

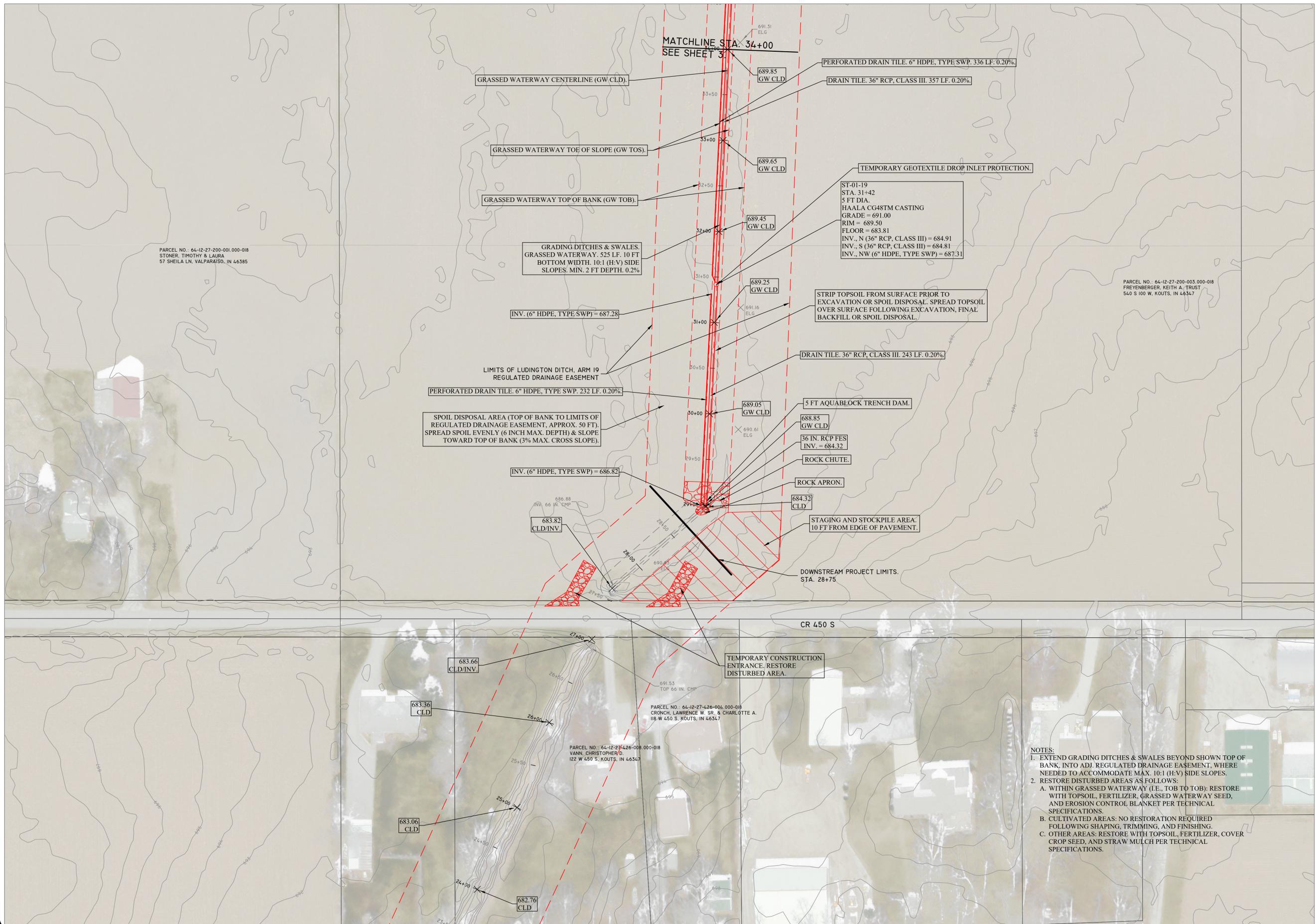
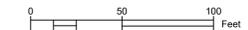
CONSTRUCTION PLANS
 FOR
LUDINGTON DITCH, ARM 19
DRAIN TILE RECONSTRUCTION, PHASE 1

