CITY OF PORTSMOUTH, NEW HAMPSHIRE
MADBURY WTP BACKWASH TANK AND PUMP STATION UPGRADE
MADBURY, NH
DECEMBER 2019

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3	C-01	SITE PLAN NOTES
4	C-02	OVERALL SITE PLAN
5	C-03	EXISTING CONDITIONS & DEMOLITION PLAN
6	C-04	SITE PLAN
7	C-05	GRADING & DRAINAGE PLAN
8	C-06	SOIL EROSION & SEDIMENT CONTROL PLAN
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20	S-02	BACKWASH PUMP STATION LOWER LEVEL PLAN (EL. 52.75)
21	S-03	BACKWASH PUMP STATION ROOF PLAN
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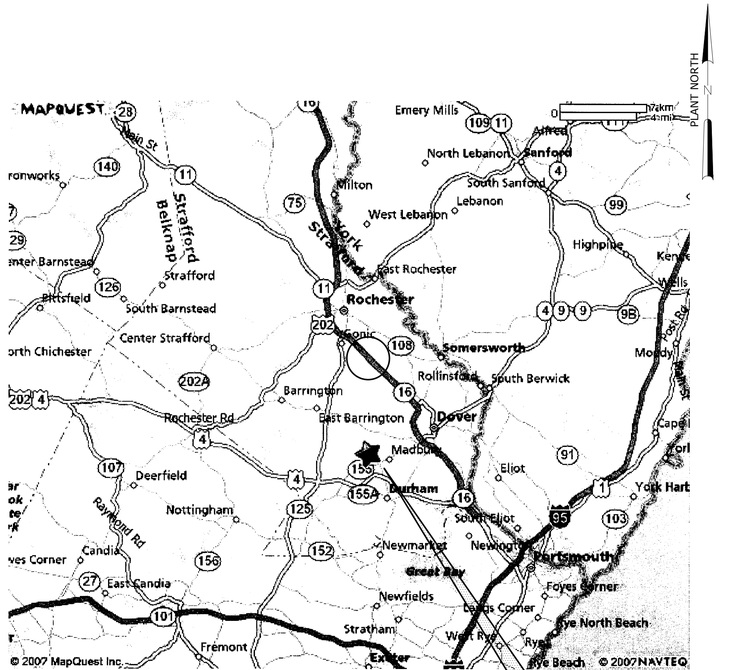


VICINITY MAP
N.T.S.

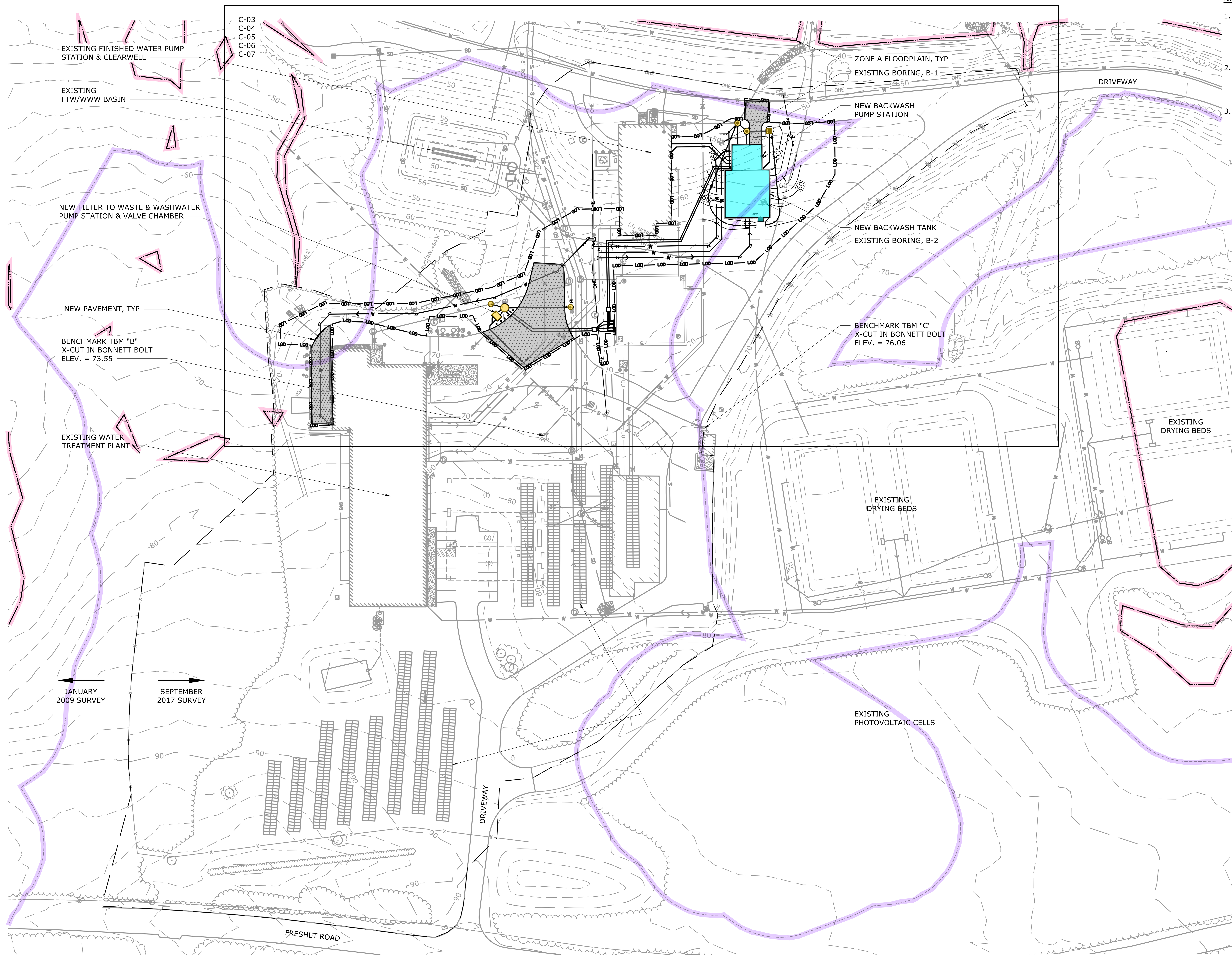
PROJECT AREA

STATE OF NEW HAMPSHIRE
ALBERTO ANGLES, JR.
No. 16043
LICENSED PROFESSIONAL ENGINEER

Hazen
HAZEN AND SAWYER
24 FEDERAL STREET
BOSTON, MASSACHUSETTS 02110

SHEET 1 OF 50

DWG. NO. G-01



NOTES:

1. A PARTIAL SURVEY WAS CONDUCTED BY DOUCET SURVEYING INC. FOR PROPOSED PUMP STATION AREA IN SEPTEMBER 2017. THE OUTER TOPOGRAPHY HAS BEEN USED FROM THE PREVIOUS WATER TREATMENT PLANT CONSTRUCTION AS BUILT PLANS BY HAZEN AND SAWYER AND UNDERWOOD ENGINEERS IN JANUARY OF 2009.
2. HORIZONTAL CONTROL IS REFERENCED TO THE NEW HAMPSHIRE STATE PLANE (2800), BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83). VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. A PORTION OF THE SITE IS LOCATED IN ZONE A FLOOD PLAIN FROM FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) STAFFORD COUNTY, NEW HAMPSHIRE, PANEL 0320, MAP NUMBER 33017C0320E, DATED SEPTEMBER 30, 2015; HOWEVER, NO SITE WORK WILL BE LOCATED IN FLOOD ZONE A.

SCALE: 1" = 50'

50 25 0 50

NO.	DATE	ISSUED FOR	BY
1	12/16/19	BIDDING	MTV

DESIGNED J. PERRUZZA
DRAWN J. PERRUZZA
CHECKED D. SHEERAN
PROJ.ENGR. M. GREELEY
APPROVED A. ANGLES

SCALE: AS SHOWN

STATE OF NEW HAMPSHIRE — ALBERTO ANGLES, JR. No. 15043 — PROFESSIONAL ENGINEER — LICENSED

P.E.

Hazen

HAZEN AND SAWYER
24 FEDERAL STREET
BOSTON, MASSACHUSETTS 02110

CITY OF PORTSMOUTH

MADBURY WTP BACKWASH TANK AND PUMP STATION UPGRADE

MADBURY WTP UPGRADE

CIVIL

OVERALL SITE PLAN

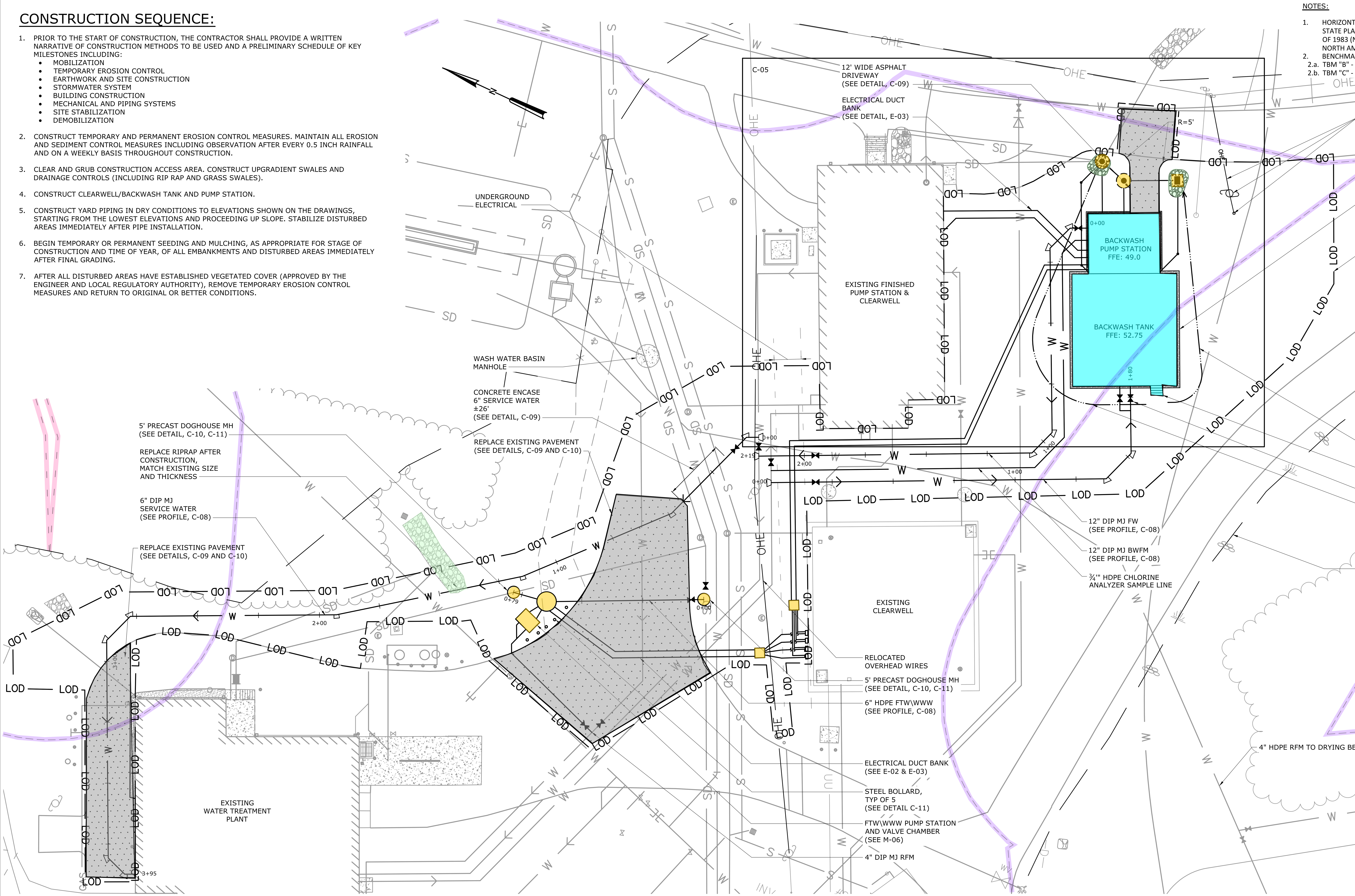
DATE DECEMBER 2019
SHEET 04 OF 50
DWG. NO. C-02

