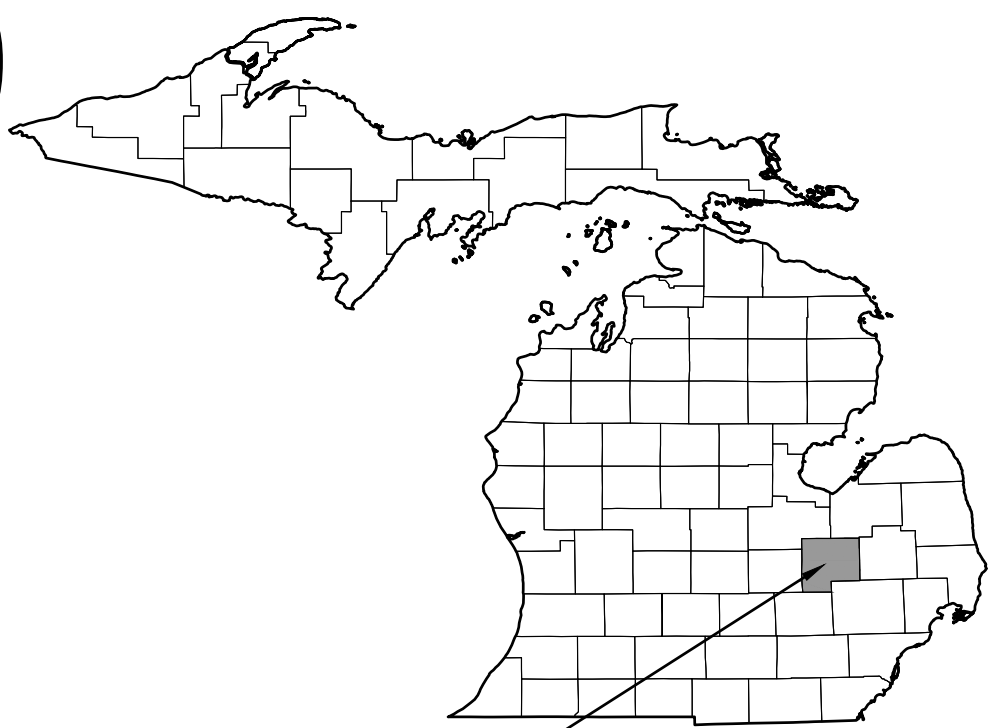


CONSTRUCTION PLANS FOR PINE RUN, CLAYTON BRANCH, #1419

SECTION 7 AND 18 OF VIENNA TOWNSHIP GENESEE COUNTY DRAIN COMMISSIONER



PROJECT LOCATION

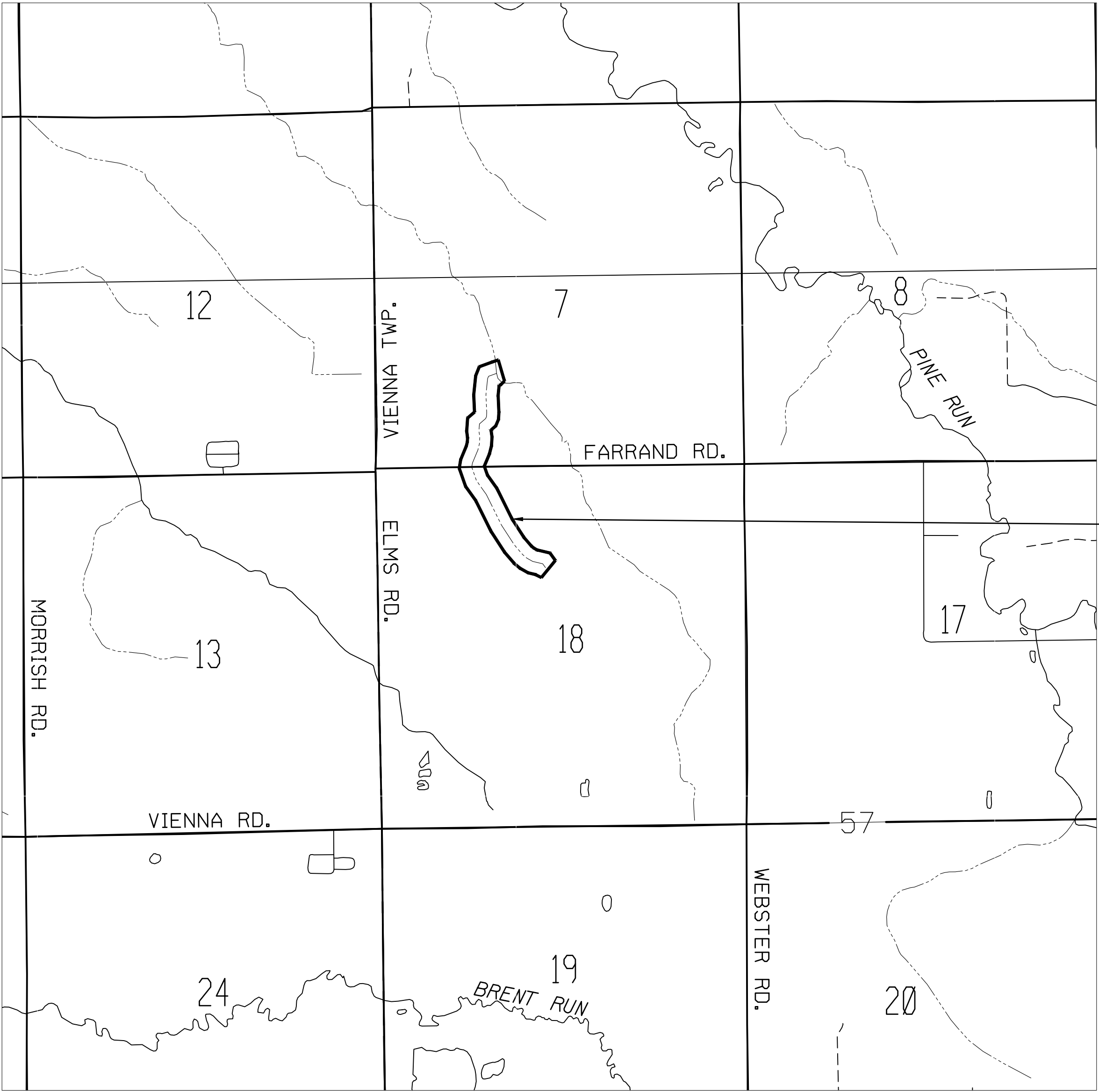
KEY MAP
NOT TO SCALE

CONTACTS:

GENESEE COUNTY DRAIN COMMISSIONER ATTN: TOM JONES, PE G-4608 BEECHER ROAD FLINT, MI 48532 TELEPHONE: (810) 732-1590	STORM SEWER AND COUNTY DRAINS
GENESEE COUNTY DRAIN COMMISSION DIVISION OF WATER & WASTE SERVICES G-4610 BEECHER ROAD FLINT, MI 48532 ATTN: MARK STEPHENS TELEPHONE: (810) 732-7870	SANITARY SEWER AND WATER MAIN
CONSUMERS ENERGY ATTN: TRACY MAHAR 1801 W. MAIN STREET OWOSSO, MI 48867 TELEPHONE: (989) 729-3250	ELECTRIC DISTRIBUTION LINES
CONSUMERS ENERGY ATTN: MATTHEW COX 3201 E. COURT STREET FLINT, MI 48501 TELEPHONE: (810) 760-3486	GAS
GENESEE COUNTY ROAD COMMISSION ATTN: BILL DILORENZO 211 W. OAKLEY STREET FLINT, MI 48503 TELEPHONE: (810) 767-4920, EXT. 242	COUNTY ROADS

NOTE TO CONTRACTOR
THIS PROJECT HAS BEEN DESIGNED USING THE LATEST GCDC CRITERIA. REVIEW THESE NOTES, DETAILS AND DESIGN CAREFULLY PRIOR TO SUBMITTING A BID. FULL COMPLIANCE WITH THE NEW STANDARDS WILL BE REQUIRED.

