

AGENCY & UTILITY
CONTACT INFORMATION

TENNESSEE VALLEY
WASTEWATER SOLUTIONS

UNIVERSITY OF TENNESSEE
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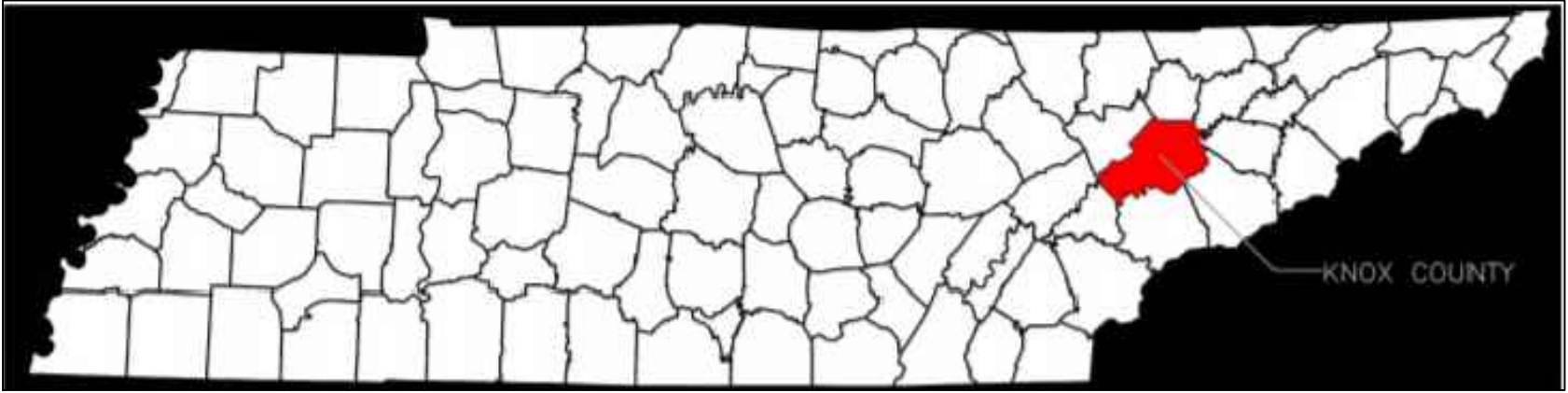
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BEFORE YOU DIG

THE CONTRACTOR IS INSTRUCTED TO CALL 811, THE ONE-CALL SYSTEM FOR INFORMATION ON THE LOCATION OF EXISTING UNDERGROUND UTILITIES. THE CALL IS TO BE PLACED A MINIMUM OF TWO (2) AND NO MORE THAN TEN (10) BUSINESS DAYS PRIOR TO EXCAVATION. THE CONTRACTOR SHOULD BE AWARE THAT OWNERS OF UNDERGROUND FACILITIES ARE NOT REQUIRED TO BE MEMBERS OF THE 811 ONE-CALL BEFORE-TO-DIG (BUD) SERVICE. THE CONTRACTOR MUST COORDINATE EXCAVATION WITH THE UTILITY OWNERS, INCLUDING THOSE WHOM DO NOT SUBSCRIBE TO 811. IT MAY BE NECESSARY FOR THE CONTRACTOR TO CONTACT THE COUNTY TO DETERMINE WHAT UTILITY COMPANIES HAVE FACILITIES IN THE AREA.

Choto Peninsula Low-Pressure Sewer System



TENNESSEE VALLEY WASTEWATER SOLUTIONS

DESIGN DEVELOPMENT PACKAGE

CHOTO RD. KNOXVILLE,
TENNESSEE 37922



INDEX OF SHEETS

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SD-4	PUMP STATION DETAILS

STUDENT WORK - NOT FOR CONSTRUCTION

PLANS PREPARED and SUBMITTED BY



JOE BRESSON
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SPRING 2020
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GENERAL NOTES:

1. FURNISH AND INSTALL ALL SEWER MAINS, SERVICES, VALVES, BLOW OFF ASSEMBLIES AND FITTINGS IN ACCORDANCE WITH OWNER'S STANDARD SPECIFICATIONS AND STANDARD DRAWINGS.
2. SHEETS FOR EXISTING PUMP STATION PROVIDED BY FIRST UTILITY DISTRICT OCTOBER 14TH, 2019
3. SHEETS FOR EXISTING PUMP STATION DRAWN BY JORDAN JONES & GOULDING MAY, 1998.
4. FORCE MAIN PIPING MATERIAL SHALL BE CAST IRON OR CONCRETE MASONRY PIPE.
5. ALL NEW LOW PRESSURE PIPING SHALL BE HDPE
6. ALL PAVEMENT CONCRETE SHALL BE DESIGNED TO A STRENGTH OF 4000 PSI.
7. TOPOGRAPHY FOR CHOTO PUMP STATION SITE PLANS ARE BASED ON AS BUILT DRAWING AND KNOXVILLE GEOGRAPHIC INFORMATION SYSTEM DATA. FULL SURVEY OF SITE REQUIRED PRIOR TO CONSTRUCTION.
8. TOPOGRAPHY FOR CHANNEL POINT STATION SITE PLANS ARE BASED ON KNOXVILLE GEOGRAPHIC INFORMATION SYSTEM DATA. FULL SURVEY OF SITE REQUIRED PRIOR TO CONSTRUCTION.
9. SLAB DESIGN FOR CHANNEL POINT PUMP STATION BASED ON UNITED STATES GEOLOGICAL SURVEY MAPS. FULL GEOTECHNICAL STUDY OF SITE REQUIRED BEFORE CONSTRUCTION.

SOLDIER PILE SHORING NOTES:

1.0 DESIGN CRITERIA:

- a. THE DESIGN REFLECTED ON THESE DRAWINGS IS INTENDED FOR THE CONSTRUCTION OF A TEMPORARY SOLDIER PILE RETAINING WALL. SOME LIMITED LATERAL AND VERTICAL MOVEMENT MAY OCCUR ABOVE AND BEHIND THE WALL.
- b. GROUNDWATER IS NOT EXPECTED WITHIN THE CONSTRUCTION LIMITS OF THE RETAINING WALL. HYDROSTATIC PRESSURE IS NOT CONSIDERED IN THE DESIGN. IF GROUNDWATER IS ENCOUNTERED, THE ENGINEER MUST BE NOTIFIED IMMEDIATELY TO DETERMINE IF DESIGN MODIFICATIONS ARE REQUIRED.
- c. SURCHARGE LOAD: 250 PSF HEAVY TRAFFIC SURCHARGE
- d. SLOPES: NO SLOPES ABOVE OR BELOW THE WALL HAVE BEEN CONSIDERED IN THE DESIGN.

2.0 GEOTECHNICAL DATA

- a. THE SOIL PARAMETERS UTILIZED IN THIS DESIGN WERE WERE SELECTED BASED ON CONSERVATIVE PARAMETERS SIMILAR TO THOSE FOUND IN THE AREA.
- b. IF THE MATERIALS VARY FROM THE PARAMETERS LISTED ABOVE, THE ENGINEER SHALL BE RETAINED TO DETERMINE IF ADJUSTMENTS TO THE DESIGN ARE REQUIRED.

3.0 MATERIALS:

- a. VERTICAL H-PILES: HP 16X141 ASTM A572 OR ASTM A992 GRADE 50 STRUCTURAL STEEL.
- b. GRANULAR BACKFILL: GRANULAR BACKFILL SHALL BE #2 OR #57 SIZE CRUSHED LIMESTONE AGGREGATE (OR APPROVED EQUAL).
- c. TEMPORARY TIMBER LAGGING: 4"x8" SOUTHER PINE TIMBER LAGGING
- d. PLATES: GRADE 50 MIN.
- e. WALERS: HP 16X141 ASTM A572 OR ASTM A992 GRADE 50 STRUCTURAL STEEL
- f. WEDGE ANCHORS: HILTI KWIK BOLT 1/2" X 5" MIN. OR APPROVED EQUAL

4.0 CONSTRUCTION

- a. VERTICAL PILE INSTALLATION: VERTICAL PILES SHALL BE INSTALLED WITHIN 2 INCHES OF THE LOCATIONS SHOWN ON THE DRAWINGS. THE PILES SHALL BE PLUMB WITHIN 2 PERCENT OF THE TOTAL-LENGTH ALIGNMENT. THE TOP ELEVATION OF THE PILES SHALL BE PLUS/MINUS 1 INCH FROM THE TOP OF WALL ELEVATIONS SHOWN ON THE DRAWINGS.
- b. DRILLING FOR VERTICAL PILES: DRILLING EQUIPMENT AND METHODS SHALL BE SUITABLE FOR DRILLING THROUGH THE CONDITIONS TO BE ENCOUNTERED, WITHOUT CAUSING DAMAGE TO ANY OVERLYING OR ADJACENT STRUCTURES OR SERVICES. FILL, RESIDUAL SOILS, AND WEATHERED / UNWEATHERED ROCK WILL BE ENCOUNTERED AT THE PILE LOCATIONS. THE DRILL HOLE MUST BE OPEN ALONG ITS FULL LENGTH TO AT LEAST THE MINIMUM DRILL HOLE DIAMETER AS SHOWN IN THE SCHEDULES PRIOR TO PLACING THE SOLDIER PILE AND GROUT. THE DEPTH OF THE HOLE SHALL BE EXTENDED TO THE MINIMUM DEPTH IN BEDROCK AS SHOWN ON THE PLANS. ONLY HORIZONTALLY CONTINUOUS BEDROCK LAYERS 18 INCHES IN THICKNESS OR GREATER SHALL BE UTILIZED AS CONTRIBUTING TO THE REQUIRED ROCK SOCKET LENGTH. IF APPLICABLE, TEMPORARY CASING OR OTHER APPROVED METHOD OF PILE DRILLHOLE SUPPORT WILL BE REQUIRED IN CAVING OR UNSTABLE GROUND TO PERMIT THE PILE TO BE FORMED TO THE MINIMUM DESIGN DRILL HOLE DIAMETER.
- c. GROUND HEAVE OR SUBSIDENCE: DURING CONSTRUCTION, THE CONTRACTOR SHALL OBSERVE THE CONDITIONS IN THE VICINITY OF THE WALL CONSTRUCTION ON A DAILY BASIS FOR SIGNS OF GROUND HEAVE OR SUBSIDENCE. IMMEDIATELY NOTIFY THE ENGINEER IF SIGNS OF MOVEMENTS ARE OBSERVED. THE CONTRACTOR SHALL IMMEDIATELY SUSPEND OR MODIFY DRILLING OR GROUTING OPERATIONS IF GROUND HEAVE OR SUBSIDENCE IS OBSERVED, IF THE WALL IS ADVERSELY AFFECTED, OR IF ADJACENT STRUCTURES ARE DAMAGED FROM THE DRILLING OR GROUTING.
- d. IF THE ENGINEER DETERMINES THAT THE MOVEMENTS REQUIRE CORRECTIVE ACTION, THE CONTRACTOR SHALL TAKE THE CORRECTIVE ACTIONS NECESSARY TO STOP THE MOVEMENT AND/OR PERFORM REPAIRS. WHEN DUE TO THE CONTRACTOR'S METHODS, OPERATIONS, OR FAILURE TO FOLLOW THE APPROVED CONSTRUCTION SEQUENCE, AS DETERMINED BY THE ENGINEER, THE COSTS OF PROVIDING CORRECTIVE ACTIONS SHALL BE BORNE BY THE CONTRACTOR.
- e. VERTICAL PILE PLACEMENT: ALL LOCATIONS WHERE PILES ARE TO BE PLACED SHALL BE DRILLED, PILE PLACED, AND GROUTED IN AN EXPEDITIOUS MANNER SO AS TO MINIMIZE EXPOSURE TO WEATHER AND COLLECTION OF WATER IN THE HOLES. IF GROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO CONTINUING WALL CONSTRUCTION. THE ENGINEER WILL DETERMINE IF CORRECTIVE MEASURES ARE WARRANTED OR IF THE DESIGN REQUIRES MODIFICATION.
- f. VERTICAL PILE GROUTING – PILE EMBEDMENT DEPTH: THE CONTRACTOR SHALL USE A STABLE NEAT CEMENT GROUT OR SAND CEMENT GROUT WITHOUT LUMPS AND UNDISPERSED CEMENT FOR THE ENTIRE EMBEDMENT DEPTH OF EACH PILE. THE CONTRACTOR SHALL HAVE THE MEANS AND METHODS OF MEASURING THE GROUT QUANTITY AND PUMPING PRESSURE DURING THE GROUTING PROCESS. GROUT SHALL BE PLACED WITHIN ONE HOUR OF MIXING. THE GROUT SHALL BE KEPT IN AGITATION PRIOR TO PLACEMENT. THE GROUT SHALL BE PLACED IN SUCH A MANNER AS TO COMPLETELY FILL ALL VOID SPACE AROUND THE PILE UP TO THE BOTTOM OF THE FACING. THE GROUT SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 4,000PSI.
- g. LAGGING PLACEMENT: LAGGING SHALL BE PLACED TO RETAIN THE BACKFILL MATERIAL BETWEEN PILE LOCATIONS AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL LIFT AND PLACE ALL LAGGING IN A MANNER THAT DOES NOT DAMAGE ANY PARTS OF THE LAGGING AND SO THAT THE LAGGING FITS SECURELY BETWEEN THE FLANGES OF THE DRILLED PILES. VOID SPACE BETWEEN THE LAGGING AND THE RETAINED MATERIAL SHALL BE FILLED WITH FREE DRAINING #2 SIZE OR #57 SIZE LIMESTONE AGGREGATE.
- h. WALL BACKFILL AND FILL PLACEMENT: FOLLOWING EXCAVATION AND LAGGING PLACEMENT, AREAS BEHIND THE RETAINING WALL SHALL BE BACKFILLED WITH MATERIALS DESCRIBED IN SECTION 4 TO MEET THE LINES AND GRADES FOR THE PROPOSED TOP OF WALL ELEVATIONS. ALL BACKFILL MATERIALS SHALL BE PLACED IN A MANNER THAT WILL MINIMIZE VOIDS, POCKETS, AND BRIDGING. ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE FACE OF THE WALL.
- i. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING CONSTRUCTED PORTIONS OF THE RETAINING WALL DURING FILL PLACEMENT. ANY PORTIONS OF THE RETAINING WALL DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

- (A) CONSTRUCTION SHALL CONFORM TO THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301) AND IN ADDITION SHALL COMPLY WITH ALL LOCAL LAWS AND ORDINANCES. WHERE CONFLICTING REQUIREMENTS OCCUR, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- (B) TOLERANCES FOR CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 117.
- (C) FORMWORK SHALL COMPLY TO ACI 347
- (D) HOT WEATHER CONCRETING SHALL CONFORM TO ACI 305. COLD WEATHER CONCRETING SHALL CONFORM TO ACI 306.
- (E) CONCRETE SHALL DEVELOP A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
- (F) STRENGTH TESTS SHOULD BE MOLDED IN ACCORDANCE WITH ASTM C39 1 SET OF 5 (4"x8") CYLINDERS PER 100 CUBIC YARDS OR ONCE PER DAY, WHICHEVER IS GREATER. CONDUCT SLUMP TEST IN ACCORDANCE WITH ASTM C143.
- (G) ALL CONCRETE SHALL USE TYPE I CEMENT IN ACCORDANCE WITH ASTM C150 AND AGGREGATE CONFORMING TO ASTM C33 NUMBER 57 OR 67.
- (H) CONCRETE FOR EXTERIOR APPLICATIONS SHALL HAVE AIR ENTRAINMENT OF 4 TO 8%. AIR ENTRAINED ADMIXTURES SHALL CONFORM TO ASTM C260. CONDUCT AIR CONTENT TEST IN ACCORDANCE WITH ASTM C173 OR C231.
- (I) SUBMIT ALL TEST RESULTS TO OWNER. ANY CONCRETE TEST NOT IN CONFORMANCE WITH THE REQUIREMENTS HEREIN SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.
- (J) SUBMIT CONCRETE MIX DESIGN TO ENGINEER FOR APPROVAL A MINIMUM OF SEVEN DAYS PRIOR TO PLACEMENT. MIX DESIGN SHALL INCLUDE PROPORTIONS OF ALL INGREDIENTS INCLUDING ADMIXTURES. AGGREGATE GRADATION AND TYPE, RESULTS OF STRENGTH TESTING, SLUMP, AND AIR CONTENT TESTS. CERTIFICATES OF COMPLIANCE WITH ASTM STANDARDS FOR ADMIXTURES, WATER CEMENT RATIO, AND UNIT WEIGHT OF CONCRETE. PROPORTION CONCRETE BY LABORATORY TRIAL BATCHES IN ACCORDANCE WITH ACI 318. FLY ASH CONTENT SHALL NOT REPOLACE MORE THAN 20% OF TOTAL WEIGHT OF CEMENT PLUS FLY ASH. MIXES CONTAINING FLY ASH MUST BE VERIFIED WITH A SUCCESSFUL TEST PLACEMENT ONSITE DEMONSTRATING PROPER WORKABILITY, FINISHABILITY, AND SETTING TIME.

ABBREVIATIONS

AC	ASBESTOS CEMENT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
CI	CAST IRON
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
CFS	CUBIC FEET PER SECOND
DIP	DUCTILE IRON PIPE
FM	FORCE MAIN
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
ROW	RIGHT OF WAY
S/L	SERVICE LINE
TYP	TYPICAL
W	WATERLINE

SITE PIPING LEGEND

FORCE MAIN (PROP.)	FM
CONTOUR (PROP.)	815
DRAIN LINE: SCH 40 PVC @ 0.60%	DL
8" VENT PIPE: SCH 80 PVC(ABOVE GROUND)	
FITTINGS AS NECESSARY	
CHEMICAL FEED LINE(BIOXIDE)	CFL
3" SCH 80 PVC	
MANHOLE	
CHEMICAL TANK FOR SCRUBBER UNITS	
PROPERTY LINE (CHANNEL POINT)	
PROPERTY LINE (CHOTO)	
YARD HYDRANT	
2-INCH PVC WATER MAIN	2" PVC
SANITARY SEWER	
CONCRETE PAD	
GAS SERVICE LINE	G
BENCH MARK	
CENTERLINE ROAD	
CHAIN LINK FENCE	X
WATER METER	WM

5.0 CONCRETE CONTINUED

(k) PROPORTION CONCRETE MIX FOR A MAXIMUM WATER/CEMENTITIOUS MATERIALS RATIO FOR EXTERIOR APPLICATIONS OF 0.45. PROVIDE A MINIMUM CEMENTITIOUS MATERIAL CONTENT OF 470 POUNDS PER CUBIC YARD. PROPORTION CONCRETE SO SLUMP WITHOUT ADDING MID-RANGE OR HIGH-RANGE WATER REDUCING ADMIXTURE WOULD BE 4 INCHES (+1/2",-1"). MID-RANGE OR HIGH-RANGE WATER REDUCING AGENT SHALL BE ADDED. IF HIGH-RANGE IS USED, THE MAXIMUM SLUMP AFTER ADDING THE ADMIXTURE SHALL BE 8 INCHES.

(l) CONCRETE FINISHES SHALL CONFORM TO ACI 301.

(m) CURE CONCRETE A MINIMUM OF SEVEN DAYS IN ACCORDANCE WITH ONE OF THE METHODS LISTED IN ACI 301.

(n) CLEAR CONCRETE COVER AT REINFORCING SHALL BE AS FOLLOWS:

CAST AGAINST EARTH	3"
EXPOSED TO EARTH OR WEATHER	2"

(o) REINFORCING STEEL SHALL BE GRADE 60, DEFORMED BARS, CONFORMING TO ASTM A615 IN ACCORDANCE WITH THE TDOT STANDARD DRAWINGS.

(p) SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL SHOWING ALL DETAILS OF REINFORCEMENT PRIOR TO FABRICATION.

(q) BAR SPLICES SHALL BE CLASS "B" TENSION LAP SPLICES IN ACCORDANCE WITH ACI 318 AND AASHTO STANDARDS.

(r) REINFORCING BAR HOOKS SHALL BE ACI STANDARD 90 DEGREE HOOKS IN ACCORDANCE WITH ACI 318.

GRAVITY SEWER NOTES:

1.0 DESIGN CRITERIA:

- a. BEDDING BACKFILL SHALL BE CRUSHED STONE FOR PVC PIPES AND DIP PIPES.
- b. WHERE CRUSHED STONE BACKFILL IS REQUIRED THE CRUSHED STONE SHALL BE NO. 57 SIZE AS DESIGNATED BY TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT) STANDARDS AND SHALL MEET ALL REQUIREMENTS OF THE TDOT STANDARDS FOR CRUSHED STONE USED IN ROAD SURFACING.
- c. BACKFILL TO A DEPTH OF 12" ABOVE THE TOP OF PIPE (PIPE ZONE) SHALL BE CRUSHED STONE, PLACED BY HAND TO AVOID DAMAGE OR MISALIGNMENT OF THE PIPE.



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

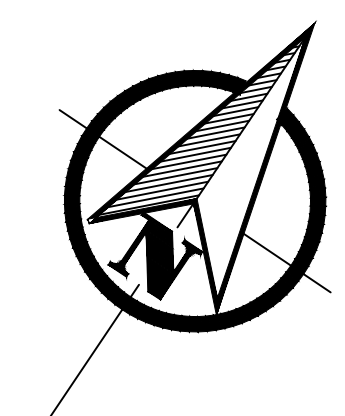
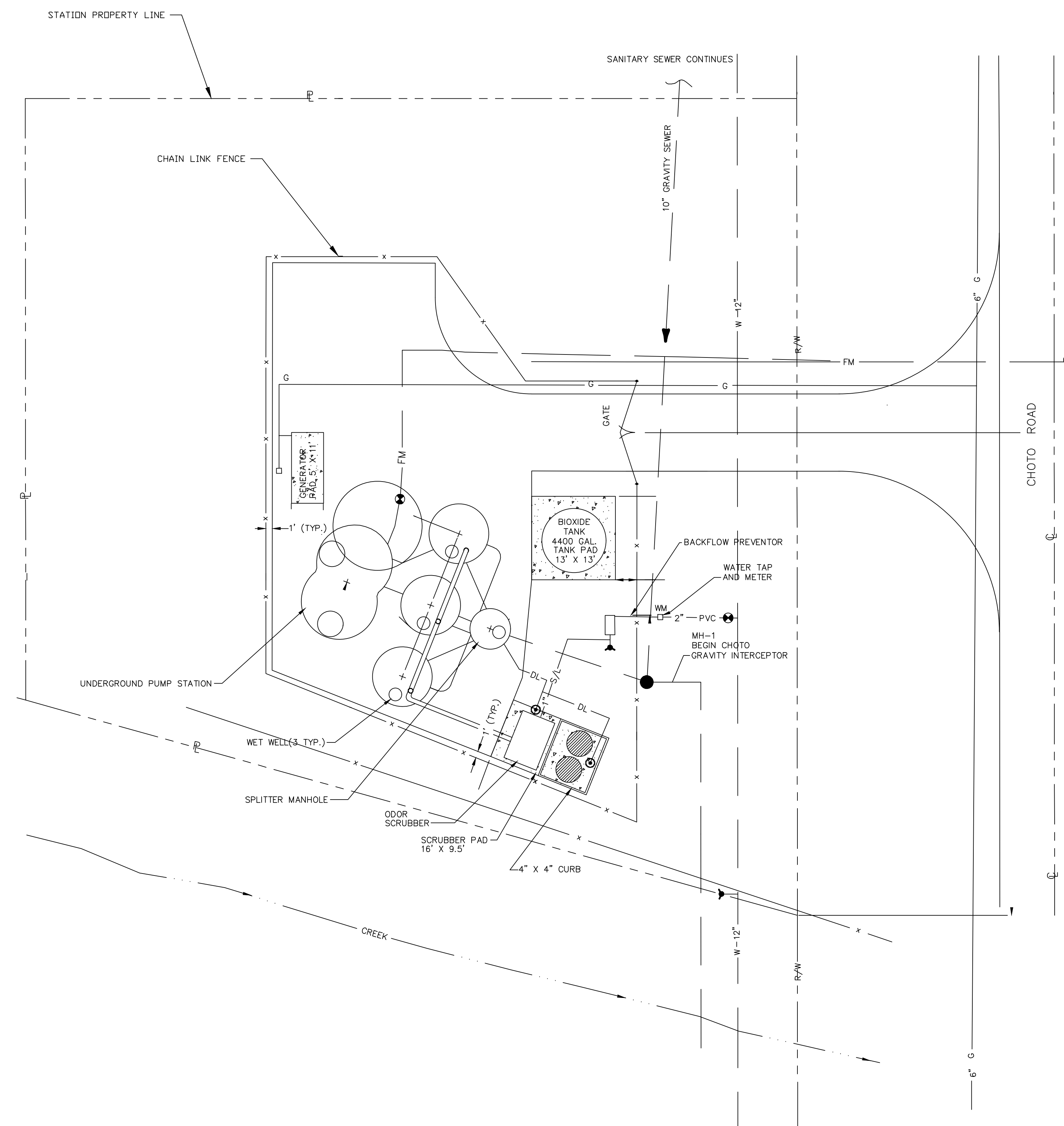
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KNOXVILLE, TENNESSEE 37996

Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

GENERAL
NOTES AND
ABBREVIATIONS

Project CHOTO PENINSULA	Sheet
Date 04/21/2020	CO.1
Scale N/A	



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

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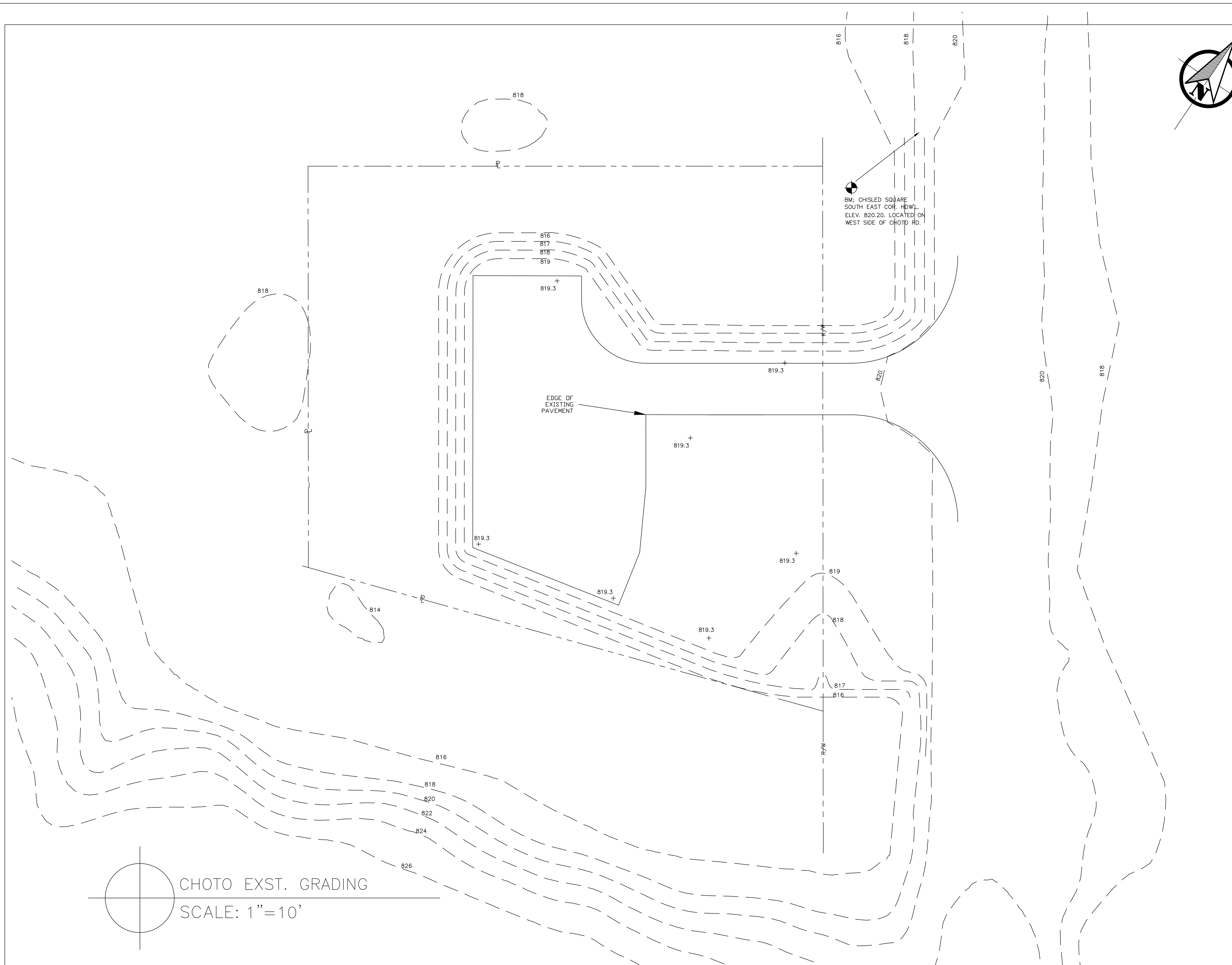
Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

