

SEQUOIA LIFT STATIONS REPLACEMENT PROJECT

ITB # 4670

CITY OF ANN ARBOR PUBLIC SERVICES UNIT / WASTEWATER TREATMENT PLANT

WASHTENAW COUNTY, MICHIGAN

APRIL 20TH, 2021
ISSUED FOR BIDS
HRC JOB NO. 20181019

LIST OF DRAWINGS

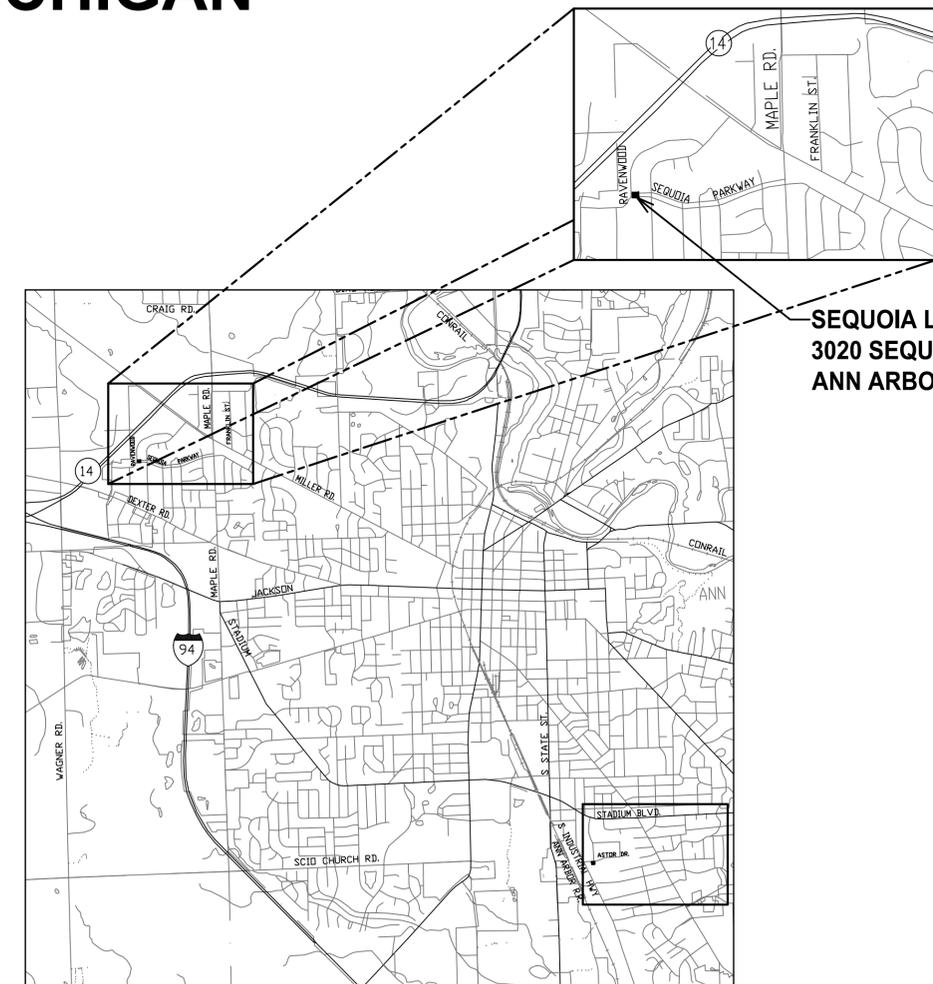
COVER SHEET

GENERAL

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- G P-01 PROCESS LEGEND
- G S-01 GENERAL STRUCTURAL DETAILS

SEQUOIA LIFT STATIONS

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SEQUOIA LIFT STATIONS
3020 SEQUOIA PARKWAY
ANN ARBOR, MI



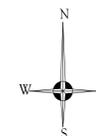
HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

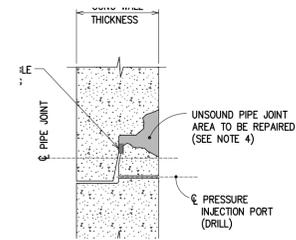
535 GRISWOLD STREET
DETROIT, MICHIGAN 48226

PHONE: (313) 965-3330
FAX: (313) 965-3342

WEB SITE: [http:// www.hrc-engr.com](http://www.hrc-engr.com)

LOCATION MAP
NOT TO SCALE



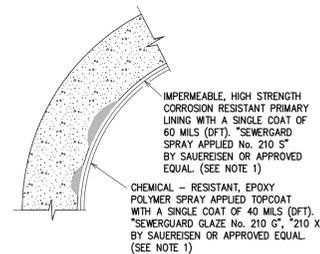
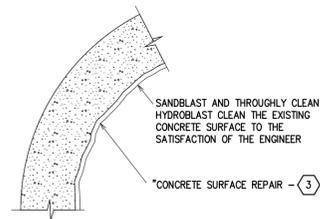


PRECAST PIPE JOINT

NOTES: JOINT REPAIR & SEAL - (1)

- A MANDATORY PRECONSTRUCTION MEETING W/FIELD ENGINEER WILL BE REQUIRED TO DETERMINE EXACT LOCATION AND QUANTITY OF REPAIRS.
- REMOVE ALL UNSOUND AND DETERIORATED CONCRETE ALONG THE EXISTING PIPE JOINTS TO THE LIMITS AS DETERMINED BY THE ENGINEER.
- SURFACE PREPARATION PER MANUFACTURER'S RECOMMENDATIONS. MECHANICAL REMOVAL OF BUILD UP AT JOINTS MAY BE NECESSARY.
- INSTALL BRIDGING EPOXY, DRILL SMALL PORT HOLES AS NECESSARY, INSTALL PRESSURE INJECTION PORTS AND PRESSURE INJECT THE PIPE JOINT WITH A SELF EXPANDING HYDROPHILIC POLYURETHANE RESIN THAT IS SPECIFICALLY DESIGNED TO STOP THE INFILTRATION OF GROUND WATER. AFTER PRESSURE INJECTION HAS BEEN COMPLETED, REMOVE PORTS AND BRIDGING EPOXY.
- FURNISH, INSTALL, FINISH AND CURE A TROWELABLE FAST SETTING HIGH EARLY STRENGTH PORTLAND BASED PATCHING MATERIAL WITH A 28 DAY CONCRETE COMPRESSIBLE STRENGTH OF AT LEAST 6000 PSI IN THE PIPE JOINT AREA TO BE REPAIRED. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ACCEPTABLE PRODUCT: UNDERLAYMENT No. F-120 BY SAUERREISEN OR APPROVED EQUAL.
- INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PERFORM ALL WORK ASSOCIATED WITH THE REMOVAL OF UNSOUND CONCRETE ALONG THE PIPE JOINTS, OFF-SITE DISPOSAL AND PRESSURE INJECTION AND JOINT REPAIR AS NOTED. CONTRACTOR SHALL BE PAID IN FULL FOR ALL COSTS ASSOCIATED WITH THE INDIVIDUAL PAY ITEM AFTER COMPLETION OF THE WORK. ITEMS INCLUDED (NOT PAID FOR SEPARATELY):
 - FURNISHING OF ALL ACCESS LADDERS, CONFINED SPACE ENTRY EQUIPMENT, SCAFFOLDING AND TIME NECESSARY FOR ENGINEER'S DETERMINATION OF LIMITS OF UNSOUND CONCRETE AREAS.
 - REMOVING UNSOUND CONCRETE ALONG THE PIPE JOINT TO THE LIMITS AS DETERMINED BY THE ENGINEER.
 - SURFACE PREPARATION PER MANUFACTURER'S RECOMMENDATIONS.
 - MECHANICAL REMOVAL OF BUILD UP AT JOINTS.
 - PRESSURE INJECT THE PIPE JOINT PERIMETER
 - REPAIR THE UNSOUND CONCRETE SURFACE AT THE PIPE JOINT
 - REMOVAL AND OFF-SITE DISPOSAL OF UNSOUND PIPE JOINT MATERIAL
 - REMOVING THE INJECTION PORTS AND BRIDGING EPOXY
- THE PATCHING AND PRESSURE INJECTION MATERIAL SHALL BE COMPATIBLE WITH PROTECTIVE CONCRETE COATING SYSTEM (REPAIR TYPE (4)).

JOINT REPAIR & SEAL - REPAIR TYPE (1)

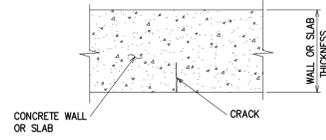


NOTES: SURFACE PREP & INSTALL PROTECTIVE CONCRETE COATING - (4)

- PRIMARY LINER AND TOPCOAT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. APPLICATIONS SHALL BE INSTALLED BY PRODUCT MANUFACTURER'S CERTIFIED INSTALLERS. CONTRACTOR SHALL PROVIDE SUPPORTIVE CERTIFICATION DOCUMENTATION FOR OWNER'S REVIEW PRIOR TO SURFACE PREPARATION WORK.
- THE ENTIRE INTERIOR CONCRETE SURFACES OF THE WET WELL SHALL RECEIVE THE PROTECTIVE COATING TO THE LIMITS AS SHOWN.
- INCLUDED IS THE FURNISHING OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PERFORM ALL WORK ASSOCIATED WITH THE SURFACE PREPARATION OF THE CONCRETE SURFACES AND THE INSTALLATION OF THE PROTECTIVE CONCRETE COATING. CONTRACTOR SHALL BE PAID FOR ALL COSTS ASSOCIATED WITH THIS WORK AFTER COMPLETION OF WORK. ITEMS INCLUDED (NOT PAID FOR SEPARATELY):
 - SURFACE PREPARATION PER MANUFACTURER'S RECOMMENDATIONS
 - FURNISHING AND INSTALLATION OF PRIMARY LINER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
 - FURNISHING AND INSTALLATION OF TOPCOAT LINER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
- DFT - DRY FILM THICKNESS

SURFACE PREP & INSTALL PROTECTIVE CONCRETE COATING

REPAIR TYPE (4)



WALL OR SLAB CRACK

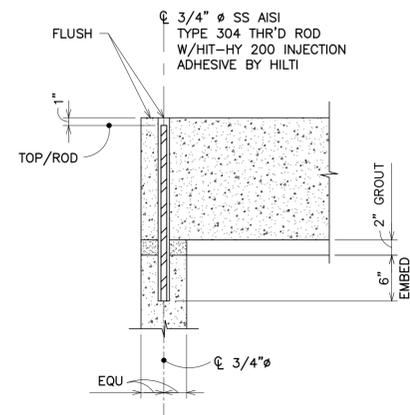
NOTES: CRACKS, REPAIR & SEAL - (2)

- A MANDATORY PRECONSTRUCTION MEETING W/FIELD ENGINEER WILL BE REQUIRED TO DETERMINE EXACT LOCATION AND QUANTITY OF REPAIRS.
- CONTRACTOR SHALL PREPARE AND THOROUGHLY CLEAN THE CONCRETE SURFACE ALONG THE CRACK TO BE REPAIRED PER MANUFACTURER'S RECOMMENDATIONS.
- INSTALL BRIDGING EPOXY, DRILL SMALL PORT HOLES AS NECESSARY, INSTALL PRESSURE INJECTION PORTS AND PRESSURE INJECT THE PIPE JOINT WITH AN EPOXY RESIN THAT IS SPECIFICALLY DESIGNED TO STRUCTALLY BOND THE CRACK CLOSED. AFTER PRESSURE INJECTION HAS BEEN COMPLETED, REMOVE PORTS AND BRIDGING EPOXY.
- INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PERFORM ALL WORK ASSOCIATED WITH PRESSURE INJECTION OF THE WALL AND SLAB CRACKS WITH AN EPOXY RESIN. CONTRACTOR SHALL BE PAID IN FULL FOR ALL COSTS ASSOCIATED WITH THIS INDIVIDUAL PAY ITEM AFTER COMPLETION OF THE WORK. ITEMS INCLUDED (NOT PAID FOR SEPARATELY):
 - FURNISHING OF ALL ACCESS LADDERS, CONFINED SPACE ENTRY EQUIPMENT, SCAFFOLDING AND TIME NECESSARY FOR ENGINEER'S DETERMINATION OF LIMITS OF UNSOUND CONCRETE AREAS
 - SURFACE PREPARATION AND THOROUGHLY CLEANING THE CONCRETE SURFACE ALONG THE CRACK
 - TO BE REPAIRED PER MANUFACTURER'S RECOMMENDATIONS
 - PRESSURE INJECTION OF WALL OR SLAB CRACKS
 - REMOVING THE INJECTION PORTS AND BRIDGING EPOXY

