

CITY OF BURLINGTON, VERMONT

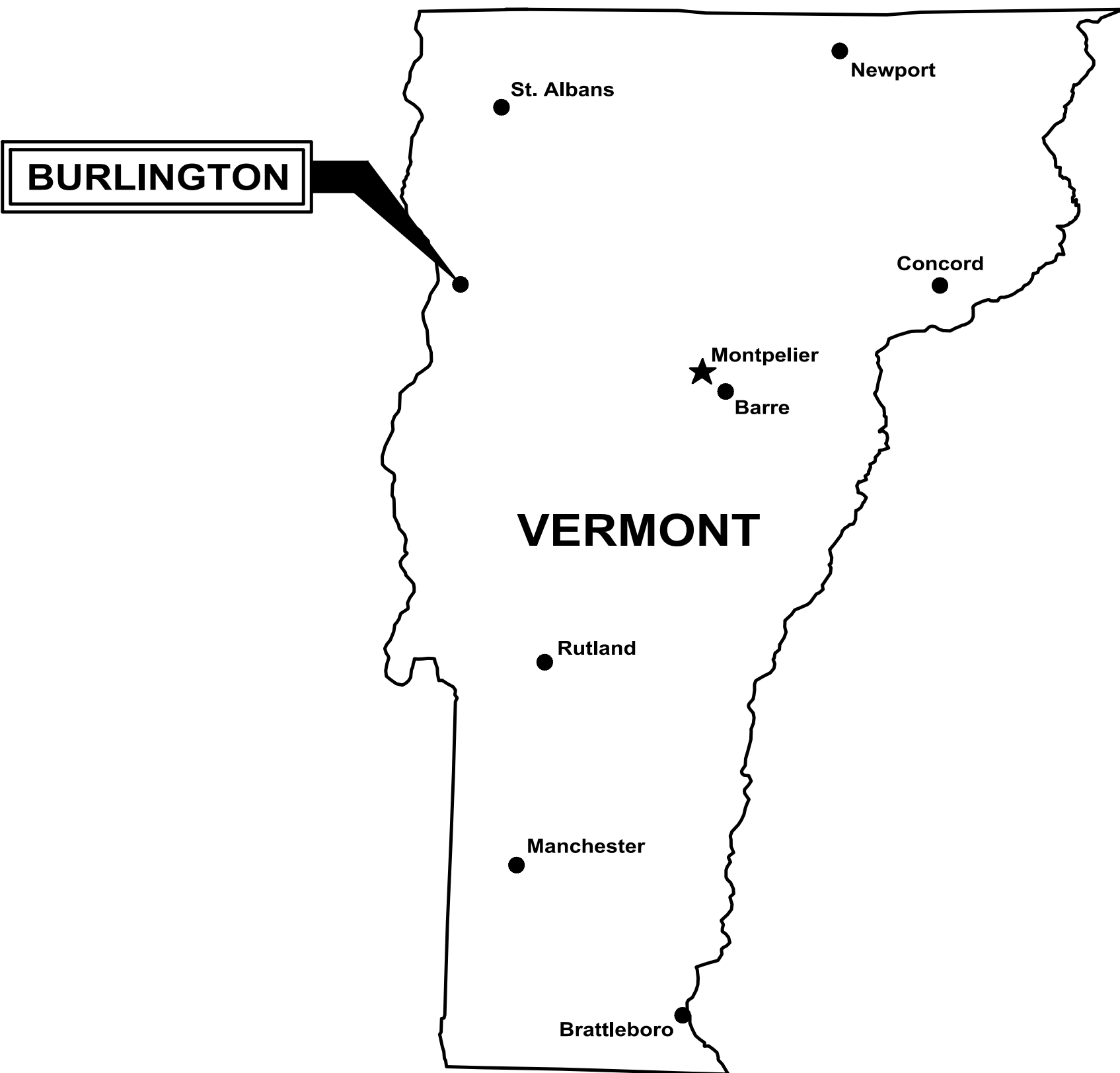
CONTRACT DRAWINGS FOR

EAST WASTEWATER TREATMENT FACILITY

OUTFALL REPAIRS

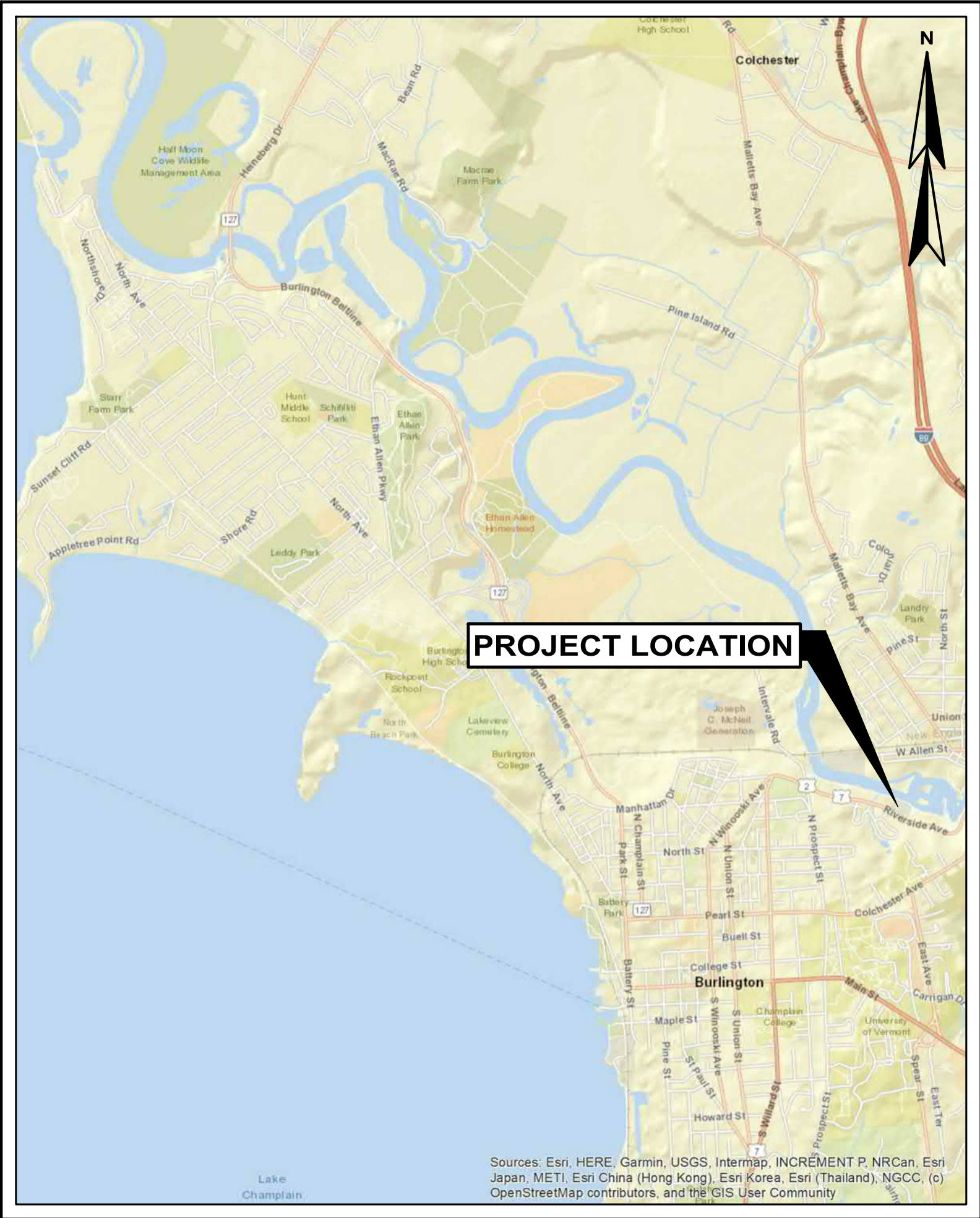
MARCH 2022

BID DOCUMENTS



DRAWING INDEX

GENERAL	---	COVER SHEET
CIVIL	C-1	GENERAL CIVIL NOTES, LEGEND AND ABBREVIATIONS
	C-2	EXISTING CONDITIONS AND DEMOLITION PLAN
	C-3	OUTFALL REPAIR PLAN
	C-4	EROSION CONTROL NOTES AND DETAILS
	C-5	DETAILS



LOCATION PLAN
SCALE: 1"=4,000'

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FOR REVIEW 3/1/22

FOR BIDDING 3/2/22

WP PROJECT No. 20445

GENERAL NOTES

1.

THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS LISTED IN THE SUPPLEMENTARY OR SPECIAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL OBTAINED PERMITS ARE AVAILABLE FOR REVIEW FROM THE OWNER. ALL OTHER PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2.

THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL RIGHTS_OF_WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE OWNER.
3.

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PEDESTRIAN FLOW AT ALL TIMES ALONG THE RIVERWALK TRAIL. CONTRACTOR SHALL INSTALL AND MAINTAIN SIGNS IN ACCORDANCE WITH RIVERWALK TRAIL AND ALL STATE AND LOCAL REGULATIONS. THE CONTRACTOR IS REQUIRED TO SUBMIT A PEDESTRIAN CONTROL PLAN TO THE OWNER AND RIVERWALK TRAIL PRIOR TO COMMENCING CONSTRUCTION.
4.

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA AND VOSH).
5.

CONTRACTOR SHALL COMPLY WITH THE COORDINATION REQUIREMENTS AND RELATED COSTS, IF ANY, AS SPECIFIED IN SPECIFICATION SECTION 01050.
6.

CONTRACTOR SHALL NOTE THAT, IN GENERAL, ALL EXISTING CONDITION INFORMATION ON THE DRAWINGS ARE SHOWN WITH A LIGHTER LINE WEIGHT AND WITH A SLANTED TYPE TEXT.
7.

ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY.
8.

ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO THE ENGINEER FOR REVIEW FOR CONFORMANCE WITH THE PLANS. TESTS PITS ARE REQUIRED WHERE SHOWN ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER. TEST PITS WILL BE DUG PRIOR TO CONNECTING PROPOSED SEWERS. THE RESULTS OF TEST PITS DUG TO DETERMINE EXISTING SEWER ELEVATIONS AND LOCATIONS WILL BE REPORTED TO THE ENGINEER. ADJUSTMENTS TO INVERTS, LENGTHS, AND SLOPES OF PROPOSED SEWER MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. THE HORIZONTAL ALIGNMENT OF THE NEW SEWERS AND FORCE MAINS MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR APPROVAL OF THE ENGINEER.

EXISTING SITE CONDITIONS

1.

THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. NO GUARANTEE IS MADE THAT UTILITIES OR STRUCTURES WILL BE ENCOUNTERED WHERE SHOWN, OR THAT ALL UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN. ALL LOCATIONS AND SIZES OF EXISTING UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD WITH TEST PITS AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES OR PIPING THAT MAY BE AFFECTED. THE CONTRACTOR WILL REALIGN NEW PIPE LOCATIONS AS REQUIRED TO CONFORM TO EXISTING LINES AND AS APPROVED BY THE ENGINEER.
2.

LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 01050. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED.
3.

THERE ARE NO KNOWN HAZARDOUS ENVIRONMENTAL CONDITIONS WITHIN THE AREA OF WORK. IF THE PRESENCE OF HAZARDOUS ENVIRONMENTAL CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY. ALL ACTIVITIES, HANDLING AND DISPOSAL OF HAZARDOUS ENVIRONMENTAL CONDITIONS AND MATERIALS SHALL BE IN ACCORDANCE WITH OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS.

SITE DEMOLITION

1.

REFER TO THE EXISTING SITE PLAN, FOR ADDITIONAL INFORMATION REGARDING EXISTING FACILITIES. REFER TO THE LAYOUT DRAWING FOR LIMITS OF WORK.
2.

REFER TO SPECIFICATION SECTION 01010A, WHICH CONTAINS INFORMATION ON CONSTRAINTS OF CONSTRUCTION SEQUENCING.
3.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE OWNER RESERVE THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER. REFER TO SPECIFICATION SECTION 02050A.
4.

THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01720.
5.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND GROUNDWATER DEWATERING OPERATIONS.

SITE CLEARING, GRUBBING AND GRADING

1.

STRIPPING OF TOPSOIL (LOAM) SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02115. REFER TO THE LAYOUT AND GRADING DRAWINGS FOR LIMIT OF WORK AND STRIPPING.
2.

CONTRACTOR SHALL MINIMIZE CLEARING OPERATIONS. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110. CLEARING LIMITS SHALL BE AS INDICATED ON THE DRAWINGS, BUT AT ALL TIMES WITHIN PROPERTY LINES ON CITY_OWNED PROPERTY OR EASEMENTS. ALL CLEARING AND GRUBBING MATERIAL SHALL BE THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT A SITE PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS.
3.

THE CONTRACTOR SHALL FOLLOW ALL ENDANGERED SPECIES ACT 4(D) RULES REGARDING THE NORTHERN LONG EARED BAT. THIS INCLUDES AVOIDANCE OF TREE REMOVAL DURING THE MONTHS OF JUNE AND JULY. CONTRACTOR SHALL PLAN ACCORDINGLY.
4.

CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINE SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION AND GRADING. PRIOR TO BEGINNING EXCAVATION WORK, EROSION CONTROL FENCE SHALL BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE ACTUAL LIMITS OF GRUBBING AND/OR GRADING, AND AS SHOWN ON THE DRAWINGS. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM, CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES. EROSION CONTROL FENCE SHALL ALSO BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION. ALL INSTALLED EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE END OF THE PROJECT. REFER TO SPECIFICATION SECTION 02270.
5.

ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY COIR MAT FILTERS TO PREVENT ENTRY OF SEDIMENT FROM RUNOFF WATERS DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL COLLECTED SEDIMENT, AND THAT WHICH COLLECTS IN THE STORM DRAIN SYSTEM. REFER TO THE CIVIL DETAILS DRAWINGS.
6.

CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01562.
7.

CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS AND PLANT DRIVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.
8.

THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS.
9.

CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.
10.

ALL NON-ROADWAY AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED, UNLESS OTHERWISE NOTED. THE TOP 4-INCHES OF SOIL SHALL BE LOAM. REFER TO SPECIFICATION SECTION 02485, LANDSCAPING/LOAM AND SEED.

CIVIL SITE LAYOUT

1.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THIS PROVIDED LAYOUT INFORMATION THROUGHOUT THE COURSE OF CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
2.

THE LOCATIONS AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER. THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THESE AREAS.
3.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETTling ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY CONSTRUCTION. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF VERMONT, AT NO ADDITIONAL COST TO THE OWNER.
4.

WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
5.

ALL ELEVATIONS REFER TO THE NAVD88 DATUM. ORIENTATION IS GRID NORTH ON THE VERMONT STATE PLANE COORDINATE SYSTEM. PROJECT BENCH MARK IS SHOWN ON THE DRAWINGS AND IS DERIVED FROM REDUNDANT RTK GPS OBSERVATIONS. CONTRACTOR SHALL VERIFY BENCHMARK ELEVATIONS PRIOR TO USING IN CONSTRUCTION.
6.

WETLAND BOUNDARIES DELINEATED BY FITZGERALD ENVIRONMENTAL ASSOCIATES IN SPRING 2021. WETLANDS FLAGS SURVEYED BY FITZGERALD ENVIRONMENTAL ASSOCIATES.

CIVIL SITE PIPING

1.

REFER TO SPECIFICATION SECTION 02200 FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
2.

COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE-YEAR OF FINAL COMPLETION OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
3.

WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.
4.

ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED ON THE CIVIL EXISTING CONDITIONS AND DEMOLITION PLAN. ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5.

CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL DEMOLITION MATERIALS IN ACCORDANCE WITH SPECIFICATION SECTION 02050.
6.

CONTRACTOR SHALL SUBMIT A PLAN FOR BYPASSING THE FULLY TREATED WASTEWATER EFFLUENT DURING CONSTRUCTION. THE PLAN SHALL BE APPROVED BY THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION.
7.

INVERT ELEVATIONS ARE SHOWN APPROXIMATELY AND ARE BASED ON RECORD DRAWING INTERPRETATIONS AND APPROXIMATE FIELD MEASUREMENTS.

CIVIL ABBREVIATIONS

&	AND	MIN	MINIMUM
Ø, DIA	DIAMETER	MW	MONITORING WELL
#, NO	NUMBER	N	NORTH
AC	ASBESTOS CEMENT	NGVD	NATIONAL GEODETIC VERTICAL DATUM
APP'D	APPROVED	N/A	NOT AVAILABLE/APPLICABLE
BR	BRICK	NTS	NOT TO SCALE
BLDG	BUILDING	OD	OUTSIDE DIAMETER
CB	CATCH BASIN	OUT	OUTFALL
CEN	CENTER	PC	PERFORATED CLAY
CFS	CUBIC FEET PER SECOND	PSF	POUNDS PER SQUARE FOOT
CI	CAST IRON	PSI	POUNDS PER SQUARE INCH
CIPP	CURED-IN-PLACE-PIPE	PS	PRIMARY SLUDGE
CL	CENTERLINE	PT	POINT OF TANGENCY
CMP	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
CO	CLEANOUT	RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE	RD	ROOF DRAIN
COR	CORNER	REQ'D	REQUIRED
CY	CUBIC YARD	S	SLOPE, SEWER
DEMO	DEMOLITION	SD	STORM DRAIN
DMH	DRAIN MANHOLE	SF	SQUARE FEET
DI	DUCTILE IRON	SMH	SANITARY SEWER MANHOLE
DR	DRAIN	SQ	SQUARE
DWG	DRAWING	STA	STATION
EL	ELEVATION	T, XFMR	TRANSFORMER
EMH	ELECTRIC MANHOLE	TBM	TEMPORARY BENCH MARK
FM	FORCE MAIN	THK	THICKNESS
FT	FEET	TOS	TOP OF STRUCTURE
G	GAS	TYP	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE	UD	UNDERDRAIN
HYD	HYDRANT	UG	UNDERGROUND
IN	INCH	UGE	UNDERGROUND ELECTRIC
INF	INFLUENT	VC	VITRIFIED CLAY
INV	INVERT	VF	VERTICAL FOOT
LBS	POUNDS	W/	WITH
LF	LINEAR FOOT	W	POTABLE WATER
MAX	MAXIMUM		
MH	MANHOLE		

EXISTING		PROPOSED
	PROPERTY/ROW LINE	
	SETBACK LINE	
	EASEMENT LINE	
	CENTERLINE	
	EDGE OF PAVEMENT	
	CURBING	
	EDGE OF GRAVEL	
	EDGE OF CONCRETE	
	CONTOUR	
	BUILDING	
	STONEWALL	
	TREELINE	
	CHAIN LINK FENCE	
	STOCKADE FENCE	
	BARB WIRE FENCE	
	RETAINING WALL	
	GUARDRAIL	
	SEWER	
	SEWER FORCE MAIN	
	GAS	
	WATER	
	STORM DRAIN	
	UNDERDRAIN	
	CULVERT	
	UNDERGROUND ELECTRIC	
	OVERHEAD ELECTRIC	
	UNDERGROUND TELEPHONE	
	UNDERGROUND CABLE TV	
	IRON PIPE/REBAR	
	DRILLHOLE	
	MONUMENT	
	SURVEY CONTROL POINT	
	SPOT ELEVATION	
	SEWER MANHOLE	
	DRAINAGE MANHOLE	
	CATCH BASIN	
	ELECTRIC MANHOLE	
	TELEPHONE MANHOLE	
	SHUTOFF VALVE	
	WATER SERVICE SHUTOFF	
	YARD HYDRANT	
	HYDRANT	
	GAS SERVICE SHUTOFF	
	GAS GATE VALVE	
	UTILITY POLE	
	UTILITY POLE W/ GUY	
	LIGHT POLE	
	BOLLARD	
	FLAGPOLE	
	CONIFEROUS TREE	
	DECIDUOUS TREE	
	SHRUB	
	WETLAND FLAG	
	EDGE OF WATER	
	STREAM	
	EDGE OF WETLANDS	
	FLOODPLAIN	
	WETLANDS	
	DRAINAGE FLOW	
	DRAINAGE SWALE	
	PAVEMENT MARKINGS	
	SIGN	
	MAILBOX	
	TEMPORARY BENCH MARK	
	TEST PIT	
	TEST BORING	
	TEST PROBE	
	MONITORING WELL	
	LIMIT OF WORK	
	SILT FENCE	
	RIPRAP	
	RAILROAD	
	MATCHLINE	
	ROCK OUTCROP	

PROJECT NO: 20455
DESIGNED: J. SHAKTMAN
CAD COORD: J. MICHAUD
CAD: J. MICHAUD
CHECKED: J. PREBLE
DATE: 3/27/22
APPROVED: K. LEMANSEY
DATE: 3/27/22
SUBMISSION: BID DOCUMENTS