EXISTING
CHOTO PUMP
STATION SITE
PLAN

Project CHOTO PENINSULA	Sheet C1.0
Date 04/21/2020	
Scale As Noted	

CHOTO ROAD PUMP STATION SITE LAYOUT PLAN
SCALE: 1"=10'





TENNESSEE VALLEY WASTEWATER SOLUTIONS

General Notes

VICINITY MAP

TENNESSEE VALLEY
WASTEWATER SOLUTIONS

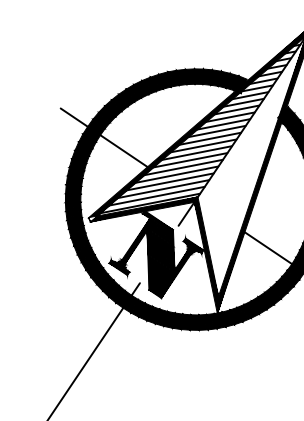
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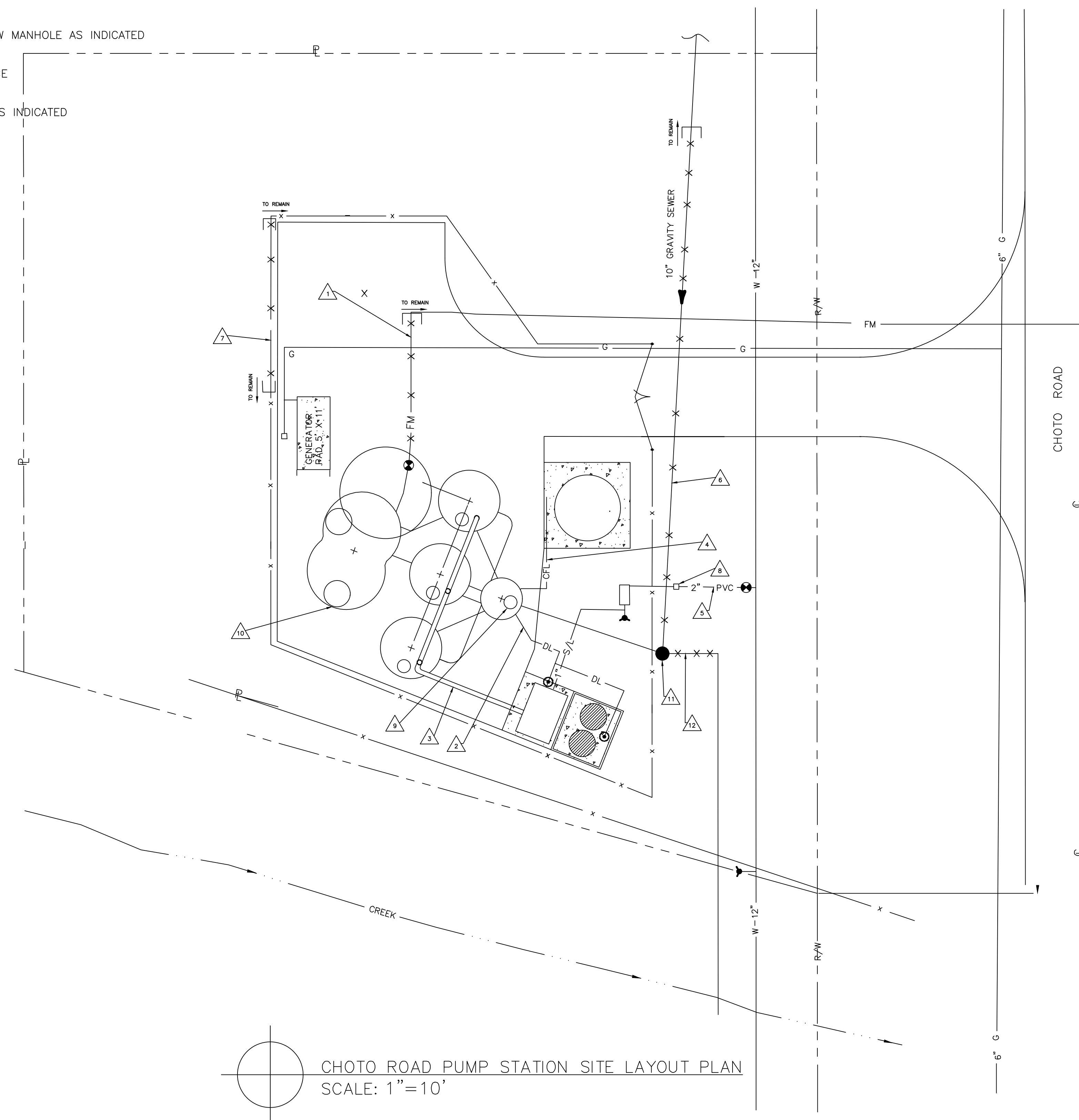
EXISTING PUMP
STATION
GRADING

Project	CHOTO PENINSULA	Sheet	C1.1
Date	04/21/2020		
Scale	As Noted		



CODED NOTES:

1. FORCE MAIN TO BE ABANDONED IN PLACE UP TO BEND AS INDICATED
2. DRAIN LINE TO BE ABANDONED IN PLACE
3. VENT PIPE BE ABANDONED IN PLACE
4. CHEMICAL FEED LINE TO BE ABANDONED IN PLACE
5. WATER MAIN TO BE ABANDONED IN PLACE
6. SANITARY SEWER TO BE ABANDONED IN PLACE UP TO NEW MANHOLE AS INDICATED
7. CHAIN LINK FENCE TO BE REMOVED AS INDICATED
8. WATER METER TO BE ABANDONED IN PLACE
9. UNDERGROUND PUMP STATION TO BE ABANDONED IN PLACE
10. WET WELL TO BE ABANDONED IN PLACE
11. MANHOLE TO BE ABANDONED IN PLACE
12. FORCE MAIN TO BE ABANDONED IN PLACE UP TO BEND AS INDICATED



CHOTO ROAD PUMP STATION SITE LAYOUT PLAN
SCALE: 1"=10'

General Notes

1. EXISTING WET WELL, PUMP, SEWER LINE, AND ALL ASSOCIATED EQUIPMENT TO BE ABANDONED IN PLACE MUST REMAIN IN OPERATION UNTIL CONSTRUCTION OF PROPOSED WET WELL, PUMPS, AND CONNECTION PIPEWORK IS COMPLETE.
2. PROPER OPERATION OF PROPOSED WET WELL, PUMP, AND ASSOCIATED EQUIPMENT MUST BE VERIFIED BEFORE CONNECTIONS TO ABANDONED IN PLACE EQUIPMENT ARE PERMANENTLY REMOVED.

VICINITY MAP



**TENNESSEE VALLEY
WASTEWATER SOLUTIONS**

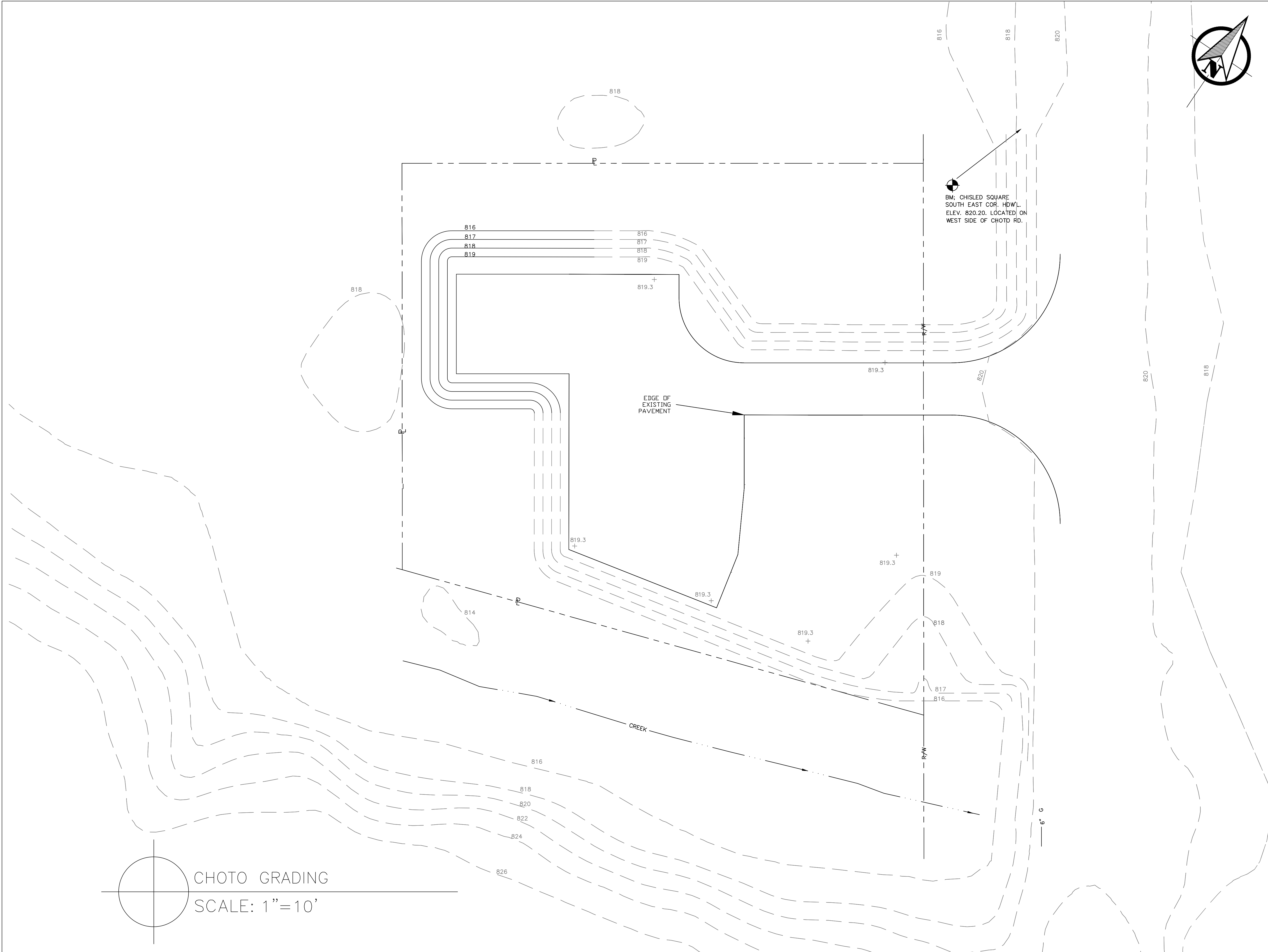
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Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

**EXISTING
PUMP
DEMOLITION
PLAN**

Project CHOTO PENINSULA	Sheet C1.2
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Scale As Noted	



- General Notes
1. EXISTING PIPE INVERTS ELEVATIONS RETRIEVED FROM AS-BUILT DRAWINGS. VERIFY ELEVATIONS IN THE FIELD.



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

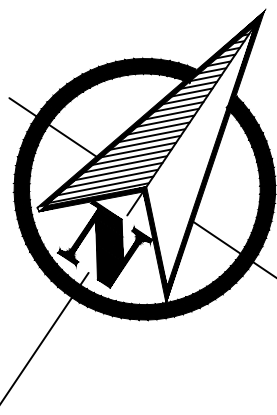
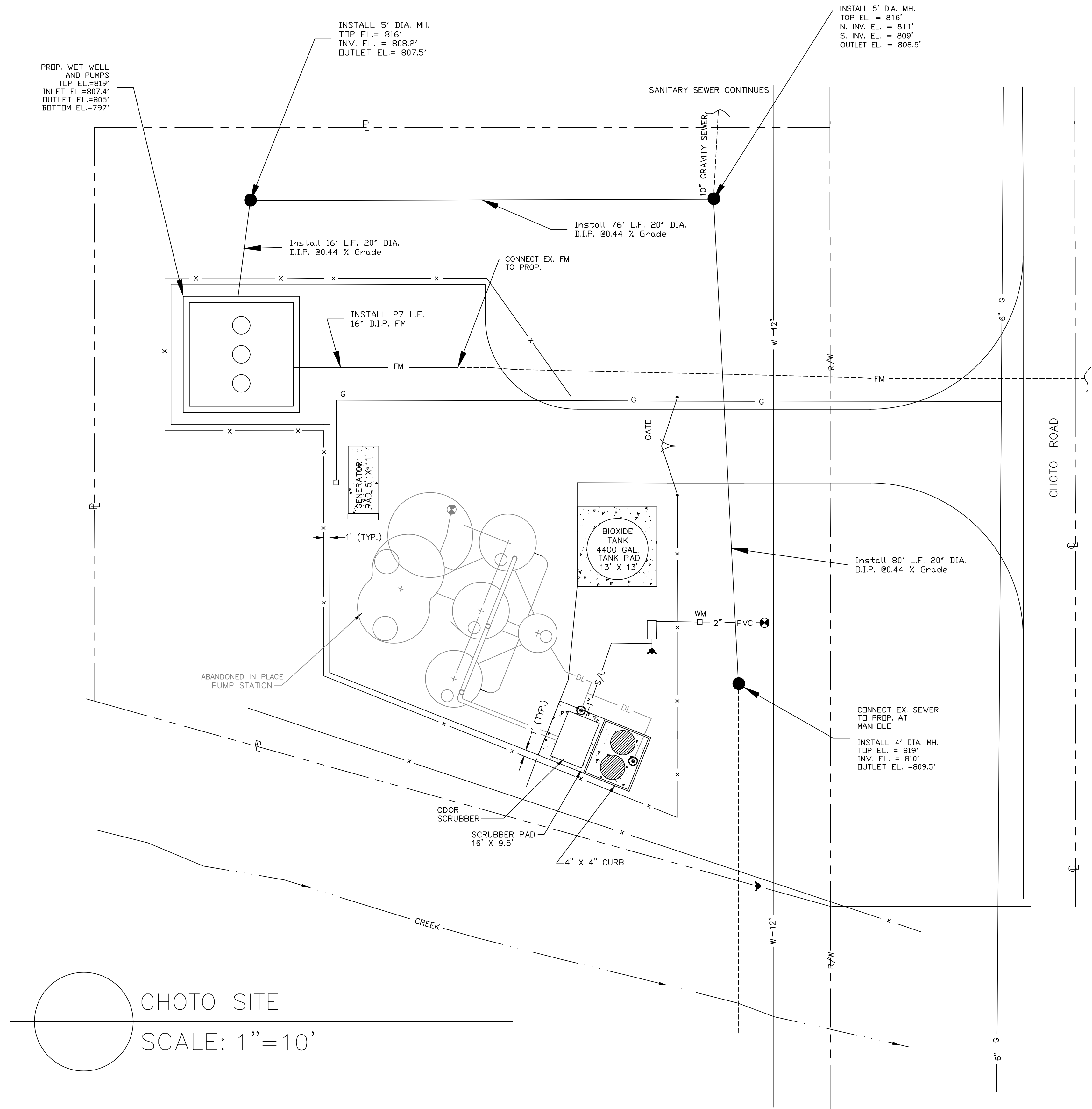
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Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHOTO PUMP STATION GRADING PLAN

Project CHOTO PENINSULA	Sheet C2.0
Date 04/21/2020	
Scale As Noted	



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

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Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHOTO PUMP
STATION SITE
PLAN

Project
CHOTO PENINSULA
Date
04/21/2020
Scale
As Noted

Sheet

C2.1



General Notes

- 1. FOR CONSTRUCTION MATERIAS AND PROCEDURES SEE NOTES 4.0 AND 5.0 UNDER SOLDIER PILE NOTES ON THE GENERAL NOTES PAGE

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

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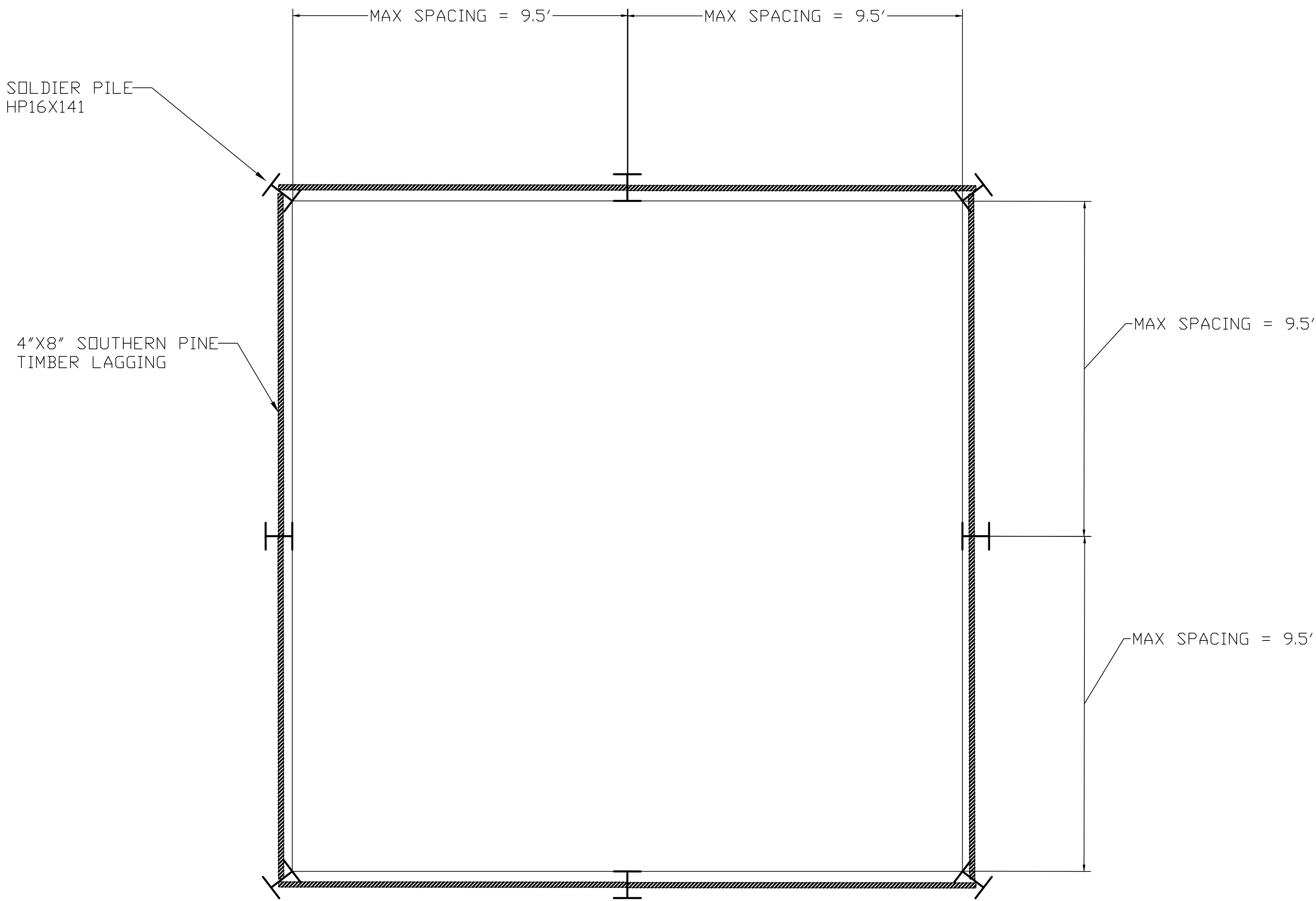
Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHOTO
SHORING PLAN

Project
CHOTO PENINSULA
Date
04/21/2020
Scale
As Noted

Sheet
C2.2



CHOTO SHORING PLAN
SCALE: 1"=2'



General Notes

1. FOR CONSTRUCTION MATERIAS AND PROCEDURES SEE NOTES ON THE GENERAL NOTES PAGE

VICINITY MAP



TENNESSEE VALLEY
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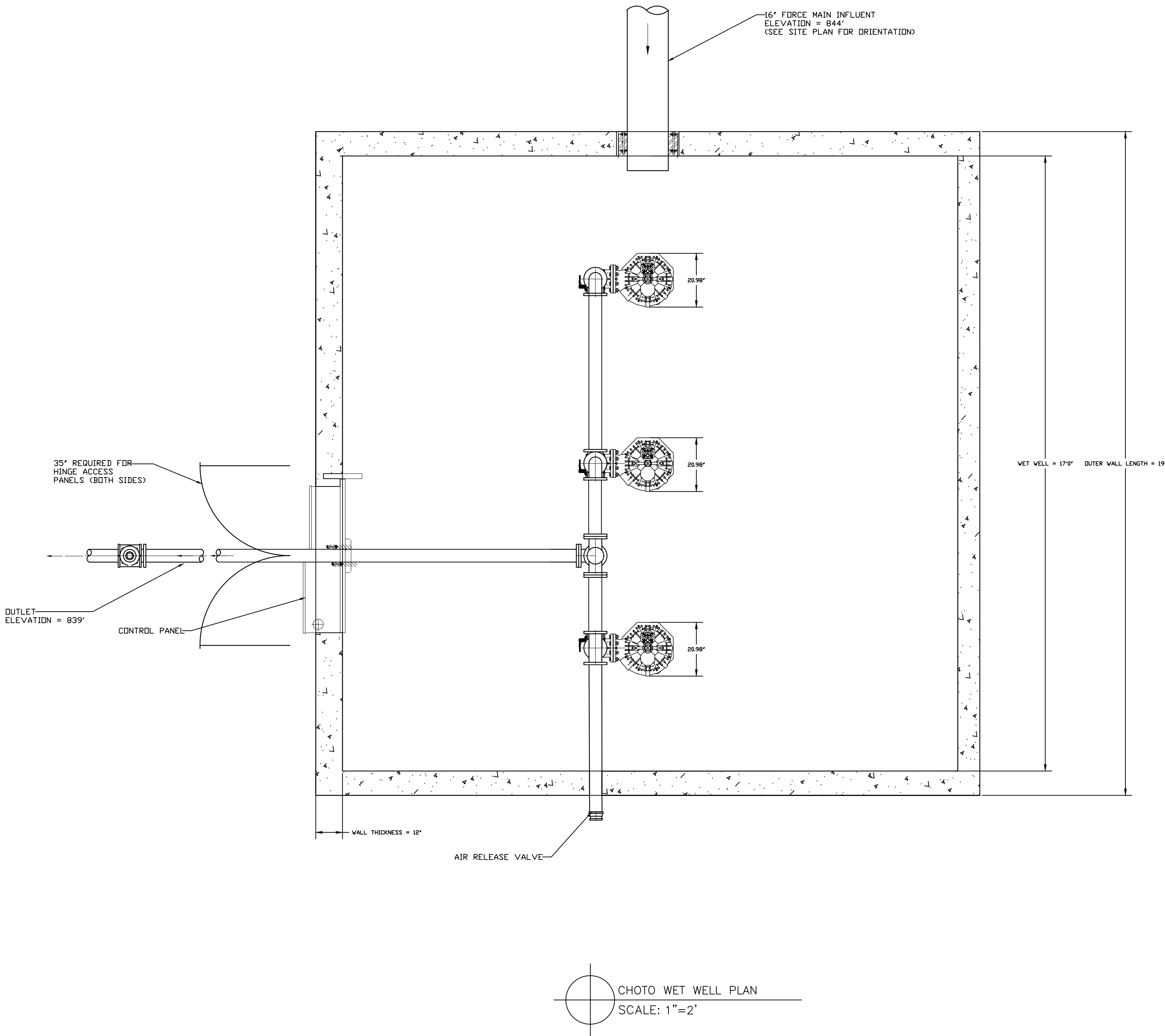
Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHOTO PUMP
SATION PLAN
VIEW

Project
CHOTO PENINSULA
Date
04/21/2020
Scale
NOT TO SCALE

Sheet
C2.3



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

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KNOXVILLE, TENNESSEE 37996

Project Name and Address

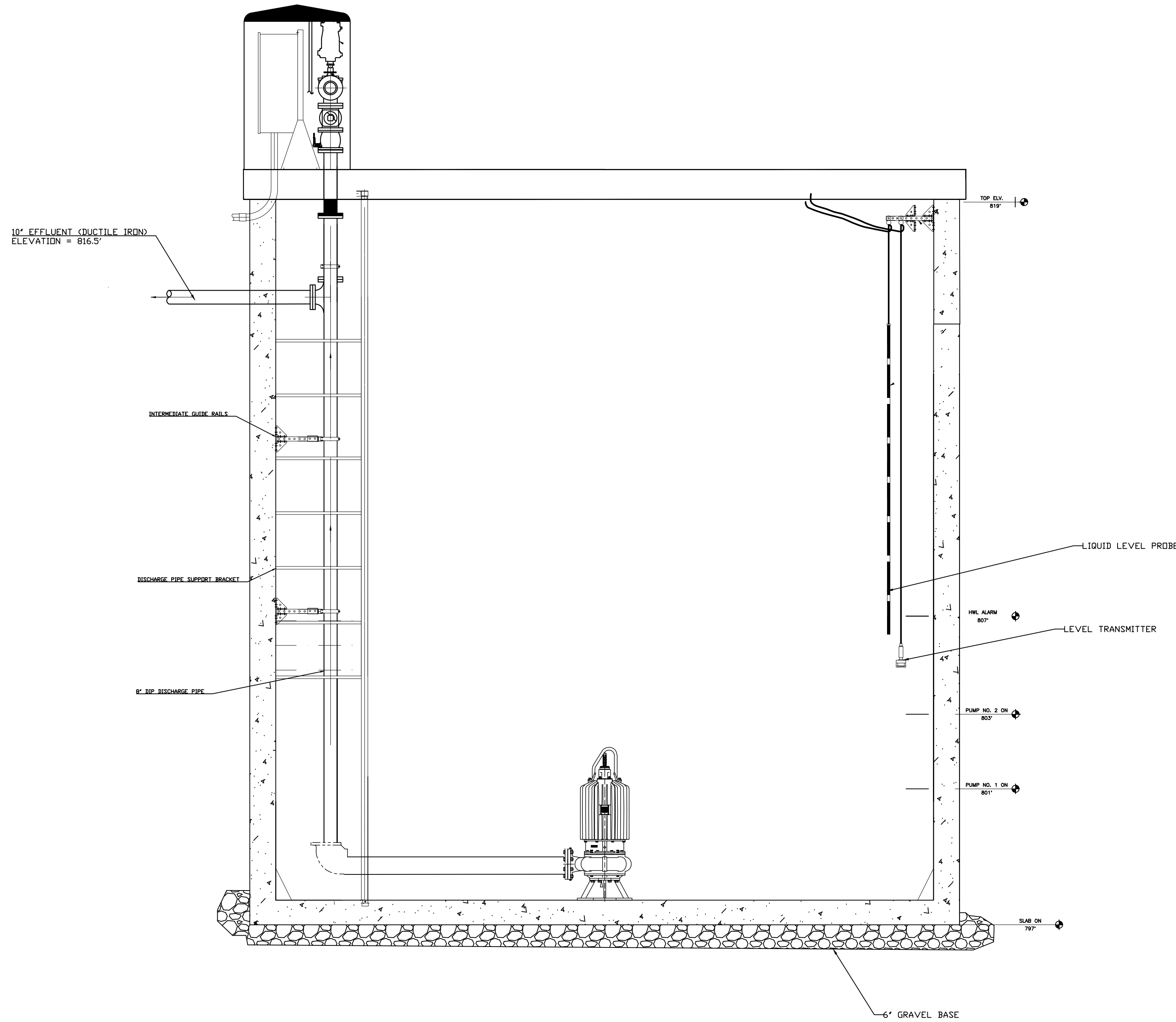
CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHOTO PUMP
STATION FRONT
VIEW

