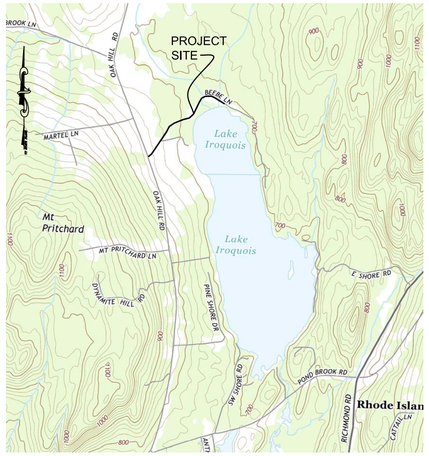
SITE LOCATION BASE MAP OBTAINED FROM VCGI TOPOGRAPHY MAPPING, N.T.S.



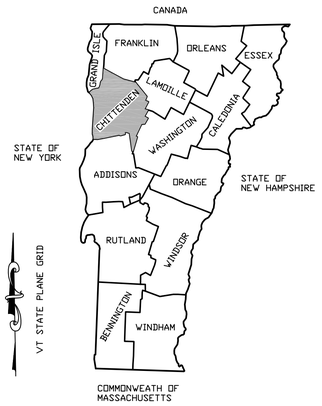
SITE LOCATION MAP
SCALE: NTS

BEEBE LANE ROAD AND STORMWATER MANAGEMENT IMPROVEMENTS LAKE IROQUOIS WILLISTON, VT

DECEMBER, 2019

PROPOSED IMPROVEMENTS INCLUDE THE CONSTRUCTION OF AN IMPROVED GRAVEL ROAD SECTION, PAVEMENT ROAD SECTION, STORMWATER MANAGEMENT FACILITIES, EROSION PREVENTION AND SEDIMENT CONTROL, AND ALL ASSOCIATED MISCELLANEOUS OVER 2,800 LINEAR FEET OF ROAD

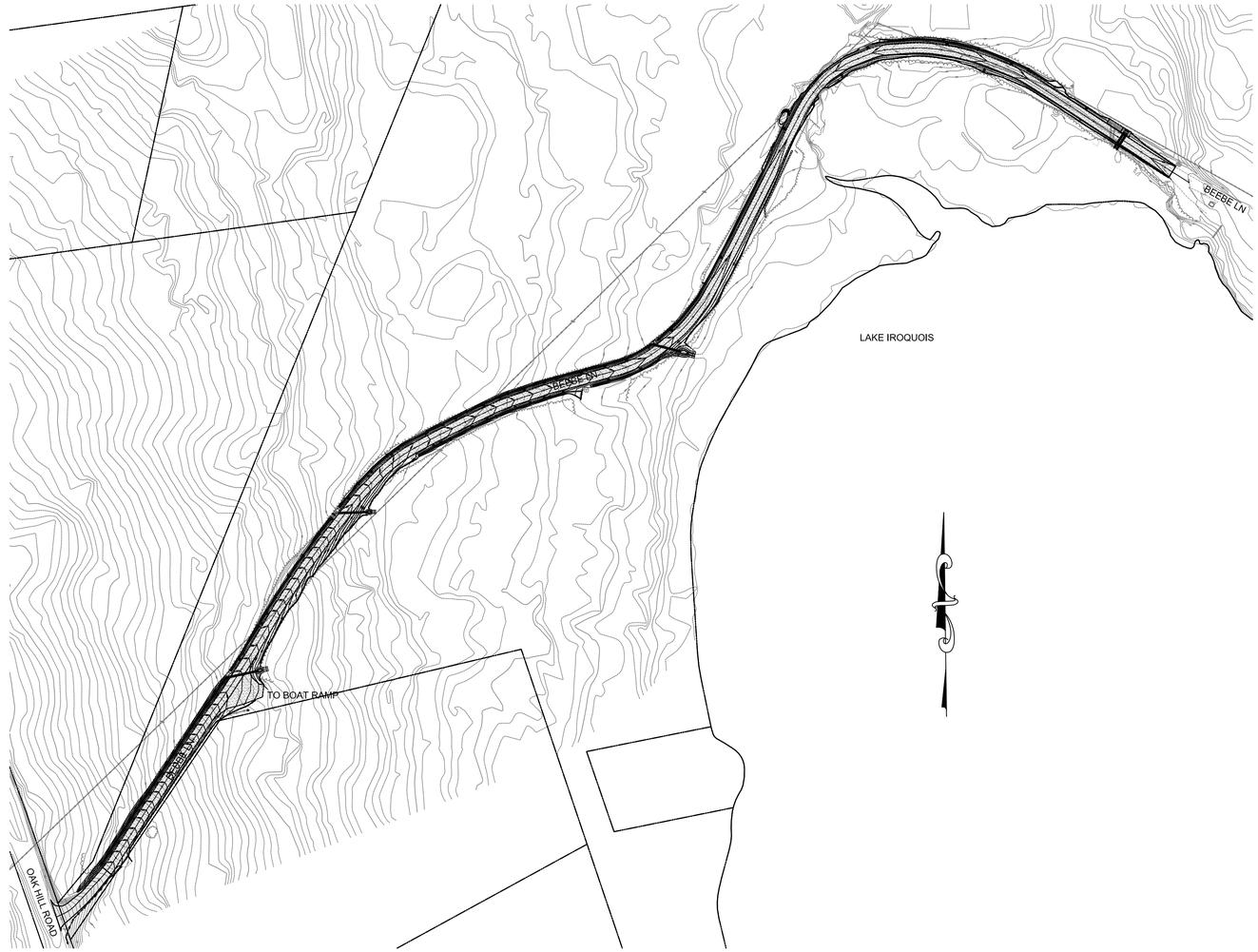
FUNDING FOR THIS PROJECT HAS BEEN PROVIDED BY A CLEAN WATER BLOCK GRANT #2017-ERP-BG-001.



VERMONT COUNTY MAP
SCALE: NTS

LIST OF ABBREVIATIONS

BC	BOTTOM OF CURVE
BW	BOTTOM OF WALL
C#	ALIGNMENT CURVE #
ø	DIAMETER
E	EASTING
EG	EXISTING GRADE
ELEV.	ELEVATION
EOG	EDGE OF GRAVEL
EOP	EDGE OF PAVEMENT
EOTW	EDGE OF TRAVELED WAY
EX	EXISTING
FG	FINISHED GRADE
FL	FLOWLINE
H	HORIZONTAL
I.E.	INVERT ELEVATION
L#	ALIGNMENT LINE #
LF	LINEAR FEET
LT	LEFT OFFSET (FROM CENTERLINE)
MAX	MAXIMUM
MIN	MINIMUM
N	NORTHING
N.T.S.	NOT TO SCALE
PC	POINT OF CURVATURE
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
RT	RIGHT OFFSET (FROM CENTERLINE)
S	SLOPE
SQFT	SQUARE FEET
STA	STATION
TBD	TO BE DECIDED
TC	TOP OF CURVE
TOS	TOP OF SLAB/SIDEWALK
TYP	TYPICAL
TW	TOP OF WALL
V	VERTICAL



PROJECT AREA MAP
SCALE: 1"=120'

LEGEND

PROPOSED	EXISTING	
---692---	---692---	MINOR CONTOURS
——690——	——690——	MAJOR CONTOURS
	————	PROPERTY LINE
		WETLANDS
		WETLAND BUFFER
		EDGE OF PAVEMENT
		EDGE OF GRAVEL
		CULVERT
		BUILDING
		OVERHEAD UTILITY
		TREE LINE
		SWALE FLOWLINE
		RETAINING WALL
		TOP/TOE OF BANK
		BREAKLINES
		STONE WALL
		WOVEN WIRE FENCE
		SILT FENCE
		CHECK DAM
		GRAVEL ROAD
		PAVEMENT
		RIP RAP
		WETLAND IMPACT
		WETLAND BUFFER IMPACT
		TREE
		SIGN
		TRAVERSE STATION
		PROPERTY CORNER PIN
		GRADING/FLOW ARROW

SHEET INDEX:

1. CV.1: COVER SHEET
2. NO.1: NOTES
3. SP.1: CIVIL SITE AND PROFILE DESIGN (STA. 10+00 TO 15+00)
4. SP.2: CIVIL SITE AND PROFILE DESIGN (STA. 15+00 TO 20+00)
5. SP.3: CIVIL SITE AND PROFILE DESIGN (STA. 20+00 TO 25+00)
6. SP.4: CIVIL SITE AND PROFILE DESIGN (STA. 25+00 TO 30+00)
7. SP.5: CIVIL SITE AND PROFILE DESIGN (STA. 30+00 TO 35+00)
8. SP.6: CIVIL SITE AND PROFILE DESIGN (STA. 35+00 TO 38+00)
9. XS.1: LINE AND GRADE CROSS SECTIONS
10. XS.2: LINE AND GRADE CROSS SECTIONS
11. DT.1: TYPICAL ROAD CROSS SECTION DETAILS
12. DT.2: TYPICAL ROAD CROSS SECTION DETAILS
13. DT.3: EROSION PREVENTION AND SEDIMENT CONTROL DETAILS

GEOGRAPHIC COORDINATION SYSTEM
HORIZONTAL DATUM - VERMONT STATE PLAN (FEET)
VERTICAL DATUM - NAD83 1986

ENGINEER:

STATE OF VERMONT
STEPHEN J.C. DIGLIO
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FINAL DESIGN

GENERAL CONSTRUCTION NOTES

1. DESIGN SPECIFICATIONS: THE DESIGN SPECIFICATIONS FOR THE PROJECT SHALL BE THE VERMONT AGENCY OF TRANSPORTATION 2018 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND TOWN OF WILLISTON PUBLIC WORK STANDARDS, UNLESS OTHERWISE NOTED ON THESE PLANS.

2. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE NOT BASED ON "DIG SAFE" MARKINGS AND ARE NOT WARRANTED TO BE EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITY STRUCTURES, WHETHER SHOWN OR NOT, AND TO NOTIFY ALL UTILITY COMPANIES TO VERIFY IN THE FIELD THE LOCATION OF THEIR INSTALLATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL UTILITY STRUCTURES FROM DAMAGE. THE EXPENSE OF REPAIR OR REPLACEMENT SHALL BE BORNE SOLELY BY THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT DIG SAFE, THE LAKE IROQUOIS RECREATION DISTRICT, AND THE TOWN OF WILLISTON PUBLIC WORKS DEPARTMENT AT LEAST 72 HOURS PRIOR TO ANY SUBGRADE CONSTRUCTION.

3. AT LOCATIONS WHERE PROPOSED (NEW) UNDERGROUND FACILITIES ARE TO BE CONNECTED TO EXISTING FACILITIES, THE CONTRACTOR SHALL EXPOSE THE EXISTING FACILITY AND VERIFY THAT THE CONNECTION CAN BE MADE AS SHOWN ON THE PLANS. THIS VERIFICATION SHALL BE DONE PRIOR TO ANY CONSTRUCTION. ANY CONFLICTS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION AS SOON AS THEY ARE DISCOVERED. THE CONTRACTOR SHALL ALLOW FOR THE TIME IN HIS SCHEDULE FOR THE POSSIBILITY OF MINOR REDESIGN OF UNDERGROUND FACILITIES TO AVOID CONFLICTS OR ADJUSTMENT DUE TO CONFLICTS.

4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THESE PLANS AND THE CONDITIONS EXISTING IN THE FIELD. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY FIGURES BEFORE STARTING WORK, AND WILL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY.

5. THE CONTRACTOR SHALL RESTORE ALL SURFACES TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS, BUILDINGS, OR OTHER STRUCTURES RESULTING FROM HIS CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE LAKE IROQUOIS RECREATION DISTRICT, THE PROPERTY OWNER, AND THE ENGINEER AT NO ADDITIONAL COST.

6. THE CONTRACTOR SHALL COOPERATE WITH OTHER CONTRACTORS OR UTILITY COMPANY FORCES WHO MAY BE INVOLVED WITH CONSTRUCTION OF OTHER WORK ADJACENT TO OR IN THE PROXIMITY OF THE LOCATION OF THE PROJECT SITE.

