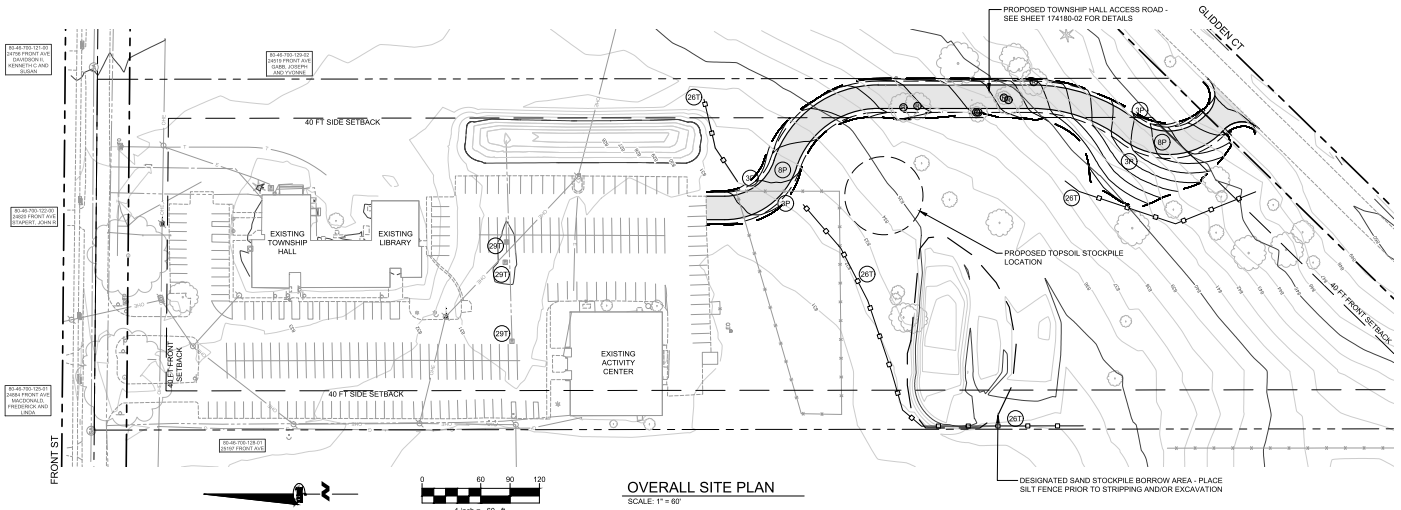
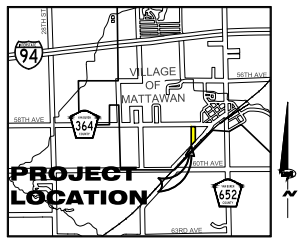
ANTWERP TOWNSHIP
TOWNSHIP HALL ACCESS ROAD



OVERALL SITE PLAN
SCALE: 1" = 60'



VICINITY MAP
NOT TO SCALE

INDEX OF PLANS

174180-01 NOTES, REMOVALS, AND SOIL EROSION AND SEDIMENTATION CONTROL PLAN
174180-02 PLAN AND PROFILE, TYPICAL SECTIONS, GRADING PLAN

LEGEND

EXISTING / PROPOSED

- CABLE
- ELECTRIC LINE
- ELECTRIC LINE (OVERHEAD)
- FIBER OPTIC LINE
- GAS LINE
- TELEPHONE LINE
- FENCE
- FORCEMAIN
- GUARDRAIL
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- CENTER LINE
- EXISTING TREE LINE
- EXISTING DITCH LINE
- EASEMENT LINE/GRADING PERMIT
- GRADING LIMITS/LIMITS OF DISTURBANCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SECTION LINE
- TO BE ABANDONED

