MILLIKIN ROAD
ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

VICINITY MAP

NOT TO SCALE

SUBDIVISION CONSTRUCTION DRAWINGS APPROVED

EJP 06/27/2018
via Matt Brubaker

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

PROJECT DESCRIPTION

THE SCOPE OF WORK TO BE PERFORMED UNDER THIS IMPROVEMENT SHALL GENERALLY CONSIST OF THE CONSTRUCTION OF A 175' EASTBOUND LEFT TURN LANE AND A 225' WESTBOUND RIGHT TURN LANE ON MILLIKIN ROAD AT FIELDSTONE FARMS BOULEVARD AND THE CONSTRUCTION OF A 240' EASTBOUND RIGHT TURN LANE ON MILLIKIN ROAD AT CINCINNATI DAYTON ROAD. WORK SHALL ALSO INCLUDE THE CONSTRUCTION OF A MULTI-USE TRAIL ALONG THE NORTH SIDE OF MILLIKIN ROAD ON FIELDSTONE FARMS.

LINE DATA

BEGIN ROADWAY PROJECT:	STA. 5+23.50
END ROADWAY PROJECT:	STA. 17+11.15
LENGTH OF ROADWAY PROJECT:	1187.65 LIN. FT. OR 0.225 MILES
BEGIN ROADWAY PROJECT:	STA. 31+86.93
END ROADWAY PROJECT:	STA. 42+45.08
LENGTH OF ROADWAY PROJECT:	1058.15 LIN. FT. OR 0.200 MILES

LEGAL SPEED LIMIT:

MILLIKIN ROAD 45 MPH

OWNER/DEVELOPER

SUNESIS PROPERTIES, LLC
2610 CRESCENTVILLE ROAD
WEST CHESTER, OHIO 45069
PH: (513) 326-6000

SCALE IN FEET

PLAN & INTERSECTION DETAILS: 0 20 40 — SCALE: 1" = 20'

CROSS SECTIONS: HORIZONTAL 0 5 7.5 — SCALE: 1" = 5'

VERTICAL 0 5 7.5 — SCALE: 1" = 5'

PROFILES: HORIZONTAL 0 20 30 — SCALE: 1" = 20'

VERTICAL 0 5 7.5 — SCALE: 1" = 5'

TRAFFIC CONTROL PLAN: 0 20 30 — SCALE: 1" = 20'

TRAFFIC SIGNAL MODIFICATION PLAN: 0 20 30 — SCALE: 1" = 20'

INDEX OF SHEETS

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ENGINEER/SURVEYOR

BAYER BECKER
6900 TYLERSVILLE ROAD, SUITE A
MASON, OHIO 45040
PH: (513) 336-6600

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS UNDERGROUND
PROTECTION SERVICE CALL: 1-800-925-0988

SUPPLEMENTAL SPECIFICATIONS

SPEC. NO.	DATE	SPEC. NO.	DATE
800	04/20/18		
832	01/17/14		

SPECIAL PROVISIONS

STANDARD CONSTRUCTION DRAWINGS

DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE
BP-3.1	07/18/14	MT-105.10	07/19/13																
BP-4.1	07/19/13	TC-41.20	10/18/13																
BP-5.1	07/19/13	TC-41.41	10/18/13																
BP-7.1	07/18/14	TC-42.20	10/18/13																
CB-1.1	01/15/16	TC-52.10	01/19/18																
DM-4.4	01/15/16	TC-52.20	07/21/17																
MT-97.10	07/18/14	TC-65.10	01/17/14																
MT-97.11	01/20/17	TC-65.11	07/21/17																
MT-99.20	07/21/17	TC-71.10	01/19/18																
MT-101.90	07/21/17	TC-82.10	07/17/15																

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD
ROADWAY IMPROVEMENTS
FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO
TITLE SHEET

bayer becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 16-0294 TITLE
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 1/20

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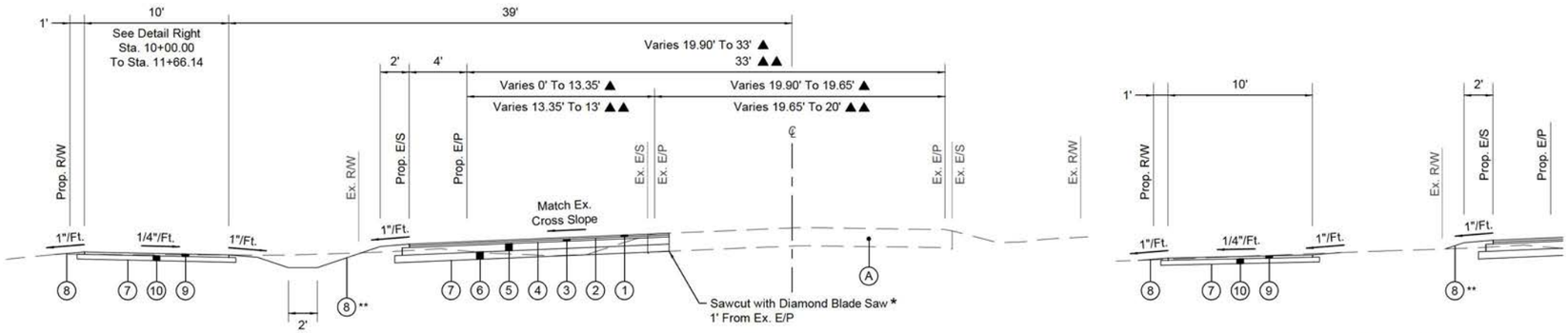


MILLIKIN ROAD TYPICAL SECTION

NOT TO SCALE

STA. 6+42.47 TO STA. 10+13.72 ▲
STA. 10+13.72 TO STA. 11+66.14 ▲▲

TRAIL & GRADING DETAIL

NOT TO SCALE

STA. 10+00.00 TO STA. 11+66.14

LEGEND

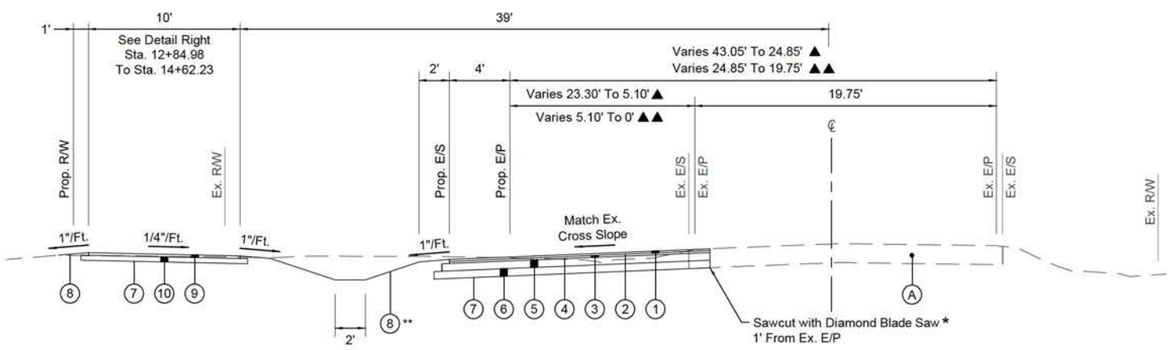
1. ITEM 441 - 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
2. ITEM 407 - NON-TRACKING TACK COAT FOR INTERMEDIATE COURSE
3. ITEM 441 - 1 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2 (448)
4. ITEM 407 - NON-TRACKING TACK COAT
5. ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
6. ITEM 304 - 6" AGGREGATE BASE
7. ITEM 204 - SUBGRADE COMPACTION
8. ITEM 659 - SEEDING & MULCHING, CLASS 1
9. ITEM 441 - 2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
10. ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22
11. ITEM 254 - 1 1/2" PAVEMENT PLANING, ASPHALT CONCRETE

(A) EXISTING PAVEMENT

NOTES:

* THE EXISTING PAVEMENT EDGE SHALL BE SAWCUT TO LOCATE A SOUND PAVEMENT EDGE PER 203.04(E) OF THE ODOT CMS.

** SEE CROSS SECTIONS FOR GRADING BEHIND THE PROP. E/S (4:1 MAX. SLOPE).



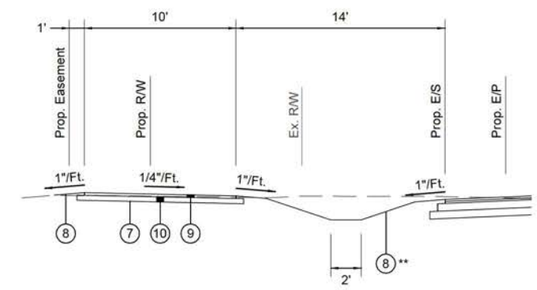
MILLIKIN ROAD TYPICAL SECTION

NOT TO SCALE

STA. 12+84.98 TO STA. 14+88.72 ▲
STA. 14+88.72 TO STA. 16+34.97 ▲▲

SEE INTERSECTION DETAILS

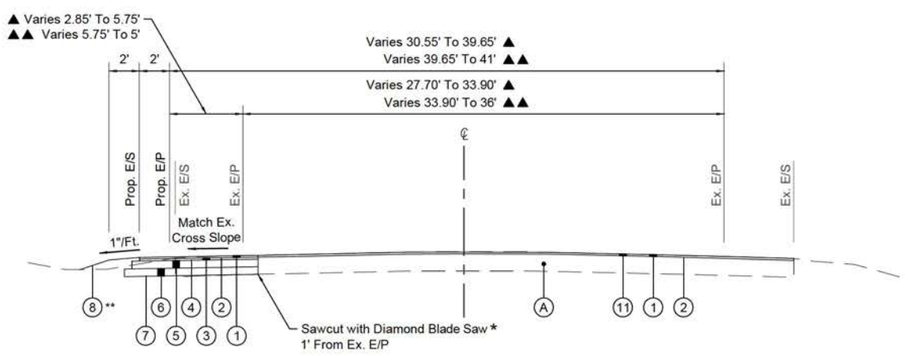
STA. 11+66.14 TO STA. 12+84.98
STA. 38+24.88 TO STA. 39+55.20



TRAIL DETAIL

NOT TO SCALE

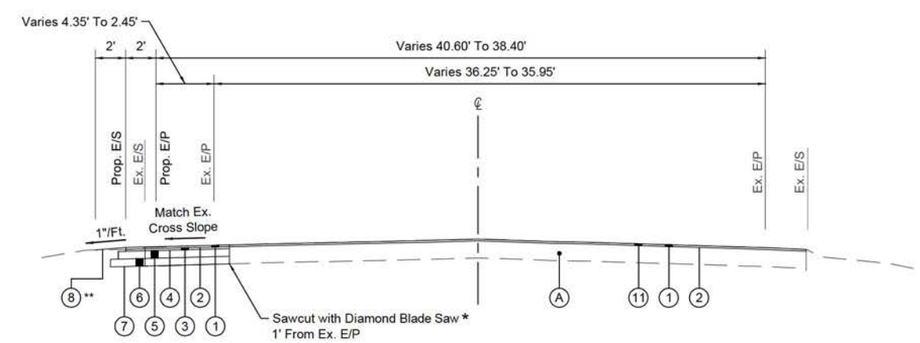
STA. 12+84.98 TO STA. 14+62.23



MILLIKIN ROAD TYPICAL SECTION

NOT TO SCALE

STA. 33+73.80 TO STA. 35+58.18 ▲
STA. 35+58.18 TO STA. 38+24.88 ▲▲



MILLIKIN ROAD TYPICAL SECTION

NOT TO SCALE

STA. 39+55.20 TO STA. 40+67.13

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1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
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MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

TYPICAL SECTIONS

bayer becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 16-0294 TYPICAL SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 2/20

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Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Typical Sections.dwg – Layout Tab: 02 Typical Sections

GENERAL SPECIFICATION

THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS), DATED JANUARY 1, 2016, THE STATE OF OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) FOR STREETS AND HIGHWAYS, 2012 EDITION, THE UNITED STATES DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, OR THE LATEST REVISIONS THEREOF, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED FOR THIS PROJECT, SHALL GOVERN THIS PROJECT, EXCEPT WHERE SPECIFICALLY MODIFIED OR AS SHOWN ON THE DRAWINGS.

CONSTRUCTION SEQUENCE

PHASE ONE

WIDEN THE NORTH SIDE OF MILLIKIN ROAD TO ACCOMMODATE THE EASTBOUND LEFT TURN LANE AND WESTBOUND RIGHT TURN LANE AT FIELDSTONE FARMS BOULEVARD. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGH THE USE OF DRUMS PER MT-97.10 AND 97.11. LANE RESTRICTIONS WILL BE PERMITTED BETWEEN 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY.

PHASE TWO

COMPLETE SIGNAGE AND PERMANENT PAVEMENT MARKINGS ALONG MILLIKIN ROAD AT FIELDSTONE FARMS BOULEVARD. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

PHASE THREE

WIDEN THE NORTH SIDE OF MILLIKIN ROAD TO ACCOMMODATE THE EASTBOUND RIGHT TURN LANE AT CINCINNATI DAYTON ROAD. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGH THE USE OF DRUMS PER MT-97.10 AND 97.11. LANE RESTRICTIONS WILL BE PERMITTED BETWEEN 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY.