7. WHEN APPLICABLE, THE CONSTRUCTION INSPECTOR SHALL MAINTAIN AS-BUILT PLANS WITH TIES AND ELEVATIONS FOR ALL UNDERGROUND UTILITIES. AS-BUILT PLANS SHALL BE SUBMITTED AT THE COMPLETION OF THE PROJECT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK NECESSARY FOR COMPLETE AND OPERABLE FACILITIES AND UTILITIES.

9. PAYMENT FOR WORK SHOWN ON THESE PLANS EITHER SPECIFICALLY OR INFERRED, BUT NOT INCLUDED IN THE BID FORM, SHALL BE CONSIDERED INCLUDED IN THE PRICE PAID FOR OTHER ITEMS OF WORK.

10. ALL REMOVAL AND DEMOLITION MATERIALS SHALL BE DISPOSED OF OFFSITE AT THE CONTRACTOR'S EXPENSE IN ACCORDANCE WITH THE VT DEC SOLID WASTE MANAGEMENT RULE. SALVAGED MATERIALS TO BE RETURNED TO THE TOWN AS INDICATED ON THE DESIGN PLANS SHALL BE COORDINATED WITH THE TOWN HIGHWAY DEPARTMENT.

11. PROPOSED CIVIL IMPROVEMENTS SHALL BE CONSTRUCTED TO LINE AND GRADE SHOWN ON DRAWINGS.

12. ANY DE-WATERING THAT IS NECESSARY FOR THE COMPLETION OF SITE WORK SHALL BE CONSIDERED AS PART OF THE CONTRACT AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

13. ANY CONFLICTS OR INCONSISTENCIES WITH THE PLANS OR SPECIFICATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.

14. THE CONTRACTOR SHALL CONFORM TO ALL PERMITS AND EASEMENTS ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF STRUCTURES, VEGETATION, AND PAVEMENT NECESSARY TO CONSTRUCT THE PROJECT, UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS, AND TRASH FROM THE SITE UPON COMPLETION OF CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY THE TOWN.

16. ANY SUBGRADE DISTURBED BY THE CONTRACTOR, OR RENDERED UNSUITABLE BY CONSTRUCTION MACHINERY SHALL BE REMOVED AND REPLACED WITH APPROVED GRANULAR BACKFILL AT THE CONTRACTORS EXPENSE.

17. JOB-SITE SAFETY CONDITIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR IS RESPONSIBLE FOR THE ADEQUATE BRACING AND/OR SHORING OF STRUCTURAL AND NON-STRUCTURAL ITEMS DURING CONSTRUCTION. THE CONTRACTOR SHALL CONSTRUCT APPROPRIATE FENCES AND BARRIERS AROUND ALL CONSTRUCTION SITES, STORAGE SITES, AND EXCAVATIONS TO SAFE GUARD THE PUBLIC. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE OSHA REGULATIONS.

18. ENGINEER ASSUMES NO RESPONSIBILITY FOR THE CONTINUED PROPER USE OR MAINTENANCE OF THE SYSTEM.

19. PRIOR TO ORDERING MATERIALS OR BREAKING GROUND, THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, DESIGN PLANS, TECHNICAL SPECIFICATIONS AND OTHER RELATED DOCUMENTS TO VERIFY AND COORDINATE DIMENSIONS, LAYOUTS, PLACEMENT, AND APPLICABILITY. THE CONTRACTOR SHALL CONDUCT FIELD CHECKS TO VERIFY THE ACCURACY OF DIMENSIONS, TOPOGRAPHY, AND EXISTING CONDITIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THESE PLANS AND THE CONDITIONS EXISTING IN THE FIELD. IF THE CONTRACTOR FAILS TO REPORT ANY DISCREPANCIES DISCOVERED TO THE PROJECT ENGINEER, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY.

20. WATER RESOURCES PROTECTION: DURING THE COURSE OF CONSTRUCTION, THE WORK SHALL BE CONDUCTED IN A MANNER AS TO PREVENT OR REDUCE TO A MINIMUM ANY DAMAGE TO NEARBY WETLANDS, STREAMS, AND THE LAKE FROM POLLUTION BY DERRIS, SEDIMENT, OR OTHER FOREIGN MATERIALS, OR FROM MANIPULATION OF EQUIPMENT.

21. DUE TO THE NATURE OF THE PROPOSED IMPROVEMENTS, THE EXACT EXTENT OF THE PROPOSED WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF WORK. THE CONSTRUCTION DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD SURVEYS AND INSPECTIONS, AND OTHER AVAILABLE INFORMATION. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO THE CONSTRUCTION DETAILS AND WORK QUANTITIES.

SURVEY NOTES (BUTTON PROFESSIONAL LAND SURVEYORS):

1. NORTH ORIENTATION IS BASED ON SURVEY GRADE STATIC GPS OBSERVATIONS MADE ON 04/08/19 AND PROCESSED USING TRIMBLE BUSINESS CENTER SOFTWARE. THE RESULTANT HORIZONTAL DATUM IS NAD 83 (CORS).

2. THE VERTICAL DATUM IS NAVD88 USING THE GEOID MODEL G12AUS.

3. THE PROPERTY LINES, EASEMENTS, AND OTHER REAL PROPERTY DESCRIPTIONS PROVIDED ON THIS PLAN ARE FOR THE USE OF THE APPLICANT ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY AS DESCRIBED IN 26 V.S.A. SECTION 2502(4), AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHT. NO LAND RECORD RESEARCH WAS PERFORMED IN THE PREPARATION OF THIS TOPOGRAPHIC PLAN.

4. THE EXISTING SITE FEATURES AND TOPOGRAPHY SHOWN HEREON WERE COLLECTED FROM A GROUND SURVEY PERFORMED ON APRIL 8TH AND 9TH, 2019 AS DIRECTED BY AN ON-SITE MEETING WITH STEVE DIGLIO OF KAS CONSULTING ENGINEERS.

5. CONTOURS OUTSIDE OF TOPOGRAPHY BOUNDARY WERE OBTAINED FROM VCGI LIDAR DATA.

6. THIS PLAN IS NOT INTENDED TO BE A BOUNDARY SURVEY AND SHALL NOT BE USED AS ONE. THE APPROXIMATE PROPERTY LINES ARE BASED ON FIELD WORK AND TAX MAPS FROM THE TOWN OF WILLISTON.

EROSION PREVENTION AND SEDIMENT CONTROL NOTES

1. THE LIMIT OF DISTURBANCE SHALL BE CLEARLY DEFINED BY THE CONTRACTOR PRIOR TO CLEARING. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE ESTABLISHED TO TRAP SEDIMENT ON SITE.

2. ALL EROSION CONTROLS SHALL BE INSTALLED AS DETAILED IN THE PUBLICATION VERMONT HANDBOOK FOR SOIL EROSION AND SEDIMENT CONTROL ON CONSTRUCTION SITES AND IN ACCORDANCE WITH THE LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL.

3. ALL SILT FENCES SHALL BE IN PLACE AT LOCATIONS INDICATED ON THE PLANS AND IN ACCORDANCE WITH THE DETAILS BEFORE COMMENCEMENT OF ANY DISTURBANCE OF EXISTING GROUND SURFACE. SILT FENCES SHALL REMAIN IN PLACE UNTIL STABLE GROWTH OF TURF IS PRESENT ON ALL DISTURBED SURFACES AND STONE FILL ARMOR IS IN PLACE.

4. PLUNGE POOL AND SEDIMENT TRAPS SHALL IN INSTALLED PRIOR TO COMMENCING UPSTREAM ROAD AND DITCH WORK. THE PLUNGE POOLS AND SEDIMENT TRAPS SHALL BE REGULARLY INSPECTED AND CLEANED OUT OF DEPOSITED SEDIMENT AS NEEDED DURING CONSTRUCTION AND AFTER FINAL STABILIZATION.

5. ALL EXPOSED CUT AND FILL EARTHWORK SURFACES SHALL BE COVERED WITH A MINIMUM OF 3" OF TOPSOIL AND SEEDED AND MULCHED.

6. THE CONTRACTOR SHALL MAINTAIN THE EROSION CONTROL MEASURES UNTIL THE ENGINEER IS SATISFIED THAT PERMANENT GROUND COVER IS ESTABLISHED AND THAT FURTHER MEASURES ARE NOT REQUIRED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO EMPLOY APPROPRIATE EROSION CONTROL AS SHOWN ON THESE DRAWINGS AND ANY OTHER MEASURES AS NECESSARY TO TRAP SEDIMENT ON SITE.

7. THE EROSION CONTROLS SHALL BE CHECKED REGULARLY BY THE OWNER'S REPRESENTATIVE AND/OR THE ENGINEER, AND AFTER STORM EVENTS IN EXCESS OF 1/2" OF RAIN. ANY NECESSARY REPAIRS OR MODIFICATIONS SHALL BE IMMEDIATELY COMPLETED BY THE CONTRACTOR.

8. ALL EXCESS MATERIAL AND TOPSOIL TO BE RE-USED ON-SITE SHALL BE STOCKPILED IN AREAS APPROVED BY THE OWNER'S REPRESENTATIVE AND/OR ENGINEER. THE STOCKPILES SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE SEEDED AND TEMPORARILY STABILIZED TO MINIMIZE WIND AND STORMWATER EROSION POTENTIAL. TEMPORARY STABILIZATION SHALL BE OBTAINED WITH MULCH AND NETTING OR NORTH AMERICAN GREEN EROSION CONTROL MATTING.

9. ALL AREAS OF DISTURBANCE SHALL BE PERMANENTLY OR TEMPORARILY STABILIZED AS SOON AS POSSIBLE AND WITHIN 48 HOURS OF FINAL GRADING. ANY AREA OF DISTURBANCE SHALL BE AT LEAST TEMPORARILY STABILIZED WITHIN 14 DAYS OF INITIAL DISTURBANCE. ANY DISTURBANCE AFTER 14 CONSECUTIVE DAYS OF EXPOSED SOIL SHALL BE STABILIZED DAILY OR WITH THE FOLLOWING EXCEPTIONS:
   - 9.1. STABILIZATION IS NOT REQUIRED IF EARTHWORK IS TO CONTINUE IN THE AREA IN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST IN THE NEXT 24 HOURS.
   - 9.2. STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (I.E., NO OUTLET) WITH A DEPTH OF 2 FT. OR GREATER (E.G. HOUSE FOUNDATION EXCAVATION, UTILITY RENCHES).
   - 9.3. STABILIZATION MEASURES SHALL INCLUDE MULCH AND NETTING, EROSION CONTROL MATTING, CRUSHED STONE, GRAVEL, OR PAVEMENT.

10. ACCEPTABLE METHODS OF STABILIZATION SHALL INCLUDE, MULCHING (WITH NETTING) (1.5-2 TONS PER ACRE), EROSION CONTROL MATTING, CRUSHED STONE, CRUSHED GRAVEL, ALL PAVING SURFACES (CONCRETE, ASPHALT, ETC.), WEIGHTED IMPERMEABLE BARRIERS, AND OTHER MATERIALS AS APPROVED BY THE ENGINEER.

11. ANY DRAINAGE SWALES WITH A SLOPE GREATER THAN 5% SHALL USE STONE LINING FOR STABILIZATION.

12. WHEN THE ENGINEER DETERMINES EROSION CONTROL MEASURES ARE DEEMED NO LONGER NECESSARY, ALL MATERIALS DETAINED, INCLUDING SILTS AND CONSTRUCTION RUNOFF DEBRIS, SHALL BE COLLECTED AND DISPOSED OF IN A MANNER ACCEPTABLE TO THE OWNER'S REPRESENTATIVE OR ENGINEER.

13. THE CONTRACTOR SHALL USE WATER FOR DUST CONTROL.

14. THE CONTRACTOR SHALL PROVIDE INLET PROTECTION AROUND ALL CATCH BASINS (EXISTING OR NEW) THAT COLLECT CONSTRUCTION SITE STORMWATER RUNOFF.

15. THE CONTRACTOR SHALL SWEEP AND WATER ALL EXISTING ROADWAYS AND NEW PAVEMENT AS NECESSARY TO MAINTAIN DUST CONTROL. SITE CONTRACTOR SHALL EMPLOY ALL MEASURES NECESSARY TO PREVENT SEDIMENT FROM TRACKING OFF-SITE.

16. ADDITIONAL EROSION CONTROLS MAY BE DEEMED NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE SITE AND SHALL BE INSTALLED AS DIRECTED BY THE OWNERS REPRESENTATIVE, THE OWNER OR THE ENGINEER.