- = ANTENNA
- = CATCH BASIN
- = CABLE RISER BOX
- = CLEAN OUT
- = CURB INLET
- = ELECTRIC MANHOLE
- = FIRE HYDRANT
- = FOUND IRON PIPE
- = GAS VALVE
- = GUY ANCHOR
- = LIGHT POLE
- = MAILBOX
- = MONITORING WELL
- = POST
- = SATELLITE DISH
- = SANITARY MANHOLE
- = SECTION CORNER
- = SIGN
- = PAVEMENT/SOIL BORING
- = PROPOSED HYDRANT
- = PROPOSED GATE VALVE & BOX
- = PROPOSED GATE VALVE & VAULT
- = PROPOSED REDUCER
- = PROPOSED SANITARY MANHOLE
- = PROPOSED STORM MANHOLE
- = STORM MANHOLE
- = TELEPHONE MANHOLE
- = TELEPHONE RISER BOX
- = TURNING POINT/TRAVERSE
- = UTILITY POLE
- = VAULT
- = WATER ELEVATION
- = WATER MANHOLE
- = WATER METER
- = WATER VALVE
- = WATER SPIGOT
- = WELL

PROPOSED ASPHALT ACCESS ROAD

TREE DESIGNATORS

DECIDUOUS TREE

DECIDUOUS TREE TO BE REMOVED

PROJECT NOTES

1. THE "2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND "STANDARD PLANS" BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) ARE HEREBY INCORPORATED INTO THESE CONTRACT DOCUMENTS. COPIES OF THESE STANDARDS ARE AVAILABLE FOR INSPECTION AT THE OFFICE OF THE ENGINEER.
2. THE PLACING OF TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE DONE IN ACCORDANCE WITH THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), AS AMENDED.
3. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.
4. THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
5. THE CONTRACTOR IS RESPONSIBLE FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND/OR PLANS PREPARED BY OTHERS. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSTING ALL BONDS AND INSURANCE CERTIFICATES AND SUBMITTING TRAFFIC CONTROL PLANS FOR REVIEW AND APPROVAL WHICH MAY BE REQUIRED BY THE VILLAGE FOR THE CONSTRUCTION OF THIS PROJECT WITHIN THE RESPECTIVE ROAD RIGHT-OF-WAY. THE CONTRACTOR SHALL APPLY FOR THESE PERMITS UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE VILLAGE OF MATTAWAN AND ANTWERP TOWNSHIP TO NOTIFY THEM THAT WORK IS COMMENCING.
8. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL PRE-EXISTING ON-SITE IMPROVEMENTS WITHIN LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED. THIS INCLUDES BUT IS NOT LIMITED TO CONCEALED FOUNDATIONS AND FOOTINGS, CURBS, ASPHALT, TREES, SHRUBS, EXISTING UTILITY LINES, DEBRIS AND ALL OTHER ITEMS AND UTILITIES TO BE ABANDONED.
9. IF AN EXISTING IMPROVEMENT IS REQUIRED TO BE REMOVED WITHIN THE SHOWN PROJECT LIMITS AND NOT INCLUDED WITHIN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL CONSIDER SUCH REMOVALS INCIDENTAL AND THE CORRESPONDING COSTS THEREOF SHALL BE INCLUDED WITHIN THE LUMP SUM BID.
10. FILL SHALL BE PLACED AND ADEQUATELY KEYED INTO STRIPPED AND SCARIFIED SOILS PER THE MDOT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION. ALL FILL MATERIAL SHOULD BE AT APPROXIMATELY THE OPTIMUM MOISTURE CONTENT DURING COMPACTION. FURTHERMORE, FILL MATERIAL SHOULD NOT BE FROZEN NOR BE PLACED ON A FROZEN BASE.
11. ADEQUATE DUST CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER IN THE FIELD, TO BE INCLUDED IN THE VARIOUS ITEMS OF WORK.
12. COMPACTION OF ANY FILL BY FLOODING IS NOT ACCEPTABLE. THIS METHOD WILL GENERALLY NOT ACHIEVE THE DESIRED COMPACTION, AND THE LARGE QUANTITIES OF WATER WILL TEND TO SOFTEN THE FOUNDATION SOILS.