CONSTRUCTION SEQUENCE:

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A WRITTEN NARRATIVE OF CONSTRUCTION METHODS TO BE USED AND A PRELIMINARY SCHEDULE OF KEY MILESTONES INCLUDING:
   - MOBILIZATION
   - TEMPORARY EROSION CONTROL
   - EARTHWORK AND SITE CONSTRUCTION
   - STORMWATER SYSTEM
   - BUILDING CONSTRUCTION
   - MECHANICAL AND PIPING SYSTEMS
   - SITE STABILIZATION
   - DEMOBILIZATION
2. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING OBSERVATION AFTER EVERY 0.5 INCH RAINFALL AND ON A WEEKLY BASIS THROUGHOUT CONSTRUCTION.
3. CLEAR AND GRUB CONSTRUCTION ACCESS AREA. CONSTRUCT UPGRADIENT SWALES AND DRAINAGE CONTROLS (INCLUDING RIP RAP AND GRASS SWALES).
4. CONSTRUCT CLEARWELL/BACKWASH TANK AND PUMP STATION.
5. CONSTRUCT YARD PIPING IN DRY CONDITIONS TO ELEVATIONS SHOWN ON THE DRAWINGS, STARTING FROM THE LOWEST ELEVATIONS AND PROCEEDING UP SLOPE. STABILIZE DISTURBED AREAS IMMEDIATELY AFTER PIPE INSTALLATION.
6. BEGIN TEMPORARY OR PERMANENT SEEDING AND MULCHING, AS APPROPRIATE FOR STAGE OF CONSTRUCTION AND TIME OF YEAR, OF ALL EMBANKMENTS AND DISTURBED AREAS IMMEDIATELY AFTER FINAL GRADING.
7. AFTER ALL DISTURBED AREAS HAVE ESTABLISHED VEGETATED COVER (APPROVED BY THE ENGINEER AND LOCAL REGULATORY AUTHORITY), REMOVE TEMPORARY EROSION CONTROL MEASURES AND RETURN TO ORIGINAL OR BETTER CONDITIONS.

NOTES:

1. HORIZONTAL CONTROL IS REFERENCED TO THE NEW HAMPSHIRE STATE PLANE (2800), BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83). VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. BENCHMARKS: SEE C-02
   2.a. TBM "B" - X CUT IN BONNET BOLT ON HYDRANT ELEV - 73.55
   2.b. TBM "C" - X CUT IN BONNET BOLT ON HYDRANT ELEV - 76.06



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1	12/16/19	BIDDING	MTV

DESIGNED J. PERRUZZA
DRAWN J. PERRUZZA
CHECKED D. SHEERAN
PROJ.ENGR. M. GREELEY
APPROVED A. ANGLES

SCALE: AS SHOWN

STATE OF NEW HAMPSHIRE ALBERTO ANGLES, JR. No. 15043 LICENSED PROFESSIONAL ENGINEER — P.E.

Hazen

HAZEN AND SAWYER
24 FEDERAL STREET
BOSTON, MASSACHUSETTS 02110

CITY OF PORTSMOUTH

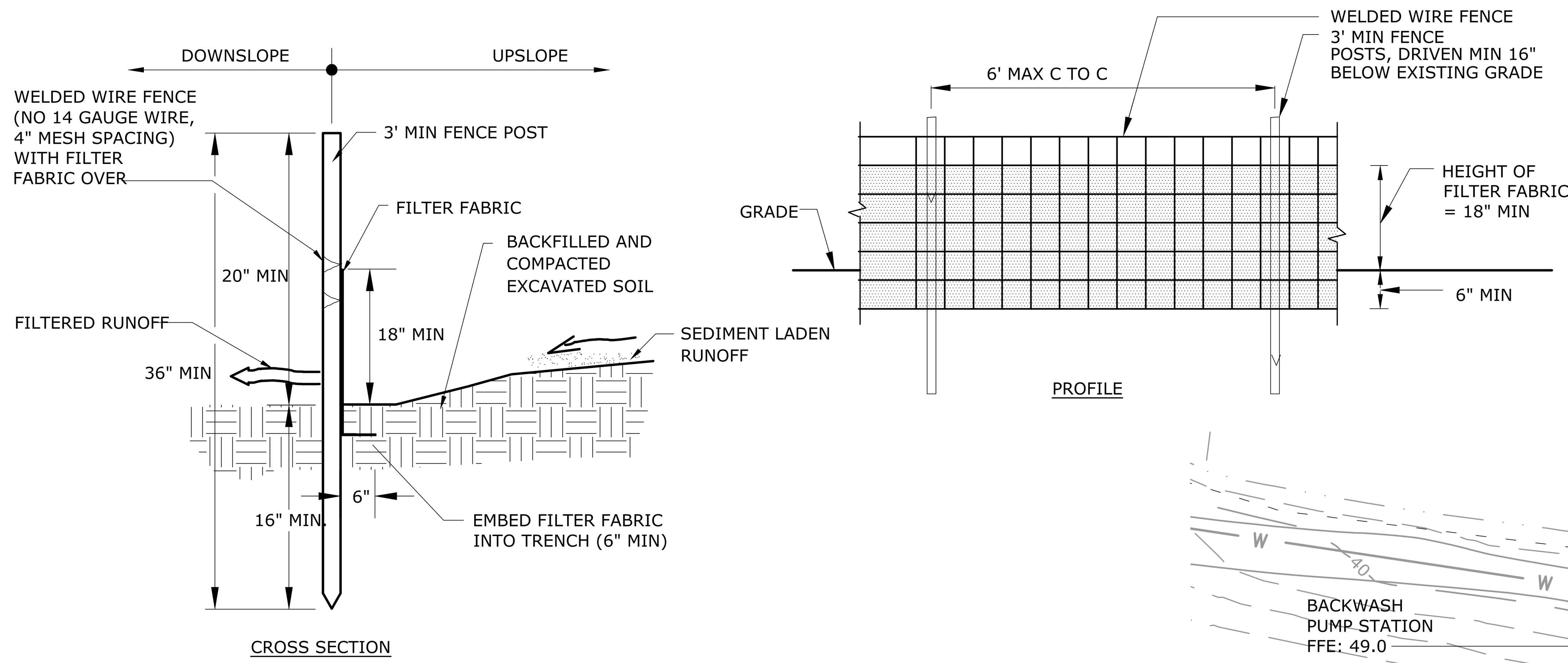
MADBURY WTP BACKWASH TANK AND PUMP STATION UPGRADE

MADBURY WTP UPGRADE

CIVIL

SITE PLAN

DATE DECEMBER 2019
SHEET 06 OF 50
DWG. NO. C-04



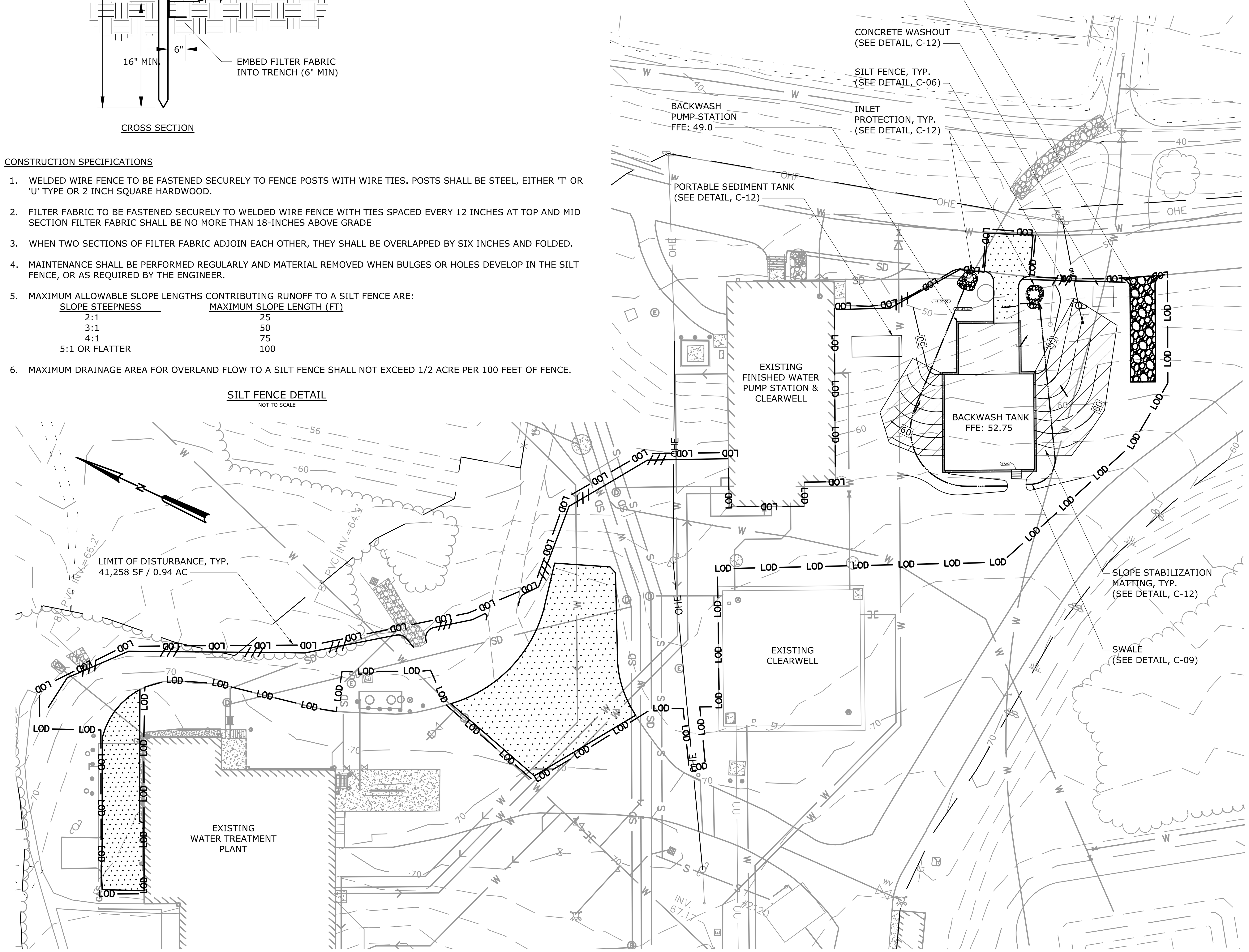
CONSTRUCTION SPECIFICATIONS

1. WELDED WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. POSTS SHALL BE STEEL, EITHER 'T' OR 'U' TYPE OR 2 INCH SQUARE HARDWOOD.
2. FILTER FABRIC TO BE FASTENED SECURELY TO WELDED WIRE FENCE WITH TIES SPACED EVERY 12 INCHES AT TOP AND MID SECTION FILTER FABRIC SHALL BE NO MORE THAN 18-INCHES ABOVE GRADE
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED REGULARLY AND MATERIAL REMOVED WHEN BULGES OR HOLES DEVELOP IN THE SILT FENCE, OR AS REQUIRED BY THE ENGINEER.
5. MAXIMUM ALLOWABLE SLOPE LENGTHS CONTRIBUTING RUNOFF TO A SILT FENCE ARE:

SLOPE STEEPNESS	MAXIMUM SLOPE LENGTH (FT)
2:1	25
3:1	50
4:1	75
5:1 OR FLATTER	100

6. MAXIMUM DRAINAGE AREA FOR OVERLAND FLOW TO A SILT FENCE SHALL NOT EXCEED 1/2 ACRE PER 100 FEET OF FENCE.

SILT FENCE DETAIL
NOT TO SCALE



STORMWATER MANAGEMENT, EROSION & SEDIMENTATION CONTROL NOTES:

1. DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:
2. THE SMALLEST PRACTICABLE AREA OF LAND SHALL BE EXPOSED FOR THE SHORTEST PRACTICAL PERIOD AT ANY GIVEN TIME DURING CONSTRUCTION.
3. EXCAVATION AND EARTHWORK SHALL BE CONDUCTED IN A MANNER THAT WILL MINIMIZE EFFECTS OF EROSION THROUGHOUT CONSTRUCTION.
4. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR A MATERIAL LAYDOWN/STORAGE AREA AND/OR A SOIL STOCKPILE AREA.
5. DUE TO THE SITE DISTURBANCE BEING UNDER ONE (1) ACRE, A NPDES PERMIT FOR CONSTRUCTION ACTIVITIES IS NOT REQUIRED FOR THIS PROJECT.
6. THE CONTRACTOR SHALL SUBMIT, FOR REVIEW AND APPROVAL, A SCHEDULE TO INCLUDE ALL EARTHWORK ACTIVITIES IN ACCORDANCE WITH DIVISION 1 OF THE PROJECT SPECIFICATIONS.
7. THE CONTRACTOR SHALL LOAM, SEED AND MULCH ALL CUT AND FILL SLOPES IMMEDIATELY FOLLOWING FINAL GRADING TEMPORARY SEEDING AND MULCH SHALL BE APPLIED AT ALL UNVEGETATED AREAS THAT WILL BE EXPOSED FOR A PERIOD EXCEEDING TWENTY (20) DAYS.
8. SEEDING AND MULCHING:

   A. TEMPORARY SEEDING AND MULCHING:

   - TEMPORARILY SEED WITH ANNUAL RYEGRASS 1LB PER 1000SQFT AND MULCH DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR MORE THAN 21 DAYS.
   - TEMPORARILY MULCH DISTURBED AREAS, INCLUDING STOCKPILES, WHICH WILL NOT BE WORKED FOR 7 TO 21 DAYS WITH CHOPPED HAY AND NETTING.
   - SLOPES STEEPER THAN 3:1 PROVIDE EROSION CONTROL MATTING.

   B. PERMANENT SEEDING AND MULCHING:

   - ALL DISTURBED VEGETATED AREAS SHALL BE COVERED WITH A MINIMUM OF 4 INCHES OF SCREENED TOPSOIL, SEEDED, FERTILIZED AND MULCHED TO PROVIDE A PERMANENT, DENSE, HEALTHY GROWTH OF GRASS.
   - ALL AREAS TO BE TOP SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 4 INCHES PRIOR TO PLACEMENT OF TOPSOIL.
   - SLOPES FLATTER THAN 3:1 PROVIDE CHOPPED HAY MULCH WITH MULCH NETTING.
   - SLOPES EXCEEDING 3:1 PROVIDE EROSION CONTROL MATTING.

10. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF TWO BALES PER 1,000 SQUARE FEET (OR APPROXIMATELY TWO TONS PER ACRE).
11. TEMPORARY EROSION CONTROL MEASURES ARE TO BE MAINTAINED AND KEPT CLEAN UNTIL ALL EXPOSED AREAS HAVE ESTABLISHED VEGETATION, AT WHICH TIME TEMPORARY MEASURES ARE TO BE REMOVED.
12. THE EROSION CONTROL SPECIFIED AND DETAILED ON THE PLANS SHALL BE CONSIDERED THE MINIMUM REQUIRED AND IS TO BE USED AS A GUIDELINE ONLY. ADDITIONAL MEASURES MAY BE DICTATED BY FIELD CONDITIONS. PROVIDE ADDITIONAL EROSION CONTROL AS REQUIRED BY THE CITY, STATE OR THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION CONTROL DURING CONSTRUCTION AND UNTIL PERMANENT VEGETATION IS ESTABLISHED.
13. HAY BALES, SILT FENCING AND EROSION STONE SHALL BE INSTALLED WHERE NECESSARY TO MINIMIZE THE EFFECTS OF EROSION. ALL WORK SHALL BE COMPLETED IN CONFORMANCE WITH THE LATEST EDITION OF "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE" TO PREVENT THE DEGRADATION OF DOWNSTREAM PROPERTIES AND DRAINAGE.
14. HAY BALE BARRIERS SHALL BE INSTALLED AROUND CATCH BASINS AND AT ALL AREAS WHERE STORMWATER OR TRENCHWATER CONCENTRATE.
15. DRAINAGE SWALES SHALL BE MONITORED AND MAINTAINED THROUGHOUT OPERATION. SILT SHALL BE PERIODICALLY REMOVED FROM SWALES AS NECESSARY TO PREVENT SOIL MIGRATION. REMOVED SILT SHALL BE STABILIZED OR DISPOSED OF IN SUCH A MANNER AS TO LIMIT FURTHER EROSION AND SEDIMENT TRANSPORT. ANY EROSION OR OTHER DAMAGE TO SWALES SHALL BE REPAIRED AND THE DISTURBED AREAS STABILIZED IMMEDIATELY.
16. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED: FINISHED COURSE GRAVELS HAVE BEEN INSTALLED; A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED; A MINIMUM OF 3" OF NON-EROSIVE MATERIALS SUCH AS STONE OR RIP RAP HAS BEEN PROPERLY INSTALLED; OR EROSION CONTROL MATTING HAVE BEEN PROPERLY INSTALLED.
17. WINTER CONSTRUCTION NOTES:

   A. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL MATTING ON SLOPES GREATER THAN 3:1, AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL MATTING OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

   B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL MATTINGS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

   C. AFTER NOVEMBER 15TH, INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT ITEM 304.3).

18. THE CONTRACTOR IS RESPONSIBLE FOR STORMWATER MANAGEMENT DURING ALL PHASES OF CONSTRUCTION. NO WORK SHALL BE PERMITTED IN FLOWING WATER. DIVERSION SHALL BE ACCOMPLISHED BY THE USE OF SAND BAGS, BERMS, TEMPORARY CULVERTS, OR PUMPING. ALL DIVERTED WATER SHALL BE DISCHARGED TO DIRT BAGS, STONE FILL OR OTHER SUITABLE EROSION CONTROL STRUCTURE.
19. THE CONTRACTOR MAY NOT REMOVE EROSION CONTROL MEASURES UNTIL TURF IS VIGOROUSLY ESTABLISHED. ANY DISTURBED AREAS REMAINING AFTER OR AS A RESULT OF THE REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BB LOAMED, SEEDED AND MULCHED.
20. STABILIZE ALL DITCHES AND SWALES PRIOR TO DIRECTING FLOW TO THEM.
21. ALL ROADWAYS AND OTHER PAVED AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
22. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SCALE: 1" = 30'
30 15 0 30

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1	12/16/19	BIDDING	MTV

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DRAWN J. PERRUZZA
CHECKED D. SHEERAN
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SCALE
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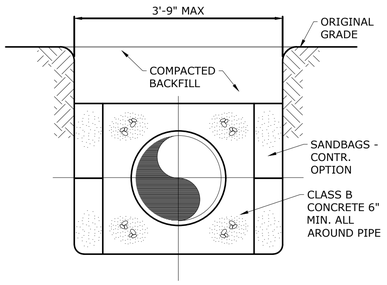
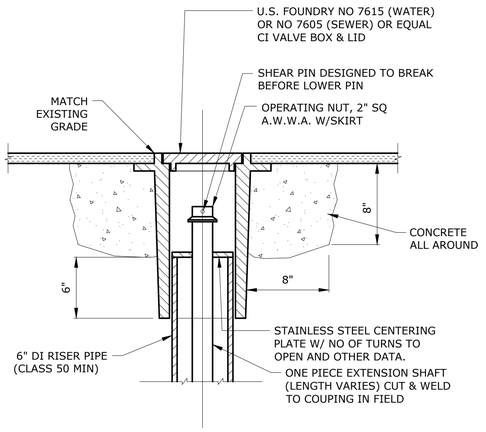
CITY OF PORTSMOUTH
MADBURY WTP BACKWASH TANK AND PUMP STATION UPGRADE

MADBURY WTP UPGRADE
CIVIL
SOIL EROSION & SEDIMENT CONTROL PLAN

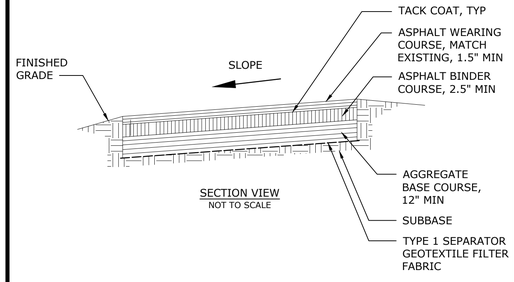
DATE DECEMBER 2019
SHEET 08 OF 50
DWG. NO. C-06



CONCRETE ENCASED PIPE DETAIL
NOT TO SCALE

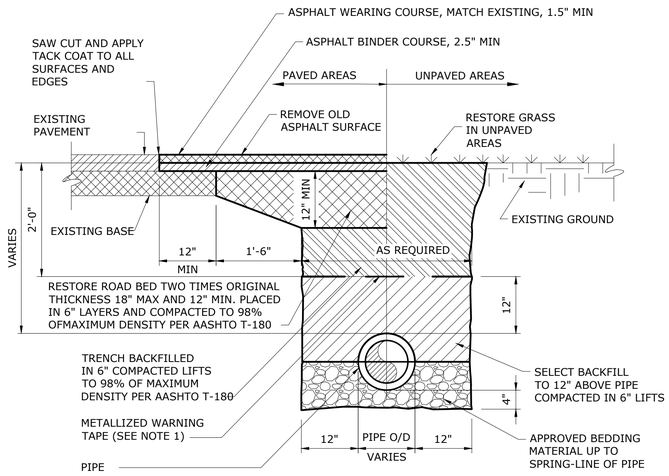


VALVE BOX DETAIL
NOT TO SCALE



SECTION VIEW
NOT TO SCALE

ASPHALT DRIVEWAY PLAN & SECTION DETAIL
NOT TO SCALE



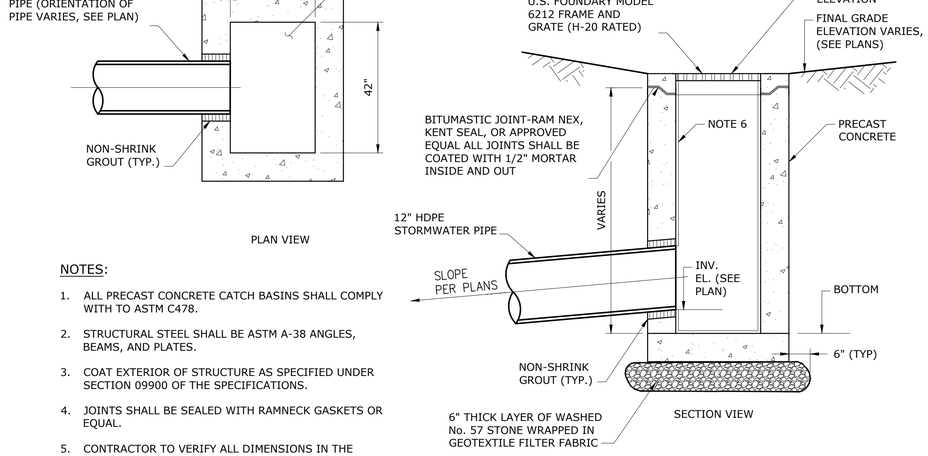
TYPICAL TRENCH DETAIL
NOT TO SCALE

TRENCH EXCAVATION LIMITS		
INTERNAL DIAMETER OF PIPE	W WIDTH OF TRENCH	
	MAX	MIN
4"-6"	3'-9"	2'-0"
8"-10"	3'-9"	2'-2"
12"	3'-9"	O.D.+2'
14"-16"	4'-2"	O.D.+2'
18"	4'-4"	O.D.+2'
20",21"	4'-8"	O.D.+2'
24"	4'-11"	O.D.+2'
27"	5'-9"	O.D.+2'
30"	6'-7"	O.D.+2'

W = TRENCH WIDTH AT BOTTOM OF PIPE. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.

