CITY OF WORCESTER - INDIAN LAKE ALUM DOSING STATION
CONSTRUCTION PLANS

PROPERTY

PARCEL # 37-025-001A
110 SHORE DRIVE
WORCESTER, MA 01605

PREPARED FOR:

CITY OF WORCESTER
DPW&P WATER OPERATIONS DIVISION
CITY HALL, 455 MAIN STREET
WORCESTER, MA 01608

MA PROFESSIONAL ENGINEER
ENDORSEMENT

COMMONWEALTH OF MASSACHUSETTS
PAYSON R. WHITNEY, III
CIVIL
No. 41703
REGISTERED
PROFESSIONAL ENGINEER

2021.12.20 16:07:56 -05'00'
Not Valid Without Signature

PROPERTY OWNER:

CITY OF WORCESTER
455 MAIN STREET
WORCESTER, MA 01608

DECEMBER 20, 2021

PREPARED BY:

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& engineering services

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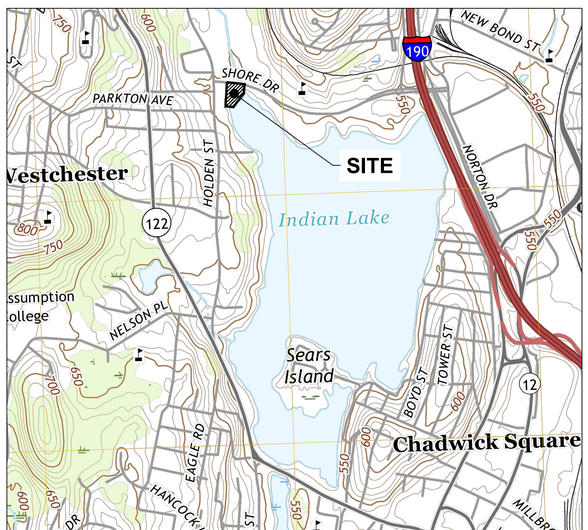

LOCUS MAP
SCALE 1"=1000'

LOCUS MAP SOURCE:
USGS WORCESTER NORTH QUADRANGLE, MASSACHUSETTS - WORCESTER COUNTY, 2018.

Sheet List Table

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ATTACHMENTS

"PLANS AND PROFILE OF SHORE DRIVE INTERSECTION IMPROVEMENTS PROJECT IN THE CITY OF WORCESTER, WORCESTER COUNTY, 75 / 100 % PLANS FOR NOTICE OF INTENT" LAST REVISED OCTOBER 19, 2018, SHEET NO. 2 OF 55 - "TITLE SHEET & INDEX", PREPARED BY NITSCH ENGINEERING

"WORCESTER INTERSECTION & SIGNAL IMPROVEMENTS, HOLDEN ST, DRUMMOND AVE, & SHORE DR. SHEET NO. 16 OF 61 - CURB TIE & GRADING PLANS, REVISION #2", REVISED AUGUST 17, 2020, PREPARED BY NITSCH ENGINEERING

"CONSTRUCTION PLANS - ALUM DOSING STATION", DATED NOVEMBER 24, 2021, PREPARED BY BLU DOT INC.

"ALUM STORAGE TANKS AND DOSING STATION - FOUNDATION PLAN, SECTIONS, AND DETAILS", DATED NOVEMBER 15, 2021, PREPARED BY NORTHEAST ENGINEERS & CONSULTANTS, INC.

ISSUED FOR BID

GENERAL NOTES:

1. BASE PLAN REFERENCES "MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION- SHORE DRIVE INTERSECTION IMPROVEMENTS PROJECT - CURB TIE & GRADING PLANS " BY NITSCH ENGINEERING, LAST REVISED 8/17/2020. ELECTRONIC VERSION SHOWN AS BASE PLAN HEREIN LAST MODIFIED ON 8/31/2020.

2. THE EXISTING TOPOGRAPHIC CONDITIONS SHOWN ON THESE PLANS CONSIST OF ON-THE-GROUND INSTRUMENT SURVEY AS SHOWN ON A PLAN DATED MAY 8, 2015, BY MILONE AND MACBROOM, INC. THE PLAN HAS BEEN SUPPLEMENTED BY ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY NITSCH ENGINEERING INC IN AUGUST 2017 AND VERIFICATION OF RECORD PROPERTY AND UTILITY RECORDS.

3. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.

4. COORDINATES ARE PROVIDED IN US SURVEY FEET, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83). ELEVATIONS ARE PROVIDED IN US SURVEY FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

5. NOTE REFERENCES TO NUMBERED GENERAL CONDITIONS OR SPECIAL CONDITIONS REFER TO THE ORDER OF CONDITIONS ISSUED BY THE WORCESTER CONSERVATION COMMISSION, DATED DECEMBER 9, 2020.

DOCUMENT USE:

1. THESE PLANS AND THE CORRESPONDING CAD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE PREPARED BY ESS GROUP, INC., AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED WRITTEN CONSENT OF ESS GROUP, INC. ANY UNAUTHORIZED USE, REUSE, MODIFICATION, OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT, SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO ESS GROUP, INC.

2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, OR DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS OR OWNER, BUT SHALL VERIFY LOCATIONS OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS, AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURER'S LITERATURE, SHOP DRAWINGS, AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.

2. UNLESS OTHERWISE NOTED ALL WORK HEREIN SHALL CONFORM TO THE CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS & PARKS STANDARD SPECIFICATIONS & DETAILS DATED FEBRUARY 1, 2021 WITH ALL REVISIONS AND THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, 2021 EDITION WITH ALL REVISIONS.

3. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, OR FIRE HYDRANTS WITHOUT APPROPRIATE PERMITS.

4. IN ACCORDANCE WITH SPECIAL CONDITION #38 ALL TREE, BRUSH & WOOD REMOVAL SHALL ADHERE TO THE MOST RECENTLY AMENDED REQUIREMENTS SET FORTH BY THE MASSACHUSETTS DEPARTMENT OF CONSERVATION & RECREATION. **THE PROJECT IS LOCATED IN THE ASIAN LONGHORNED BEETLE QUARANTINE ZONE.**

5. AREAS OUTSIDE THE LIMITS OF THE PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE AND NO ADDITIONAL COST TO THE OWNER.

6. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE AND NO ADDITIONAL COST TO THE OWNER.

7. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, SEDIMENT, GROUNDWATER, OR OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.

8. THE CONTRACTOR SHALL ESTABLISH "CONSTRUCTION LIMITS" ON THE SITE BY ERECTING AN ORANGE SNOW FENCE IN ACCORDANCE WITH SPECIAL CONDITION #31. ALL WORK AND EQUIPMENT SHALL BE CONFINED TO WITHIN THESE LIMITS, UNLESS OTHERWISE SPECIFICALLY AUTHORIZED.

9. NO CHANGES ARE TO BE MADE UNLESS AUTHORIZED BY THE ENGINEERS AND/OR APPLICANT/OWNER.

10. ALL PRODUCTS TO BE INSTALLED PER MANUFACTURER'S OR DISTRIBUTOR'S INSTRUCTIONS. NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO INSTALLATION.

11. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, STREETS, PAVEMENTS, HIGHWAY GUARDS, CURBING, EDGING, TREES AND PLANTINGS, ETC. ON OR OFF THE PREMISES, AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AT HIS/HER OWN EXPENSE AS REQUIRED BY THE ENGINEER OR OWNER ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK.

12. THE CONTRACTOR SHALL DISPOSE OF ALL RUBBISH, AND DEBRIS IN ACCORDANCE WITH THE SPECIFICATIONS AND ALL APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR SHALL LEAVE THE PROJECT SITE IN A SAFE AND CLEAN CONDITION AT ALL TIMES DURING CONSTRUCTION.

13. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.

14. THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN EXCAVATING NEAR AND BACKFILLING IN THE VICINITY OF EXISTING BUILDINGS, INCLUDING THE USE OF HAND EXCAVATION WHERE APPROPRIATE.

15. CONSTRUCTION SEQUENCE SHALL BE COORDINATED TO MINIMIZE DISTURBANCE OF EXISTING CONDITIONS AND OPERATIONS.

16. ON-SITE REFUELING IS PROHIBITED.

17. ON-SITE WASHING OF VEHICLES INCLUDING CEMENT TRUCKS IS PROHIBITED IN ACCORDANCE WITH SPECIAL CONDITION #41.

18. THE CONTRACTOR SHALL USE DESIGNATED LOCATIONS WITHIN THE ESTABLISHED LIMIT OF DISTURBANCE TO ACCESS THE SITE.

19. THE CONTRACTOR SHALL NOT BE ALLOWED TO CROSS AND/OR IMPACT WETLAND AREAS WITH VEHICLES OR HEAVY CONSTRUCTION EQUIPMENT DURING CONSTRUCTION.

20. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING, UNDERSTANDING AND COMPLYING WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC.

21. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING AND GENERATED RUBBLE, DEBRIS AND OTHER DELETERIOUS MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS AND ALL APPLICABLE CODES AND REGULATIONS

SEDIMENTATION & EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES, AS SPECIFIED ON THE DRAWINGS, AND AS REQUIRED BY ALL PERMIT CONDITIONS.

2. EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN HEREIN OR AS DIRECTED BY THE ENGINEER.

3. PERIMETER SOIL AND EROSION CONTROLS SHALL BE PLACED PRIOR TO ANY CONSTRUCTION ACTIVITIES. CONTRACTOR TO NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES. ALL SOIL AND EROSION CONTROLS SHALL BE CHECKED AND REPAIRED AS NECESSARY.

4. EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EACH STORM EVENT GREATER THAN 0.25 INCHES OF RAINFALL. ALL DAMAGED FILTER SOCKS SHALL BE REPLACED. ACCUMULATED SEDIMENT SHALL BE STOCKPILED FOR LATER REUSE.