UTILITY STATEMENT
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORD DRAWINGS. THE ENGINEER MAKES NO GUARANTEES THAT THE UTILITIES COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ALTHOUGH THE ENGINEER DOES CERTIFY THAT THE UTILITIES ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE.



LOCATION MAP
SCALE: NOT TO SCALE

SHEET INDEX	
GENERAL SHEETS	SHEET NO.
COVER SHEET	1
SESC MEASURE DETAILS	2
OVERALL PLAN SHEET	3
PLAN AND PROFILE SHEETS	4-6
CONSTRUCTION DETAILS AND NOTES	7-8

PREPARED FOR
JEFFREY WRIGHT
GENESEE COUNTY DRAIN COMMISSIONER
G-4608 BEECHER ROAD
FLINT, MICHIGAN 48532

NPDES STATEMENT
GCDC-SWM WILL OBTAIN A NPDES STORM WATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITES FROM EGLE AS REQUIRED UNDER PERMIT-BY-RULE (RULE 323.2190).

THE GROSS ACREAGE OF AREA DISTURBED IS 3 ACRES. THE NPDES STORMWATER DISCHARGE PERMIT FALLS UNDER THE PERMIT BY RULE GUILDLINE. NO NOTICE OF COVERAGE IS REQUIRED BUT ALL RULES AND REQUIREMENTS MUST BE FOLLOWED.

THE CONTRACTOR WILL BE REQUIRED TO FOLLOW ALL RULES AND REQUIREMENTS UNDER PERMIT-BY-RULE (RULE 323.2190). THIS WILL BE PAYED FOR AS SOIL EROSION AND SEDIMENTAION.

ISSUED FOR BIDDING, 6-7-22

JOB NO. GDC2052.01F SHEET 1



PREPARED UNDER THE SUPERVISION OF:



Kevin E. Cook

WADE TRIM, INC - KEVIN E. COOK, P.E.
REGISTRATION NO. 43274





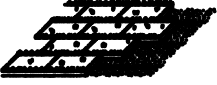





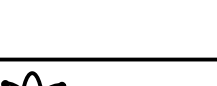
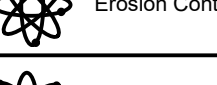
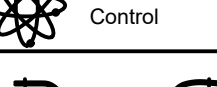





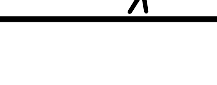
Know what's below.
Call before you dig.

GENERAL CONSTRUCTION NOTES:

1. THREE (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT MISS DIG UTILITY PROTECTION SERVICE (1-800-482-7171) OR 811 TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.
2. THE GENESEE COUNTY DRAIN COMMISSIONER WILL OBTAIN ALL STATE AND LOCAL PERMITS REQUIRED TO WORK WITHIN THE ROAD, UTILITY OR DRAIN RIGHT OF WAYS.
3. ALL PROPOSED DRAIN SLOPES SHALL BE 2 HORIZONTAL TO 1 VERTICAL OR FLATTER UNLESS OTHERWISE SPECIFIED.
4. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND EXPOSE ALL EXISTING UTILITIES TO BE CROSSED BY THE DRAIN FOR VERIFICATION OF DEPTH AND HORIZONTAL LOCATION. THIS SHALL INCLUDE TELEPHONE CABLE AND CONDUIT, ELECTRIC LINES, CABLE TV, GAS MAINS, SANITARY AND STORM SEWERS, AND WATER MAINS. CONTRACTOR SHALL NOTIFY THE ENGINEER WHERE CONFLICTS MAY EXIST. THE OWNER RESERVES THE OPTION TO ADJUST THE LOCATION AND GRADE OF PROPOSED DRAIN BOTTOM TO FIT THE CONDITION FOUND. ALL COSTS FOR LOCATING AND UNCOVERING EXISTING UTILITIES AND ADJUSTING LOCATION AND GRADE OF PROPOSED DRAIN SHALL BE INCIDENTAL TO THE DRAIN EXCAVATION PAY ITEMS.
5. IN CASES WHERE EXISTING SEWERS, DRAINS, GAS SERVICE CONNECTION, TELEPHONE OR ELECTRICAL FACILITIES, AND WATER SERVICE CONNECTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL PERFORM HIS OPERATIONS IN SUCH A MANNER THAT THE SERVICE WILL BE UNINTERRUPTED AND THE COST THEREOF SHALL BE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS CONSTRUCTION OPERATIONS WITH THE USERS OF THE UTILITIES AND UTILITY ITSELF. THE METHODS USED BY THE CONTRACTOR FOR MAINTAINING AND SUPPORTING UTILITIES AND THEIR SERVICE CONNECTIONS SHALL BE SUCH AS TO AVOID SETTLEMENT OF SUCH UTILITIES BEFORE AND AFTER PLACING BACKFILL. SUPPORT DETAILS SHALL MEET THE APPROVAL OF THE UTILITY INVOLVED.
6. ALL COST AND FEES CHARGED BY ANY UTILITY (I.E. GAS, ELECTRIC, TELEPHONE, CABLE TV.) PURSUANT TO CONSTRUCTION OF THE DRAIN SHALL BE PAID FOR BY THE CONTRACTOR. THIS SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, TEMPORARY SUPPORT OF POLES; TEMPORARY SUPPORT OF UNDERGROUND PIPE, CONDUITS, AND CABLES; RELOCATION, REPAIR, AND/OR REPLACEMENT OF SERVICE LEADS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. IF ANY EXISTING UTILITY IS DAMAGED BY THE CONTRACTOR'S OPERATION, IT SHALL BE REPAIRED IN ACCORDANCE WITH THE RELATED UTILITIES STANDARDS AT THE CONTRACTOR'S EXPENSE.
8. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR COMPLETENESS OR ACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES TO OBTAIN ONSITE LOCATIONS OF EXISTING UTILITIES.
9. ALL EXISTING SEWERS, WATER MAIN PIPING AND OTHER UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
10. CONTRACTOR MUST PROTECT THE PUBLIC AND THEIR WORKERS AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES PER MIOSHA GUIDELINES.
11. DAMAGE TO ANY EXISTING FEATURE THAT IS TO REMAIN IN PLACE SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY THE SIZE AND QUANTITY OF ITEMS TO BE REMOVED PRIOR TO BID.
13. THE CONTRACTOR SHALL COMPLY WITH ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SPECIFIED ON THE PLANS OR BY THE OWNER.
14. THE CONTRACTOR SHALL CONFORM TO THE SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF 1994.
15. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH MATERIAL CERTIFICATES TO THE OWNER AND THE OWNERS REPRESENTATIVE, VERIFYING THAT ALL MATERIALS USED ON THE PROJECT ARE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS AND/OR CATALOG CUTS SHALL BE REQUIRED FOR MAJOR MATERIAL.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INVESTIGATING AND DETERMINING FOR HIMSELF THE EXISTING SOIL CONDITIONS. IF THE CONTRACTOR ELECTS TO TAKE SOIL BORINGS PRIOR TO CONSTRUCTION, HE SHALL SUBMIT ONE COPY TO THE OWNER.
17. ALL STREET AND DRIVEWAY PAVEMENTS SHALL BE SAW CUT PRIOR TO REMOVAL. ALL CURBS AND WALKS SHALL BE REMOVED AT THE NEAREST JOINT.
18. MINOR TREES, BRUSH AND VEGETATION MAY NOT BE SHOWN ON PLANS. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE THEM IF NECESSARY. COSTS SHALL BE INCLUSIVE TO THE DRAIN EXCAVATION OR CLEARING AND GRUBBING PAY ITEMS.
19. CONTRACTOR SHALL MAINTAIN HIS CONSTRUCTION OPERATIONS WITHIN THE PRESENTLY EXISTING ROAD RIGHTS OF WAY AND DRAIN RIGHT OF WAY THROUGHOUT THE PROJECT AREA. IN THE EVENT THE CONTRACTOR DEEMS IT NECESSARY OR ADVISABLE TO OPERATE BEYOND THE LIMITS OF THE EXISTING RIGHTS OF WAY, HE SHALL BE RESPONSIBLE FOR MAKING SPECIAL WRITTEN AGREEMENTS WITH THE PROPERTY OWNERS PRIOR TO WORKING ON THAT PROPERTY AND SHALL FURNISH SUCH COPIES OF AGREEMENT TO THE OWNER AND ENGINEER PRIOR TO PROCEEDING.
20. THE CONTRACTOR SHALL BE REQUIRED TO DISPOSE OF ALL EXCAVATED MATERIAL NOT TO BE REUSED OR DISPOSED OF ON SITE. CONTRACTOR SHALL DISPOSE OF THIS MATERIAL ACCORDING TO STATE AND LOCAL REQUIREMENTS.
21. IN AREAS OF UNSTABLE ORGANIC SOILS, SPECIAL METHODS OF EXCAVATION AND SPOIL DISPOSAL SHALL BE USED TO INSURE THAT THE LEVELED SOILS WILL NOT ENDANGER THE STABILITY OF THE EXCAVATED DRAIN.
22. THE CONTRACTOR SHALL MAINTAIN DITCH DRAINAGE DURING CONSTRUCTION AND SHALL NOT BLOCK ANY SUMP PUMP LEADS DISCHARGING TO THE DITCH OR SEWER.
23. THE CONTRACTOR SHALL INSTALL FILTER FABRIC PER THE PLANS AND SPECIFICATIONS UNDERNEATH ALL RIPRAP CALLED FOR ON THE PLANS.
24. UPON COMPLETION OF CHANNEL EXCAVATION, CONTRACTOR SHALL CLEAN OUT ALL DEBRIS AND SEDIMENT FROM EXISTING AND PROPOSED CULVERTS, INCLUSIVE TO PAY ITEM FOR CULVERT CLEANOUT PER LUMP SUM.
25. ALL PAVED ROADS NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED BY THE CONTRACTOR. ANY UNAUTHORIZED DAMAGE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
26. AT ALL LOCATIONS THAT A UTILITY INCLUDING SERVICE CONNECTIONS IS TO BE INSTALLED UNDER A PROPOSED OR EXISTING PAVED SURFACE THE CONTRACTOR SHALL BACKFILL WITH MDOT CLASS II GRANULAR MATERIAL COMPACTED TO 95% OF MAXIMUM DENSITY.
27. ALL JOINTS IN PAVEMENT BETWEEN EXISTING AND PROPOSED SURFACES SHALL BE SAW CUT FOR BUTT JOINTS.
28. CONTRACTOR SHALL NOT REUSE BROKEN CONCRETE REMOVED FROM EXISTING CULVERT CROSSING LOCATIONS WITHOUT APPROVAL BY THE OWNER/ ENGINEER.
29. CONTRACTOR SHALL DISPOSE OF BROKEN CONCRETE AND DEBRIS WASTE AT AN OFFSITE LOCATION.
30. RIPRAP FOR THIS PROJECT SHALL ALL BE LIMESTONE MATERIAL AS APPROVED BY THE PROJECT ENGINEER. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT SAMPLES TO THE ENGINEER FOR APPROVAL. OWNER/ENGINEER RESERVES THE RIGHT TO REJECT ANY AND ALL RIP RAP.
31. THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS/RESIDENTS A MINIMUM OF 24 HOURS ADVANCE NOTICE PRIOR TO REUSING/REPLACING DRIVEWAY CULVERTS.
32. ACCESS FOR MAIL DELIVERY AND GARBAGE PICKUP SHALL BE MAINTAINED AT ALL TIMES TO ALL PROPERTIES WITHIN THE INFLUENCE OF THE PROJECT. IN THE EVENT THAT PICKUP AND DELIVERIES ARE BLOCKED, THE CONTRACTOR SHALL TAKE THE NECESSARY MEASURES TO ALLOW ACCESS FOR PICKUP OR DELIVERIES.
33. ALL MAILBOXES AND POSTS SHALL BE PROTECTED BY THE CONTRACTOR. ALL DAMAGED MAILBOXES AND POSTS SHALL BE REPLACED WITH NEW MATERIALS AT THE CONTRACTORS EXPENSE.
34. PROJECT RELATED WORK SHALL BE PERFORMED BETWEEN THE HOURS OF 7:00 AM AND 7:00 PM MONDAY THROUGH FRIDAY. NO WORK SHALL BE PERMITTED ON SUNDAYS OR HOLIDAYS.
35. TRAFFIC AND ACCESS TO HOMES IN THE PROJECT AREA SHALL BE MAINTAINED AT ALL TIMES DURING PROJECT CONSTRUCTION. THE COST SHALL BE INCLUDED IN PAYMENT FOR TRAFFIC CONTROL.
36. ALL UTILITY POLES AND TELEPHONE PEDESTALS/RISERS SHALL BE PROTECTED BY THE CONTRACTOR. IF DESIGNATED ON THE PLANS THESE FACILITIES SHALL BE RELOCATED BY OTHERS TO A LOCATION OUTSIDE OF DRAIN BANKS.
37. CONTRACTOR SHALL INSTALL RIPRAP SPLASH PADS AT ALL TILE OUTLETS, CROSS CULVERTS AND SURFACE WATER INLET LOCATIONS AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. COST TO BE INCLUDED WITH THE BID ITEM FOR PLAIN RIPRAP SPLASH PAD.
38. ANY OLD SPOIL PILES THAT MAY REMAIN ALONG THE BANKS OF THE DRAIN SHALL BE LEVELED AS NEEDED INCLUDED IN PAYMENT FOR SEDIMENT REMOVAL.
39. CONTRACTOR SHALL CLEAN ALL SIDE DITCHES TO THE LIMITS OF THE DRAIN RIGHT OF WAY.
40. ALL TREES BRUSH AND STUMPS SHALL BE CHIPPED, CUT AND STOCKPILED AS DIRECTED BY PROPERTY OWNER OR DISPOSED OF AT AN OFFSITE LOCATION. NO TREES, BRUSH OR STUMPS SHALL BE BURNED IN WOODED AREAS. TREES BRUSH AND STUMPS MAY BE BURNED IN OPEN AG AREAS WITH PERMISSION FROM THE PROPERTY OWNER AND A BURN PERMIT FROM THE TOWNSHIP.
41. CONTRACTOR SHALL STRIP TOPSOIL AND STOCKPILE FOR USE AS TOPSOIL AS DIRECTED BY THE ENGINEER.
42. ALL YARD AREAS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 4" OF TOPSOIL.
43. ALL DISTURBED AREAS SHALL BE FINISH GRADED, SEEDED AND MULCHED DAILY PER THE PROJECT SPECIFICATIONS.

MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS
SOIL EROSION AND SOIL EROSION CONTROL KEYING SYSTEM

EROSION CONTROL MEASURES

KEY	SESC MEASURE	SYMBOL	WHERE USED
1	SEEDING		When bare soil is exposed, temporarily or permanently, to erosive forces from wind and/or water on flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles.
2	MULCH		On flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles when areas are subject to raindrop impact, and erosive forces from wind or water.
3	SODDING		When a temporary or permanent vegetative cover is necessary or desired to prevent soil erosion and filter sediment in residential, commercial or high traffic areas; or on steep slopes, auxiliary spillways, and grassed swales
4	TREES, SHRUBS, VINES, AND GROUND COVER		When bare soil or recently vegetated slopes are exposed to erosive forces from wind and/or water
5	PERIMETER SEDIMENT CONTROL MEASURES (SILT FENCE, STRAW WATTLES, ETC.)		As a temporary measure used to capture sediment from sheet flow. May also divert small volumes of sheet flow to protected outlets.
6	CATCH BASIN		Where surface water accumulates and needs an outlet or an open drain discharges to a stream or drain at erosive velocities. Within an enclosed drain system to provide an inlet and a sump.
7	STORM DRAIN INLET PROTECTION		Around the entrance to a newly constructed catch basin or an inlet that will capture runoff from an earth change activity.
8	LIVE STAKING		Slopes and drain banks, wetland buffer and reservoir drawdown areas. In areas requiring stabilization but with limited access for equipment or when little site disturbance is required.
9	VEGETATION REMOVAL WITHOUT GRUBBING		Retains existing root mat which assists in stabilizing slopes. Assists in the revegetation process by providing sprout growth. Reduces sheet flow velocities preventing rilling and gullying. Discourages off-road vehicle use.
10	SOIL BINDING POLYMERS		Over all exposed soil surfaces or prepared seed beds that need protection from precipitation impact, sheet flow, rill flow or wind prior to erosive force impact.
11	POLYMER FLOCCULANTS		Where turbid water can be collected and suspended sediments removed prior to discharging runoff to a lake, stream, drain, or a wetland or runoff leaves the drain easement.
12	PLASTIC SHEETING OR GEOTEXTILE COVER		As a temporary measure to line a channel, cover stockpile areas or to provide immediate cover on exposed slopes
13	SLOPE STABILIZATION		Slope stabilization measures provide an immediate and effective cover over raw erodible slopes affording excellent protection against rain and wind erosion.
14	SLOPE ROUGHENING AND SCARIFICATION		On disturbed slopes and stream or drain banks when site grading or construction activities result in grades that may cause increased erosive velocities or off-site sedimentation.
15	RIPRAP		Along drain banks, shorelines, or where concentrated flows occur. Slows velocity, reduces erosion and sediment load.
16	RIPRAP TOE OF SLOPE		Riprap and toe of slope protection is used in areas where velocities are causing drain bank erosion and are too high to stabilize using other methods
17	WATTLES		Where a slope or streambank requires stabilization and minimal disturbance is preferred or the site has limited access.












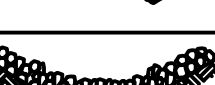





DETAILED DRAWINGS AND SPECIFICATIONS ARE LOCATED IN THE MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SOIL EROSION AND SEDIMENTATION CONTROL AUTHORIZED PUBLIC AGENCY PROCEDURES MANUAL

SYMBOLGY FOR INSERTION INTO CONSTRUCTION DRAWINGS:

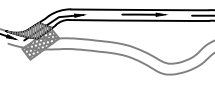





 = PERMANENT MEASURE

 = TEMPORARY MEASURE

EROSION CONTROL MEASURES

KEY	SESC MEASURE	SYMBOL	WHERE USED
18	REINFORCED VEGETATED SPILLWAY		When slope failure at eroded outfalls are observed or are likely to occur from concentrated runoff on very shallow slopes (where flow velocities will be low enough not to undermine the reinforced grass root structure).
19	ARMORED SPILLWAY		When concentrated flow must be conveyed down a drain bank or slope or discharge into another drain. Where slope failure or channel scour is observed or is likely to occur, or when runoff must be redirected around work in the drain.
20	TOE DRAIN		Where piping is causing ension and unstable drain banks.
21	PIPE DROP SPILLWAY		Where surface runoff accumulates at the top of a slope and must be conveyed, either temporarily or permanently, from a higher to lower elevation within a short horizontal distance, down steep slopes, or when soils are highly erodible or excessively wet. Also used when velocities must be reduced to prevent channel scour or drain bank erosion at the outlet.
22	SLOPED PIPE SPILLWAY		Where surface runoff accumulates at the top of a slope and must be conveyed to a lower elevation without causing slope erosion, gully formation, slope failure, or channel scour.
23	OUTFALL STABILIZATION		In the stream or drain bank usually above the ordinary high water mark where an enclosed drain or tile discharges to an open drain.
24	ENERGY DISSIPATORS		Where the discharge velocity of concentrated flow exceeds the erosive velocity of the receiving area or channel.
25	SAND OR STONE FILLED BAGS		Within or adjacent to a stream to isolate or divert flow during construction. Can also be used to temporarily impound water for very short time periods.
26	DUST CONTROL		As a temporary measure on exposed and unstabilized areas that must be protected from wind or water erosion.
27	STABILIZED SURFACE COVER		Can be used in any area where a stable condition is needed for construction operations, equipment storage or in heavy traffic areas. Reduces potential soil erosion and fugitive dust by stabilizing raw areas.
28	STABILIZED CONSTRUCTION ACCESS		At locations where construction equipment will enter and exit the drain easement and tracking of soil is anticipated.
29	CHECK DAM		In constructed and existing flow corridors to reduce flow velocities.
30	VEGETATED BUFFER STRIPS		Along stream and drain condors, sensitive areas, and shorelines when earth changes will occur during a drain maintenance or improvement project or when an eroding bank or drain easement area needs to be stabilized.
31	DIVERSION DIKE		Runoff needs to be diverted around sensitive areas, unstable or easily eroded soils, bare soils, away from steep banks, or around earth change activities.
32	DIVERSION DITCH		Runoff needs to be intercepted and or diverted around sensitive areas, unstable or easily eroded soils, bare soils, away from steep banks, or around earth change activities.
33	STONE FILTER BERM		When runoff must be filtered prior to entering a lake, stream, drain or wetland. Never use in place of a check dam in a flowing stream.
34	SILT FENCE		In areas susceptible to wind erosion, particularly where the soil has not yet been stabilized by other means. To re-build a slope.

EROSION CONTROL MEASURES

KEY	SESC MEASURE	SYMBOL	WHERE USED
35	TEMPORARY BYPASS CHANNEL		In and adjacent to a stream when flow conditions prevent completing work activity without diverting flow around a work area
36	SEDIMENT BASIN		When working in the drain, or drain easement. In streams or drains where sediment sumps are inadequate.
37	SEDIMENT SUMP (TRAP)		When working in the drain, or drain easement and the soil disturbance and anticipated sediment is limited.
38	SHEET PILING		As a permanent measure in locations where a vertical bank is required and other erosion control measures have failed. As a weir. As a temporary cofferdam during construction.
39	DEWATERING		When construction or maintenance activities are limited by the presence of water and a dry work area is required.
40	TURBIDITY CURTAIN		Within a stream or drain parallel to flow when a slack water area is necessary to isolate earth change activities from a lake or channel.