CRACKS, REPAIR & SEAL - REPAIR TYPE (2)

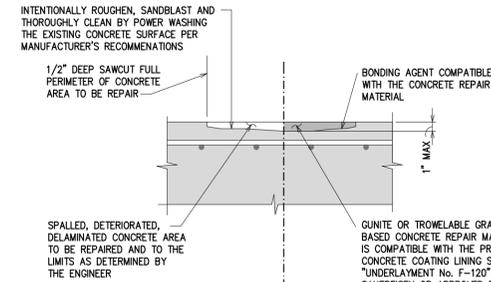
FRP LADDER & LADDER UP NOTES:

- CONTRACTOR SHALL FIELD VERIFY ALL NECESSARY DIMENSIONS FOR PROPER FIT OF THE FRP LADDER AND STAINLESS STEEL LADDER UP WITH EXISTING RISER SECTIONS AND COORDINATE WITH PROPOSED TOP SLAB AND ACCESS HATCH.
- CONTRACTOR SHALL PREPARE, SUBMIT AND SEAL BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MICHIGAN, DETAILED FRP LADDER & LADDER UP SHOP DRAWINGS AND CALCULATIONS FOR ENGINEER'S REVIEW. THE DESIGN, FABRICATION, MATERIAL THICKNESS, APPROVED FABRICATORS, ETC OF THE FRP LADDER SHALL BE IN ACCORDANCE WITH SPECIFICATIONS SECTION 06610.
- THE LADDER UP, LADDER STAND-OFF BRACKETS AND ALL CONNECTIONS HARDWARE SHALL BE STAINLESS STEEL - TYPE 316 OR APPROVED EQUAL.



TOP SLAB CONNECTION

NO SCALE

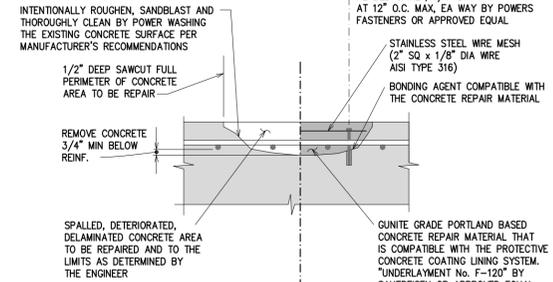


DEPTH: LESS THAN OR EQUAL TO 1" SHALLOW REPAIR

NOTES: CONCRETE SURFACE REPAIR - (3)

- A MANDATORY PRECONSTRUCTION MEETING W/FIELD ENGINEER WILL BE REQUIRED TO DETERMINE EXACT LOCATION AND QUANTITY OF REPAIRS.
- THE BONDING AGENT SHALL BE A ONE OR TWO COMPONENT BONDING AGENT THAT IS COMPATIBLE WITH THE CONCRETE REPAIR MATERIAL. THE BONDING AGENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PERFORM ALL WORK ASSOCIATED WITH THE REMOVAL AND OFF-SITE DISPOSAL OF UNSOUND CONCRETE AND THE FURNISHING, INSTALLATION, FINISHING AND CURING OF THE REPAIR MATERIALS AND ALL ASSOCIATED REPAIR ITEMS AS NOTED ABOVE. CONTRACTOR SHALL BE PAID IN FULL FOR ALL COSTS ASSOCIATED WITH THIS INDIVIDUAL PAY ITEM AFTER COMPLETION OF THE WORK. ITEMS INDIVIDUAL (NOT PAID FOR SEPARATELY):
 - FURNISHING OF ALL ACCESS LADDERS, CONFINED SPACE ENTRY EQUIPMENT, SCAFFOLDING AND TIME NECESSARY FOR ENGINEER'S DETERMINATION OF LIMITS OF UNSOUND CONCRETE AREAS
 - REMOVAL AND OFF-SITE DISPOSAL OF ALL UNSOUND, SPALLED, DETERIORATED AND DELAMINATED CONCRETE AREAS.
 - SURFACE PREPARATION PER MANUFACTURER'S RECOMMENDATIONS.
 - FURNISHING, INSTALLATION, FINISHING AND CURING OF ALL PATCHING REPAIR MATERIALS AND METHODS AS INDICATED ABOVE.
- THE CONCRETE SURFACE REPAIR MATERIALS AND THE PROTECTIVE CONCRETE COATING SYSTEM SHALL BE COMPATIBLE AND MANUFACTURED BY THE SAME COMPANY. DIFFERENT MANUFACTURE'S OF INDIVIDUAL COMPONENTS SHALL NOT BE ACCEPTABLE.

CONCRETE SURFACE REPAIR - REPAIR TYPE (3)



DEPTH: GREATER THAN 1" DEEP REPAIR



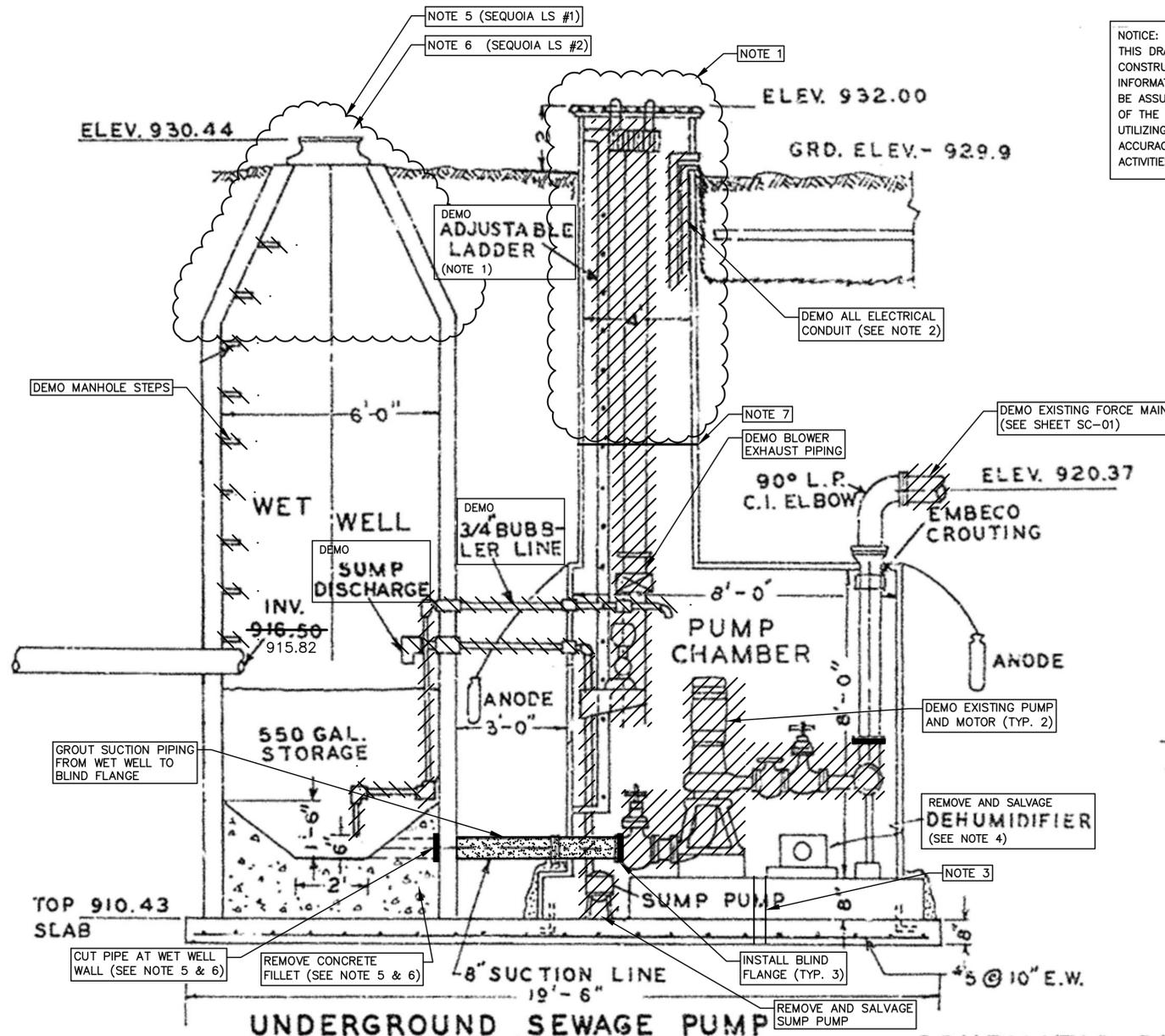
ISSUED FOR BIDS	APRIL 20, 2021	AAU	CHECKED
ISSUED FOR 90% REVIEW	NOV. 5, 2019	AAU	DATE
REV.	DESCRIPTION	DATE	

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PUBLIC SERVICES
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ANN ARBOR, MI 48107-8647
www.a2gov.org

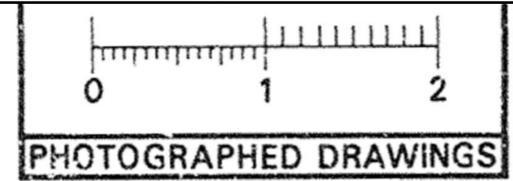


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
GENERAL STRUCTURAL
DETAILS

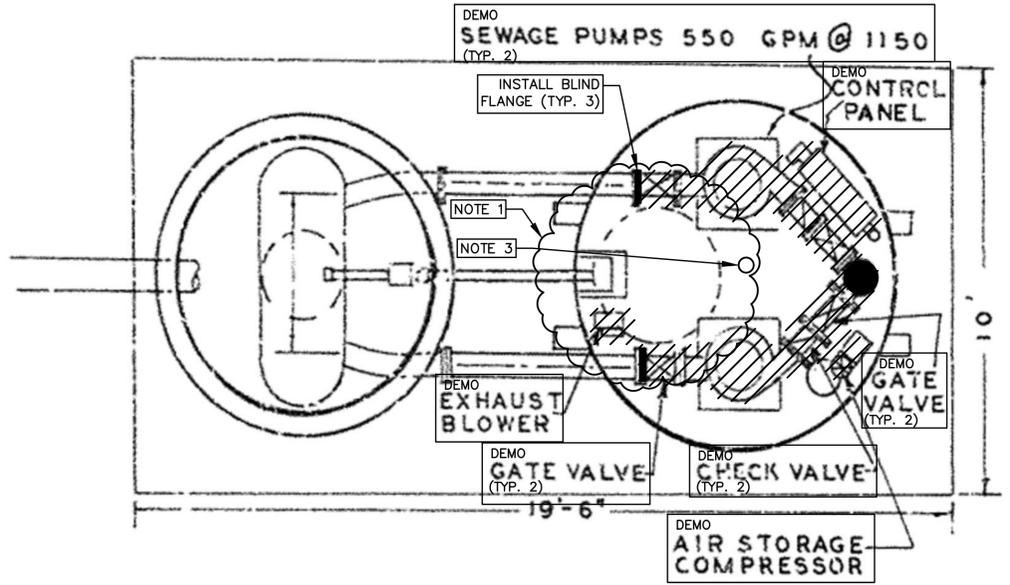
SCALE N.T.S.
DRAWING No. G S-01
SHEET No.



NOTICE:
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NOTE:
PUMPING STATION SUPPORTED ON STEEL BEAMS OR CHANNELS AND ANCHORED TO THE REINFORCED CONCRETE BASE.