5. EROSION CONTROL MEASURES SHALL BE REMOVED WHEN THE DISTURBED AREA IS STABILIZED OR AS SPECIFIED BY THE ENGINEER. DISTURBED AREA RESULTING FROM THE FILTER SOCK REMOVAL OPERATION SHALL BE PERMANENTLY SEEDED. ALL ACCUMULATED SEDIMENT SHALL BE STOCKPILED FOR LATER REUSE.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EROSION CONTROL MEASURES TO PREVENT OFF-SITE TRACKING OF EARTH, SEDIMENT AND DEBRIS.

7. TEMPORARY STRAW MULCH OR TEMPORARY EROSION CONTROL BLANKETS SHALL BE USED WHERE NON-VEGETATIVE COVER IS REQUIRED FOR A PERIOD GREATER THAN 14 DAYS BUT LESS THAN SIX MONTHS. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MACHINE RESULTING IN 100% COVERAGE OF THE DISTURBED SOIL. IF ANCHORING IS NECESSARY, TACKIFIERS AND/OR NETTING EITHER WITH THE MULCH OR IMMEDIATELY FOLLOWING MULCH APPLICATION SHALL BE USED.

8. TEMPORARY SEEDING SHALL BE USED WHERE VEGETATIVE COVER IS REQUIRED FOR SIX (6) MONTHS OR LONGER ON DISTURBED SOIL AREAS. SUCH AREAS SHALL BE SEEDED IF THE SOILS WILL BE EXPOSED FOR MORE THAN 30 DAYS. RAPIDLY GROWING ANNUAL GRASSES WILL BE UNIFORMLY APPLIED AT THE RATE ASSOCIATED WITH HYDRAULIC APPLICATION (HYDROSEEDING). A HYDRAULICALLY APPLIED MATERIAL, SUCH AS GEOPERM™, SHALL BE APPLIED TO SOME DISTURBED AREAS IN LIEU OF HYDRO-SEED. THE SITE SHALL BE CHECKED PERIODICALLY TO ASSESS THE GROWTH OF THE PLANTS. IF SEEDING FAILS TO GROW, THE AREA SHALL BE RE-ESTABLISHED TO PROVIDE ADEQUATE EROSION CONTROL.

9. PERMANENT SEEDING SHALL BE USED ON AREAS WHERE PERMANENT VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL AND REDUCE EROSION AND SEDIMENTATION. RAPIDLY GROWING ANNUAL GRASSES SHALL BE UNIFORMLY APPLIED AT THE RATE ASSOCIATED WITH HYDRAULIC APPLICATION (HYDROSEEDING). THE SEED MIXTURE TO BE USED FOR PERMANENT STABILIZATION SHALL BE MASSDOT M6.03.0-1.

10. TEMPORARY STRAW MULCH SHALL BE APPLIED WITHIN 7 DAYS OF EXPOSING SOIL, OR PRIOR TO ANY STORM EVENT, WITHIN 100 FEET OF LAND UNDER WATER RESOURCE AREA BOUNDARY. MULCH ANCHORING SHALL BE USED ON SLOPES WITH GRADIENTS GREATER THAN 5% IN LATE FALL (PAST SEPTEMBER 15) AND OVER-WINTER (SEPTEMBER 15 - MAY 15).

11. SEEDING SHALL OCCUR PRIOR TO OCTOBER 15TH. AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION BY NOVEMBER 15TH, MUST BE STABILIZED THROUGH THE USE OF NON- VEGETATIVE EROSION CONTROL MEASURES. AREAS SEEDED BETWEEN MAY 15TH AND AUGUST 15TH SHALL BE COVERED WITH STRAW MULCH. DURING THESE MONTHS, TEMPORARY AND PERMANENT SEEDED AREAS SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.

12. TREATMENT CHEMICALS SHALL NOT BE APPLIED.

13. FILL MATERIAL SHALL BE FREE FROM DELETERIOUS MATERIALS SUCH AS STUMPS, WOOD, ROOTS, ETC.

14. SOIL STOCKPILES SHALL BE LOCATED AND MANAGED AS SHOWN HEREIN, AND AS SPECIFIED BY THE ENGINEER.

15. ALL SOIL STOCKPILES SHALL BE SURROUNDED BY EROSION CONTROL BARRIERS REGARDLESS OF THEIR DURATION OF EXPOSURE. SOILS TO BE STOCKPILED FOR A PERIOD OF MORE THAN 7 DAYS SHALL BE COVERED OR TEMPORARILY STABILIZED APPROPRIATELY.

16. SOIL STOCKPILES SHALL NOT BE LOCATED WITHIN 50 FEET OF LAND UNDER WATER RESOURCE AREA BOUNDARY IN ACCORDANCE WITH SPECIAL CONDITION 37G.

17. AREAS TO REMAIN UNSTABILIZED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED ACCORDING TO THE MOST RECENT APPROVED MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS.

18. ALL DISTURBED AREAS TO BE SEEDED SHALL HAVE A MINIMUM OF FOUR INCHES OF LOAM PLACED BEFORE BEING PERMANENTLY SEEDED AND MULCHED. EXISTING LOAM TO BE REUSED, SHALL BE SCREENED TO REMOVE DEBRIS PRIOR TO REUSE. LOAM FROM AN OFF SITE BORROW SOURCE SHALL BE SAMPLED AND APPROVED FOR USE BY THE ENGINEER PRIOR TO ITS DELIVERY TO THE SITE.

UTILITIES NOTES:

1. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO EXCAVATION.

2. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES AND UTILITY COMPANIES, IN WRITING, A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION WITHIN 15 FEET OF A UTILITY LINE.

3. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS AND FOR PERFORMING ANY NECESSARY WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OR JURISDICTION OF THE UTILITY COMPANIES, SUCH AS ELECTRICITY, TELEPHONE, WATER, GAS AND ANY SYSTEM OR SYSTEMS WHICH WILL BE AFFECTED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT.

4. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES.

5. IF REQUIRED, OVERHEAD LINES SHALL BE RELOCATED BY THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.

6. THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN EXCAVATING NEAR AND BACKFILLING IN THE VICINITY OF EXISTING UTILITIES, INCLUDING THE USE OF HAND EXCAVATION WHERE APPROPRIATE.

7. ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED, OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES.

8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

9. EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM FIELD SURVEYS AND VARIOUS OTHER SOURCES. LOCATIONS ARE NOT GUARANTEED TO BE ACCURATE NOR IS IT GUARANTEED THAT ALL UTILITIES ARE SHOWN. NO SEPARATE OR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR DUE TO ANY VARIANCE BETWEEN THE DATA SHOWN ON THE PLANS AND THE ACTUAL FIELD CONDITIONS ENCOUNTERED. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THIS INFORMATION FURNISHED TO THE ENGINEER.

CONSTRUCTION SEQUENCE NOTES:

1. WORK ASSOCIATED WITH THE PROJECT IS EXPECTED TO OCCUR IN THE FOLLOWING ORDER, THOUGH SOME TASKS MAY OCCUR SIMULTANEOUSLY OR IN A DIFFERENT ORDER BASED ON CONTRACTOR'S MEANS AND METHODS:
   - 1.1. INSTALL A DEP SIGN WITH TEXT READING " DEP FILE # 349-1288" IN ACCORDANCE WITH GENERAL CONDITION #10. SAID SIGN SHALL NOT BE ATTACHED TO A LIVE TREE.
   - 1.2. IN ACCORDANCE WITH GENERAL CONDITION #17, THE WETLAND FLAGS IN THE VICINITY OF THE LIMIT OF DISTURBANCE SHALL BE CHECKED AND MAINTAINED FOR THE DURATION OF CONSTRUCTION.
   - 1.3. INSTALL CRUSHED STONE ACCESS DRIVE UP TO LIMITS OF EXISTING TREE LINE.
   - 1.4. INSTALL ALL PERIMETER EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES INCLUDING AN ORANGE SNOW FENCE IDENTIFYING LIMITS OF DISTURBANCE AND AREAS INTERNAL TO THE SITE THAT ARE REQUIRED TO BE PROTECTED BEFORE ANY EARTHWORK BEGINS. THIS SHALL BE DONE IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS. UPON ACCEPTABLE COMPLETION OF SITE PREPARATION AND INSTALLATION OF EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES, SITE CONSTRUCTION ACTIVITIES MAY COMMENCE.
   - 1.5. IN ACCORDANCE WITH SPECIAL CONDITION #29 THE WORCESTER CONSERVATION COMMISSION OR ITS AGENTS SHALL INSPECT AND VERIFY THE INSTALLATION OF THE INSTALLED EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY MEASURES PRIOR TO COMMENCEMENT OF EXCAVATION, GRUBBING AND/OR STUMPING OF VEGETATION, GRADING, CONSTRUCTION OR OTHER SITE PREPARATION.
   - 1.6. COMPLETE CLEARING AND GRUBBING ACTIVITIES. INSPECT AND REPLACE ALL DAMAGED PERIMETER SEDIMENT CONTROLS UPON COMPLETION OF CLEARING AND GRUBBING .
   - 1.7. COMPLETE ROUGH GRADING AS REQUIRED AND INSTALL ADDITIONAL INTERIOR SEDIMENT CONTROL AS NEEDED ONCE ROUGH GRADING OF RESPECTIVE AREA IS COMPLETE, AND PRIOR TO COMMENCEMENT OF UPGRADIENT EARTH WORK.
   - 1.8. UPON COMPLETION OF ROUGH GRADING INSTALL REMAINING CRUSHED STONE ACCESS SURFACES.
   - 1.9. COMPLETE INSTALLATION OF ALL COMPONENTS RELATED TO STORAGE TANKS, FOUNDATIONS, ALUM DOSING STATION AND ALL EQUIPMENT, ELECTRICAL AND PLUMBING.
   - 1.10. UPON COMMENCEMENT OF SITE CONSTRUCTION ACTIVITIES, THE OPERATOR SHALL INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER EARTH WORK ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED. SUCH TEMPORARY OR PERMANENT SOIL STABILIZATION MEASURES MUST BE INSTALLED PRIOR TO INITIATING LAND DISTURBANCE IN SUBSEQUENT PHASES.
   - 1.11. ROUTINE INSPECTION AND MAINTENANCE AND/OR MODIFICATION OF EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES WHILE EARTHWORK IS ONGOING IS REQUIRED.
   - 1.12. COMPLETE CONSTRUCTION OF SITE IMPROVEMENTS AND COMMISSION ALUM DOSING STATION.
   - 1.13. COMPLETE FINAL SITE STABILIZATION OF ANY DISTURBED AREAS AFTER EARTHWORK HAS BEEN COMPLETED.
   - 1.14. REJUVENATE CRUSHED STONE TO RE-ESTABLISH PERMEABILITY BY REMOVING ACCUMULATED SEDIMENT AS NECESSARY. REMOVE EROSION AND SEDIMENT CONTROLS, BIODEGRADABLE FILTER SOCK MAY REMAIN.