Project
CHOTO PENINSULA
Date
04/21/2020
Scale
NOT TO SCALE

Sheet

C2.4



CHOTO WET WELL FRONT VIEW
SCALE: 1"=2'



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

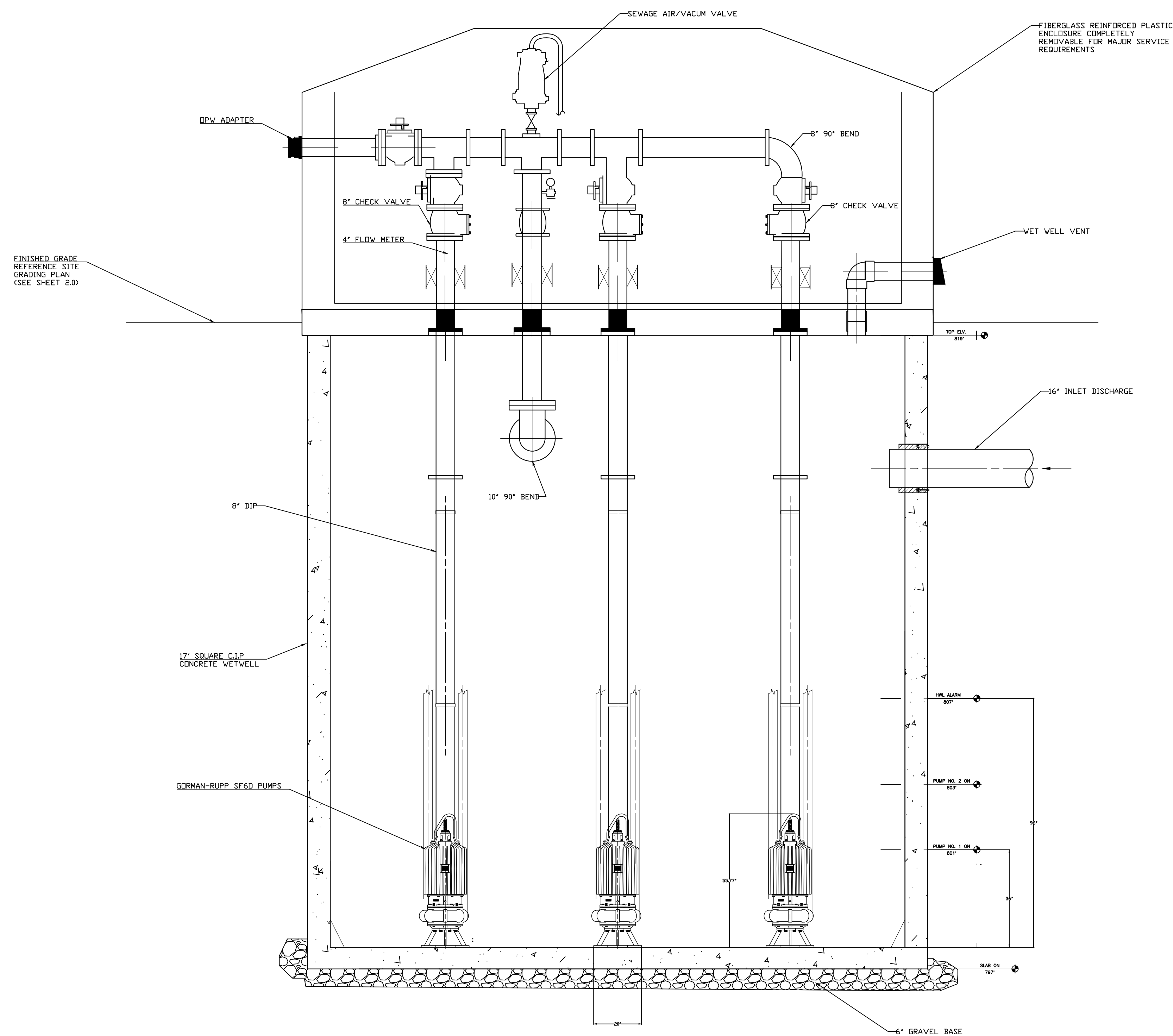
Project Name and Address

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LOW-PRESSURE
SEWER SYSTEM

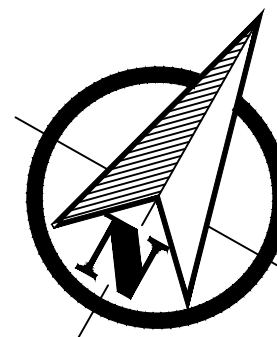
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STATION SIDE
VIEW

Project
CHOTO PENINSULA
Date
04/21/2020
Scale
As Noted

Sheet
C2.5



CHOTO WET WELL SIDE VIEW
SCALE: 1"=2'



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHANNEL
POINT
EXISTING
GRADING PLAN

Project
CHOTO PENINSULA

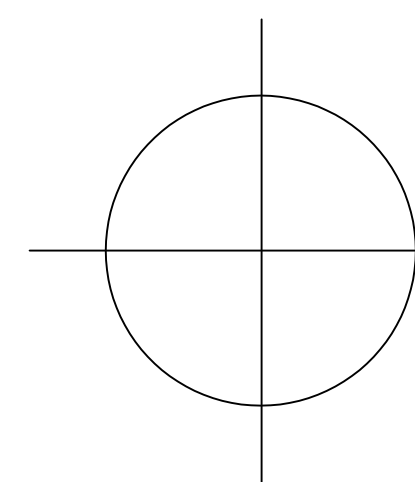
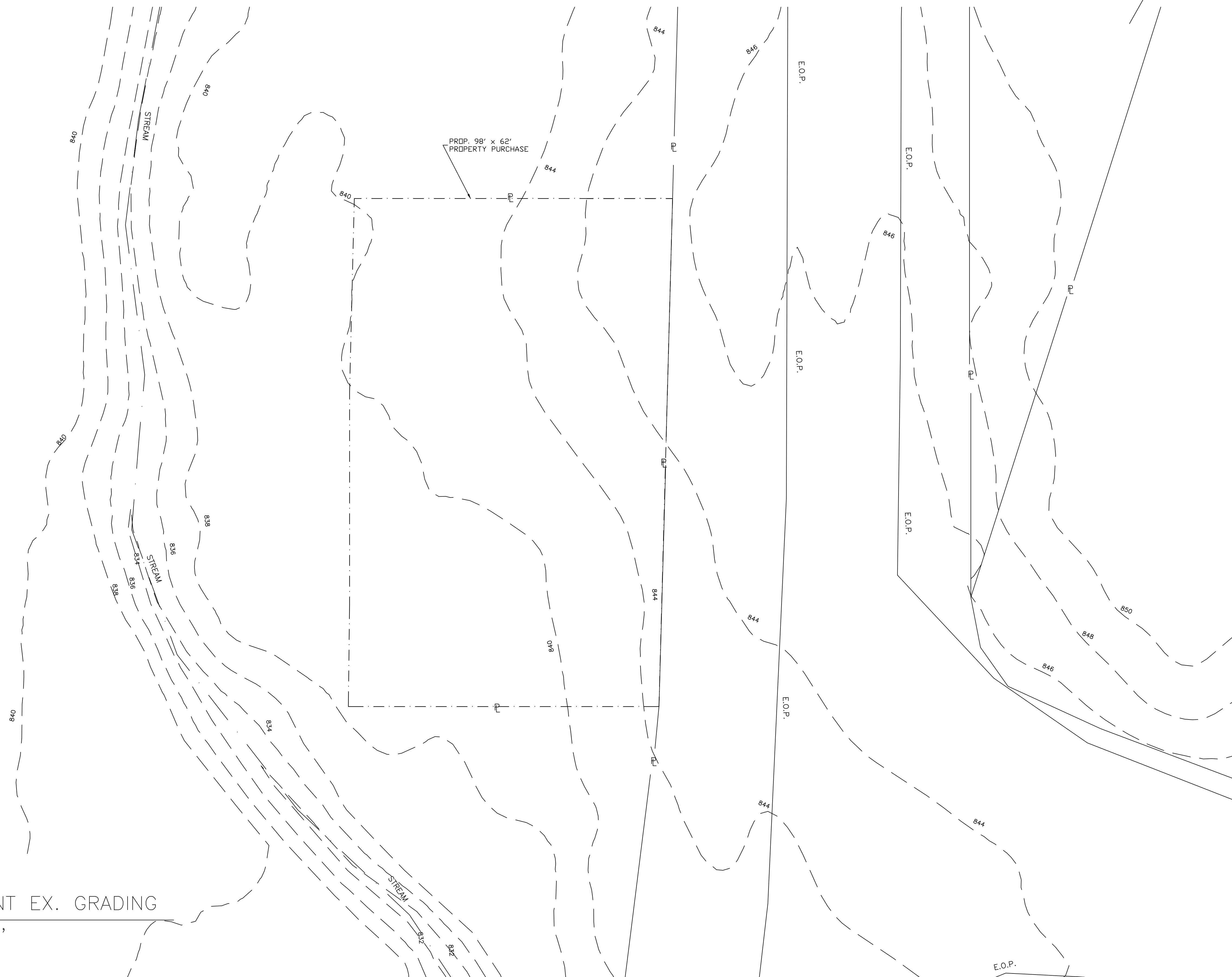
Date
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Scale
As Noted

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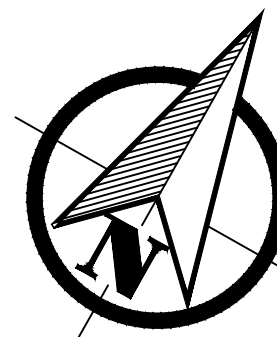
C3.0

PROP. 98' x 62'
PROPERTY PURCHASE



CHANNEL POINT EX. GRADING

SCALE: 1"=10'



General Notes

1. GRADE DRIVEWAY AT APPROXIMATELY 5% SLOPE SUCH THAT RUNOFF DRAINS INTO CATCH BASIN. MAINTAIN SLAB AT 846".

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

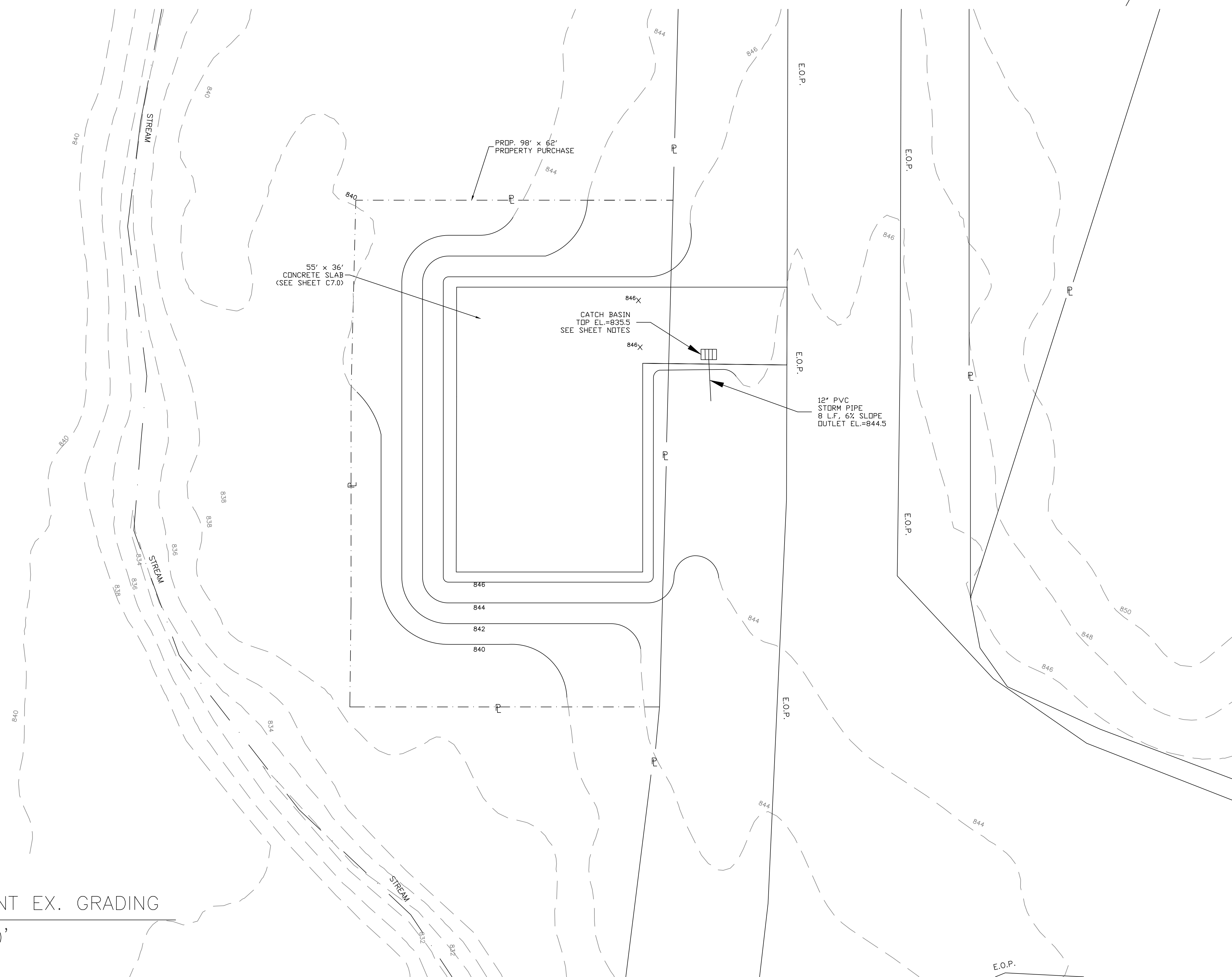
JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

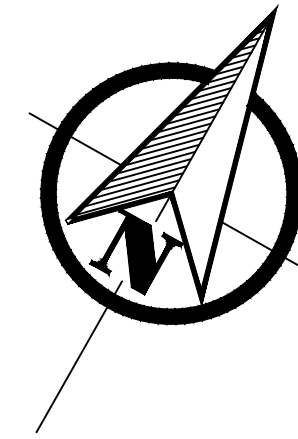
CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHANNEL
POINT
GRADING PLAN

Project CHOTO PENINSULA	Sheet C3.1
Date 04/21/2020	
Scale As Noted	



CHANNEL POINT EX. GRADING
SCALE: 1"=10'

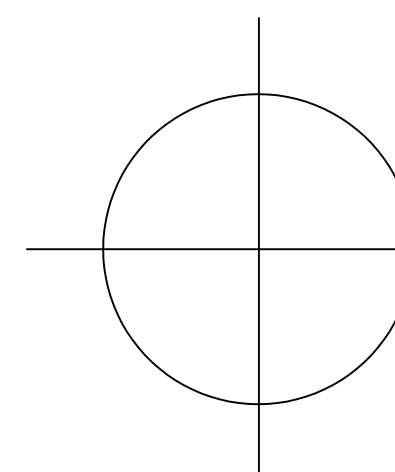


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KNOXVILLE, TENNESSEE 37996

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

Project CHOTO PENINSULA	Sheet
Date 04/21/2020	C3.2
Scale As Noted	

SCALE: 1"=10'



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

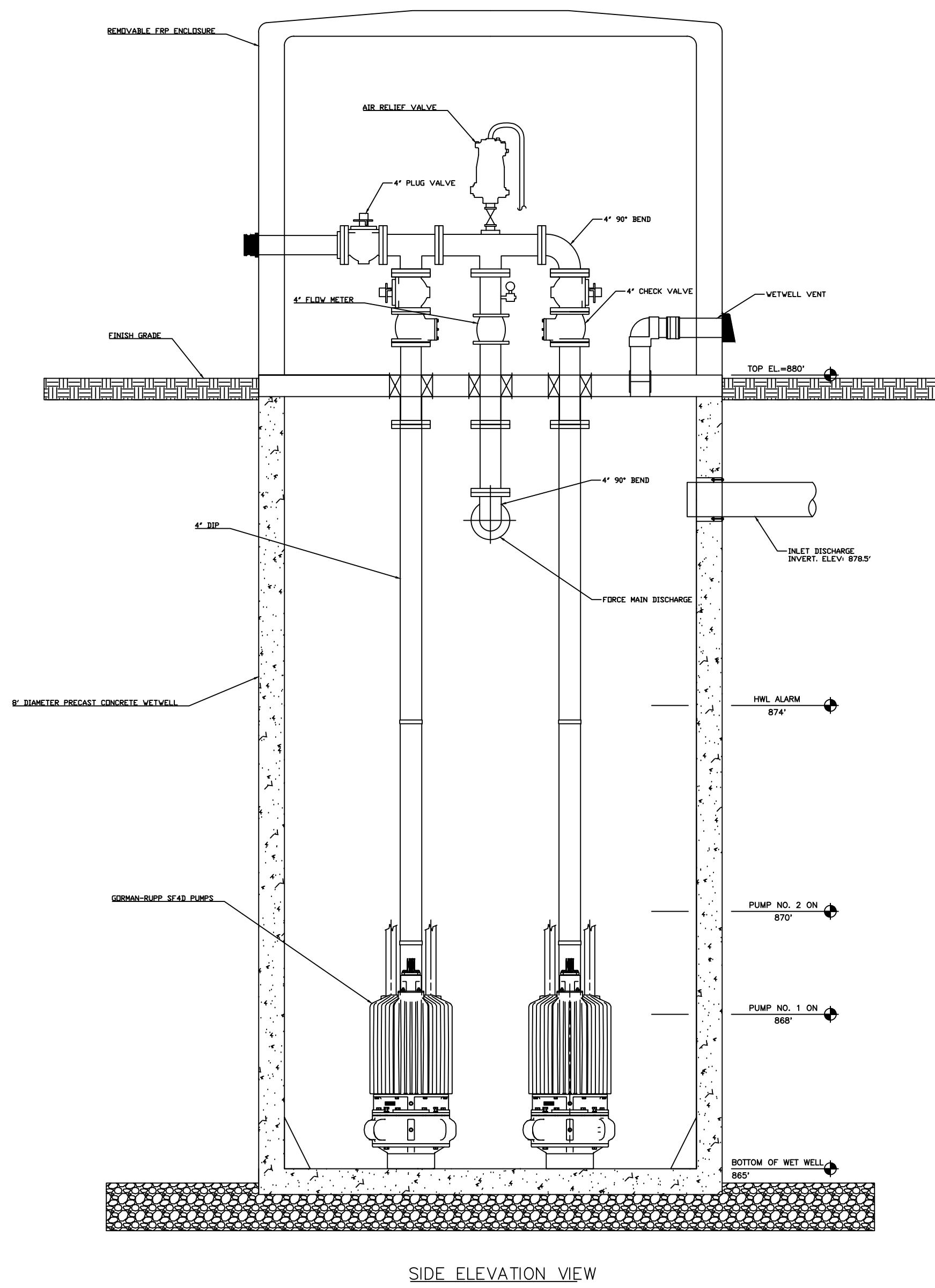
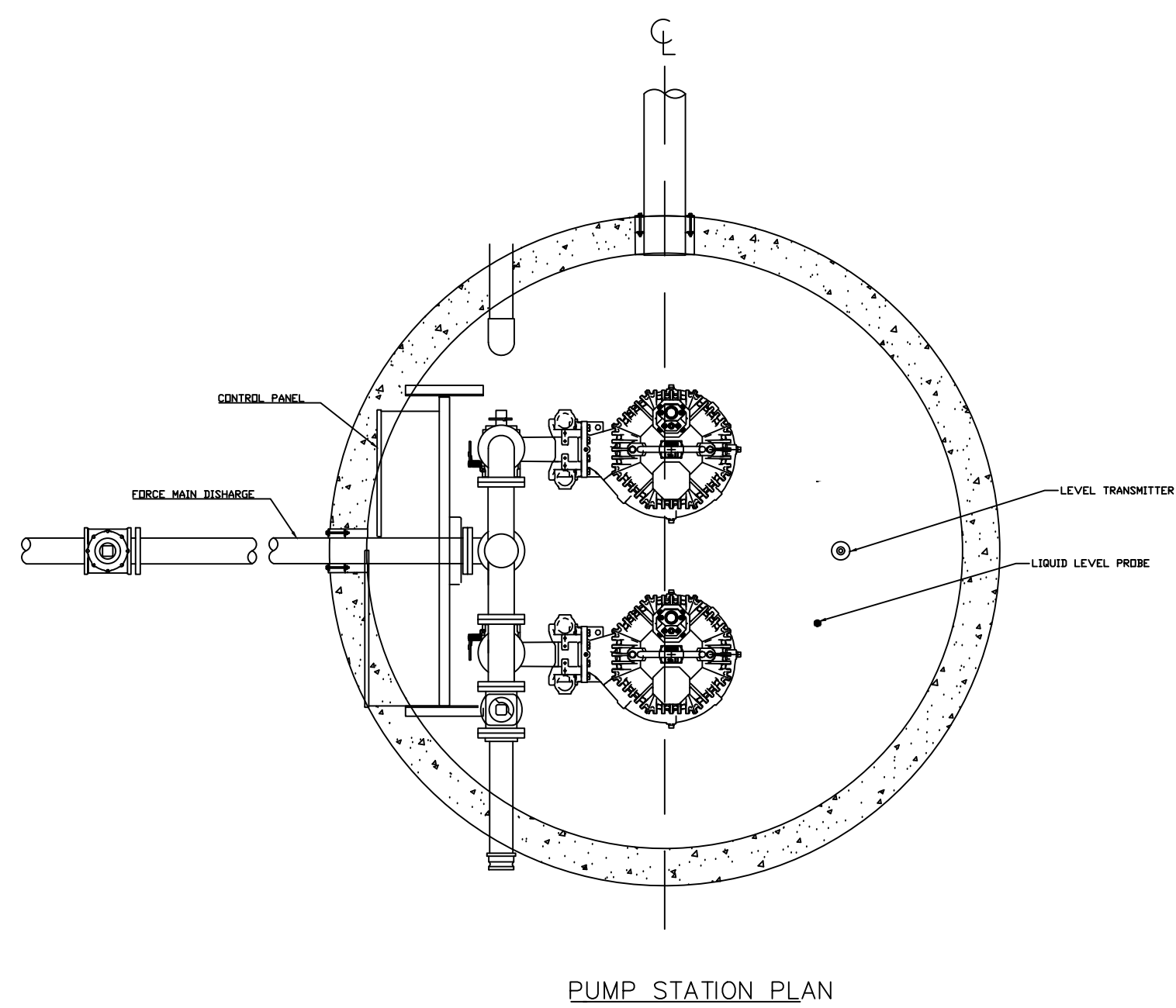
CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHANNEL
POINT PUMP
STATION PLAN,
SIDE VIEW

Project
CHOTO PENINSULA
Date
04/21/2020
Scale
As Noted

Sheet

C3.3



CHANNEL POINT WET WELL PLAN & SIDE VIEW
SCALE: 1"=2'



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

CHANNEL
POINT PUMP
STATION FRONT
VIEW

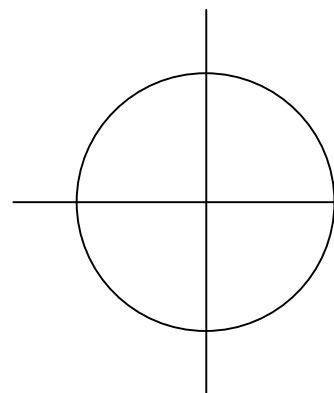
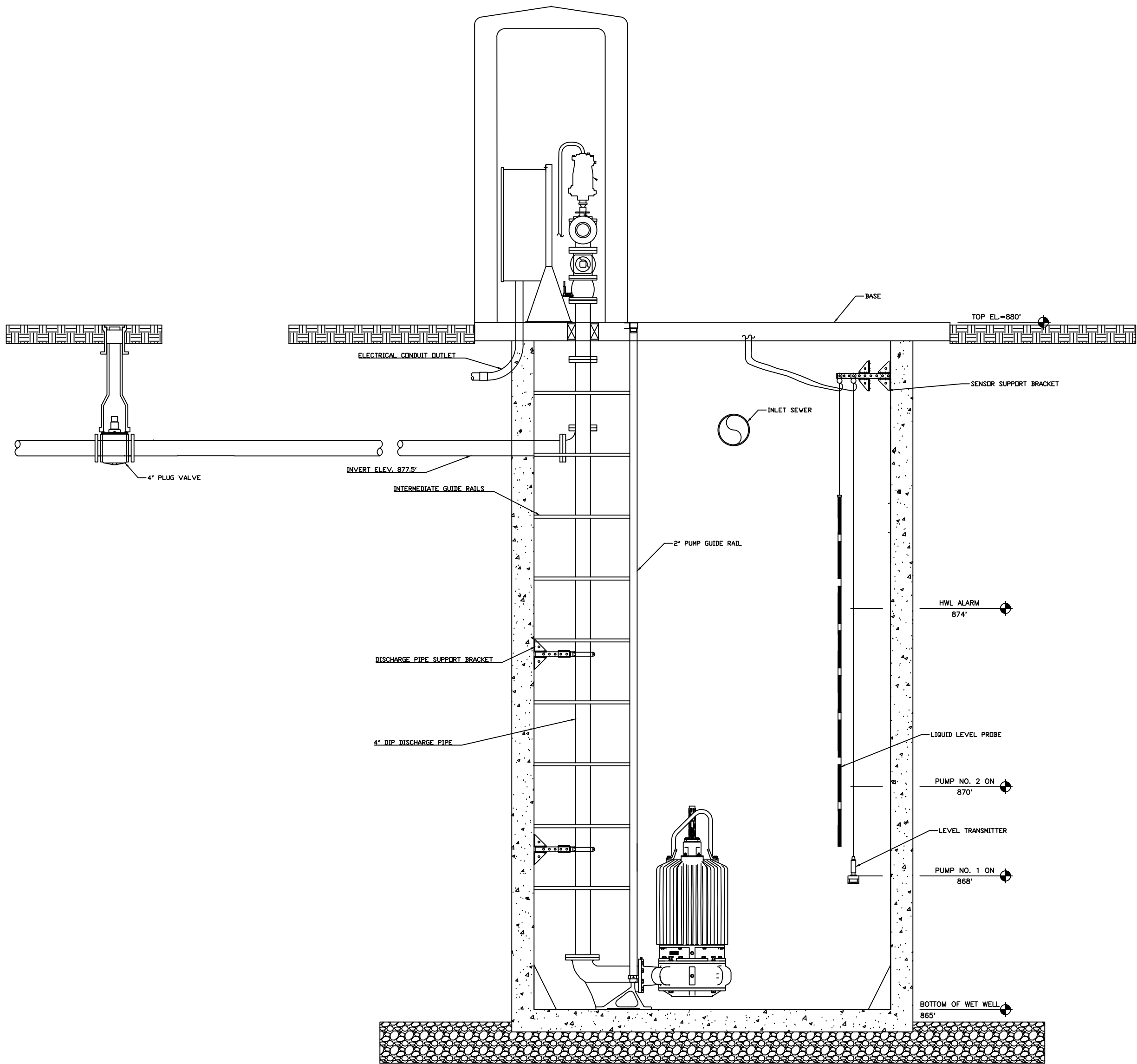
Project
CHOTO PENINSULA

Date
04/21/2020

Scale
As Noted

Sheet

C3.4



CHANNEL POINT WET WELL FRONT VIEW

SCALE: 1"=2'