UNDERGROUND SEWAGE PUMP SECTION VIEW
SCALE: 1" = 4'
SCHEMATIC DIAGRAM
SHOWING ESSENTIAL ELEMENTS

DEMOLITION NOTES:

1. REMOVE ENTRANCE TUBE & ACCESS LADDER TO 5' MIN. BELOW GRADE AT SEQUOIA #1 LIFT STATION AND TO 16' MIN. BELOW GRADE AT SEQUOIA #2 LIFT STATION. FILL LIFT STATIONS DRY WELLS WITH PEA STONE (CONFORMING TO MDT 34R) FOLLOWING COMPLETION OF DEMOLITION.
2. FOR CONTINUATION OF ELECTRICAL DEMOLITION, SEE SHEET SE-01.
3. DRILL ONE (1) CORE HOLE IN EACH LIFT STATION DRY WELL AND SEQUOIA #1 WET WELL BASE SLAB FOR GROUNDWATER DRAINAGE. DRAINAGE HOLE MUST BE 3 INCHES IN DIAMETER.
4. SALVAGED ITEMS SHALL BE CLEANED, STORED, AND PROTECTED AT A LOCATION APPROVED BY THE ENGINEER. SALVAGE ITEMS IN ACCORDANCE WITH SPECIFICATION SECTION 02050 - DEMOLITION WORK.
5. EXISTING SEQUOIA #1 LIFT STATION WET WELL CONE, CHIMNEY, MANHOLE FRAME AND COVER TO BE REMOVED. ALL EQUIPMENT TO BE DEMOLISHED. SUCTION PIPING TO BE GROUTED FROM WET WELL TO BLIND FLANGE WITH ABANDONED LS DRY WELL. SEQUOIA #1 LIFT STATION WET WELL TO BE FILLED WITH PEA STONE (CONFORMING WITH MDT 34R) FOLLOWING COMPLETION OF DEMOLITION.
6. EXISTING SEQUOIA #2 LIFT STATION WET WELL TO BE REPURPOSED AS A MANHOLE. DEMOLISH ALL EXISTING EQUIPMENT FROM WET WELL & DRY WELL, CUT ALL PIPING AT WET WELL WALL AND GROUT. SEE SHEET GS-01 AND SP-01 FOR MORE DETAILS.
7. INSTALL A GEOTEXTILE SEPARATOR FABRIC AT THE LIMIT OF DEMOLITION WITHIN THE ENTRANCE TUBE FOR BOTH LIFT STATION DRY WELLS (CONFORMING TO 2012 MDT STANDARDS SECTION 910.03.C).
8. DETAILS ARE TYPICAL FOR BOTH SEQUOIA #1 AND #2 LIFT STATIONS.
9. CONFIRM ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

APPROVED BY: _____

M.D.H. Permit No. 20546 910 5-29-61
PREPARED BY ATWELL-HICKS INC.

DR. BY R.S.	DATE 1-23-01	SHEET NO.
TR. BY F.S.	DATE 1-29-01	INDEX NO. 4536
CH. BY JLS R/L A.N.	DATE 4/61	SHELF NO.
REVISIONS SANITARY AS BUILT MARCH 1968 AS BLT. L.F.S. 10/69		6-C-2673E
SCALE: HORIZONTAL 1" = 40' VERTICAL 1" = 4'		

SANITARY SEWER AND PUMPING STATION
SEQUOIA PKWY.
KUEHNLE AVE. TO RAVENWOOD AVE
FREDRICK A. MAMMEL SUPERINTENDENT OF PUBLIC WORKS

PUBLIC WORKS DEPARTMENT - ANN ARBOR, MICHIGAN

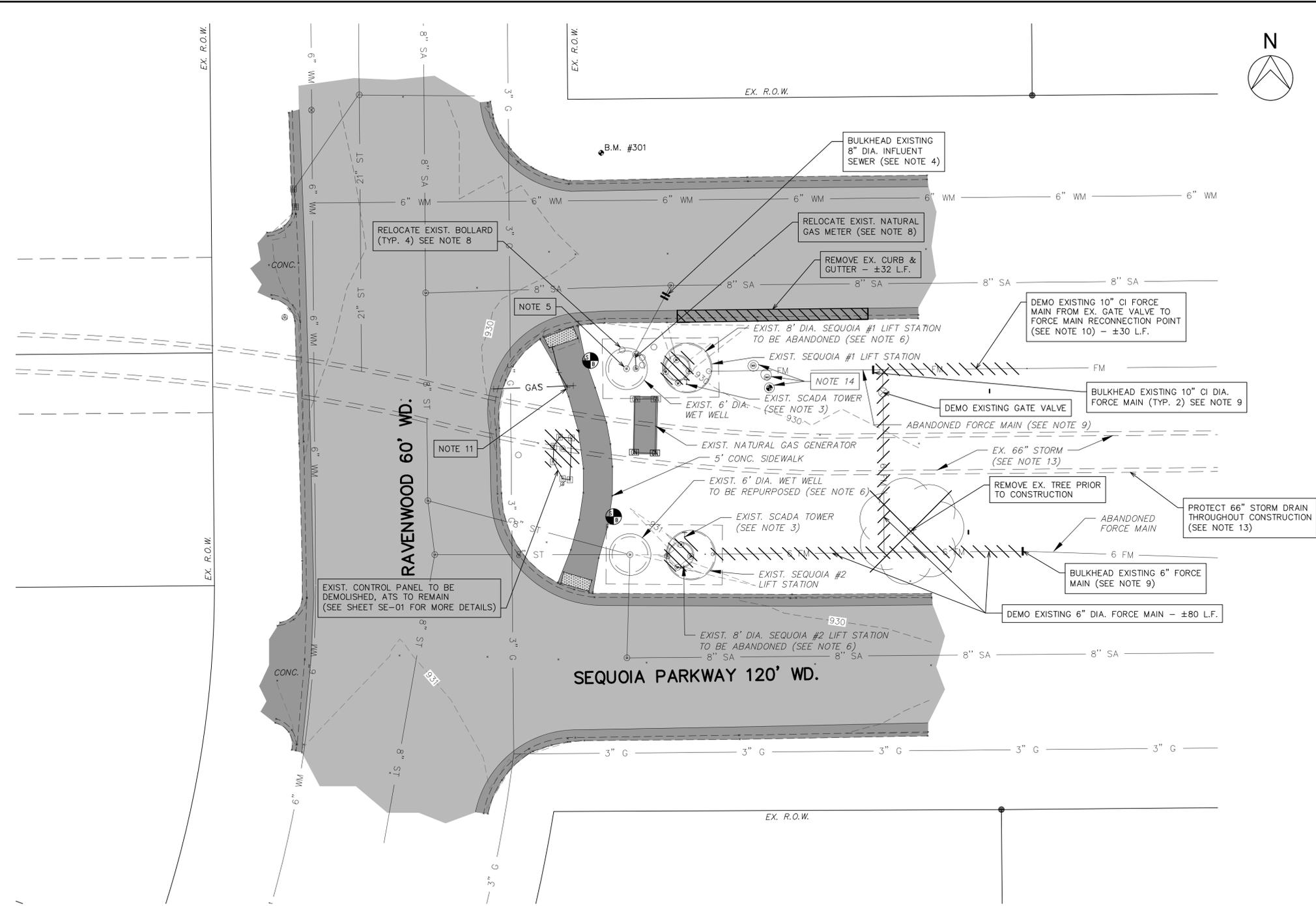
811 Know what's below. Call before you dig.

CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
SEQUOIA LIFT STATIONS
DEMOLITION

SCALE N.T.S.
DRAWING No. S D-01
SHEET No.

ISSUED FOR BIDS	APRIL 20, 2021	AAU	CHECKED
ISSUED FOR 90% REVIEW	NOV. 5, 2019	AAU	DRAWN
REV.	DESCRIPTION	DATE	



GENERAL NOTES

1. CONTRACTOR TO CONFINE HIS OPERATIONS TO WITHIN THE UTILITY EASEMENT AREA AND OUTSIDE OF THE RIGHT OF WAY WHENEVER POSSIBLE.
2. BOTH LIFT STATIONS ARE TO REMAIN IN SERVICE UNTIL THE NEW LIFT STATION IS COMMISSIONED. SEE SPEC 01950 FOR ADDITIONAL DETAILS.
3. TEMPORARILY RELOCATE SCADA TOWER TO STAGING AREA DURING CONSTRUCTION. CONFIRM FUNCTIONALITY FOLLOWING TEMPORARY INSTALLATION. COORDINATE WITH SPEC SECTION 01950 – SEQUENCING.
4. BULKHEAD EXISTING 8" DIA. INFLUENT SEWER WITH BRICK TO EXISTING SEQUOIA #1 LIFT STATION AND FILL WITH FLOWABLE FILL.
5. DEMO EXISTING MANHOLE COVER, FRAME, CHIMNEY AND CONE. ALL EQUIPMENT LOCATED WITHIN THE EXISTING SEQUOIA #1 LIFT STATION WET WELL TO BE FILL WITH PEA STONE (CONFORMING WITH MDOT 34R). SEE SHEET SD-01 FOR MORE DETAILS ON DEMOLITION.
6. EXISTING SEQUOIA #2 LIFT STATION WET WELL TO BE REPURPOSED TO A STANDARD MANHOLE. DEMO AND GROUT ALL EXISTING PIPING BETWEEN LIFT STATION WET WELL AND CAN. SEE REHABILITATION REQUIREMENTS ON SHEET GS-01 AND SP-01.
7. EXISTING LIFT STATION CANS TO BE ABANDONED IN PLACE. ALL ELECTRICAL AND MECHANICAL EQUIPMENT IS TO BE DEMOLISHED (SEE SHEET SD-01 AND SE-01). AFTER DEMOLITION AND LIFT STATION DRAINAGE CONNECTION IS COMPLETE, SEQUOIA #1 LIFT STATION ENTRANCE TUBE CAN BE CUT OFF 5' BELOW GRADE AND SEQUOIA #2 LIFT STATION ENTRANCE TUBE CAN BE CUT OFF 16' BELOW GRADE. SEQUOIA LIFT STATION #1 TO BE FILLED WITH FLOWABLE FILL AND SEQUOIA LIFT STATION #2 TO BE FILLED WITH PEA STONE (CONFORMING WITH MDOT 34R).
8. RELOCATE EXISTING NATURAL GAS METER AND PROTECTION BOLLARDS AS DIRECTED BY DTE PRIOR TO DEMOLITION OF SEQUOIA #1 LIFT STATION WET WELL.
9. BULKHEAD EXISTING FORCE MAIN USING BRICKS AND NON-SHRINK GROUT.
10. CONTRACTOR TO CONFIRM LOCATION OF ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK, AND WILL CONDUCT THEIR OPERATIONS IN SUCH A MANNER AS TO INSURE UTILITIES ARE NOT DISTURBED THROUGHOUT CONSTRUCTION.
11. NATURAL GAS UTILITY EXTENDS TO EMERGENCY GENERATOR, BUT UTILITY LOCATION IS UNKNOWN. HAND DIG AROUND THIS VICINITY FOR THE LOCATION.
12. ELECTRICAL UTILITY LOCATION IS UNKNOWN. CONTACT MISSDIG FOR UTILITY LOCATION AND HAND DIG AROUND VICINITY TO DETERMINE FINAL LOCATION.
13. THE EXISTING 66" STORM SEWER IS A WASTENAW COUNTY DRAIN, AND A PERMIT IS REQUIRED FOR UTILITY CROSSINGS. THE PLANS HAVE BEEN SUBMITTED TO THE WCWRC FOR REVIEW. THE CONTRACTOR IS REQUIRED TO COMPLY WITH THEIR REQUIREMENTS, INCLUDING LOCATING THE UTILITY ALIGNMENT AND DEPTH, AND PAYING ANY PERMIT FEES, WHICH WILL BE TAKEN FROM THE ALLOWANCE ON THE BID FORM PRICE SHEET. POT-HOLING THE LOCATION MAY BE REQUIRED AS THE TOP ELEVATION OF THE DRAIN IS CURRENTLY UNKNOWN.
14. THE PURPOSE OR FUNCTION OF THE TWO CLEAN-OUTS AND MONITORING WELL ARE UNKNOWN AS WELL AS THE LOCATION OF WHERE THE CLEAN-OUTS MAY LEAD. (THE MONITORING WELL IS ASSUMED TO BE VERTICAL) THE CONTRACTOR IS REQUIRED TO TV EACH LINE TO DETERMINE THE DIAMETER, DEPTH, DIRECTION, AND ANY OTHER INFORMATION REGARDING THESE LINES PRIOR TO DEMOLITION.