PORTER CO. DEPARTMENT OF DEVELOPMENT & STORMWATER MANAGEMENT
 APRIL 8, 2021

The following Construction Plans shall apply to and govern the project designated as **Ludington Ditch, Arm 19 – Drain Tile Reconstruction, Phase 1**. Such Construction Plans supplement the specifications contained in the documents listed in the table below and, in case of conflict with any part or parts of said specifications, the Engineer shall determine which specifications shall take precedence and govern. The following hierarchy will be applied by the Engineer in resolving any conflict, error, ambiguity, or discrepancy in or between said specifications.

Specification	Issuing Agency	Adopted/Dated
Technical Specifications for Ludington Ditch, Arm 19 – Drain Tile Reconstruction, Phase 1	Porter Co. Department of Development & Storm Water Management	April 8, 2021
Construction Plans for Ludington Ditch, Arm 19 – Drain Tile Reconstruction, Phase 1	Porter Co. Department of Development & Storm Water Management	April 8, 2021
General Specifications to the Construction & Maintenance Services Agreements	Porter Co. Department of Development & Storm Water Management	February 1, 2021

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PARCEL NO.: 64-12-27-200-001-000-018
 STONER, TIMOTHY & LAURA
 57 SHEILA LN. VALPARAISO, IN 46385

PARCEL NO.: 64-12-27-200-003-000-018
 FREYENBERGER, KEITH A. TRUST
 540 S 100 W, KOUTS, IN 46347

MATCHLINE STA. 34+00
 SEE SHEET 3

- GRASSED WATERWAY CENTERLINE (GW CLD)
- GRASSED WATERWAY TOE OF SLOPE (GW TOS)
- GRASSED WATERWAY TOP OF BANK (GW TOB)
- GRADING DITCHES & SWALES. GRASSED WATERWAY. 525 LF. 10 FT BOTTOM WIDTH. 10:1 (H:V) SIDE SLOPES. MIN. 2 FT DEPTH. 0.2%
- LIMITS OF LUDINGTON DITCH, ARM 19 REGULATED DRAINAGE EASEMENT
- SPOIL DISPOSAL AREA (TOP OF BANK TO LIMITS OF REGULATED DRAINAGE EASEMENT, APPROX. 50 FT). SPREAD SPOIL EVENLY (6 INCH MAX. DEPTH) & SLOPE TOWARD TOP OF BANK (3% MAX. CROSS SLOPE).
- PERFORATED DRAIN TILE. 6" HDPE, TYPE SWP. 336 LF. 0.20%
- PERFORATED DRAIN TILE. 6" HDPE, TYPE SWP. 232 LF. 0.20%
- INV. (6" HDPE, TYPE SWP) = 687.28
- INV. (6" HDPE, TYPE SWP) = 686.82
- 683.82 CLD/INV.
- 683.66 CLD/INV.
- 683.36 CLD
- 683.06 CLD
- 682.76 CLD
- 689.85 GW CLD
- 689.65 GW CLD
- 689.45 GW CLD
- 689.25 GW CLD
- 689.05 GW CLD
- 688.85 GW CLD
- 684.32 CLD
- 691.31 ELG
- 691.16 ELG
- 690.61 ELG
- 691.53 TOP 66 IN. CMP
- 686.88 INV. 66 IN. CMP
- PERFORATED DRAIN TILE. 36" RCP, CLASS III. 357 LF. 0.20%
- PERFORATED DRAIN TILE. 36" RCP, CLASS III. 243 LF. 0.20%
- ST-01-19 STA. 31+42 5 FT DIA. HAALA CG48TM CASTING GRADE = 691.00 RIM = 689.50 FLOOR = 683.81 INV., N (36" RCP, CLASS III) = 684.91 INV., S (36" RCP, CLASS III) = 684.81 INV., NW (6" HDPE, TYPE SWP) = 687.31
- TEMPORARY GEOTEXTILE DROP INLET PROTECTION.
- STRIP TOPSOIL FROM SURFACE PRIOR TO EXCAVATION OR SPOIL DISPOSAL. SPREAD TOPSOIL OVER SURFACE FOLLOWING EXCAVATION, FINAL BACKFILL OR SPOIL DISPOSAL.
- DRAIN TILE. 36" RCP, CLASS III. 243 LF. 0.20%
- 5 FT AQUABLOCK TRENCH DAM
- ROCK CHUTE
- ROCK APRON
- STAGING AND STOCKPILE AREA. 10 FT FROM EDGE OF PAVEMENT.
- DOWNSTREAM PROJECT LIMITS. STA. 28+75
- CR 450 S
- TEMPORARY CONSTRUCTION ENTRANCE. RESTORE DISTURBED AREA.