TRAFFIC CONTROL NOTES

1. TRAFFIC CONTROL SIGNING AND CHANNELIZING DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST MUTCD STANDARDS, VTRANS STANDARDS, AND OTHER TRAFFIC CONTROL DEEMED NECESSARY BY THE AGENCY'S DISTRICT TRANSPORTATION ADMINISTRATOR.

2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A SITE SPECIFIC TRAFFIC CONTROL PLANS FOR EACH PHASE OF CONSTRUCTION AND SUBMIT TO THE TOWN FOR APPROVAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND WORKER SAFETY AT ALL TIMES DURING CONSTRUCTION.

3. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, DETOURS, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.

4. APPROACH CONSTRUCTION SIGNING SHALL REMAIN IN PLACE DURING THE ENTIRE CONSTRUCTION PERIOD. OTHER SIGNING SHALL BE REMOVED OR COVERED WHEN NOT APPLICABLE.

5. TO FACILITATE THE FLOW OF TRAFFIC, THE ENGINEER SHALL HAVE AUTHORITY TO MODIFY THE CONTRACTORS ONGOING OPERATIONS OR PROPOSED METHODS OF CONSTRUCTION IN AND / OR NEAR THE CONSTRUCTION LIMITS AS IS DEEMED NECESSARY FOR THE SAFETY, CONVENIENCE AND WELFARE OF THE TRAVELING PUBLIC.

6. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

TOPSOIL

1. WHENEVER POSSIBLE, STOCKPILE AND REAPPLY TOPSOIL TO THE AREAS THAT ARE TO BE VEGETATED.

2. TOPSOIL SHALL HAVE AT LEAST 2 PERCENT BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL, AND NO GREATER THAN 6 PERCENT.

3. TOPSOIL SHALL HAVE NOT LESS THAN 20 PERCENT FINE TEXTURED MATERIAL (PASSING THE NO. 200 SIEVE) AND NOT MORE THAN 15 PERCENT CLAY.

4. TOPSOIL TREATED WITH SOIL STERILANTS OR HERBICIDES SHALL BE SO IDENTIFIED TO THE PURCHASER.

5. TOPSOIL SHALL BE RELATIVELY FREE OF STONES OVER 1 ½-INCH DIAMETER, TRASH, NOXIOUS WEEDS SUCH AS NUTSEDGE AND QUACKGRASS, AND WILL HAVE LESS THAN 10 PERCENT GRAVEL BY VOLUME.

6. TOPSOIL CONTAINING SOLUBLE SALTS GREATER THAN 500 PPM SHALL NOT BE USED.

7. TOPSOIL SHALL BE DISTRIBUTED TO A UNIFORM DEPTH OVER THE AREA. IT SHALL NOT BE PLACED WHEN IT IS PARTLY FROZEN, MUDDY, OR ON FROZEN SLOPES OR OVER ICE, SNOW, OR STANDING WATER PUDDLES.

SEEDING

1. SOIL AMENDMENTS –
   - 1.1. LIME TO PH OF 6.0
   - 1.2. FERTILIZE WITH 600 LBS. OF 5-10-10 OR EQUIVALENT PER ACRE (14 LBS./1,000 SQ.FT.)

2. USE CONSERVATION SEED MIXTURES OR APPROVED OTHERS PER THE VTRANS STANDARD TECHNICAL SPECIFICATIONS.

FINAL DESIGN

REVISIONS	BY

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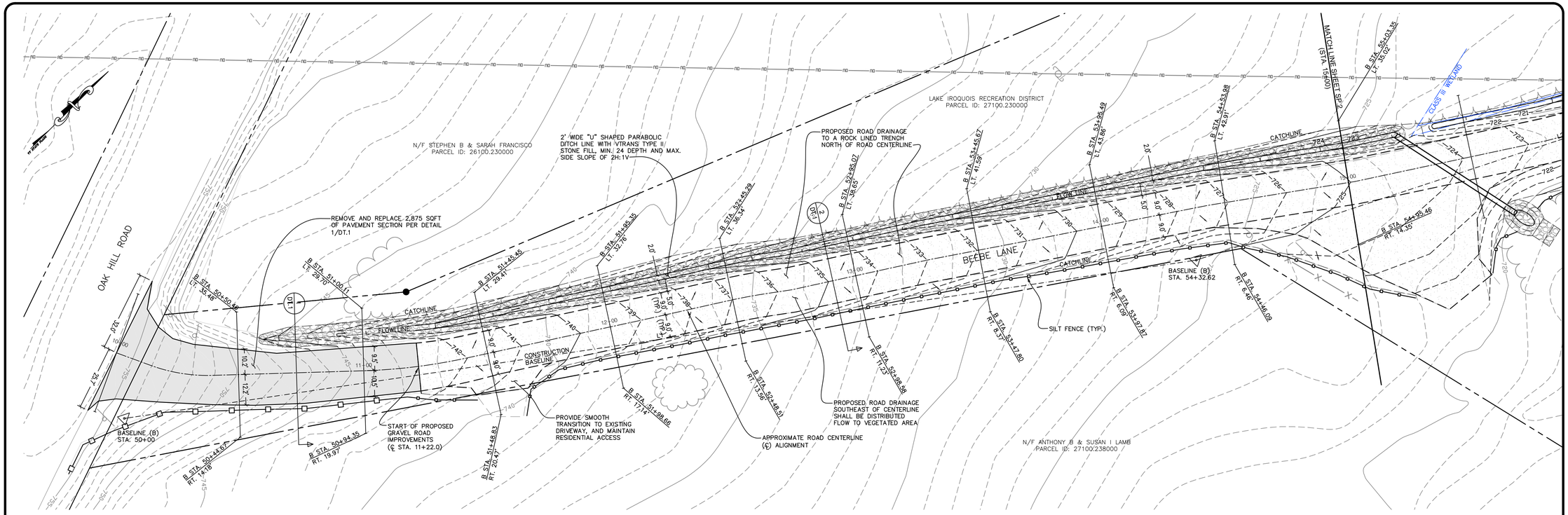
STATE OF VERMONT
STEPHEN J.C. DIGLIO
NO. 74333
PROFESSIONAL ENGINEER

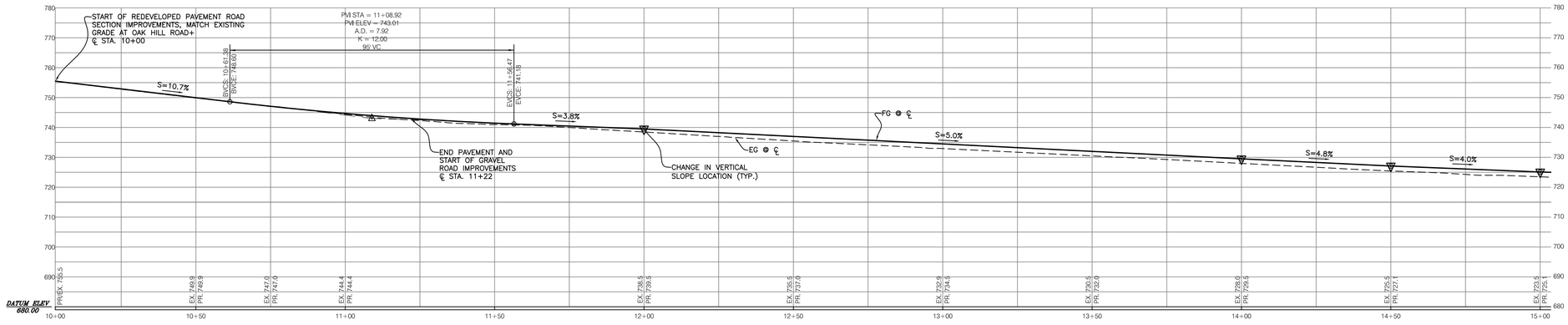
LAKE IROQUOIS RECREATION DISTRICT
BEEBE LANE - ROAD AND STORMWATER
NOTES
WILLISTON, VT

DRAWN	SJD
CHECKED	SJD
DATE	12/20/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	NO.1



1 SP.1 CIVIL SITE PLAN: STA. 10+00 TO STA. 15+00
1"=20'

GRAPHIC SCALE
20' 0 10' 20' 40' 80'
(IN FEET)
1 inch = 20 ft.



2 SP.1 CIVIL CENTERLINE PROFILE VIEW: STA. 10+00 TO STA. 15+00
1"=20'

CONSTRUCTION BASELINE (B) LAYOUT TABLE

LINE TABLE		
LINE	LENGTH	BEARING
L1	432.08	N36°35'43"E
L2	307.14	N26°41'45"E
L3	262.08	N39°31'23"E
L4	375.04	N69°19'10"E
L5	221.66	N81°54'34"E
L6	291.43	N30°47'44"E
L7	206.44	N20°53'23"E
L8	217.18	N76°08'54"E
L9	222.89	S68°48'57"E
L10	439.55	S51°07'12"E

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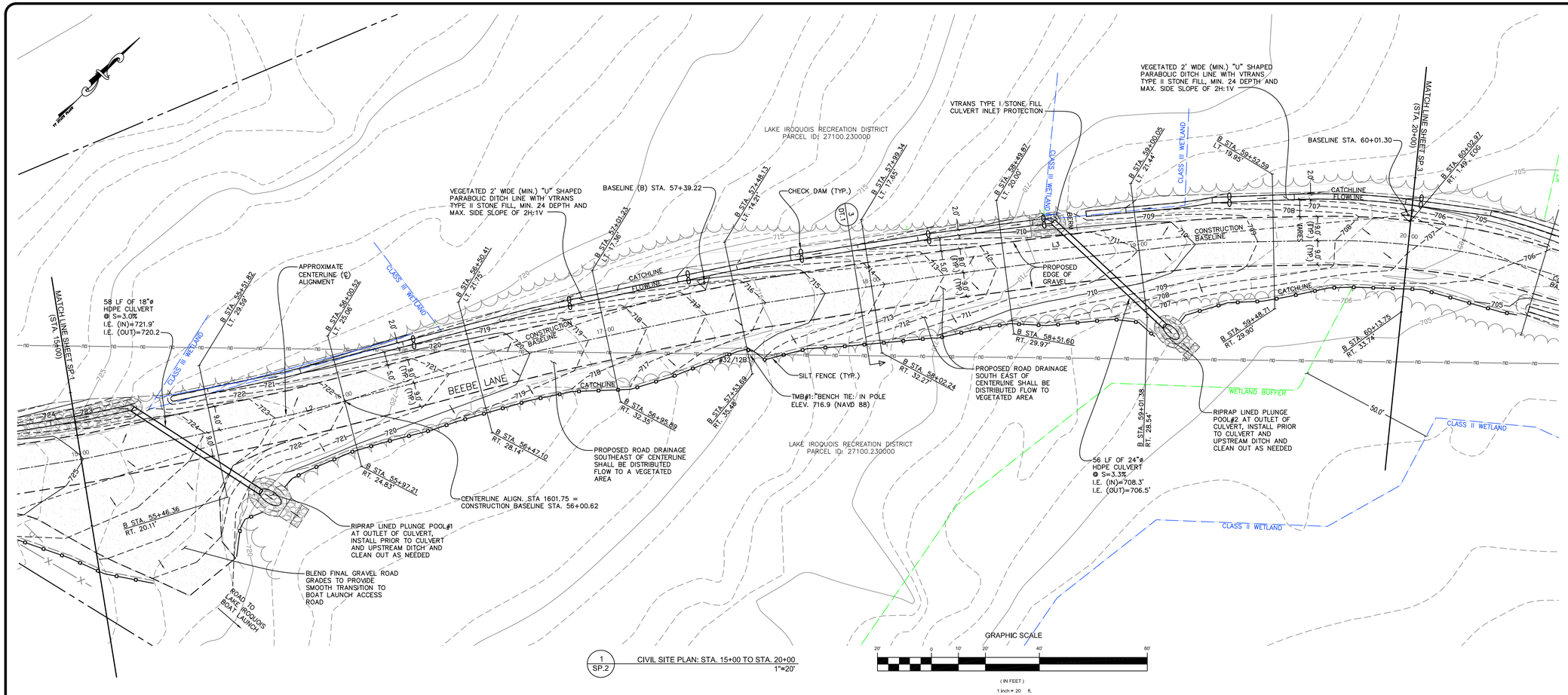
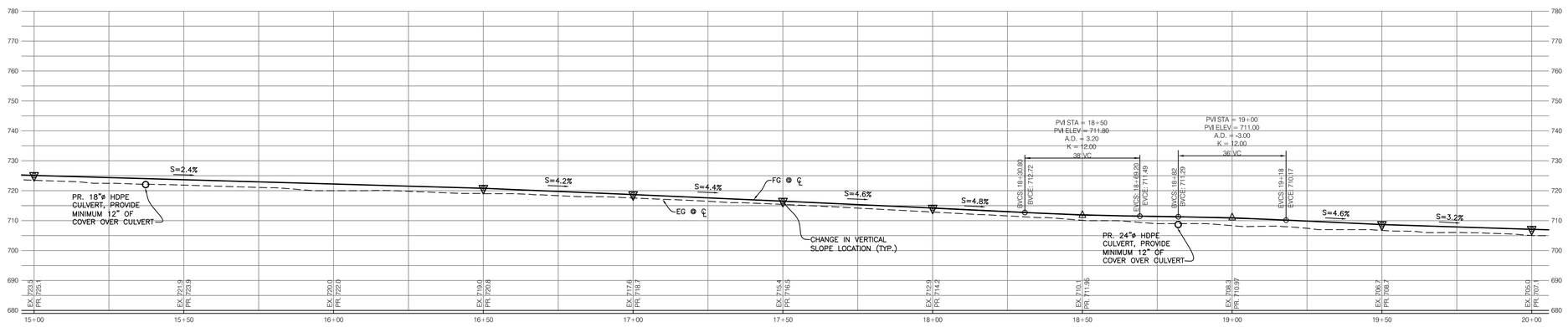
BEEBE LANE - ROAD AND STORMWATER
CIVIL SITE AND PROFILE DESIGN
WILLISTON, VT