BENCHMARK INFORMATION		
B.M.#	DESCRIPTION	ELEV.
301	CROSS-CUT AT TOP OF THE LARGE EASTERLY STEAMER OF THE HYDRANT LOCATED AT NORTH EAST CORNER OF SEQUOIA PARKWAY AND RAVENWOOD	531.74



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PROJECT MANAGEMENT – PUBLIC SERVICES – CITY OF ANN ARBOR
SEQUOIA LIFT STATIONS
EXISTING SITE PLAN
SCALE PLAN: 1"=10'
DRAWING No. S C-01
SHEET No.

B.M. #301



GENERAL NOTES:

- NEW 10" DI FM TO BE CONNECTED TO EXISTING CI FM LINE VIA A TRANSITION FITTING. FOR CONTINUATION REFER TO SHEET SC-04 PLAN.
- EXISTING LIFT STATION CANS TO BE ABANDONED IN PLACE. ALL ELECTRICAL AND MECHANICAL EQUIPMENT IS TO BE DEMOLISHED (SEE SHEETS SD-01 & SE-01).
- TREES AND VEGETATION SURROUNDING THE NEW VALVE VAULT AND EXISTING WET WELL MUST BE REMOVED PRIOR TO CONSTRUCTION.
- CONTRACTOR TO TRANSITION EXISTING MANHOLES, CLEANOUTS, MONITORING WELLS AND EXISTING CURB & GUTTER TO NEW ACCESS DRIVE. SEE SHEET SC-01 FOR REQUIRED INVESTIGATION OF CLEAN OUTS AND MONITORING WELLS.
- INSTALL ACCESS DRIVE JOINTS PER MDOT STANDARDS.
- CONTRACTOR TO COORDINATE GAS UTILITY WORK AND METER AS INDICATED ON SHEET AE-01.
- CONTRACTOR TO RELOCATE EXISTING SCADA TOWER TO LOCATION DENOTED ON SHEET SE-01AT THE END OF CONSTRUCTION.
- CONTRACTOR TO PROTECT EXISTING SIDEWALK THROUGHOUT THE COURSE OF CONSTRUCTION OR REPLACE TO ORIGINAL CONDITIONS.
- ACCESS DRIVE APPROACH TO BE TYPE 'L' DRIVE APPROACH WITH HORIZONTAL SAW CUT BARRIER CURB PER THE CITY OF ANN ARBOR PUBLIC SERVICE DEPARTMENT STANDARDS. SEE STANDARD DRAWING SD-R-7 REGARDING ACCESS DRIVE APPROACH GRADING.
- THE EXISTING 66" STORM SEWER IS A WASTENAW COUNTY DRAIN, AND A PERMIT IS REQUIRED FOR UTILITY CROSSINGS. THE PLANS HAVE BEEN SUBMITTED TO THE WCRC FOR REVIEW. THE CONTRACTOR IS REQUIRED TO COMPLY WITH THEIR REQUIREMENTS, INCLUDING LOCATING THE UTILITY ALIGNMENT AND DEPTH, AND PAYING ANY PERMIT FEES, WHICH WILL BE TAKEN FROM THE ALLOWANCE ON THE BID FORM PRICE SHEET. POT-HOLING THE LOCATION MAY BE REQUIRED AS THE TOP ELEVATION OF THE DRAIN IS CURRENTLY UNKNOWN.
- SEE SOIL BORING REPORT LISTED AS AN ATTACHMENT IN THE SPECIFICATIONS.



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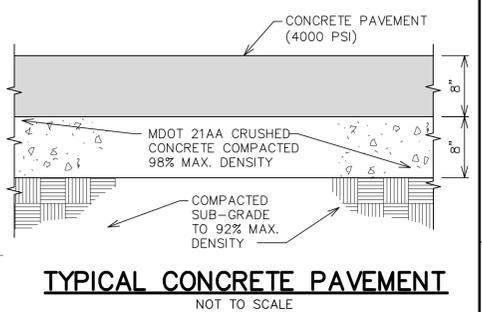
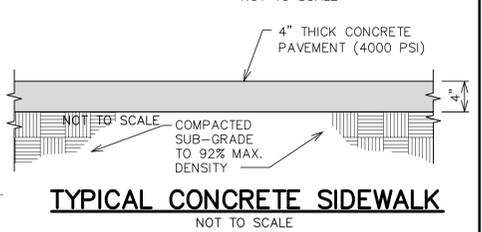
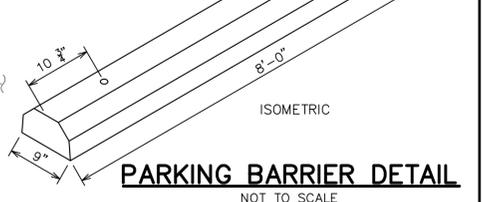
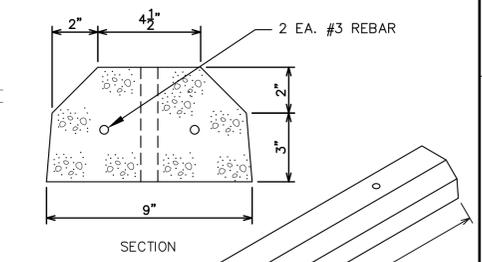
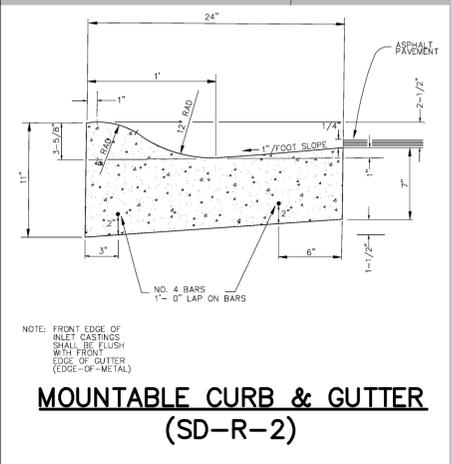
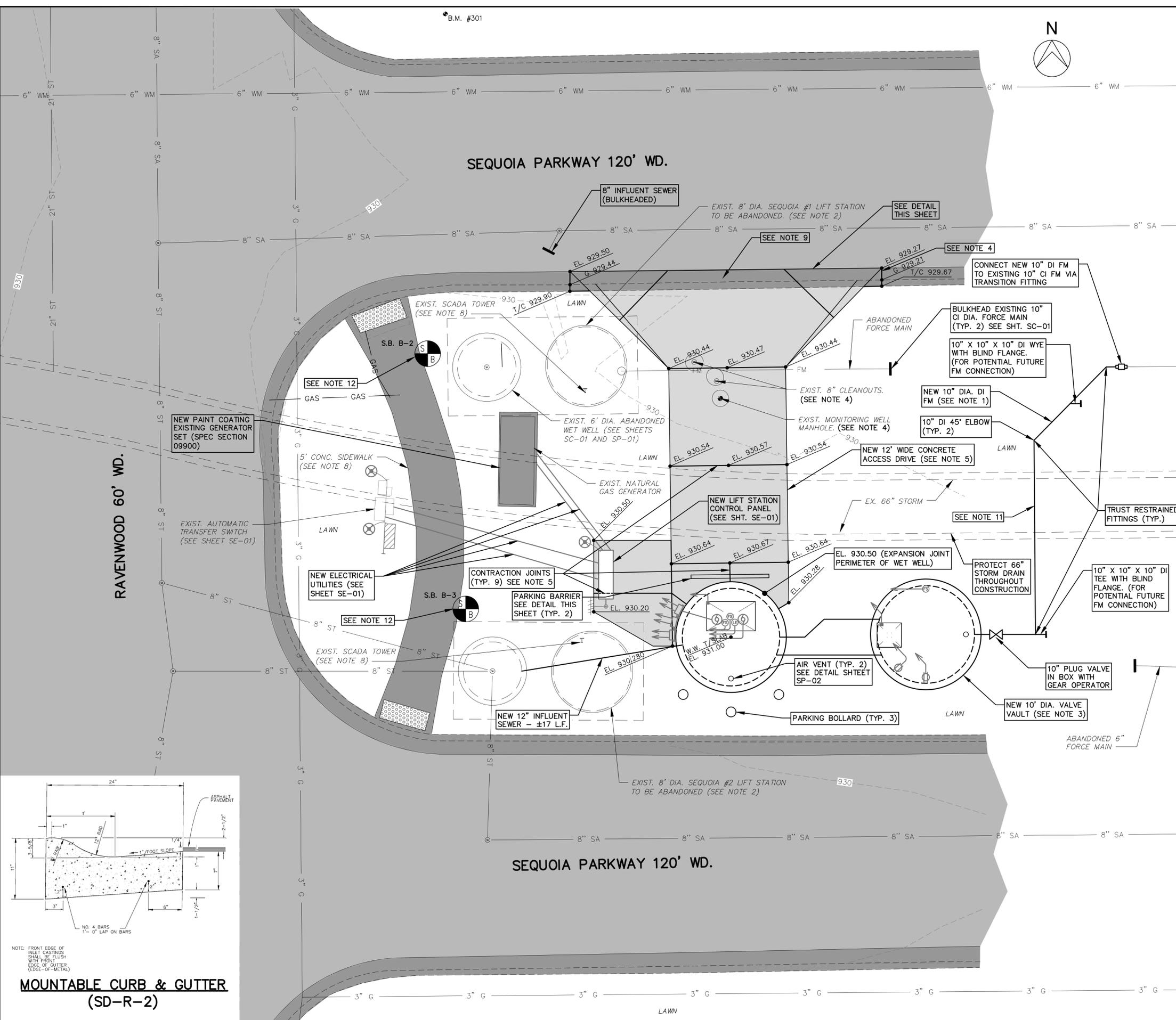


PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
ARBORWORKS CONSULTING
PROPOSED SITE PLAN

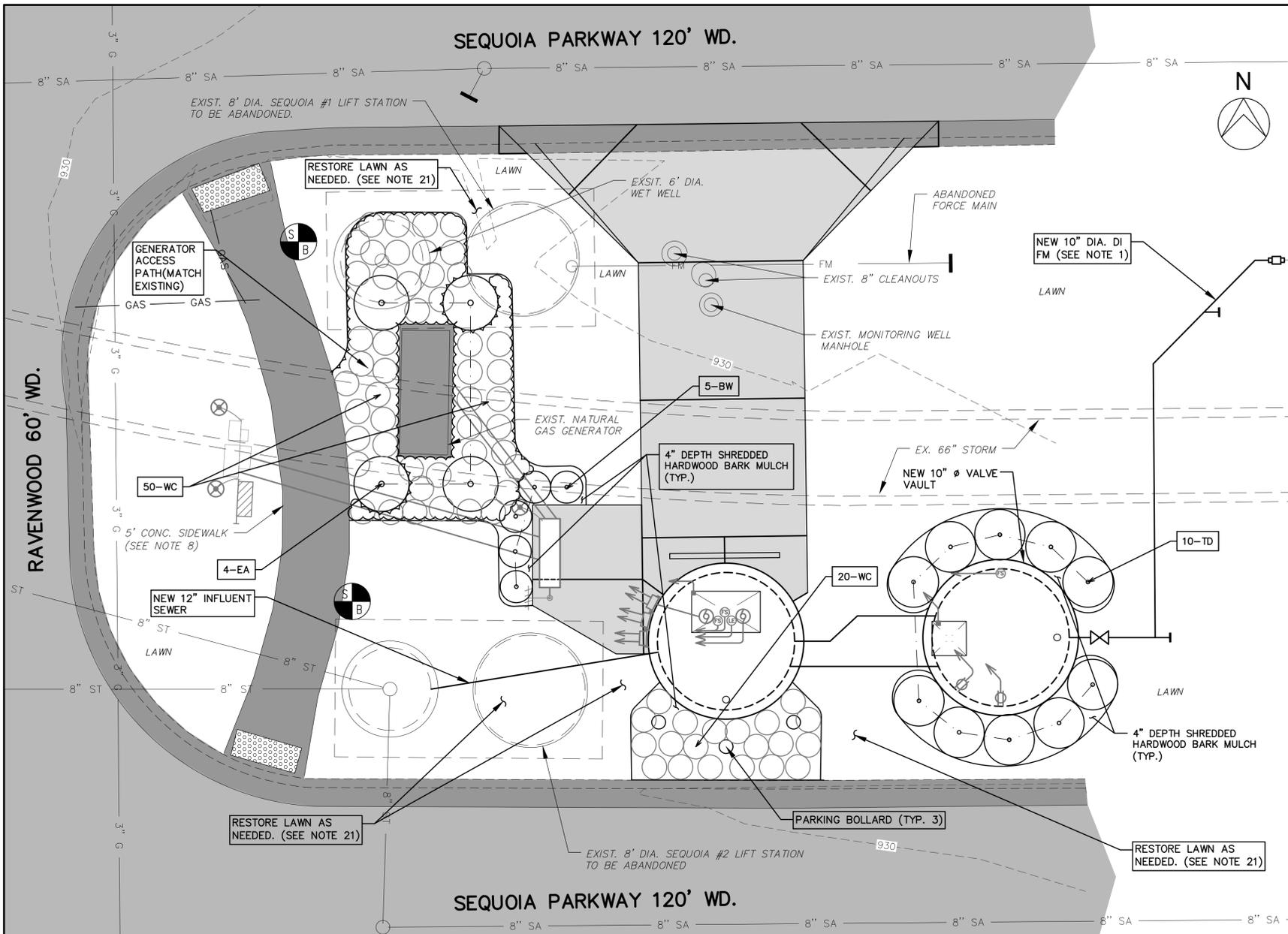
SCALE PLAN: 1"=5'
DRAWING No. S C-02
SHEET No.