- NOTES:**
1. EXTEND GRADING DITCHES & SWALES BEYOND SHOWN TOP OF BANK, INTO ADJ. REGULATED DRAINAGE EASEMENT, WHERE NEEDED TO ACCOMMODATE MAX. 10:1 (H:V) SIDE SLOPES.
 2. RESTORE DISTURBED AREAS AS FOLLOWS:
 - A. WITHIN GRASSED WATERWAY (I.E., TOB TO TOB): RESTORE WITH TOPSOIL, FERTILIZER, GRASSED WATERWAY SEED, AND EROSION CONTROL BLANKET PER TECHNICAL SPECIFICATIONS.
 - B. CULTIVATED AREAS: NO RESTORATION REQUIRED FOLLOWING SHAPING, TRIMMING, AND FINISHING.
 - C. OTHER AREAS: RESTORE WITH TOPSOIL, FERTILIZER, COVER CROP SEED, AND STRAW MULCH PER TECHNICAL SPECIFICATIONS.

NO.	DATE	REVISION	BY
1	4/8/21	FOR BIDDING	CRG

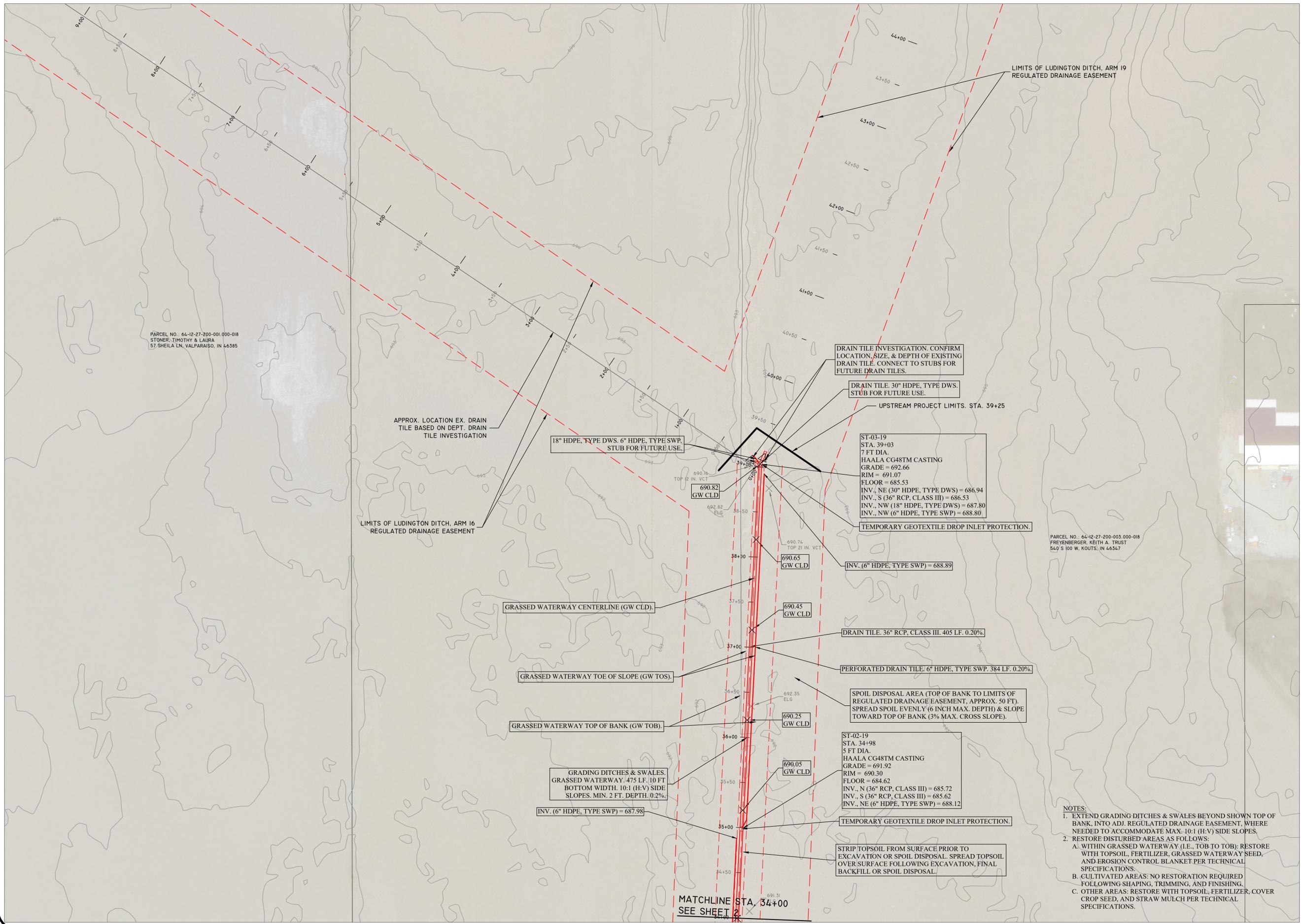
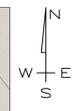
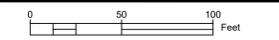
DESIGNED: CRG
 DRAWN: CRG
 CHECKED: MEN
 DATE: 6/21/19
 PROJECT NO.: P21-001



The Department of
STORM WATER MANAGEMENT
 Porter County, Indiana

PROJECT: LUDINGTON DITCH, ARM 19-DRAIN TILE RECONSTRUCTION, PHASE I