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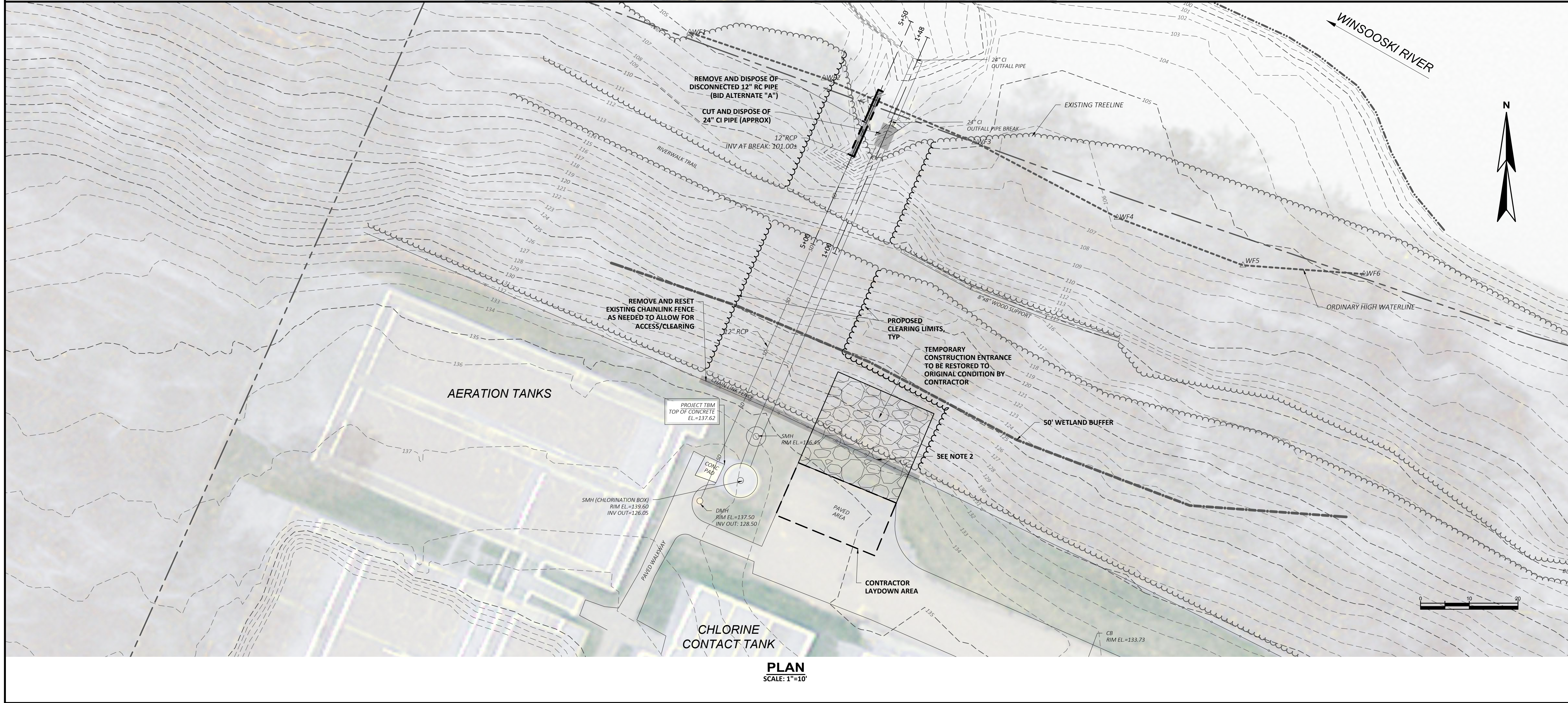
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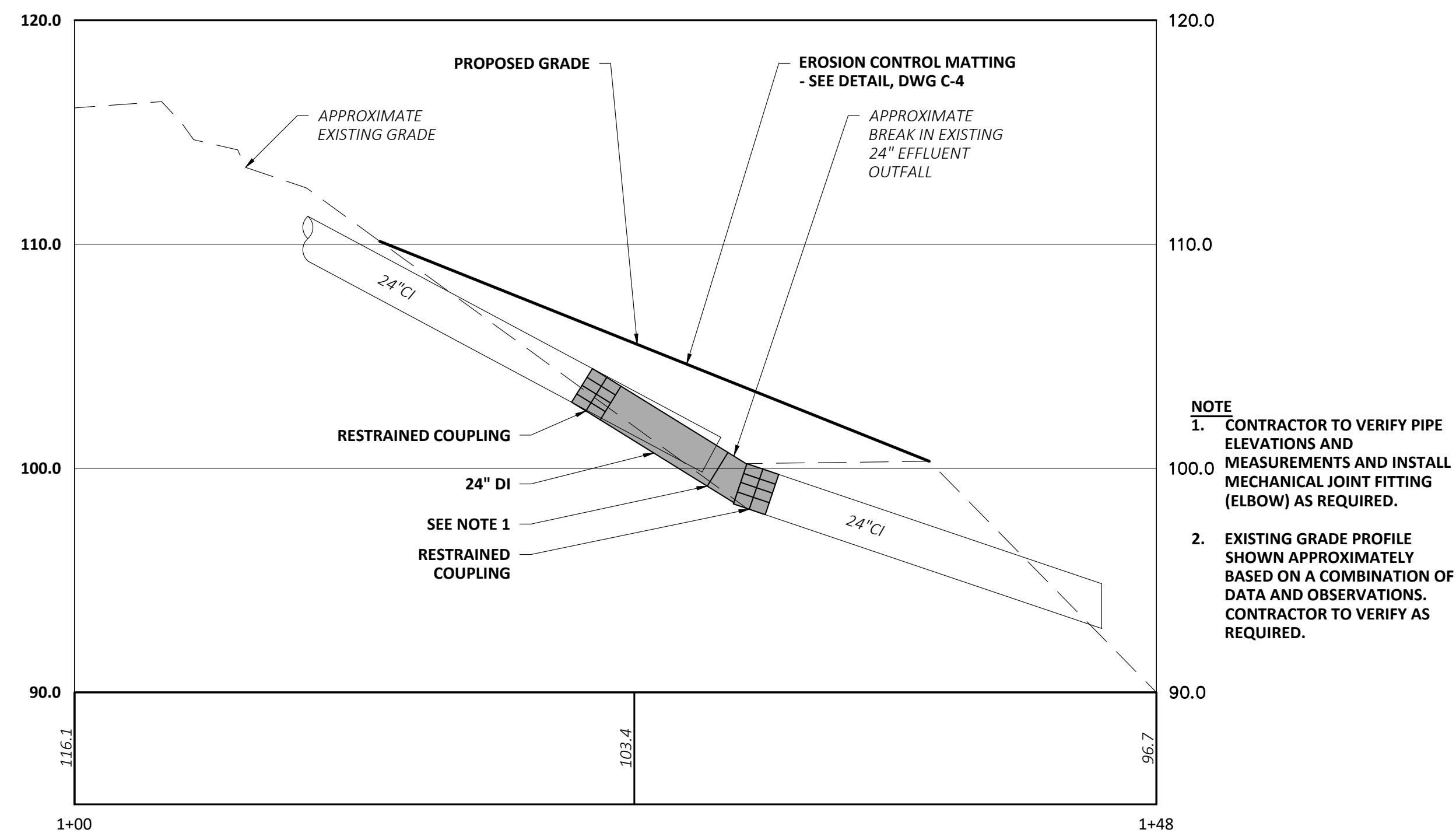
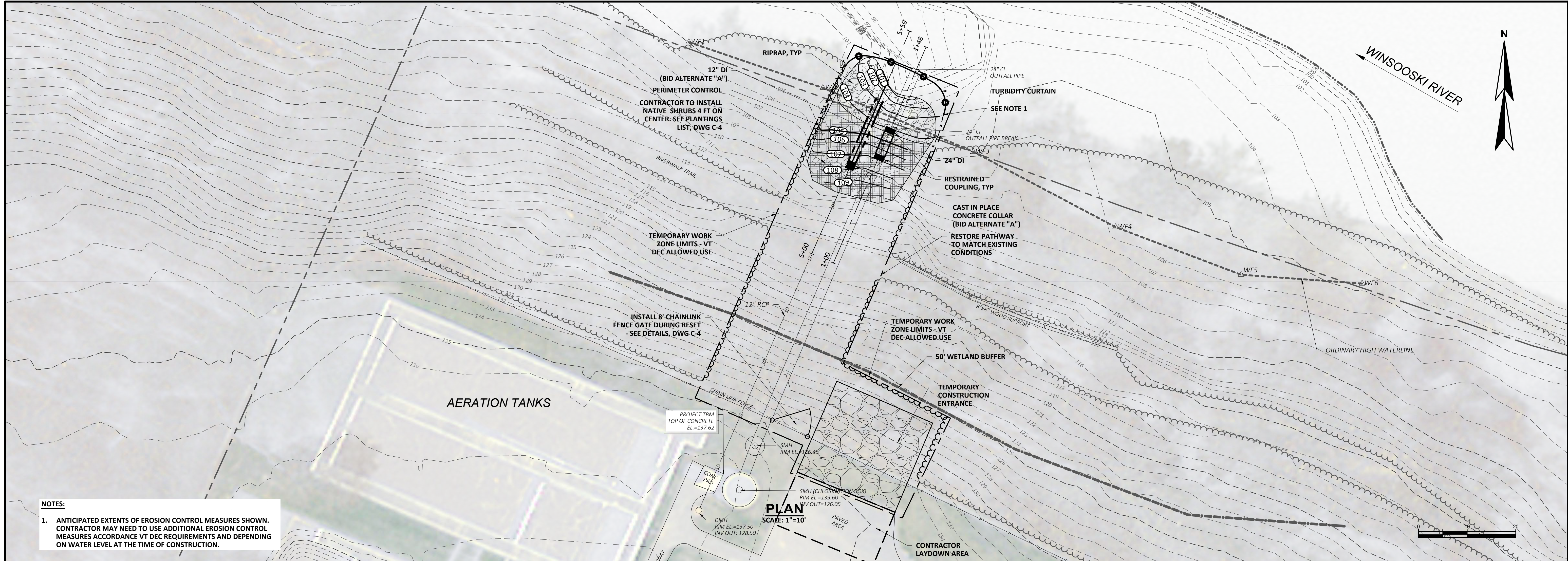
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CITY OF BURLINGTON, VT
EAST WATERSWATER TREATMENT FACILITY
OUTFALL REPAIRS