SEQUOIA PARKWAY 120' WD.

RAVENWOOD 60' WD.



NOTE: FRONT EDGE OF INLET CASTINGS SHALL BE FLUSH WITH FRONT EDGE OF GUTTER (EDGE-OF-METAL)



PLANT LIST/QUANTITY

KEY	QT.	BOTANIC NAME	COMMON NAME	SIZE	NOTES
EA	4	EUONYMUS ALA. COMPACTA	DWARF BURNING BUSH	30" HT.	B & B
BW	5	BUXUS 'GREEN VELVET'	GREEN VELVET BOXWOOD	2 GAL.	CONT.
WC	70	EUONYMUS FORTUNEI	WINTER CREEPER	1 GAL.	CONT.
TD	10	TAXUS DENSIFORMIS	DENSE YEWE	30" HT.	B & B

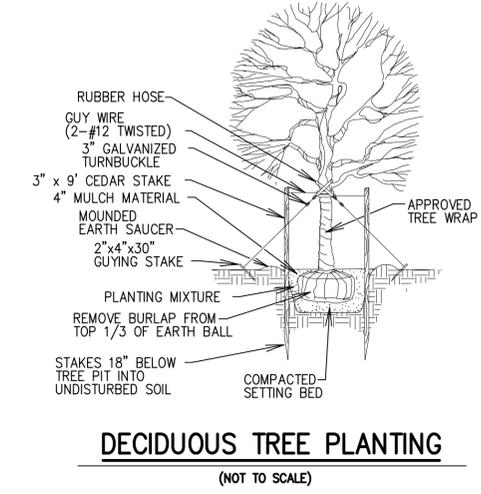
4" DEPTH HARDWOOD BARK MULCH - ALL BEDS

LANDSCAPE NOTES

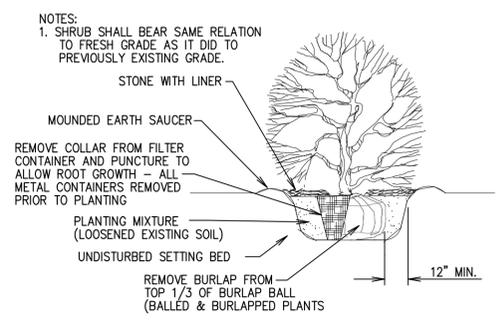
- VERIFY ALL CONDITIONS ON SITE PRIOR TO COMMENCING CONSTRUCTION AND REPORT ANY DISCREPANCIES IMMEDIATELY TO ENGINEER OR OWNER.
- VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AND SERVICES PRIOR TO COMMENCING WORK. CONTRACTOR IS RESPONSIBLE FOR ANY COST INCURRED DUE TO DAMAGED UTILITIES.
- THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES REFLECTED ON THE PLANT LIST. IF A DISCREPANCY EXISTS BETWEEN THE LIST AND THE PLAN, THE PLAN SHALL BE HELD VALID.
- INSTALLATION AND SIZE OF ALL PLANT MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARDS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERY MEN OR AS SPECIFIED IN THE WRITTEN SPECIFICATIONS.
- THE LANDSCAPE CONTRACTOR SHALL CONTACT THE ENGINEER OR OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION. DISCREPANCIES BETWEEN THE PLANS AND ACTUAL SITE CONDITIONS, OR OTHER PROBLEM AREAS, SHALL BE RESOLVED AT THIS TIME.
- THE LOCATION OF ALL PLANTS SHALL BE SCALED FROM THE DRAWINGS OR INTERPRETED FROM THE PLANT LIST. PRIOR TO PLANT INSTALLATION THE LANDSCAPE CONTRACTOR SHALL CONTACT THE OWNER'S REP. 2 WORKING DAYS BEFORE INSTALLATION TO ALLOW THE OWNER'S REP. THE OPTION TO REVIEW PLANT LOCATIONS.
- IF ROUGH GRADE IS DONE BY OTHERS, CONTRACTOR SHOULD REVIEW THAT GRADE AND ADDRESS ANY PROBLEMS WITH THE OWNER. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL GRADING AND SITE SURFACE DRAINAGE, DRAIN TO PAVING, CATCH BASIN ETC. NO LOW SPOTS THAT HOLD STANDING WATER WILL BE ACCEPTED.
- ANY RAISED EARTH BERMS SHOWN ON THE PLANS SHALL BE MADE ENTIRELY OF LIGHT ORGANIC SOILS AND SHALL BLEND SMOOTHLY INTO EXISTING TOPOGRAPHY.
- WATER-IN ALL PLANT MATERIAL IMMEDIATELY AFTER INSTALLATION.
- MULCH CIRCLES FOR ALL TREES SHALL COVER ENTIRE PLANTING PIT. IF SOIL HAS HEAVY CLAY CONTENT, PLANTING THE TREE 6" HIGH IS ACCEPTABLE. ADVISE ENGINEER PRIOR TO PLANTING.
- SUBMIT SAMPLES OF MULCH, TOPSOIL, PRE-EMERGENT, STONE, ETC., AS REQUIRED BY THE PROJECT.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR SUPPLY AND PLACEMENT OF TOPSOIL PER SPECIFICATIONS.
- ALL TREES SHALL HAVE CLAY LOAM ROOT BALLS - NO SAND BALLS ACCEPTED.
- SNOW/TREE PROTECTION FENCING NEEDS TO BE INSTALLED AROUND PERIMETER OF WORK AREA TO PROTECT EXISTING TREES AND PROPERTY.
- PRIOR TO ANY LAND CLEARING OR CONSTRUCTION, TREE PROTECTION FENCING IS TO BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY THE OWNER. THIS FENCING SHALL BE INSTALLED AT THE DRIP LINE OF ALL TREES AND SHRUBS, IN ACCORDANCE WITH THE OWNER'S TREE PROTECTION DETAIL, AND MUST BE MAINTAINED AS APPROVED FOR THE DURATION OF THE PROJECT. NO CUTTING, FILLING OR TRESPASSING SHALL OCCUR INSIDE THE FENCED AREAS WITHOUT PRIOR APPROVAL FROM THE OWNER.
- PLANT TREES AND SHRUBS NO CLOSER THAN THE FOLLOWING MINIMUM DISTANCES FROM SIDEWALKS, CURBS AND PARKING STALLS UNLESS AS SHOWN ON THE PLANS.

A. SHADE/CANOPY TREES	5 FEET
B. ORNAMENTAL/FLOWERING TREES	5 FEET
C. EVERGREEN TREES	10 FEET
D. EVERGREEN/FLOWERING SHRUBS	4 FEET
- DIG SHRUB PIT A MINIMUM OF 1" LARGER THAN SHRUB ROOT BALLS AND TREE PITS 2" LARGER THAN ROOT BALLS. BACKFILL WITH TWO PARTS TOP SOIL, TWO PARTS SOIL FROM EXCAVATED PLANTING HOLE AND ONE PART PEAT. PLANT TREES AND SHRUBS AT THE SAME GRADE LEVEL AT WHICH THEY WERE PLANTED AT THE NURSERY. IF WET CLAY SOILS ARE EVIDENT, PLANT TREES AND SHRUBS HIGHER.
- REMOVE ALL TWINE, WIRE AND BURLAP FROM THE TOP 1/3 OF TREE AND SHRUB EARTH BALLS AND FROM TREE TRUNKS. REMOVE ALL NON-BIODEGRADABLE MATERIAL SUCH AS PLASTIC OR NYLON COMPLETELY.
- SHRUB BEDS ARE TO BE MULCHED WITH SHREDDED HARDWOOD BARK MULCH TO A MINIMUM DEPTH OF 4". ONLY NATURAL-COLORED SHREDDED HARDWOOD BARK MULCH WILL BE ACCEPTED.
- UPON FINAL COMPLETION, ALL PLANT MATERIALS MUST BE PRUNED AND INJURIES REPAIRED. THE AMOUNT OF PRUNING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES AND TO COMPENSATE FOR THE LOSS OF ROOTS FROM TRANSPLANTING. ALL CUTS SHALL BE MADE FLUSH, LEAVING NO STUBS. PAINT ALL CUTS OVER 1" DIA. WITH TREE PAINT.
- EXISTING LAWN THAT THE OWNER INTENDS TO SAVE AND AREAS THAT ARE DAMAGED DURING CONSTRUCTION MUST BE INSPECTED BY THE OWNER'S REP. TO DETERMINE VIABILITY. IF THE EXISTING LAWN IS FOUND TO BE LEVEL, HEALTHY, DENSE & FREE FROM WEEDS, LAWN MAY NOT REQUIRE REPLACEMENT OR RENOVATION. IF RENOVATION IS REQUIRED OR IS PART OF THE APPROVED PLAN, THEN THE FOLLOWING REQUIREMENTS WILL APPLY:
 - EXISTING LAWN FOUND TO BE GENERALLY IN GOOD CONDITION BUT WITH BARE, SPARSE OR WEEDY AREAS MUST BE RENOVATED BY FILLING IN LOW AREAS, RAKING, OVERSEEDING AND TOP DRESSING ALL SPARSE AND BARE SPOTS AND BY INITIATING A WEED AND FEED PROGRAM.
 - BACKFILL DIRECTLY BEHIND ALL CURBS AND SIDEWALKS AND COMPACT TO THE TOP OF CURB OR WALK TO SUPPORT VEHICLE AND PEDESTRIAN WEIGHT WITHOUT SETTLING.
 - THE CONTRACTOR AGREES TO GUARANTEE ALL PLANTS FOR ONE YEAR FROM THE TIME OF PLANTING AND FINAL APPROVAL & INSPECTION BY THE OWNER'S REPRESENTATIVE. THIS GUARANTEE INCLUDES FURNISHING NEW PLANTS AS WELL AS THE LABOR AND MATERIALS FOR THE INSTALLATION OF REPLACEMENTS. ALL REPLACEMENT PLANTS SHALL BE GUARANTEED FOR AN ADDITIONAL PERIOD OF ONE YEAR.
 - PLANT MATERIAL WITH 25% OR GREATER DIE BACK, AS DETERMINED BY THE OWNER'S REPRESENTATIVE, SHALL BE REPLACED AS STIPULATED ABOVE.
 - TOPSOIL SHALL BE FERTILE, FRIABLE NATURAL TOPSOIL OF CLAY LOAM CHARACTER CONTAINING AT LEAST 5% BUT NOT MORE THAN 20% BY WEIGHT OF ORGANIC MATTER WITH A PH RANGE FROM 6.0 TO 7.0. SOIL SHALL BE FREE OF CLAY LUMPS, COURSE SAND, STONES, PLANT ROOTS, STICKS OR OTHER FOREIGN MATERIAL.
 - SOD SHALL BE A MIX OF THE FOLLOWING TYPES IN THE PORTIONS SHOWN. APPLY SEED AT A RATE OF 250LBS./ACRE(6LBS./1000 SF)

KENTUCKY BLUEGRASS 'BARON/CHERI/ADELPI'	20%
CHEWING FESCUE	20%
TURF TYPE TALL FESCUE (K-31)	30%
PERENNIAL RYE GRASS (MANHATTAN)	30%
- WEED CONTENT SHALL NOT EXCEED 0.30 OF 1%.