 LOCATION: CR 450 S TO CONFLUENCE WITH LUDINGTON DITCH, ARM 16
 SHEET TITLE: SHEET 2-PLAN STA. 28+75 TO STA. 34+00

© 2020 WATERSHED SERVICES, INC. PROJECT: LUDINGTON DITCH, ARM 19, STA. 28+75 TO STA. 34+00



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 FREYENBERGER, KEITH A. TRUST
 540 S 100 W, KOUTS, IN 46347

18" HDPE, TYPE DWS, 6" HDPE, TYPE SWP,
 STUB FOR FUTURE USE.

DRAIN TILE INVESTIGATION. CONFIRM
 LOCATION, SIZE, & DEPTH OF EXISTING
 DRAIN TILE. CONNECT TO STUBS FOR
 FUTURE DRAIN TILES.

DRAIN TILE. 30" HDPE, TYPE DWS,
 STUB FOR FUTURE USE.

UPSTREAM PROJECT LIMITS. STA. 39+25

ST-03-19
 STA. 39+03
 7 FT DIA.
 HAALA CG48TM CASTING
 GRADE = 692.66
 RIM = 691.07
 FLOOR = 685.53
 INV., NE (30" HDPE, TYPE DWS) = 686.94
 INV., S (36" RCP, CLASS III) = 686.53
 INV., NW (18" HDPE, TYPE DWS) = 687.80
 INV., NW (6" HDPE, TYPE SWP) = 688.80

TEMPORARY GEOTEXTILE DROP INLET PROTECTION.