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

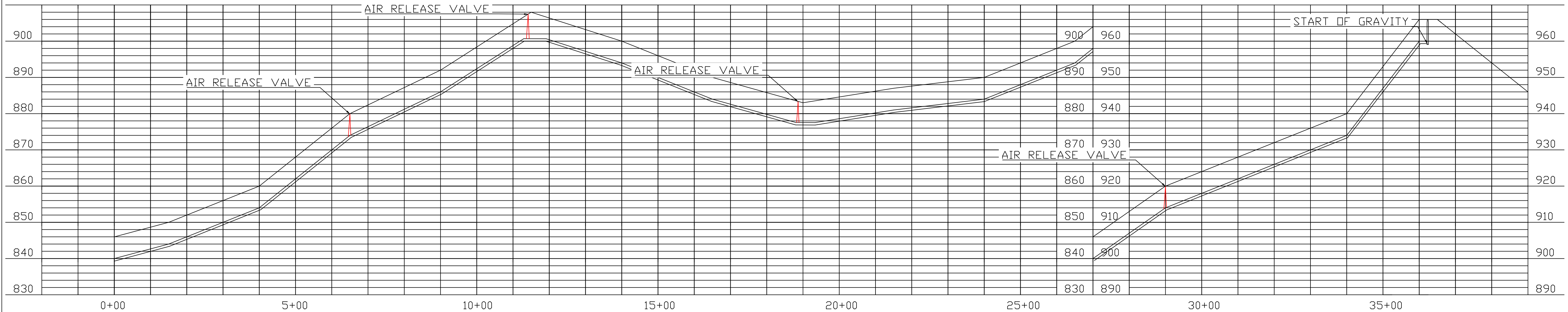
PROPOSED
FORCE MAIN

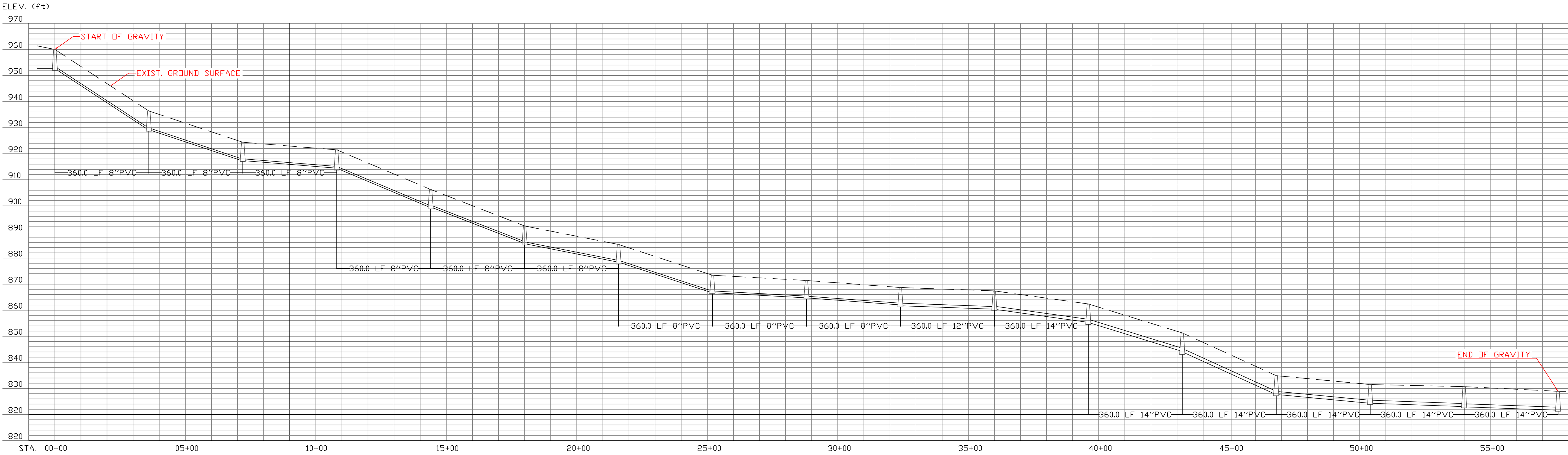
Project
CHOTO PENINSULA
Date
04/21/2020
Scale
As Noted

Sheet
C4.0



PROPOSED FORCE MAIN PLAN VIEW
SCALE: 1"=150'





General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

GRAVITY
SEWER PLAN
& PROFILE

Project
CHOTO PENINSULA

Date
04/21/2020

Scale
As Noted

Sheet

C5.0

General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

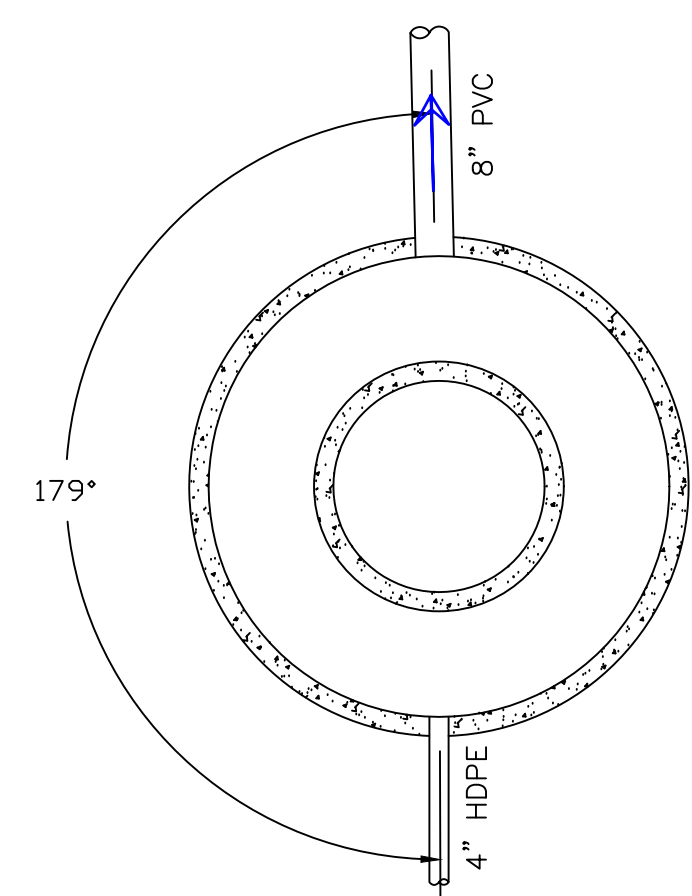
Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

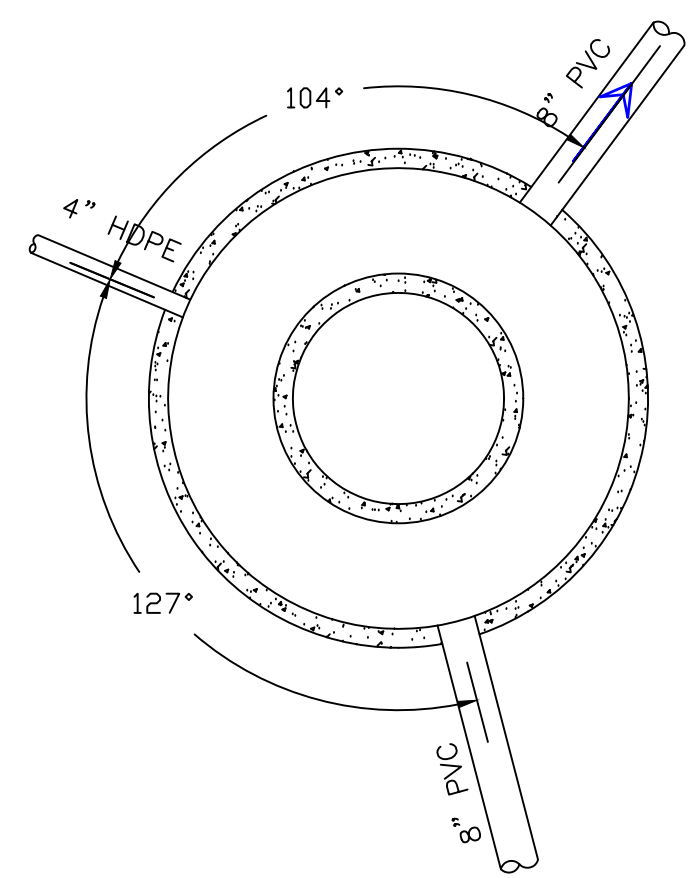
TYPICAL
MANHOLE
CROSS
SECTION

Project
CHOTO PENINSULA
Date
04/21/2020
Scale
As Noted

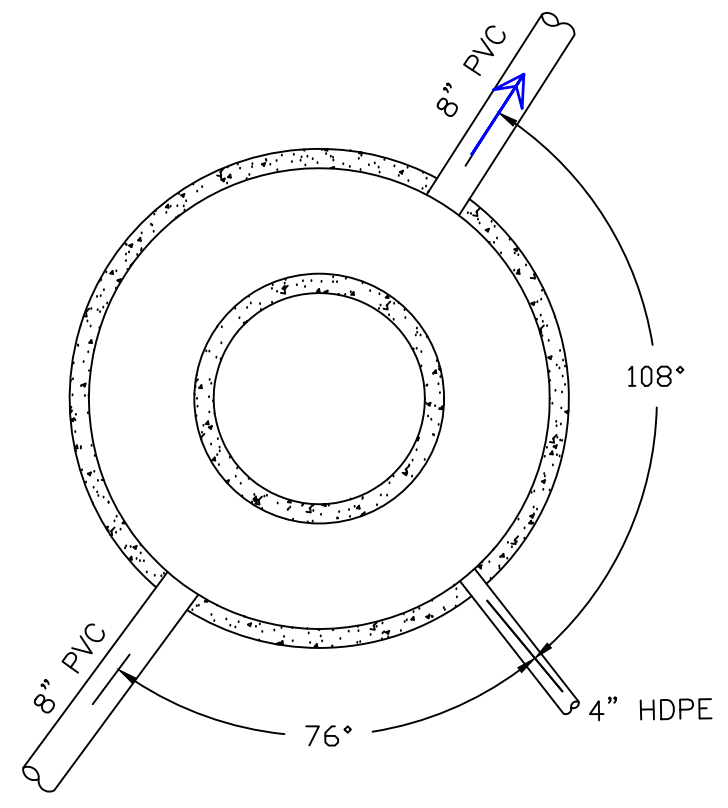
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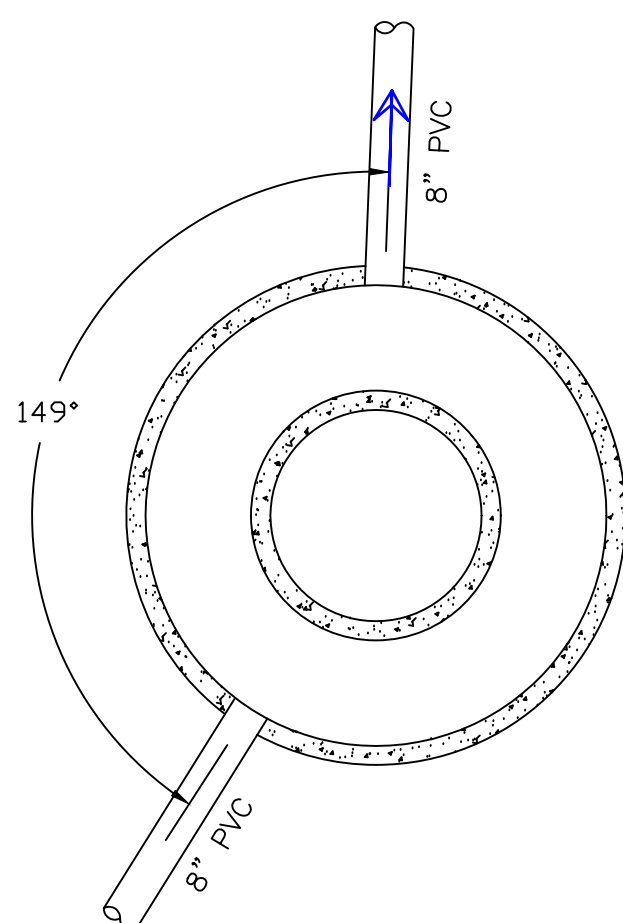
MH-0
Elev: 966.1 ft
Dia: 48"



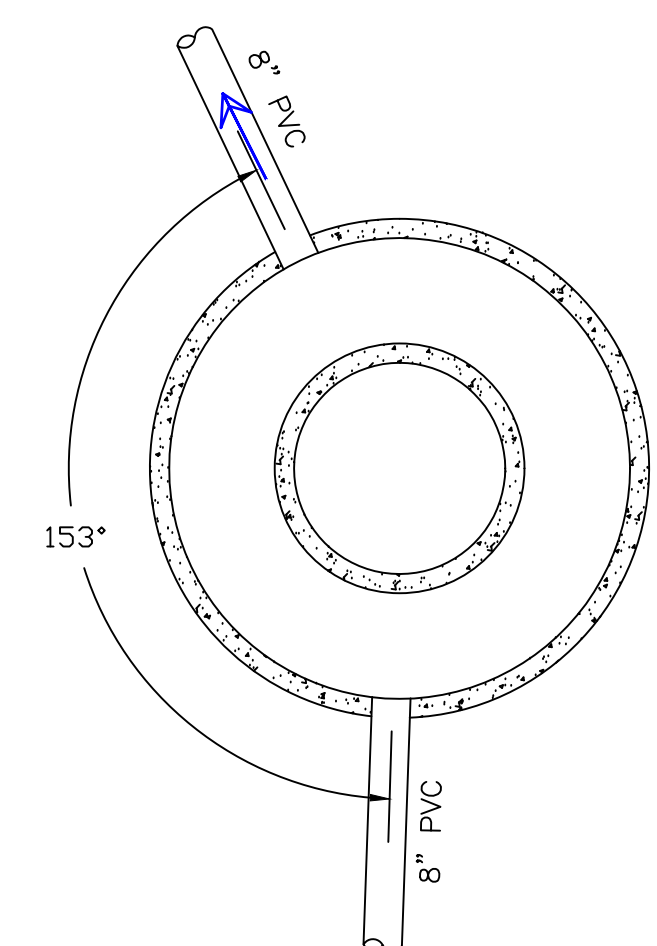
MH-1
Elev: 942.5 ft
Dia: 48"



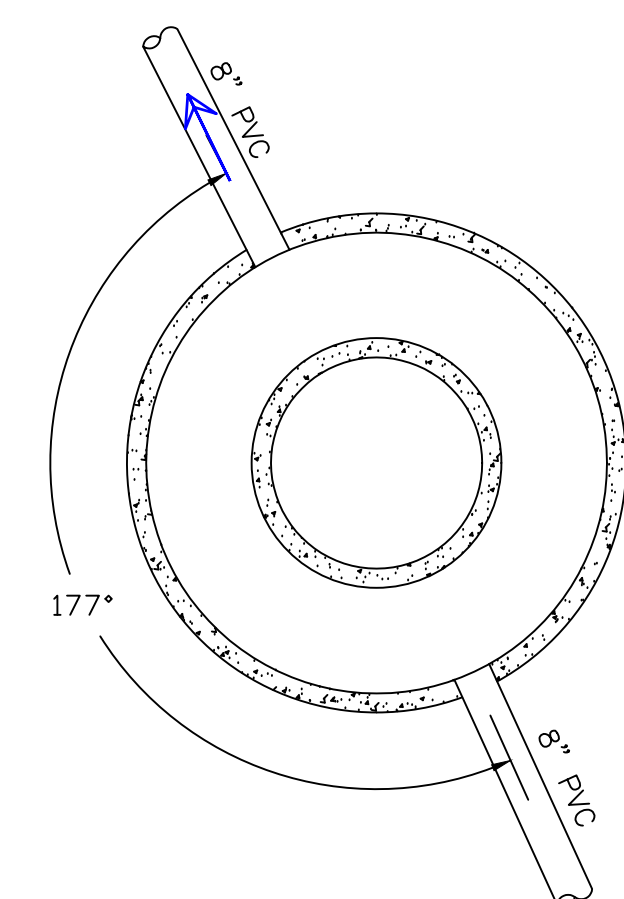
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Dia: 48"



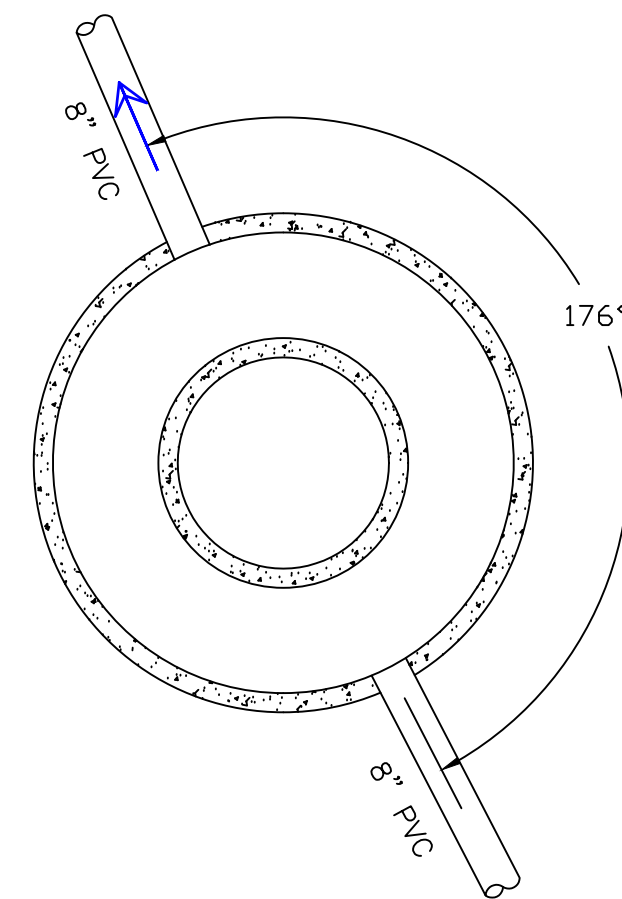
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Dia: 48"



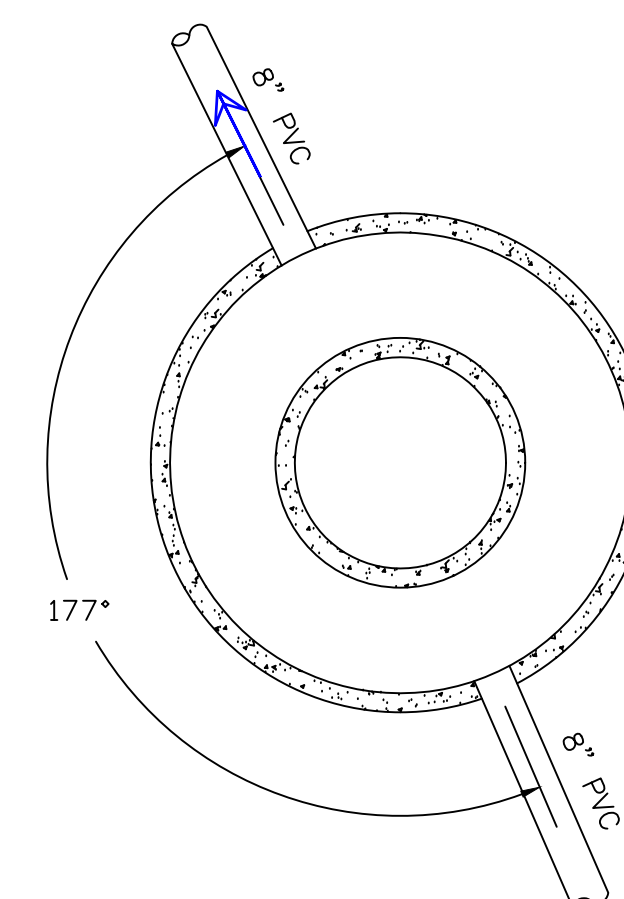
MH-4
Elev: 912.4 ft
Dia: 48"



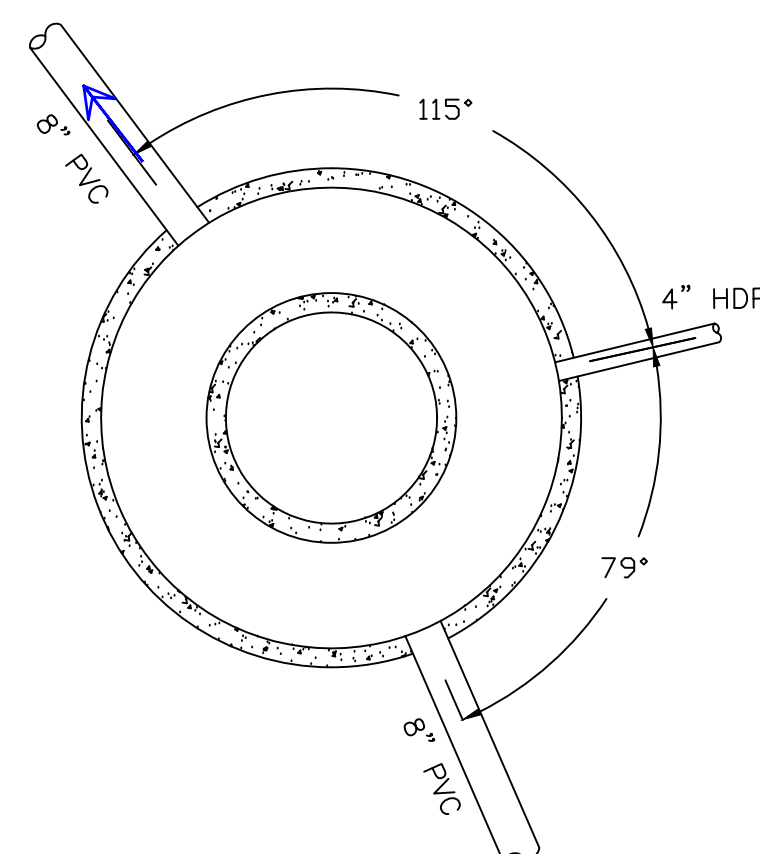
MH-5
Elev: 898.4 ft
Dia: 48"



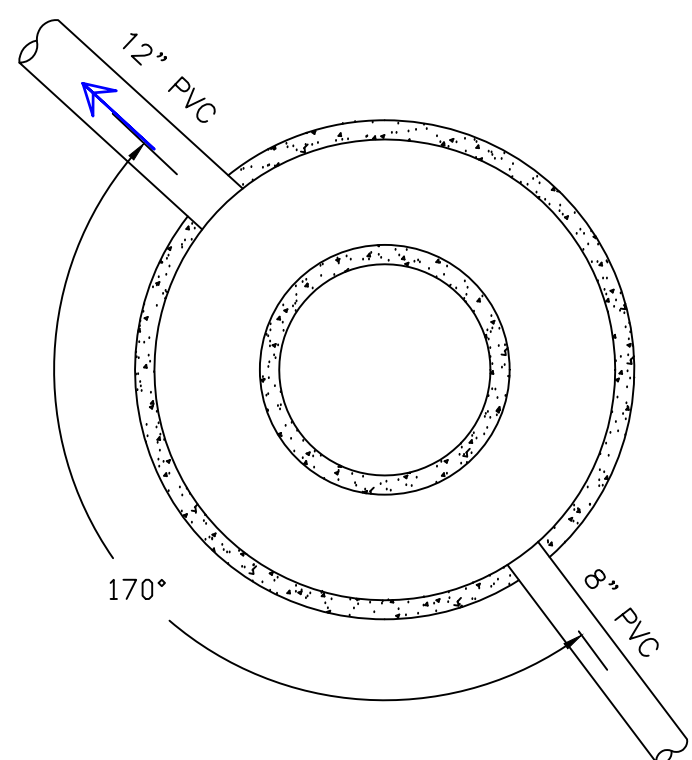
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Dia: 48"



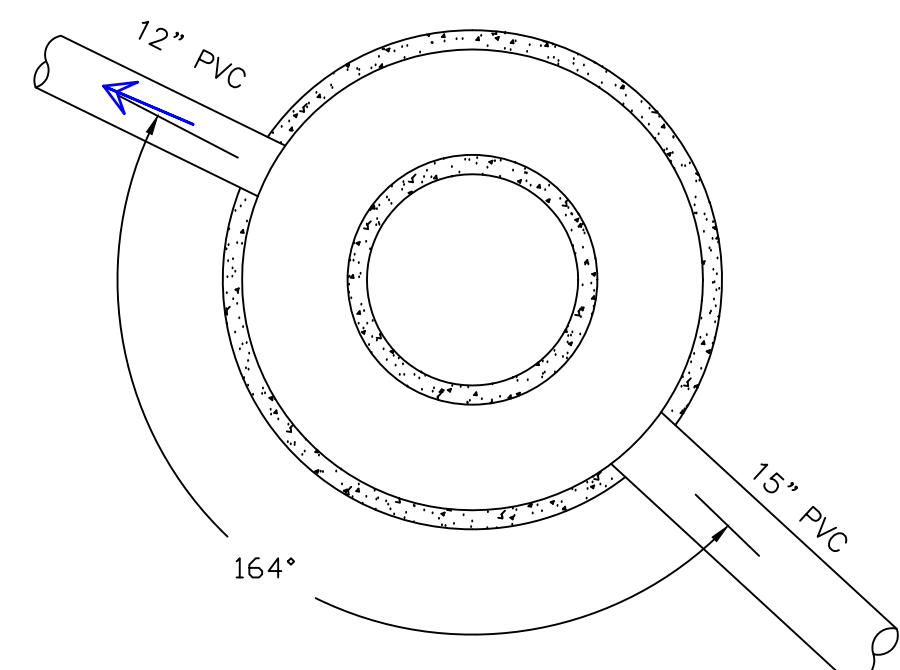
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Dia: 48"



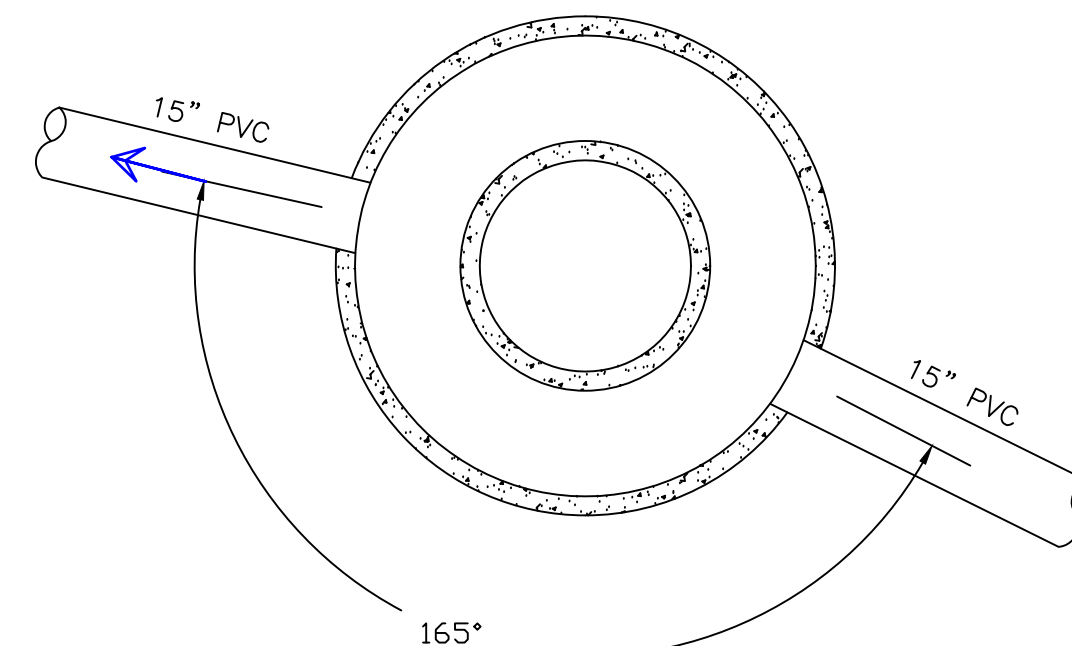
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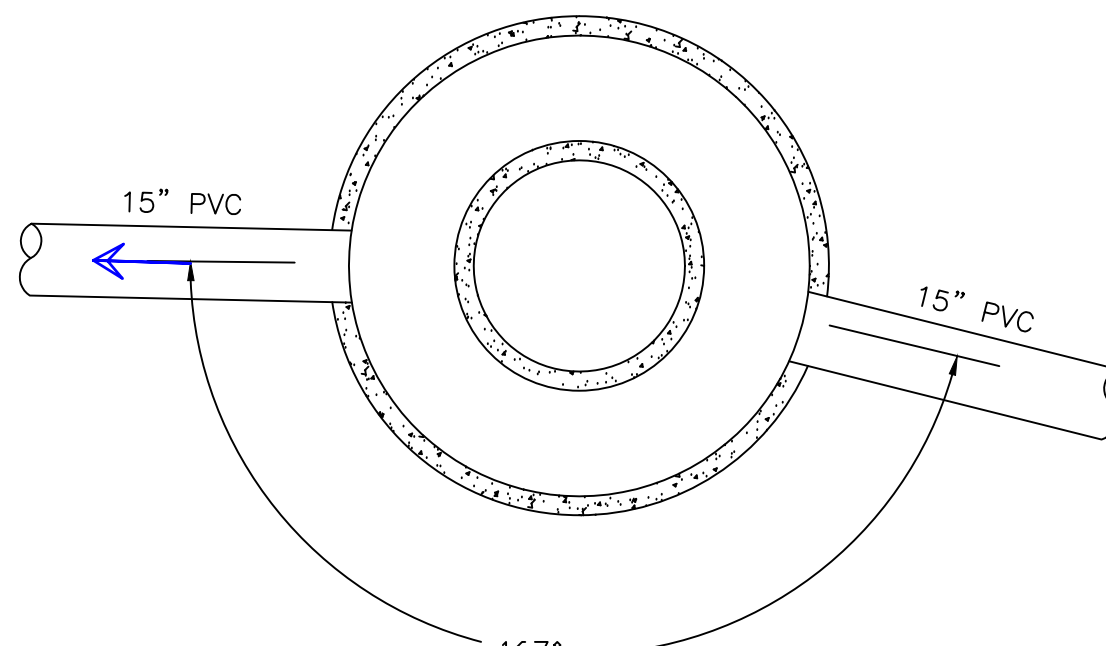
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Dia: 48"