GENERAL NOTES, LEGEND, AND ABBREVIATIONS

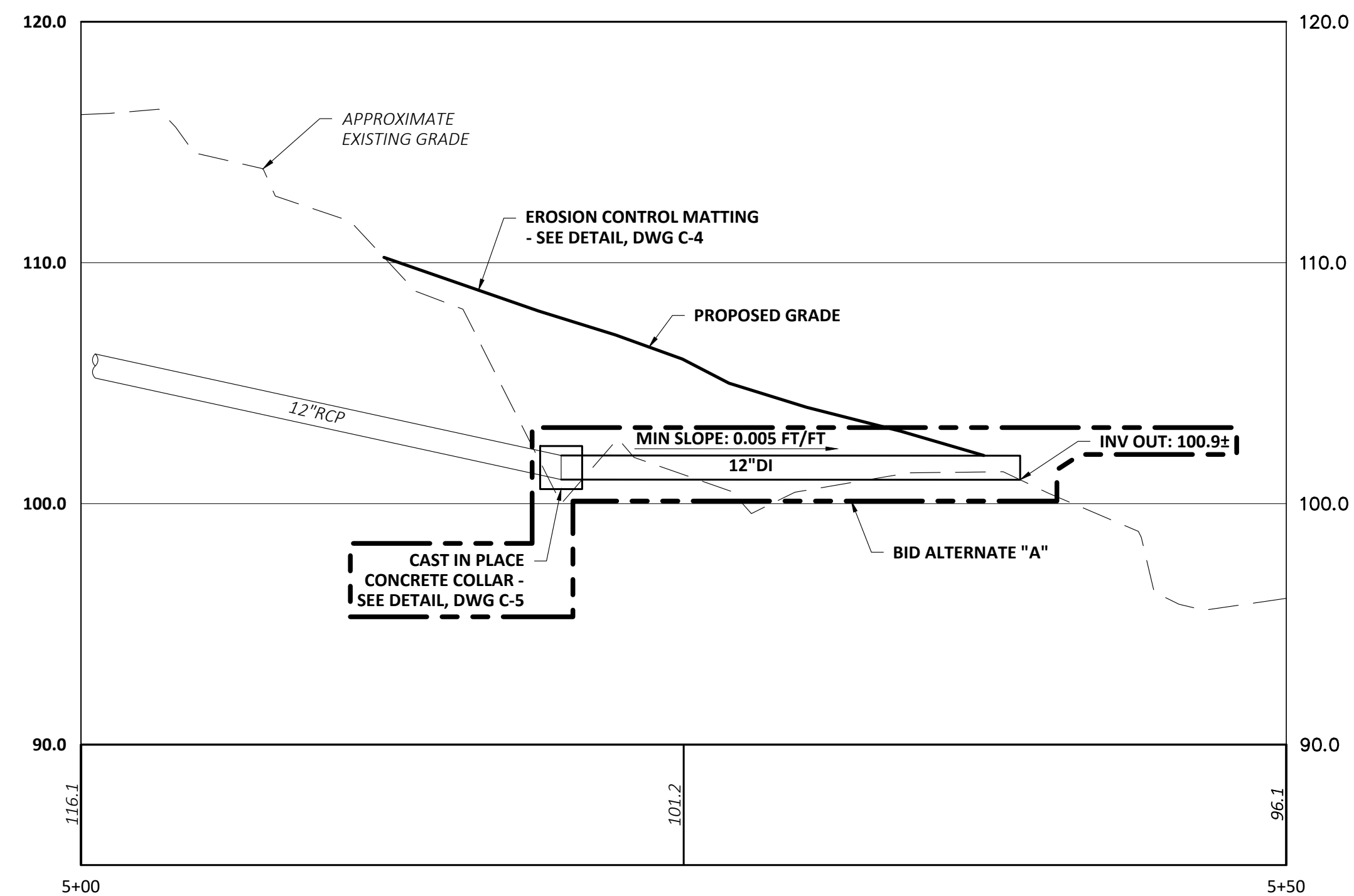
DRAWING
C-1





SEWER PIPE PROFILE

SCALES
VERT:1"=5'
HORIZ:1"=5'



STORM PIPE PROFILE

SCALES
VERT:1"=5'
HORIZ:1"=5'

CITY OF BURLINGTON, VT EAST WATERS TREATMENT FACILITY OUTFALL REPAIRS	WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCIAL WAY, SUITE 302, PORTSMOUTH, NH 03801			PROJECT NO.: 20455 DESIGNED: J. SHACTMAN CAD COORD: J. MICHAUD CAD: J. MICHAUD CHECKED: J. PREBLE DATE: 3/7/22 APPROVED: K. LEAMANSEY DATE: 3/7/22 SUBMISSION: BID DOCUMENTS	NO △ △ △ △ △ △	REVISIONS	APPD. DATE
	DRAWING	C-3					

EROSION AND SEDIMENTATION CONTROL NOTES

1. CONTRACTOR IS REQUIRED BY THE CITY OF BURLINGTON TO SUBMIT AN EROSION PREVENTION AND SEDIMENT CONTROL (EPCS) PERMIT AND IMPLEMENT THE PRACTICES LAID OUT THEREIN TO MINIMIZE DISCHARGE OF SEDIMENT FROM THE SITE. REFER TO SPECIFICATION SECTION 02270 FOR ADDITIONAL GUIDANCE ON CITY PERMITTING.

2. THIS PLAN HAS BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE "VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL", 2019. THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL STRUCTURES REQUIRED FOR THE PROJECT ARE SHOWN ON THE GRADING/EROSION CONTROL PLANS. PROVIDE SILT FENCE, STONE CHECK DAMS AND OTHER EROSION CONTROL MEASURES AS REQUIRED TO ADEQUATELY PREVENT SEDIMENT TRANSPORT AS NOTED IN THE BMP.
1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH "VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL", 2019.

2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE MAINTAINED IN AN UNTREATED OR UNVEGETATED CONDITION FOR THE MINIMUM TIME REQUIRED. IN GENERAL, AREAS TO BE DISTURBED SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE. AFTER THIS TIME, DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED IN ADVANCE OF ANY RUNOFF PRODUCING EVENT IN ACCORDANCE WITH APPENDIX A OF VERMONT CONSTRUCTION GENERAL PERMIT.

3. SEDIMENT BARRIERS (SILT FENCE, STONE CHECK DAMS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF UPGRADIENT DRAINAGE AREAS.

4. INSTALL SILT FENCE AT TOE OF SLOPES TO FILTER SILT FROM RUNOFF. SEE SILT FENCE DETAIL FOR PROPER INSTALLATION. SILT FENCE WILL REMAIN IN PLACE PER NOTE #5.

5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSURE. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.

6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2 TO 1) UNLESS STABILIZED WITH PERMANENT EROSION CONTROL MEASURES.

7. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT TO BE COMPLETED 30 DAYS PRIOR TO THE ANTICIPATED DATE OF THE FIRST KILLING FROST, USE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING, UNTIL UPGRADIENT AREAS ARE STABILIZED.

8. WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISH GRADED SHALL BE COMPLETED 30 DAYS PRIOR TO THE FIRST KILLING FROST.

9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS. POST SEEDING SEDIMENT, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER.

10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND REVEGETATED AS FOLLOWS:

A. A MINIMUM OF FOUR (4) INCHES OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.

B. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT DEEMED FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 6.9 POUNDS PER 1,000 SQUARE FEET USING 10-20-20 (N-P205-K20) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 2 TONS PER ACRE (100 LB PER 1,000 SQ. FT.).

C. FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED WITH MIXTURE NO.2 CONSISTING OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED WITH MIXTURE NO. 1 CONSISTING OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYE GRASS: SEEDING RATE IS 3.0 LBS PER 1000 SQ. FT. LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED.

D. HAY MULCH AT THE RATE OF 75-100 LBS PER 1000 SQUARE FEET OR A HYDRO-APPLICATION OF CELLULOSE FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER WILL BE USED ON HAY MULCH FOR WIND CONTROL.

11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE WORK AREA IS STABILIZED.

12. WETLANDS (EXCEPTING THOSE WHICH ARE TO BE FILLED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS) WILL BE PROTECTED WITH SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.

13. IN GENERAL, AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS SHALL HAVE A MAXIMUM PERIOD OF EXPOSURE OF NOT MORE THAN 15 DAYS.

14. FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IN ALL AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS.

15. CONTRACTOR TO COMPLETE AND RECEIVE APPROVAL FOR BURLINGTON'S EROSION PREVENTION AND SEDIMENT CONTROL PLAN PRIOR TO CONSTRUCTION.
- MULCH ANCHORING
- ANCHOR MULCH WITH: MULCH NETTING (AS PER MANUFACTURER); ASPHALT EMULSION (0.04 GALLONS PER SQ. YD.); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); OR BE WOOD CELLULOSE FIBER (2000 LBS/ACRE). WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.
- ADDITIONAL TEMPORARY SEED MIXTURE (OR PERIODS LESS THAN 12 MONTHS)
- | | | |
|---|-----------------------|--------------|
| SPRING, SUMMER, OR EARLY FALL
(4/1 - 9/15) | ANNUAL RYE GRASS | 40 LBS/ACRE |
| LATE FALL OR EARLY WINTER
(9/15 - 11/1) | WINTER RYE | 120 LBS/ACRE |
| (11/1 - 4/1) | MULCH W/ DORMANT SEED | 80 LBS/ACRE* |
- *SEED RATE ONLY
- MULCH AND MULCH ANCHORING
- | MULCH | | |
|---|------------------------------------|----------------------------|
| LOCATION | MULCH | RATE (1000 S.F.) |
| PROTECTED AREA | STRAW OR HAY * | 100 POUNDS |
| WINDY AREAS | STRAW OR HAY (ANCHORED) * | 100 POUNDS |
| MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES (GREATER THAN 3:1) | JUTE MESH, EXCELSIOR MAT OR EQUIV. | AS REQUIRED
AS REQUIRED |
| * A HYDRO-APPLICATION OF CELLULOSE FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SHALL BE USED ON HAY MULCH FOR WIND CONTROL. | | |
- EROSION CONTROL DURING WINTER CONSTRUCTION
1. WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH APRIL 15.

2. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

3. EXPOSED AREA SHOULD BE LIMITED TO THAT THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY PRECIPITATION EVENT.

4. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.

5. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE-FREEZING TEMPERATURES, THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE 200 - 300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT EXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.

6. BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE EITHER WOOD CELLULOSE FIBER OR BE ANCHORED WITH MULCH NETTING OR CHEMICAL TACK.

7. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3%, FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.

8. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST, THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.

9. AFTER NOVEMBER 1ST THE CONTRACTOR SHALL APPLY DORMANT SEEDING OR MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.

10. DURING WINTER CONSTRUCTION PERIODS ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
- PLANTING LIST
- | Zone | Common Name | Taxonomic Name | Form | Size |
|---------|------------------------|---------------------|-----------------|------|
| Wetland | Eastern Cottonwood | Populus deltoides | 2 gal container | 4-5' |
| | Silver Maple | Acer saccharinum | 2 gal container | 4-5' |
| | Red Osier Dogwood | Cornus sericea | 1 gal container | 3-4' |
| | Willow | Salix spp. | 1 gal container | 3-4' |
| | Black Cherry | Prunus Serotina | 2 gal container | 4-5' |
| Upland | Sugar Maple | Acer saccharum | 2 gal container | 4-5' |
| | Allegheny Serviceberry | Amelanchier laevis | 2 gal container | 4-5' |
| | Elderberry | Sambucus canadensis | 1 gal container | 3-4' |
| | Pagoda dogwood | Cornus alternafolia | 1 gal container | 3-4' |
| | | | | |
- STABILIZE WITH EROSION CONTROL MATTING FOLLOWING 4" LOAM PLACEMENT. NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES.

VARIES

BL

EXISTING GRADE

5%

1

VARIES

GEOTEXTILE FILTER FABRIC (MIRAFI 140N OR EQUIVALENT)

4" LAYER OF COARSE AGGREGATE

EXISTING GRADE

CLASS V RIPRAP, D50=18"

1

VARIES

RIPRAP EXTENTS SHOWN ON PLANS

24"

6"

2" TO 4" STONE

CROSS SECTION

24"

6"

2" TO 4" STONE

TOP OF DITCH

BOTTOM OF DITCH

SUMP

PROFILE

STONE CHECK DAM DETAIL

SCALE: NTS

NOTES:

1. PLACE RIPRAP AS SHOWN ON PLANS 1.5:1(HORIZONTAL:VERTICAL) SLOPE MAXIMUM.

2. TOE OF SLOPE RIPRAP SHOULD BE KEYED INTO THE EXISTING GROUND SURFACE A MINIMUM OF 3'-0".

3. A NON-WOVEN GEOTEXTILE FILTER FABRIC (MIRAFI 140N OR EQUIVALENT) SHOULD BE INSTALLED OVER SUBGRADE PRIOR TO PLACING COARSE AGGREGATE. THE FILTER FABRIC SHOULD OVERLAP THE TOP OF THE RIPRAP.

4. WHERE REQUIRED, GRANULAR BORROW SHOULD BE PLACED IN 12" THICK LIFTS AND COMPACTED TO 92% OF IT'S MAXIMUM DRY DENSITY PER ASTM D-698 (STANDARD PROCTOR).
- COUPLER

SECTION A

SECTION B

POLES

SECTION A

SECTION B

JOINING SILT FENCE SECTIONS

SCALE: "NTS"

WOOD POSTS

EXISTING GRADE

FLOW

EXCAVATE TRENCH FOR MIN 6"-OVERLAP FABRIC AND BACKFILL WITH EXCAVATED MATERIALS

SEE DETAIL "JOINING SILT FENCE SECTIONS"

8'-0"(MAX)

8'-0"(MAX)

5'-0" (MIN)

2'-6"

2'-0" (MIN)

3' WIRE REINFORCED SILTATION FABRIC W/ WIRE MESH BACKING ATTACHED TO WOOD POST

SILT FENCE INSTALLATION DETAIL

SCALE: "NTS"

PAVEMENT

RADIUS 15' MIN

STABILIZED SURFACE

STONE SIZE SHALL BE 1 1/2" TO 2 1/2"

MATCH ENTRANCE 20'-0" W. (MIN.)

10" THICKNESS

PLAN

ROAD SURFACE

50' LENGTH (MIN)

SECTION

STABILIZED CONSTRUCTION ENTRANCE

SCALE: "NTS"

(TEMPORARY, TO BE REMOVED PRIOR TO FINAL SITE PAVING/GRADING)

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT TRACKED, SPILLED, OR WASHED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATLY.

