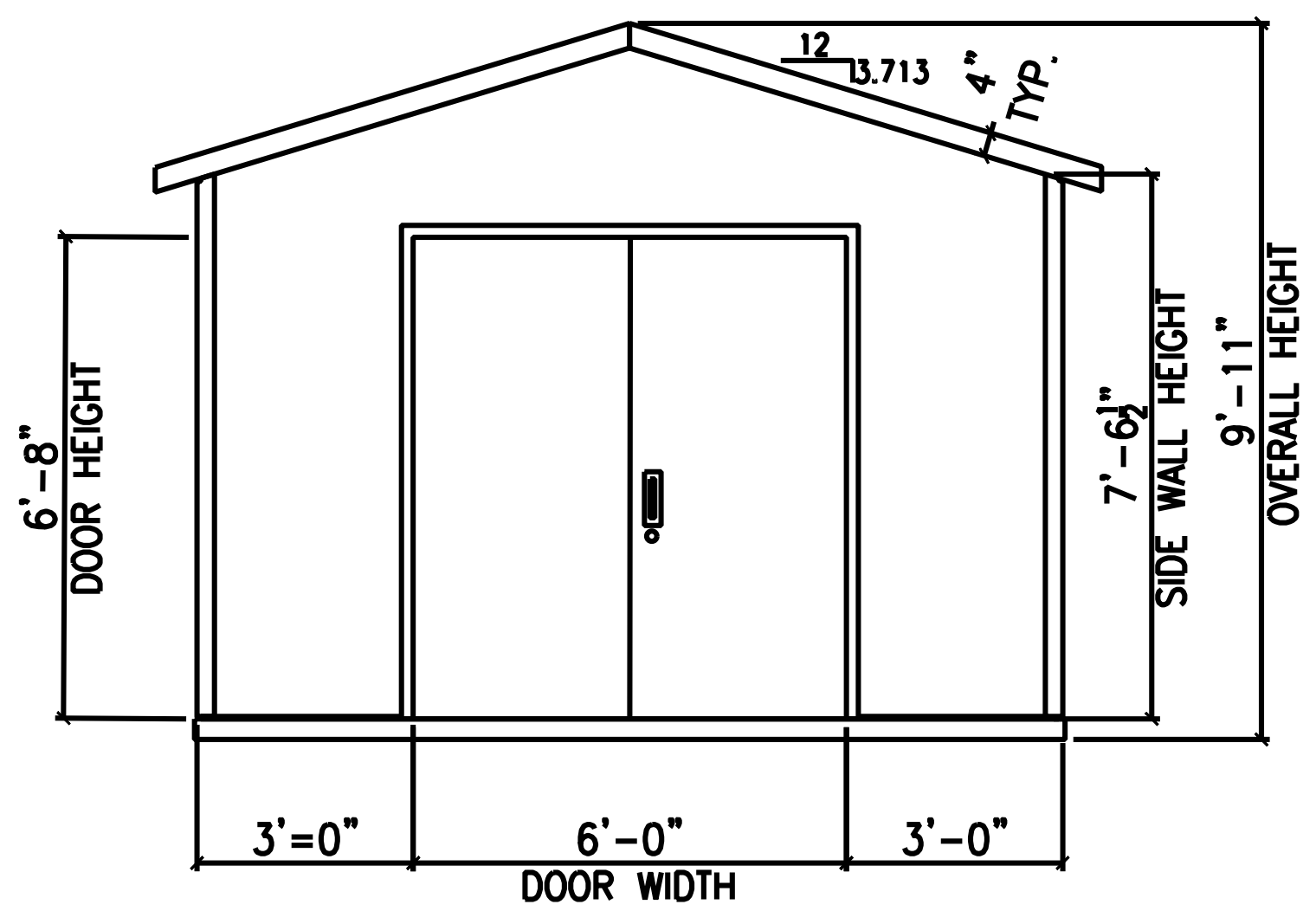
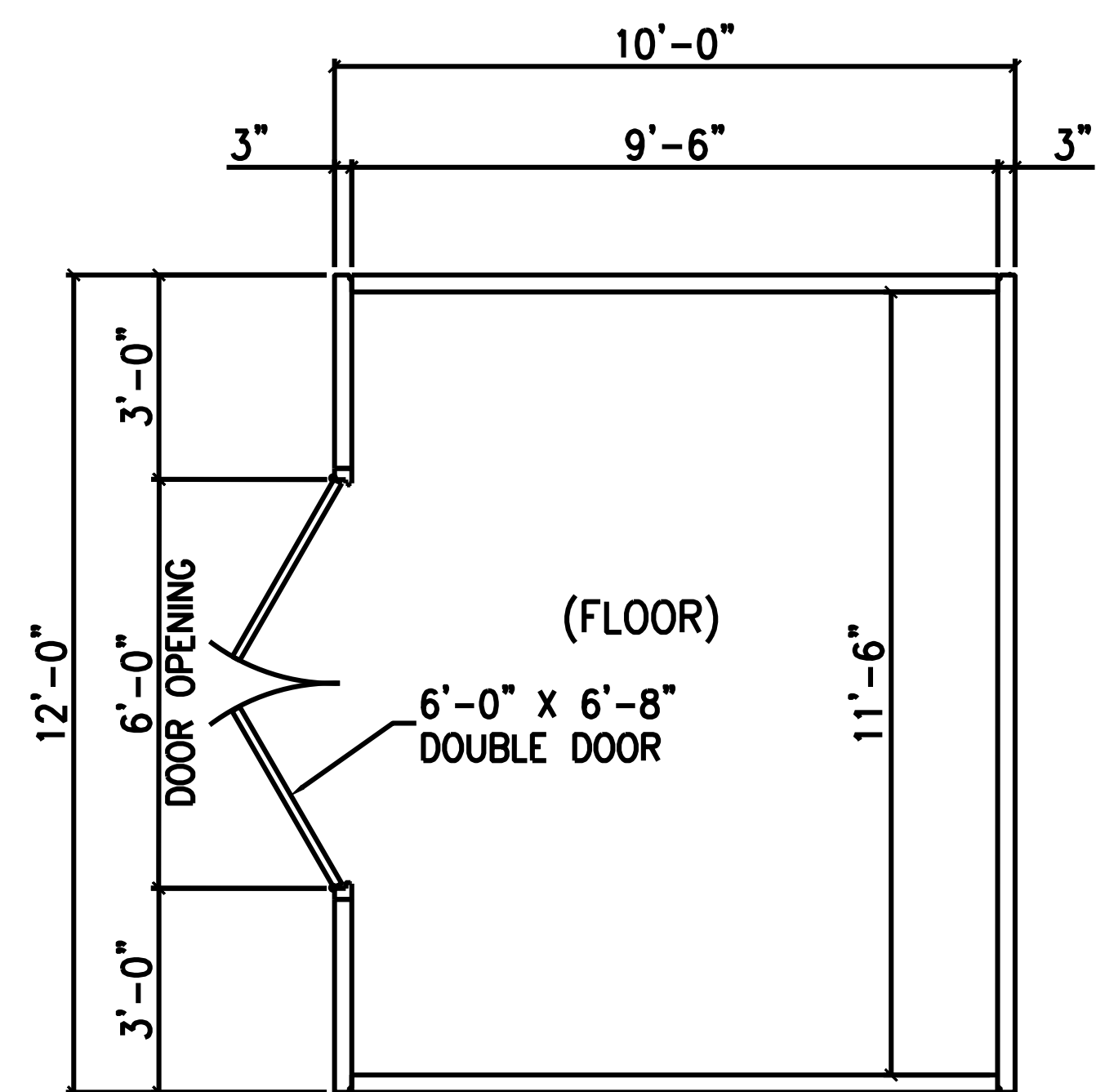
① TYPICAL CHAIN LINK FENCE DETAILS
NOT TO SCALE