PROPOSED LEGEND

- PROPOSED CLEARING LIMIT
- CHAIN LINK FENCE
- ALUM DELIVERY PIPE
- LOD — LIMIT OF DISTURBANCE
- SLOD — COMBINED FILTER SOCK & SILT FENCE AND LIMIT OF DISTURBANCE
- UGE — UNDERGROUND ELECTRICAL SERVICE

RESOURCE AREA LEGEND

- WF#B1 — LIMITS OF INLAND BANK
- WF#19 — LIMITS OF BORDERING VEGETATED WETLAND (BVW)
- 15-FT NO DISTURB AREA
- 25-FT RIVERFRONT AREA
- 30-FT NO STRUCTURE AREA
- 50-FT BUFFER ZONE
- 100-FT BUFFER ZONE
- 100-YEAR FLOOD ELEVATION

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110 SHORE DRIVE
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COMMONWEALTH OF MASSACHUSETTS — PAYSON R. WHITNEY, III — CIVIL — No. 41703 — REGISTERED PROFESSIONAL ENGINEER

Not Valid Without Signature

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No.	REVISION	DATE	DRAWN	DESIGN	CHK

DRAWN BY: GJR | DESIGNED BY: JMG | CHECKED BY: PRW

CONSTRUCTION PLANS NOTES

ISSUED FOR BID

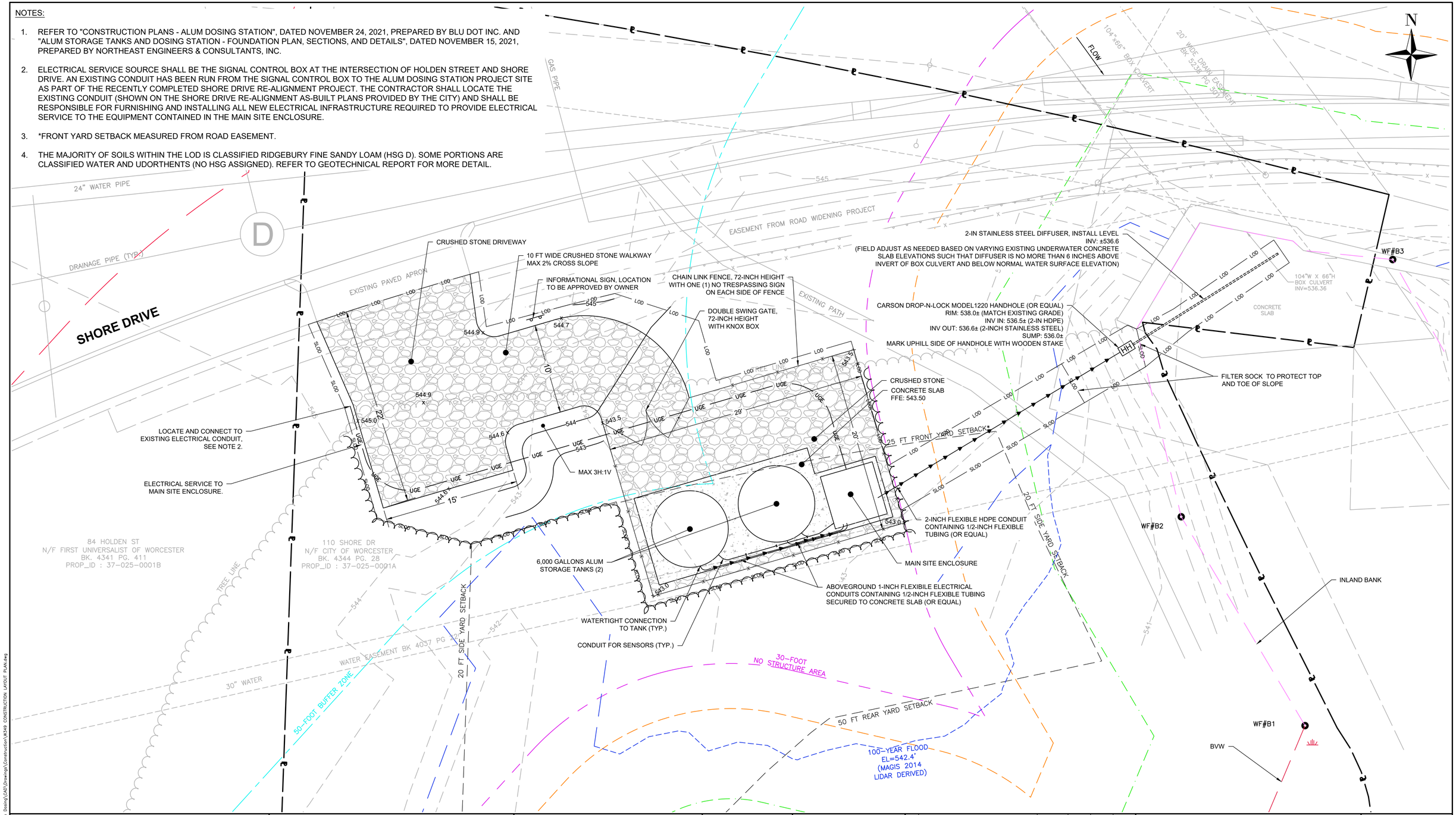
DRAWING NO:
N-1

PROJECT NO: W349-000
DATE OF ISSUE: 12/20/2021
SHEET NO: 2 OF 5

DATE: Dec. 20, 2021 - 3:45PM
FILENAME: N:\W349-000 Indian Lake Alum Dosing\CAD\Drawings\Construction\W349 CONSTRUCTION NOTES.dwg

NOTES:

1. REFER TO "CONSTRUCTION PLANS - ALUM DOSING STATION", DATED NOVEMBER 24, 2021, PREPARED BY BLU DOT INC. AND "ALUM STORAGE TANKS AND DOSING STATION - FOUNDATION PLAN, SECTIONS, AND DETAILS", DATED NOVEMBER 15, 2021, PREPARED BY NORTHEAST ENGINEERS & CONSULTANTS, INC.
2. ELECTRICAL SERVICE SOURCE SHALL BE THE SIGNAL CONTROL BOX AT THE INTERSECTION OF HOLDEN STREET AND SHORE DRIVE. AN EXISTING CONDUIT HAS BEEN RUN FROM THE SIGNAL CONTROL BOX TO THE ALUM DOSING STATION PROJECT SITE AS PART OF THE RECENTLY COMPLETED SHORE DRIVE RE-ALIGNMENT PROJECT. THE CONTRACTOR SHALL LOCATE THE EXISTING CONDUIT (SHOWN ON THE SHORE DRIVE RE-ALIGNMENT AS-BUILT PLANS PROVIDED BY THE CITY) AND SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL NEW ELECTRICAL INFRASTRUCTURE REQUIRED TO PROVIDE ELECTRICAL SERVICE TO THE EQUIPMENT CONTAINED IN THE MAIN SITE ENCLOSURE.
3. *FRONT YARD SETBACK MEASURED FROM ROAD EASEMENT.
4. THE MAJORITY OF SOILS WITHIN THE LOD IS CLASSIFIED RIDGEBURY FINE SANDY LOAM (HSG D). SOME PORTIONS ARE CLASSIFIED WATER AND UDORTHENTS (NO HSG ASSIGNED). REFER TO GEOTECHNICAL REPORT FOR MORE DETAIL.



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SCALE: 1" = 5'

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DRAWN BY: GJR | DESIGNED BY: JMG | CHECKED BY: PRW