DECIDUOUS TREE PLANTING
(NOT TO SCALE)



TYPICAL SHRUB PLANTING
(NOT TO SCALE)

811
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ISSUED FOR BIDS	APRIL 20, 2021	ISSUED FOR 90% REVIEW	NOV. 5, 2019	DATE
REV.	DESCRIPTION	DATE	DATE	DATE

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ANN ARBOR, MI 48107-8647
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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
SEQUOIA LIFT STATIONS
LANDSCAPING PLAN

SCALE PLAN: 1"=5'
DRAWING No. S C-03
SHEET No.



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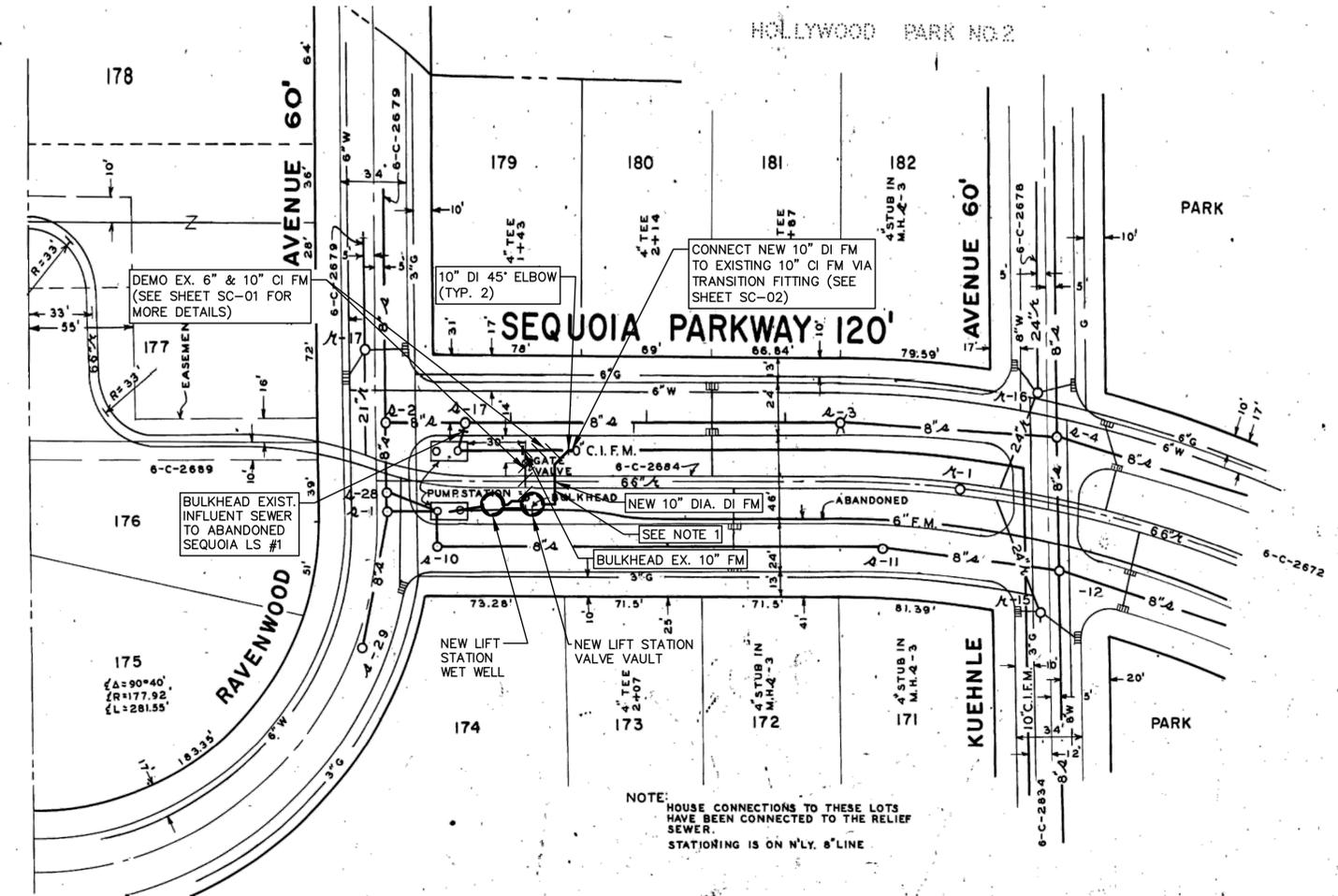
ISSUED FOR BIDS	APRIL 20, 2021	AAU	CHECKED
ISSUED FOR 90% REVIEW	NOV. 5, 2019	AAU	DRAWN
REV.	DESCRIPTION	DATE	

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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
SEQUOIA LIFT STATIONS
FORCE MAIN PLAN
SCALE NO SCALE
DRAWING No. S C-04

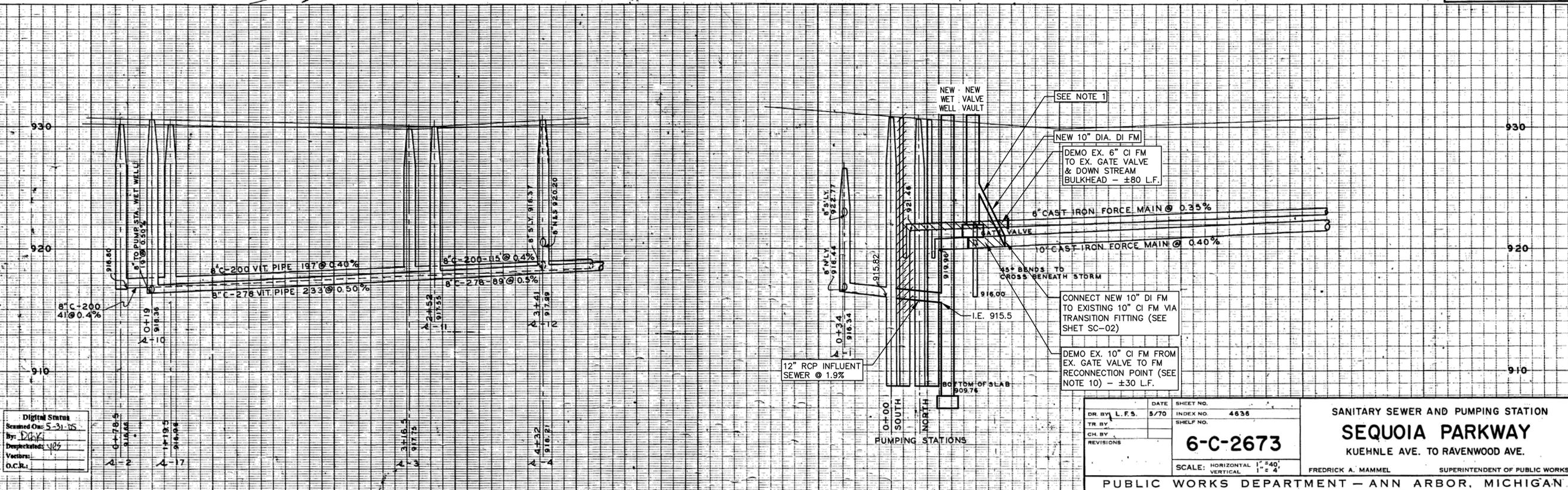
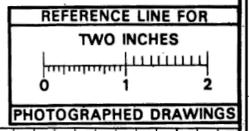
NOTICE:
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GENERAL NOTES:

1. AS NOTED ON SHEET SC-01, THE LOCATION OF THE 60" COUNTY DRAIN IS UNKNOWN AND NOT SHOWN ON THIS PROFILE. THE CONTRACTOR IS REQUIRED TO WORK WITH THE WCWRC OFFICE TO COMPLY WITH THEIR REQUIREMENTS, INCLUDING THE MEANS TO LOCATE THIS UTILITY. THE NEW 10" FORCE MAIN WILL CROSS OVER THE TOP OF THE DRAIN TO THE CONNECTION LOCATION SHOWN ON SHEET S C-02. THE PROFILE OF THIS PIPE WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION ONCE THE DRAIN IS PROPERLY LOCATED.

NOTE:
HOUSE CONNECTIONS TO THESE LOTS HAVE BEEN CONNECTED TO THE RELIEF SEWER.
STATIONING IS ON N'LY. 6" LINE



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D.C.R.: [blank]

DR. BY L.F.S. DATE 5/70 SHEET NO. INDEX NO. 4636 SHELF NO.
TR. BY
CH. BY
REVISIONS
6-C-2673
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'

SANITARY SEWER AND PUMPING STATION
SEQUOIA PARKWAY
KUEHNLE AVE. TO RAVENWOOD AVE.
FREDRICK A. MAMMEL SUPERINTENDENT OF PUBLIC WORKS

PUBLIC WORKS DEPARTMENT - ANN ARBOR, MICHIGAN

LEGEND:

UNDERGROUND UTILITIES	EXISTING SANITARY	EXISTING STORM	EXISTING GAS
PROPOSED SANITARY	PROPOSED STORM	EXISTING WATER	
PROFILES	CENTER LINE	RIGHT PROPERTY LINE	LEFT PROPERTY LINE

REFERENCES:
BENCH MARK
PROFILES BY
DRAWINGS
3680-M.D.P.H. PERMIT NO. 690060 2/7/69

JOB 3680-5	DIST.	
JOB 2867-5	DIST.	
JOB	DIST.	
JOB	DIST.	

PREPARED BY McNAMEE, PORTER & SEELEY
APPROVED BY HOWARD RUSSELL 1/21/69

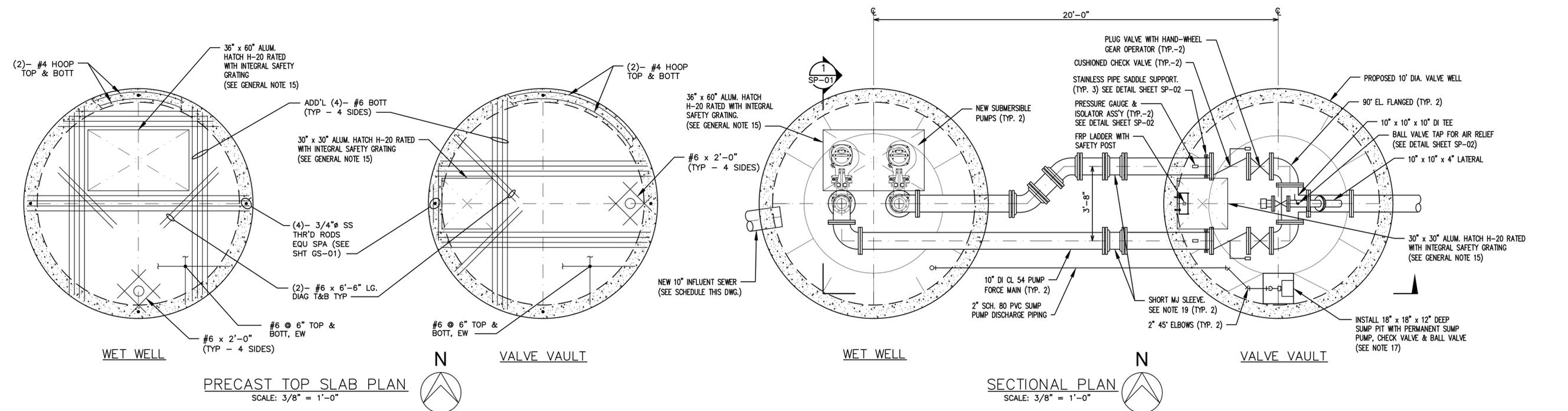


REV.	DESCRIPTION	DATE	DRAWN	CHECKED
ISSUED FOR BIDS		APRIL 20, 2021	AAU	AAU
ISSUED FOR 90% REVIEW		NOV. 5, 2019		

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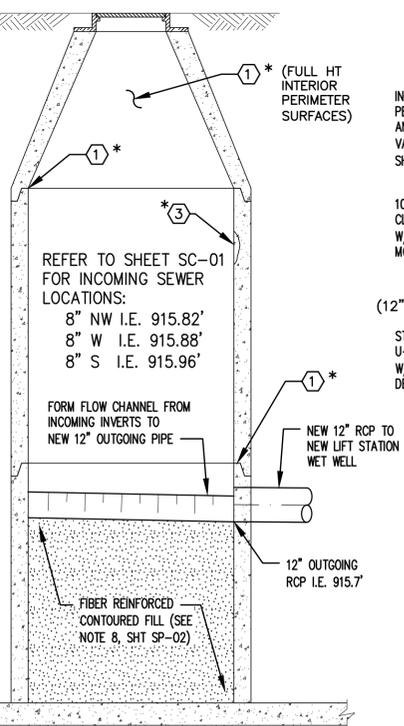
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
SEQUOIA LIFT STATIONS
PLAN AND SECTIONS
SCALE AS SHOWN
DRAWING No. S P-01
SHEET No.