NOTES:

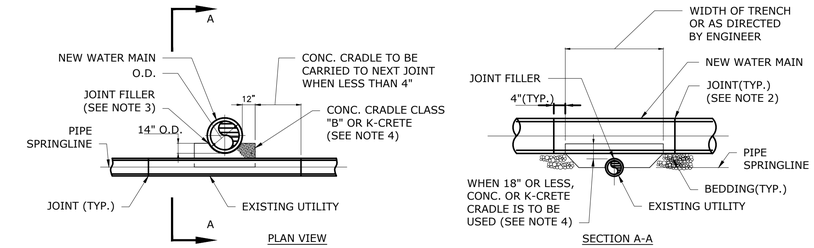
1. METALLIZED WARNING TAPES SHALL BE INSTALLED 24" BELOW FINISH GRADE CENTERED ABOVE THE PIPE.
2. SELECTED BACKFILL MATERIAL SHALL BE FREE OF STONES LARGER THAN 3/4" DIA.
3. REPLACE ALL LANE MARKINGS AND REFLECTIVE MARKERS.
4. DEPTH OF PIPE VARIES. SEE PIPING PLANS FOR PROPOSED DEPTHS. MINIMUM DEPTH OF COVER SHALL BE 36 INCHES.



NOTES:

1. ALL PRECAST CONCRETE CATCH BASINS SHALL COMPLY WITH TO ASTM C478.
2. STRUCTURAL STEEL SHALL BE ASTM A-38 ANGLES, BEAMS, AND PLATES.
3. COAT EXTERIOR OF STRUCTURE AS SPECIFIED UNDER SECTION 09900 OF THE SPECIFICATIONS.
4. JOINTS SHALL BE SEALED WITH RAMNECK GASKETS OR EQUAL.
5. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
6. COAT INTERIOR OF MANHOLE WITH 30 MILS OF COAL TAR EPOXY.
7. STONE SHALL MEET REQUIREMENTS OF NHDOT SPECIFICATION SECTION 901.

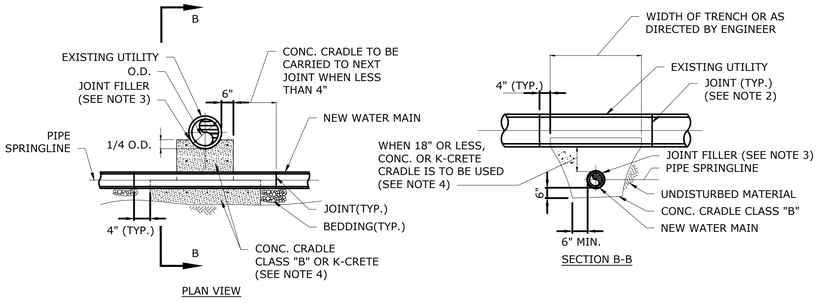
YARD INLET DETAIL
NOT TO SCALE



NEW PIPE OVER EXIST. UTILITY DETAIL
NOT TO SCALE

NOTES:

1. IF LESS THAN 18" CLEARANCE, HEALTH DEPARTMENT APPROVAL WILL BE REQUIRED.
2. ARRANGE SO NEITHER NEW OR EXISTING PIPE HAS JOINT IN CONTACT WITH CONCRETE.
3. JUTE OR SIMILAR BITUMINOUS IMPREGNATED JOINT FILLER SHALL BE INSTALLED BETWEEN BOTH PIPES AND CONCRETE.
4. IF 10' OF HORIZONTAL SEPARATION OR 18" VERTICAL SEPARATION CANNOT BE MADE, THE CONTRACTOR WILL ENCASE THE NEW WATER MAIN IN K-CRETE (SEE WATER MAIN INSTALLATION NEAR SANITARY SEWER). WHERE THE DISTANCE IS LESS THAN 5 FEET THE NEW WATER MAIN CAN BE ENCASED IN CLASS "B" CONCRETE.



NEW PIPE UNDER EXIST. UTILITY DETAIL
NOT TO SCALE

NOTES:

1. IF LESS THAN 18" CLEARANCE, HEALTH DEPARTMENT APPROVAL WILL BE REQUIRED.
2. ARRANGE SO NEITHER NEW OR EXISTING PIPE HAS JOINT IN CONTACT WITH CONCRETE.
3. JUTE OR SIMILAR BITUMINOUS IMPREGNATED JOINT FILLER SHALL BE INSTALLED BETWEEN BOTH PIPES AND CONCRETE.
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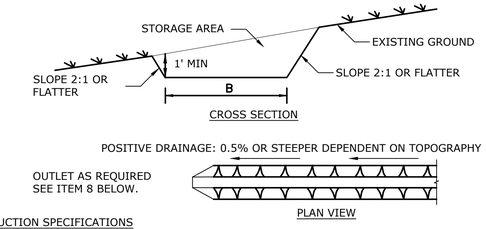

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE FLOW CHANNEL STABILIZATION MEASURES SPECIFIED IN THE SWALE REQUIREMENT TABLE. WHERE SEEDING IS REQUIRED, PROVIDE A MINIMUM OF 6" OF TOPSOIL TO BRING SWALE TO DESIRED GRADES.
9. ALL SWALES SHALL BE OUTFITTED WITH CHECK DAMS. SEE DETAIL, THIS SHEET.
10. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

GRASSED DRAINAGE SWALE DETAIL
NOT TO SCALE

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PLOT DATE: 12/10/2019 2:23 PM BY: LWALLACE

NO.	DATE	ISSUED FOR	BY
1	12/16/19	BIDDING	MTV

DESIGNED J.PERRUZZA
DRAWN J. PERRUZZA
CHECKED D. SHEERAN
PROJ.ENGR. M. GREELEY
APPROVED A. ANGLES

SCALE
AS SHOWN

STATE OF NEW HAMPSHIRE — ALBERTO ANGLES, JR. — No. 16043 — PROFESSIONAL ENGINEER — P.E.

Hazen
HAZEN AND SAWYER
24 FEDERAL STREET
BOSTON, MASSACHUSETTS 02110

CITY OF PORTSMOUTH

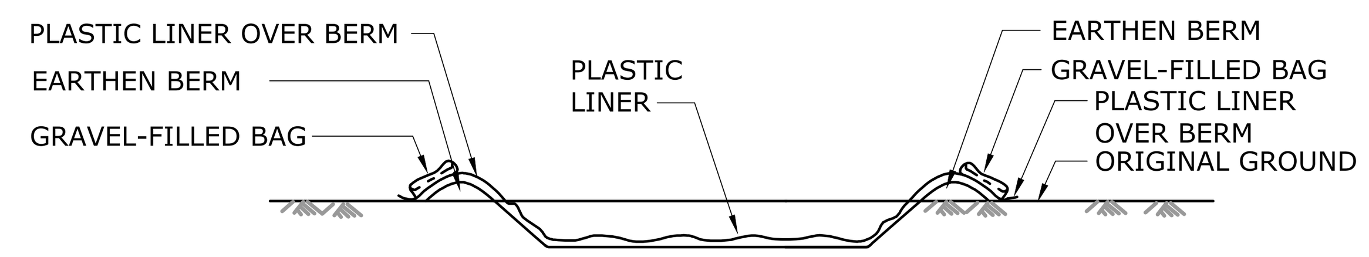
MADBURY WTP BACKWASH TANK AND PUMP STATION UPGRADE