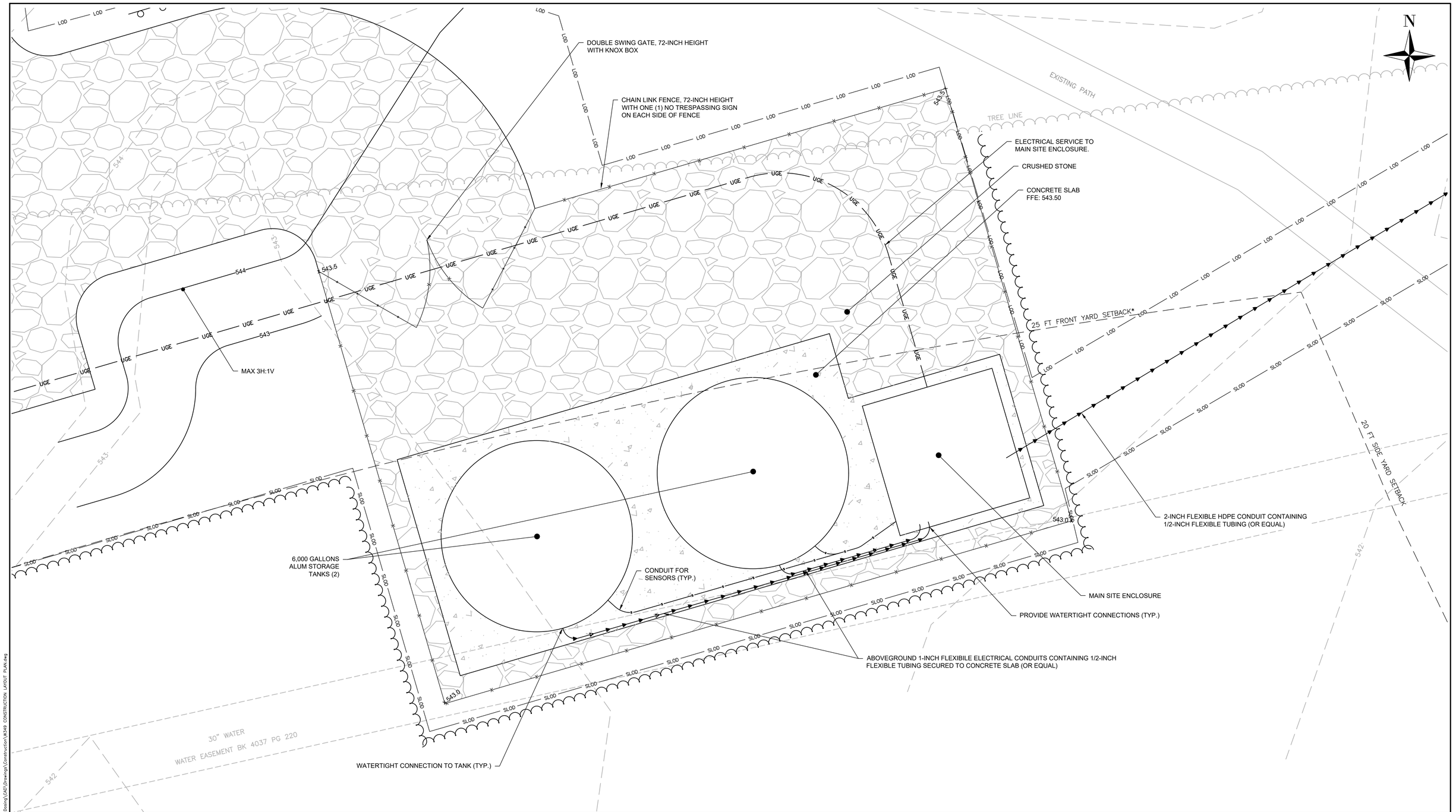
CONSTRUCTION PLANS
LAYOUT PLAN

ISSUED FOR BID

DRAWING NO:
C-1

PROJECT NO: W349-000
DATE OF ISSUE: 12/20/2021
SHEET NO: 3 OF 5

DATE: Dec 20, 2021 - 3:45PM
FILE: L:\W\W349-000 Indian Lake Alum Dosing\Cad\Drawings\Construction\W349 CONSTRUCTION LAYOUT PLAN.dwg



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2021.12.20 16:09:47 -05'00'

No.	REVISION	DATE	DRAWN	DESIGN	CHK

DRAWN BY: GJR | DESIGNED BY: JMG | CHECKED BY: PRW

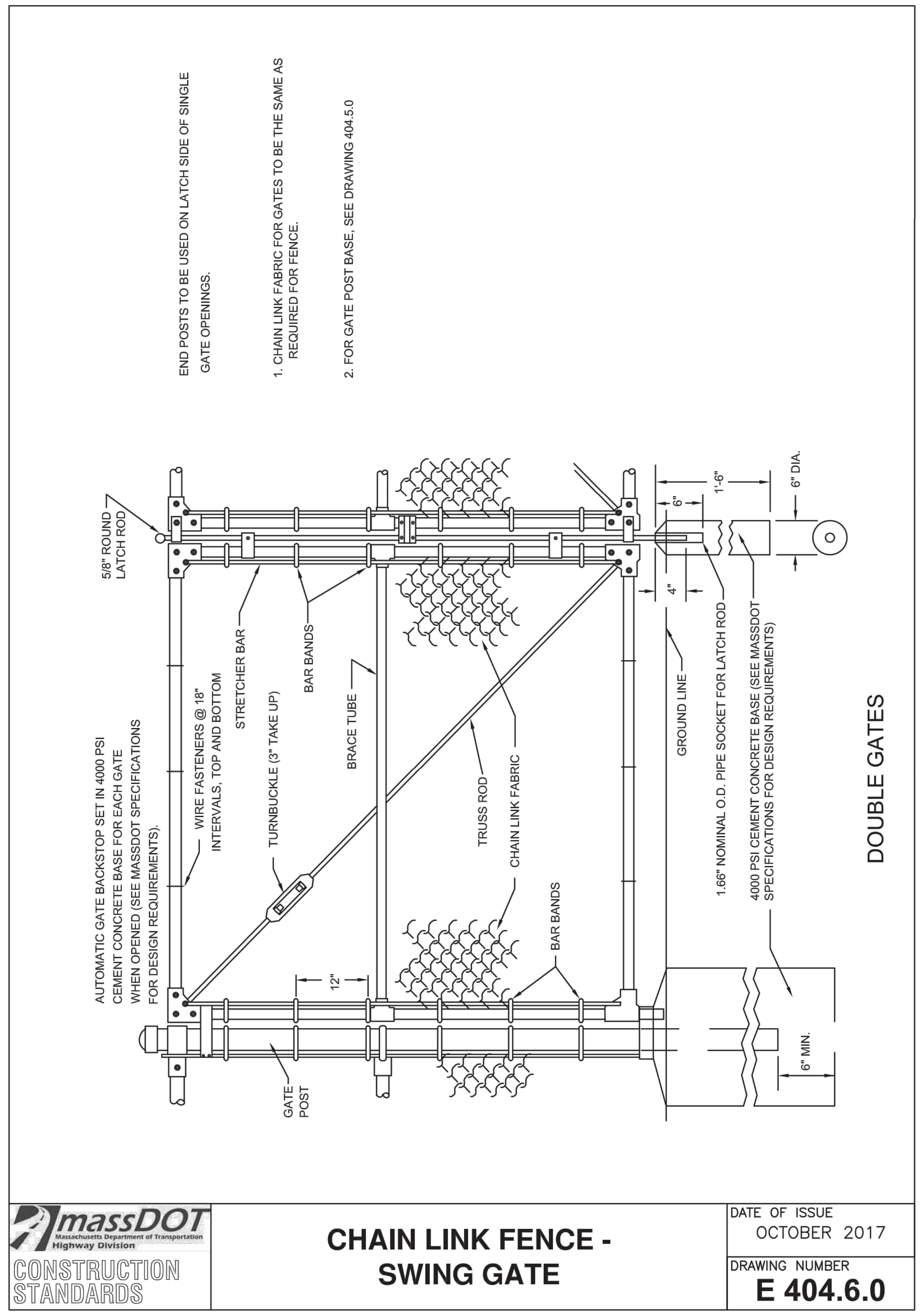
CONSTRUCTION PLANS
LAYOUT PLAN

ISSUED FOR BID

DRAWING NO:
C-2

PROJECT NO: W349-000
DATE OF ISSUE: 12/20/2021
SHEET NO: 4 OF 5

DATE: Dec 20, 2021 - 3:45PM
FILE: K:\W349-000 Indian Lake Alum Dosing\CAD\Drawings\Construction\W349 CONSTRUCTION LAYOUT PLAN.dwg

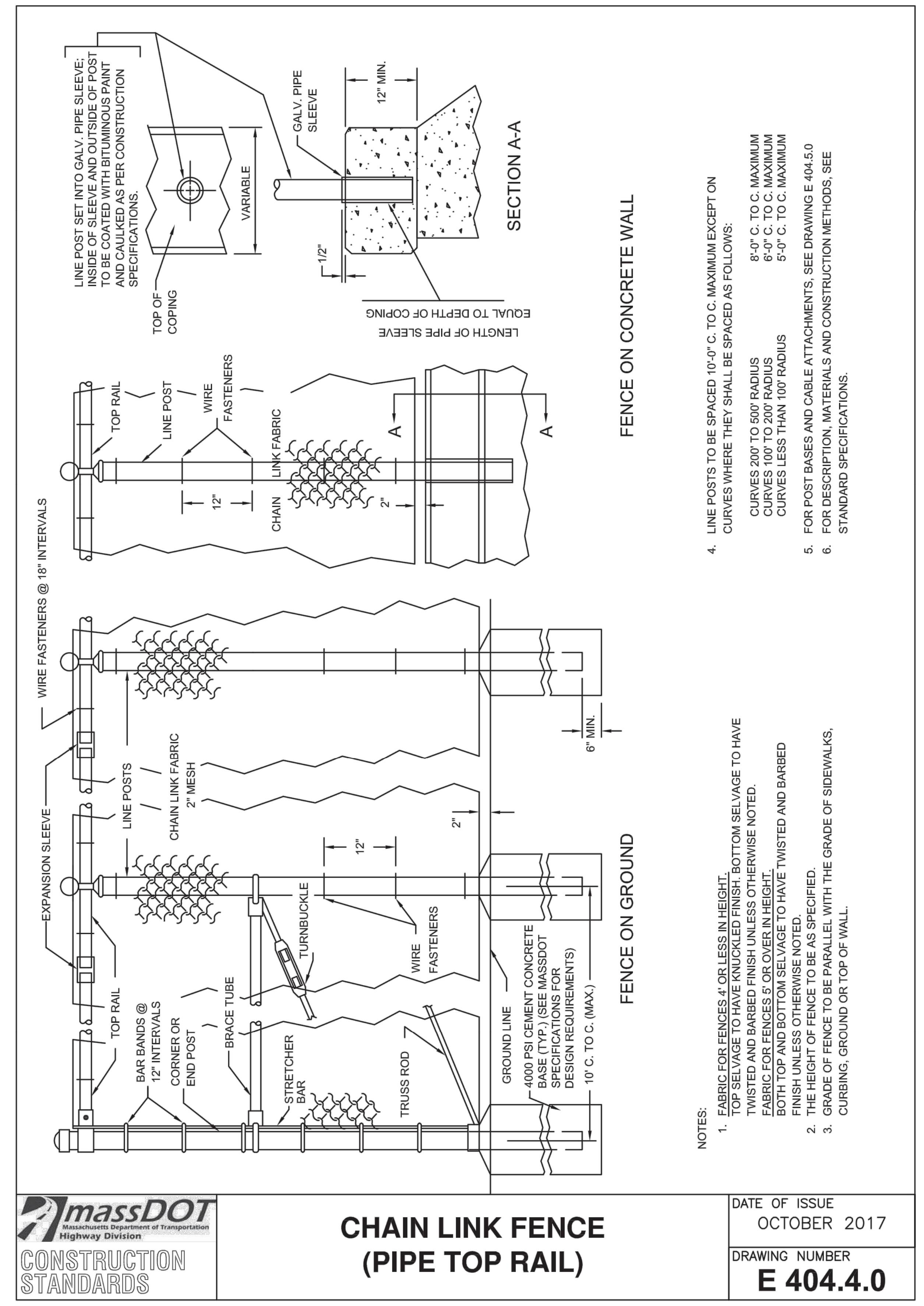


NOTES:

1. FENCE HEIGHT SHALL BE 6 FEET, OPENING WIDTH SHALL BE 10 FEET.

1/5 TYPICAL PEDESTRIAN GATE DETAIL

SCALE: NTS

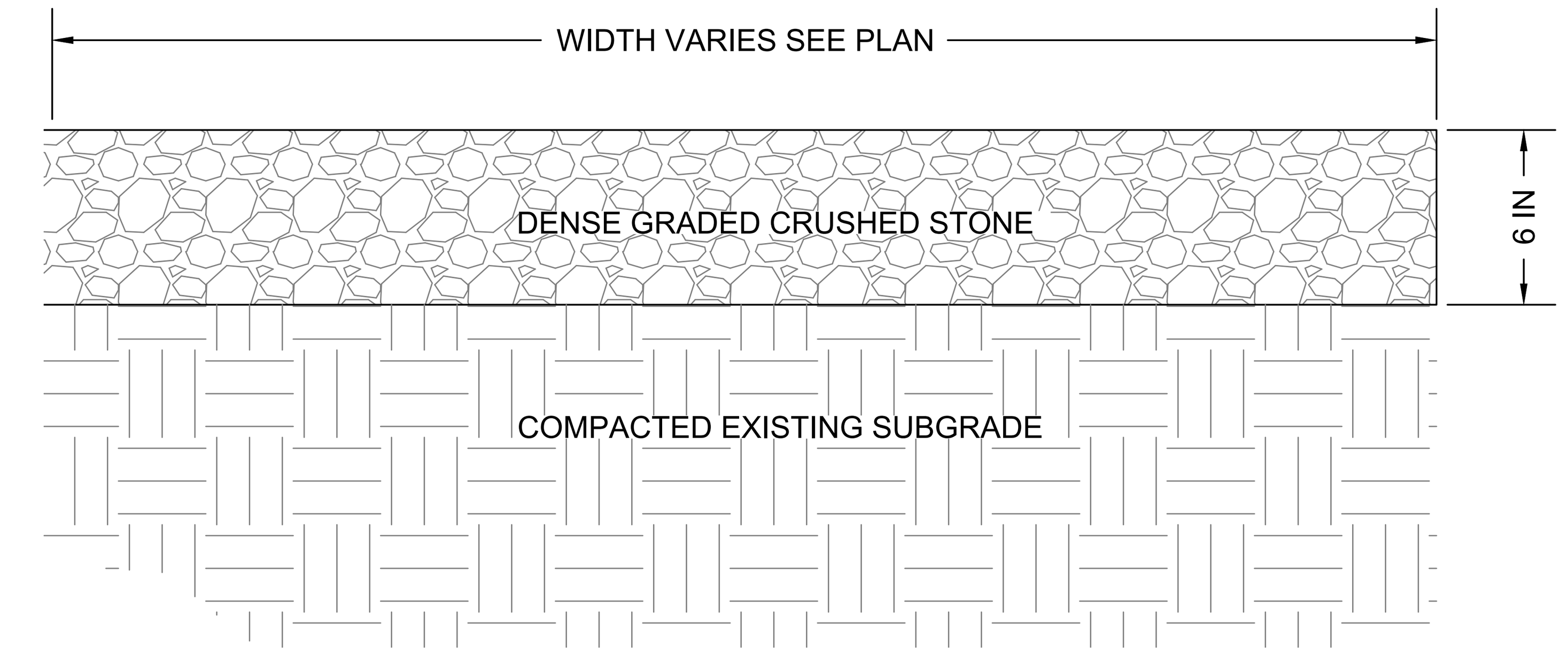


NOTES:

1. FENCE HEIGHT SHALL BE 6 FEET.

2/5 TYPICAL CHAIN LINK FENCE DETAIL

SCALE: NTS

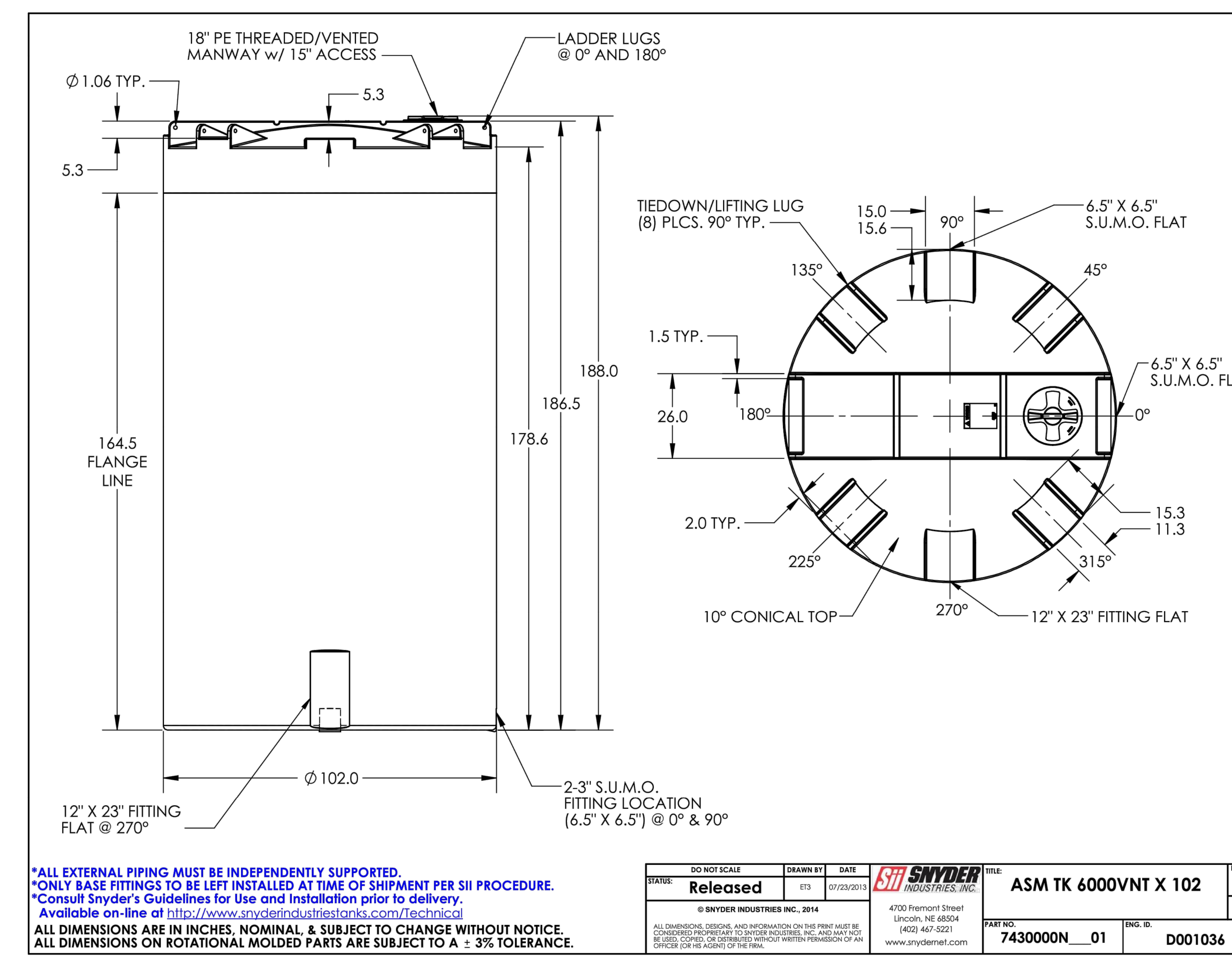


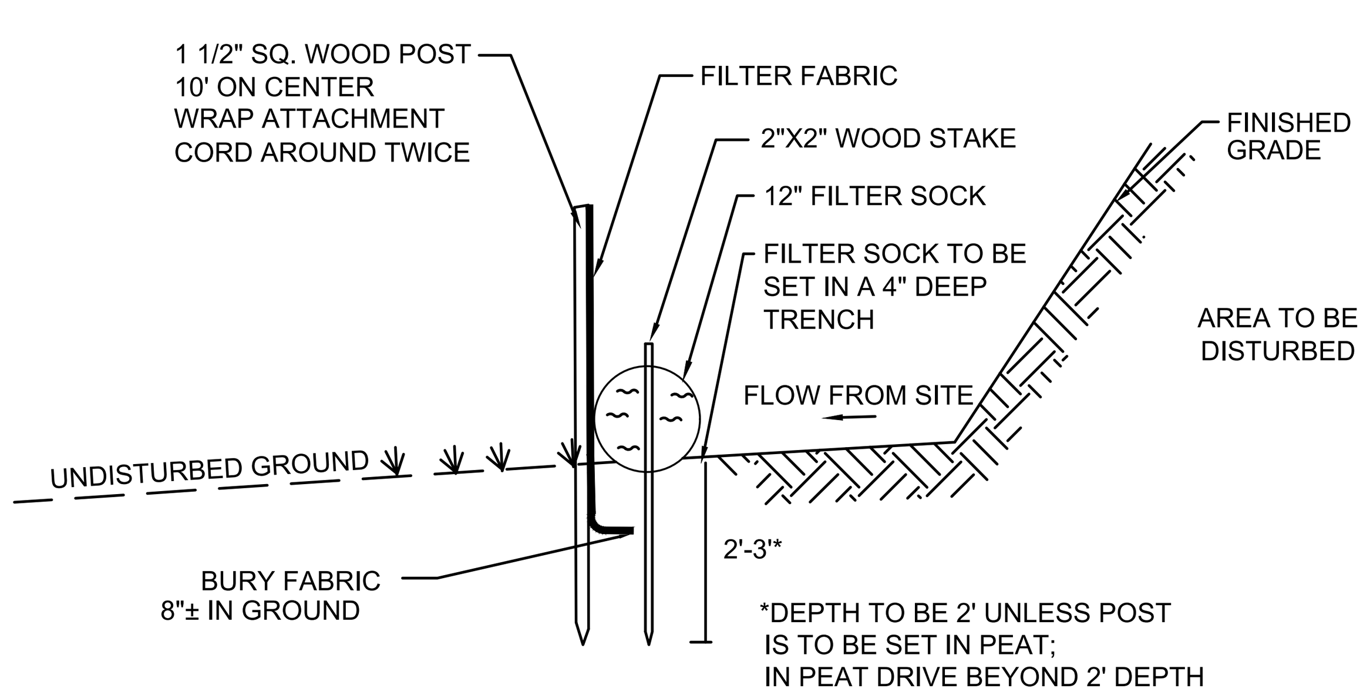
NOTES:

1. DENSE GRADED CRUSHED STONE SHALL BE INSTALLED AFTER EXISTING GROUND SURFACE HAS BEEN EVENLY GRADED AND EXISTING SUBGRADE HAS BEEN SUFFICIENTLY COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.
2. DENSE GRADED CRUSHED STONE MATERIAL SHALL ADHERE TO GRADATION AS STATED IN MASSDOT MATERIAL SPECIFICATION M2.01.7 OR APPROVED EQUAL.

3/5 TYPICAL CRUSHED STONE SURFACE

SCALE: NTS





4/5 TYPICAL COMBINED SILT FENCE & FILTER SOCK (SLOD)

SCALE: NTS

NOTES:

1. SIGN SHALL BE 0.040 IN. RUST FREE ALUMINUM.
2. SIGN SHALL COMPLY WITH ANSI Z535.
3. ONE (1) NO TRESPASSING SIGN TO BE INSTALLED ALONG EACH SIDE OF FENCE LINE FOR A TOTAL OF FOUR (4) SIGNS.

5/5 TYPICAL NO TRESPASSING SIGN

SCALE: NTS

6/5 TYPICAL ALUM STORAGE TANK

SCALE: NTS

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CITY OF WORCESTER
DPW&P WATER OPERATIONS DIVISION
CITY HALL, 455 MAIN STREET
WORCESTER, MA 01608

INDIAN LAKE ALUM DOSING STATION
PARCEL # 37-025-001A
110 SHORE DRIVE
WORCESTER, MA 01605

COMMONWEALTH OF MASSACHUSETTS PAYSON R. WHITNEY, III CIVIL No. 41703 REGISTERED PROFESSIONAL ENGINEER

Not Valid Without Signature

2021.12.20 16:10:15 -05'00'

No.	REVISION	DATE	DRAWN	DESIGN	CHK

DRAWN BY: GJR | DESIGNED BY: JMG | CHECKED BY: PRW

CONSTRUCTION PLANS DETAILS

ISSUED FOR BID

DRAWING NO:

D-1

PROJECT NO: W349-000
DATE OF ISSUE: 12/20/2021
SHEET NO: 5 OF 5

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
		ALTERNATIVE CATCH BASIN
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
•SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		COMPOST MULCH FILTER TUBES
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		EDGE OF PAVEMENT
		LIMIT OF MICROMILLING AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		COMPOST MULCH FILTER TUBES FOR EROSION CONTROL

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE - 6 INCH
	SYL	SOLID YELLOW LINE - 6 INCH
	BWL	BROKEN WHITE LINE - 6 INCH
	BYL	BROKEN YELLOW LINE - 6 INCH
	DWL	DOTTED WHITE LINE - 6 INCH
	DYL	DOTTED YELLOW LINE - 6 INCH
	DWLEx	DOTTED WHITE LINE EXTENSION - 6 INCH WIDTH, 2' LINES W/ 4' GAPS
	DYLEx	DOTTED YELLOW LINE EXTENSION - 6 INCH WIDTH, 2' LINES W/ 4' GAPS
	DBWL	DOUBLE WHITE LINE - 6 INCH
	DBYL	DOUBLE YELLOW LINE - 6 INCH

FOR PERMITTING
NOT FOR CONSTRUCTION

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LSA	LANDSCAPED AREA
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
OHL	OVERHEAD LIGHTS
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
∠PT	ANGLE POINT
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION

ABBREVIATIONS (cont.)

GENERAL

PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL ABBREVIATIONS

CAB	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY UPRAISED HAND
FDW	FLASHING UPRAISED HAND
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
FYL	FLASHING YELLOW LEFT ARROW
FYR	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALKING PERSON
Y	STEADY CIRCULAR YELLOW
YL	STEADY YELLOW LEFT ARROW

WORCESTER
INTERSECTION & SIGNAL IMPROVEMENTS
HOLDEN ST, DRUMMOND AVE, & SHORE DR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	55
PROJECT FILE NO.	603251		

TITLE SHEET & INDEX

603251_HDLEG) - NOI.DWG Plotted on 18-Oct-2018 3:25 PM

WORCESTER
INTERSECTION & SIGNAL IMPROVEMENTS
HOLDEN ST, DRUMMOND AVE, & SHORE DR

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	CMQ-003S(301)X	16	61
PROJECT FILE NO.	603251		

CURB TIE & GRADING PLANS

603251_HD(TIE).DWG Plotted on 17-Aug-2020 11:36 AM

Curve Table				
Curve #	Length	Radius	Delta	Tangent
C7	465.16	425.00	62°42'32"	258.960
C8	417.66	375.00	63°48'48"	233.478

SURVEY TRAVERSE POINT TABLE				
Point #	Northing	Easting	Elevation	Raw Description
15	2936271.3293	570465.8062	545.350	MTRV IPIN OPUS
16	2936168.4447	570738.7903	548.210	MTRV IPIN OPUS

N

SHORE DRIVE

15
N: 2936271.329'
E: 570465.806'
EL: 545.350'
IPIN OPUS

N 2936249.9260
E 570401.5037

98 SHORE DR
N/F BANCROFT SCHOOL
BK. 3742 PG. 304
PROP_ID : 37-024-00001

85 SHORE DR
N/F CITY OF WORCESTER
BK. 11283 PG. 76
PROP_ID : 37-025-00002

110 SHORE DR
N/F BANCROFT SCHOOL
BK. 4344 PG. 28
PROP_ID : 37-025-0001A
PROPERTY TO BE ACQUIRED BY CITY OF WORCESTER

CONTINUED ON SHEET NO. 14

R=10.00'
L=10.32'
PRC+79.92
OFFSET: 38.44

R=15.00'
L=33.18'
PCC+04.40
OFFSET: 37.08

R=20.00'
L=7.68'
PT+06.18
OFFSET: 29.70

R=20.00'
L=33.38'
PC+35.22
OFFSET: 29.56

16
N: 2936168.445'
E: 570738.790'
EL: 548.210'
IPIN OPUS

PT+71.83

PROP PERM EASEMENT

PROP TEMP EASEMENT

SURVEY TRAVERSE
S69°20'57"E
291.73'

C7: Δ=63°11'45" R=400.00' L=441.19' T=246.06'

C8

DWY-9 +76.8 +50.3

DWY-10 +36.9

DWY-11 +10.2 +33.3

+79.90

+04.4

BEGIN 10:1 FLARE RATE
+69.37
OFFSET: 29.22

END 10:1 FLARE RATE
+18.31
OFFSET: 24.62

BEGIN GUARDRAIL
+36.72
OFFSET: 29.68

+51.32

WCR-10

WCR-9

WCR-11

PT+71.83

PT+71.85

PT+45.00

PT+75.00

SHORE DR CONST ℄

MEET EXIST +75.0
OFFSET: 15.3

PROJECT END
STA 30+75
N2936036.2707
E570919.9678

MEET EXIST +75.0
OFFSET: 19.8

1983 CITY LAYOUT

S55°58'21"E
278.17'