DRAWN	SJD
CHECKED	SJD
DATE	12/20/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	SP.1



1 SP.2 CIVIL SITE PLAN: STA. 15+00 TO STA. 20+00
1"=20'



2 SP.2 CIVIL PROFILE VIEW: STA. 15+00 TO STA. 20+00
1"=20'

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L9	222.89	S68°48'57"E
L10	439.55	S51°07'12"E

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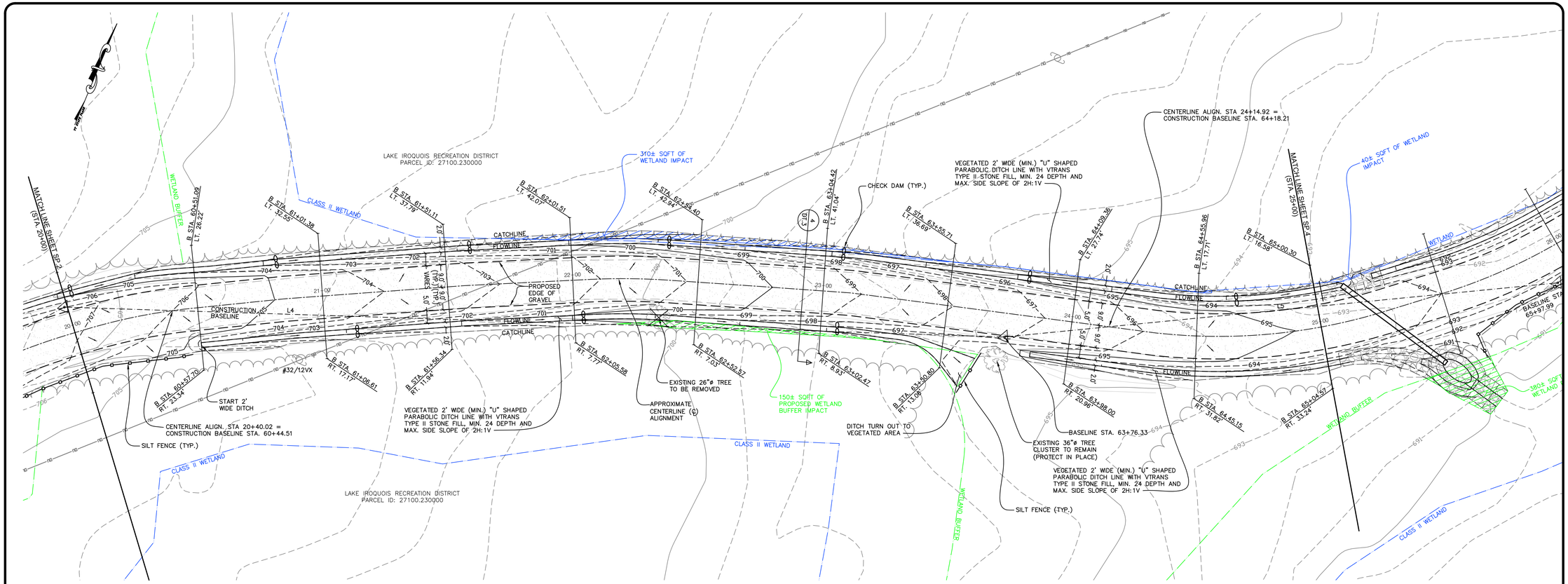
NO. 74333
PROFESSIONAL ENGINEER

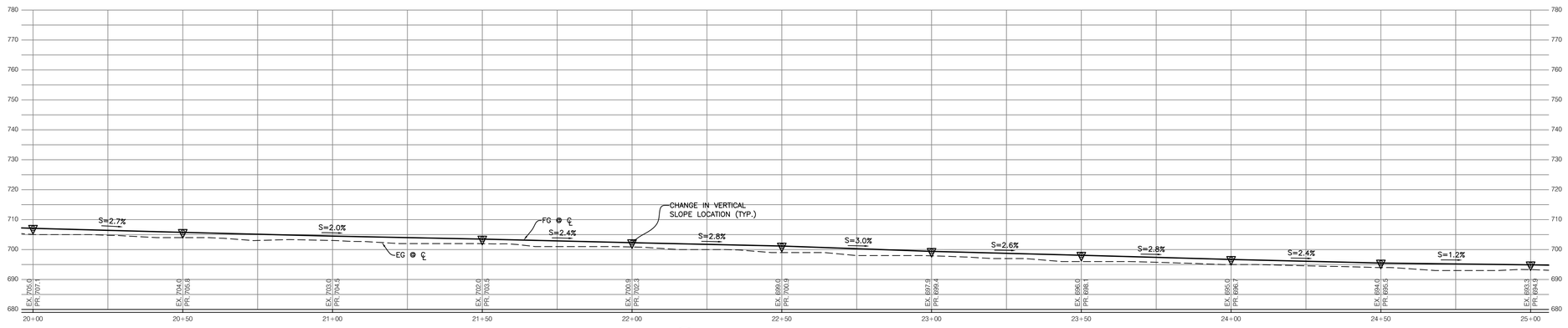
LAKE IROQUOIS RECREATION DISTRICT
BEEBE LANE - ROAD AND STORMWATER
CIVIL SITE AND PROFILE DESIGN
WILLISTON, VT

DRAWN	SJD
CHECKED	SJD
DATE	12/20/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	SP.2



1 SP.3 — CIVIL SITE PLAN: STA. 20+00 TO STA. 25+00
1"=20'

GRAPHIC SCALE
20' 0 10' 20' 40' 80'
(IN FEET)
1 inch = 20 ft.



2 SP.3 — CIVIL PROFILE VIEW: STA. 20+00 TO STA. 25+00
1"=20'

CONSTRUCTION BASELINE (B) LAYOUT TABLE

LINE TABLE		
LINE	LENGTH	BEARING
L1	432.08	N36°35'43"E
L2	307.14	N26°41'45"E
L3	262.08	N39°31'23"E
L4	375.04	N69°19'10"E
L5	221.66	N61°54'34"E
L6	291.43	N30°47'44"E
L7	206.44	N20°53'23"E
L8	217.18	N76°08'54"E
L9	222.89	S68°48'57"E
L10	439.55	S51°07'12"E

FINAL DESIGN

REVISIONS	BY

Environmental Science & Engineering
589 Avenue D, Suite 10
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Williston, VT 05495
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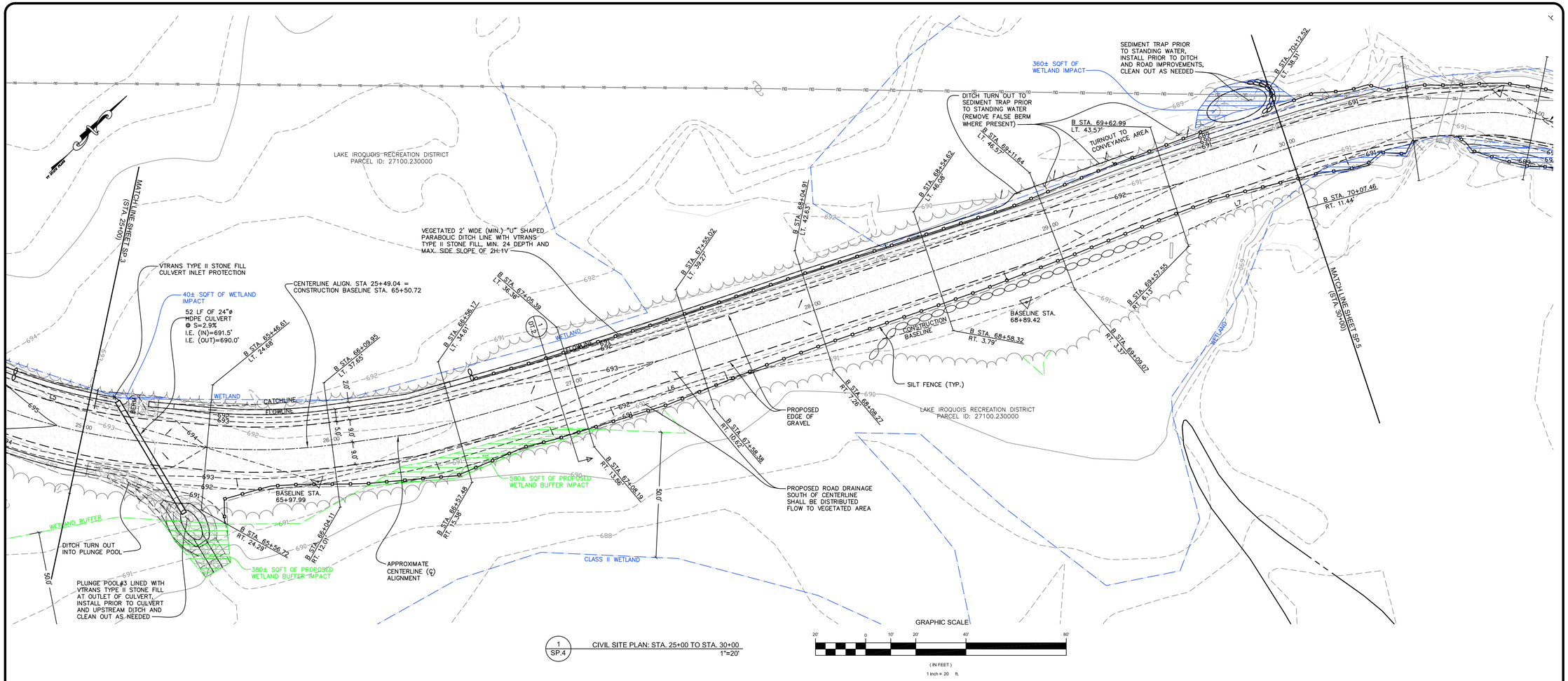
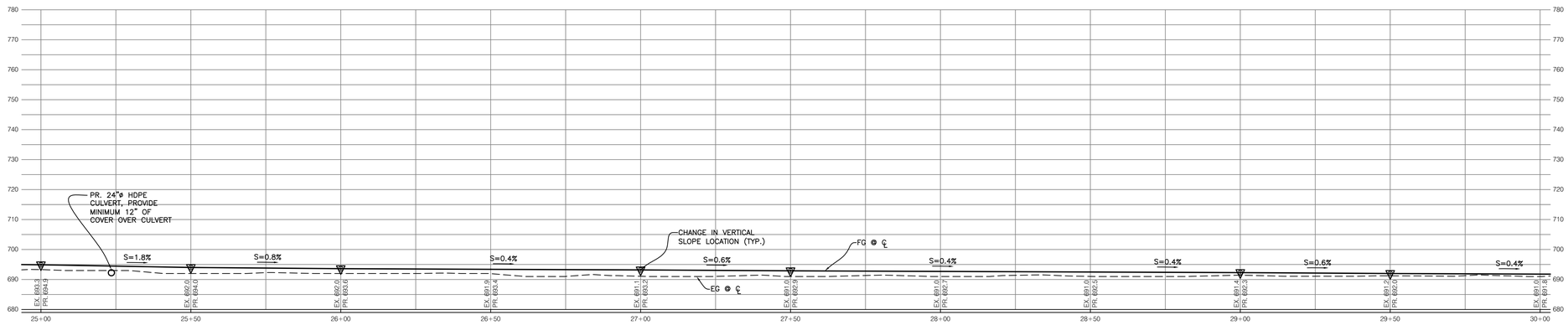
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	SP.3