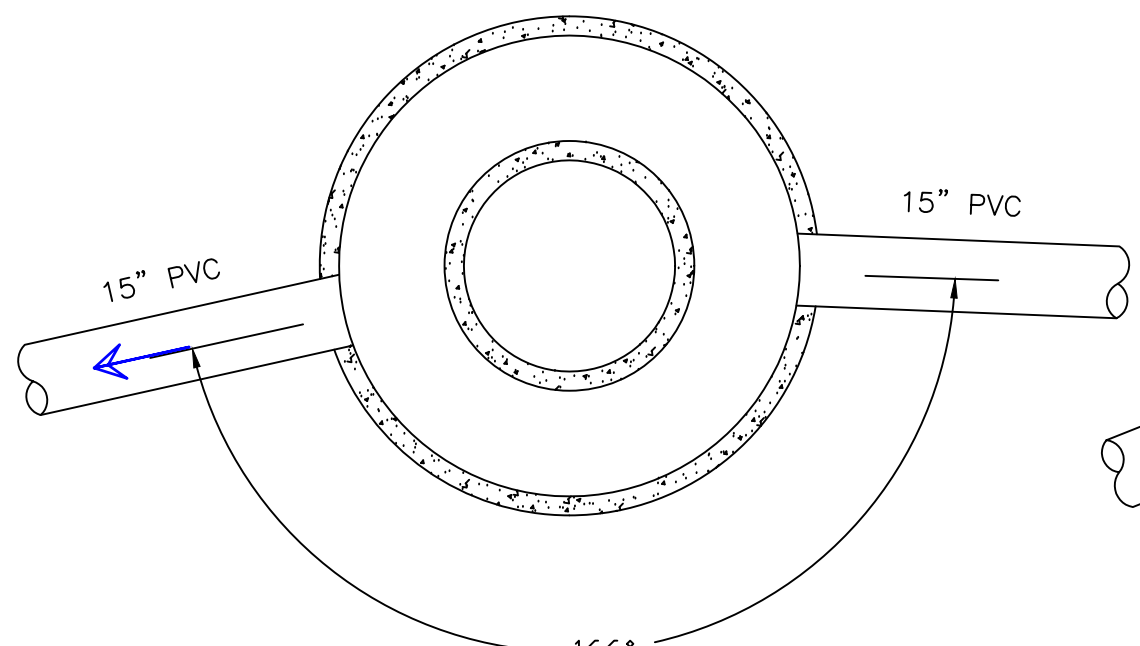
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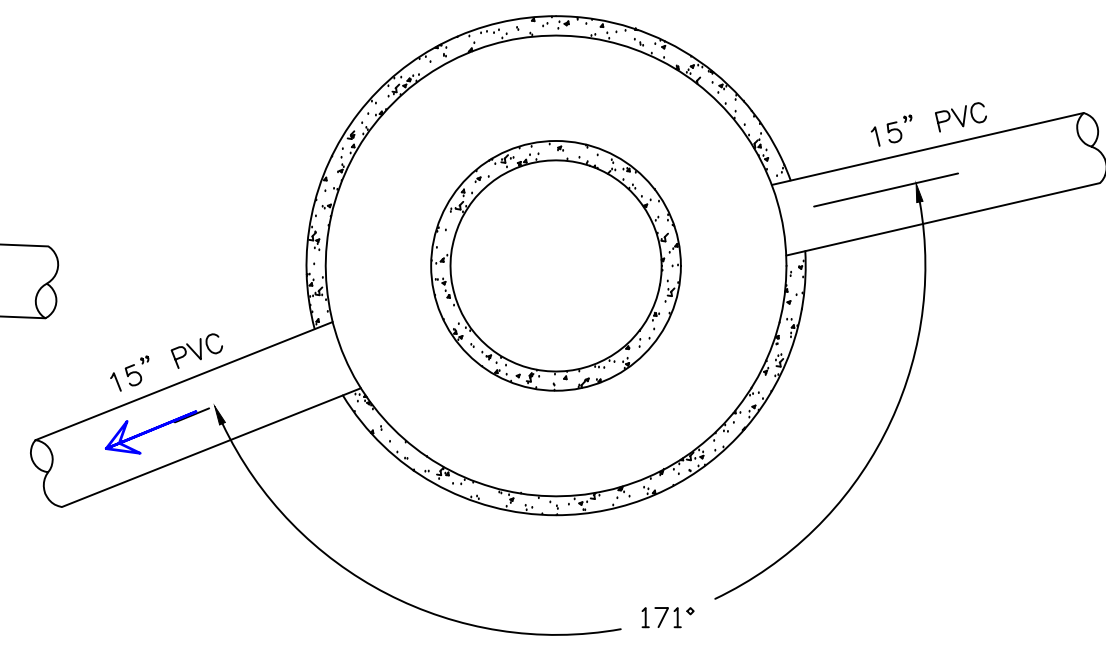
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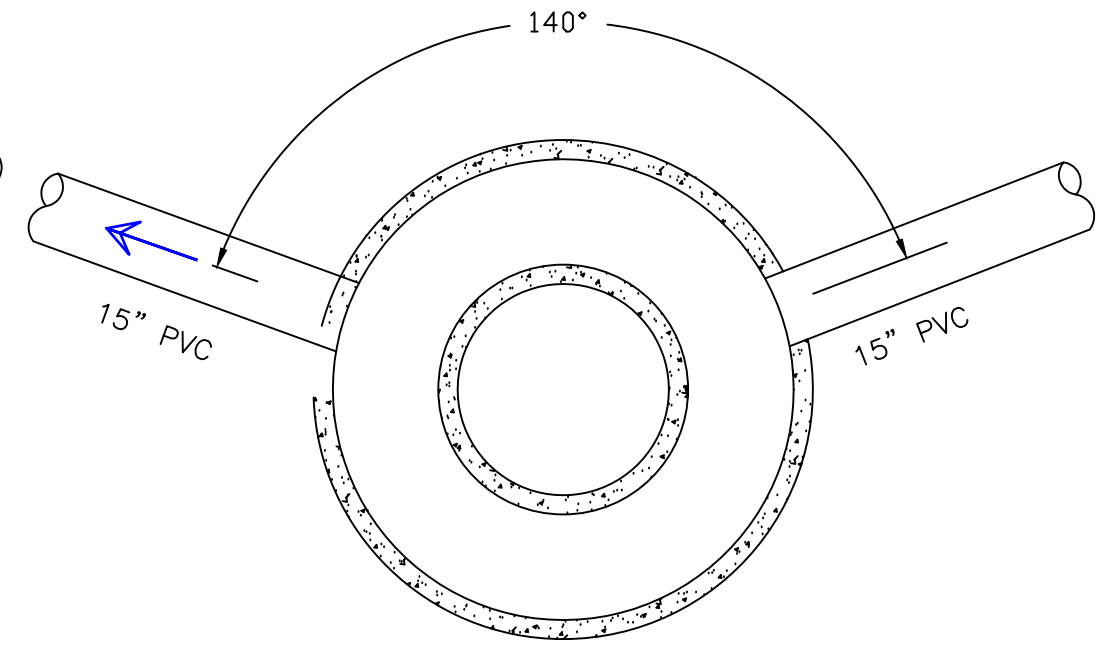
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Elev: 841.0 ft
Dia: 48"



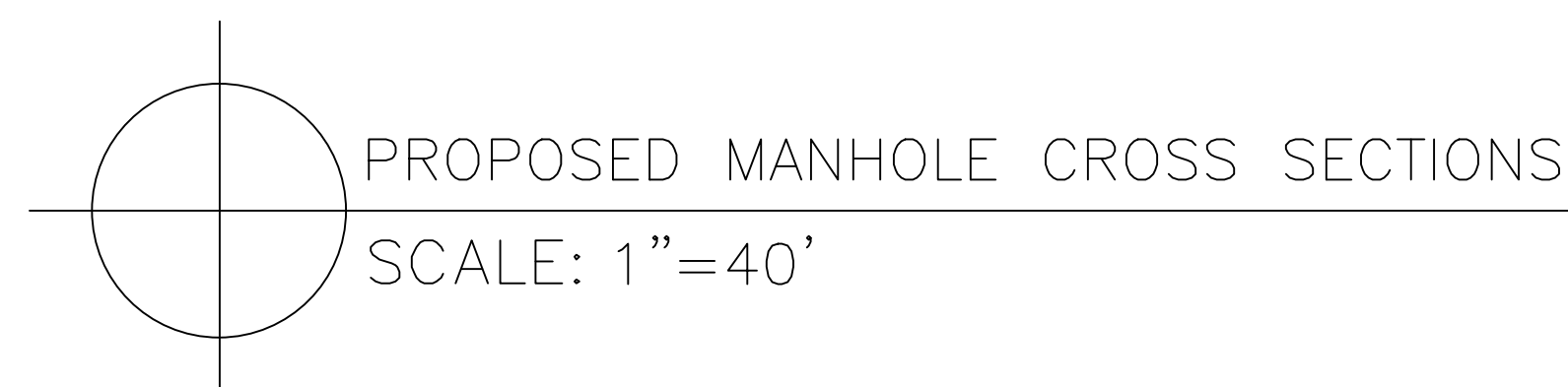
MH-13
Elev: 837.6 ft
Dia: 48"



MH-14
Elev: 836.8 ft
Dia: 48"



MH-15
Elev: 835.0 ft
Dia: 48"





General Notes

1. BRACKET DETAILS ARE TO BE USED IN BOTH CHANNEL POINT AND CHOTO WET WELLS.
2. CONCRETE DETAILS ARE ONLY FOR THE CHOTO WET WELL.
3. ALL CONCRETE & REBAR SHALL CONFORM TO THE CONCRETE SECTION OF THE GENERAL NOTES

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

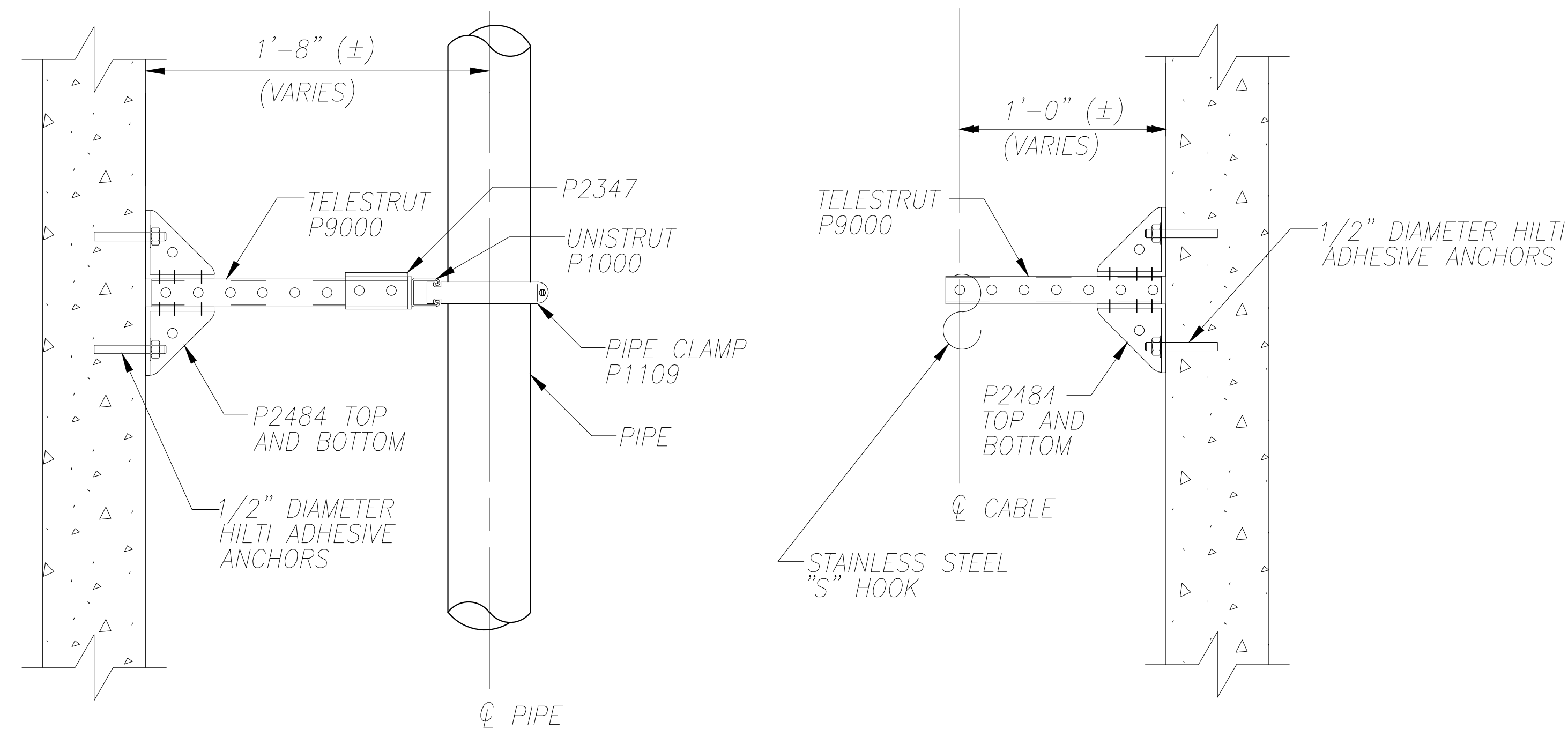
Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

WET WELL
DETAILS

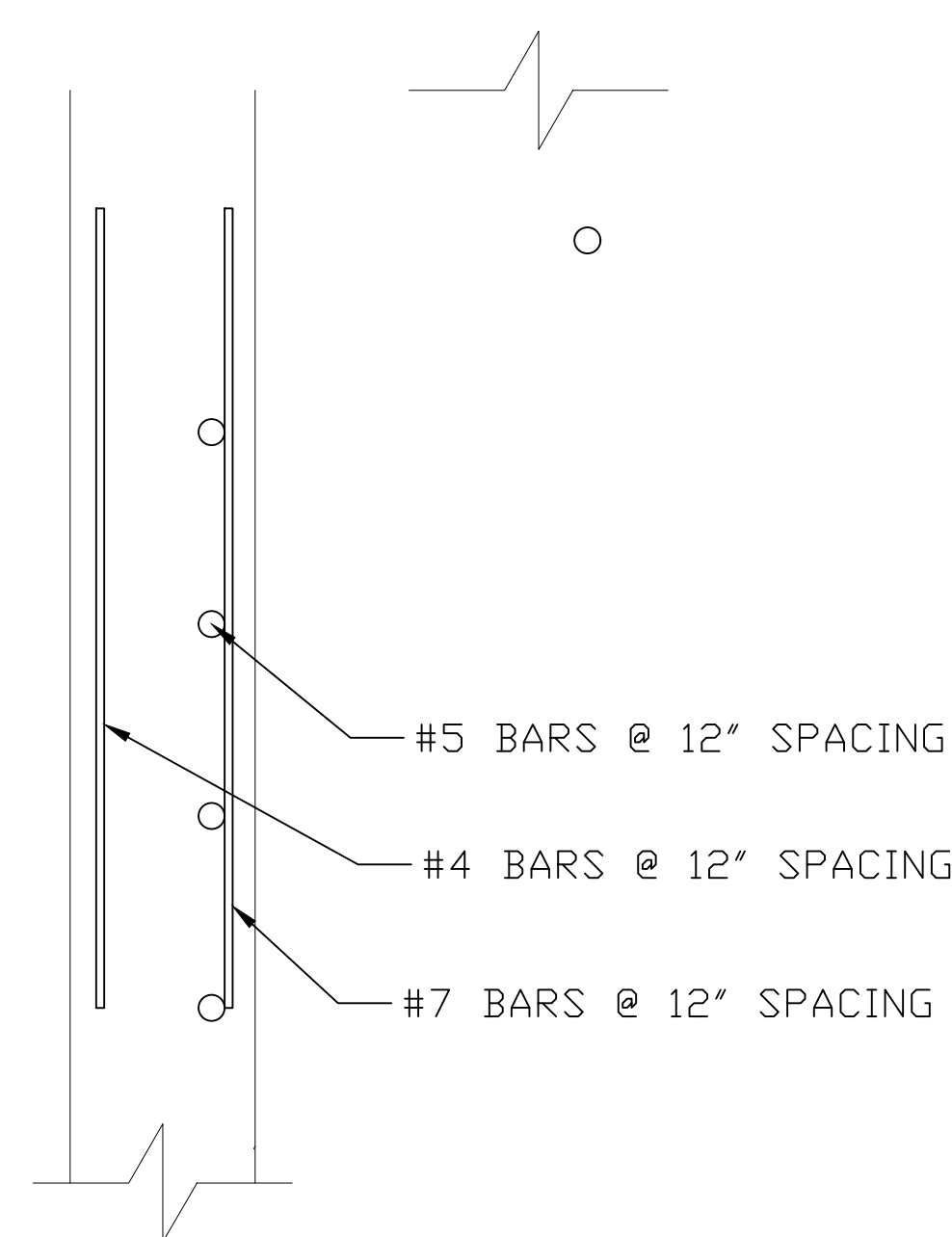
Project
CHOTO PENINSULA
Date
04/21/2020
Scale
As Noted

Sheet
C6.0

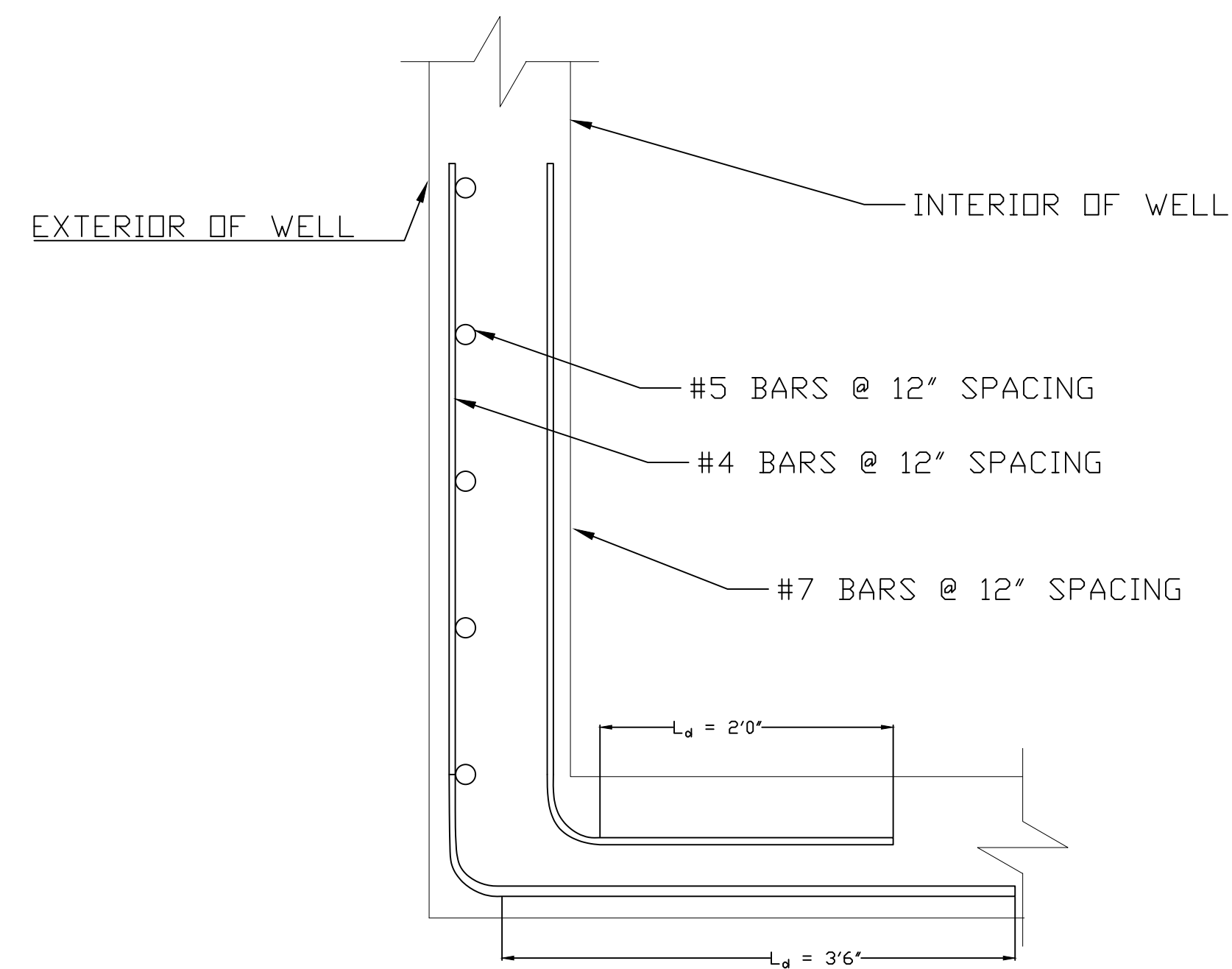


#1.0 PIPE SUPPORT BRACKET DETAIL
C6.0

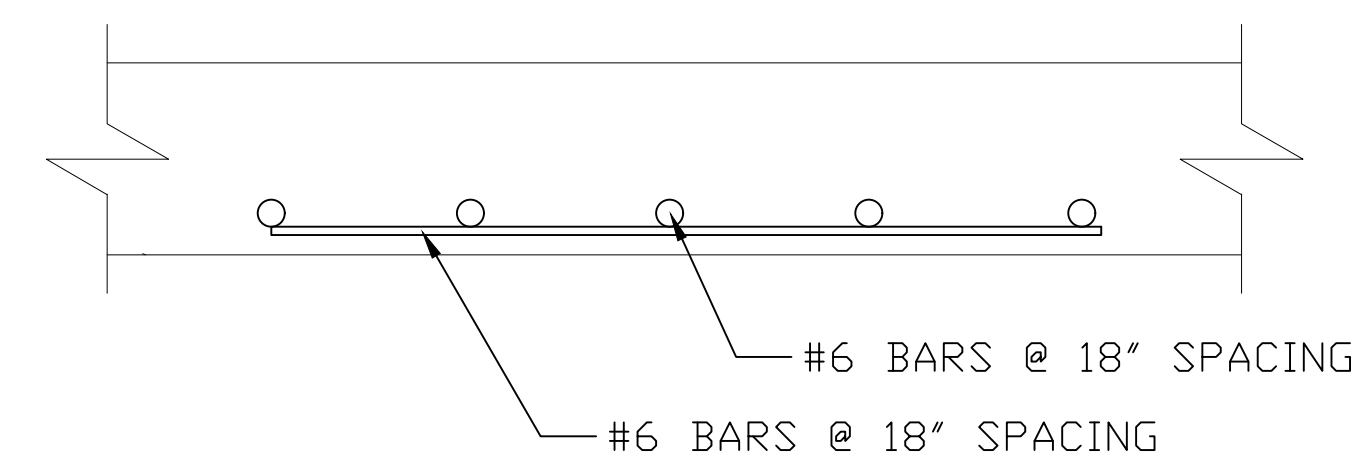
#2.0 SENSOR SUPPORT BRACKET DETAIL
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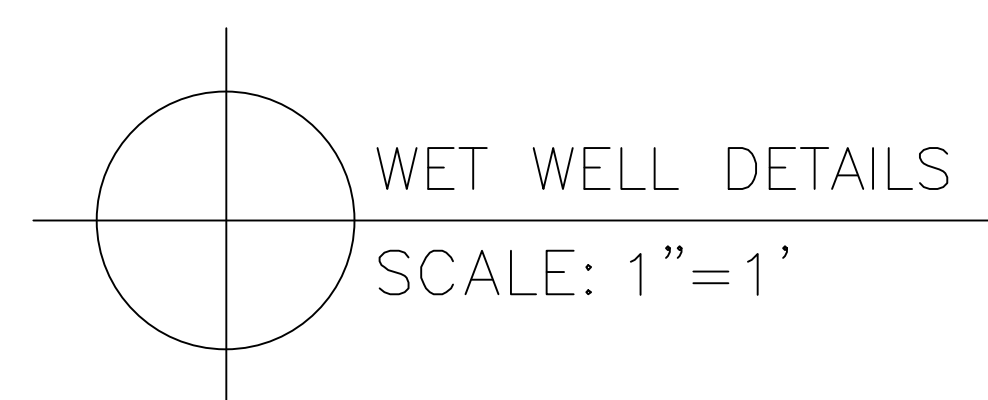
#3.0 CHOTO SIDE WALL REINFORCEMENT
C6.0