INV. (6" HDPE, TYPE SWP) = 688.89

690.45
 GW CLD

DRAIN TILE. 36" RCP, CLASS III. 405 LF. 0.20%.

PERFORATED DRAIN TILE. 6" HDPE, TYPE SWP. 384 LF. 0.20%.

SPOIL DISPOSAL AREA (TOP OF BANK TO LIMITS OF
 REGULATED DRAINAGE EASEMENT, APPROX. 50 FT).
 SPREAD SPOIL EVENLY (6 INCH MAX. DEPTH) & SLOPE
 TOWARD TOP OF BANK (3% MAX. CROSS SLOPE).

690.25
 GW CLD

ST-02-19
 STA. 34+98
 5 FT DIA.
 HAALA CG48TM CASTING
 GRADE = 691.92
 RIM = 690.30
 FLOOR = 684.62
 INV., N (36" RCP, CLASS III) = 685.72
 INV., S (36" RCP, CLASS III) = 685.62
 INV., NE (6" HDPE, TYPE SWP) = 688.12

TEMPORARY GEOTEXTILE DROP INLET PROTECTION.

STRIP TOPSOIL FROM SURFACE PRIOR TO
 EXCAVATION OR SPOIL DISPOSAL. SPREAD TOPSOIL
 OVER SURFACE FOLLOWING EXCAVATION, FINAL
 BACKFILL OR SPOIL DISPOSAL.

GRASSED WATERWAY CENTERLINE (GW CLD).

GRASSED WATERWAY TOE OF SLOPE (GW TOS).

GRASSED WATERWAY TOP OF BANK (GW TOB).

GRADING DITCHES & SWALES.
 GRASSED WATERWAY. 475 LF. 10 FT
 BOTTOM WIDTH. 10:1 (H:V) SIDE
 SLOPES. MIN. 2 FT. DEPTH. 0.2%.

INV. (6" HDPE, TYPE SWP) = 687.98

LIMITS OF LUDINGTON DITCH, ARM 16
 REGULATED DRAINAGE EASEMENT

APPROX. LOCATION EX. DRAIN
 TILE BASED ON DEPT. DRAIN
 TILE INVESTIGATION

LIMITS OF LUDINGTON DITCH, ARM 19
 REGULATED DRAINAGE EASEMENT

MATCHLINE STA. 34+00
 SEE SHEET 2

- NOTES:
- EXTEND GRADING DITCHES & SWALES BEYOND SHOWN TOP OF BANK, INTO ADJ. REGULATED DRAINAGE EASEMENT, WHERE NEEDED TO ACCOMMODATE MAX. 10:1 (H:V) SIDE SLOPES.
 - RESTORE DISTURBED AREAS AS FOLLOWS:
 - WITHIN GRASSED WATERWAY (I.E. TOB TO TOB): RESTORE WITH TOPSOIL, FERTILIZER, GRASSED WATERWAY SEED, AND EROSION CONTROL BLANKET PER TECHNICAL SPECIFICATIONS.
 - CULTIVATED AREAS: NO RESTORATION REQUIRED FOLLOWING SHAPING, TRIMMING, AND FINISHING.
 - OTHER AREAS: RESTORE WITH TOPSOIL, FERTILIZER, COVER CROP SEED, AND STRAW MULCH PER TECHNICAL SPECIFICATIONS.