13. AN ON-SITE SAND STOCKPILE FOR BORROW HAS BEEN PREARRANGED FOR THIS PROJECT - SEE THIS SHEET FOR STOCKPILE LOCATION. ANY ADDITIONAL FILL BEYOND WHAT IS AVAILABLE ON-SITE AND WHICH IS NECESSARY TO COMPLETE THIS PROJECT MUST BE OBTAINED AND FURNISHED BY THE CONTRACTOR. ALL REQUIRED FILL SHALL BE SELECTED EXCAVATED MATERIAL FROM THE SITE AND APPROVED BY THE ENGINEER, OR MDOT CLASS II GRANULAR MATERIAL FROM BORROW. EXCESS FILL SHALL BE STOCKPILED ON SITE AT THE DIRECTION OF THE ENGINEER.
14. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EXISTING DRAINAGE PATTERNS, AND SHALL RESOLVE ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH MAY RESULT FROM THE CONTRACTOR'S ACTIVITIES.
15. ANY SANITARY SEWER, SANITARY SEWER SERVICE LEADS, WATER MAIN, WATER SERVICES, OR STORM SEWER THAT IS DAMAGED BY THE CONTRACTOR DURING THEIR OPERATIONS SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AND AT THE CONTRACTOR'S EXPENSE.
16. MATERIAL FOR AGGREGATE BASE SHALL BE MDOT 22A GRAVEL, 22A SLAG, 22A LIMESTONE, 22A RECYCLED CONCRETE, OR COLD MILLED, HMA MATERIAL WHICH APPROXIMATES THE GRADATION OF 22A MATERIAL. THE ENGINEER SHALL TEST AND/OR VISUALLY APPROVE THE MILLED MATERIAL BEFORE IT IS USED ON THE PROJECT. IF MILLED HMA MATERIAL IS USED, IT MAY BE USED FULL DEPTH OR ON TOP OF 22A AGGREGATE TO OBTAIN THE REQUIRED THICKNESS. 22A GRAVEL SHALL NOT BE PLACED ON TOP OF MILLED HMA MATERIAL.
17. DATUM REFERS TO NAVD88 DATUM.
18. ALL SCALES FOR DRAWINGS AND DETAILS ARE BASED ON 24"x36" PRINTED PLANS. DIMENSIONS TAKE PRECEDENCE OVER SCALE. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS INCLUDING PERMIT COSTS.
20. SOIL, AGGREGATE, AND HMA DENSITY TESTING - THE ENGINEER SHALL VERIFY THE DENSITY OF ALL PLACED MATERIALS AS SPECIFIED. COMPACTION TESTING SHALL TAKE PLACE PRIOR TO INSTALLATION OF THE AGGREGATE BASE AND PRIOR TO THE INSTALLATION OF THE HMA PAVEMENT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 3 DAYS PRIOR TO ALL AGGREGATE AND HMA PLACEMENT ACTIVITIES.
21. PROPERTY OWNER'S NAMES, WHERE SHOWN, ARE FOR INFORMATION ONLY, AND THEIR ACCURACY IS NOT GUARANTEED.
22. **THE CONTRACTOR SHALL NOTE THE OWNER INTENDS TO SOLICIT BIDS DIRECTLY THROUGH ITS OWN PROCUREMENT PROCESSES. THE PLANS PREPARED BY THE ENGINEER DEPICT THE ENTIRETY OF THE WORK TO BE COMPLETED IN WHOLE BY THE CONTRACTOR, WHICH WORK GENERALLY CONSISTS OF STRIPPING TOPSOIL AND COMPLETING ANY NECESSARY REMOVALS, EARTHWORK ACTIVITIES TO SHAPE, FORM, MOVE AND COMPACT SAND TO THE DESIRED CROSS SECTION, PLACEMENT AND COMPACTION OF AGGREGATE BASE, PLACEMENT AND COMPACTION OF HOT MIX ASPHALT PAVEMENT, AND ALL ASSOCIATED RESTORATION AND SOIL EROSION AND SEDIMENTATION CONTROL MEASURES. IN PREPARING THE BID TO BE SUBMITTED TO THE TOWNSHIP, THE CONTRACTOR SHALL INCLUDE ALL COSTS, LABOR, MATERIAL, EQUIPMENT AND ANY ACTIVITIES NECESSARY TO COMPLETE THE INDICATED WORK IN WHOLE, WHETHER DIRECTLY CALLED OUT FOR OR IMPLIED WHEN APPLYING TYPICAL INDUSTRY STANDARDS AND INCORPORATION OF THE 2012 MDOT STANDARD SPECIFICATIONS INTO ALL REQUIRED WORK ITEMS.**
23. **THE CONTRACTOR SHALL CONSULT DIRECTLY WITH THE TOWNSHIP TO DETERMINE INSURANCE AND BONDING REQUIREMENTS FOR THIS PROJECT.**