1 SP.4 CIVIL SITE PLAN: STA. 25+00 TO STA. 30+00
1"=20'



2 SP.4 CIVIL PROFILE VIEW: STA. 25+00 TO STA. 30+00
1"=20'

CONSTRUCTION BASELINE (B) LAYOUT TABLE

LINE TABLE		
LINE	LENGTH	BEARING
L1	432.08	N36°35'43"E
L2	307.14	N26°41'45"E
L3	262.08	N39°31'23"E
L4	375.04	N69°19'10"E
L5	221.66	N61°54'34"E
L6	291.43	N30°47'44"E
L7	206.44	N20°53'23"E
L8	217.18	N76°08'54"E
L9	222.89	S68°48'57"E
L10	439.55	S51°07'12"E

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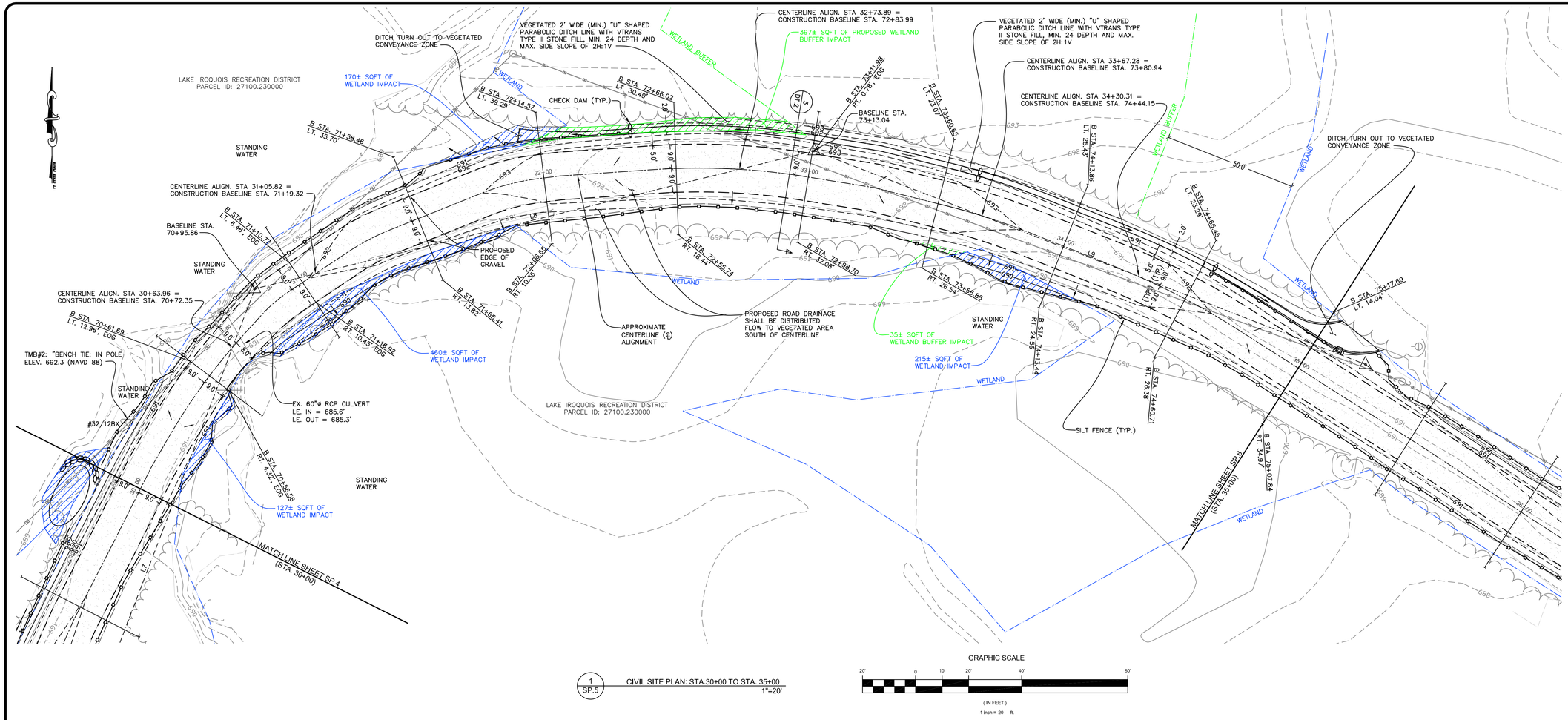
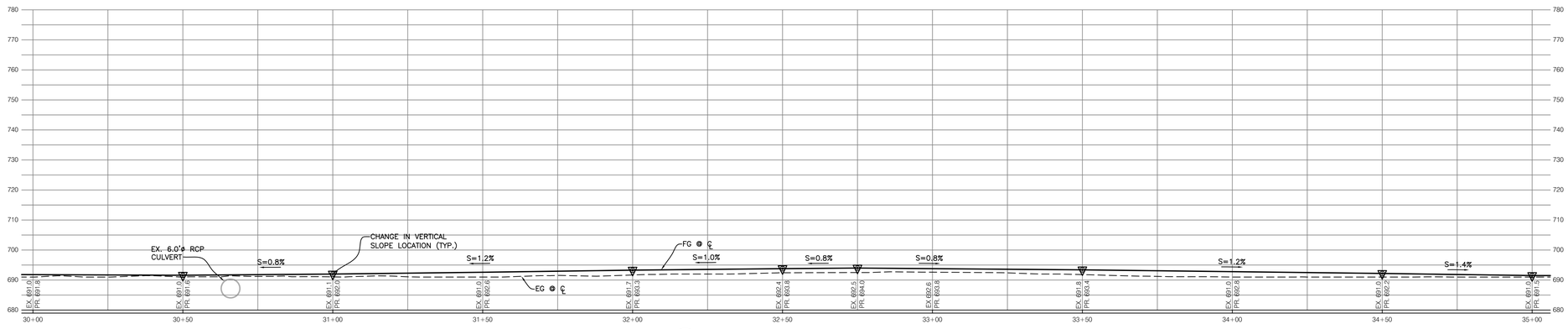
CHECKED	SJD
DATE	12/20/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	SP.4



1 SP.5 CIVIL SITE PLAN: STA.30+00 TO STA. 35+00
1"=20'

GRAPHIC SCALE
20' 0 10' 20' 40' 80'
(IN FEET)
1 inch = 20 ft.



2 SP.5 CIVIL PROFILE VIEW: STA. 30+00 TO STA. 35+00
1"=20'

CONSTRUCTION BASELINE (B) LAYOUT TABLE

LINE TABLE		
LINE	LENGTH	BEARING
L1	432.08	N36°35'43"E
L2	307.14	N26°41'45"E
L3	262.08	N39°31'23"E
L4	375.04	N69°19'10"E
L5	221.66	N61°54'34"E
L6	291.43	N30°47'44"E
L7	206.44	N20°53'23"E
L8	217.18	N76°08'54"E
L9	222.89	S68°48'57"E
L10	439.55	S51°07'12"E

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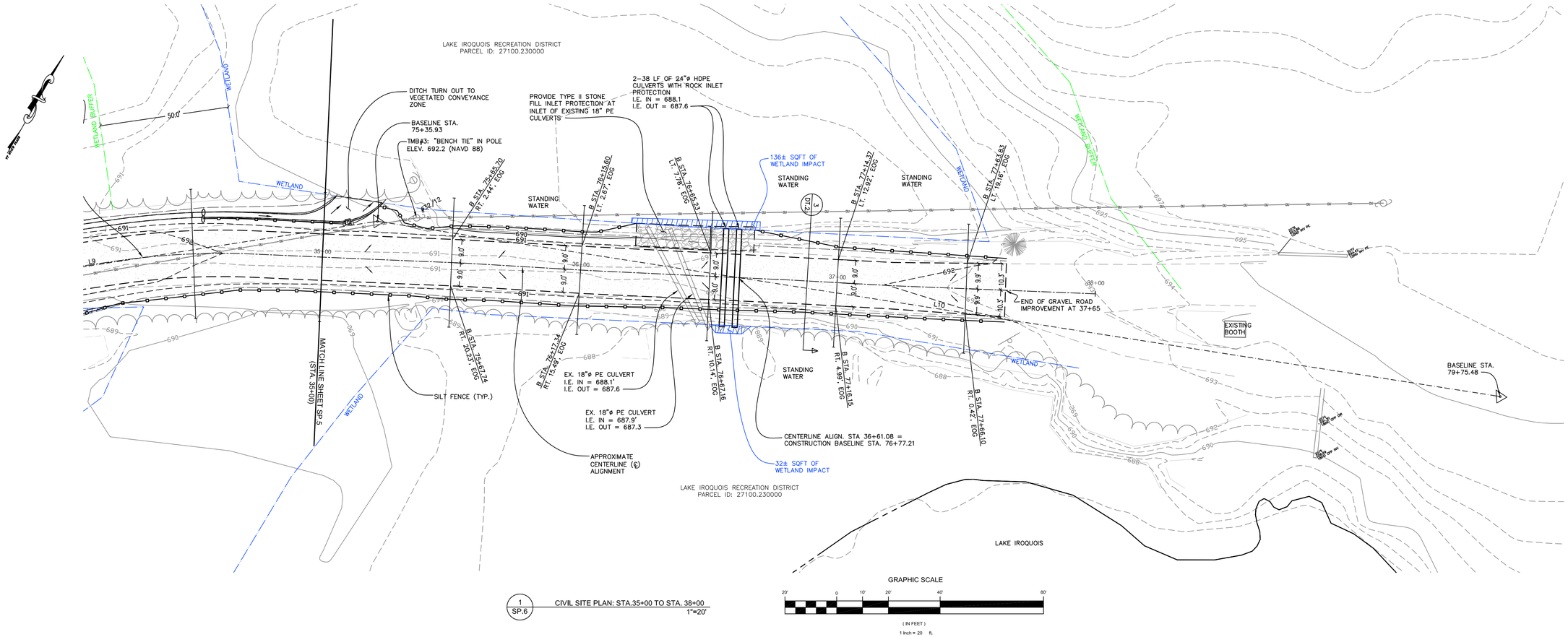
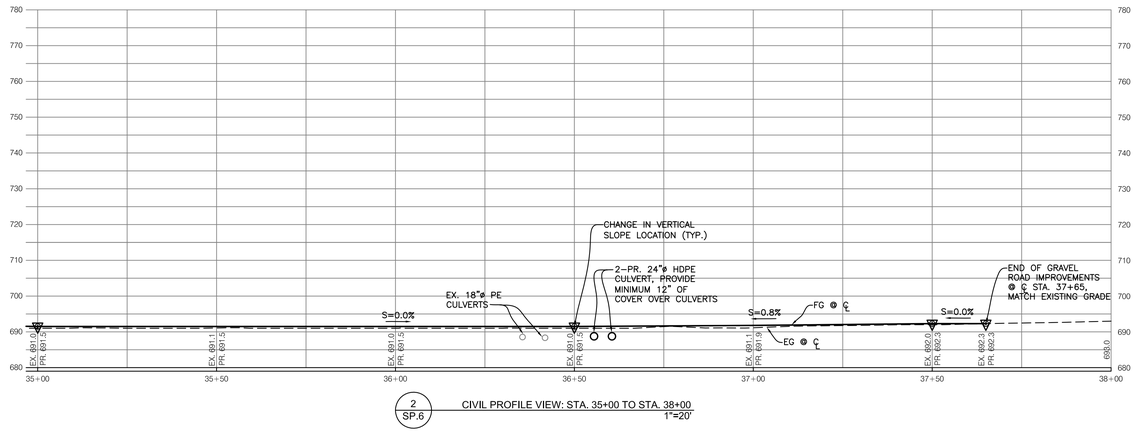
SHEET	SP.5