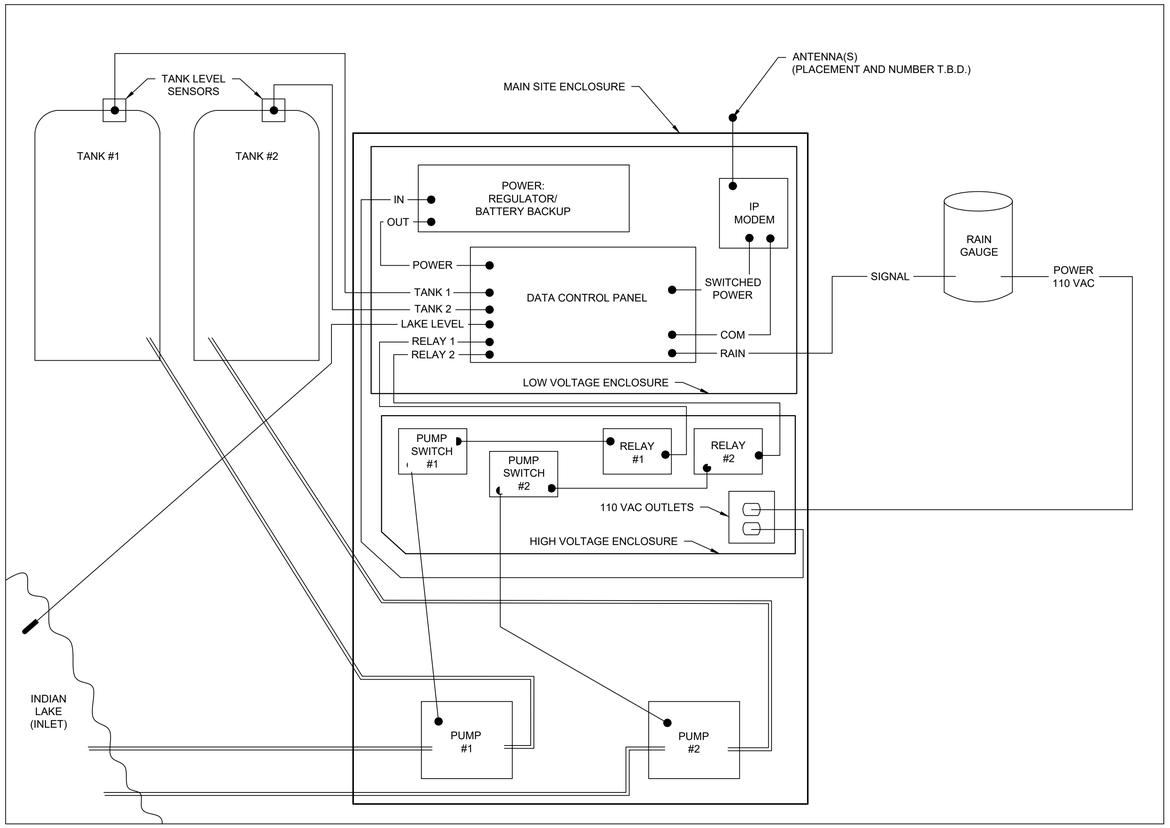
31+50

REVISION SUMMARY		
DATE	REVISION #	DESCRIPTION
8/17/2020	2	ADDITION OF DRIVEWAY #11 & GUADRAIL FLARE MODIFICATIONS

NOTES:
1. DRIVEWAY #11 SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "SIDEWALK THROUGH DRIVEWAY WITH CURB RETURNS 2' CURB CORNER" CONSTRUCTION DETAIL ON SHEET NO. 43.
2. THE AREA BETWEEN THE BACK OF SIDEWALK AND FACE OF GUARDRAIL SHALL BE CONSTRUCTED WITH A 1.50% MAX SLOPE.

0 20 50 100
SCALE: 1" = 20'

1. ADDENDUM NO. 1, NOVEMBER 15, 2019



1/1 DOSING STATION SCHEMATIC

NOT TO SCALE

EQUIPMENT LIST

ITEM	DESCRIPTION	QUANTITY
MAIN SITE ENCLOSURE (~6'X6'X6')	6X6' YARD BUDDY BY PORT-A-STORE PORTABLE STORAGE SYSTEMS* - CORTEN STEEL EXTERIOR (EXTERIOR FINISH COLOR TO BE APPROVED BY OWNER) - MARINE GRADE PLYWOOD FLOOR - PUMP MOUNTING PLATES (2) - ENCLOSURE LIGHTING (LINE VOLTAGE) - WATERTIGHT (NEMA 3)	1
TANKS	SNYDER INDUSTRIES 6000 GALLON TANK*	2
16X18 ENCLOSURE	16X18 NEMA 4 WEATHER RESISTANT ENCLOSURE (CLEAR DOOR)	1
MOUNTS	ENCLOSURE HANGER KIT. VERTICAL MOUNTING	1
16X18 ENCLOSURE	BACK PLATE FOR 16X18 ENCLOSURE	1
CABLE GRIP	LIQUID TIGHT FITTINGS: TD'S X 3, TOTAL PRECIP, POWER, COMM, CONTROL X 2	1
CM 110 TRIPOD*	10' ALUMINUM TRI-TOWER WITH GROUND KIT	1
MOUNTS	ALUMINUM TRI-TOWER CONCRETE MOUNTING PLATE	1
MOUNTS	MET ONE 385: CUSTOM BASE AND LEVELING MOUNT*	1
MOUNTS	MOUNT, 1.25" PIPE, RAIL AND CLAMP	1
MOUNTS	DCM MOUNT KIT	1
MOUNTS	OMNI DIRECTIONAL ANTENNA MOUNT	1
EQUIP./PARTS	WATSON MARLOW PERISTALTIC PUMP* - LINE VOLTAGE - VARIABLE FLOW RATES UP TO 50GPH - 4 ONBOARD RELAYS	2
PARTS MISC.	50FT MARPRENE TUBE 2.4MM ID X 9MM OD	1
RAIN GAUGE-HEATED	MET ONE 385: 12" (.01" TIP) HEATED RAIN GAUGE* - FURNISH AND INSTALL POWER AND SIGNAL CABLING SOLD SEPARATELY	1
CABLING	MET ONE 385: WIRING FOR BOTH SENSOR AND HEATING ELEMENT*	60
SENSORS	KELLER USA PRESSURE TRANSDUCER, 5PSIG* - FURNISH AND INSTALL BENCH SETUP FOR 4-20 CONVERSION	1
CABLE	CABLING (100', VENTED)	100
SENSORS	ULTRASONIC LEVEL TRANSMITTER: CUSTOM CONFIGURATION - NON CONTACT, CORROSIVE RESISTANT DESIGN - 4-20MA FULL SCALE - 0-15FT, CUSTOM RANGE (TANK HEIGHTS SHOWN ON DRAWING NO. D-1) - FURNISH AND INSTALL BENCH SETUP FOR 4-20 CONVERSION	2
CABLING	ULTRASONIC CABLING (50'/EA, VENTED)	100
CABLE	LMR 400 COAXIAL ANTENNA CABLE W/ FITTINGS (CUSTOM)	1
CABLE	NULL MODEM CABLE 9-PIN MALE TO MALE	1
CABLE	MODEM POWER PIGTAIL (DL TO MODEM)	1
CR1000-4M*	DATALOGGER, 16 SE/8 DIFF/2 PULSE/3 SWITCHED/8 DIG	1
DATALOGGER/MUX/STORAGE	RELAY: EATON CUTLER - 2/10VDC - 90/150 VAC, 40AMP*	2
COMMUNICATION	CELLULAR DIGITAL MODEM: VERIZON NETWORK*	1
3DB OMNI ANTENNA	9 DB OMNI DIRECTIONAL ANTENNA W/ MOUNT	1
ANT. 3DB OMNI KIT	3DB OMNI DIRECTIONAL PADDLE ANTENNA (~1FT)	1
POWER	CH200: CHARGER/REGULATOR: 12VDC, WITH CHARGING AND TENDING*	1
WALL CHARGER 13947*	WALL CHARGER, 12V 1.0 AMP. 6FT PIGTAIL	1
POWER	PS12: 7AHR POWER SUPPLY BATTERY BACKUP	1
POWER	SONIC SENSORS: POWER SUPPLY - 24VDC - VARIABLE OUTPUT (20-28) - DIN RAIL MOUNT	1
POWER	BATTERY HARNESS: 12VDC REGULATOR TO DCP	1
LOGGERNET	LOGGERNET, DATALOGGER SUPPORT SOFTWARE* - LOGGERLINK: IP ADDRESSABLE SMARTPHONE INTERFACE*	1

* - OR APPROVED EQUAL

BLU DOT INC.

WATER RESOURCE & ENVIRONMENTAL MONITORING, MANAGEMENT & CONSULTING

CITY OF WORCESTER
DPW&P WATER OPERATIONS DIVISION
CITY HALL, 455 MAIN STREET
WORCESTER, MA 01608

INDIAN LAKE ALUM DOSING STATION
PARCEL # 37-025-001A
110 SHORE DRIVE
WORCESTER, MA 01605

Not Valid Without Signature

No.	REVISION	DATE	DRAWN	DESIGN	CHK

DRAWN BY: MMO | DESIGNED BY: DC | CHECKED BY: DC

CONSTRUCTION PLANS
ALUM DOSING STATION

ISSUED FOR BID

DRAWING NO:

Q-1

PROJECT NO: W349-000
DATE OF ISSUE: 11/24/2021
SHEET NO: 1 OF 2

DATE: Dec 20, 2021 - 8:45AM
PLOTTED: W:\W349-000 Indian Lake Alum Dosing\CAD\Drawings\Construction\Blue Dot Dosing Station\W349-000 Indian Lake Alum Dosing Station.dwg

NOTES:
1. ALL MATERIALS COMING INTO CONTACT WITH PAC SOLUTION MUST BE PAC RESISTANT.
2. ALL ABOVEGROUND PVC PIPE SHALL BE PROTECTED FROM UV DAMAGE.
3. ALL CONNECTIONS AND FITTINGS SHALL BE WATERTIGHT.