PROJECT MANAGER: KEVIN COOK
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FIELD BOOK INFORMATION: -
PLOTED: 6/7/2022 2:19 PM BY: COOK, KEVIN

GENESEE COUNTY DRAIN COMMISSION
G-4608 BEECHER ROAD
FLINT, MICHIGAN 48532
PINE RUN DRAIN IMPROVEMENTS
SESC MEASURE DETAILS

ISSUED FOR: DATE: BY:
REVIEW 8-17-18 KEC
REVIEW 2-28-19 KEC
REVIEW 6-25-19 KEC
WETLANDS 1-26-21 KEC
ALIGNMENT 11-5-21 KEC
PERMITTING 4-29-22 KEC
BIDDING 6-7-22 KEC

JOB NO.
GDC205201F

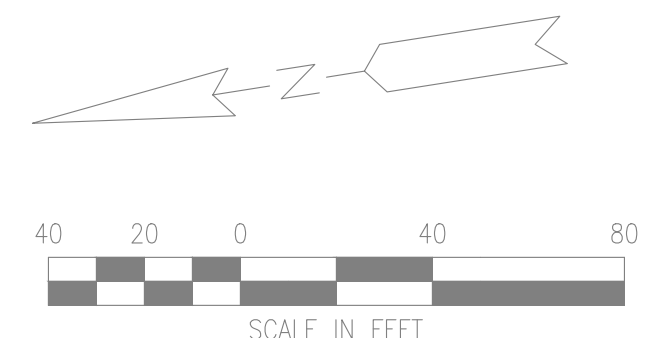
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555 S. Saginaw Street, Suite 201
Flint, MI 48602
810.235.2555
www.wade-trim.com

WADE TRIM

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IMPROVEMENTS PROJECT
PINE RUN DRAIN



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GENESEE COUNTY DRAIN COMMISSION
G-4608 BEECHER ROAD
FLINT, MICHIGAN 48532
PINE RUN DRAIN IMPROVEMENTS
OVERALL PLAN VIEW

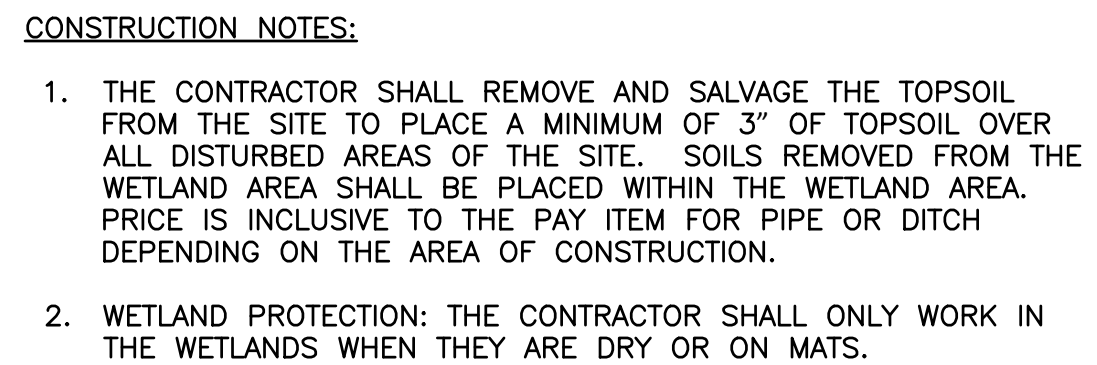
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REVIEW	8-17-18	KEC
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WETLANDS	1-26-21	KEC
ALIGNMENT	11-5-21	KEC
PERMITTING	4-29-22	KEC
BIDDING	6-7-22	KEC