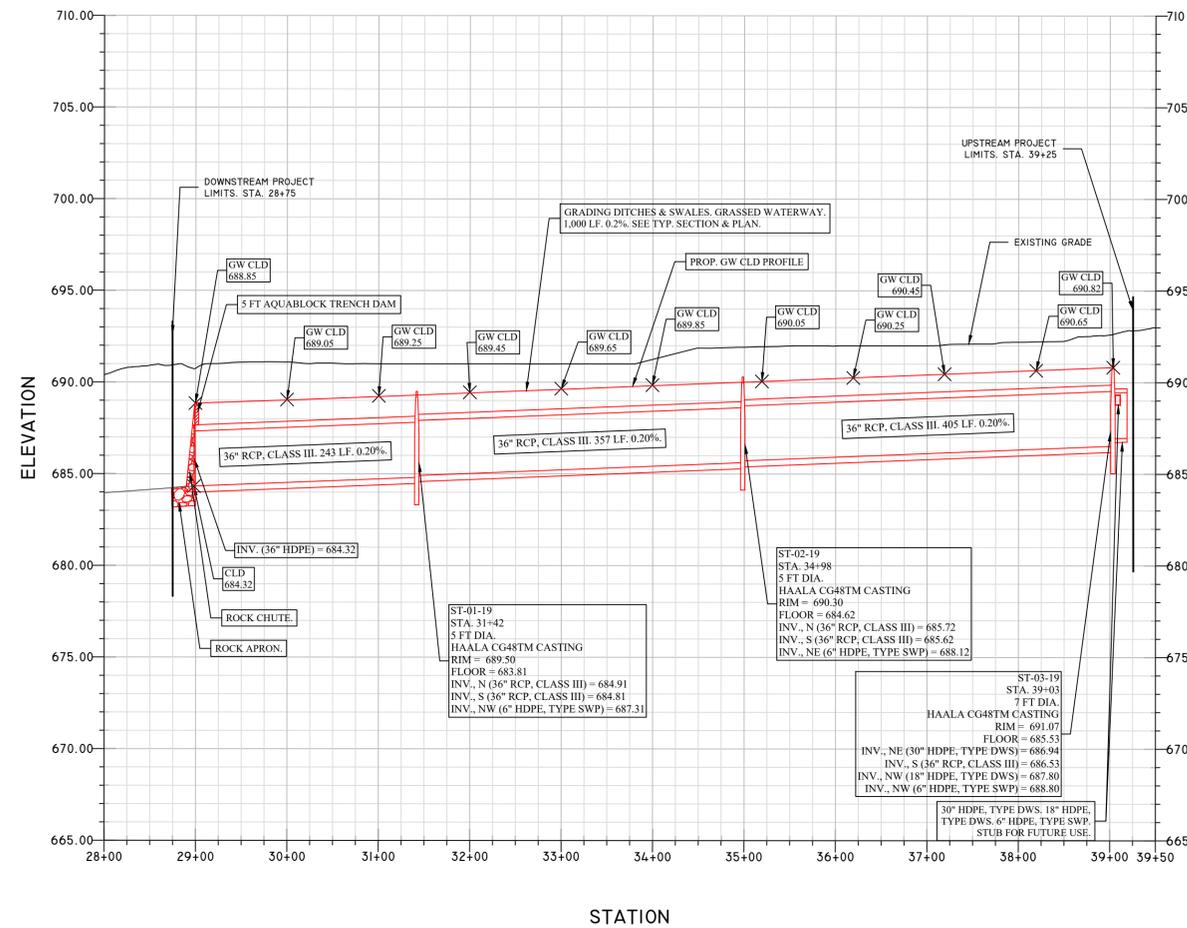
NO.	DATE	REVISION	BY
1	4/8/21	FOR BIDDING	CRG