MADBURY WTP UPGRADE

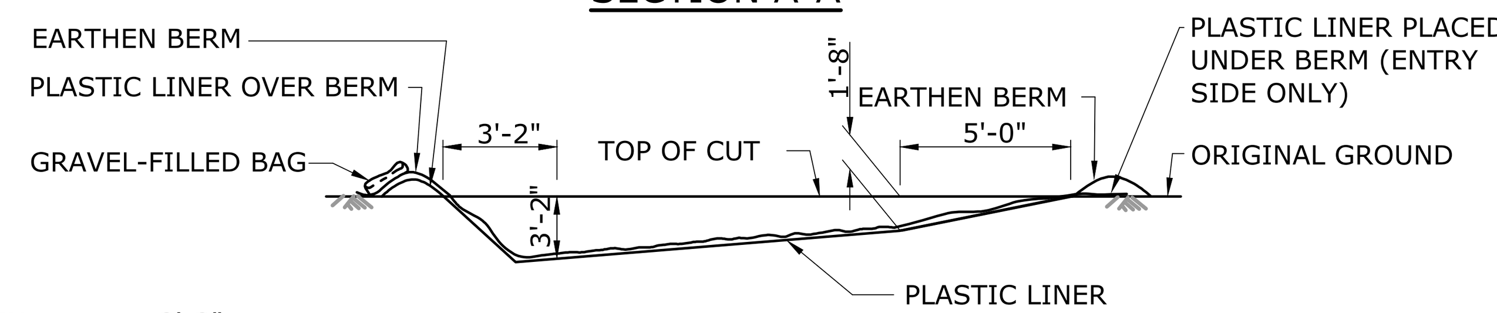
CIVIL

DETAILS SHEET SHEET 1 OF 3

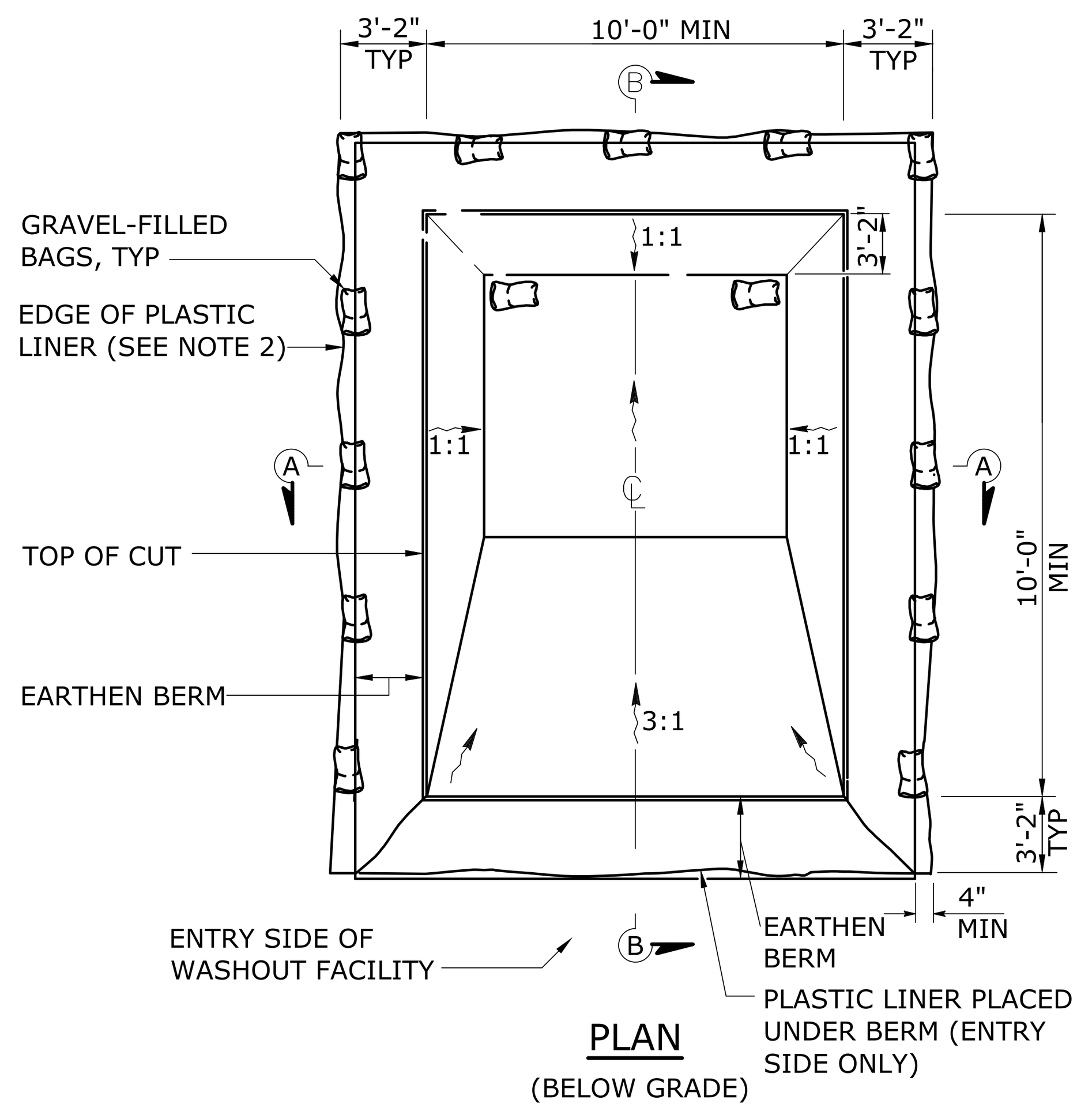
DATE DECEMBER 2019
SHEET 11 OF 50
DWG. NO. C-09



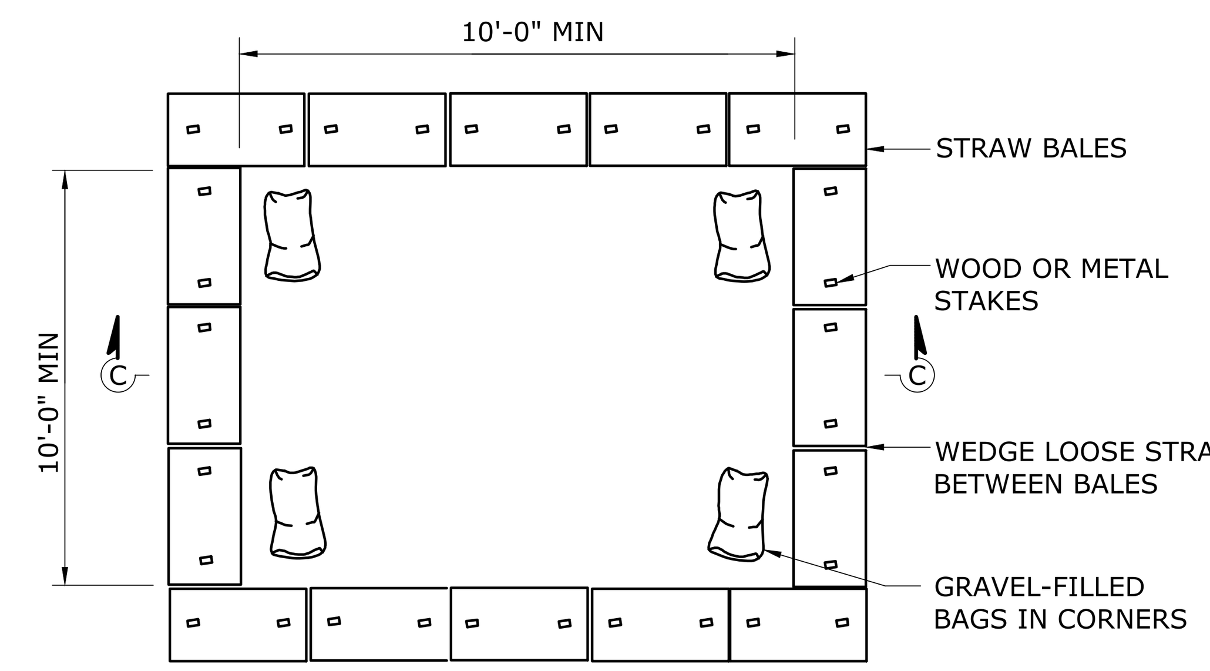
SECTION A-A



SECTION B-B

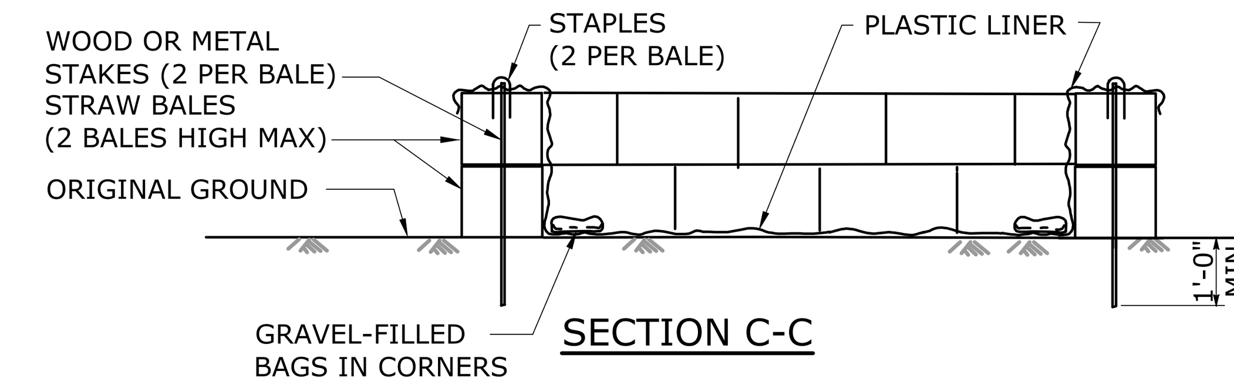


PLAN
(BELOW GRADE)

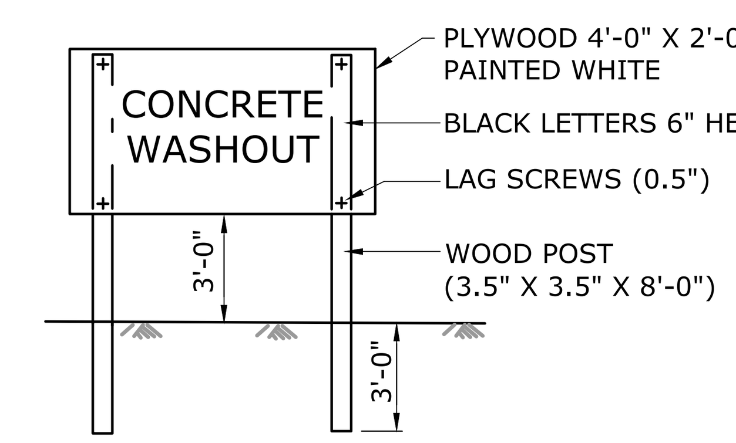


PLAN
(ON GRADE)