PHASE FOUR

OVERLAY MILLIKIN ROAD AT CINCINNATI DAYTON ROAD. COMPLETE SIGNAGE AND PERMANENT PAVEMENT MARKINGS ALONG MILLIKIN ROAD AT CINCINNATI DAYTON ROAD. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

PHASE FIVE

COMPLETE TRAFFIC SIGNAL MODIFICATIONS AT THE INTERSECTION OF MILLIKIN ROAD AND CINCINNATI DAYTON ROAD. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

PHASE SIX

CONSTRUCT THE MULTI-USE TRAIL ALONG THE NORTH SIDE OF MILLIKIN ROAD ON FIELDSTONE FARMS.

ALTERNATE METHODS

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN WILL BE PUT INTO EFFECT UNTIL THE APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE BUTLER COUNTY ENGINEER'S OFFICE.

MAINTENANCE OF TRAFFIC

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 614 AND OTHER APPLICABLE PORTIONS OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, AS WELL AS IN ACCORDANCE WITH PART 6 OF THE OMUTCD. LANE CLOSURES SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-97.10 AND MT-97.11. AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL REMAIN OPEN DURING CONSTRUCTION ACTIVITIES. LANE CLOSURES WILL NOT BE PERMITTED BETWEEN THE HOURS OF 6:00 AM AND 9:00 AM AND BETWEEN THE HOURS OF 3:00 PM AND 6:00 PM, MONDAY THROUGH FRIDAY.

ELEVATION DATUM

ALL ELEVATIONS BASED ON U.S.G.S. DATUM.

UNDERGROUND UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

THE PERMITTEE SHALL BE RESPONSIBLE FOR ANY AND ALL UTILITY RELOCATION ON THE PROJECT.

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

ELECTRIC

DUKE ENERGY
1199 NILLES ROAD
FAIRFIELD, OH 45014
ATTN: JOE ZUERNER
(513-287-4718)

WATER & SEWER

BUTLER COUNTY WATER & SEWER
130 HIGH STREET
HAMILTON, OH 45011
ATTN: CONSTANCE KEPNER
(513-785-5134)

CABLE

TIME WARNER CABLE
11252 CORNELL PARK DRIVE
CINCINNATI, OH 45242
ATTN: MIKE BOONE
(513-489-5000)

TELEPHONE

CINCINNATI BELL
221 E. 4TH STREET, 121-900
P.O. BOX 2301
CINCINNATI, OH 45201
ATTN: DAN SPRINGELMEYER
(513-397-7165)

GAS

DUKE ENERGY
139 EAST FOURTH STREET
CINCINNATI, OH 45202
ATTN: NICK WEIL
(513-287-2088)

WITNESSES AND BENCHMARKS

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY PRIOR TO BEGINNING CONSTRUCTION TO RESET CENTERLINE CONTROL WITNESSES AND BENCHMARKS.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED AS DIRECTED BY THE ENGINEER UNLESS AUTHORIZED BY THE ENGINEER.

INSPECTIONS

THE PERMITTEE SHALL BE RESPONSIBLE FOR PAYING ANY OVERTIME REQUIRED OF THE BUTLER COUNTY ENGINEER'S OFFICE INSPECTORS ON THE PROJECT.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

ITEM 659	REPAIR SEEDING AND MULCHING	141 SQ YD
ITEM 659	COMMERCIAL FERTILIZER	0.019 TONS
ITEM 659	WATER	0.76 M GAL

WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09.

ITEM 659	WATER	15.17 M GAL

CROSSINGS AND CONNECTIONS TO EXISTING PIPE AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE COUNTY, REPRESENTATIVES OF THE COUNTY AND CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE COUNTY.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE COUNTY.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE THE ENGINEER.

PAYMENT FOR ALL OFERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

ITEM 611 - CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN

INCLUDES THE REPLACEMENT OF THE EXISTING GRATE WITH LOAD A BEARING GRATE.

ITEM 611 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN

INCLUDES THE REPLACEMENT OF THE EXISTING GRATE WITH LOAD A BEARING LID.

ITEM 623 - CONSTRUCTION LAYOUT STAKES

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH AND VERIFY THE LAYOUT AND THE GRADES OF ALL SECTIONS OF THE PROJECT. THE CONTRACTOR SHALL FURNISH AND PLACE ALL ADDITIONAL STAKES FOR THIS PROJECT TO SECURE A CORRECT LAYOUT OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE FINISH WORK CONFORM TO THE LINE, GRADES, ELEVATIONS, AND DIMENSIONS CALLED FOR IN THE PLANS. ONCE THE CENTERLINE HAS BEEN STAKED, THE CONTRACTOR SHALL CONTACT THE BUTLER COUNTY ENGINEER'S OFFICE TO INSPECT THE LAYOUT PRIOR TO CONSTRUCTION. PAYMENT FOR THIS ITEM WILL BE THE LUMP SUM BID FOR ITEM 623, CONSTRUCTION LAYOUT STAKES.

JOINT SEAL

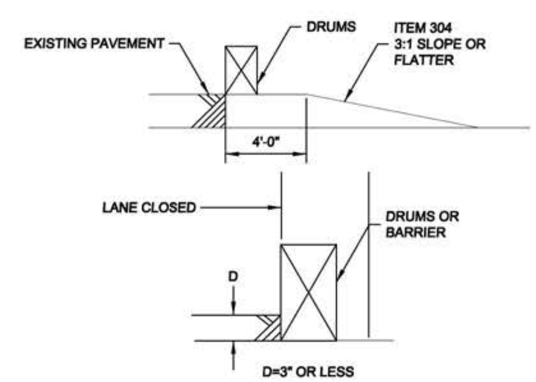
WHERE PROPOSED PAVEMENT IS TO BUTT THE EXISTING PAVEMENT, THE EXISTING PAVEMENT IS TO BE SAWCUT OR MILLED AND THE JOINT IS TO BE SEALED WITH A FOUR INCH WIDE STRIP OF ASPHALT CEMENT 702.01 APPLIED TO THE SURFACE OF THE JOINT. PAYMENT SHALL INCLUDE ALL NECESSARY LABOR, EQUIPMENT, AND MATERIALS FOR THE WORK NOTED ABOVE AND SHALL BE INCLUDED WITH THE CONTRACT UNIT PRICE BID FOR ITEM 407, TACK COAT, AS PER PLAN.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT ADJACENT TO MILLIKIN ROAD TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT, UNLESS OTHERWISE NOTED.

DROP-OFF IN WORK ZONES

DROP-OFFS ADJACENT TO TRAVELED LANES AFTER EXCAVATION BUT BEFORE PLACEMENT OF ITEM 304.



GENERAL NOTES

1. IT IS INTENDED THAT THIS DETAIL BE USED FOR TREATMENT OF DROP-OFFS THAT DEVELOP DURING CONSTRUCTION OPERATIONS, AND THAT ARE NOT OTHERWISE PROVIDED FOR IN THE CONSTRUCTION PLANS.
2. THE NEED FOR CERTAIN ADVISORY SIGNING IS REQUIRED TO ADVISE OR WARN MOTORISTS, AND ALL REQUIREMENTS OF THE OMUTCD MUST BE FULFILLED.
3. IN URBAN OR OTHER HEAVILY DEVELOPED AREAS WHERE PEDESTRIANS AND/OR BICYCLISTS MAY BE PRESENT IN SIGNIFICANT NUMBERS, ADDITIONAL SIGNING AND PROTECTIVE MEASURES OTHER THAN THOSE SHOWN HEREON MAY BE REQUIRED.
4. WHEN DRUMS ARE SPECIFIED FOR A DROP-OFF CONDITION, A MINIMUM NUMBER OF FOUR (4) DRUMS SHALL BE USED. SPACING SHALL BE AS INDICATED IN THE PLANS OR AS SPECIFIED IN THE OMUTCD.

ITEM	QUANTITY	UNIT	DESCRIPTION
			ROADWAY
201	LUMP	LUMP	CLEARING AND GRUBBING
202	163	FT	PIPE REMOVED, 24" AND UNDER
202	2	EACH	MAILBOX REMOVED
202	1	EACH	CATCH BASIN REMOVED
202	38	FT	SPECIAL - FILL AND PLUG EXISTING CONDUIT
202	643	SQ YD	FENCE REMOVED
202	2	EACH	WATER METER AND LATERAL REMOVED
202	LUMP	LUMP	REMOVAL MISC.: WALL
202	217	SQ YD	REMOVAL MISC.: DRIVEWAY
203	1123	CU YD	EXCAVATION
203	245	CU YD	EMBANKMENT
204	4274	SQ YD	SUBGRADE COMPACTION
252	1776	FT	FULL DEPTH PAVEMENT SAWING
254	4451	SQ YD	1 1/2" PAVEMENT PLANING, ASPHALT CONCRETE
611	4	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN
611	2	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN
690	1	EACH	SPECIAL - MAILBOX REMOVED AND RESET
			EROSION CONTROL
659	2810	SQ YD	SEEDING AND MULCHING
659	141	SQ YD	REPAIR SEEDING AND MULCHING
659	0.398	TON	COMMERCIAL FERTILIZER
659	15.93	MGAL	WATER
			DRAINAGE
611	188	FT	12" CONDUIT, TYPE C, 707.33
611	28	FT	12" CONDUIT, TYPE D, 707.33
			PAVEMENT
301	591	CU YD	ASPHALT CONCRETE BASE, PG64-22
304	463	CU YD	AGGREGATE BASE
407	616	GAL	NON-TRACKING TACK COAT
441	361	CU YD	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
441	106	CU YD	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2 (448)
452	51	SQ YD	6" NON-REINFORCED CONCRETE PAVEMENT
608	47	SQ FT	DETECTABLE WARNING
			TRAFFIC CONTROL
621	37	EACH	RAISED PAVEMENT MARKER
621	45	EACH	RAISED PAVEMENT MARKER REMOVED
630	135	FT	GROUND MOUNTED SUPPORT, NO. 3 POST
630	43.75	SQ FT	SIGN, FLAT SHEET
630	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
630	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
630	3	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION
642	0.58	MILE	EDGE LINE, 4"
642	0.59	MILE	CENTERLINE, 4"
642	959	FT	CHANNELIZING LINE, 8"
642	63	FT	STOP LINE
642	57	SQ FT	ISLAND MARKING
642	12	EACH	LANE ARROW
642	0.19	MILE	REMOVAL OF PAVEMENT MARKING
			TRAFFIC SIGNAL
630	3	EACH	REMOVAL OF OVERHEAD SIGN AND REERECTION
632	3	EACH	REMOVAL OF VEHICULAR SIGNAL HEAD AND REERECTION
633	2	EACH	STOP BAR RADAR DETECTION
			MISCELLANEOUS
614	LUMP	LUMP	MAINTAINING TRAFFIC
623	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES
624	LUMP	LUMP	MOBILIZATION

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	
3	REVISED PER BCEO COMMENTS	06-26-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

GENERAL NOTES & GENERAL SUMMARY

bayer becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 16-0294 GENERAL NOTES
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18

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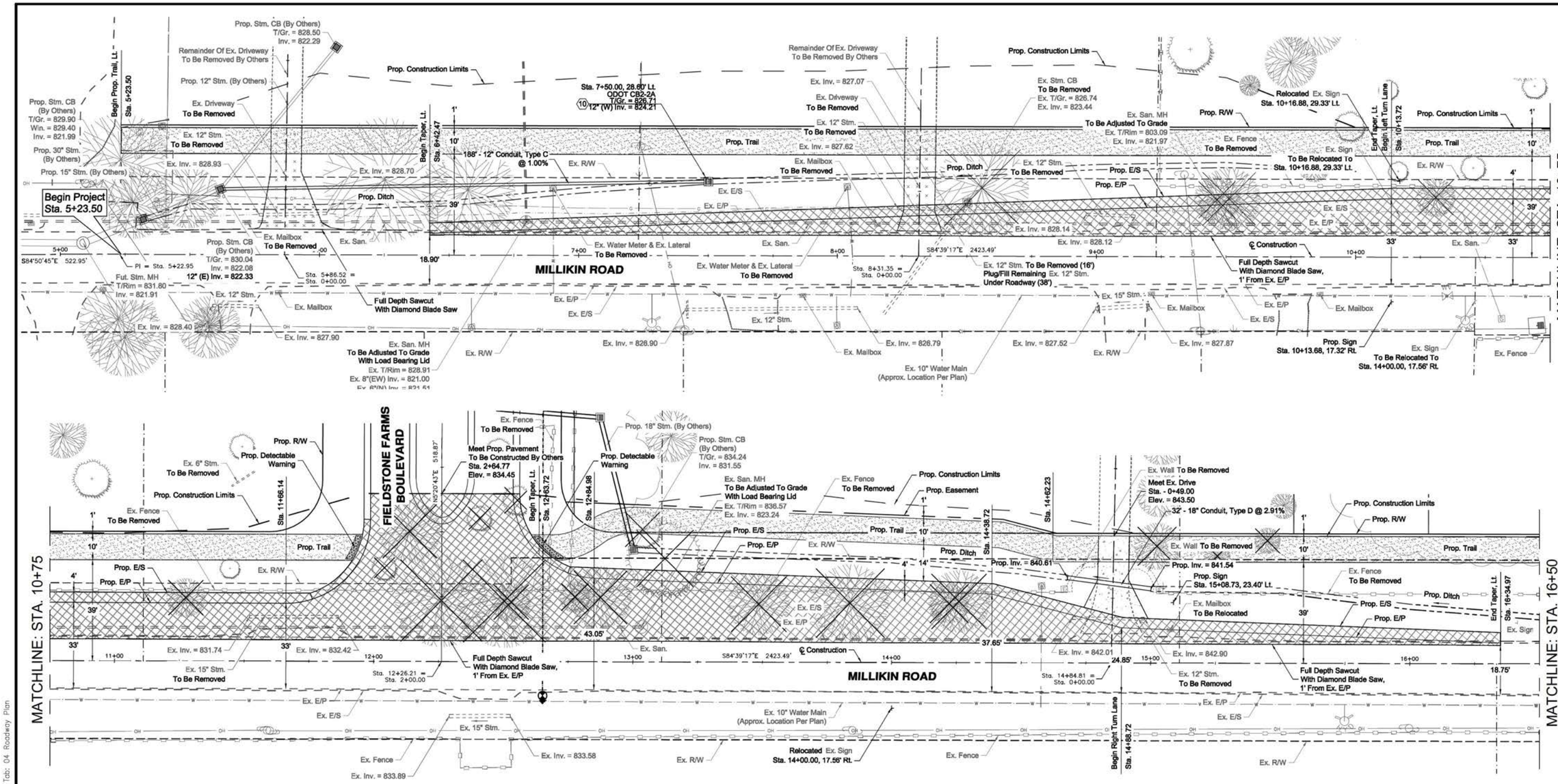
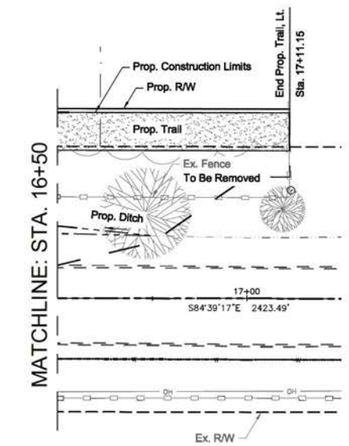
Plot time: Jun 26, 2018 – 6:09am
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 General Notes.dwg – Layout Tab: 03 General Notes & General Summary