DESIGNED: CRG
 DRAWN: CRG
 CHECKED: MEN
 DATE: 6/21/19
 PROJECT NO.: P21-001

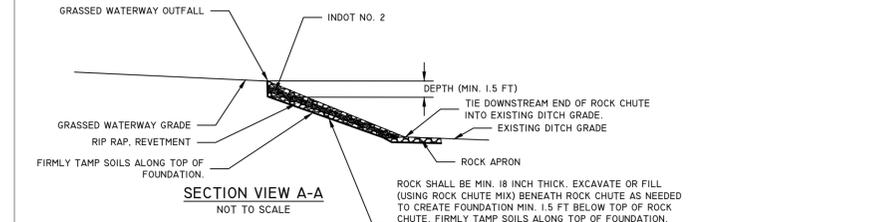
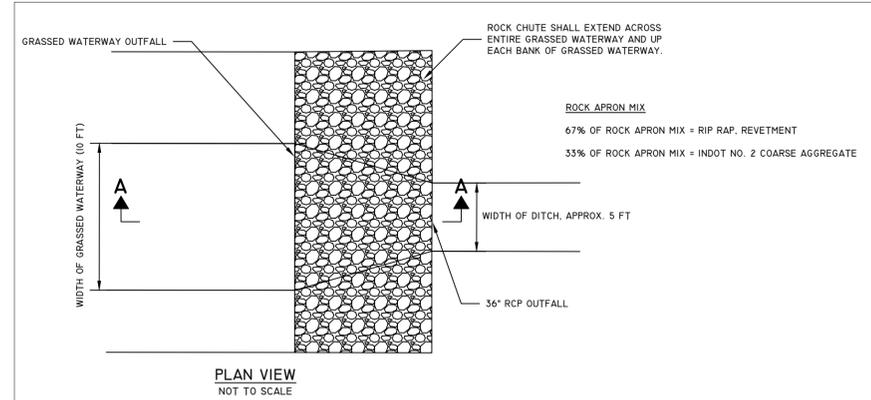
PROJECT: LUDINGTON DITCH, ARM 19-DRAIN TILE RECONSTRUCTION, PHASE 1
 LOCATION: CR 450 S TO THE CONFLUENCE WITH LUDINGTON DITCH, ARM 16
 SHEET TITLE: SHEET 3-PLAN STA. 34+00 TO STA. 39+00

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PROFILE VIEW OF LUDINGTON ARM 19

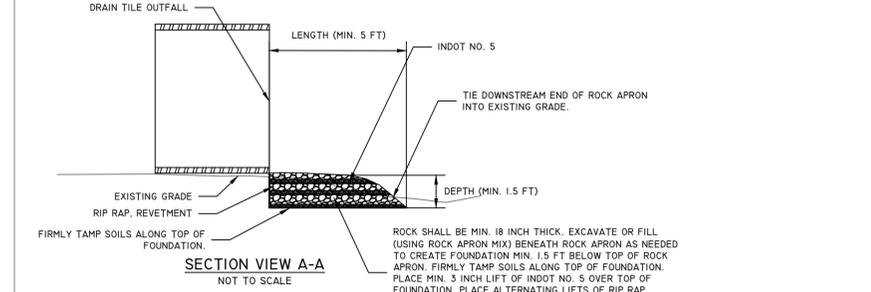
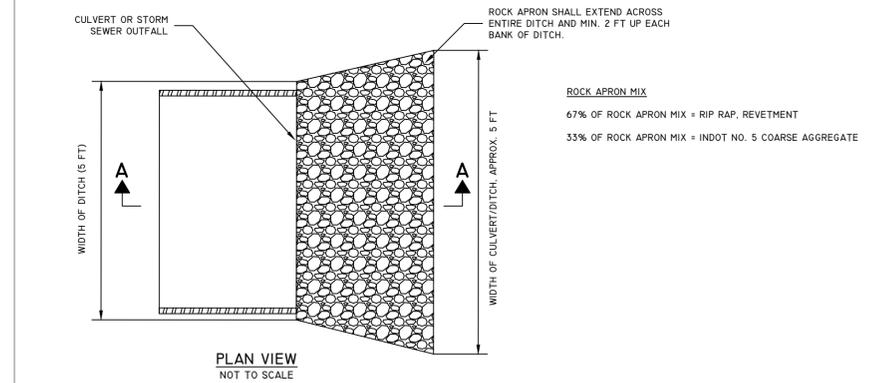