STAKE ON 10' LINEAL SPACING

WATER FLOW

COMPOST SILT SOCK

SILT SOCK

SCALE: "NTS"

EAST COAT EROSION BLANKET'S ECC-2B OR EQUIVALENT

ANCHOR PER MANUFACTURER REQUIREMENTS

4 STAPLES/SY (HIGH FLOW CHANNEL)

OVERLAP EDGES MIN OF 4". STAPLE PER MANUFACTURER REQUIREMENTS

NOTE: INSTALL ON SLOPES 3:1 OR GREATER

EROSION CONTROL MATTING - SLOPES

SCALE: NTS
- APPD

DATE

REVISIONS

NO

1

2

3

4

5

PROJECT NO: 20455

DESIGNED: J.SHAFTMAN

CAD COORD: J.MICHAUD

CAD: J.MICHAUD

CHECKED: J.PIERCE

DATE: 3/2/22

APPROVED: K.LEMANSEY

DATE: 3/2/22

SUBMISSION: BID DOCUMENTS

STATE OF VERMONT

SEAL OF THE VERMONT ENGINEER

NO. 01070464

EXPIRATION DATE 03/31/25

* PROFESSIONAL SEAL *

03/04/22

WRIGHT-PIERCE

603.430.3728

www.wright-pierce.com

230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801

CITY OF BURLINGTON, VT

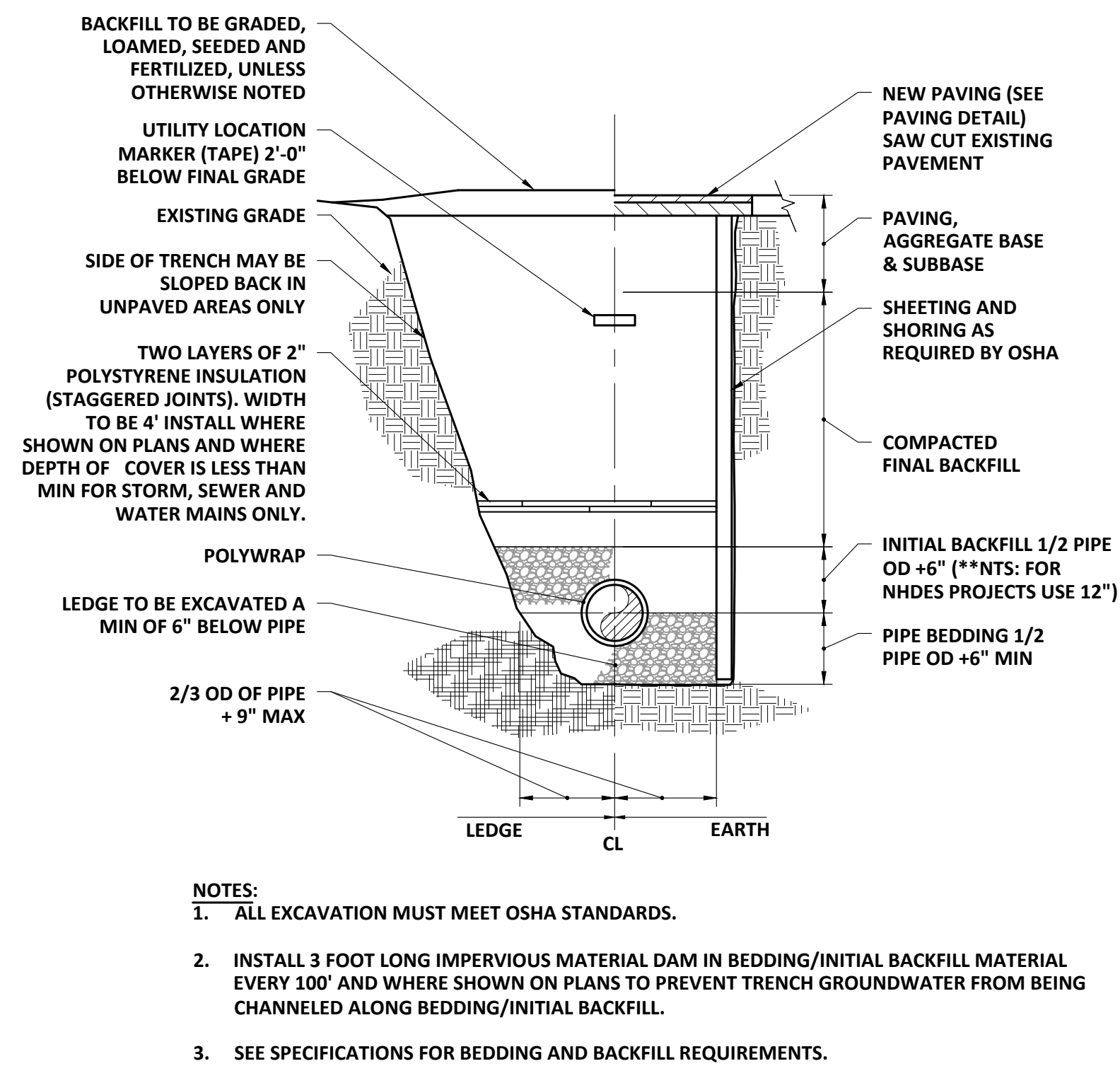
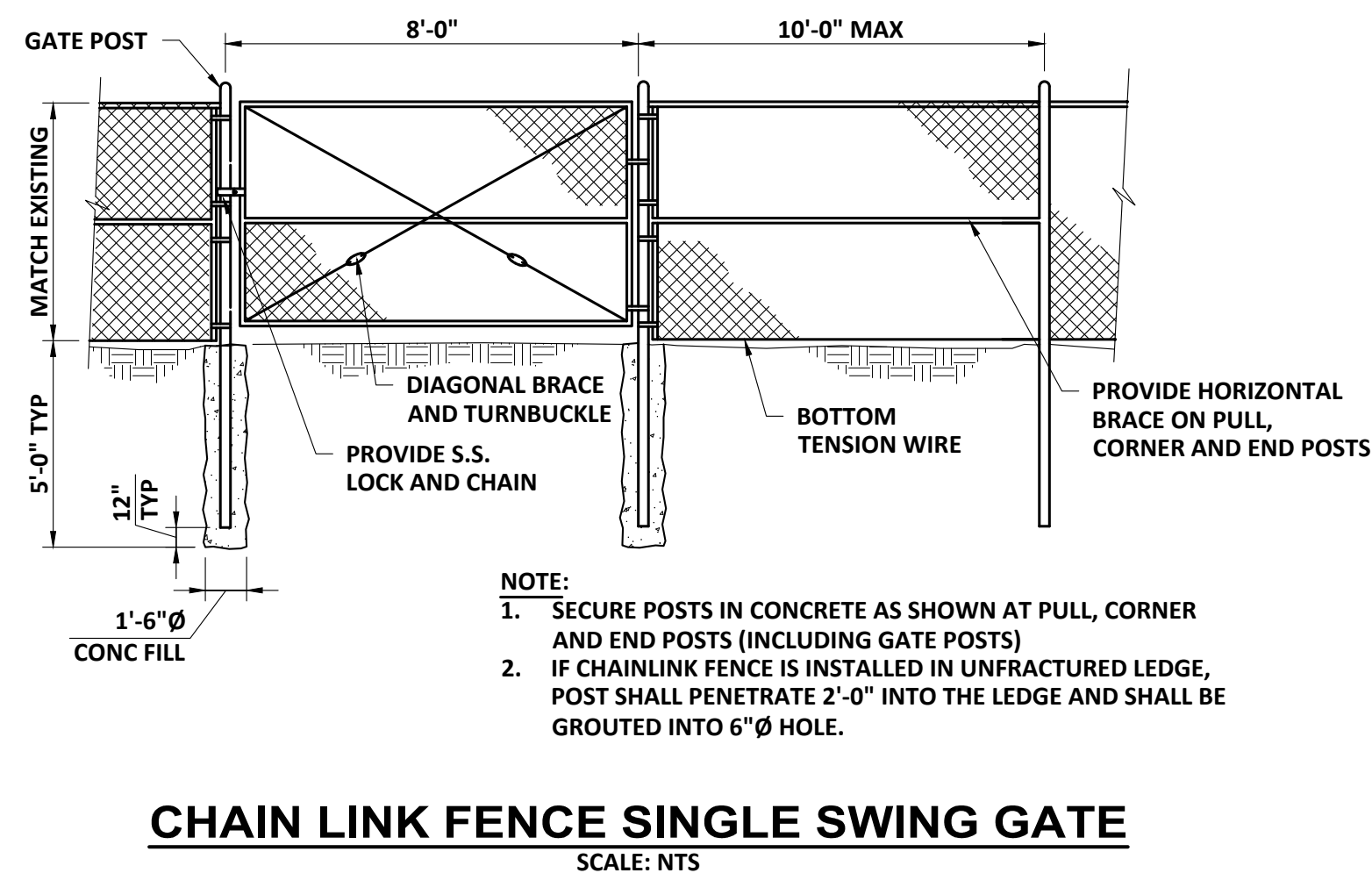
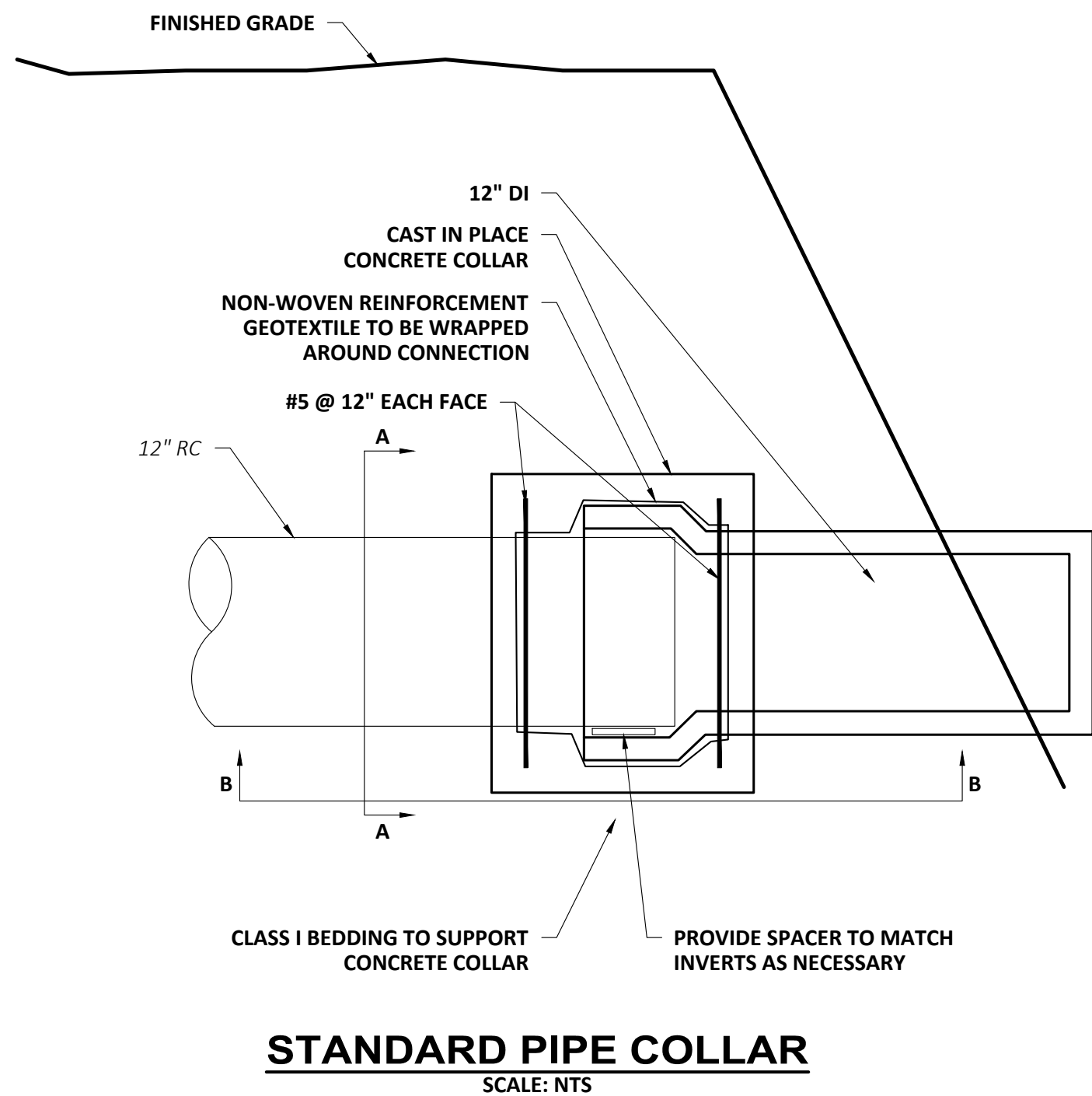
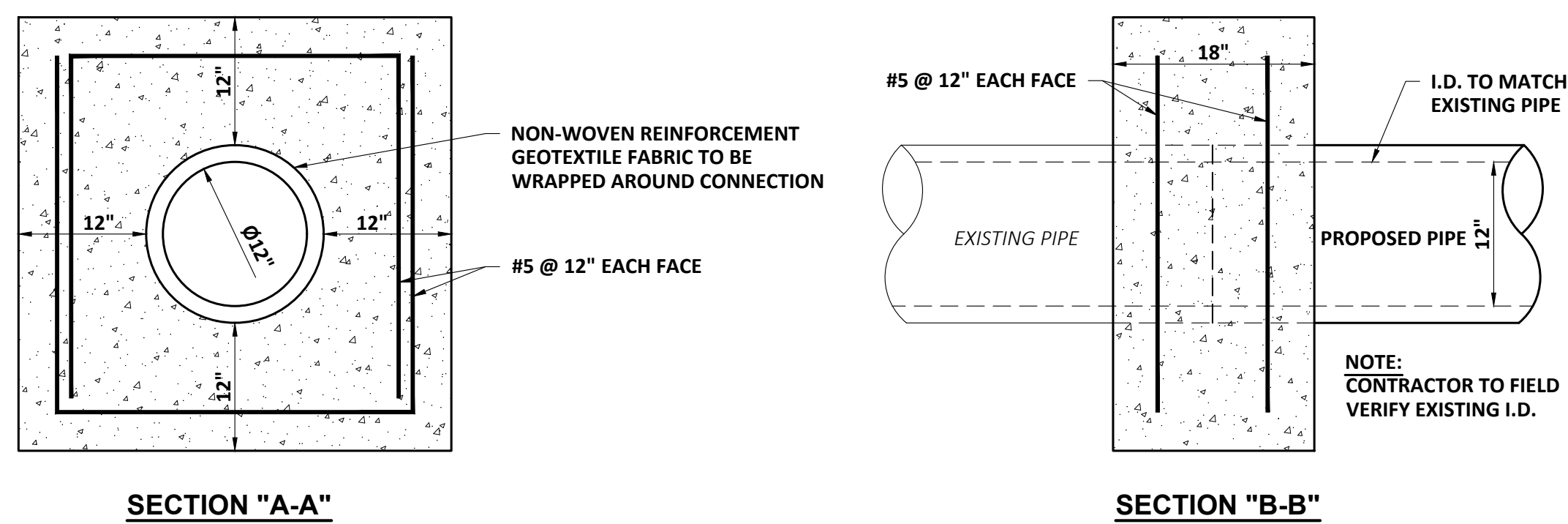
EAST WATERTREATMENT FACILITY

OUTFALL REPAIRS

EROSION CONTROL NOTES AND DETAILS

DRAWING

C-4



CITY OF BURLINGTON, VT EAST WASTEWATER TREATMENT FACILITY OUTFALL REPAIRS	WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801		PROJECT NO: 20455 DESIGNED: J.SHAHTMAN CAD COORD: J.NICHAUD CAD: J.NICHAUD CHECKED: J.PREBLE DATE: 3/7/22 APPROVED: K.LEWMANSEY DATE: 3/7/22 SUBMISSION: BID DOCUMENTS	NO	REVISIONS	APPD	DATE
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