LEGEND

PAVEMENT ON MILLIKIN ROAD

ITEM 441 - 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
ITEM 407 - NON-TRACKING TACK COAT FOR INTERMEDIATE COURSE
ITEM 441 - 1 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2 (448)
ITEM 407 - NON-TRACKING TACK COAT
ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
ITEM 304 - 6" AGGREGATE BASE

OVERLAY ON MILLIKIN ROAD

ITEM 254 - 1 1/2" PAVEMENT PLANING, ASPHALT CONCRETE
ITEM 441 - 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
ITEM 407 - NON-TRACKING TACK COAT FOR INTERMEDIATE COURSE

PROPOSED TRAIL PAVEMENT

ITEM 441 - 2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22

PROPOSED CONCRETE DRIVEWAY

ITEM 452 - 6" NON-REINFORCED PAVEMENT

PROPOSED ASPHALT DRIVEWAY

ITEM 441 - 2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (448)
ITEM 304 - 6" AGGREGATE BASE

REMOVE EXISTING PAVEMENT

REMOVE EXISTING TREE

NOTES

THE EXISTING PAVEMENT EDGE SHALL BE SAWCUT TO LOCATE A SOUND PAVEMENT EDGE PER SECTION 203.04(e) OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

ROADWAY PLAN

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Drawing: 16-0294 ROADWAY PLAN
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 4/20

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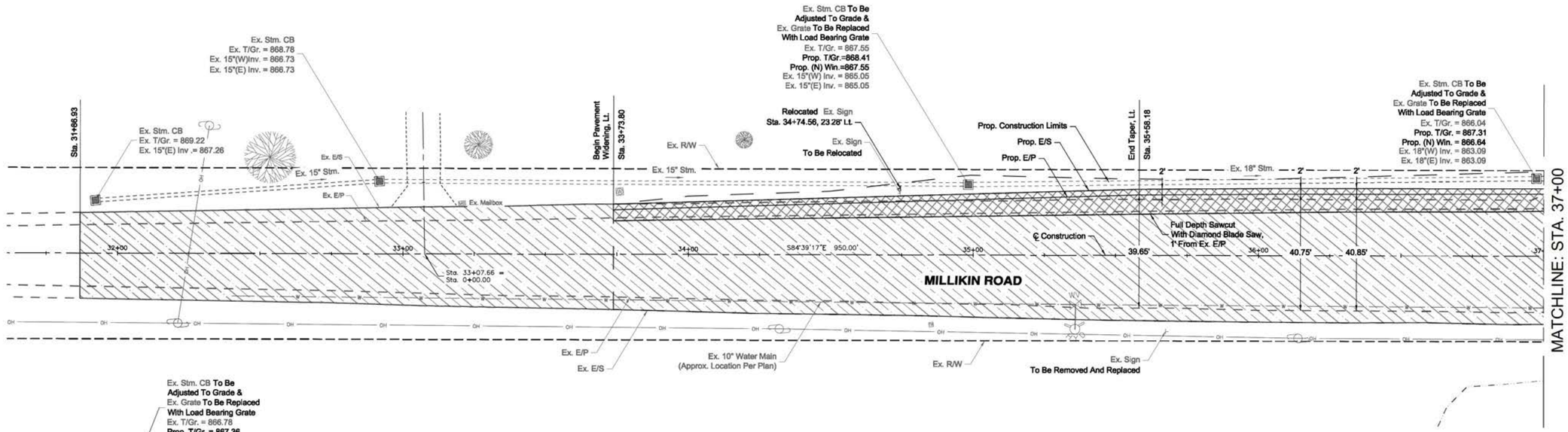
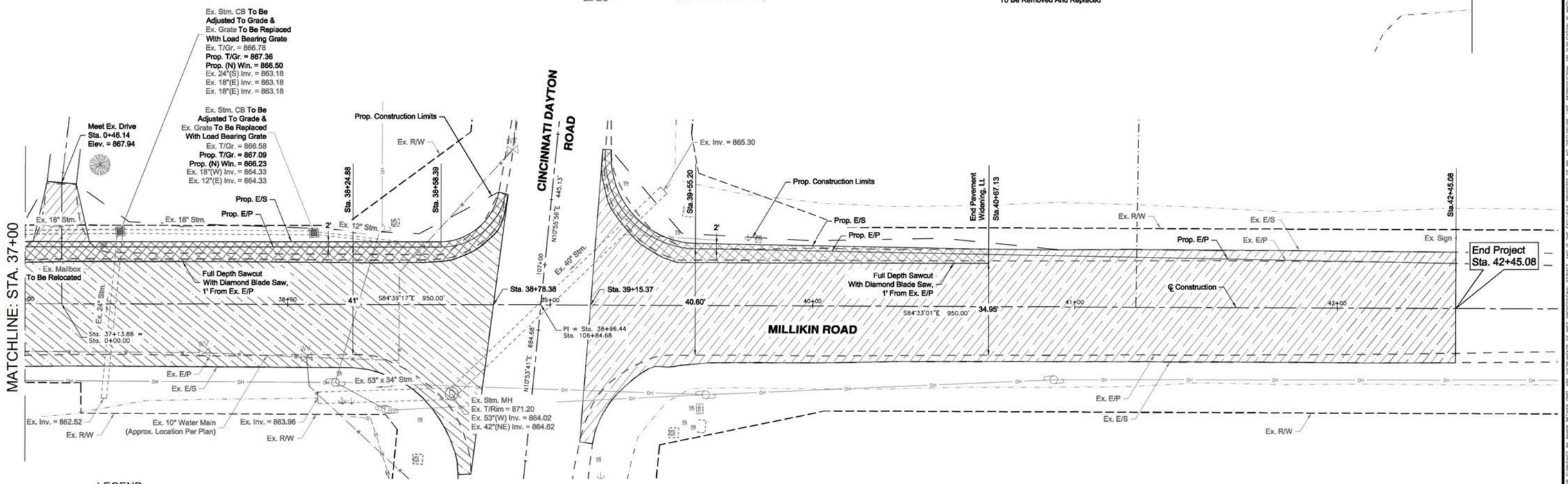
Plot time: Jun 22, 2018 – 3:16pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Roadway Plan.dwg – Layout Tab: 04 Roadway Plan





LEGEND

PAVEMENT ON MILLIKIN ROAD

ITEM 441 - 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
ITEM 407 - NON-TRACKING TACK COAT FOR INTERMEDIATE COURSE
ITEM 441 - 1 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2 (448)
ITEM 407 - NON-TRACKING TACK COAT
ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
ITEM 304 - 6" AGGREGATE BASE

OVERLAY ON MILLIKIN ROAD

ITEM 254 - 1 1/2" PAVEMENT PLANING, ASPHALT CONCRETE
ITEM 441 - 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
ITEM 407 - NON-TRACKING TACK COAT FOR INTERMEDIATE COURSE

PROPOSED TRAIL PAVEMENT

ITEM 441 - 2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (448)
ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22

PROPOSED CONCRETE DRIVEWAY

ITEM 452 - 6" NON-REINFORCED PAVEMENT

PROPOSED ASPHALT DRIVEWAY

ITEM 441 - 2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (448)
ITEM 304 - 6" AGGREGATE BASE

REMOVE EXISTING PAVEMENT

REMOVE EXISTING TREE

NOTES

THE EXISTING PAVEMENT EDGE SHALL BE SAWCUT TO LOCATE A SOUND PAVEMENT EDGE PER SECTION 203.04(e) OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

Basis of Bearing: State Plane NAD83 (2011)
0 20 30
SCALE: 1" = 20'

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

ROADWAY PLAN

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Drawing: 16-0294 ROADWAY PLAN
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 5/20

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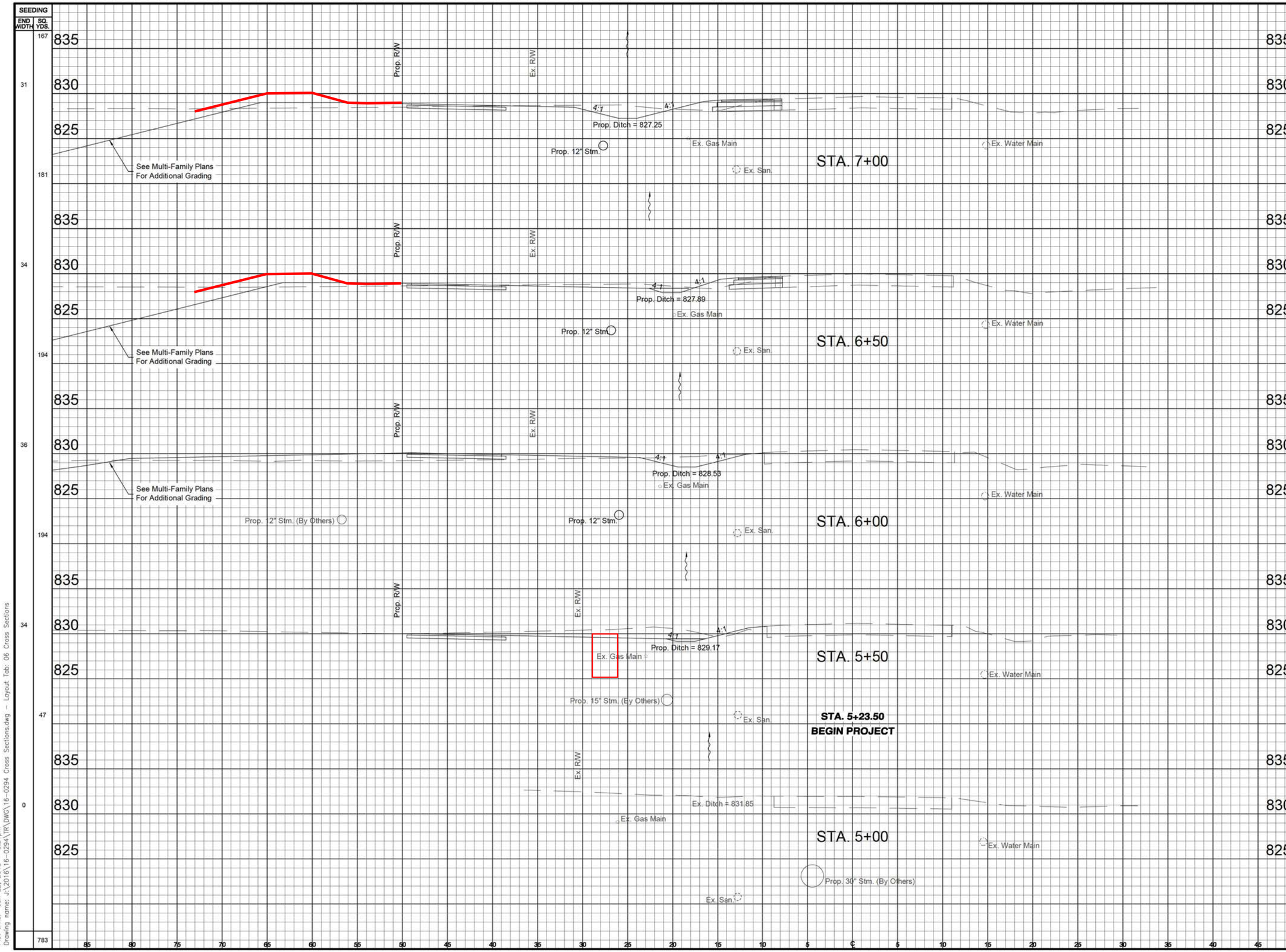
Plot time: Jun 22, 2018 – 3:16pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Roadway Plan.dwg – Layout Tab: 05 Roadway Plan



	SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		167			33	13
	31		20	3		
		181			33	7
	34		16	5		
		194			22	15
	36		8	11		
		194			32	12
	34		27	2		
		47			13	1
	0		0	0		
		783			133	48