LUDINGTON ARM 19 STORM SEWER STRUCTURE SCHEDULE									
STRUCTURE NO.	STRUCTURE TYPE	STATION	NORTHING	EASTING	RIM ELEV.	FLOOR ELEV.	PIPE OUT, INVERT(S)	PIPE IN, INVERT(S) AND ANGLE(S) (FROM OUT)	CASTINGS
ST-01-19	5 FT DIA.	31+42	2229957.51	2951456.76	689.50	683.81	S 36" RCP, CLASS III 684.81	N 36" RCP, CLASS III 684.91 180° NW 6" HDPE, TYPE SWP 687.31, 153°	HAALA CG48TM
ST-02-19	5 FT DIA.	34+98	2230313.71	2951474.04	690.30	684.62	S 36" RCP, CLASS III 685.62	N 36" RCP, CLASS III 685.72 180° NE 6" HDPE, TYPE SWP 688.12, 207°	HAALA CG48TM
ST-03-19	7 FT DIA.	39+03	2230717.82	2951494.49	691.07	685.53	S 36" RCP, CLASS III 686.53	NE 30" HDPE, TYPE DWS 686.94, 200° NW 18" HDPE, TYPE DWS 687.80 114° NW 6" HDPE, TYPE SWP 688.80, 138°	HAALA CG48TM



INSTALLATION

- EXCAVATION OR FILL (USING ROCK CHUTE MIX) BENEATH ROCK CHUTE AS NEEDED TO CREATE FOUNDATION MIN. 1.5 FT BELOW TOP OF CHUTE.
- FIRMLY TAMP ALONG TOP OF FOUNDATION.
- PLACE MIN. 3 INCH LIFT OF INDOT NO. 2 OVER TOP OF FOUNDATION.
- PLACE ALTERNATING LIFTS OF RIP RAP, REVETMENT, INDOT NO. 2, AND RIP RAP, REVETMENT AS NEEDED TO ACHIEVE LINES AND GRADES SHOWN.
- RE-SHAPE BANKS OF DITCH ABOVE ROCK CHUTE TO 2:1 OR FLATTER (TYP.). BLEND INTO ADJ. GRADE.
- RESTORE DISTURBED AREAS ON AND ABOVE RE-SHAPED BANKS OF DITCH PER DITCH TYPICAL SECTION AND TECHNICAL SPECIFICATIONS.



INSTALLATION

- EXCAVATION OR FILL (USING ROCK APRON MIX) BENEATH ROCK APRON AS NEEDED TO CREATE FOUNDATION MIN. 1.5 FT BELOW TOP OF APRON.
- FIRMLY TAMP ALONG TOP OF FOUNDATION.
- PLACE MIN. 3 INCH LIFT OF INDOT NO. 5 OVER TOP OF FOUNDATION.
- PLACE ALTERNATING LIFTS OF RIP RAP, REVETMENT, INDOT NO. 5, AND RIP RAP, REVETMENT AS NEEDED TO ACHIEVE LINES AND GRADES SHOWN.
- RE-SHAPE BANKS OF DITCH ABOVE ROCK APRON TO 2:1 OR FLATTER (TYP.). BLEND INTO ADJ. GRADE.
- RESTORE DISTURBED AREAS ON AND ABOVE RE-SHAPED BANKS OF DITCH PER DITCH TYPICAL SECTION AND TECHNICAL SPECIFICATIONS.

BY	CRG
REVISION	FOR BIDDING
DATE	4/8/21
NO.	1

DESIGNED:	CRG
DRAWN:	CRG
CHECKED:	MEN
DATE:	6/21/19
PROJECT NO.:	P21-001



PROJECT: LUDINGTON DITCH, ARM 19-DRAIN TILE RECONSTRUCTION, PHASE 1
 LOCATION: CR 450 S TO CONFLUENCE WITH LUDINGTON DITCH, ARM 16
 SHEET TITLE: SHEET 4-PROFILE AND STORM SEWER STRUCTURE SCHEDULE