1 SP.6 CIVIL SITE PLAN: STA.35+00 TO STA. 38+00
1"=20'



2 SP.6 CIVIL PROFILE VIEW: STA. 35+00 TO STA. 38+00
1"=20'

CONSTRUCTION BASELINE (B) LAYOUT TABLE

LINE TABLE		
LINE	LENGTH	BEARING
L1	432.08	N36°35'43"E
L2	307.14	N26°41'45"E
L3	262.08	N39°31'23"E
L4	375.04	N69°19'10"E
L5	221.66	N81°54'34"E
L6	291.43	N30°47'44"E
L7	206.44	N20°53'23"E
L8	217.18	N76°08'54"E
L9	222.89	S68°48'57"E
L10	439.55	S51°07'12"E

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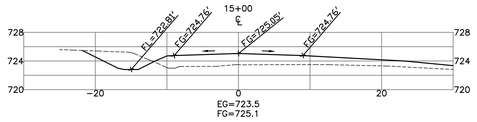
SHEET	SP.6



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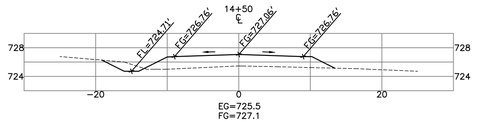

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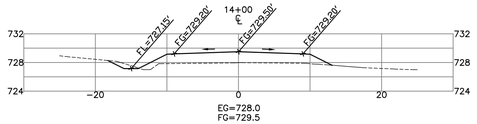

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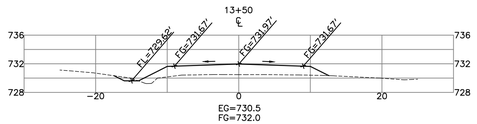

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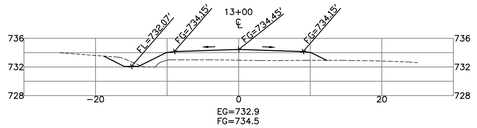

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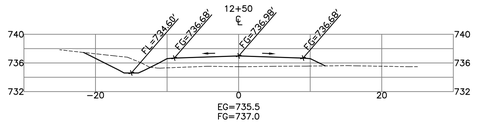

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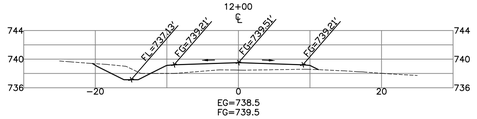

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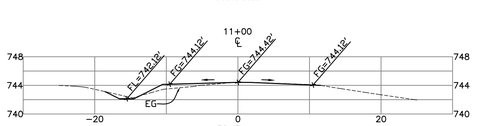

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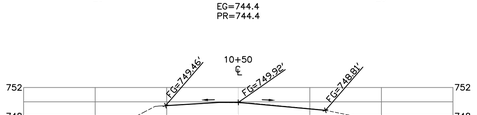

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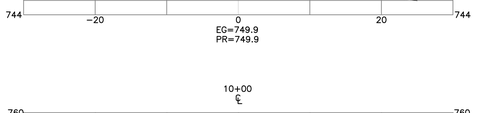

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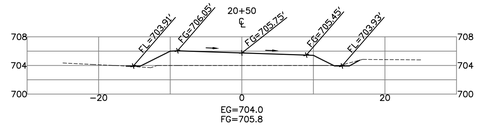

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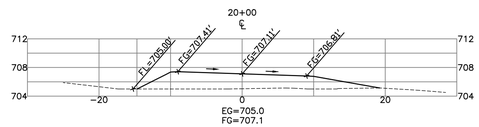

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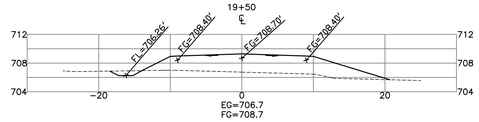

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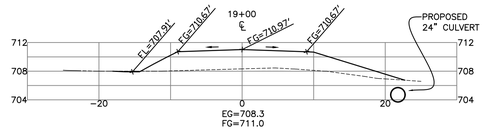

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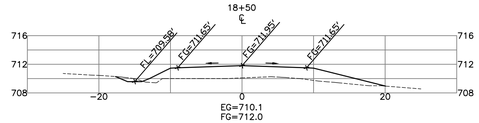

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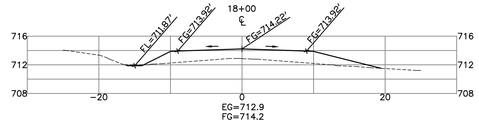

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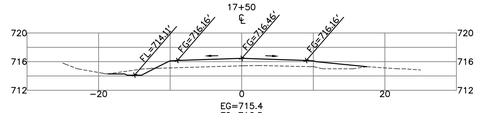

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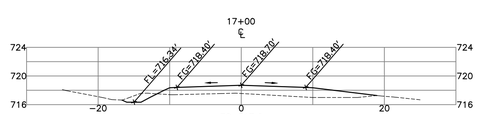

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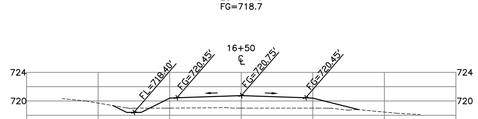

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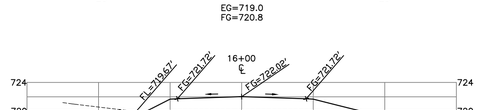

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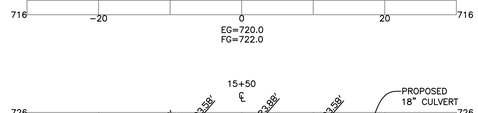

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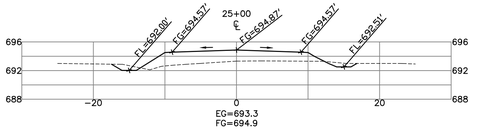

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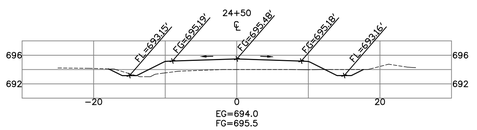

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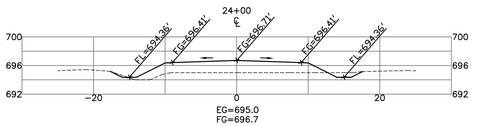

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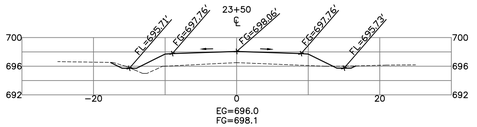

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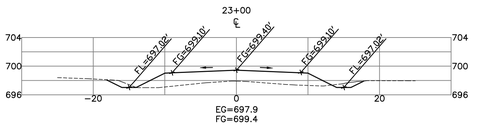

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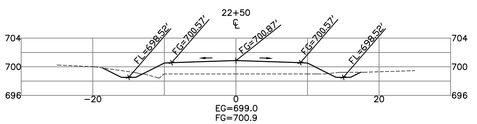

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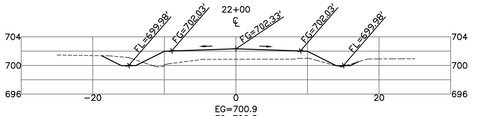

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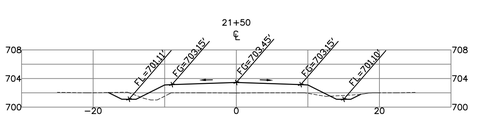

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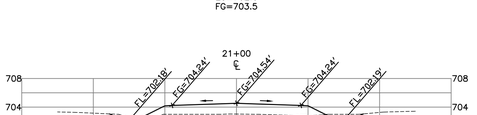

EG=703.0
FG=704.5

LEGEND

EXISTING GRADE (EG)

FINISHED GRADE (FG)

1 / XS.1 CROSS SECTIONS: 10+00 TO 25+00
1"=10'

GRAPHIC SCALE

10' 0 5' 10' 20' 40'

(IN FEET)

1 inch = 10 ft.

FINAL DESIGN

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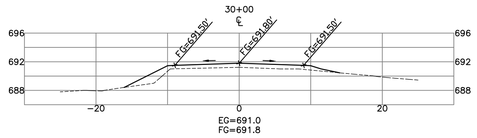
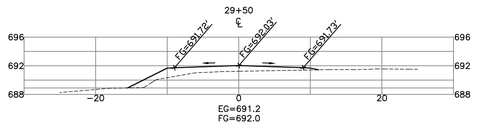
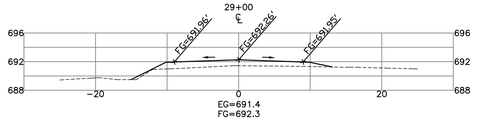
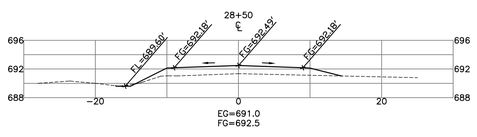
LAKE IROQUOIS RECREATION DISTRICT
BEEBE LANE - ROAD AND STORMWATER
CROSS SECTIONS
WILLISTON, VT

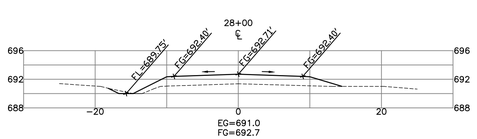
DRAWN	TB
CHECKED	SJD
DATE	12/20/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	XS.1