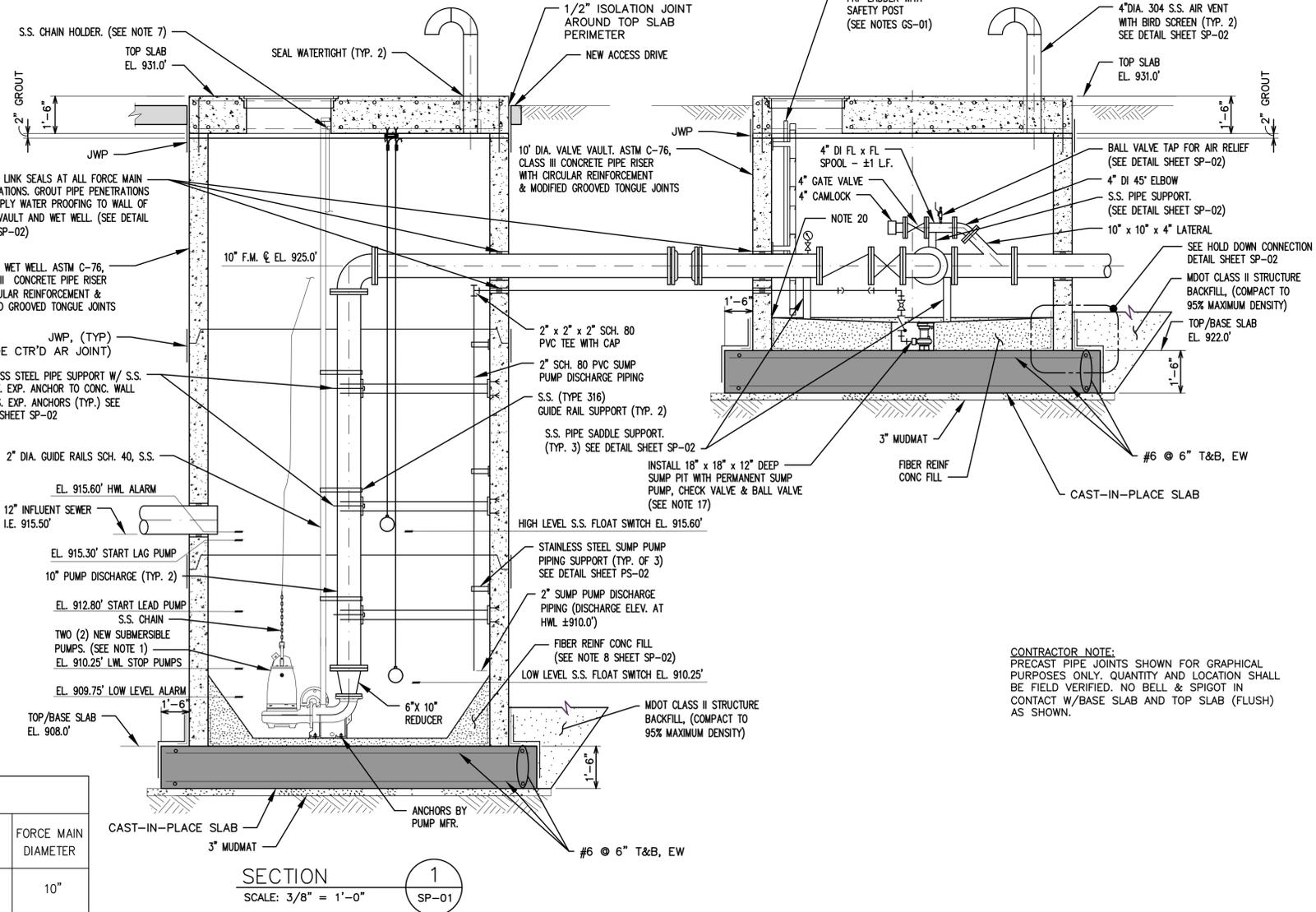
GENERAL NOTES:

- PROVIDE (2) SUBMERSIBLE PUMPS WITH AN OPERATING CONDITION OF 980 GPM AT 54 TDH. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL PUMPING & FORCE MAIN EQUIPMENT FOR OWNER APPROVAL PRIOR TO FABRICATION.
- GENERAL CONTRACTOR NOTE - THE WET WELL AND VALVE VAULT MUDMAT SHALL BE CONSTRUCTED ON UNDISTURBED IN SITU MATERIAL.
- OPEN CUT/BRACED EXCAVATION CONSTRUCTION METHODS - THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR HIS MEANS AND METHODS OF CONSTRUCTION; HOWEVER DETAILED SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF CONSTRUCTION. MEANS AND METHODS SHALL INCLUDE BRACED EXCAVATION AND OPEN CUTTING AND BACKFILLING WITH FLOWABLE FILL. REFER TO SPECIFICATION SECTION 02200 - FOR MORE DETAILS.
- EXCAVATION, BACKFILLING AND JOINT WATERPROOFING, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH THE "2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS ISSUED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT). BACKFILL LAYERS SHALL NOT EXCEED 12" IN HEIGHT MEASURED LOOSE AND SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE.
- EXCAVATION SHALL BE IN ACCORDANCE WITH SECTION 3.04 - SLOPES, SHEETING, AND BRACING, OF SECTION 02200 OF THE SPECIFICATIONS - EARTHWORK, AS WELL AS ALL OTHER APPLICABLE ITEMS LISTED IN THIS SECTION, AND IN SECTION 02140 - DEWATERING.
- DEWATERING - MEANS AND METHODS FOR DEWATERING DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF GENERAL CONTRACTOR. GROUND WATER LEVEL IS SUBJECT TO CHANGE. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.
- SOIL BORING INFORMATION IS APPENDED TO THE SPECIFICATIONS.
- THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK, AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO INSURE THAT UTILITIES WILL NOT BE DISTURBED.
- MOUNT EACH CHAIN HOLDER TO INSIDE OF HATCH OPENING WITH 2 - 3/8" 316 S.S. KWIK BOLT II EXPANSION ANCHORS BY HILTI OR APPROVED EQUAL.
- FOR BURIED FORCE MAIN PIPING, PROVIDE THRUST RESTRAINED JOINTS AT ALL LATERALS AND ELBOWS.
- HORIZONTAL PIPE PENETRATIONS THROUGH RISERS SHALL BE CORE DRILLED WITH THE RESULTING ANNULAR SPACES SEALED W/NON-SHRINK, NON-METALLIC GROUT, UNLESS OTHERWISE NOTED. ALL FORCE MAIN PENETRATIONS SHALL BE SEALED WITH LINK SEALS (SEE DETAIL SHEET SP-02).
- BACKFILL SUMP PUMP PIPING TRENCH BELOW VALVE CHAMBER WITH MDOT CL II "BACKFILL, STRUCTURE, CIP" GRANULAR MATERIAL AND COMPACTED TO 95% OF MAX. DENSITY.
- J.W.P. - JOINT WATERPROOFING. REFER TO "2012 STANDARD SPECIFICATION FOR CONSTRUCTION", SECTION 710 AS ISSUED BY MICHIGAN DEPARTMENT OF TRANSPORTATION.
- ALL PUMP DISCHARGE PIPE AND FITTINGS, EXCEPT S.S. 316 AND PVC PIPING, WITHIN THE LIFT STATION WET WELL SHALL RECEIVE AFTER INSTALLATION, A EPOXY COATINGS SYSTEM. REFER TO SPECIFICATION SECTION 09900 - PAINTING FOR MORE DETAILS.
- LIFT STATION WET WELL AND VALVE VAULT ACCESS HATCH SHALL BE MANUFACTURED BY BILCO, HALLIDAY OR APPROVED ALTERNATE. HATCH SHALL HAVE FRP SAFETY GRATING, A RECESSED SLAM LOCK AND 90 DEGREE OPEN HOLDING LATCH WITH A HEAVY GRADE LOCKING DEVICE. SEE SPECIFICATION SECTION 08305 "ACCESS HATCHES" FOR ADDITIONAL INFORMATION. THE NOTED SIZE HAS BEEN SELECTED FOR THE SPECIFIED FLGVT PUMP. IF AN ALTERNATE SIZE IS NECESSARY FOR AN ALTERNATIVE PUMP, ANY COST INCREASE SHALL BE BORNE BY THE CONTRACTOR.
- SEE SPECIFICATION SECTION 11390 "PUMPING STATION EQUIPMENT" FOR ADDITIONAL INFORMATION ON THE ITEMS SHOWN ON THIS SHEET.
- PROVIDE ONE (1) ZOELLER MODEL 95 SUMP PUMP WITH 2" PVC ADAPTOR WITH BUILT IN FLOAT.
- ALL HARDWARE AND MISC. METALS IN WET WELL SHALL BE 316 S.S. UNLESS OTHERWISE NOTED, ALL HARDWARE AND MISC. METALS IN VALVE VAULT SHALL BE 304 S.S.
- ALL MECHANICAL JOINT FITTINGS SHALL BE THRUST RESTRAINED.
- ENSURE VALVE VAULT CONCRETE FILL DEPTH AT THE VAULT WALL IS NO MORE THAN 1.25 FEET.

*NOTE: EXACT LIMITS FOR REPAIR ITEMS, AS DEFINED ON SHT GS-01, SHALL BE FIELD DETERMINED BY THE ENGINEER.