SOIL EROSION & SEDIMENTATION CONTROL NOTES

1. ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH THE MICHIGAN SOIL EROSION AND SEDIMENTATION CONTROL ACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE COUNTY PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE COUNTY "SOIL EROSION PERMIT." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.
2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER, THESE COVER AREAS ACT AS SEDIMENT FILTERS.
3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.
4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

(##) NUMBER IN CIRCLE REFERS TO NUMBERED DETAILS ON MDOT STANDARD PLAN R-96 SERIES, SOIL EROSION & SEDIMENTATION CONTROL MEASURES. "P" DENOTES PERMANENT MEASURE AND "T" DENOTES TEMPORARY MEASURE. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

(3P) DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. PLACE TOPSOIL SURFACE, SALV, 3 INCH; MDOT SEEDING, MIXTURE TUF APPLIED AT A RATE OF 220 LBS/ACRE; FERTILIZER, CHEMICAL NUTRIENT, CL A APPLIED AT A RATE OF 228 LBS/ACRE; MULCH AT A RATE OF 2 TON/ACRE (3 TON/ACRE FOR DORMANT SEEDING) AND MULCH ANCHORING (APPLIES TO ENTIRE PROJECT).

(9P) DENOTES AGGREGATE COVER/PERMANENT PAVEMENT RESTORATION

(26T) DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATERS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION.

(29T) DENOTES INLET PROTECTION FABRIC DROP. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM.

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ANTWERP TOWNSHIP
24821 FRONT STREET
MATTAWAN, MI 49071

02 12/7/2017 ACS
ISSUED FOR BIDDING

01 10/10/2017 ACS
ISSUED FOR SITE PLAN APPROVAL

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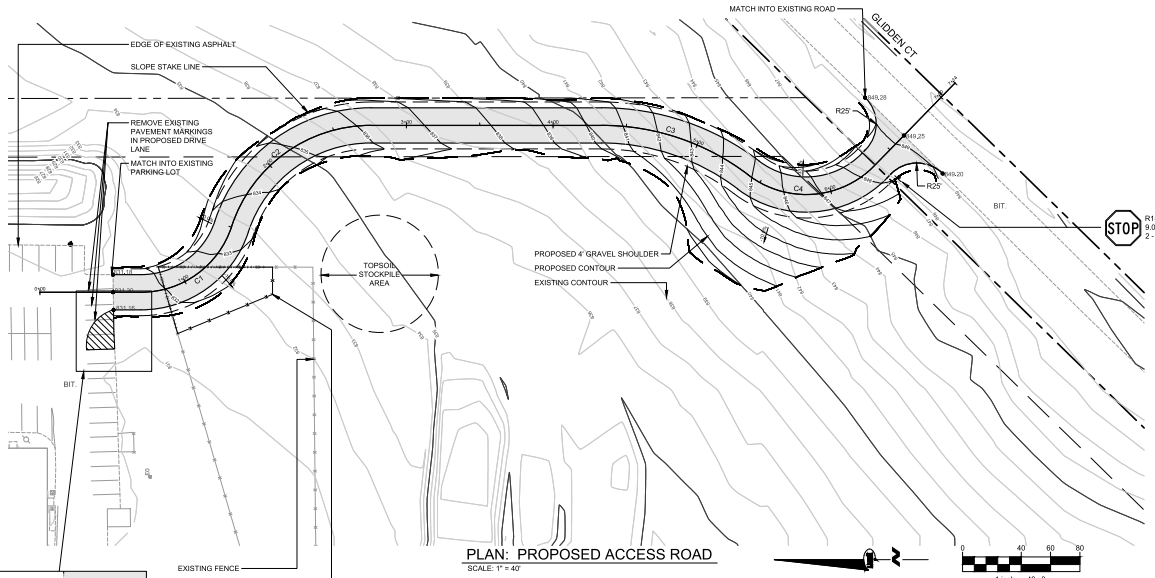
DATE: OCTOBER, 2017
SCALE: 1" = 60'