JOB NO. **GDC205201F**

SHEET

3

© Wade Trim Group, Inc. PINE RUN DRAIN IMPROVEMENTS PROJECT



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TRIM**

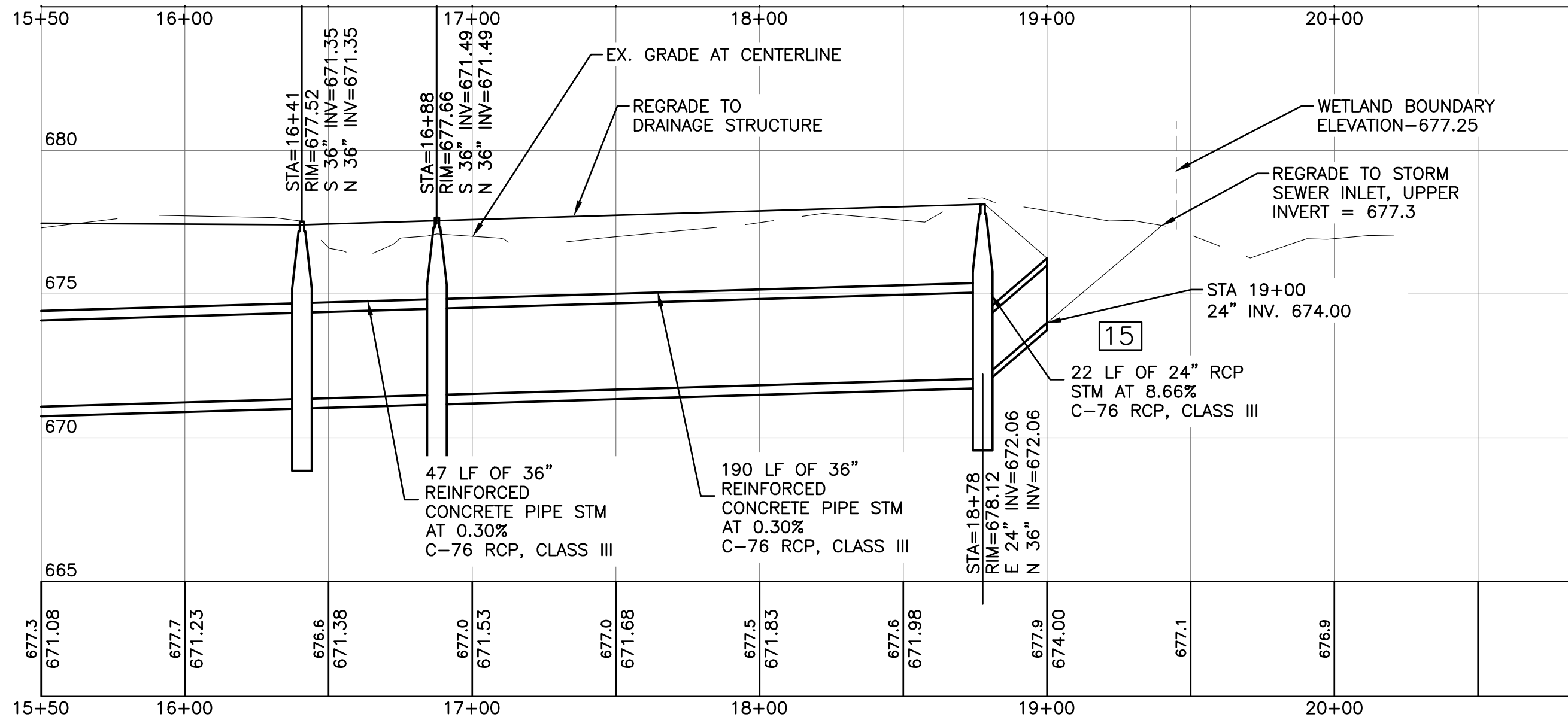
SHEET
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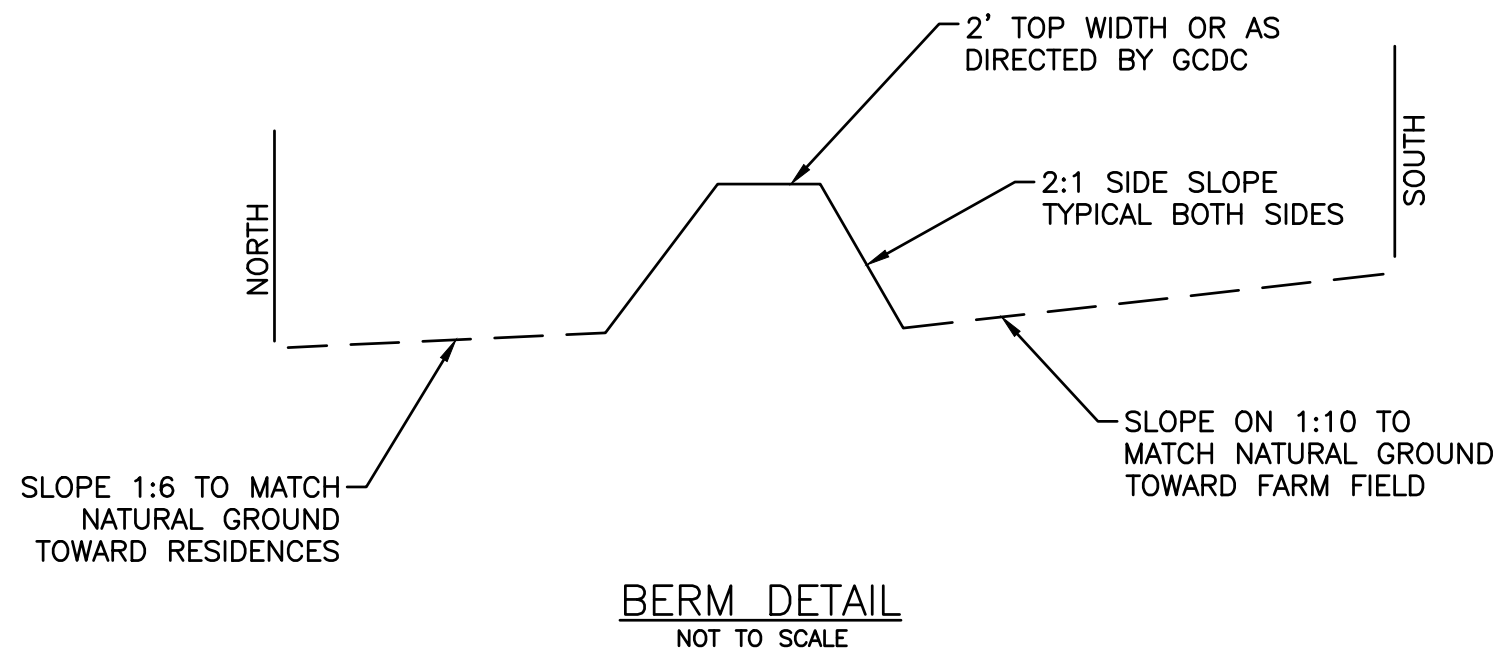
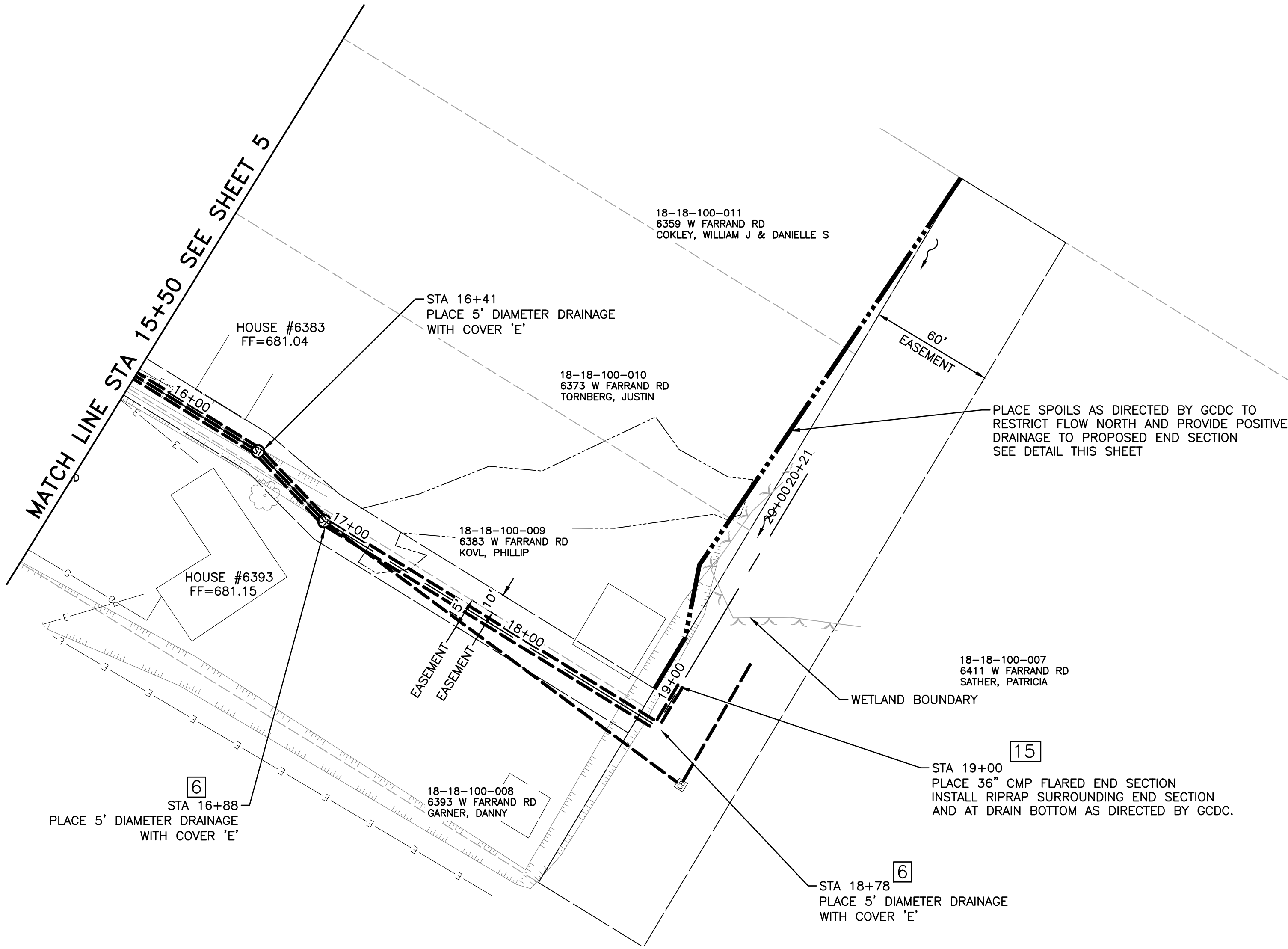
Know what's below.
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EX GROUND
PROP PIPE
INVERT