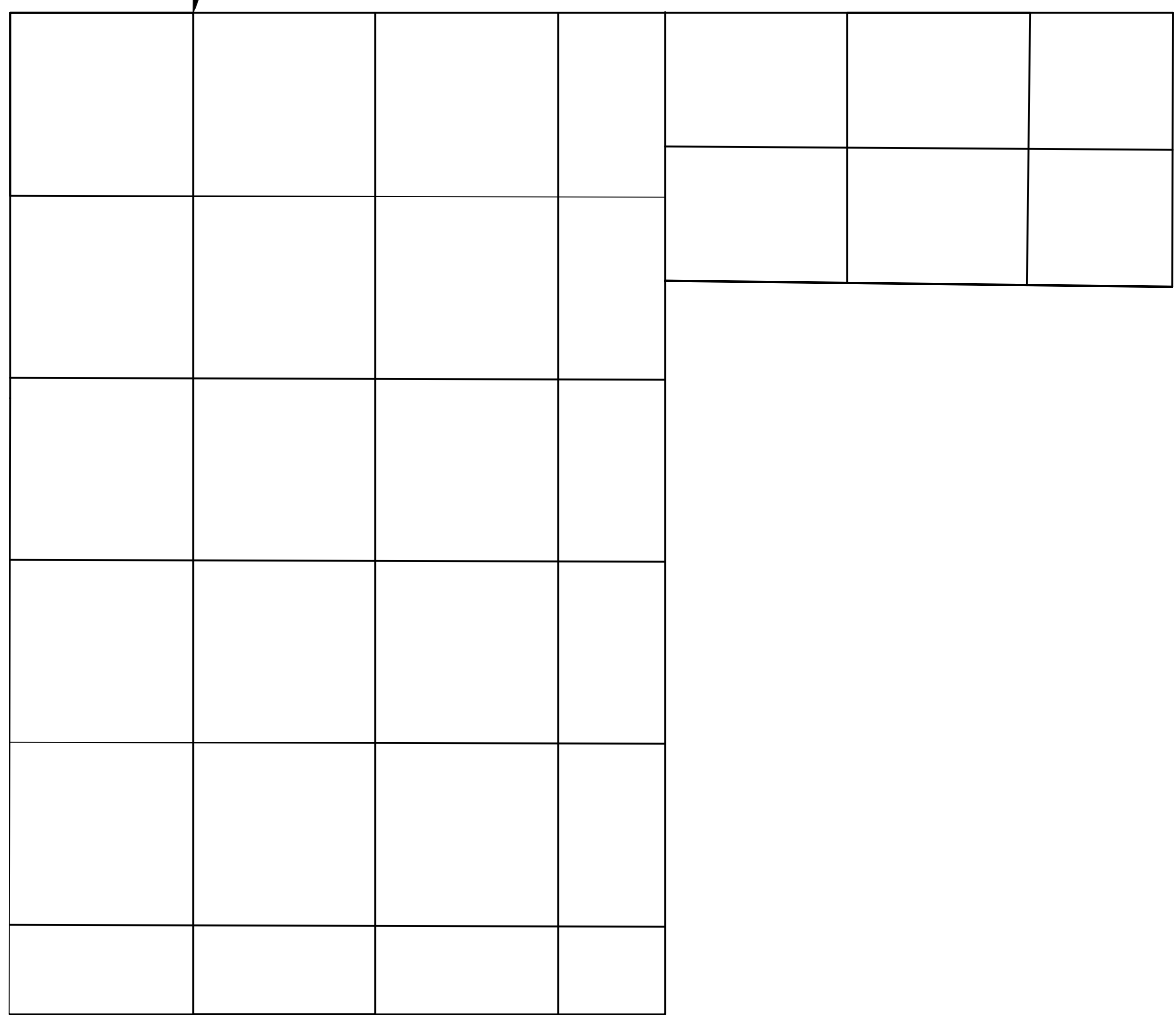
#4.0 CHOTO SIDE WALL REINFORCEMENT
C6.0



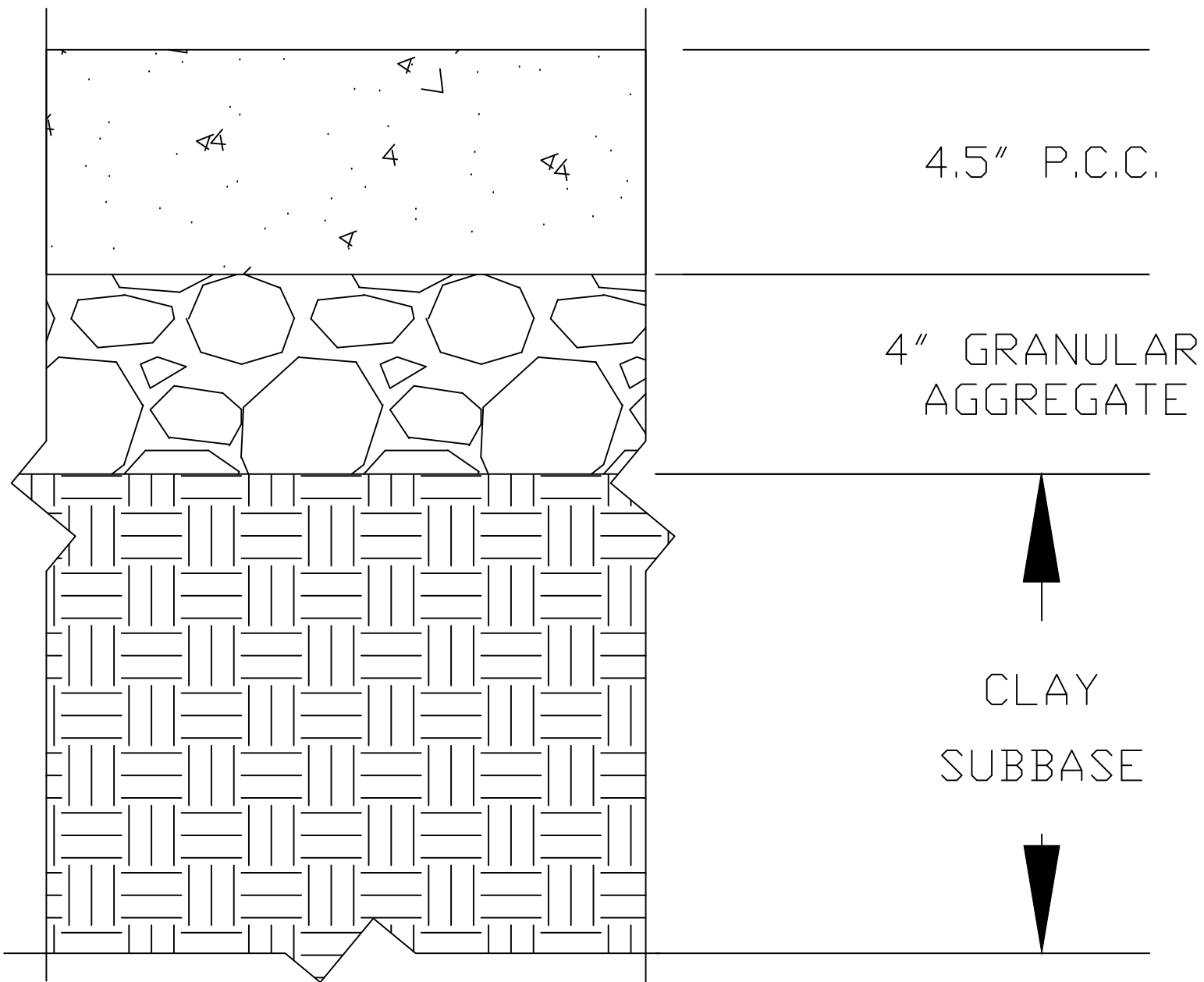
#5.0 CHOTO SLAB REINFORCEMENT
C6.0



MAX. 10' SPACING

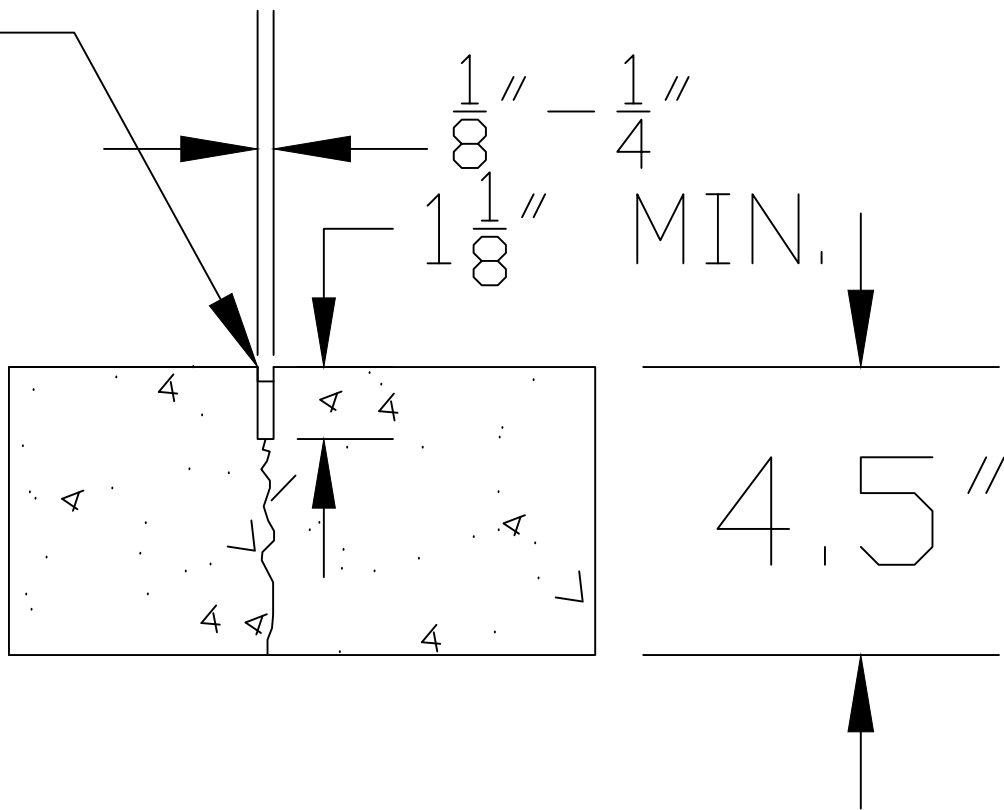


JOINT PLACEMENT
SCALE: 1"=10'



PAVEMENT SPECS
SCALE: 4"=1"

SAWCUT OR PREMOLDED
INSERT AND SEAL



SLAB JOINTS
SCALE: 4"=1"



General Notes

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

PUMP STATION
PAVEMENT
DETAILS

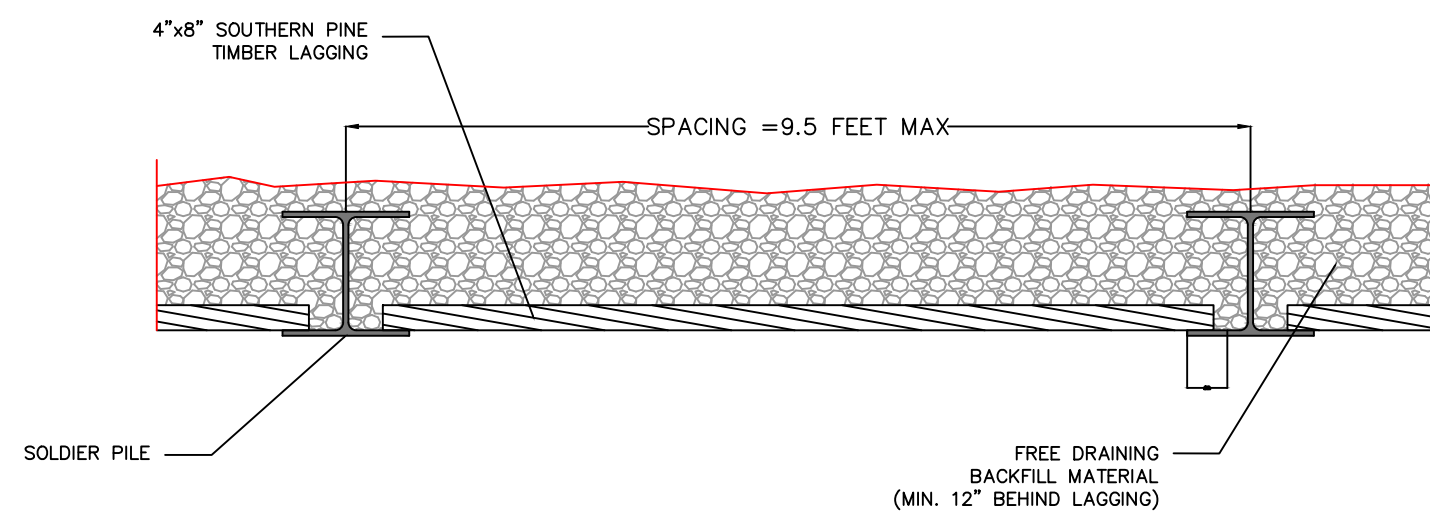
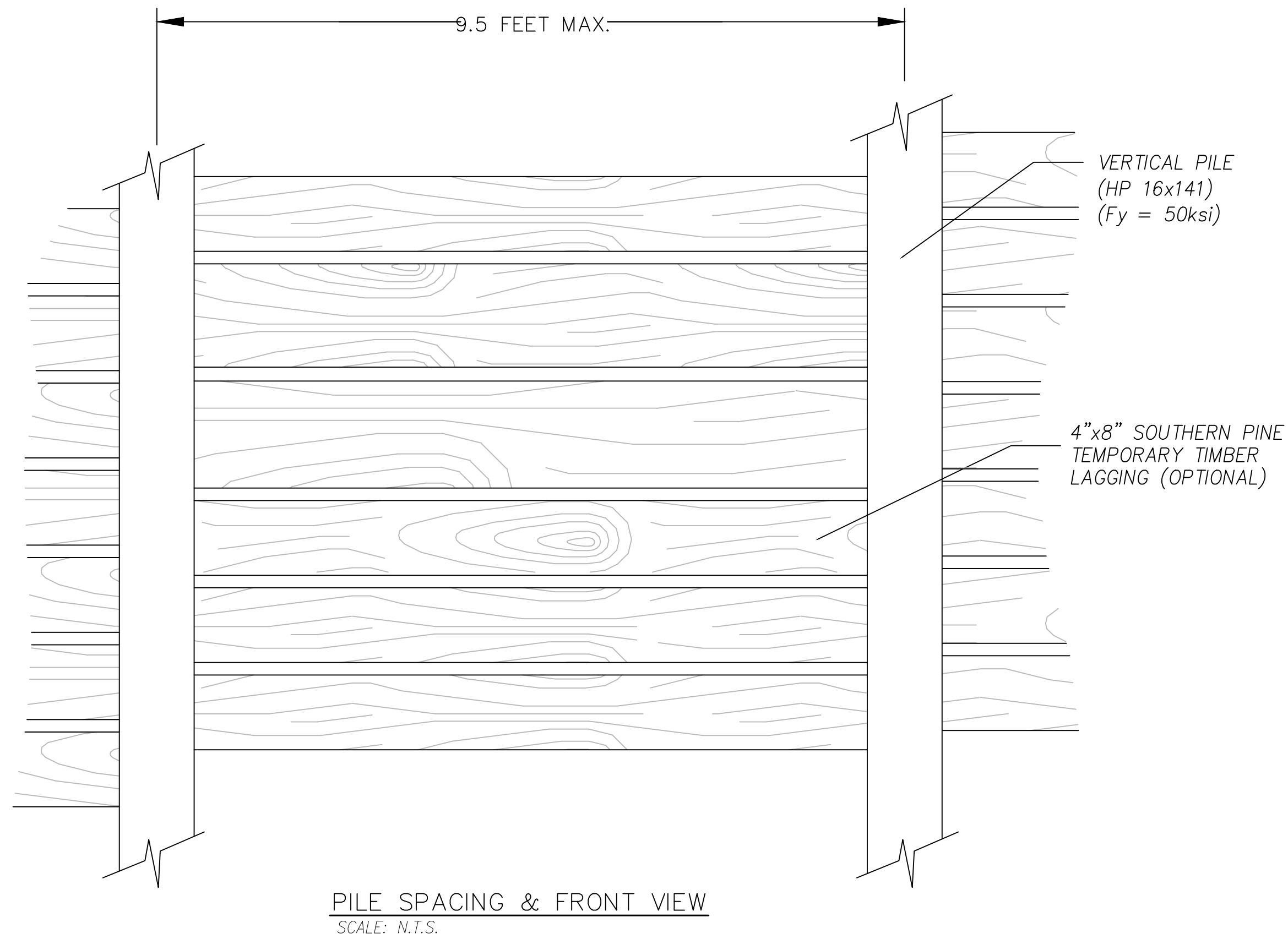
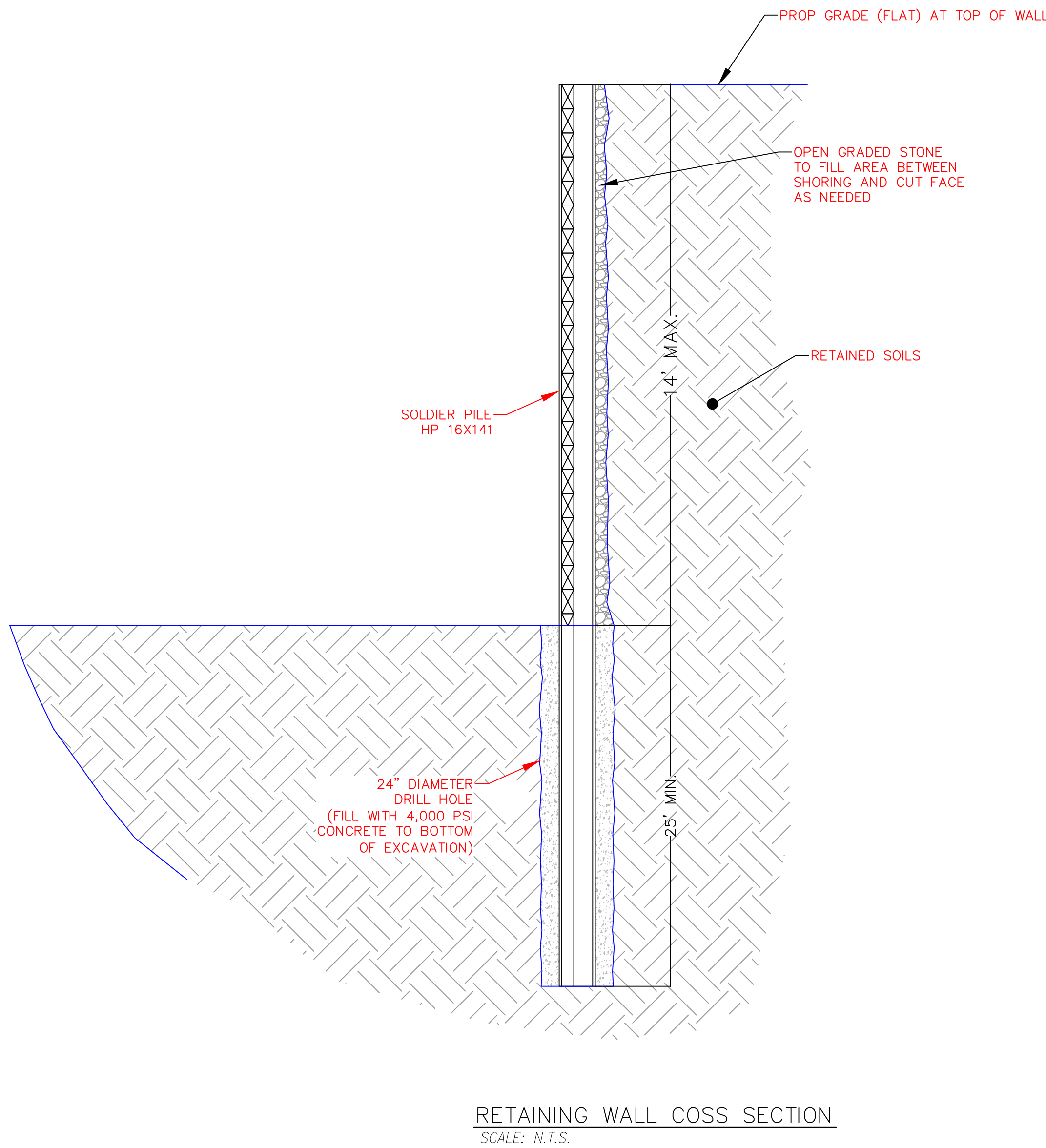
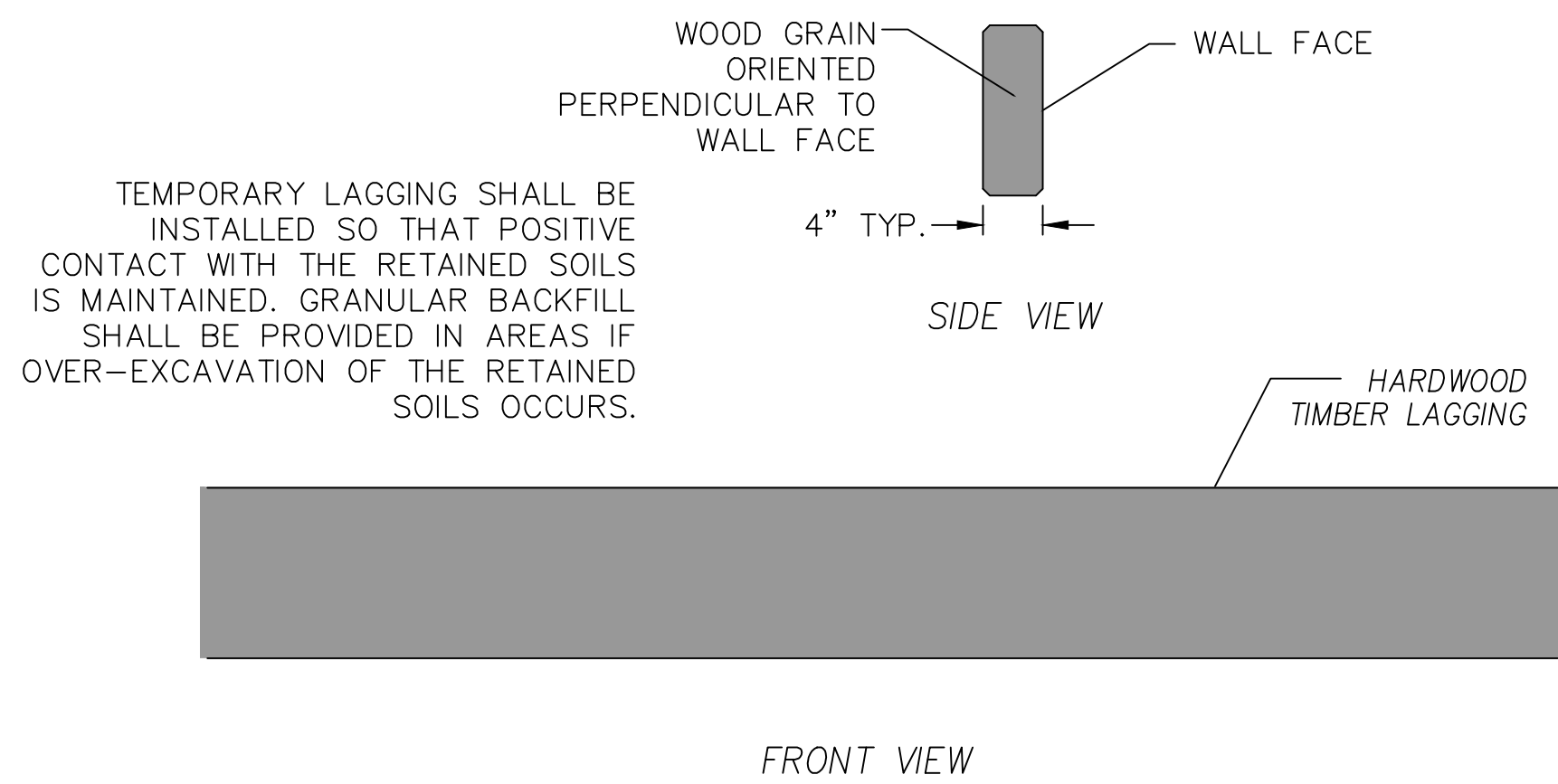
Project
CHOTO PENINSULA

Date
04/21/2020

Scale
As Noted

Sheet

C7.0



General Notes

1. SEE ALL CONSTRUCTION NOTES ON THE GENERAL NOTES PAGE UNDER SOLDIER PILE SHORING
2. ALL DETAILS USED FOR A REFERENCE ON HOW TO BUILD SHORING. SCALE NOT USED HERE BECAUSE THESE DRAWINGS ARE JUST FOR A VISUAL AID TO THE CONTRACTOR ALL REQUIRED DIMENSIONS ARE GIVEN.

VICINITY MAP



TENNESSEE VALLEY
WASTEWATER SOLUTIONS

JOHN D. TICKLE COLLEGE OF ENGINEERING
UNIVERSITY OF TENNESSEE
KNOXVILLE, TENNESSEE 37996

Project Name and Address

CHOTO PENINSULA
LOW-PRESSURE
SEWER SYSTEM

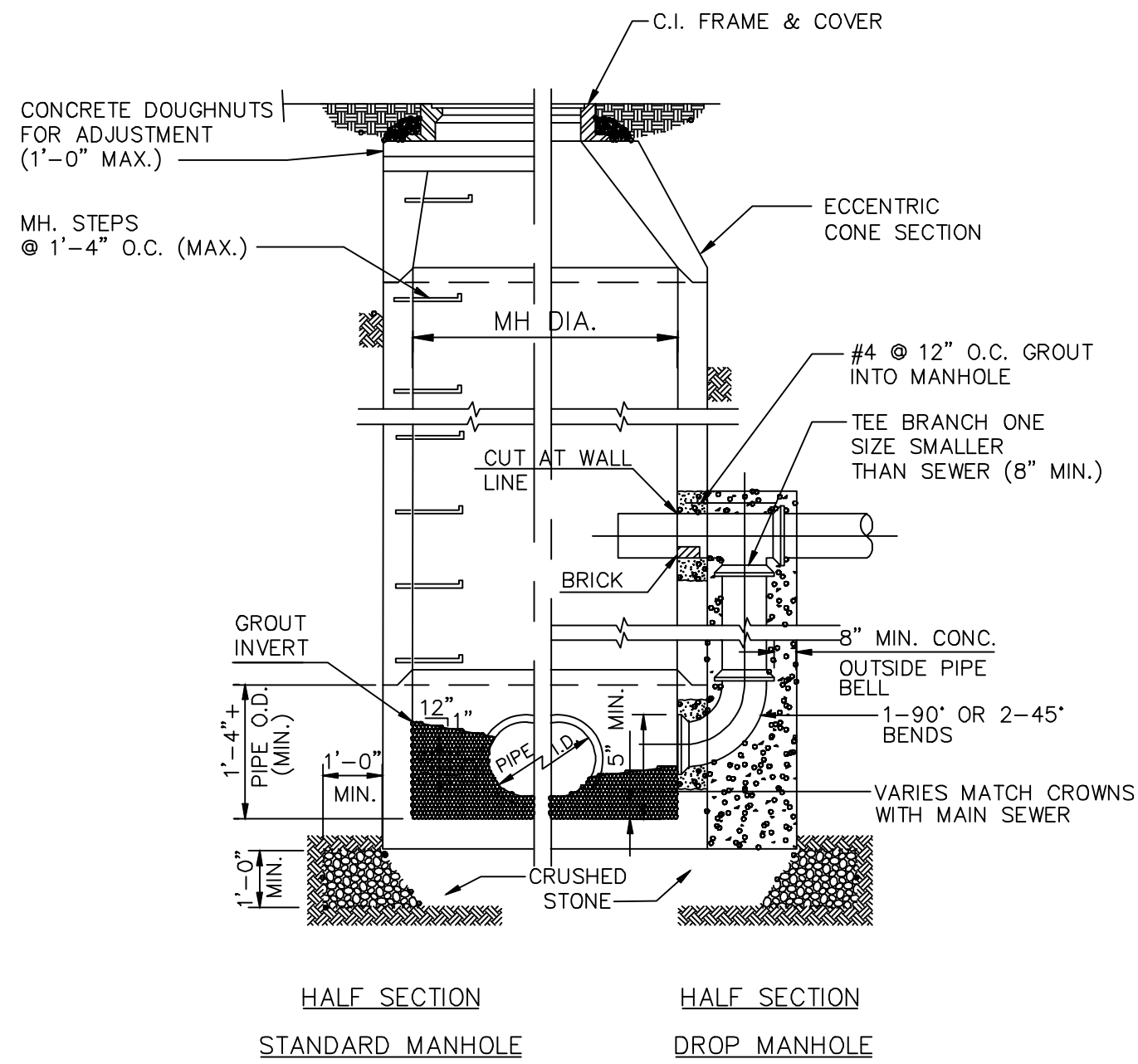
SHORING
DETAILS

Project
CHOTO PENINSULA

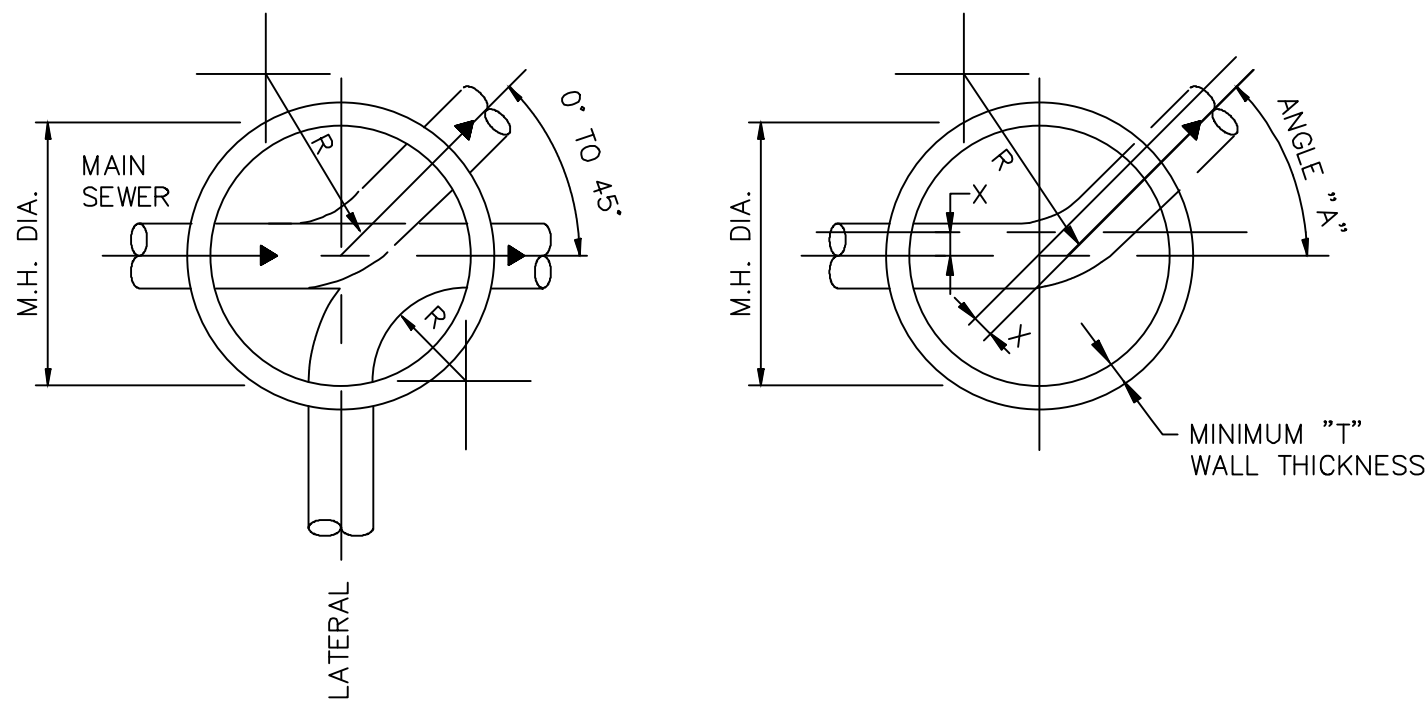
Date
04/21/2020

Scale
As Noted

Sheet
C8.0



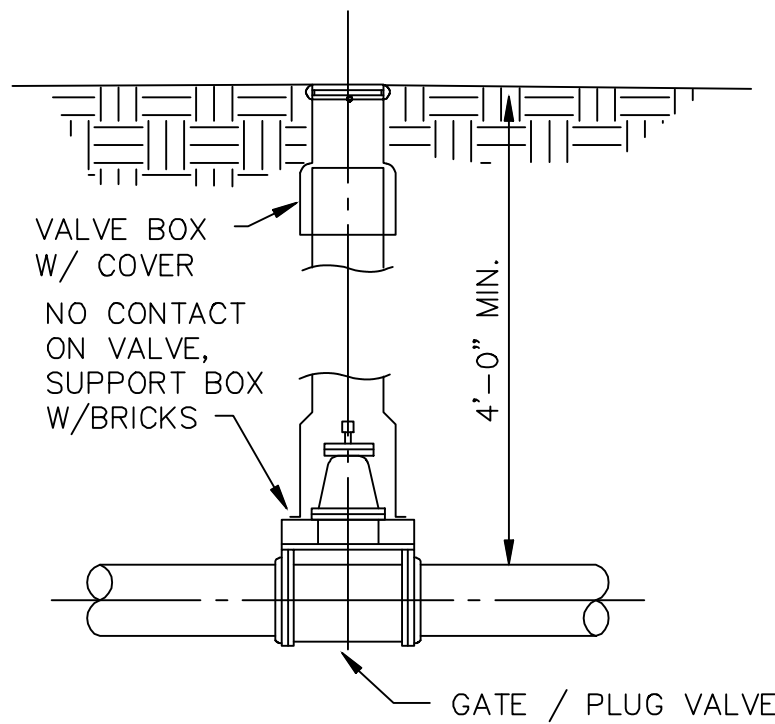
PRECAST CONCRETE MANHOLE DETAIL
N.T.S.