1/2 PAC SOLUTION DELIVERY SCHEMATIC
SCALE:NTS

DATE: Dec 20, 2021 – 8:46AM
FILENAME: H:\W349-000 Indian Lake Alum Dosing\CAD\Drawings\Construction\Blue Dot Dosing Station\W349-000 Indian Lake Alum Dosing Station.dwg

BLU DOT INC.
WATER RESOURCE & ENVIRONMENTAL MONITORING, MANAGEMENT & CONSULTING

CITY OF WORCESTER
DPW&P WATER OPERATIONS DIVISION
CITY HALL, 455 MAIN STREET
WORCESTER, MA 01608

INDIAN LAKE ALUM DOSING STATION
PARCEL # 37-025-001A
110 SHORE DRIVE
WORCESTER, MA 01605

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No.	REVISION	DATE	DRAWN	DESIGN	CHK

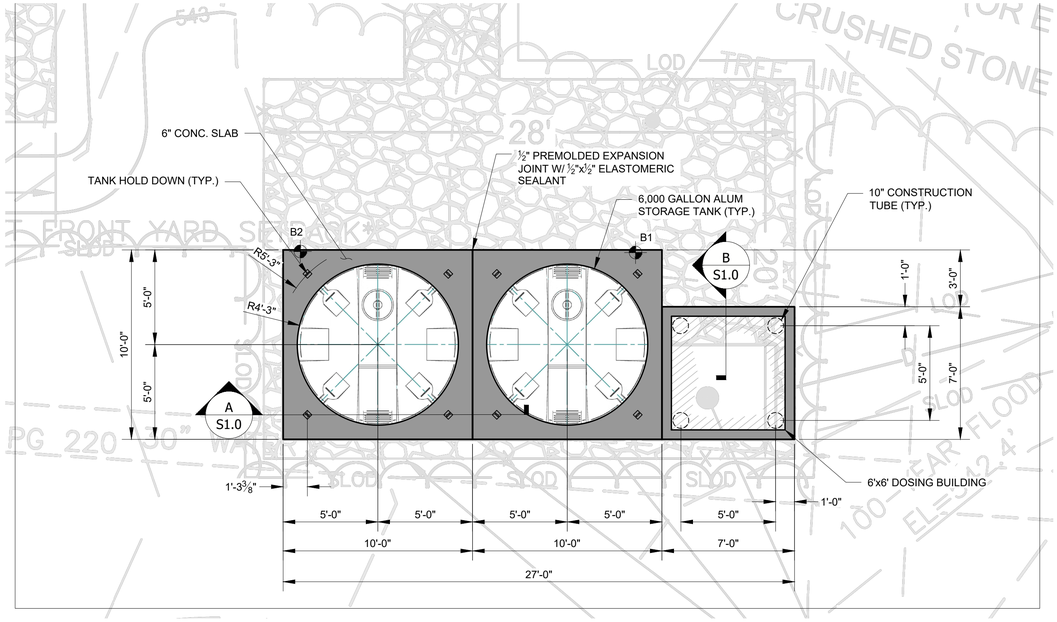
DRAWN BY: MMO | DESIGNED BY: DC | CHECKED BY: DC

CONSTRUCTION PLANS
ALUM DOSING STATION

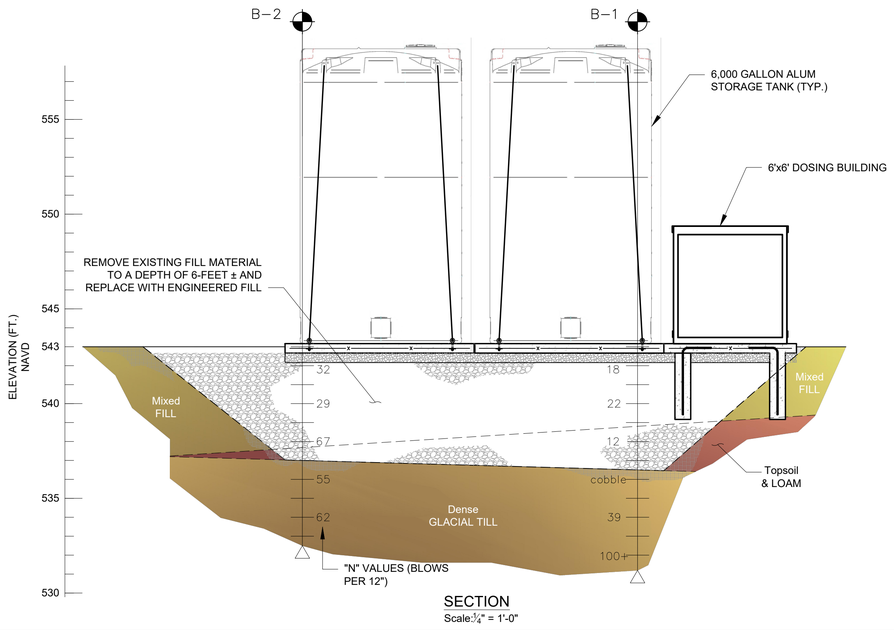
ISSUED FOR BID

DRAWING NO:
Q-2

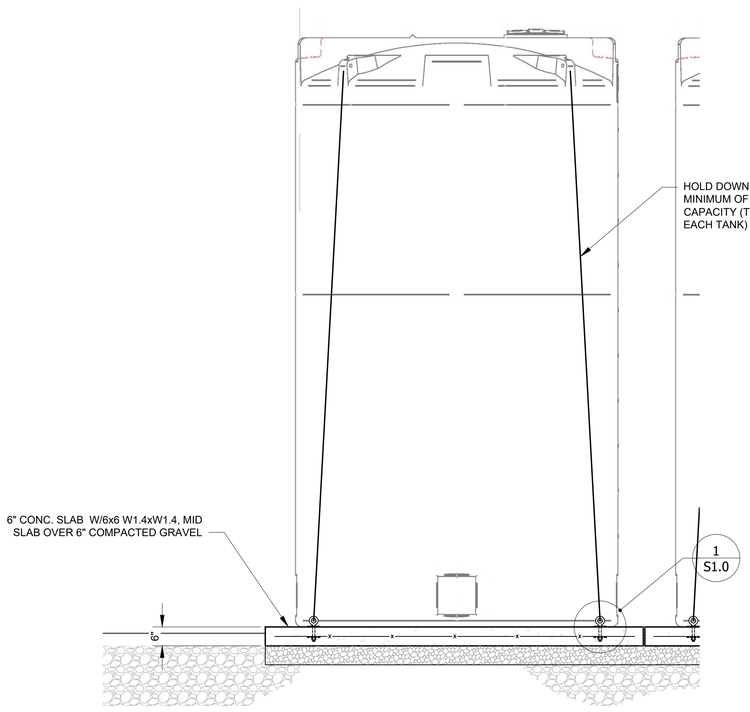
PROJECT NO: W349-000
DATE OF ISSUE: 11/24/2021
SHEET NO: 2 OF 2



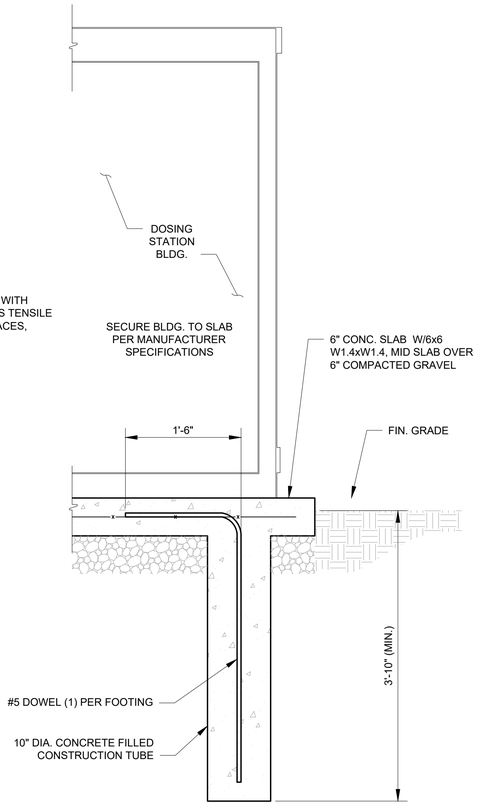
FOUNDATION PLAN
Scale:¼" = 1'-0"



SECTION
Scale:¼" = 1'-0"



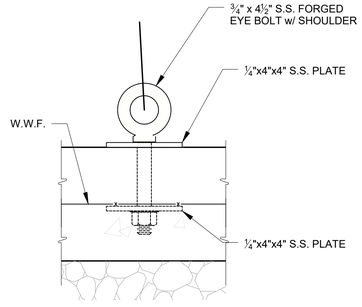
SECTION
Scale: ½" = 1'-0"
A S1.0



SECTION
Scale: 1" = 1'-0"
B S1.0

NOTES:

1. PREPARATION OF SOIL UNDER THE SLABS SHALL INCLUDE THE REMOVAL OF UNSUITABLE SOILS, COMPACTION OF EXISTING SOILS, AND PLACEMENT OF ENGINEERED FILL.
2. CONTRACTOR SHALL REMOVE EXISTING MIXED FILL AND TOPSOIL/LOAM MATERIAL (TO APPROXIMATELY ELEV. 537) AND REPLACE WITH COMPACTED ENGINEERED FILL MATERIAL PLACED IN 8-INCH LOOSE LIFTS AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST IN ACCORDANCE WITH ASTM D-1557-12, METHOD D. THE COMPACTION SHALL BE DETERMINED BY ASTM D1556/d1556m-15e1, D2167-15, D6938-17ae1, OR OTHER APPROVED NUCLEAR DENESITY TESTING DEVICE.
3. ENGINEERED FILL UNDER SLABS SHALL CONSIST OF GRANULAR SOIL FREE OF ORGANIC MATTER AND CONFORMING TO THE FOLLOWING GRADATION LIMITATIONS:
   - MAXIMUM PARTICLE SIZE.....3 INCHES
   - RETAINED ON ¾" SIEVE.....30% MAX.
   - PASSING No. 100 SIEVE.....45% MAX.
   - PASSING No. 200 SIEVE.....8% MAX.
4. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT PREPARED BY Geotechinal Partnership, Inc. DATED: SEPTEMBER 28, 2021FOR MORE INFORMATION.



DETAIL
Scale: 3" = 1'-0"
1 S1.0

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No.	REVISION	DATE	DRAWN	DESIGN	CHK

DRAWN BY: | DESIGNED BY: | CHECKED BY:

Alum Storage Tanks and Dosing Station

Foundation Plan, Sections, and Details

DRAWING NO.: S1.0
PROJECT NO.: 21293.0
DATE OF ISSUE: 11-15-2021
SHEET NO. 1 OF 1

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