Plot time: Jun 22, 2018 – 3:21pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 06 Cross Sections

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2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
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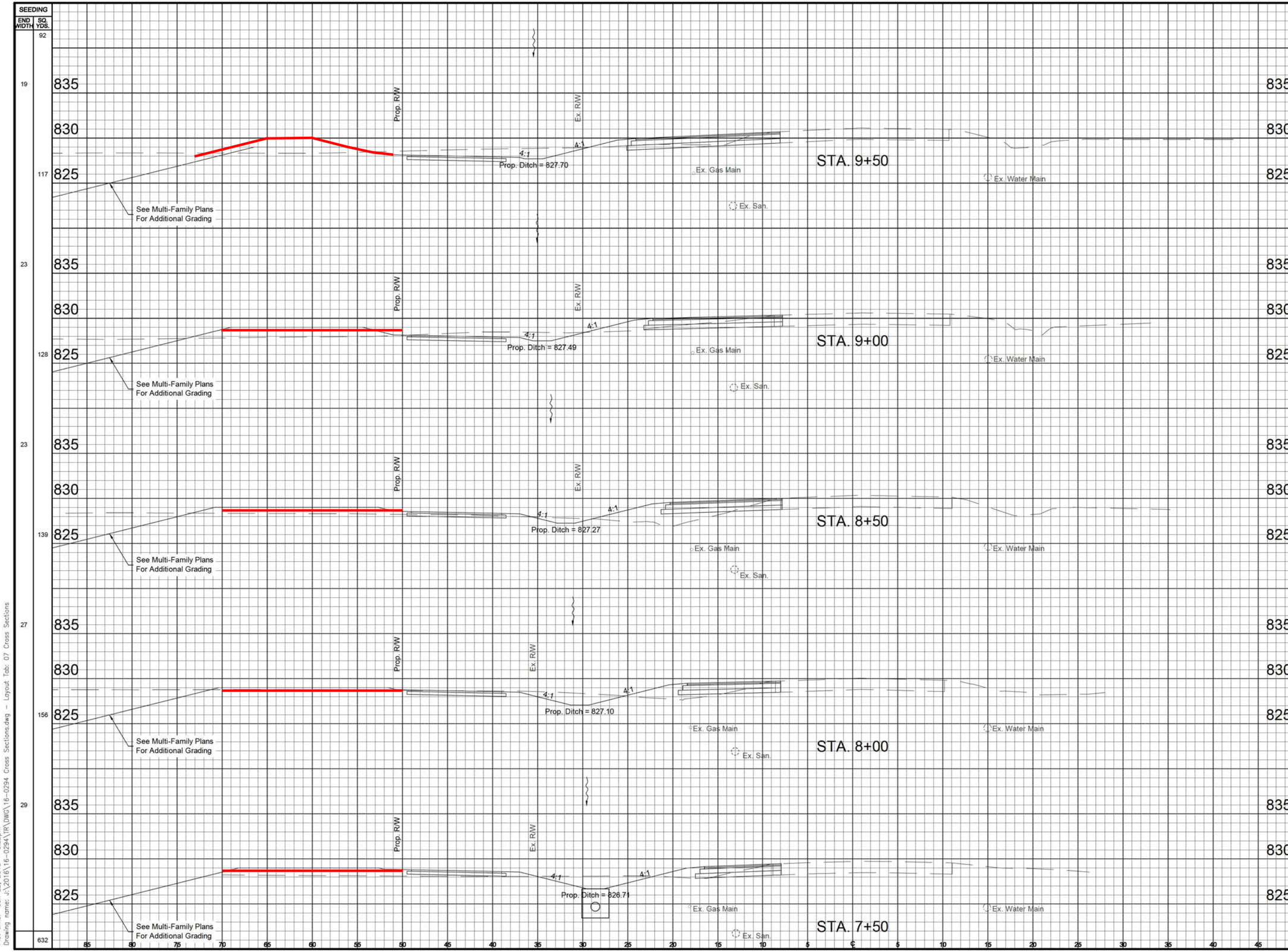
Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 6/20



Plot time: Jun 22, 2018 – 3:22pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 07 Cross Sections

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
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Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 7/20

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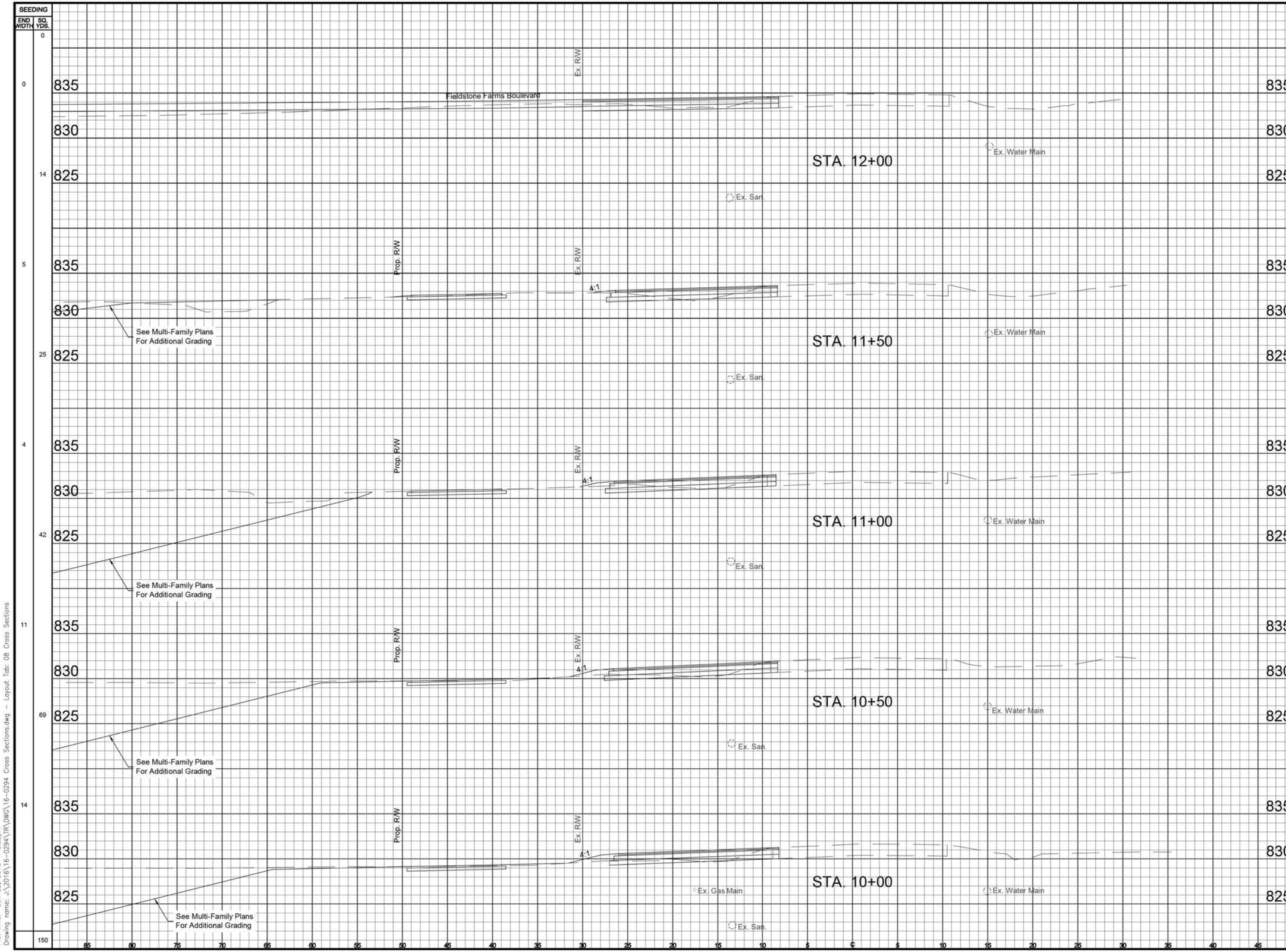

Plot time: Jun 22, 2018 – 3:22pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 08 Cross Sections

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Item	Revision Description	Date	Drwn:	Chk:
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2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
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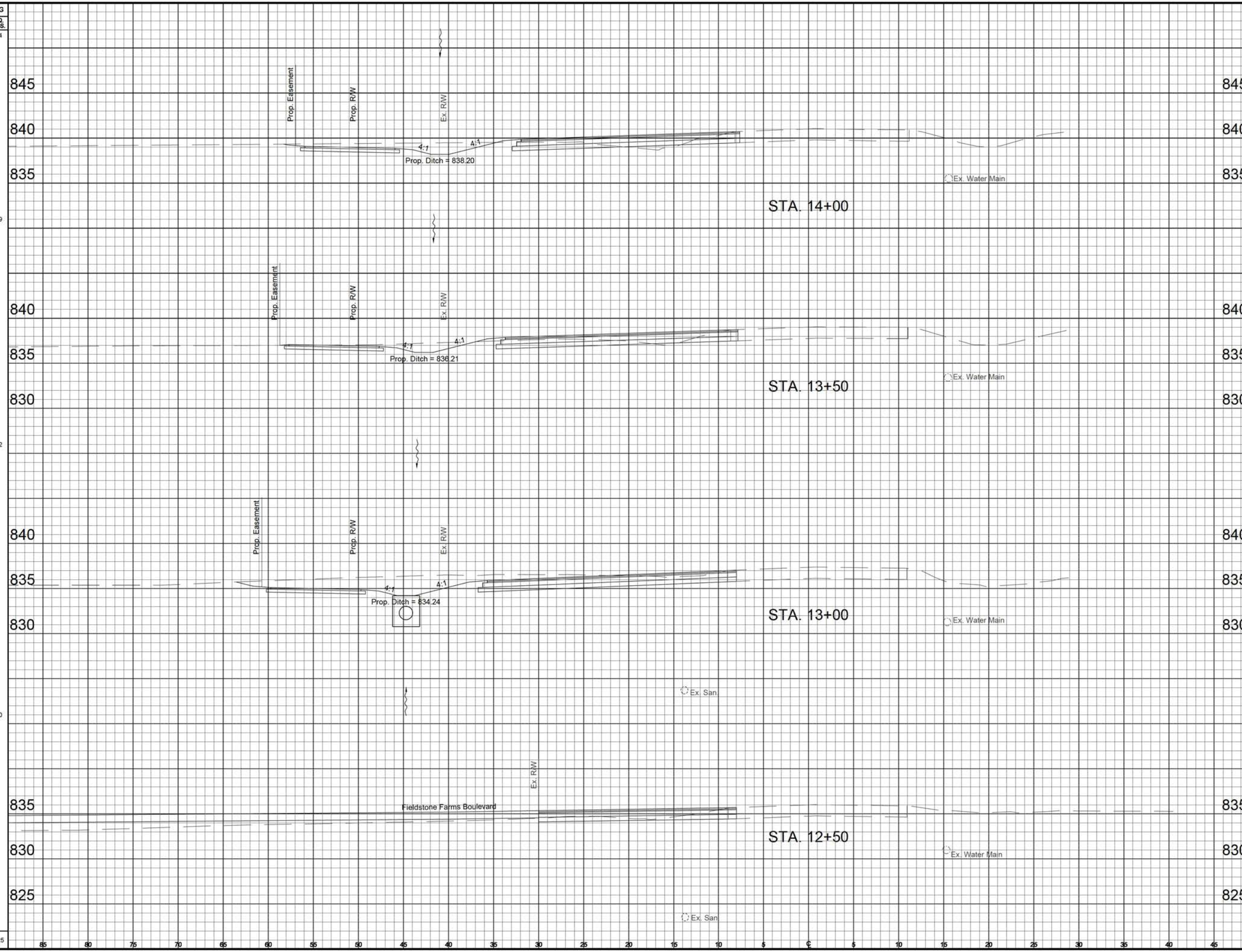
Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-21-18
Sheet: 8/20



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	94			58	3
17		33	2		
	89			57	3
15		29	1		
	92			96	1
18		75	0		
	50			80	0
0		11	0		
	325			291	7

Plot time: Jun 22, 2018 – 3:23pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 09 Cross Sections