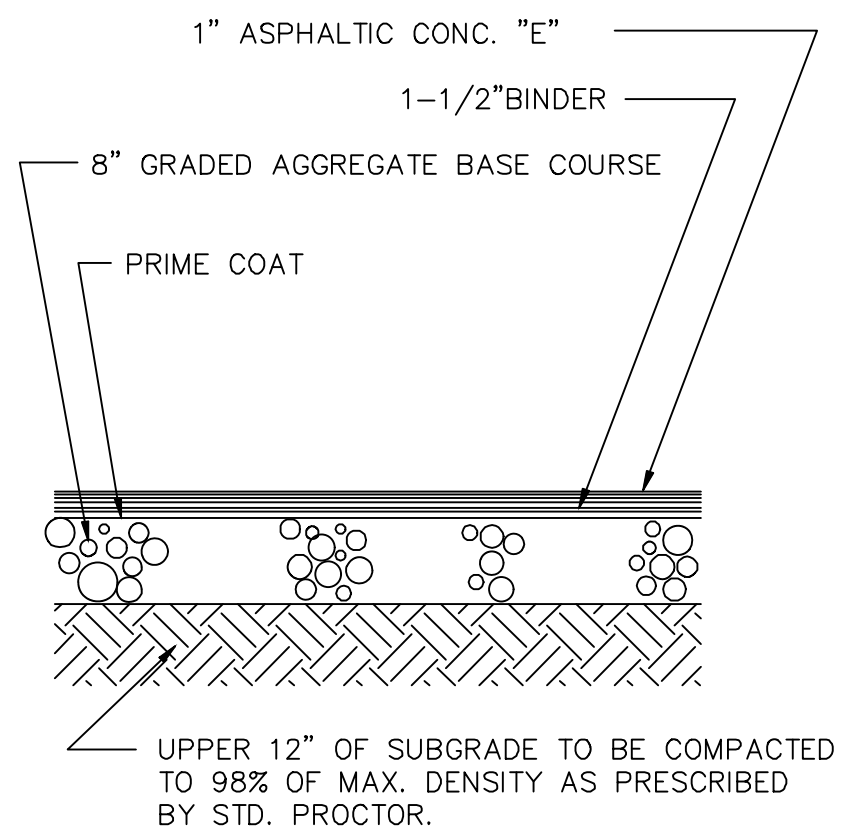
STANDARD MANHOLE SCHEDULE OF GOVERNING DIMENSIONS					
PIPE SIZE	ANGLE "A"	M.H. DIA.	"T"	"X"	"Y"
8" TO 15"	0° TO 90°	4'-0"	5"	0"	0"
18" TO 24"	0° TO 60°	4'-0"	5"	0"	0"
18" TO 24"	60° TO 90°	5'-0"	6"	6"	6"

NOTE:
MINIMUM $\frac{1}{2}$ RADIUS (R) OF M.H. INVERT
= 1.5 x PIPE DIAMETER

TYPICAL PLANS
STANDARD MANHOLE DETAIL
N.T.S.



GATE / PLUG VALVE
INSTALLATION DETAIL
N.T.S.



TYPICAL ASPHALT PAVING DETAIL
N.T.S.

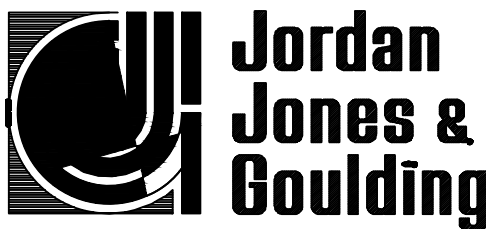
NOTES:

1.) THE CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO INSTALLATION AND NOTIFY THE ENGINEER OF ANY DISCREPANCY.

AS BUILT:

1. THESE RECORD DRAWINGS HAVE BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OF OMISSION WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT AS A RESULT.

1	NOV., 1997	AS-BUILT
0	MAY, 1996	INITIAL ISSUE
NO.	DATE	DESCRIPTION OF REVISION

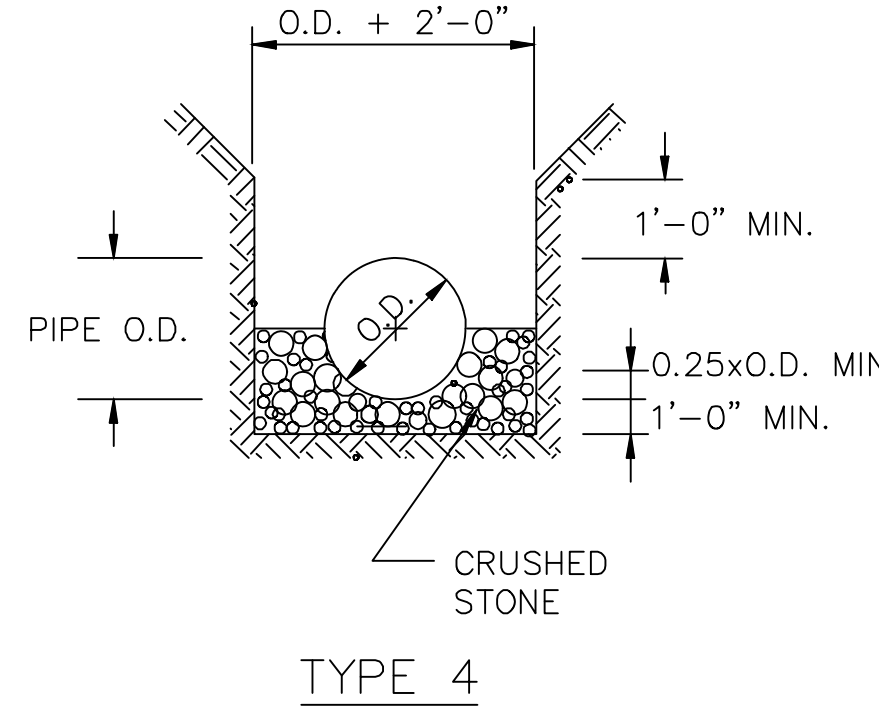
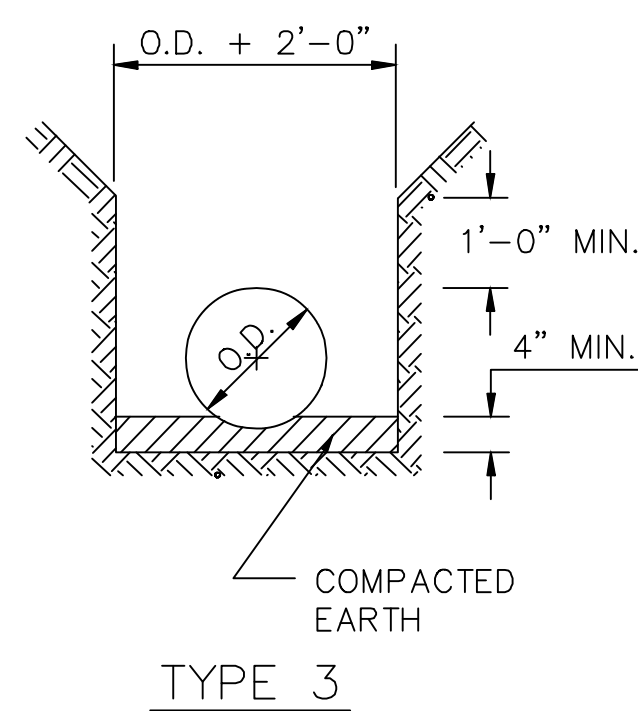
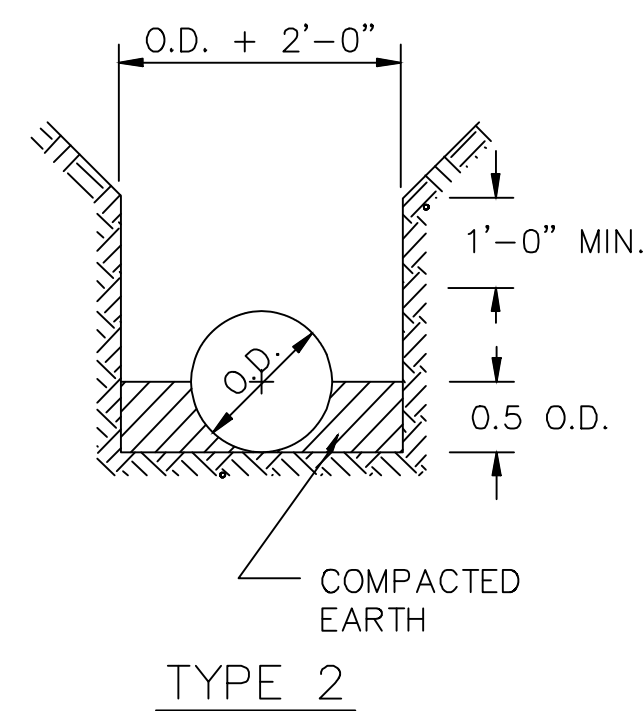
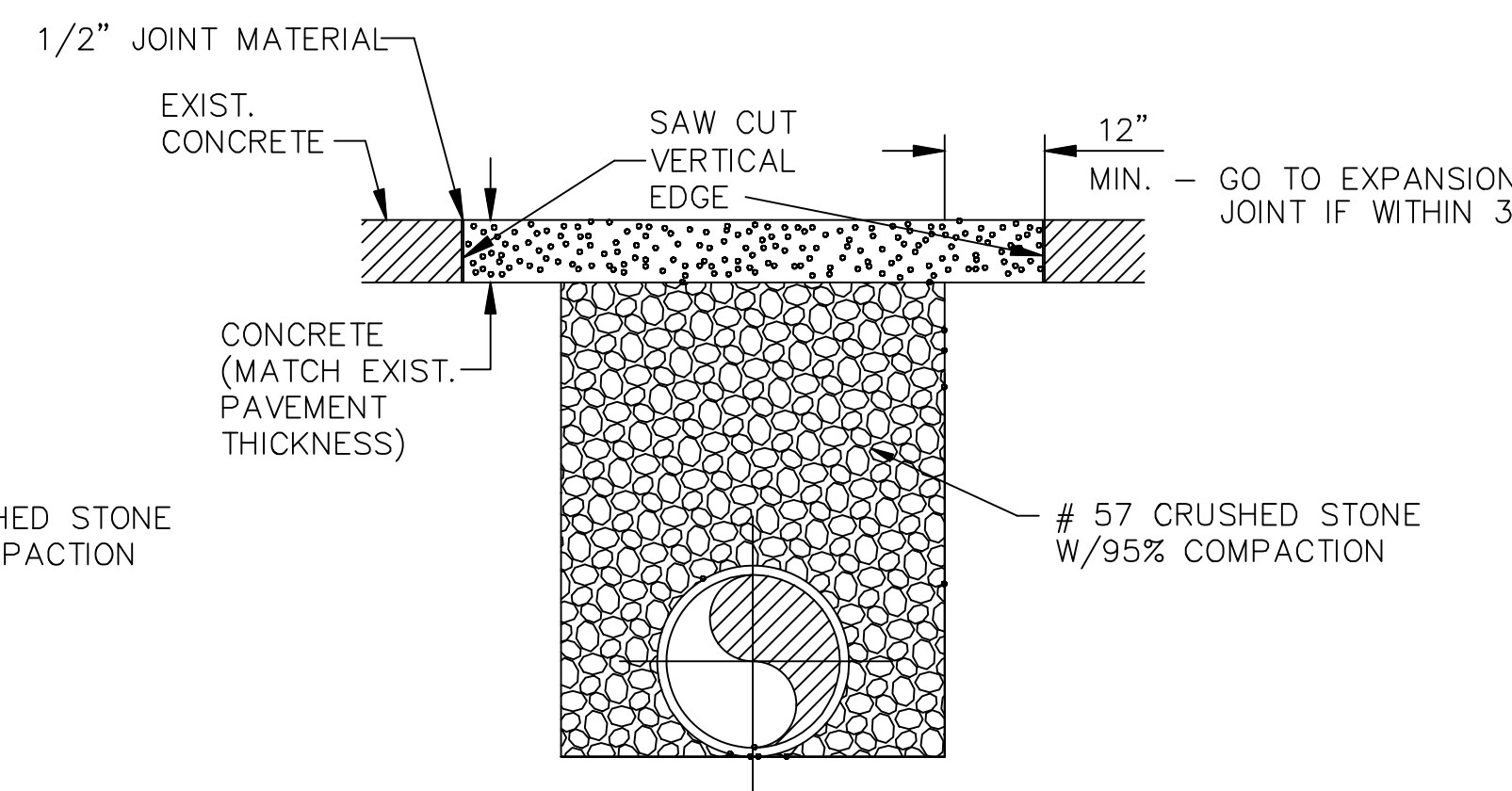
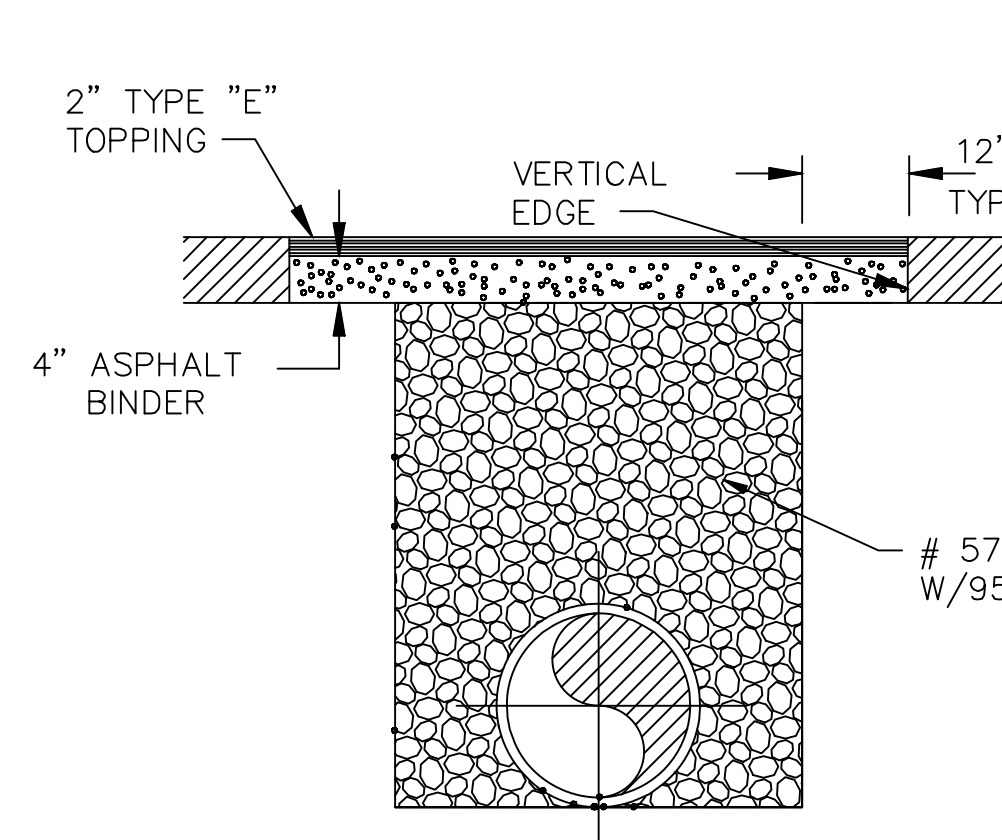
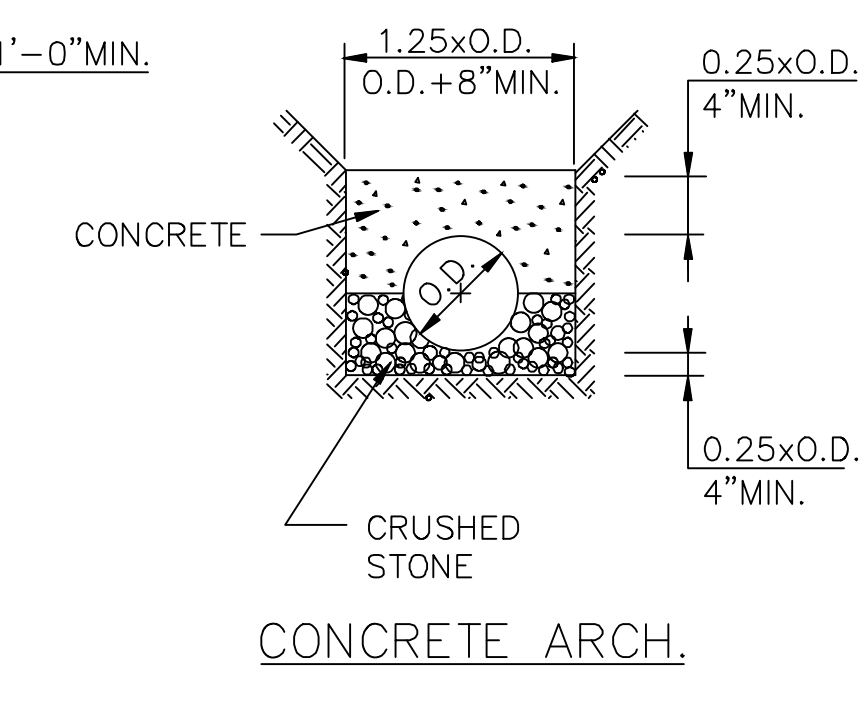
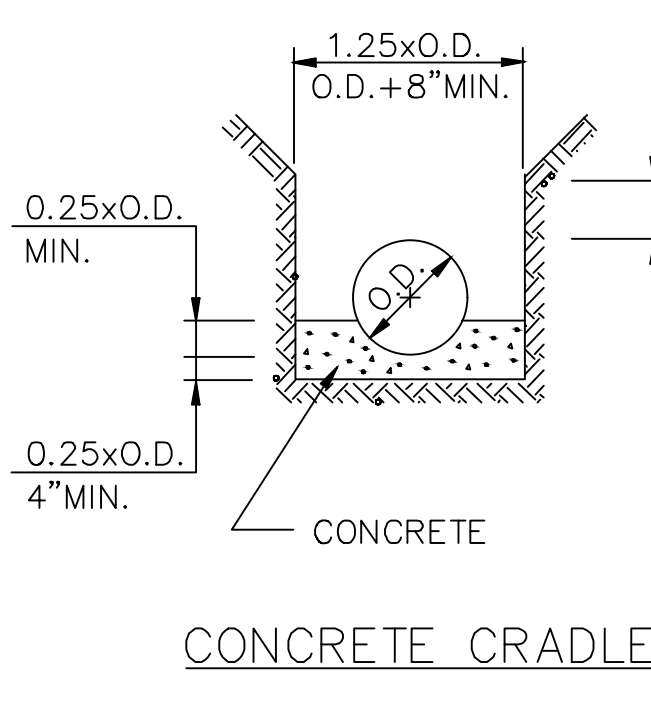
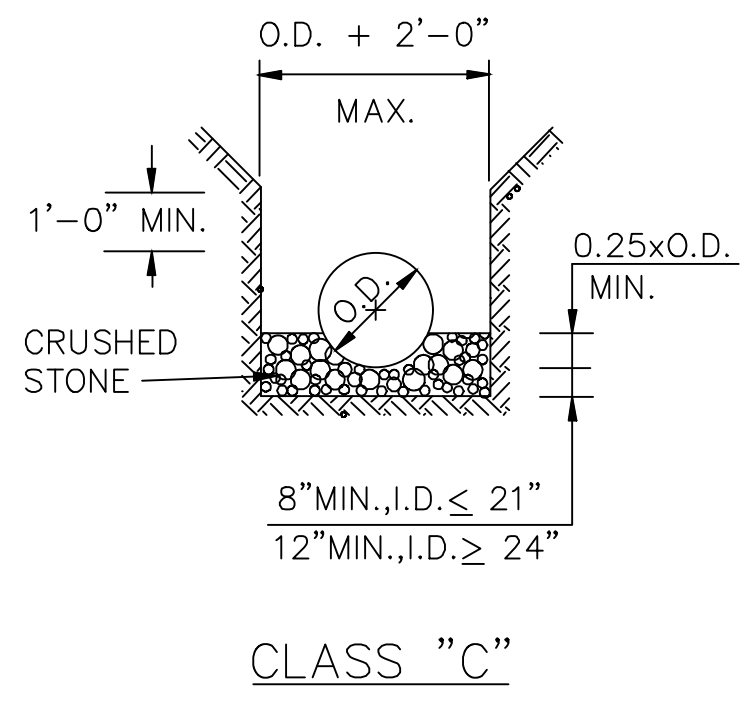
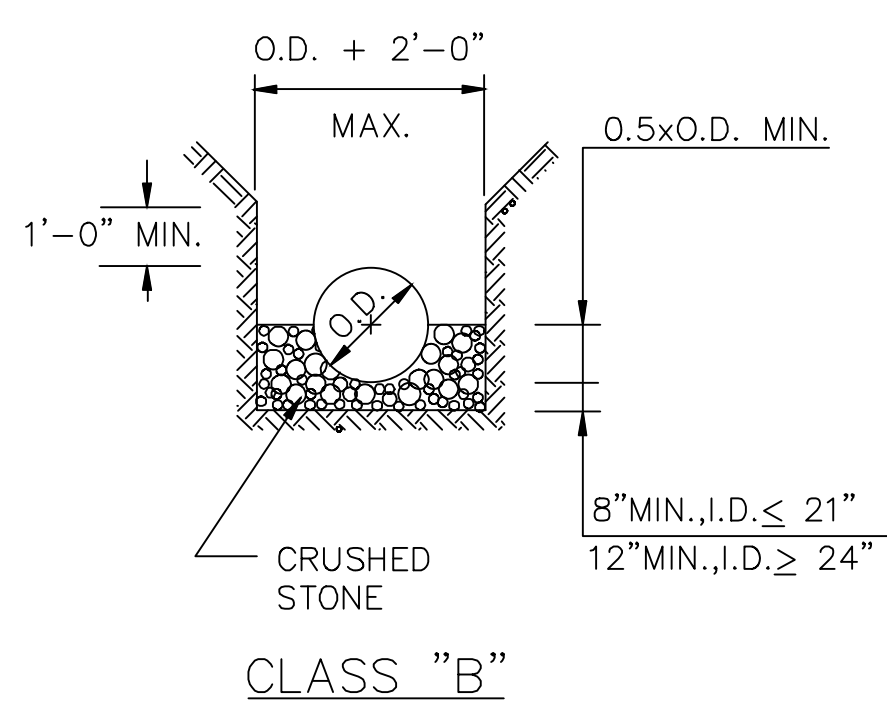


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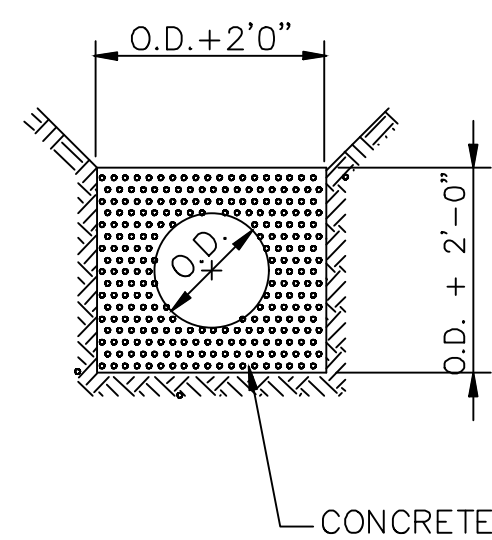
CHOTO BASIN WASTEWATER SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAILS

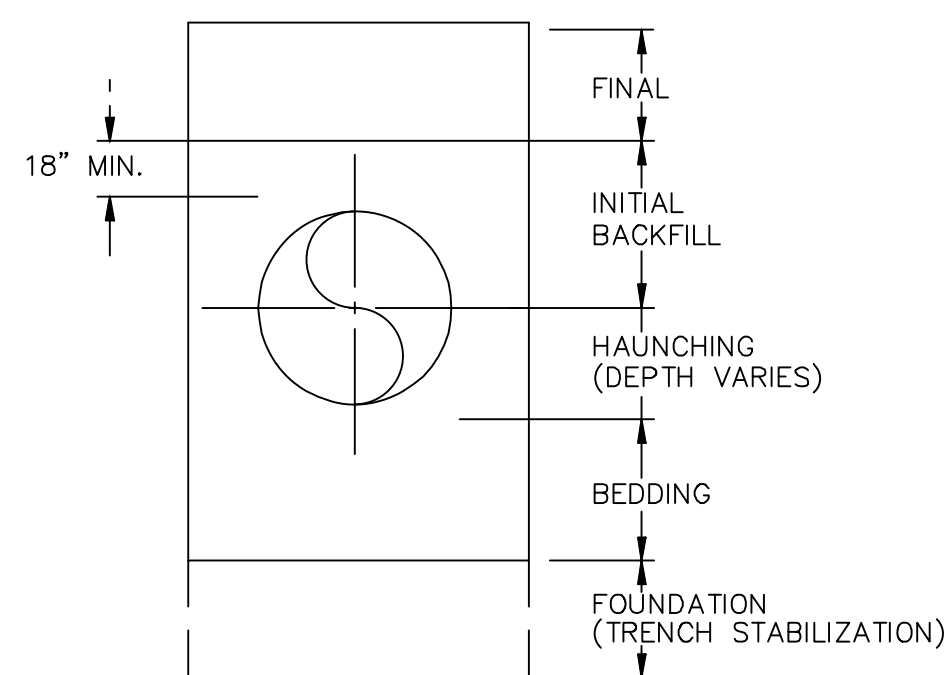
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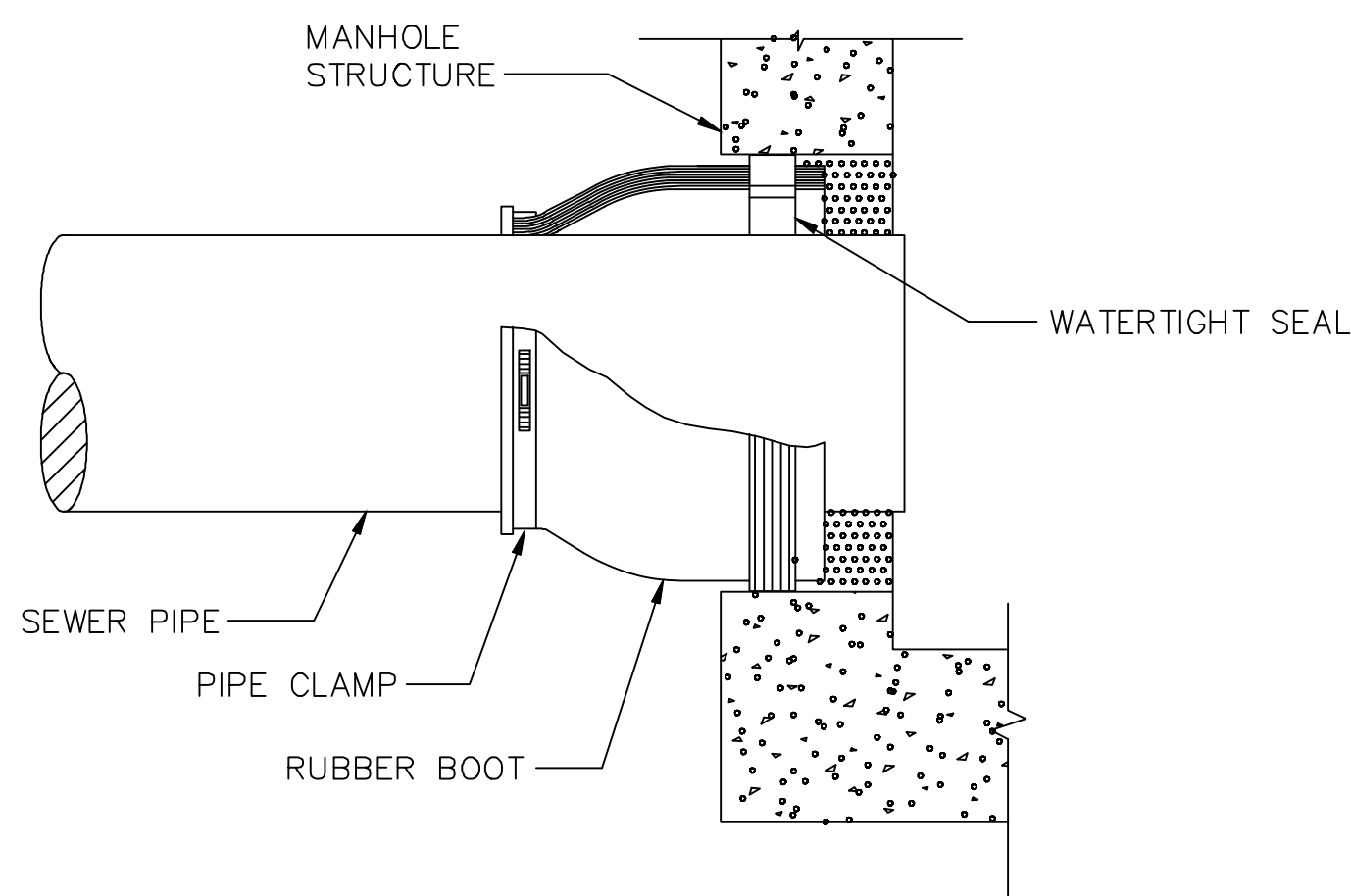
GRAVITY SEWER
FORCE MAIN
PIPE BEDDING AND HAUNCHING DETAILS
N.T.S.



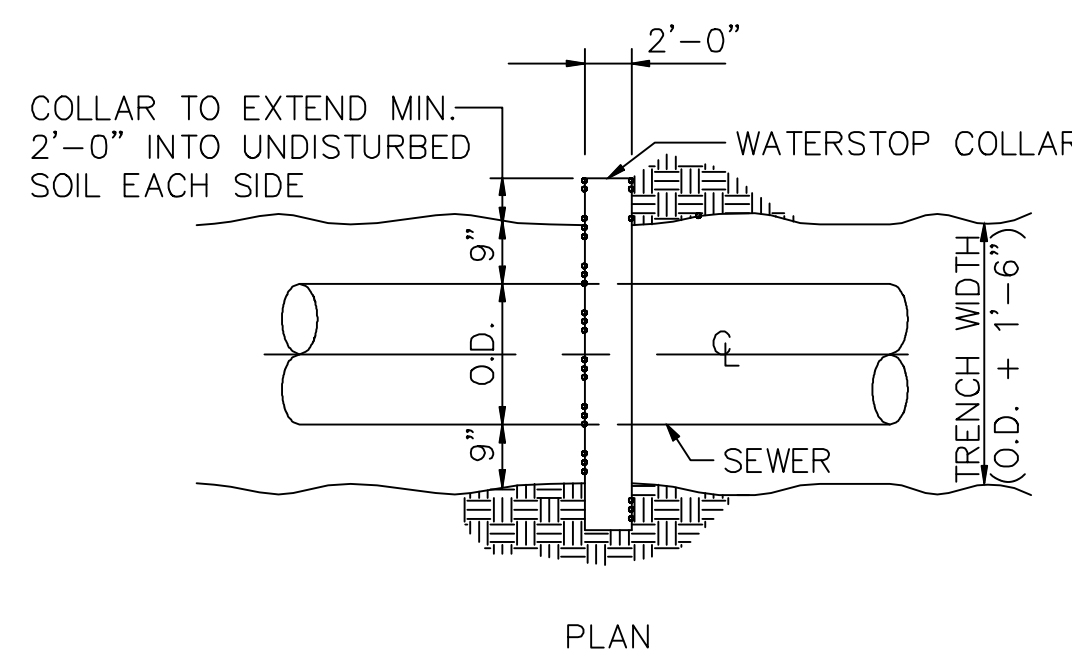
CONCRETE ENCASEMENT DETAIL
N.T.S.



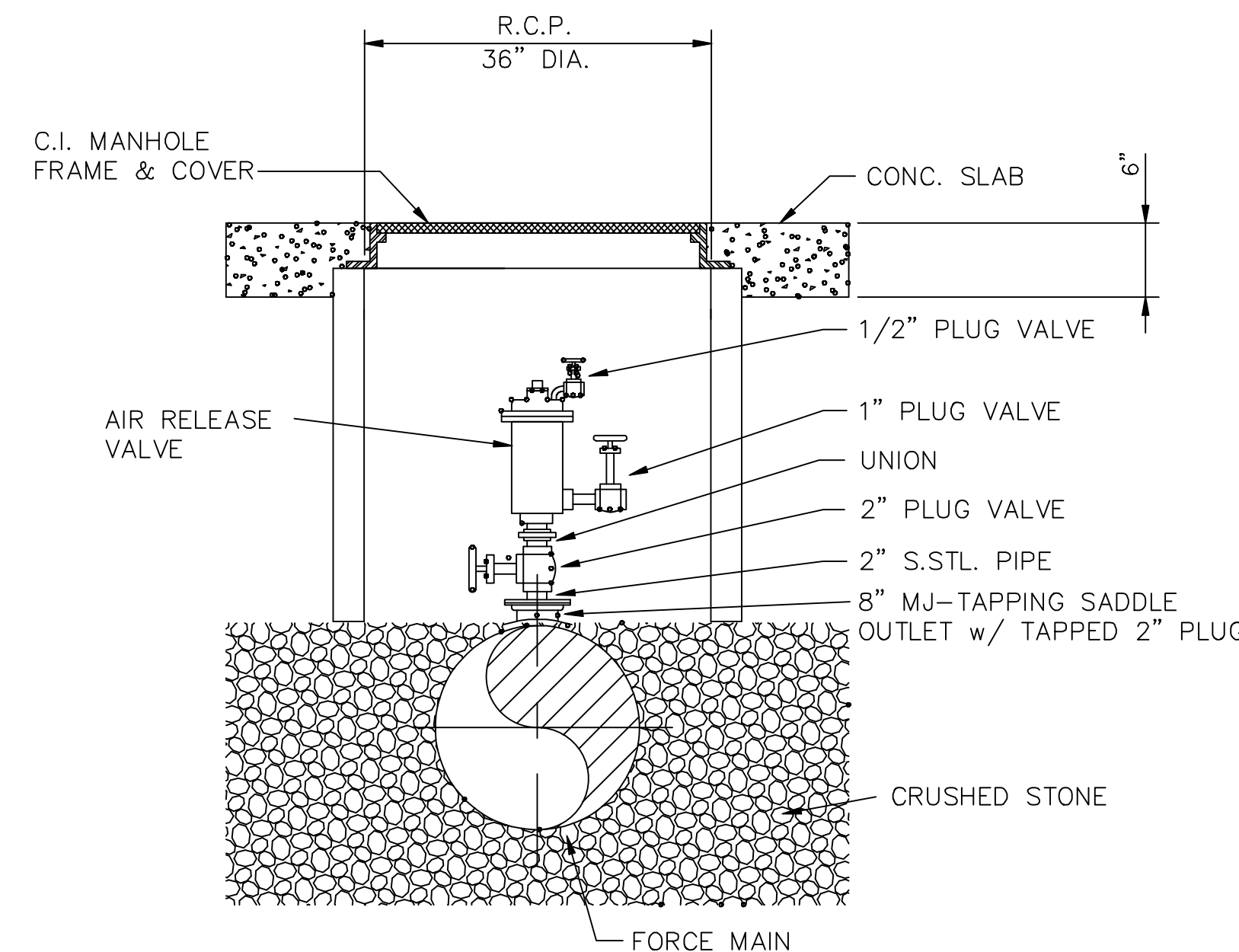
TRENCH TERMINOLOGY DETAIL
N.T.S.



MANHOLE CONNECTION DETAIL
N.T.S.



WATERSTOP COLLAR DETAIL
N.T.S.



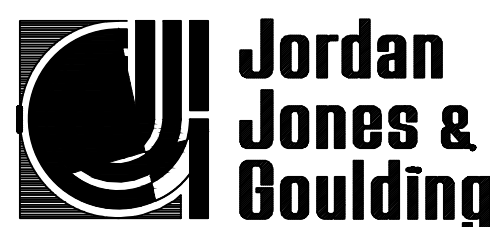
WASTEWATER AIR RELEASE
VALVE MANHOLE DETAIL
N.T.S.

NOTES:

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1. THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OF OMISSION WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT AS A RESULT.

NO.	DATE	DESCRIPTION OF REVISION
1	NOV., 1997	AS-BUILT
0	MAY, 1996	INITIAL ISSUE

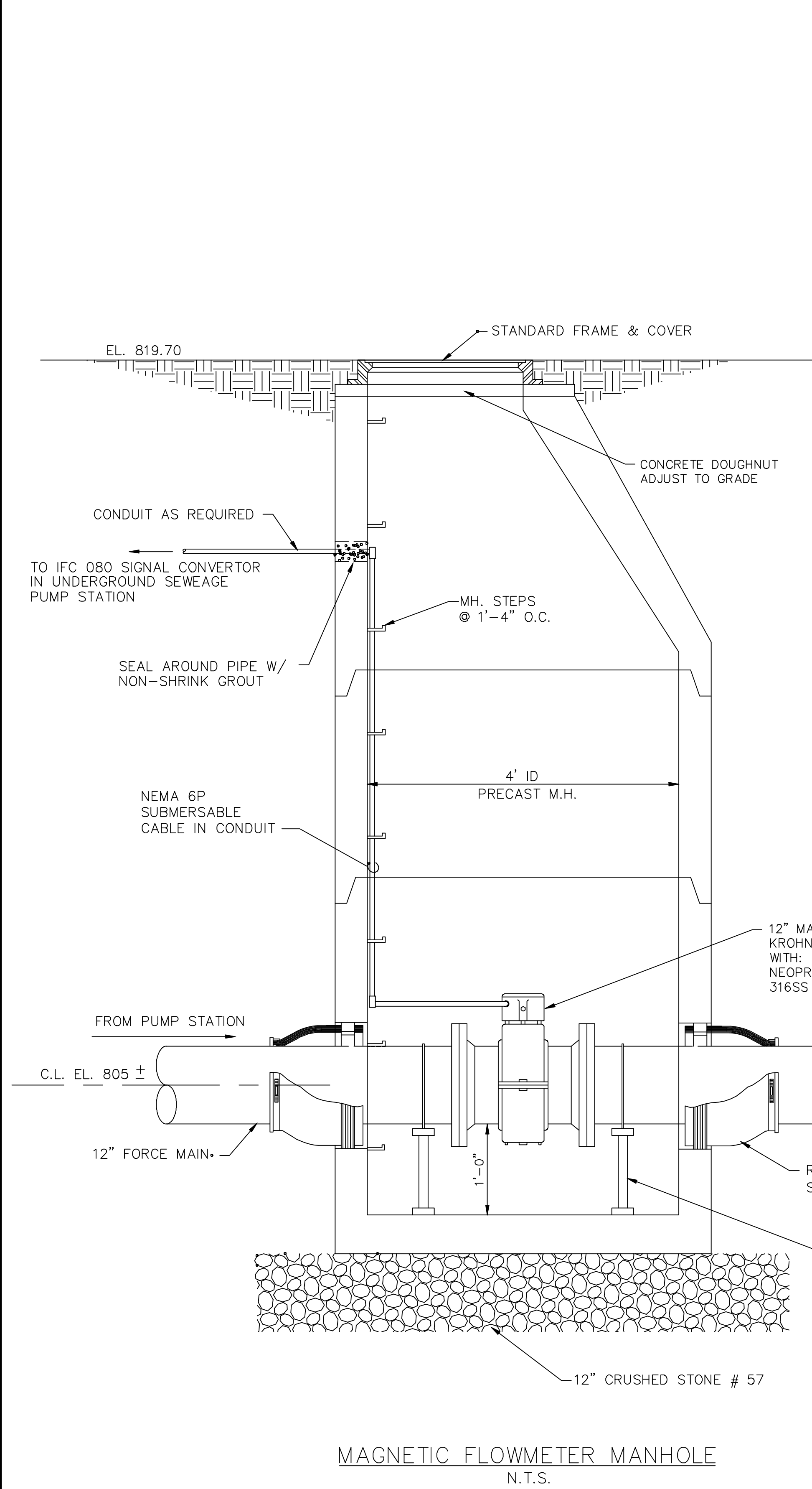


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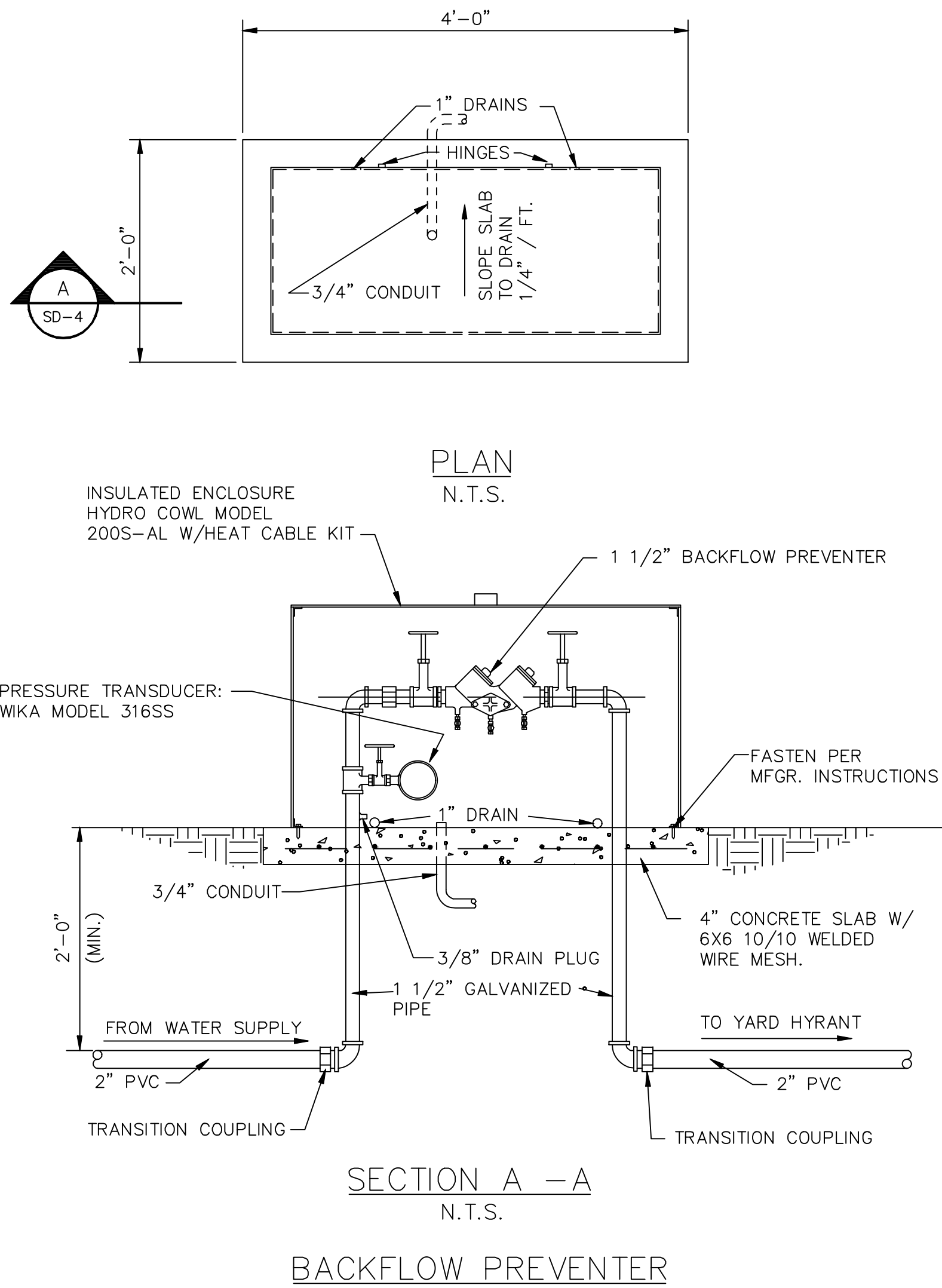
CHOTO BASIN WASTEWATER SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAILS

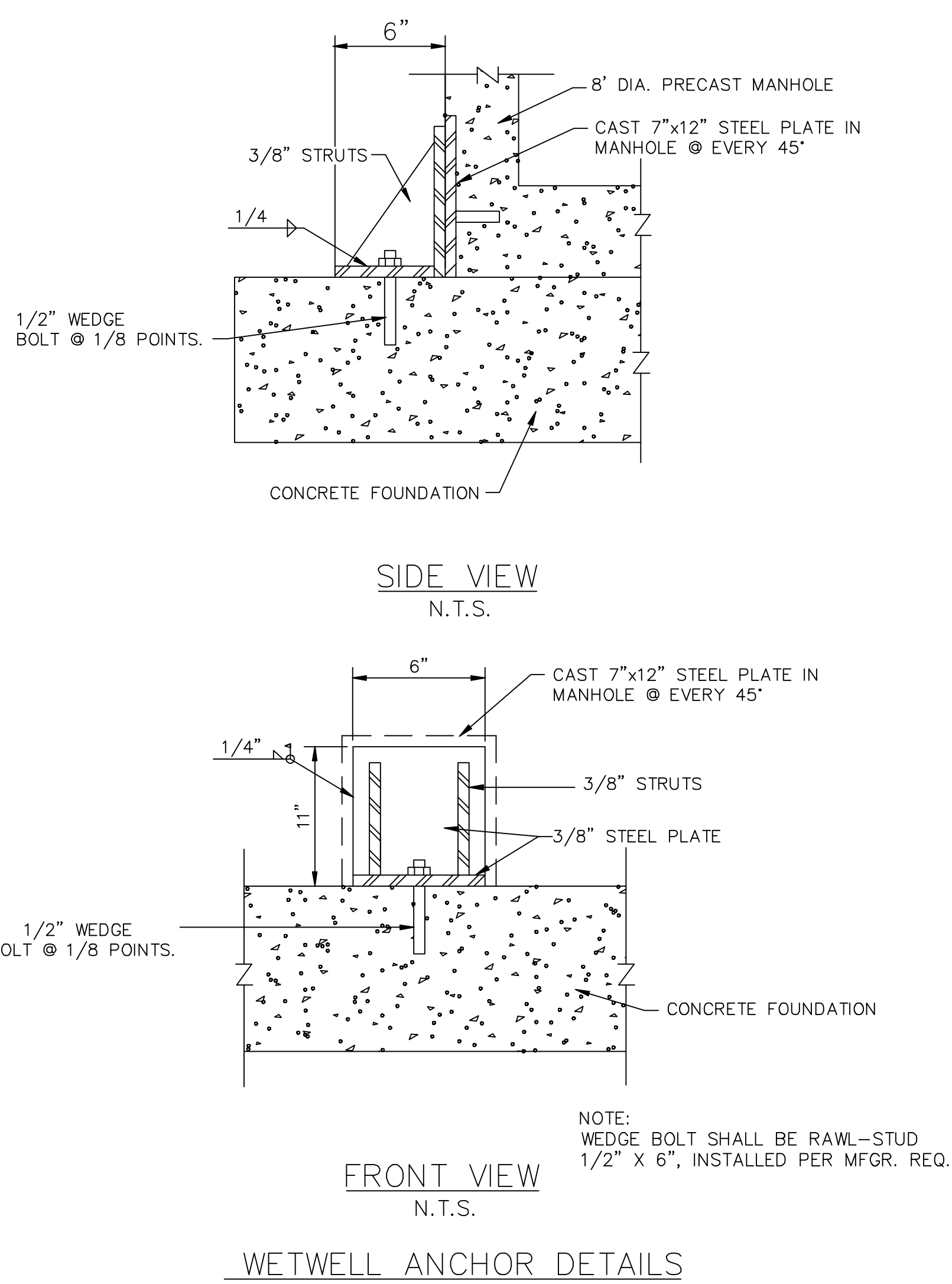
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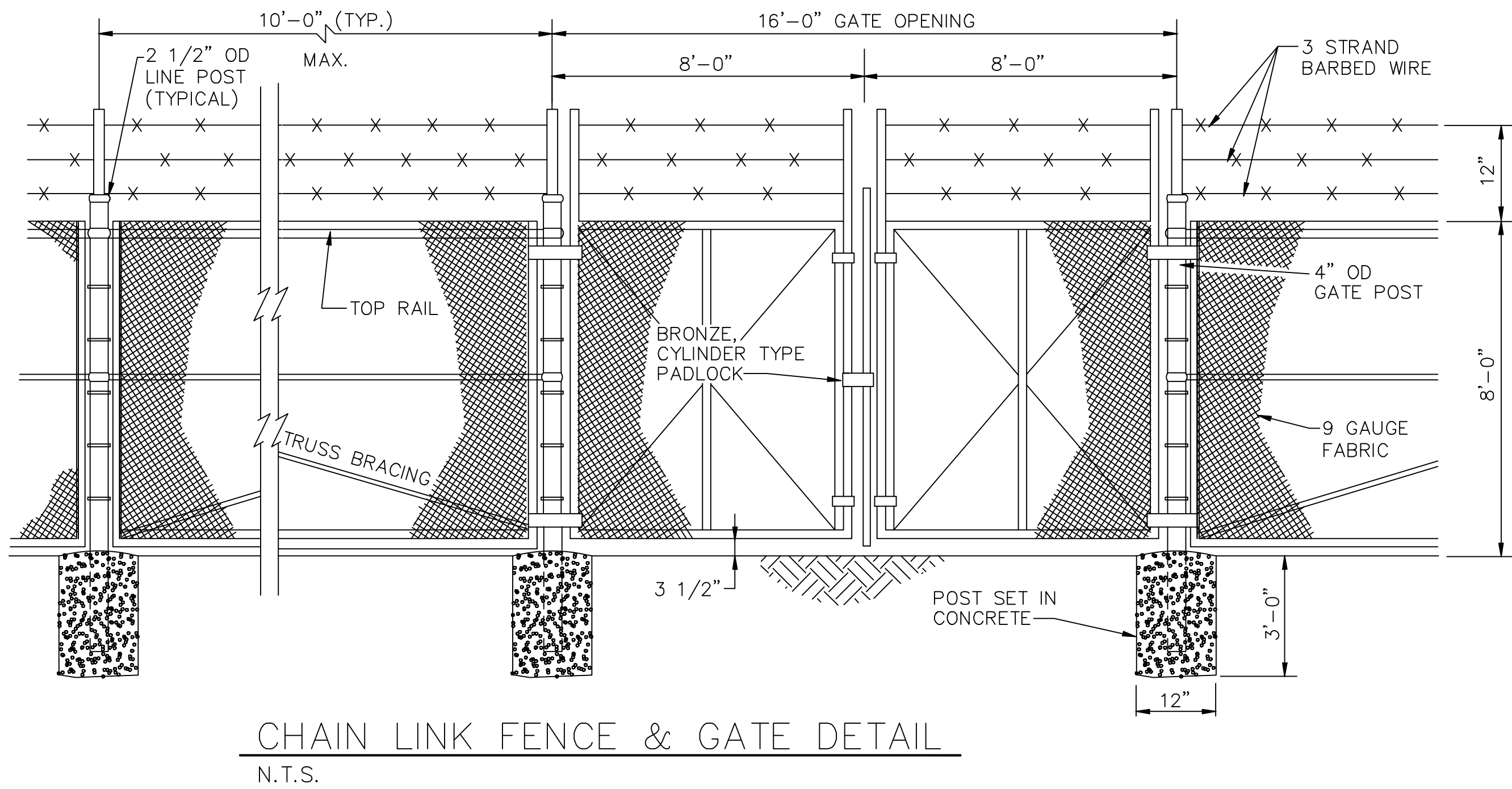
MAGNETIC FLOWMETER MANHOLE
N.T.S.



SECTION A - A
N.T.S.
BACKFLOW PREVENTER



FRONT VIEW
N.T.S.
WETWELL ANCHOR DETAILS



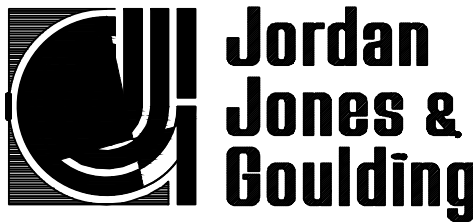
CHAIN LINK FENCE & GATE DETAIL
N.T.S.

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CHOTO BASIN WASTEWATER SYSTEM IMPROVEMENTS

MISCELLANEOUS DETAILS

DESIGNED: DJK	CHECKED: TM	DATE: MAY, 1996	SD-4	1
DRAWN: DEH	JOB NO. 2092.024.01	SCALE: NTS	SHEET	REV