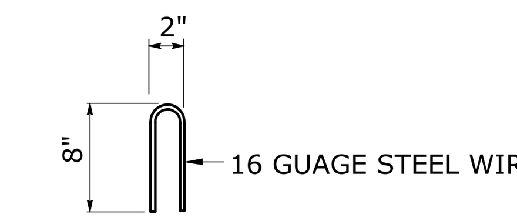
CONCRETE WASHOUT DETAIL
NOT TO SCALE



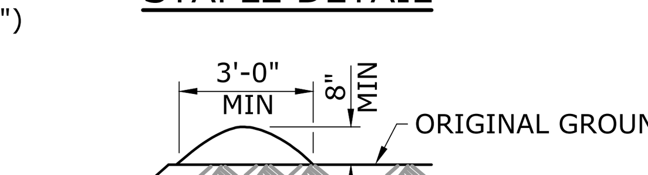
SECTION C-C



CONCRETE WASHOUT SIGN DETAIL



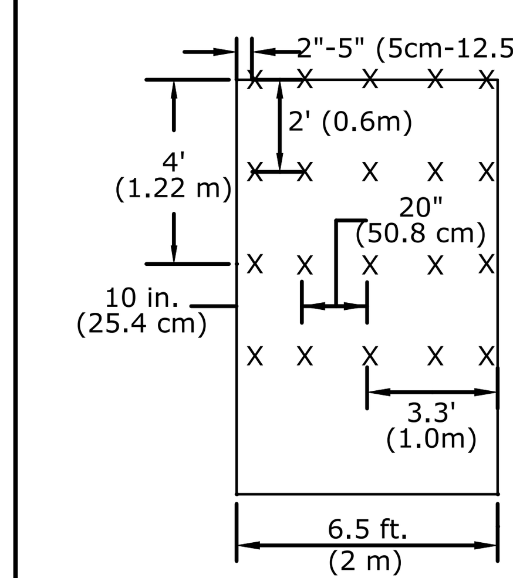
STAPLE DETAIL



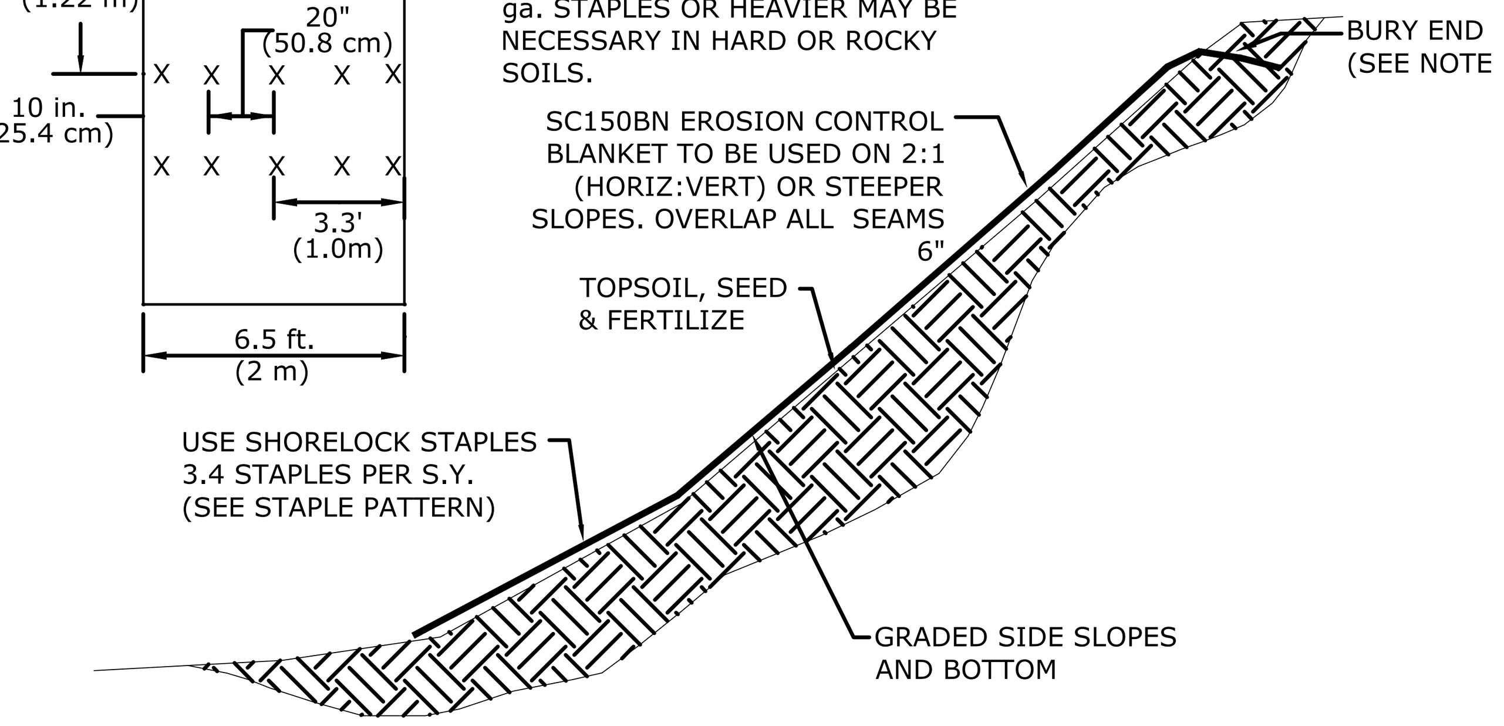
TYPICAL SECTION EARTHEN BERM

NOTES:

1. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 32'-10" OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
2. PLASTIC LINER SHALL BE ANCHORED WITH GRAVEL-FILLED BAGS FOR BELOW GRADE CONCRETE WASHOUT FACILITY.



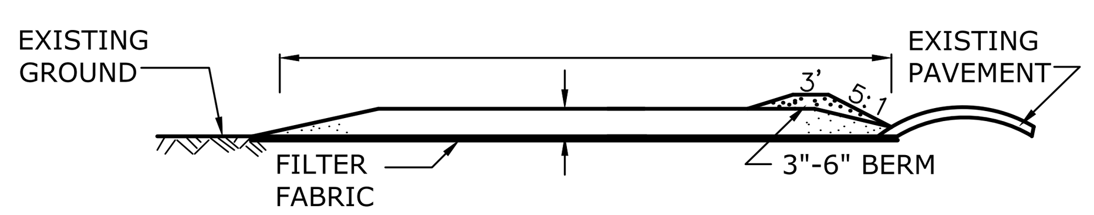
STAPLE PATTERN:
3.4 STAPLES/yd.^2 (4.1 STAPLES/m^2) USING 6 in. (15.2 cm), 11 ga. WIRE "U" STAPLES. 8 in (20.3 cm) STAPLES AND LONGER MAY BE USED FOR LOOSE SOILS. 9 ga. STAPLES OR HEAVIER MAY BE NECESSARY IN HARD OR ROCKY SOILS.



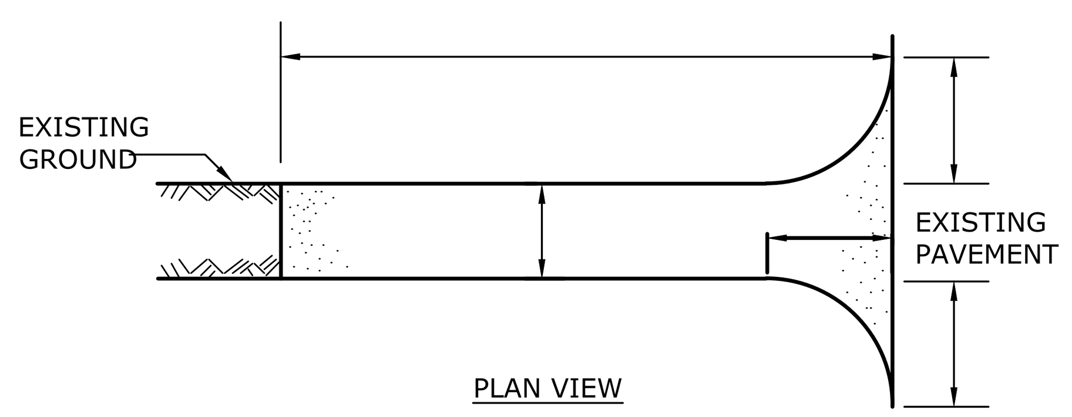
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF TOPSOIL, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 cm) DEEP x 6" (15 cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL BLANKETS IN DIRECTION OF WATER FLOW.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" (15 cm) OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" (10cm) APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" (15 cm) DEEP X 6" (15 cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" (10 cm) OVER THE CENTER BLANKET AND STAPLED [2" (5 cm) FOR C350 MATTING].
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 m TO 12 m) INTERVALS. USE A ROW OF STAPLES 4" (10 cm) APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" (10 cm) BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" (15 cm) DEEP X 6" (15 cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
9. EROSION CONTROL BLANKET SHALL BE MANUFACTURED BY "NORTH AMERICAN GREEN" EVANSVILLE, INDIANA; OR APPROVED EQUAL.

SLOPE STABILIZATION MATTING DETAIL
NOT TO SCALE



PROFILE

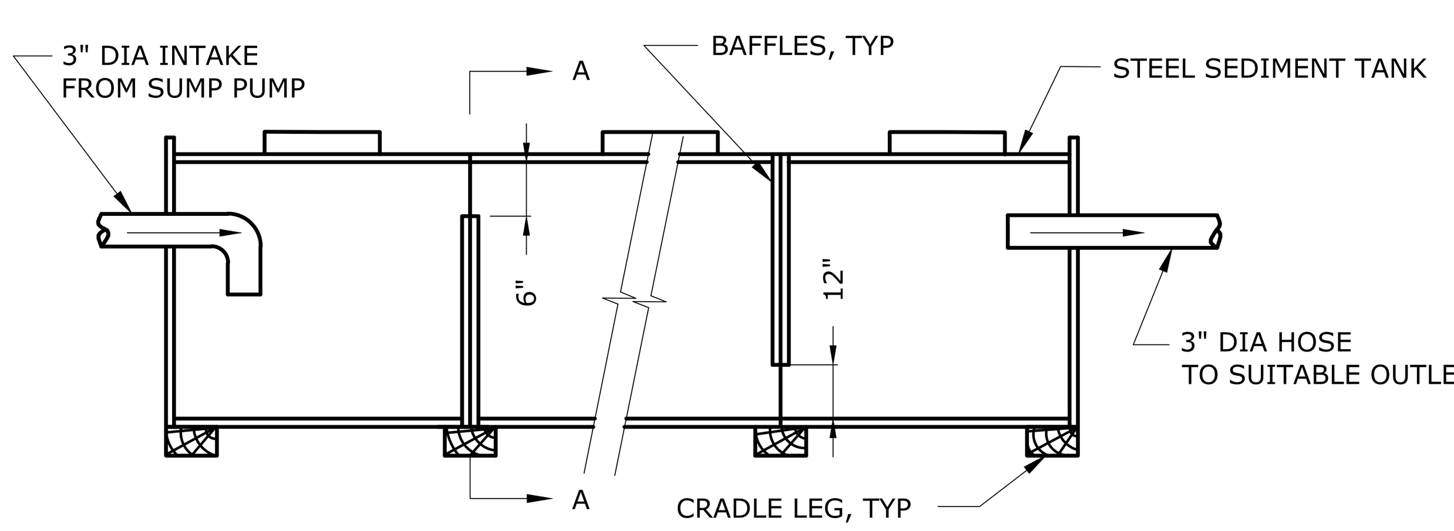


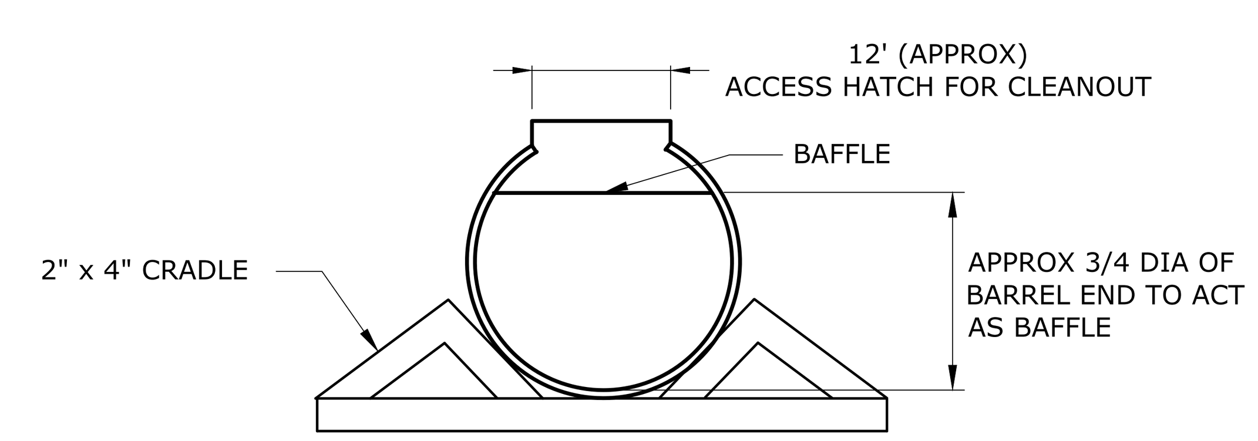
PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 3" CRUSHED STONE.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER FABRIC - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