MATCH LINE STA 15+50 - SEE SHEET 5



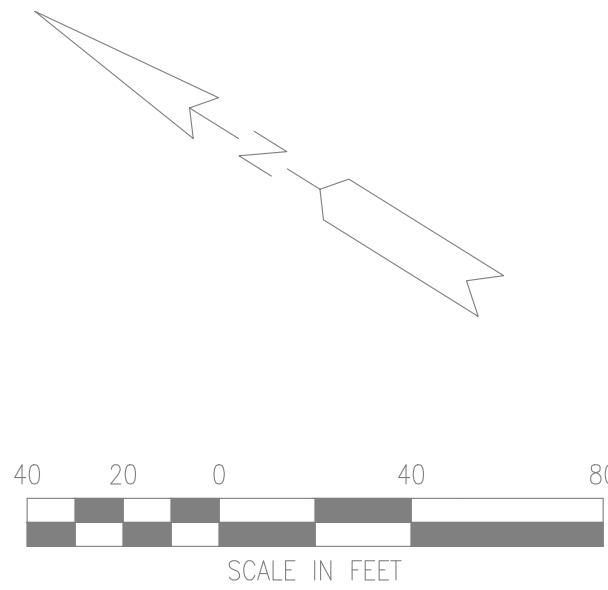
DRAIN PROFILE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: 1"=4'



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL REMOVE AND SALVAGE THE TOPSOIL FROM THE SITE TO PLACE A MINIMUM OF 3" OF TOPSOIL OVER ALL DISTURBED AREAS OF THE SITE. SOILS REMOVED FROM THE WETLAND AREA SHALL BE PLACED WITHIN THE WETLAND AREA. PRICE IS INCLUSIVE TO THE PAY ITEM FOR PIPE OR DITCH DEPENDING ON THE AREA OF CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE BETWEEN 6383 AND 6393 FARRAND RD TO THE DRAINAGE STRUCTURES WITH MINIMUM DITCHING. EXISTING DITCHES MAY BE FILLED TO ALLOW FOR GRADING.
3. CONTRACTOR TO PLACE 12" YARD DRAINS AS DIRECTED BY GCDC. STAFF AT LOCATIONS TO BE DETERMINED IN THE FIELD TO BE PAID FOR AS: 12" YARD DRAIN (EA), COST FOR 4" SCHEDULE 40 PIPE TAP IS INCLUSIVE TO 12" YARD DRAIN.

CONTRACTOR SHALL PROPERLY
DISPOSED OF ALL EXCESS SPOILS.



GENESEE COUNTY DRAIN COMMISSION
G-4608 BEECHER ROAD
FLINT, MICHIGAN 48532
PINE RUN DRAIN IMPROVEMENTS
PLAN AND PROFILE - STA 15+50 TO STA 19+50

ISSUED FOR:	DATE:	BY:
REVIEW	8-17-18	KEC
REVIEW	2-28-19	KEC
REVIEW	6-25-19	KEC
WETLANDS	1-16-21	KEC
ALIGNMENT	1-16-21	KEC
PERMITTING	4-29-22	KEC
BIDDING	6-7-22	KEC

JOB NO.
GDC205201F

SHEET

6

555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.235.2535
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1. ALL PRECAST MANHOLE AND CATCH BASIN COMPONENTS SHALL BE IN ACCORDANCE WITH A.S.T.M. C478 CURRENT EDITION.

3. SPACING BETWEEN PIPE OPENINGS IN A RISER SHALL BE 6" MINIMUM. OPENINGS MAY BE CONSTRUCTED BY CASTING, REMOVING THE GREEN CONCRETE, OR BY DRILLING THE OPENINGS IN CURED CONCRETE.

5. M.D.O.T. GRANULAR MATERIAL/CLASS II COMPACTED TO 95% DENSITY SHALL BE USED IN BACKFILLING AROUND ALL STRUCTURES THAT FALL WITHIN THE 1 ON 1 INFLUENCE LINES FROM THE EDGE OF PAVEMENT OR BACK OF CURB OR FROM STRUCTURE FOOTINGS.

7. PRECAST BOTTOMS SHALL BE SET LEVEL AND A MINIMUM OF 2" BELOW THE BOTTOM OF THE SEWER.

8. THE BELL SHALL BE REMOVED FOR THE FIRST LENGTH OF OUTLET PIPE PROJECTING THRU THE WALL OF THE MANHOLE.

9. POUR 30M CONCRETE UNDER SEWER PIPE FROM UNDISTURBED SOIL TO THE PIPE SPRING LINE. THE MINIMUM WIDTH OF CONCRETE SHALL BE O.D. + 12".

10. MORTAR FOR BRICK, BLOCK AND PARGING, POINTING AND BEDDING OF CASTING FRAMES SHALL BE IN ACCORDANCE WITH M.D.O.T. STANDARD SPECIFICATIONS FOR MORTAR TYPE II.

11. ALL LIFT PIN HOLES SHALL BE FILLED WITH MORTAR.

12. ALL BRICK AND BLOCK USED IN MANHOLE OR CATCH BASIN CONSTRUCTION SHALL BE SOLID.

13. MANHOLE AND CATCH BASIN DIAMETERS (EXCEPT WHERE OTHERWISE NOTED):

14. STEPS SHALL BE INSTALLED IN ALL STRUCTURES MORE THAN 4' DEEP AND SHALL HAVE A MINIMUM 3" EMBEDMENT. STEPS SHALL BE FABRICATED OF CAST IRON, MEETING THE REQUIREMENTS OF A.A.S.H.T.O. M105 CLASS NO. 35 OR COPOLYMER POLYPROPYLENE PLASTIC WITH 1/2" STEEL REINFORCEMENT, AND SHALL BE CAST INTEGRALLY WITH THE STRUCTURE. STEPS SHALL BE DESIGNED IN ACCORDANCE WITH CURRENT O.S.H.A. REGULATIONS AND SHALL NOT BE LESS THAN 10" CLEAR LENGTH. STEPS SHALL BE CAPABLE OF SUPPORTING 300 LBS. AND COATED WITH COAL TAR PITCH VARNISH. STEPS SHALL NOT BE PLACED OVER ANY SEWER CHANNEL.

15. FRAME AND COVER CASTING SHOP DRAWINGS SHALL BE APPROVED BY THE OWNER BEFORE MANUFACTURING.

16. THE MANHOLE FRAME AND COVER SHALL MEET THE REQUIREMENTS OF THE CURRENT STANDARD SPECIFICATIONS FOR GRAY-IRON CASTINGS A.A.S.H.T.O. M105, AND SHALL HAVE A MINIMUM STRENGTH AS PROVIDED FOR CLASS NO. 30 GRAY IRON CASTINGS.

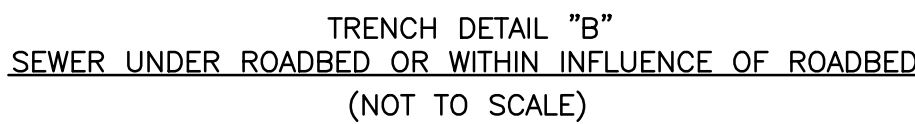
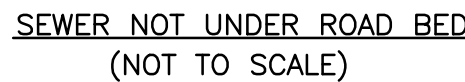
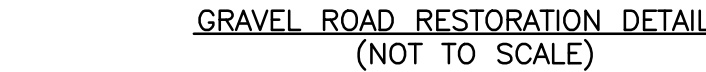
17. ALL PIPES SHALL BE MASTIC JOINT IN ACCORDANCE WITH MDOT SPECIFICATION 8.08.17 (A).