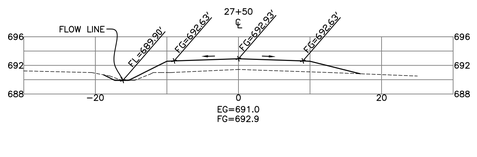


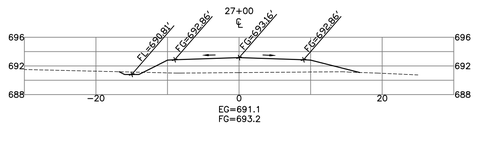


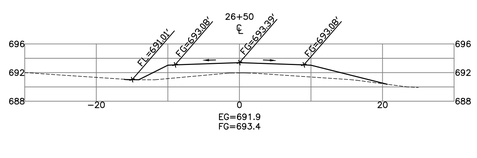


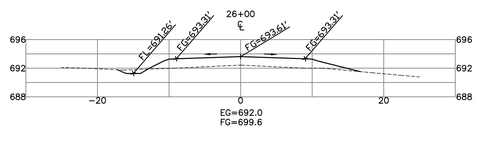


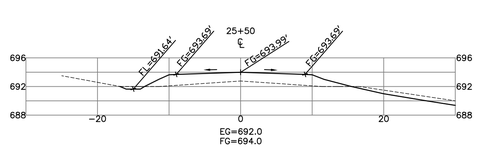


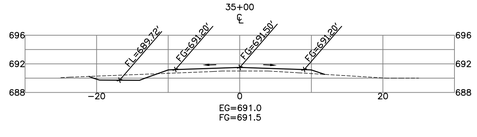


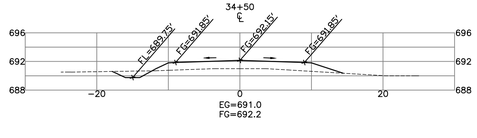


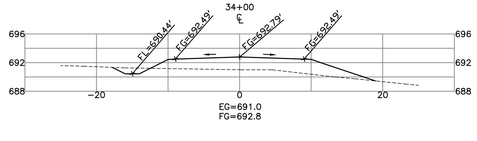


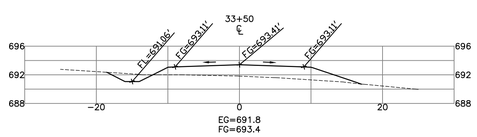


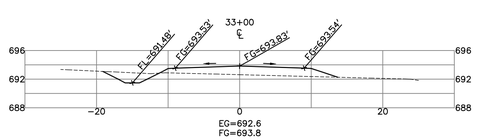


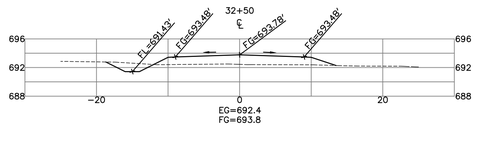


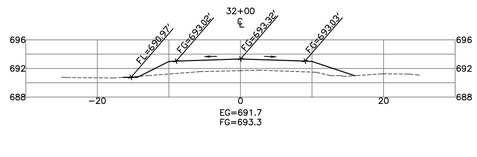


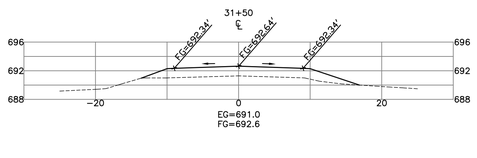


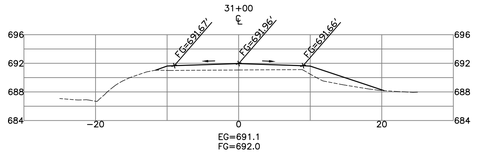


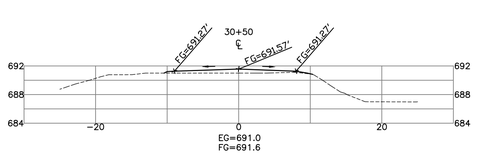


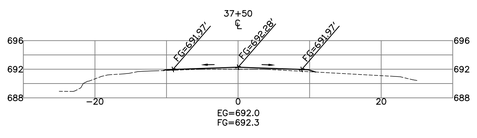


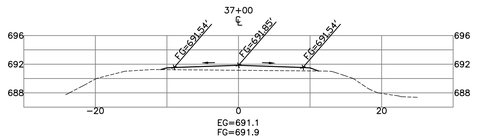


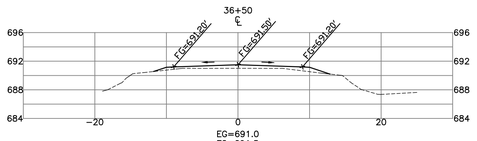


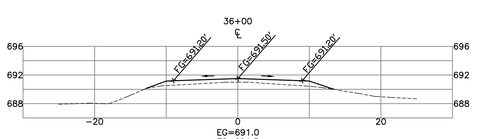


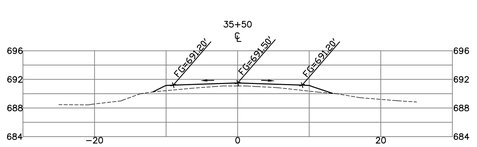












1 / XS.2 — CROSS SECTIONS: 25+50 TO 37+50, 1"=10'

GRAPHIC SCALE

10' 0 5' 10' 20' 40'

(IN FEET)
1 inch = 10 ft.

LEGEND

EXISTING GRADE (EG)

FINISHED GRADE (FG)

FINAL DESIGN

REVISIONS	BY

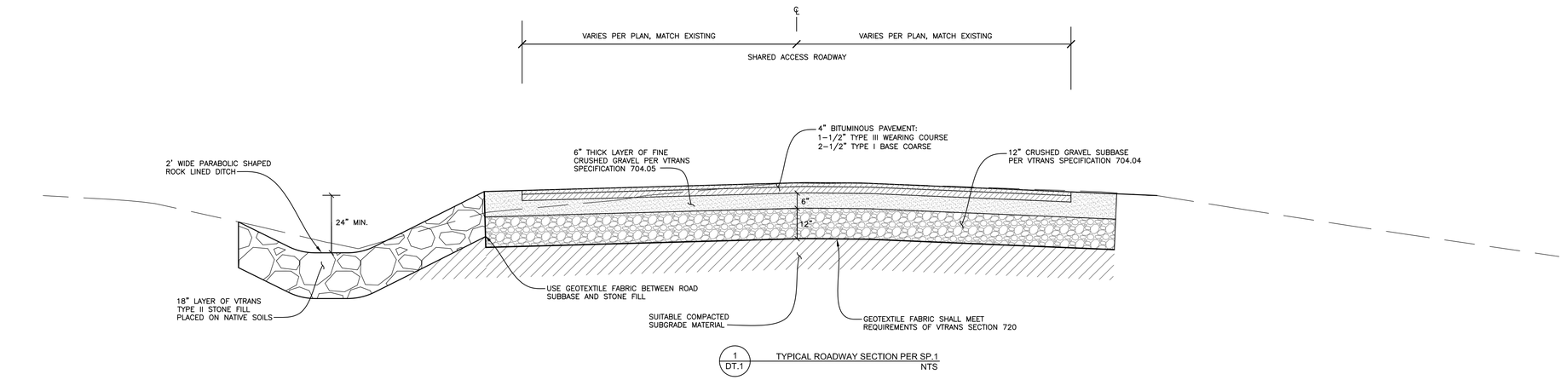
Environmental Science & Engineering
589 Avenue D, Suite 10
PO Box 787
Williston, VT 05495
www.kas-consulting.com
802 383 0486 p
802 383 0490 f

kas

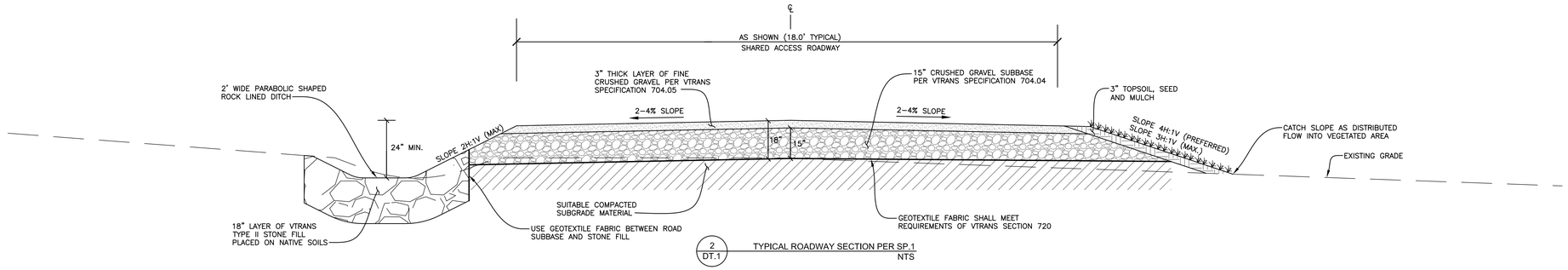
STATE OF VERMONT
STEPHEN J.C. DIGLIO
NO. 74333
PROFESSIONAL ENGINEER

LAKE IROQUOIS RECREATION DISTRICT
BEEBE LANE - ROAD AND STORMWATER
CROSS SECTIONS
WILLISTON, VT

DRAWN	TB
CHECKED	SJD
DATE	12/20/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	XS.2



1 DT.1 TYPICAL ROADWAY SECTION PER SP.1
NTS



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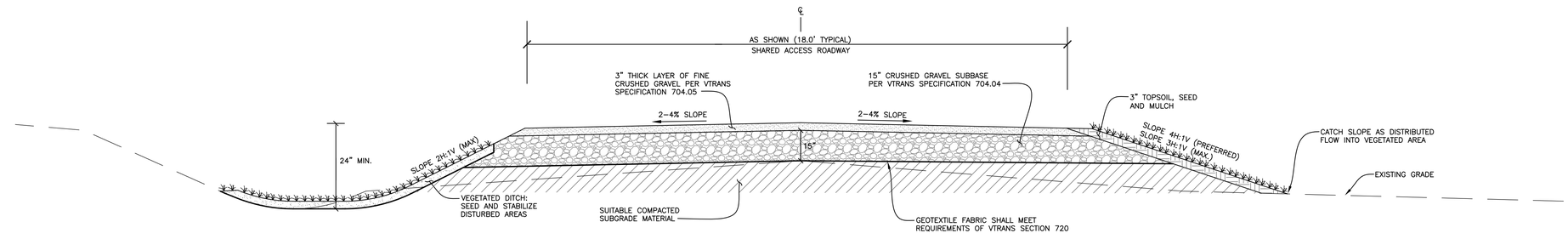

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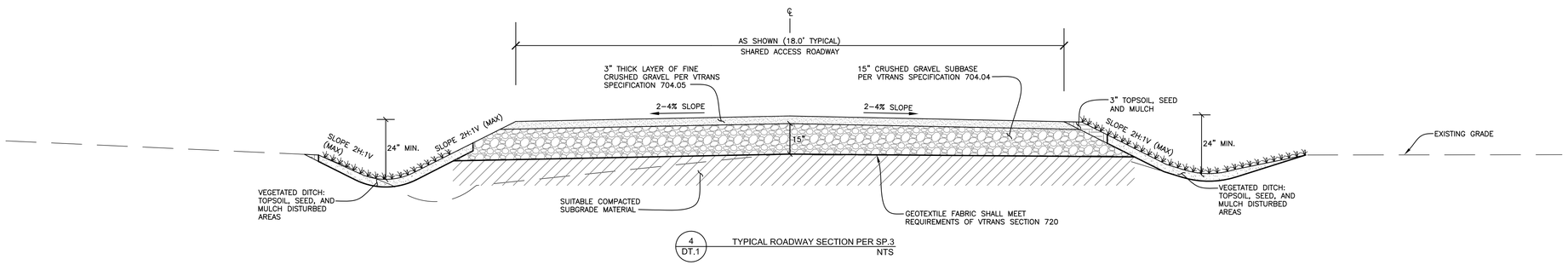

4 DT.1 TYPICAL ROADWAY SECTION PER SP.3
NTS

FINAL DESIGN

REVISIONS	BY

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Williston, VT 05495
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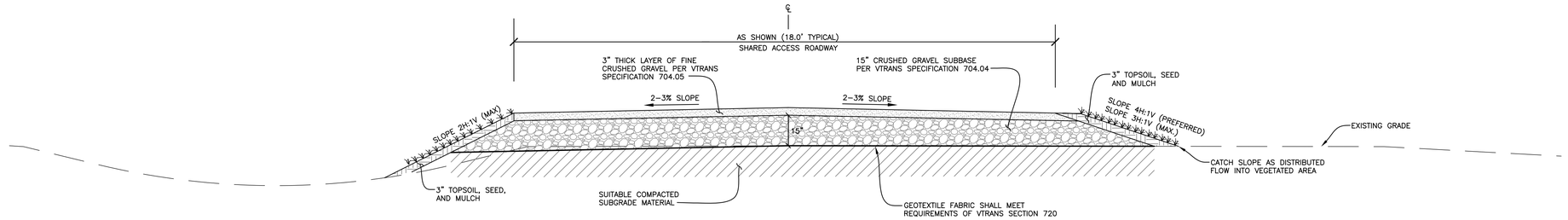
LAKE IROQUOIS RECREATION DISTRICT
BEEBE LANE - ROAD AND STORMWATER
CROSS SECTION DESIGN
WILLISTON, VT

DRAWN	TB
CHECKED	SJD
DATE	9/30/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	DT.1



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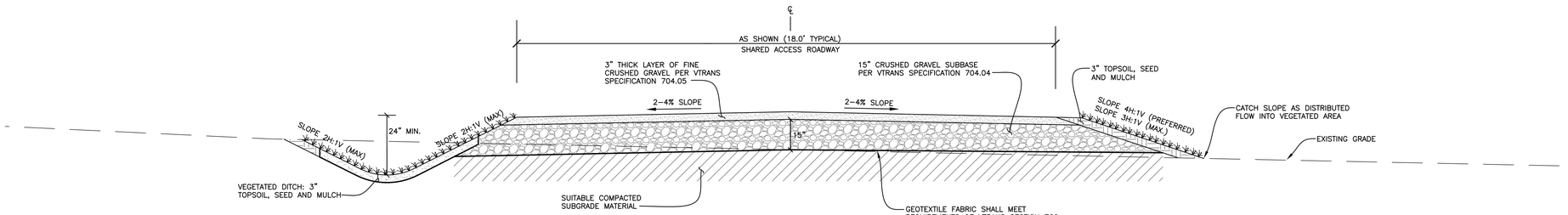