② ELEVATED WATER STORAGE TANK
NOT TO SCALE

GENERAL NOTES

1. DETAIL IS FOR REFERENCE ONLY.
2. ELEVATED WATER TANK SHALL BE WELDED STEEL TANK WITH A MINIMUM CAPACITY OF 5,000 GALLONS.
3. TANK MANUFACTURER TO DESIGN STRUCTURAL FOUNDATION AND TANK SUPPORTS IN ACCORDANCE WITH SITE SPECIFIC GEOTECHNICAL REPORT.
4. TANK MANUFACTURER SHALL PROVIDE SHOP DRAWINGS AND STRUCTURAL CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MISSOURI.
5. TANK MANUFACTURER TO PROVIDE FLOAT SWITCHES AND PUMP CONTROL PANEL. CONTROL PANEL SHALL CONTAIN MANUAL ON/OFF SWITCH TO ALLOW FOR BYPASS OPERATION DURING TANK SHUTDOWNS AND MAINTENANCE.
6. TANK MANUFACTURER TO DESIGN ACCESS LADDER AND ELEVATED PLATFORM.
7. TANK MANUFACTURER TO DESIGN RISE AND OUTLET PIPES.
8. WATER TANK OUTLET PIPE SHALL BE FITTED WITH 2.5-INCH DIAMETER FIRE DEPARTMENT CONNECTION AND SHUT-OFF VALVE AS SHOWN.
10. COORDINATE WITH FIRE DEPARTMENT ON FIRE DEPARTMENT CONNECTION.
11. ELEVATED WATER TANK SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.



A PRECAST PUMPHOUSE BUILDING LAYOUT
NOT TO SCALE

- GENERAL NOTES:**
1. DETAIL IS FOR REFERENCE ONLY. UTILIZE BUILDING LAYOUT AND DIMENSIONS FROM SELECTED MANUFACTURER. MINIMUM BUILDING DIMENSIONS SHALL BE 10-FT BY 12-FT. INSTALL PER MANUFACTURER RECOMMENDATIONS.
 2. ALL VIEWS ARE FROM EXTERIOR.
 3. PRECAST BUILDING SHALL BE PROVIDED WITH PRECAST CONCRETE FLOOR. FLOOR SHALL CONTAIN A 3-FT BY 3-FT ACCESS HOLE TO ALLOW FOR THE INSTALLATION TO OCCUR OVER THE EXISTING WELL PUMP.
 4. PRECAST BUILDING SHALL HAVE AN ELECTRICAL PACKAGE (BREAKER BOX, PRE-WIRED OUTLETS, PRE-WIRED LIGHTS, PRE-WIRED SWITCHES, ETC). COORDINATE WITH OWNER'S REPRESENTATIVE FOR INTERIOR FINISHES.
 5. ROOF MAY BE GABLED OR TAPERED AND SHALL CONTAIN A MINIMUM 3-FT BY 3-FT ACCESS HATCH FOR WELL PUMP ACCESS AND MAINTENANCE.
 6. ROOF MATERIAL SHALL BE PRECAST CONCRETE.
 7. ALL REQUIRED OPENINGS FOR ELECTRIC, MECHANICAL, LOUVERS, ETC. MUST BE SIZED AND LOCATED BY BUYER ON THIS DRAWING (OPENING SIZES AND LOCATIONS MAY HAVE TO BE ALTERED IF THEY INTERFERE WITH CONNECTIONS OR REINFORCING).
 8. COORDINATE WITH OWNER'S REPRESENTATIVE ON BUILDING FINISHES.



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CAD DWG FILE: XXX
DRAWN BY: MA
CHECKED BY: WK
DESIGNED BY: MW

SHEET TITLE:
**PRECAST CONCRETE
UTILITY BUILDING
DETAIL**

SHEET NUMBER:

C-503