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2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
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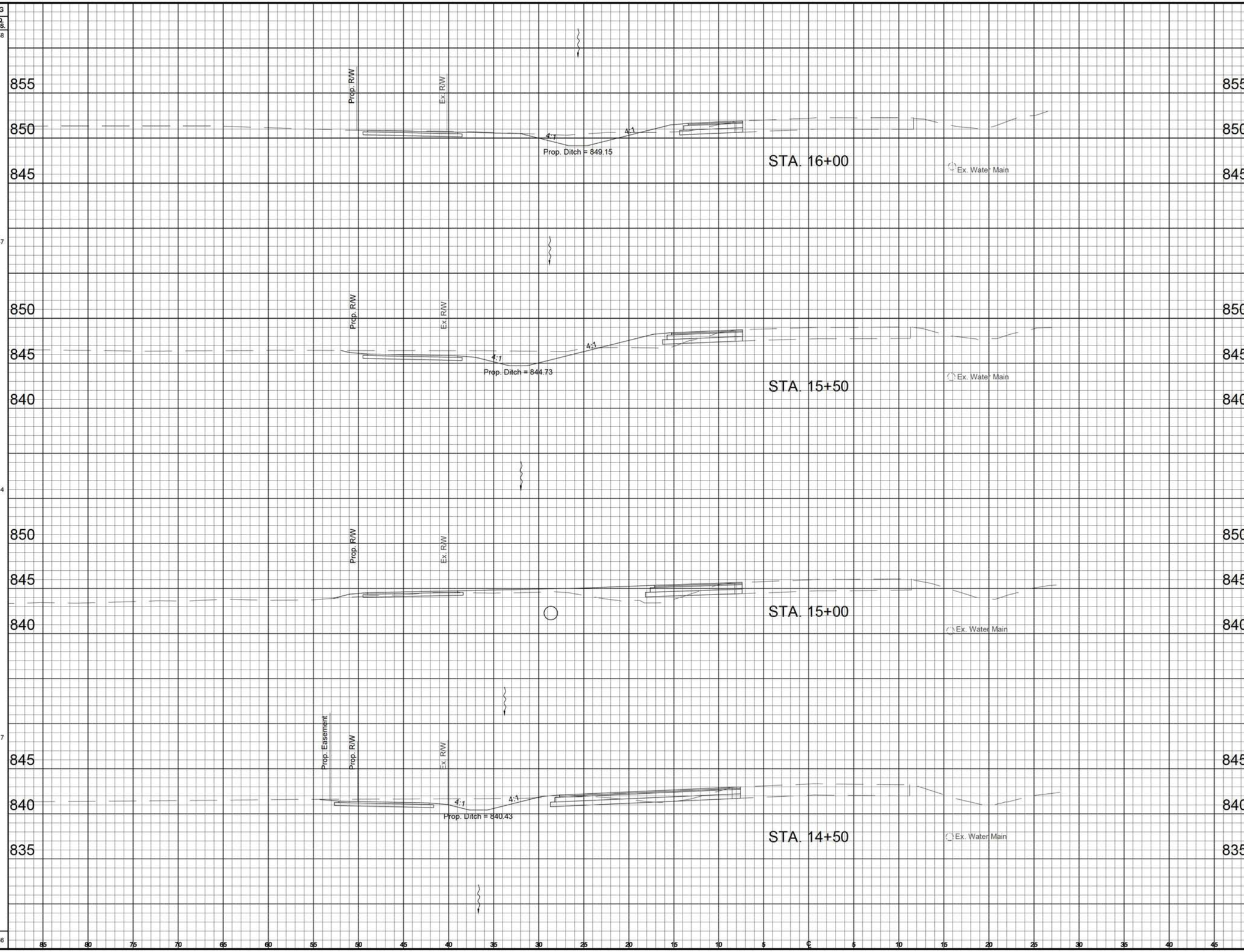
Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 9/20



Plot time: Jun 22, 2018 – 3:23pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 10 Cross Sections

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Revision Description	Date	Drwn:	Chk:
1 REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2 REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

Item

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
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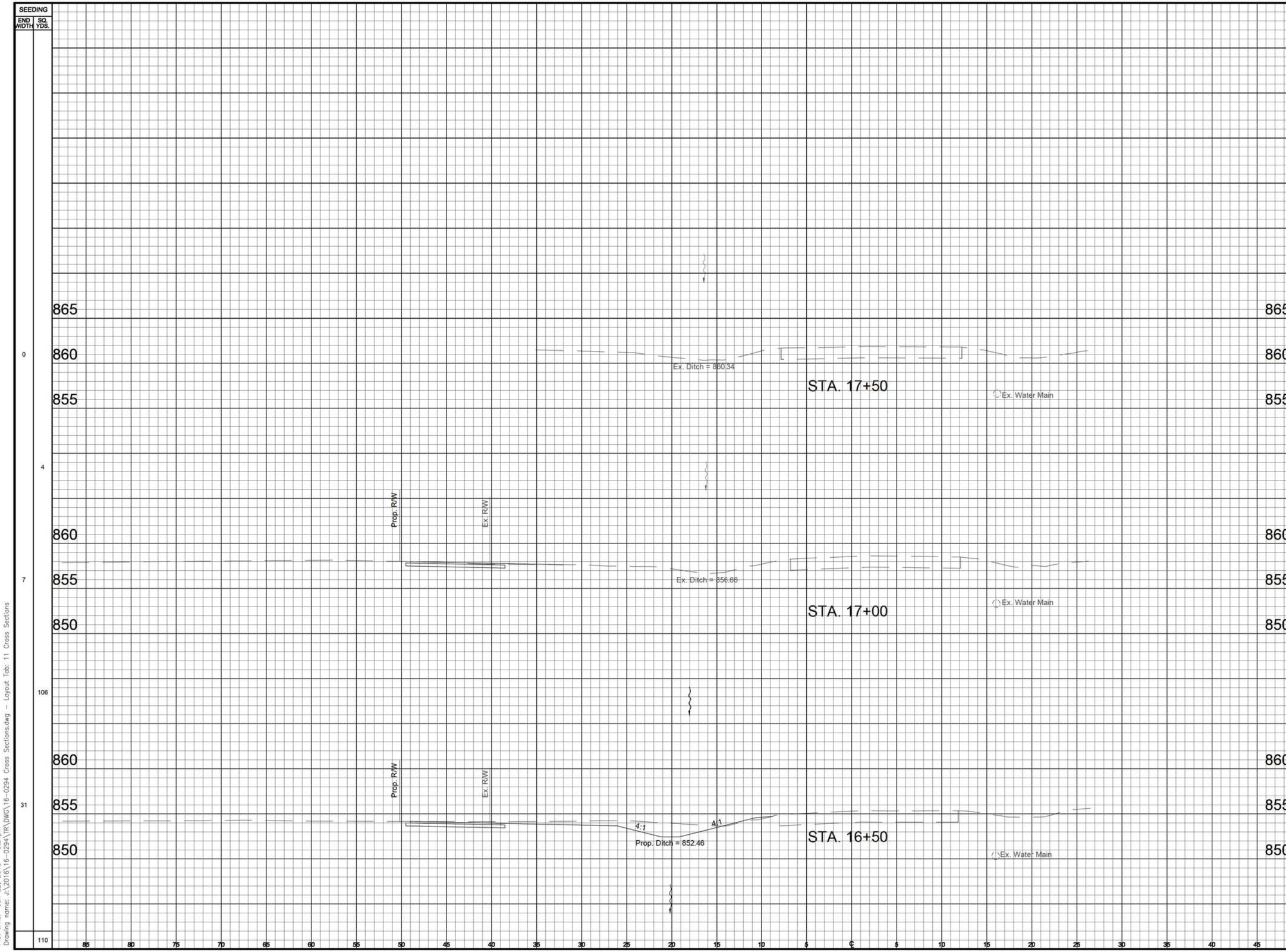
Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 10/20



Plot time: Jun 22, 2018 – 3:24pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 11 Cross Sections

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Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
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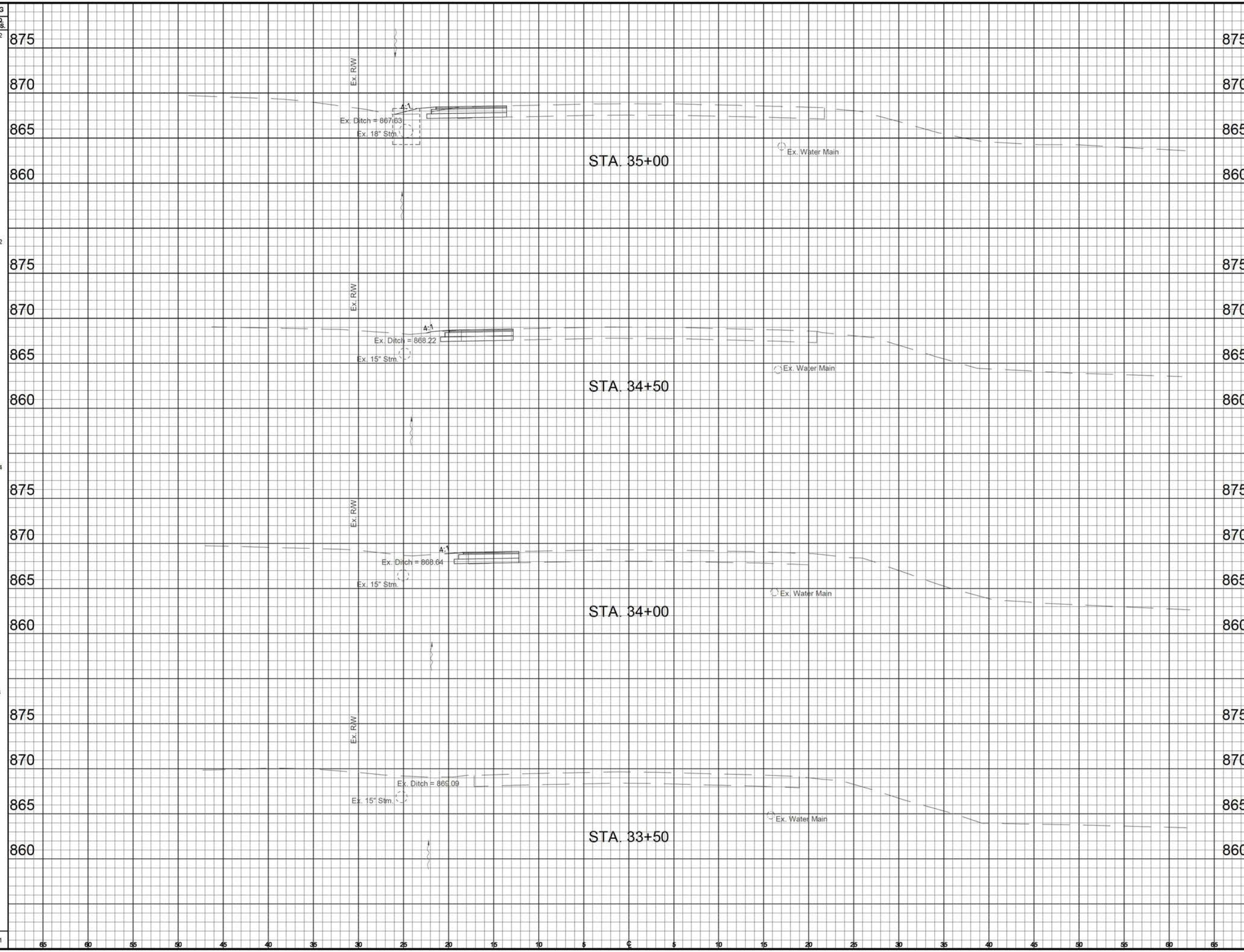
Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 11/20



END WIDTH	SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
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	22			19	2
3	14	10	0	17	0
2	3	8	0	4	0
0	61	0	0	59	5

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
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Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 12/20

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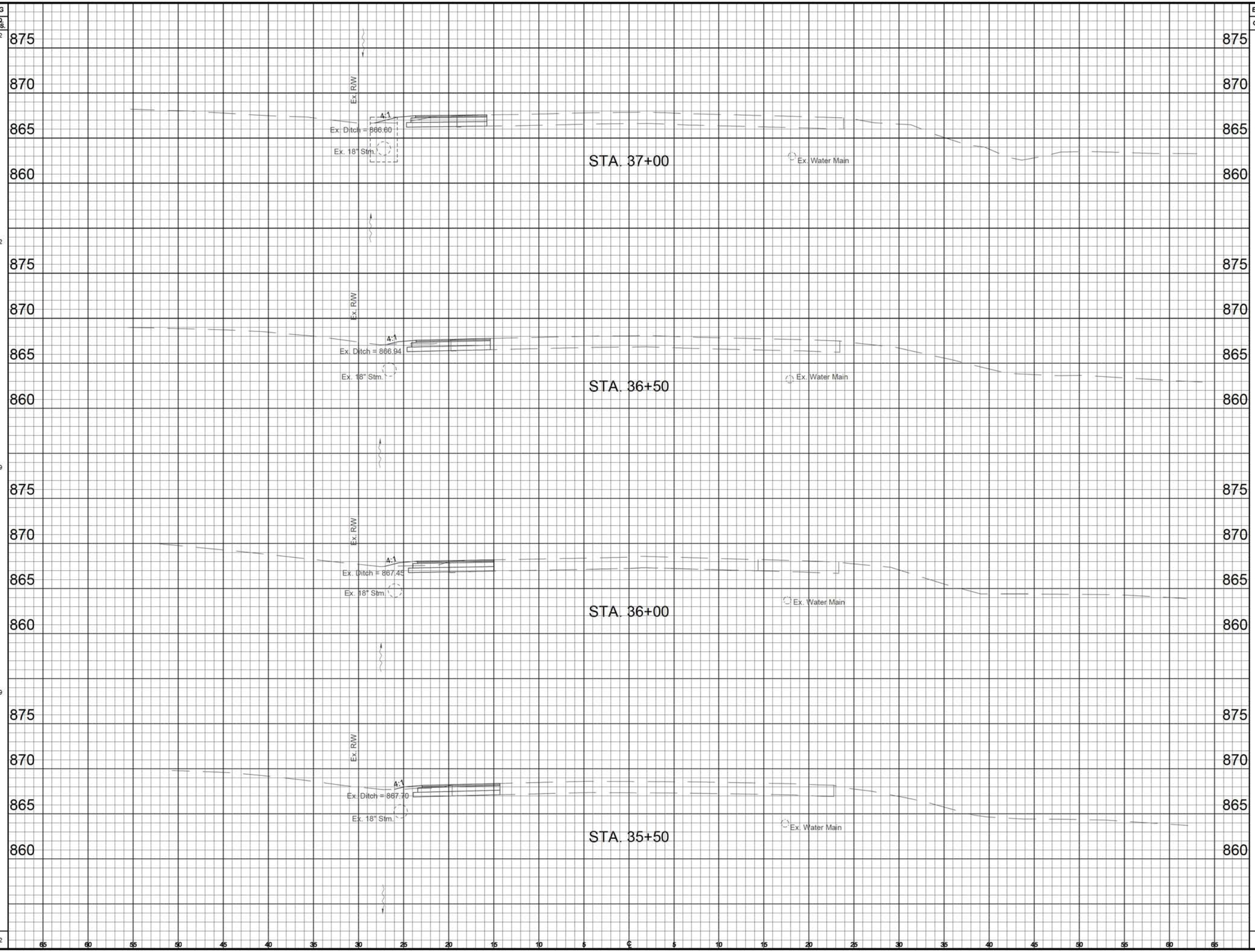
Plot time: Jun 22, 2018 – 3:24pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 12 Cross Sections