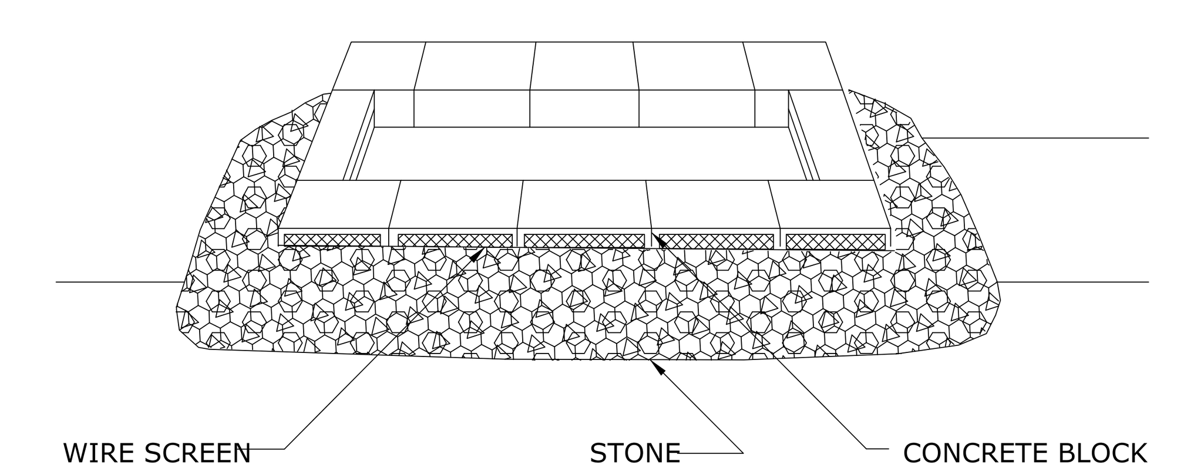


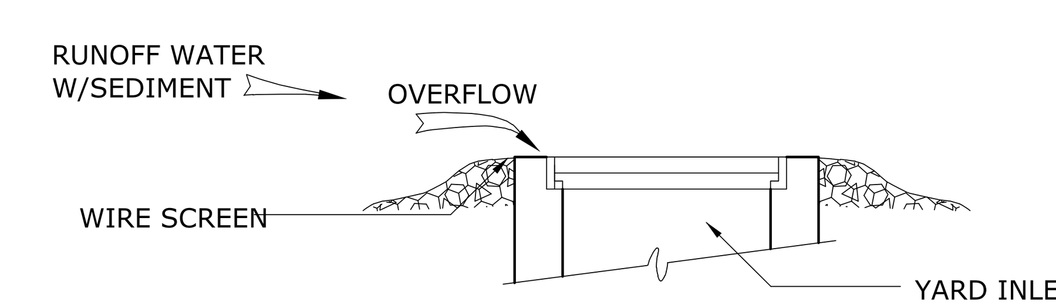
SECTION A-A

CONSTRUCTION SPECIFICATIONS

1. CLEAN OUT THE SEDIMENT TANK WHEN ONE THIRD (1/3) FILLED WITH SILT.
2. ALL SEDIMENT COLLECTED IN THE TANK SHALL BE DISPOSED OF IN A SEDIMENT TRAPPING DEVICE, AN APPROVED LOCATION IN WHICH FURTHER SEDIMENT TRANSPORT WILL NOT OCCUR OR AS APPROVED BY THE INSPECTOR.
3. PORTABLE SEDIMENT TANK SHALL BE AN ABOVE GROUND HORIZONTAL SINGLE-WALL UL-142 MANUFACTURED BY HIGHLAND TANK OR WEIR BOX MANUFACTURED BY RAIN FOR RENT OR EQUIVALENT AS APPROVED BY THE ENGINEER.

PORTABLE SEDIMENT TANK DETAIL
NOT TO SCALE

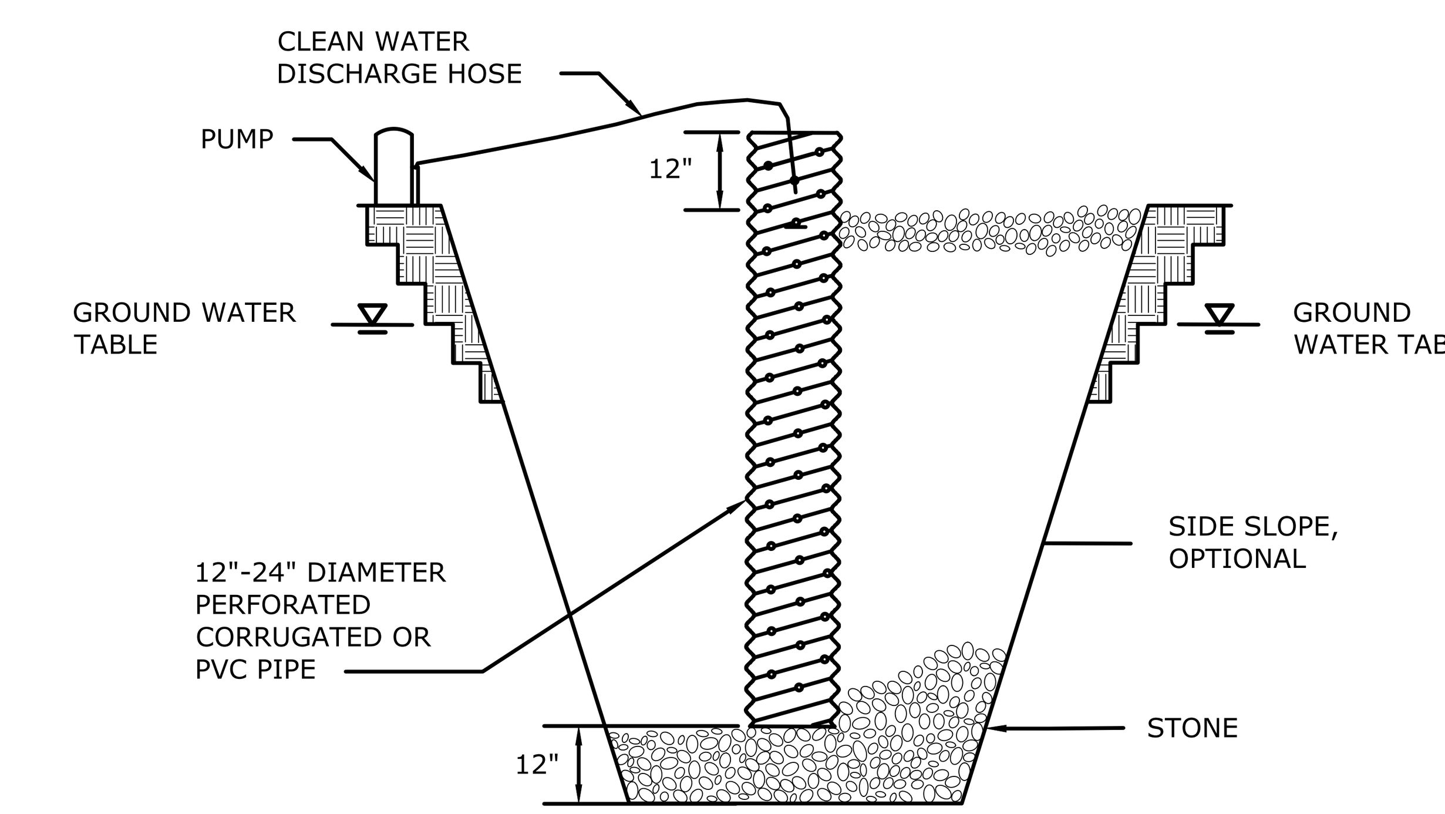




CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2 - 3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR INLETS IN ROADWAYS WITH HEAVY TRAFFIC CONDITIONS PREVENT THE PLACEMENT OF BLOCKS AND STONE FOR INLET PROTECTION PREFABRICATED FILTER INSERTS MAY BE USED AS DIRECTED BY THE ENGINEER.

INLET PROTECTION DETAIL
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. PIT DIMENSIONS SHOWN ARE OPTIONAL.
2. THE STANDPIPE SHOULD BE CONSTRUCTED BY PERFORATING A 12-24" DIAMETER
3. A BASE OF 2" AGGREGATE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING THE STANDPIPE SHOULD BE BACKFILLED WITH 2" AGGREGATE. CORRUGATED OR PVC PIPE.
4. THE STANDPIPE SHOULD EXTEND 12-18" ABOVE THE LIP OF THE PIT.
5. IF DISCHARGE WILL BE PUMPED DIRECTLY TO A STORM DRAINAGE SYSTEM, THE STANDPIPE SHOULD BE WRAPPED WITH FILTERCLOTH BEFORE INSTALLATION. IF DESIRED, 1/4"-1/2" HARDWARE CLOTH MAY BE PLACED AROUND THE STANDPIPE, PRIOR TO ATTACHING THE FILTERCLOTH.

SUMP PIT DETAIL
NTS

NO.	DATE	ISSUED FOR	BY
1	12/16/19	BIDDING	MTV

DESIGNED J. PERRUZZA
DRAWN J. PERRUZZA
CHECKED D. SHEERAN
PROJ.ENGR. M. GREELEY
APPROVED A. ANGLES

SCALE
AS SHOWN

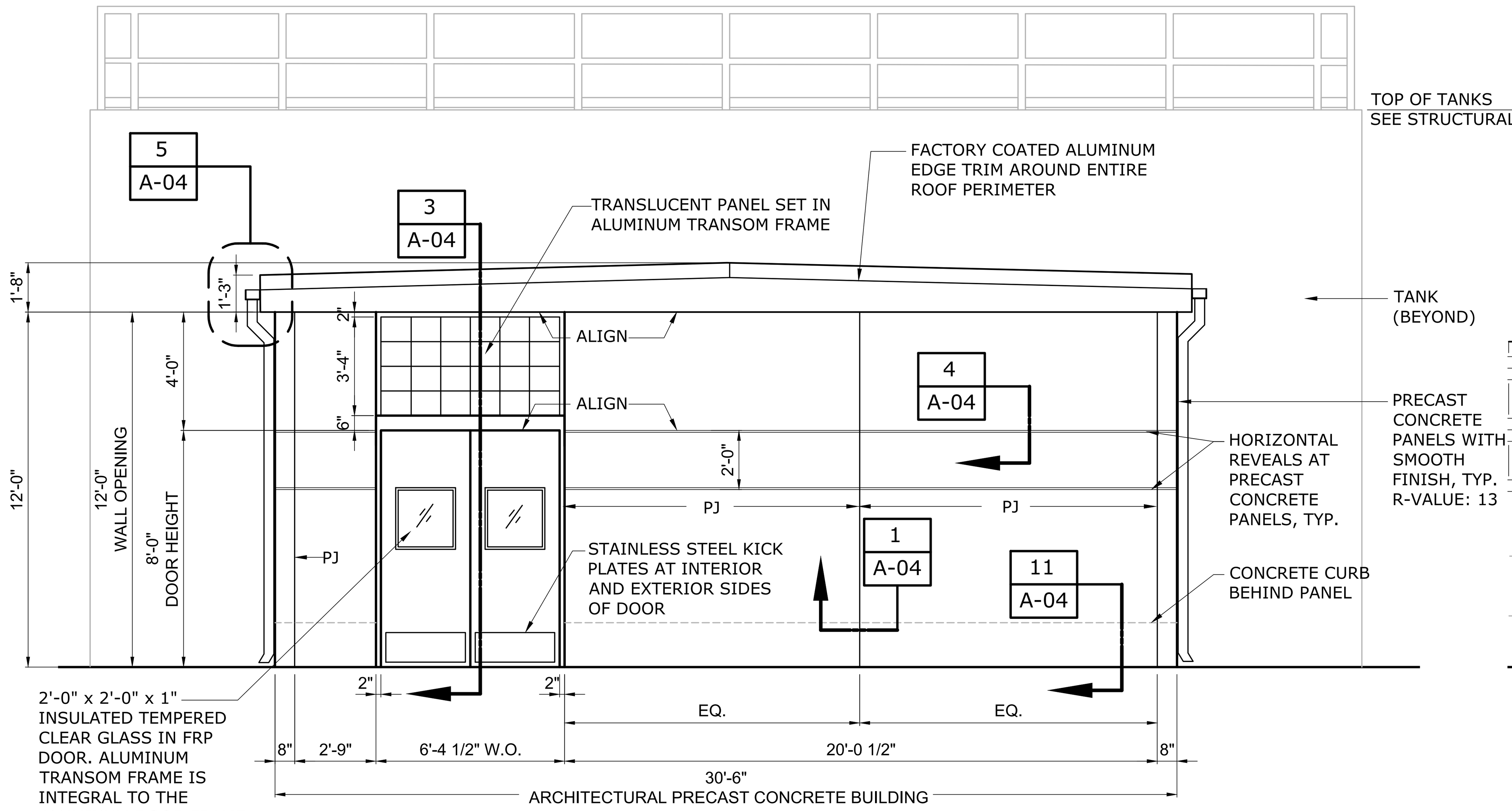
STATE OF NEW HAMPSHIRE — ALBERTO ANGLES, JR. No. 16043 — PROFESSIONAL ENGINEER — P.E.