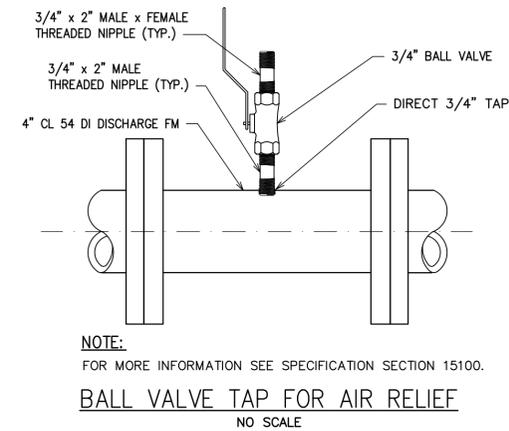
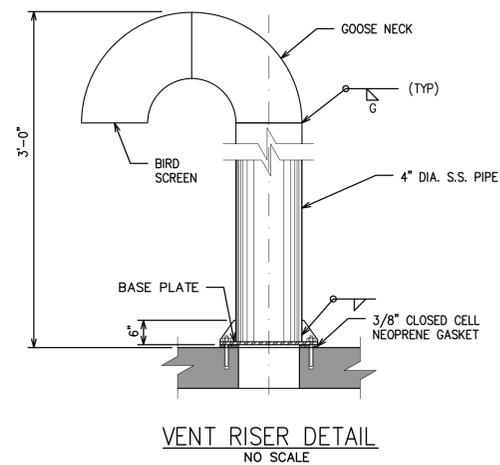
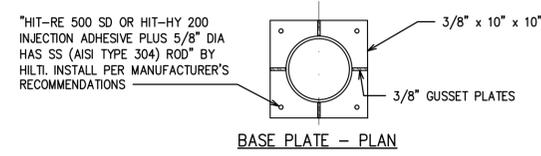
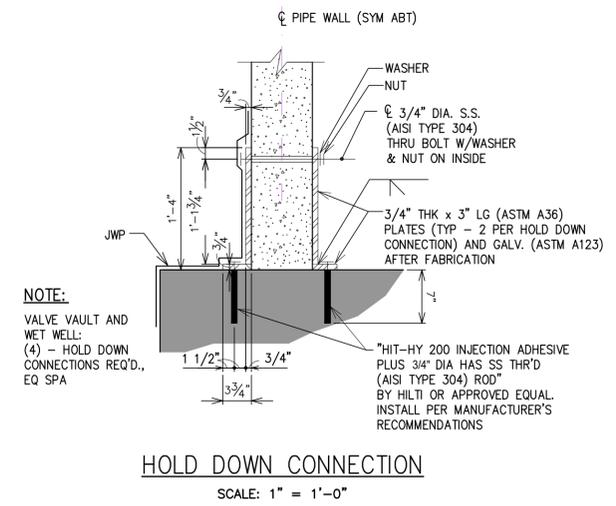
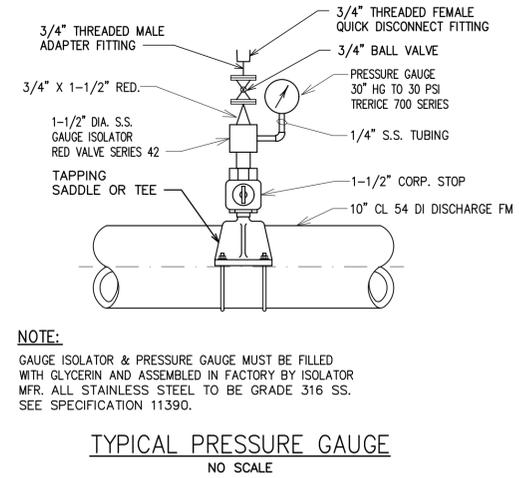
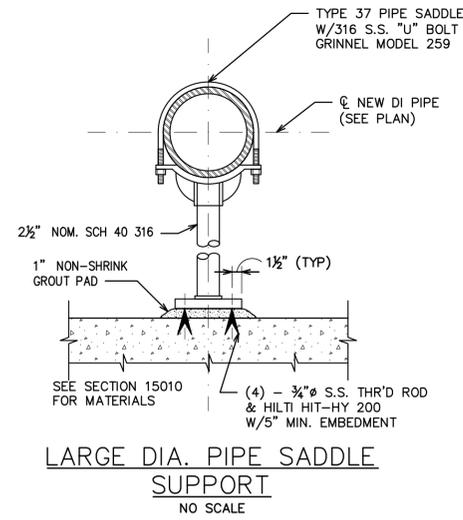
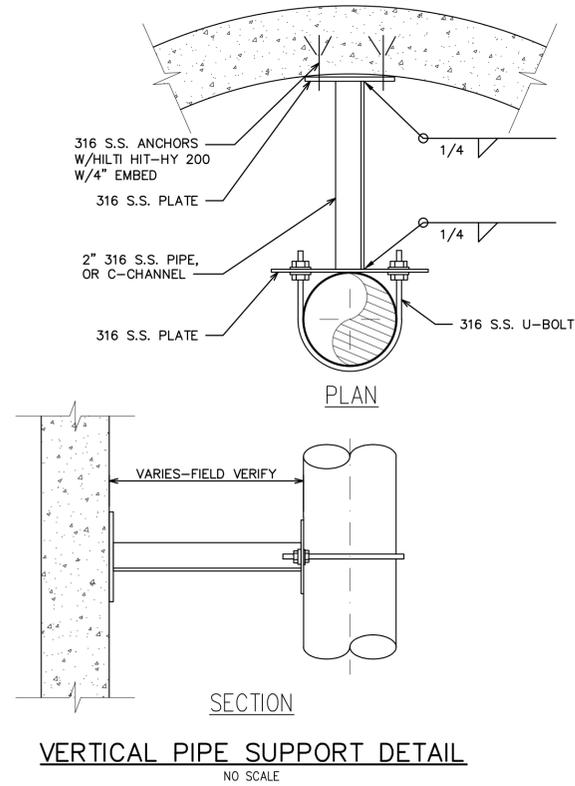


EXISTING SEQUOIA #2 LIFT STATION WET WELL MANHOLE (SOUTH STA.)



SECTION 1 SCALE: 3/8" = 1'-0"

LIFT STATION	WET WELL INTERNAL DIAMETER	WET WELL TOP OF TOP SLAB ELEV.	WET WELL INFLUENT SEWER INV. ELEV.	VALVE VAULT INTERNAL DIAMETER	VALVE VAULT TOP OF TOP SLAB ELEV.	VALVE VAULT TOP OF BASE SLAB ELEV.	FORCE MAIN ϕ ELEV.	FORCE MAIN DIAMETER
SEQUOIA LIFT STATION	10'-0"	931.0'	915.5'	10'-0"	931.0'	922.0'	925.0'	10"



FRP LADDER & LADDER UP NOTES:

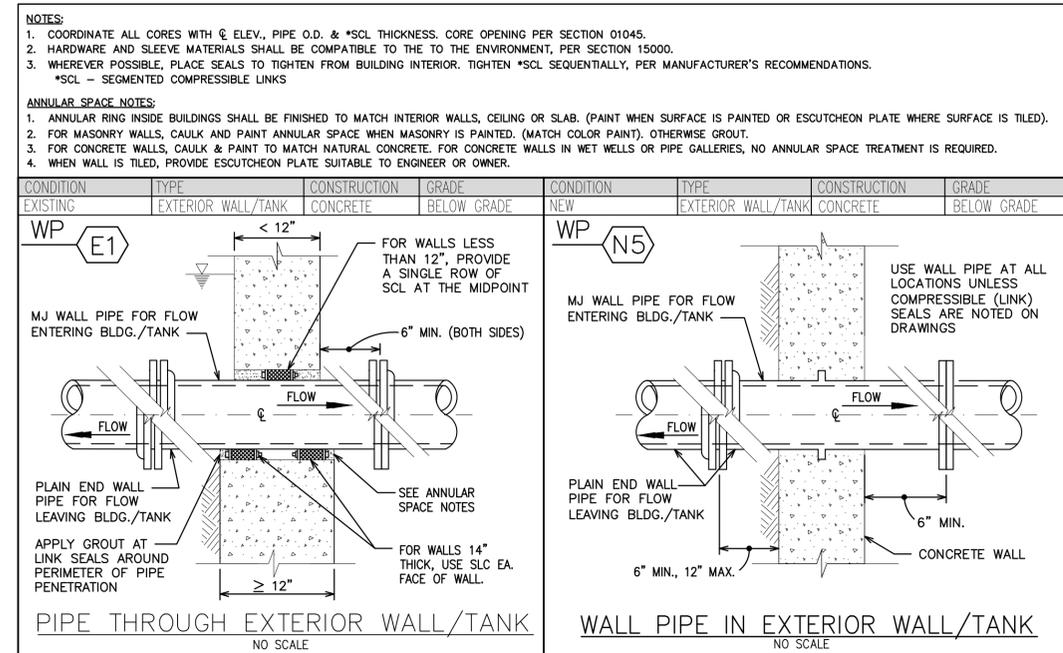
- CONTRACTOR SHALL FIELD VERIFY ALL NECESSARY DIMENSIONS FOR PROPER FIT OF THE FRP LADDER AND STAINLESS STEEL LADDER UP WITH EXISTING RISER SECTIONS AND COORDINATE WITH PROPOSED TOP SLAB AND ACCESS HATCH.
- CONTRACTOR SHALL PREPARE, SUBMIT AND SEAL BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MICHIGAN, DETAILED FRP LADDER & LADDER UP SHOP DRAWINGS AND CALCULATIONS FOR ENGINEER'S REVIEW. THE DESIGN, FABRICATION, MATERIAL THICKNESS, APPROVED FABRICATORS, ETC OF THE FRP LADDER SHALL BE IN ACCORDANCE WITH SPECIFICATIONS SECTION 06610.
- THE LADDER UP, LADDER STAND-OFF BRACKETS AND ALL CONNECTIONS HARDWARE SHALL BE STAINLESS STEEL - TYPE 316 OR APPROVED EQUAL.

PRECAST CONCRETE TOP SLAB NOTES:

- SEE "REINFORCED CONCRETE NOTES" 1 THRU 6.
- MINIMUM CONCRETE COVER TO REINFORCEMENT SHALL BE 2".
- NON-SHRINK GROUT SHALL BE PREMIXED NON-METALLIC, NON-STAINING, DIMENSIONALLY STABLE, INORGANIC GROUT AS MANUFACTURED BY:
 - BASF/MASTER BUILDERS "MASTERFLOW 100"
 - THE EUCLID CHEMICAL CO. "NS GROUT"
- LIFTING INSERTS LOCATION, SIZE AND TYPE SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE SHOWN ON THE STEEL REINFORCEMENT SHOP DRAWINGS. INSERTS TO REMAIN IN THE TOP SLAB SHALL BE STAINLESS STEEL. RECESS POCKETS SHALL BE FILLED FLUSH W/GROUT.

REINFORCED CONCRETE NOTES:

- BASE SLAB CONCRETE SHALL BE CAST IN PLACE AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 P.S.I. AT 28 DAYS UNLESS OTHERWISE NOTED. NO SUBSTITUTIONS ALLOWED. CONCRETE SHALL BE AIR-ENTRAINED WITH AN AIR CONTENT OF 6% (± 1%). CONCRETE MIX DESIGN SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL, PRIOR TO CONCRETE PLACEMENT.
- STEEL REINFORCEMENT, INCLUDING TIES AND STIRRUPS, SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. A615, GRADE 60, AND NON-EPOXY COATED.
- SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL REINFORCEMENT FOR ENGINEER'S APPROVAL, PRIOR TO FABRICATION. REINFORCEMENT SUPPLIER AND FABRICATOR SHALL BE MDOT APPROVED.
- REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH LATEST EDITION A.C.I.301 "SPECIFICATION FOR STRUCTURAL CONCRETE" C.R.S.I., AND "MANUAL OF STANDARD PRACTICE", LATEST EDITION.
- MINIMUM LAP OF REINFORCEMENT:
 - #4 24"
 - #5 30"
 - #6 37"
- CONCRETE COVER TO REINFORCEMENT :
 - CONCRETE PLACED AGAINST GROUND 3"
 - ALL OTHER (UNLESS OTHERWISE INDICATED) 2"
- MUDMAT CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.
- FIBER REINFORCED CONCRETE FILL SHALL BE CONCRETE OF 3,500 P.S.I. 28 DAY COMPRESSIVE STRENGTH, REINFORCEMENT WITH 3.0 POUNDS/CUBIC YARD OF POLYPROPYLENE FIBERS 1" LONG BY GRACE STRUX 90/40 OR APPROVED EQUAL. MIX IN ACCORDANCE W/MANUFACTURER'S RECOMMENDATIONS.
- WELDED WIRE FABRIC FOR CONCRETE PAVEMENT SHALL BE MDOT R-45-E INSTALLED AT MIDPOINT OF SLAB DEPTH.
- (2) - #6 BARS SHALL BE PLACED EACH FACE AROUND ALL OPENINGS IN WALLS & SLABS UNLESS OTHERWISE NOTED. BARS SHALL EXTEND 2'-0" PAST OPENING UNLESS OTHERWISE NOTED. (1) - #6 DIAGONAL x 3'-0" LONG TOP & BOTTOM BAR SHALL BE PROVIDED AT EACH CORNER OF OPENINGS.
- A 3/4" x 45" CHAMFER SHALL BE PROVIDED AT EXPOSED EDGES OF ALL CONCRETE SLABS.
- EXPOSED FACE OF ROOF SLABS SHALL BE BROOMED FOR CAST-IN-PLACE CONCRETE WITH NO VISIBLE SURFACE IMPERFECTIONS.
- JWP - MEL ROL BY W.R. MEADOWS OR APPROVED EQUAL.



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CITY OF ANN ARBOR MICHIGAN

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
SEQUOIA LIFT STATIONS
PROJECT DETAILS & NOTES

SCALE AS SHOWN
DRAWING No. S P-02
SHEET No.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED
ISSUED FOR BIDS		APRIL 20, 2021	AAU	AAU
ISSUED FOR 90% REVIEW		NOV. 5, 2019	AAU	AAU