Plot time: Jun 22, 2018 – 3:25pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 13 Cross Sections

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

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Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 13/20

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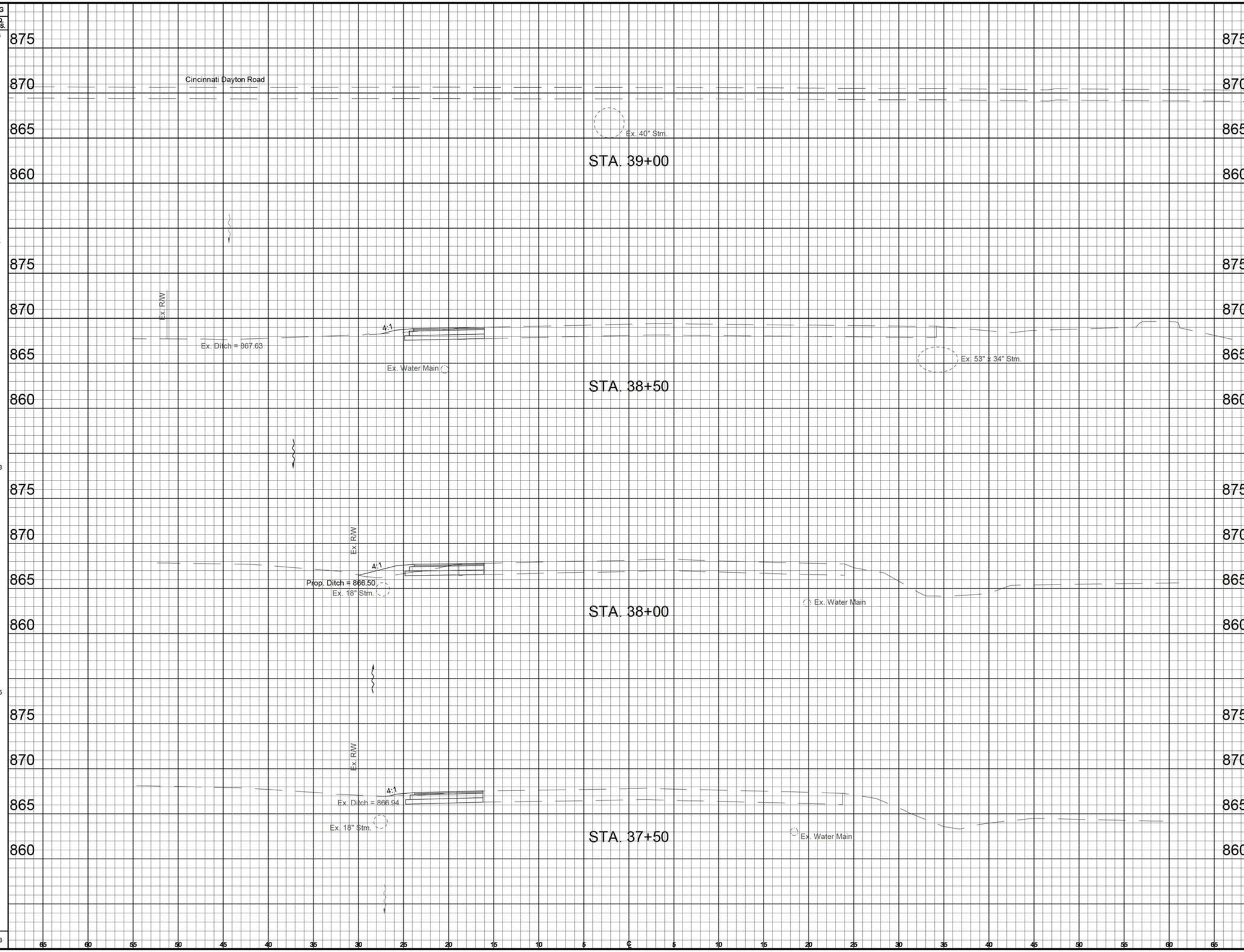

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2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

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Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 14/20

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Plot time: Jun 22, 2018 – 3:25pm
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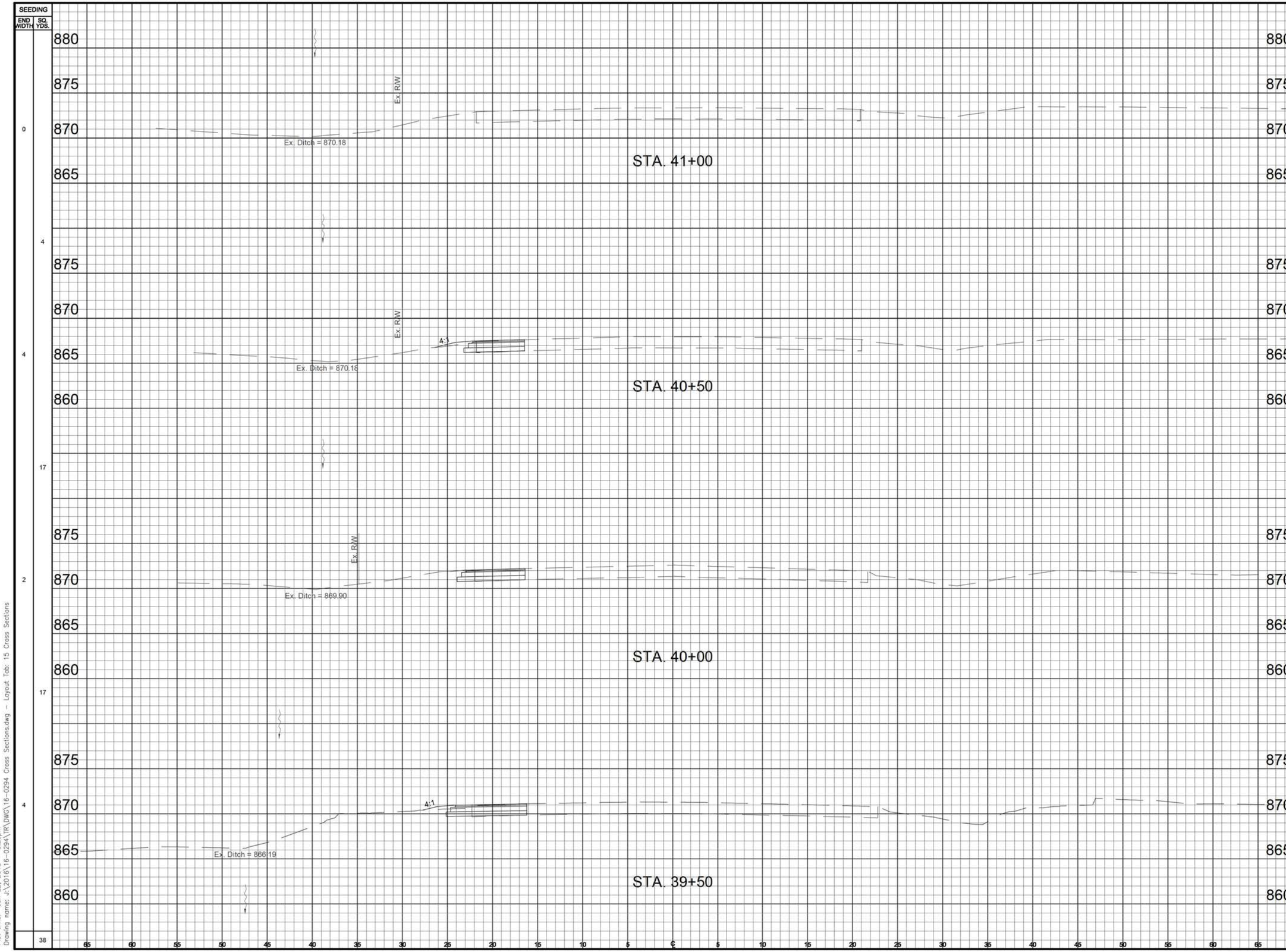

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

CROSS SECTIONS

bayer becker
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6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 16-0294 CROSS SECTIONS
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 15/20

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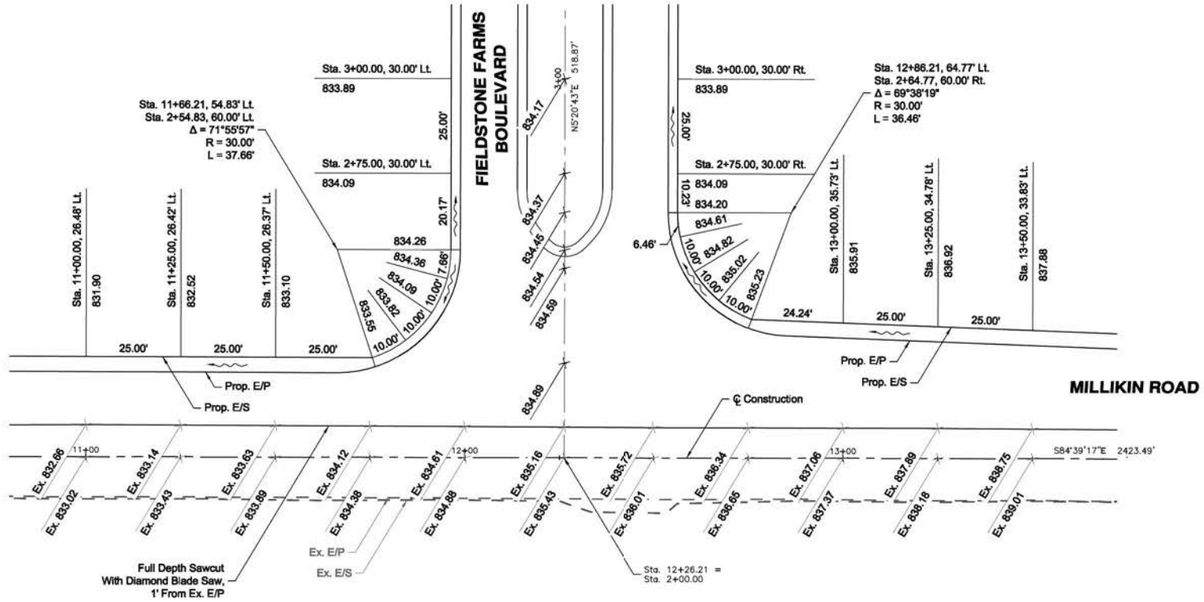
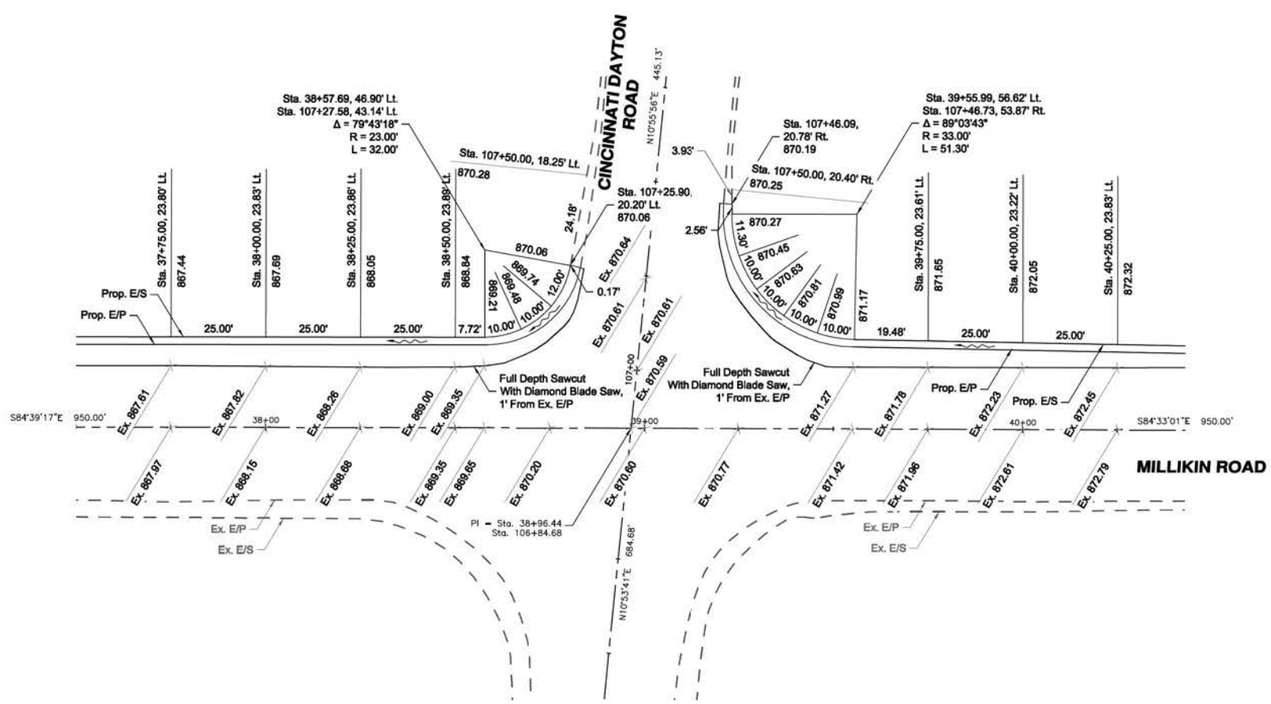
Plot time: Jun 22, 2018 – 3:26pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Cross Sections.dwg – Layout Tab: 15 Cross Sections