Hazen
HAZEN AND SAWYER
24 FEDERAL STREET
BOSTON, MASSACHUSETTS 02110

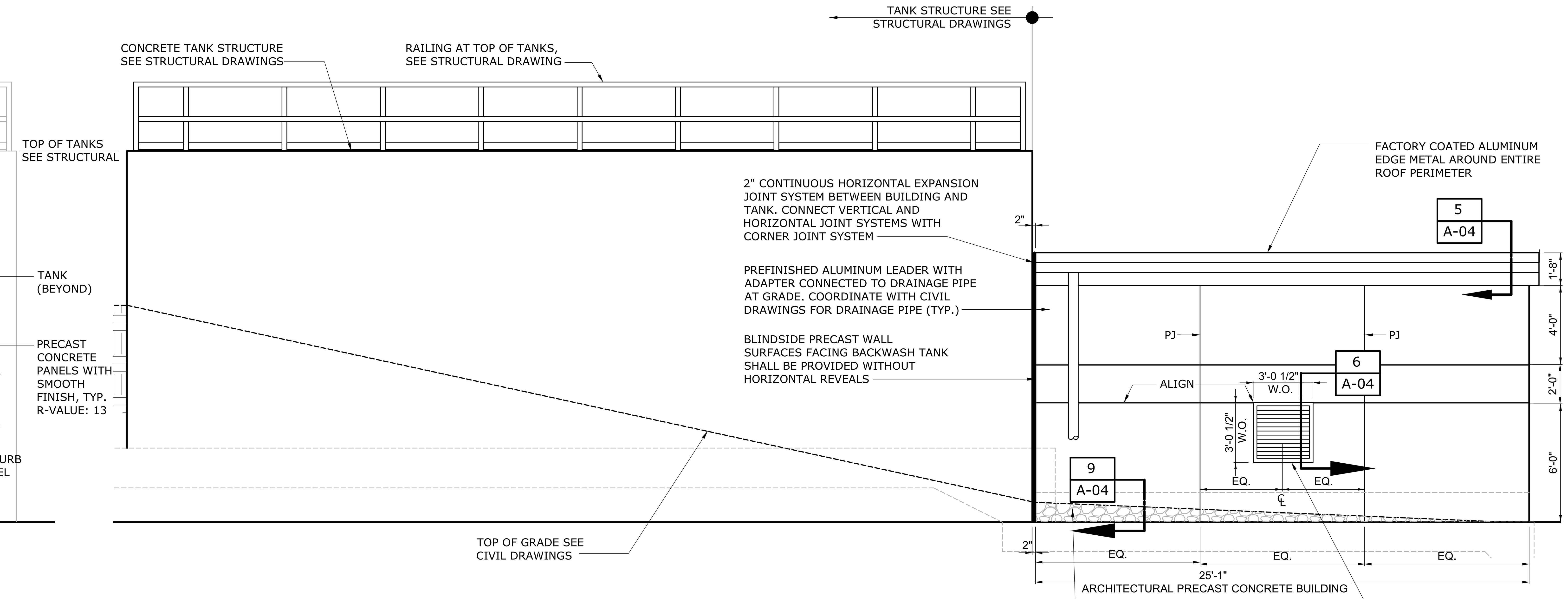
CITY OF PORTSMOUTH
MADBURY WTP BACKWASH TANK AND PUMP STATION UPGRADE

MADBURY WTP UPGRADE
CIVIL
SOIL & SEDIMENT EROSION CONTROL DETAILS

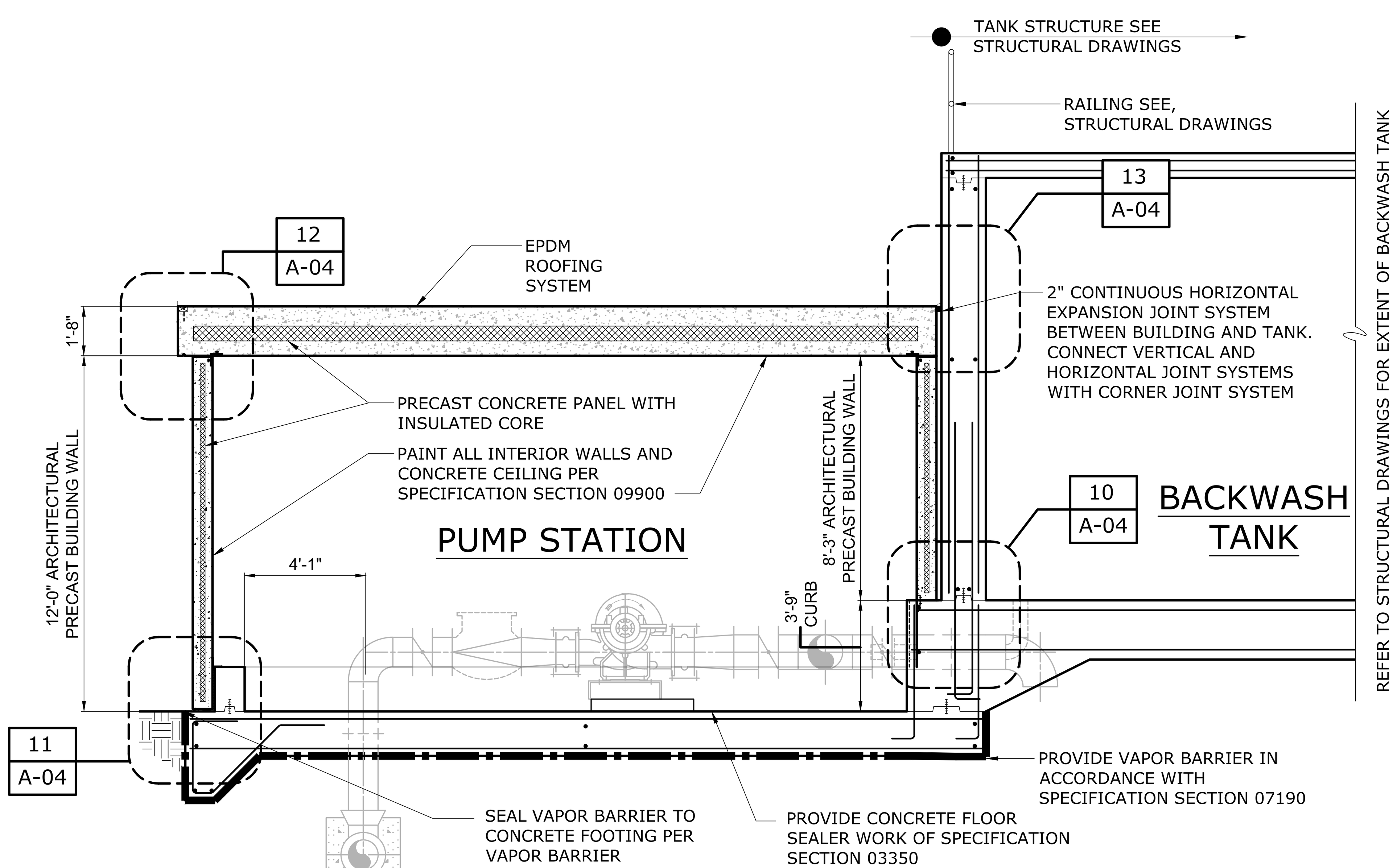
DATE DECEMBER 2019
SHEET 14 OF 50
DWG. NO. C-12



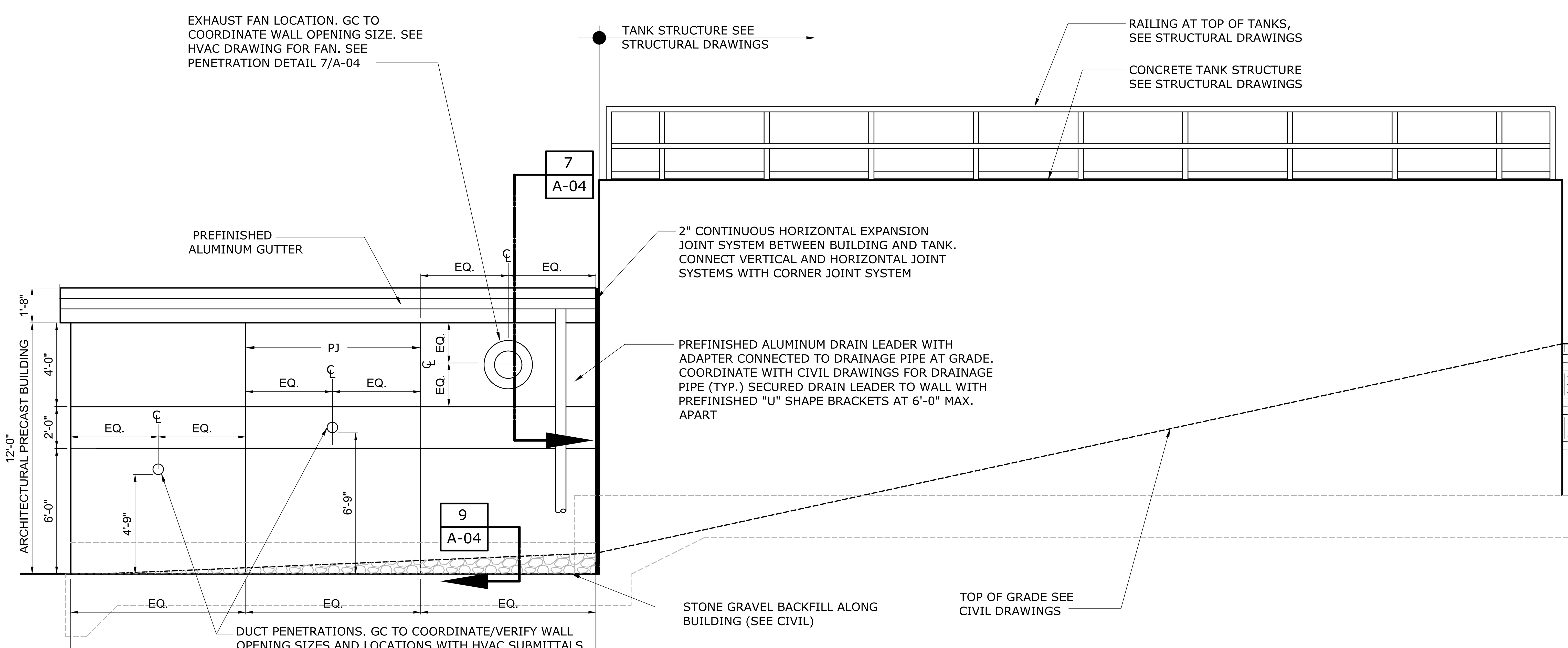
EAST ELEVATION
1/4"=1'-0"



SOUTH ELEVATION
1/4"=1'-0"



SECTION A
1/4" = 1'-0" A-03



NORTH ELEVATION
1/4"=1'-0"

PJ=PANEL JOINT

NO.	DATE	ISSUED FOR	BY
1	12/16/19	BIDDING	MTV

DESIGNED D. FONG
DRAWN J. MARTINEZ
CHECKED D. FONG
PROJ.ENGR. M. GREELEY
APPROVED W. RUSSELL

SCALE

LICENSED ARCHITECT WILLIAM RUSSELL No.03956 STATE OF NEW HAMPSHIRE

Hazen
HAZEN AND SAWYER
24 FEDERAL STREET
BOSTON, MASSACHUSETTS 02110

CITY OF PORTSMOUTH
MADBURY WTP BACKWASH TANK AND PUMP STATION UPGRADE

MADBURY WTP UPGRADE
ARCHITECTURAL
BACKWASH PUMP STATION
PRECAST BUILDING ELEVATIONS AND SECTION

DATE DECEMBER 2019
SHEET 17 OF 50
DWG. NO. A-03