18. ALL 4" SUMP LEADS SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4' AT THE ROAD R/W LINE AND A MINIMUM 4' DEEP UNDER THE ROAD PAVEMENT. PLACE PLUG IN END OF 4" SUMP LEADS AND WITNESS END.

19. ALL 4" SUMP LEADS INSTALLED BY OPEN CUT SHALL BE SDR-26 PVC PIPE. ALL 4" SUMP LEADS INSTALLED UNDER THE ROAD, SHALL BE BORED AND JACKED AT A MINIMUM DEPTH OF 4' UNDER THE ROAD PAVEMENT AND A MINIMUM DISTANCE OF 5' BEYOND THE BACK OF CURBS USING ONE OF THE FOLLOWING TWO ALTERNATIVES AS APPROVED BY THE CGRC.

A. 4"-SDR 26 PVC PIPE PLACED INSIDE 8" STEEL CASING PIPE WITH AN OUTSIDE DIAMETER OF 8.625", AND A MINIMUM WALL THICKNESS OF 0.322". JOINTS FOR STEEL PIPE SHALL BE WELDED TOGETHER.

B. EXTRA HIGH MOLECULAR WEIGHT POLYETHYLENE 3408 PIPE WITH AN SDR OF 26, AN OUTSIDE DIAMETER OF 4½", AND A MINIMUM WALL THICKNESS OF 0.173". JOINTS FOR POLYETHYLENE PIPE SHALL BE FUSED TOGETHER. JOINTS BETWEEN THE SDR-26 PVC PIPE AND POLYETHYLENE PIPE SHALL BE CONNECTED TOGETHER WITH FERRO ADAPTERS. ALL 4" SUMP LEADS INSTALLED ON THE SAME SIDE OF THE ROAD AS THE MAINLINE SEWER FROM THE SEWER TO THE ROAD RIGHT-OF-WAY LINE SHALL BE PAID FOR AS "4" SUMP LEAD" FOR EACH LEAD INSTALLED. ALL 4" SUMP LEADS INSTALLED ON THE OPPOSITE SIDE OF THE ROAD OF THE MAINLINE SEWER FROM THE SEWER TO THE ROAD RIGHT-OF-WAY LINE SHALL BE PAID FOR AS "4" SUMP LEAD, INCLUDING BORED AND JACKED UNDER ROAD" FOR EACH LEAD INSTALLED.



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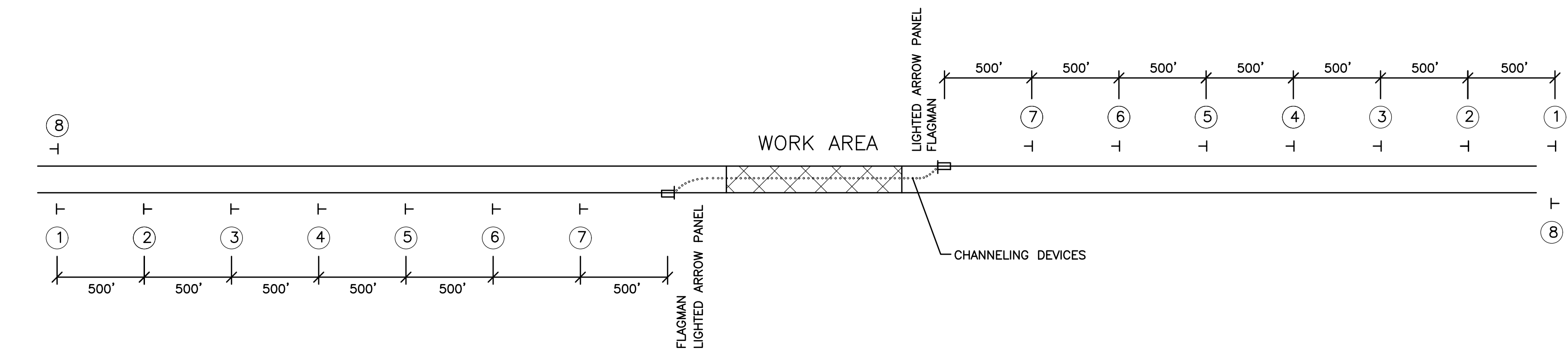
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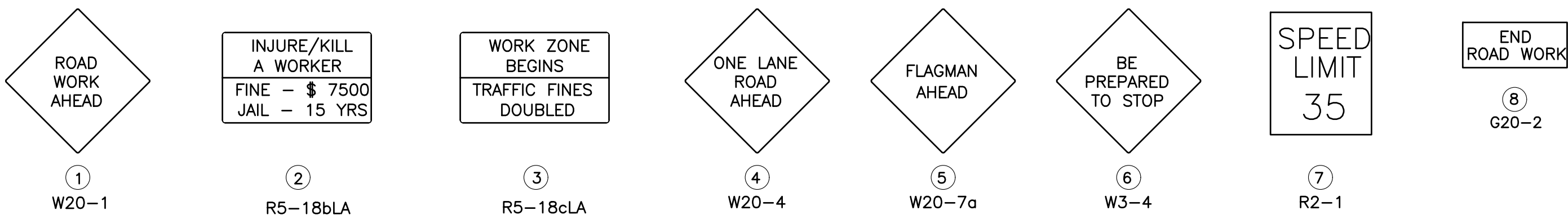
PROJECT MANAGER: KEVIN COOK
C:\PW_WORK\KCOOK\00848209\GDT-PLTS-MOT PLAN.DWG -- SHT 8 -- PLOTTED 6/7/2022 2:19 PM BY COOK, KEVIN

TRAFFIC CONTROL NOTES

1. TRAFFIC CONTROL PLAN SHOWS ESTIMATE OF ALL SIGN MATERIALS NEEDED FOR THIS JOB. IT INCLUDES SIGN PER MDOT TYPICALS FOR MAINTAINING TRAFFIC, M0020a, M0040A, MD-21a, WZD-100-A, WZD-125-D PLUS ADDITIONAL SUPPLEMENTAL SIGNING AS SHOWN ON THIS SHEET.
2. THE TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS FOR TRAFFIC AS SPECIFIED IN SECTION 812 OF THE 2003 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND SHALL BE VISUALLY INSPECTED AND APPROVED BY THE ENGINEER IN THE FIELD PRIOR TO ERECTION.
3. NONAPPLICABLE WARNING, REGULATORY, CONSTRUCTION AND GUIDE SIGNS WITHIN THE CONSTRUCTION INFLUENCE AREA SHALL BE COVERED OR REPOSITIONED.
4. SIGNS SHALL BE TYPE B, TEMPORARY WITH A 7' GROUND CLEARANCE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. SIGN POSTS SHALL BE 3 LB/FT. COST FOR SIGN POSTS SHALL BE INCLUDED IN THE SIGN ITEM.
6. SIGNS, BARRICADES AND CHANNELIZING DEVICES LEFT IN PLACE AFTER DARK SHALL BE PROVIDED WITH TYPE A WARNING LIGHTS.



TRAFFIC CONTROL PLAN
TYPICAL FOR FARRAND ROAD
NOT TO SCALE

[illegible]

 **WADE
TRIM**

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GENESEE COUNTY DRAIN COMMISSION
G-4608 BEECHER ROAD
FLINT, MICHIGAN 48532
PINE RUN DRAIN IMPROVEMENTS
MAINTENANCE OF TRAFFIC PLAN

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8