Basis of Bearing:
State Plane NAD83 (2011)

0 20 30

SCALE: 1" = 20'

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

INTERSECTION DETAILS

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Drawing: 16-0294 INT DETAIL
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 16/20

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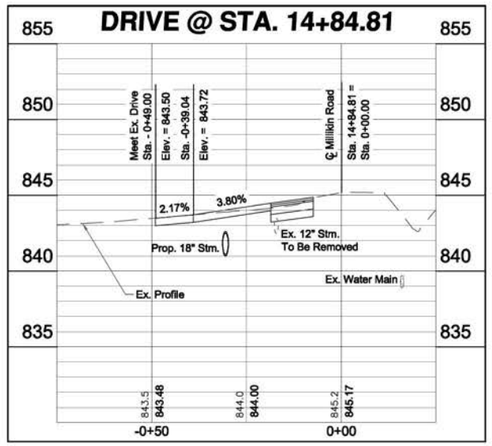
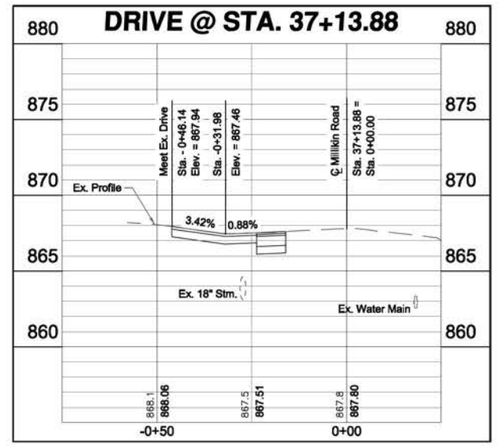
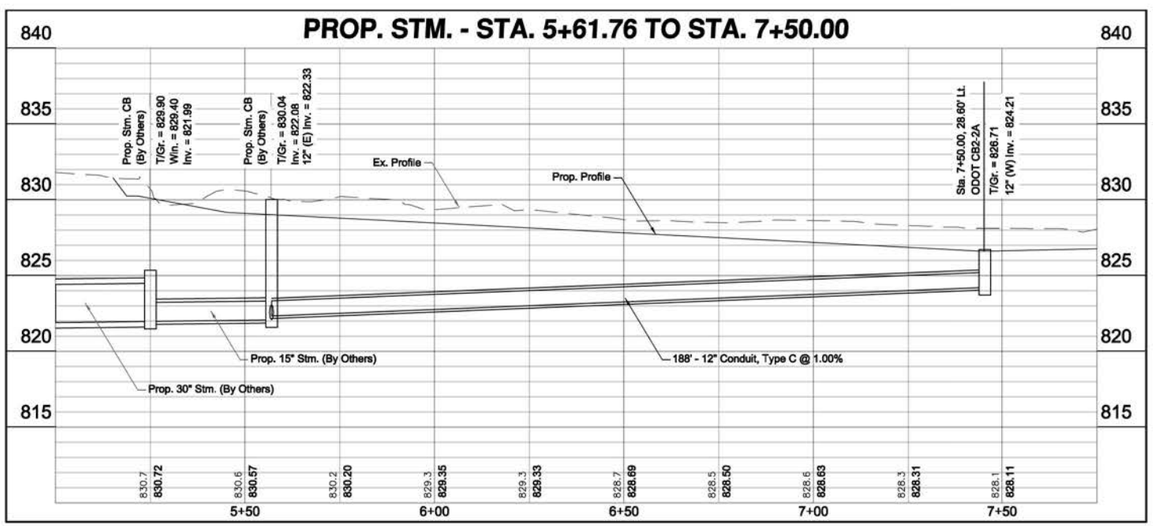
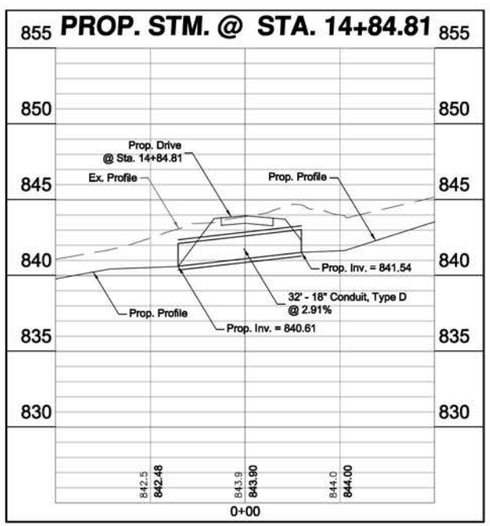
Plot time: Jun 22, 2018 – 3:31pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Int Detail.dwg – Layout Tab: 16 Int Details









Basis of Bearing:
State Plane NAD83 (2011)

0 20 30
SCALE: 1" = 20'

Item	Revision Description	Date	Drwn.	Chk.
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

PROFILES

bayer becker
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Drawing: 16-0294 PROFILES
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 17/20

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Plot time: Jun 22, 2018 – 3:34pm
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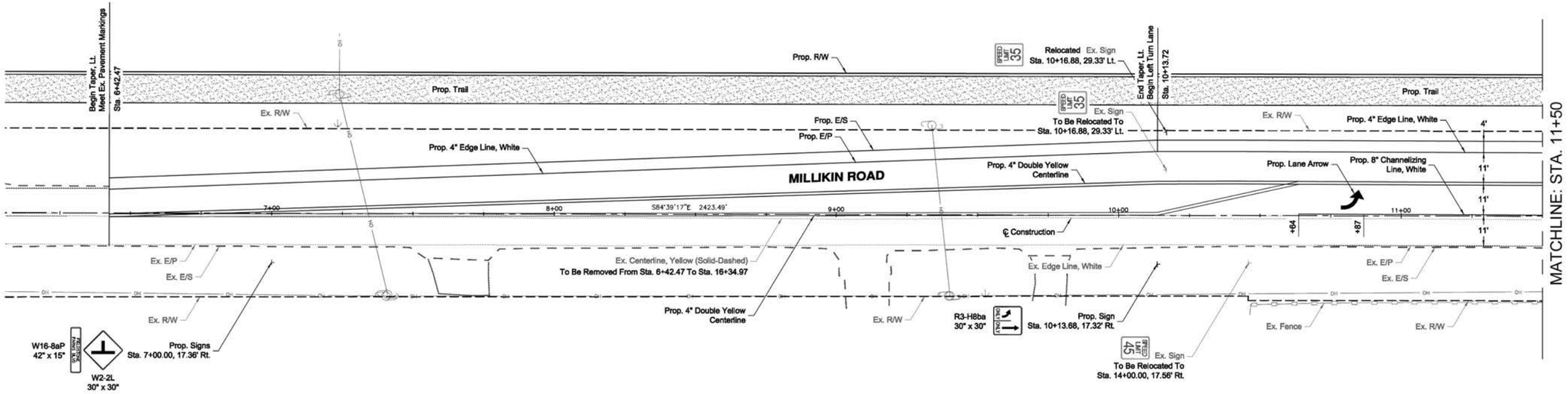

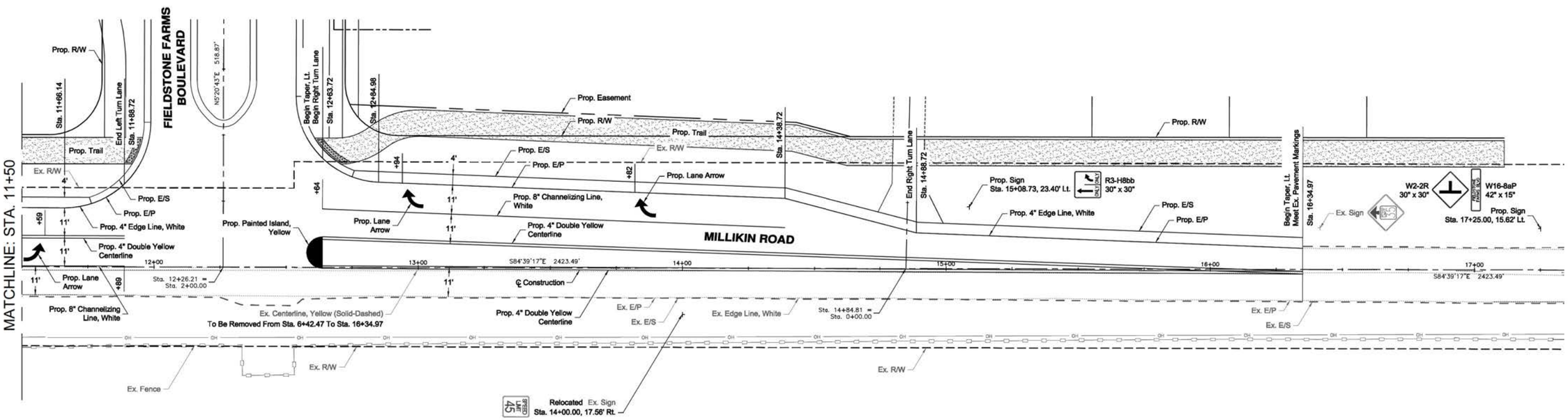

NOTES

1. EXISTING PAVEMENT MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH SECTION 641.10 OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.
2. ALL PAVEMENT MARKINGS SHALL BE PER ITEM 642 PAINT AND SHALL BE INSTALLED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).
3. ALL TRAFFIC SIGNS AND POSTS SHALL CONFORM TO ITEM 630 TRAFFIC SIGNS AND SUPPORTS AND THE OMUTCD.

Basis of Bearing:
State Plane NAD83 (2011)
0 20 30
SCALE: 1" = 20'

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	
3	REVISED PER BCEO COMMENTS	06-26-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

TRAFFIC CONTROL PLAN

bayer becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 16-0294 TRAFFIC CONTROL PLAN
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 18/20

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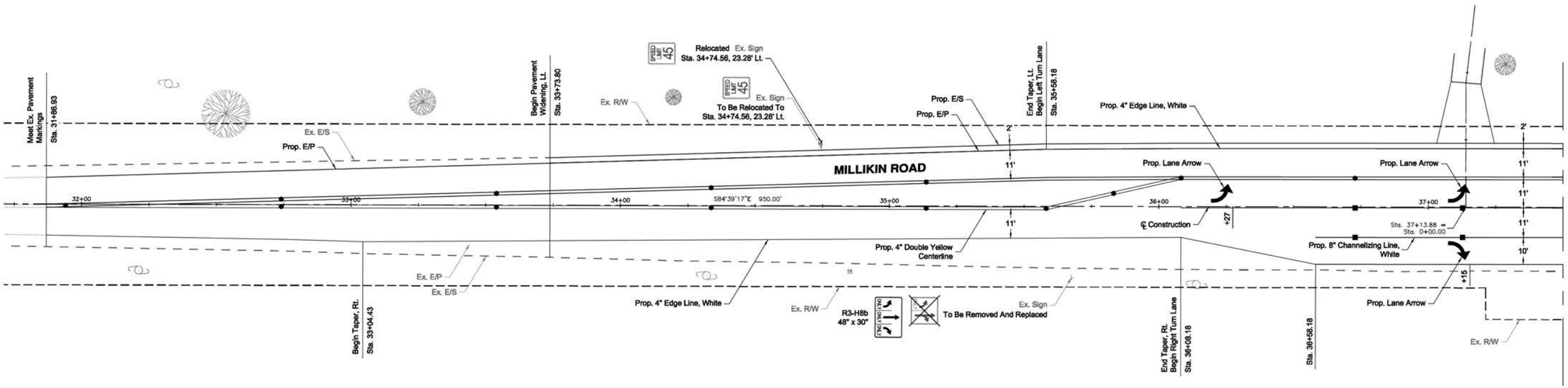
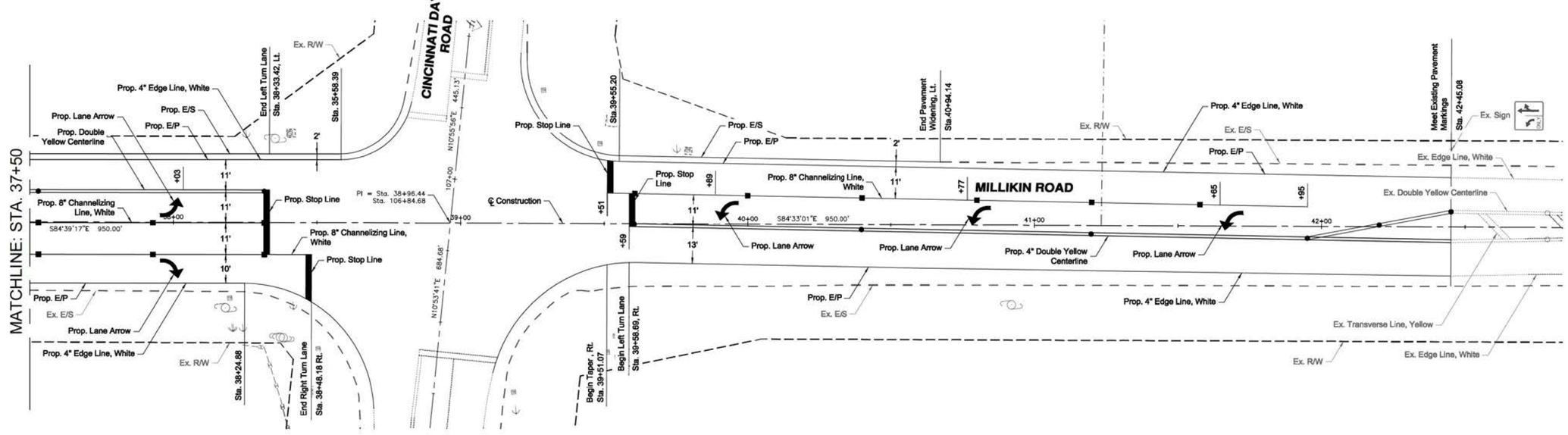
Plot time: Jun 26, 2018 – 6:12am
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Traffic Control Plan.dwg – Layout Tab: 18 Traffic Control Plan