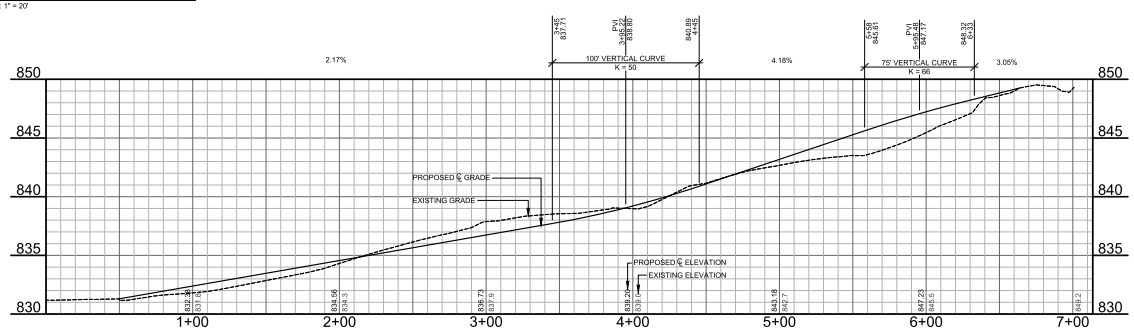
NOTES, REMOVALS, AND SOIL EROSION AND SEDIMENTATION CONTROL PLAN

174180-01

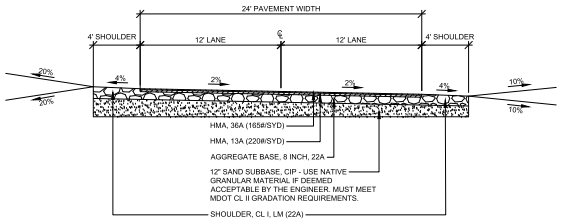


PLAN: PROPOSED ACCESS ROAD
SCALE: 1" = 40'

DETAIL - PAVEMENT MARKING
SCALE: 1" = 20'



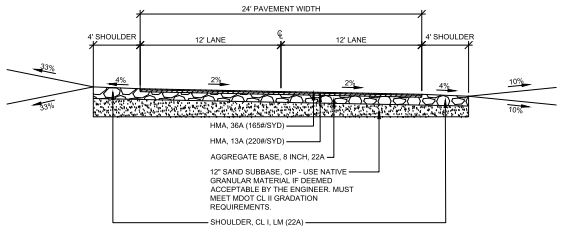
PROFILE: PROPOSED ACCESS ROAD
SCALE: 1" = 40' H, 5' V



ACCESS ROAD TYPICAL SECTION

SCALE: 1" = 5'

THIS SECTION APPLIES TO:
STA. 0+00 TO STA. 2+25



ACCESS ROAD TYPICAL SECTION

SCALE: 1" = 5'

THIS SECTION APPLIES TO:
STA.2+25 TO STA. 6+38

ITEM	AWI	YIELD	PERFORMANCE GRADE
HMA, 13A (LEVELING)		220#/SYD	P.G. 58 - 28
HMA, 36A (TOP)	N/A	165#/SYD	P.G. 58 - 28
HMA BOND COAT (NOT A PAY ITEM)		0.05 TO 0.15 GAL/SYD	SS - 1h

HMA APPLICATION TABLE

Curve Table: Alignments

Curve #	Radius	Length	Chord Direction	Starting Station	Ending Station
C1	65.00	81.56	S35° 56' 46.59"E	0+69	1+50
C2	100.00	125.48	S35° 56' 46.59"E	1+50	2+76
C3	165.00	107.50	S18° 39' 49.53"W	4+33	5+41
C4	65.00	94.23	S4° 12' 15.02"E	5+41	6+35

EARTHWORK NOTES

TOPSOIL STRIPPED = 580 CYD

TOPSOIL PLACED = 210 CYD

EXCESS TOPSOIL = 370 CYD

TOTAL FILL REQUIRED = 238 CYD
(EXCLUDES TOPSOIL, AGGREGATE AND HMA)

AGGREGATE PLACED = 470 CYD

HMA VOLUME = 321 TONS

THESE VALUES ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY.

78 YEARS WA

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DATE: OCTOBER, 2017

SCALE: 1" = 40'

PLAN AND PROFILE, TYPICAL SECTIONS, GRADING PLAN

174180-02
OF 2