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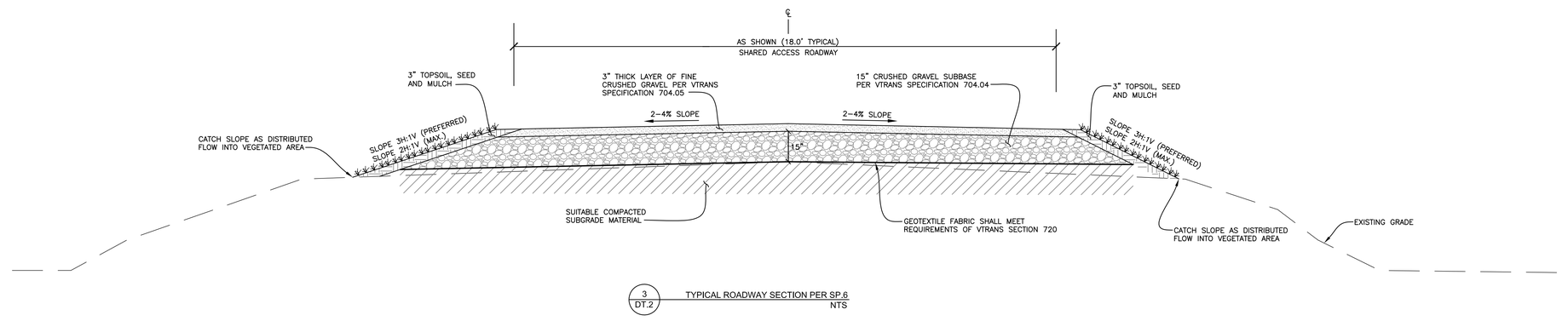

3 DT.2 TYPICAL ROADWAY SECTION PER SP.6
NTS

FINAL DESIGN

REVISIONS	BY

Environmental Science & Engineering
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PO Box 787
Williston, VT 05495
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802 383 0486 p
802 383 0490 f

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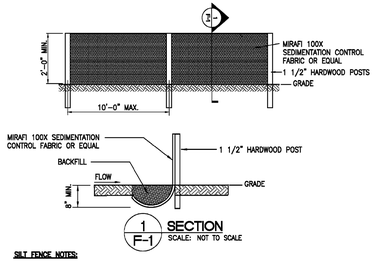
LAKE IROQUOIS RECREATION DISTRICT
BEEBE LANE - ROAD AND STORMWATER
CROSS SECTION DESIGN
WILLISTON, VT

DRAWN	TB
CHECKED	SJD
DATE	9/30/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	DT.2

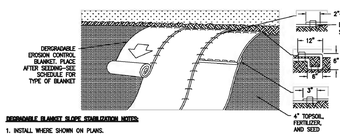


SILT FENCE NOTES:

1. SILT FENCE SHALL BE PRE-FABRICATED EROSION CONTROL FENCE BY MIRAFI OR APPROVED EQUAL.
2. INSTALL WHERE SHOWN ON PLANS. THE FENCE SHALL BE INSTALLED PARALLEL TO CONTOURS WHERE POSSIBLE. THE ENDS OF THE FENCE SHOULD BE CURVED UPHILL TO PREVENT FLOW AROUND THE ENDS.
3. SECTIONS OF THE SILT FENCE SHALL BE JOINED TO OVERLAP BY FOLDING FABRIC AROUND EACH POST ONE FULL TURN. DRIVE POSTS TIGHTLY TOGETHER AND SECURE TOPS OF POSTS BY TYING OFF WITH CORD OR WIRE TO PREVENT FLOW-THROUGH OR BUILT-UP SEDIMENT AT JOINT.
4. INSPECT ALL SILT FENCE AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER EACH RAINFALL. MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND SEDIMENT REMOVED WHEN SEDIMENT REACHES 1/3 HEIGHT OF SILT FENCE.
5. UPON FINAL STABILIZATION OF THE AREA UPHILL OF THE FABRIC, THE FABRIC SHALL BE REMOVED WITH THE APPROVAL OF THE ENGINEER.

TOWN OF WILLISTON	
PUBLIC WORKS DEPARTMENT	
SCALE: NTS	DATE: APRIL 2010
DRAWING #: F-1	DRAWN BY: FA&A
TEMPORARY SILT FENCE DETAIL	

1 / DT.3 TEMPORARY SILT FENCE DETAIL
N.T.S.



BIODEGRADABLE BLANKET SLOPE STABILIZATION NOTES:

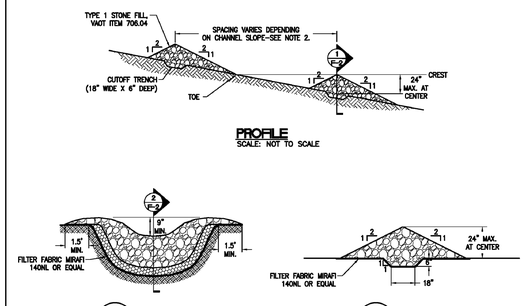
1. INSTALL WHERE SHOWN ON PLANS.
2. CONTRACTOR SHALL USE BIODEGRADABLE STAKES FOR FASTENERS. WIRE STAPLES ARE NOT ACCEPTABLE.
3. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
4. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF BIODEGRADABLE STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAKING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF BIODEGRADABLE STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
5. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING BIODEGRADABLE STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, BIODEGRADABLE STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
6. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
7. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
8. IN LOOSE SOIL CONDITIONS, THE USE OF STAKE LENGTHS GREATER THAN 8" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

BIODEGRADABLE EROSION CONTROL BLANKET SCHEDULE

TYPE	SLOPE (X)	BLANKET DESCRIPTION	MODEL NO.
A	4:1-3:1	SINGLE NET STRAW BLANKET	NORTH AMERICAN GREEN S75 OR EQUAL
B	3:1-2:1	DOUBLE NET STRAW BLANKET	NORTH AMERICAN GREEN S150 OR EQUAL
C	2:1-1:1	DOUBLE NET BLANKET 70% STRAW/30% COCONUT	NORTH AMERICAN GREEN S150 OR EQUAL
D	1:1 OR GREATER	DOUBLE NET COCONUT BLANKET	NORTH AMERICAN GREEN C125 OR EQUAL

TOWN OF WILLISTON	
PUBLIC WORKS DEPARTMENT	
SCALE: NTS	DATE: APRIL 2010
DRAWING #: F-3	DRAWN BY: FA&A
EROSION CONTROL BLANKET DETAIL	

2 / DT.3 EROSION CONTROL BLANKET DETAIL
N.T.S.



STONE CHECK DAM NOTES:

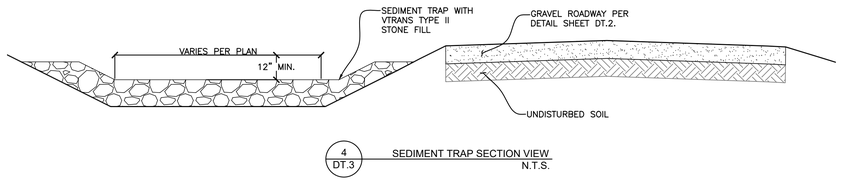
1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION AT ALL LOCATIONS SHOWN ON THE PLANS.
2. SET SPACING OF THE CHECK DAMS TO ASSURE THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT THE FLOW OF WATER AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT THE CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
6. INSPECT ALL CHECK DAMS AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER EACH RAINFALL. MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND SEDIMENT REMOVED WHEN SEDIMENT REACHES 1/3 HEIGHT OF CHECK DAM.
7. UPON STABILIZATION OF THE AREA UPSTREAM OF THE STONE CHECK DAM, THE CHECK DAM SHALL BE REMOVED WITH THE APPROVAL OF THE ENGINEER. THE AREA UNDER THE STONE CHECK DAM SHALL BE SEEDED AND MULCHED UPON REMOVAL.

TOWN OF WILLISTON	
PUBLIC WORKS DEPARTMENT	
SCALE: NTS	DATE: APRIL 2010
DRAWING #: F-2	DRAWN BY: FA&A
TEMPORARY STONE CHECK DAM DETAIL	

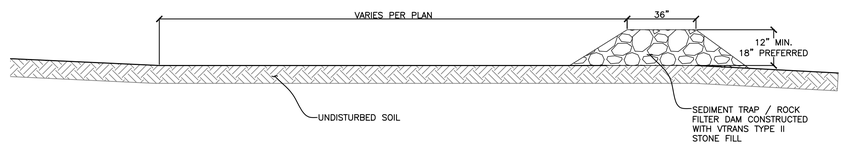
3 / DT.3 TEMPORARY STONE CHECK DAM DETAIL
N.T.S.

SHEET NOTES

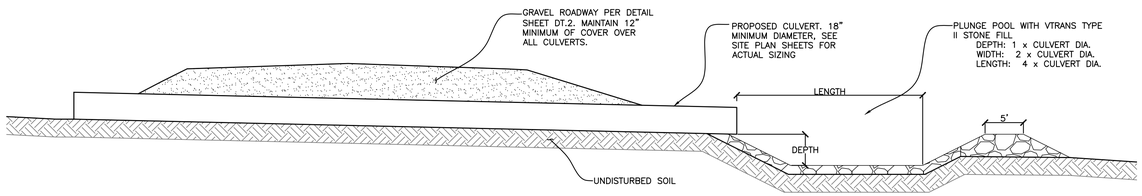
1. SEE NOTES SHEET NO.1 FOR EROSION PREVENTION CONTROL NOTES.
2. SEDIMENT TRAP AND PLUNGE POOL SECTIONS AND SIZING BASED ON VTRANS "VERMONT BETTER ROADS MANUAL" JANUARY 2019.



4 / DT.3 SEDIMENT TRAP SECTION VIEW
N.T.S.



5 / DT.3 POOL WITH SEDIMENT TRAP SECTION VIEW
N.T.S.



6 / DT.3 CULVERT WITH PLUNGE POOL SECTION VIEW
N.T.S.

FINAL DESIGN

REVISIONS	BY

Environmental Science & Engineering
589 Avenue D, Suite 10
PO Box 787
Williston, VT 05495
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802 383 0490 f

kas

STATE OF VERMONT
STEPHEN J.C. DIGLIO
NO. 74333
REGISTERED PROFESSIONAL ENGINEER

LAKE IROQUOIS RECREATION DISTRICT
BEEBE LANE - ROAD AND STORMWATER
EROSION PREVENTION AND
SEDIMENT CONTROL DETAILS
WILLISTON, VT

DRAWN	TB
CHECKED	SJD
DATE	12/20/19
SCALE	AS SHOWN
JOB NO.	801190223
SHEET	DT.3

Beebe Lane: Engineer's Estimate of Probable Construction Costs
Based Final Design Plans Dated December 2019

VTRANS No.	Item Description	unit	Qnty	Price	Total
201.10	Clearing & Grubbing, Including Individual Trees and Stumps	LS	1	$25,000.00	$25,000.00
203.15	Common Excavation	CY	2,000	$15.00	$30,000.00
203.28	Excavation of Pavement and Surfaces	CY	55	$32.00	$1,760.00
301.15	Subbase of Gravel	CY	2,430	$37.50	$91,125.00
301.26	Subbase of Gravel, Fine Graded	CY	520	$30.00	$15,600.00
406.25	Marshall Bituminous Concrete Pavement	TON	110	$150.00	$16,500.00
613.11	Stone Fill, Type II	CY	475	$45.00	$21,375.00
653.25	Check Dam, Type I	CY	20	$50.00	$1,000.00
635.11	Mobilization/Demobilization	LS	1	$20,000.00	$20,000.00
641.10	Traffic Control	LS	1	$12,500.00	$12,500.00
649.11	Geotextile for Roadbed Separator	SY	5,900	$1.50	$8,850.00
651.15	Seed	LB	230	$8.12	$1,867.60
651.18	Fertilizer	LB	100	$3.53	$353.00
651.20	Agricultural Limestone	TON	1	$558.88	$558.88
651.35	Topsoil	CY	350	$35.00	$12,250.00
653.10	Hay Mulch	TON	10	$708.61	$7,086.10
653.475	Silt Fence	LF	3,420	$4.00	$13,680.00
653.55	Project Demarcation Fence	LF	5,600	$0.92	$5,152.00
900.600	Erosion Control	LS	1	$5,000.00	$5,000.00
900.605	18" HDPE Culvert	LF	58	$16.50	$957.00
900.608	24" HDPE Culvert	LF	184	$26.50	$4,876.00
				SUB TOTAL	$295,490.58
				PERMIT FEES	$2,150.00
				BID/CONSTRUCTION SUPPORT	$7,500.00
				TOTAL	**$305,140.58**