LEGEND

- □ ○ EXISTING RAISED PAVEMENT MARKERS
- ⨯ ⨯ EXISTING RAISED PAVEMENT MARKERS TO BE REMOVED
- ■ ITEM 621 - RAISED PAVEMENT MARKERS, WHITE/RED
- ● ITEM 621 - RAISED PAVEMENT MARKERS, YELLOW/YELLOW

NOTES

1. EXISTING RAISED PAVEMENT MARKERS SHALL BE REMOVED FROM STA. 31+86.93 TO STA. 42+45.08.
2. ALL PAVEMENT MARKINGS SHALL BE PER ITEM 642 PAINT AND SHALL BE INSTALLED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).
3. ALL TRAFFIC SIGNS AND POSTS SHALL CONFORM TO ITEM 630 TRAFFIC SIGNS AND SUPPORTS AND THE OMUTCD.

Basis of Bearing:
State Plane NAD83 (2011)
0 20 30
SCALE: 1" = 20'

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	
3	REVISED PER BCEO COMMENTS	06-26-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

TRAFFIC CONTROL PLAN

bayer becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 16-0294 TRAFFIC CONTROL PLAN
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet: 19/20

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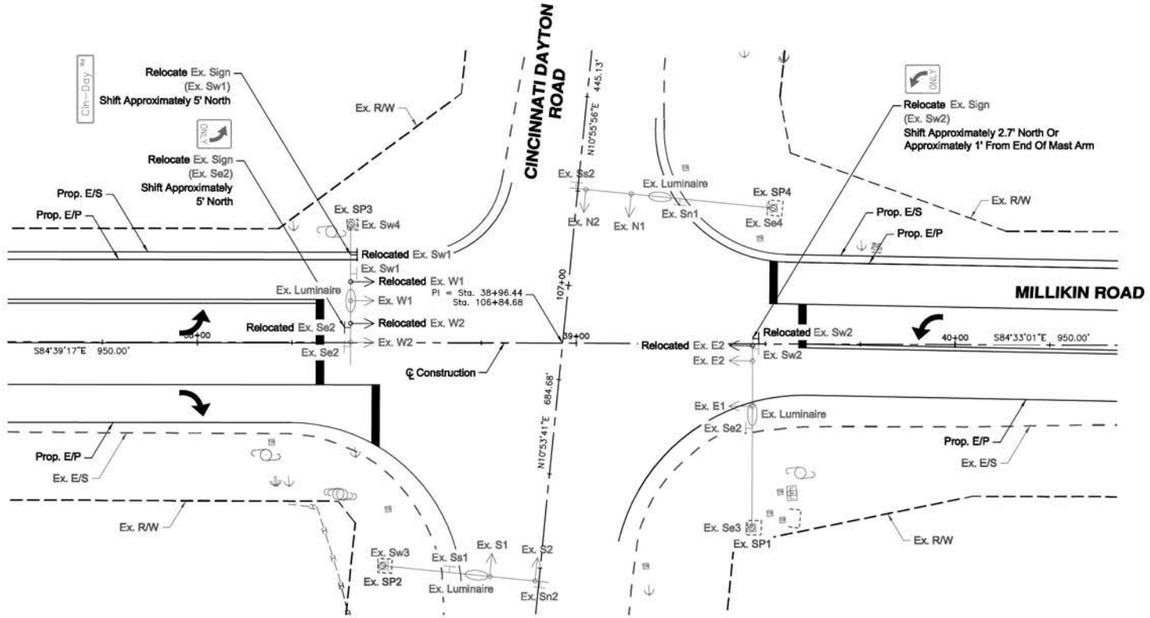
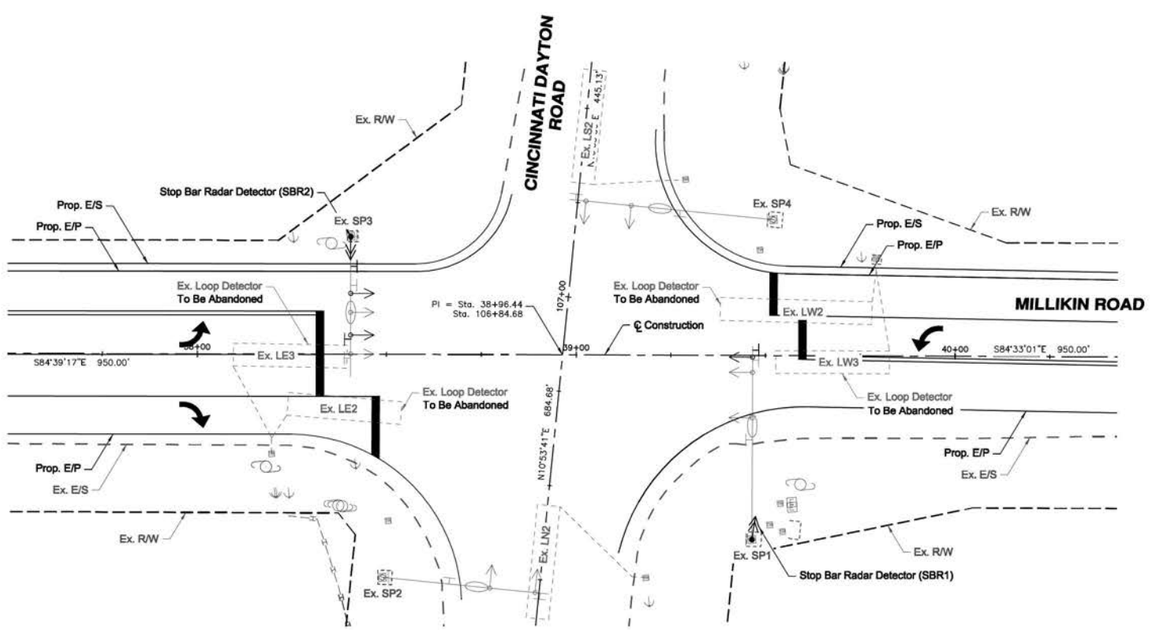
Plot time: Jun 26, 2018 - 6:15am
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Traffic Control Plan.dwg - Layout Tab: 19 Traffic Control Plan



TRAFFIC SIGNAL LAYOUT



LOOP DETECTOR LAYOUT

ITEM 633 - STOP BAR RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A STOP BAR DETECTION UNIT CAPABLE OF INTERSECTION DETECTION CONTROL UTILIZING ABOVE GROUND DIGITAL WAVE RADAR TECHNIQUES. THE UNIT SHALL BE NON-INTRUSIVE AND SHALL DETECT VEHICLES FROM 6 FEET UP TO 14 FEET FOR A 90 DEGREE FIELD OF VIEW FROM THE UNIT. THE UNIT SHALL PROVIDE REAL-TIME PRESENCE DATA FOR AT LEAST 10 LANES. THE UNIT SHALL PROVIDE AT LEAST 16 DETECTION ZONES SIMULTANEOUSLY FOR INTERSECTION CONTROL. ONE UNIT SHALL BE PROVIDE DPER APPROACH, WHERE SPECIFIED IN THE PLANS, COVERING MULTIPLE LANES WHERE STOP BAR DETECTION IS REQUIRED. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING LIST OF FEATURES AND CAPABILITIES:

- THE UNIT SHALL PROVIDE ACCURATE PRESENCE-DETECTION OF MOVING VEHICLES. THE UNIT SHALL BE MOUNTED IN A FORWARD-FIRE OR SIDE-FIRE POSITION, LOOKING AT EITHER APPROACHING OR DEPARTING TRAFFIC AND SHALL ONLY DETECT VEHICLES IN ONE DIRECTION OF TRAVEL.
- THE UNIT SHALL BE TESTED TO MEET NEMA TS2 ENVIRONMENTAL STANDARDS AND MAINTAIN ACCURATE PERFORMANCE IN THE FOLLOWING OPERATING CONDITIONS:

  RAIN UP TO 1 INCH PER HOUR
  FREEZING RAIN
  SNOW
  WIND
  DUST
  FOG
  CHANGING TEMPERATURE
  CHANGING LIGHTING

- THE RADAR DESIGN FOR EACH UNIT SHALL CONFORM TO THE FOLLOWING:

  OPERATING FREQUENCY: 24.0-24.25 GHZ (K-BAND)
  MATRIX OF 16 RADARS
  NO MANUAL TUNING TO CIRCUITRY
  TRANSMITS MODULATED SIGNALS GENERATED DIGITALLY
  NO TEMPERATURE-BASED COMPENSATION NECESSARY
  BANDWIDTH STABLE WITHIN 1%
  PRINTED CIRCUIT BOARD ANTENNAS
  ANTENNA VERTICAL 6 DB BEAM WIDTH (TWO-WAY PATTERN): 65 DEGREES
  HORIZONTAL FIELD OF VIEW: 90 DEGREES
  ANTENNA TWO-WAY SIDELOBES: -40 DB
  TRANSMIT BANDWIDTH: 245 MHZ
  UN-WINDOWED RESOLUTION: 2 FEET
  RF CHANNELS: 8
  SELF-TEST FOR VERIFYING HARDWARE FUNCTIONALITY
  DIAGNOSTICS MODE FOR VERIFYING SYSTEM FUNCTIONALITY

- THE UNIT SHALL INCLUDE A SIMPLE SETUP ROUTINE THAT SHALL AUTOMATICALLY CONFIGURE AND CALIBRATE THE UNIT FOR PROPER OPERATION DURING INSTALLATION. THE UNIT SHALL ALSO BE CAPABLE OF BEING PROGRAMMED AND UPDATED FROM A LAPTOP COMPUTER OR OTHER PORTABLE PROGRAMMING DEVICE, SUCH AS A POCKET PC, VIA A LOCAL OR REMOVE ETHERNET CONNECTION USING VENDOR SUPPLIED SOFTWARE. THE SOFTWARE SHALL SUPPORT TCP/IP CONNECTIVITY, UNIT CONFIGURATION BACK-UP AND RESTORE, AND REAL-TIME TRAFFIC VISUALIZATION FOR PERFORMANCE VERIFICATION AND TRAFFIC DISPLAY. THE GRAPHICAL USER INTERFACE SHALL OPERATE ON A WINDOWS PLATFORM.
- THE UNIT SHALL HAVE TWO HALF-DUPLEX RS-485 COMMUNICATION PORTS AND SHALL HAVE THE ABILITY TO UPGRADE FIRMWARE OVER ANY COMMUNICATION PORT.
- THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
- SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER, SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET. THE UNIT SHALL CONSUME LESS THAN 10 WATTS AND OPERATE FROM A DC INPUT BETWEEN 9 VDC AND 28 VDC. COMPLETE AND AUTOMATIC RECOVERY FROM A POWER FAILURE SHALL BE WITHIN 15 SECONDS AFTER RESUMPTION OF NORMAL POWER.
- ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
- THE MANUFACTURER'S REPRESENTATIVE SHALL BE ONSITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION, AND MAINTENANCE OF THE UNIT.
- THE UNIT SHALL COME WITH A 2-YEAR MANUFACTURER SUPPLIED WARRANTY.

PAYMENT FOR ITEM 633, STOP BAR RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN-PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, AND CONNECTIONS TESTED AND ACCEPTED.

Basis of Bearing: State Plane NAD83 (2011)
SCALE: 1" = 20'

Item	Revision Description	Date	Drwn:	Chk:
1	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-19-18	KMD	EMR
2	REVISED PER BCEO COMMENTS & INTERNAL REVIEW	06-22-18	KMD	

MILLIKIN ROAD ROADWAY IMPROVEMENTS

FIELDSTONE FARMS
SECTION 13, TOWN 3, RANGE 3 BTM
LIBERTY TOWNSHIP
BUTLER COUNTY, OHIO

TRAFFIC SIGNAL MODIFICATION PLAN

bayer becker
www.bayerbecker.com
6900 Tylersville Road, Suite A
Mason, OH 45040 - 513.336.6600

Drawing: 16-0294 TRAFFIC SIGNAL PLAN
Drawn by: KMD
Checked By: CPT
Issue Date: 06-01-18
Sheet 20/20

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Plot time: Jun 22, 2018 – 3:51pm
Drawing name: J:\2016\16-0294\TR\DWG\16-0294 Traffic Signal Plan.dwg – Layout Tab: 20 Traffic Signal Plan