

# CONSTRUCTION PLANS FOR DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT PROJECT NO. OTE: 2025-02

## TOWNSHIP OF MORRIS MORRIS COUNTY, NEW JERSEY

### MUNICIPAL OFFICIALS

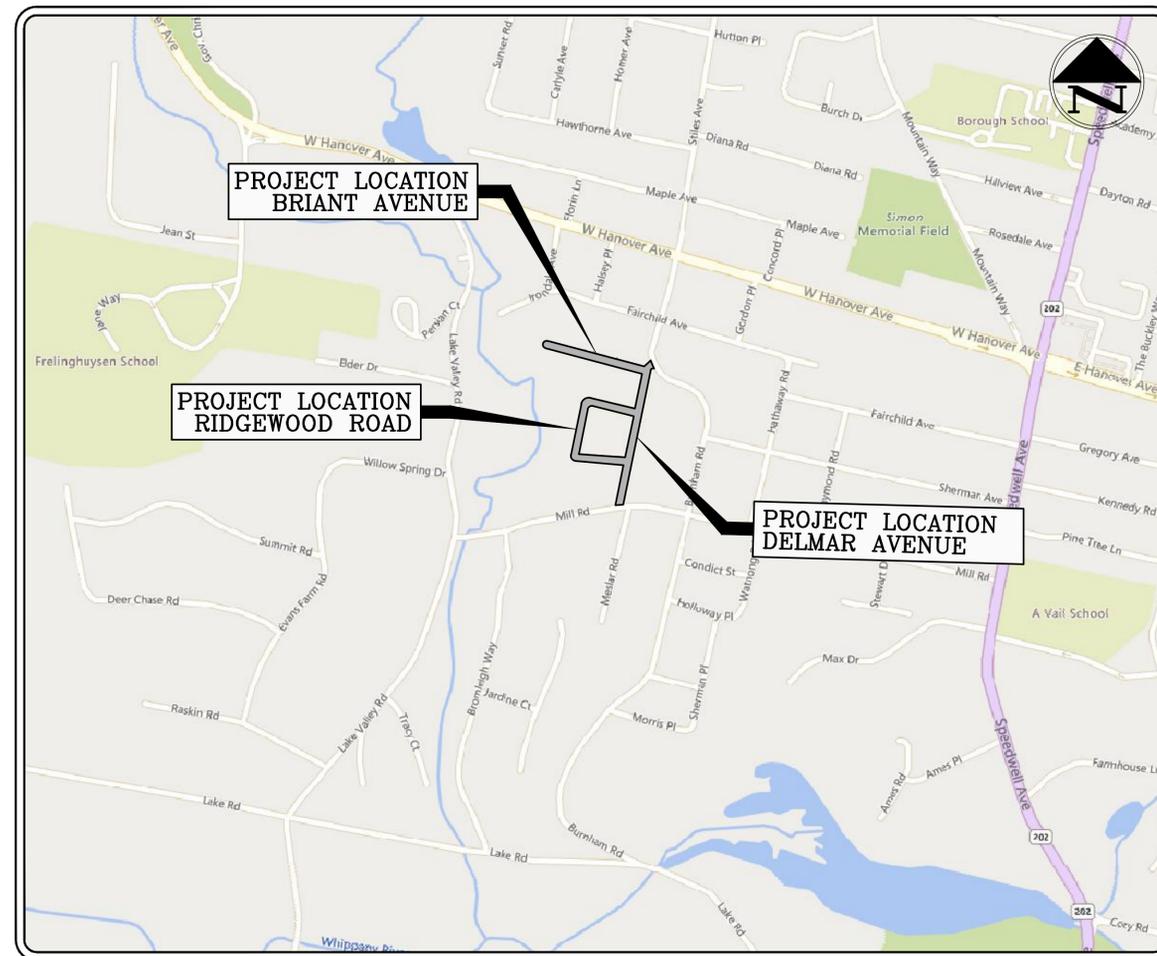
DONNA J. GUARIGLIA, MAYOR  
JEFFERY R. GRAYZEL, DEPUTY MAYOR  
MARK J. GYORFY, COMMITTEEMAN  
WILLIAM V. RAVITZ, COMMITTEEMAN  
SIVA S. JONNADA, COMMITTEEMAN  
TIMOTHY QUINN, TOWNSHIP ADMINISTRATOR  
JAMES SLATE, TOWNSHIP ENGINEER

### PUBLIC UTILITIES

<b>GAS</b> Public Service Electric & Gas Co. Manager-Corporate Services 80 Park Plaza, T6B Newark, NJ 07102	<b>TELEPHONE</b> Verizon 290 West Mount Pleasant Ave. Building 4, Floor G Livingston, NJ 07039
<b>ELECTRIC</b> Jersey Central Power & Light Company 300 Madison Avenue P.O. Box 1911 Morristown, NJ 07962	<b>WATER</b> Southeast Morris County Municipal Utilities Authority Water Department 19 Saddle Road Cedar Knolls, NJ 07927
<b>CABLE</b> Cablevision 683 Route 10 East Randolph, NJ 07869	<b>SANITARY</b> Township of Morris Sewer Utility 50 Woodland Avenue Convent Station, NJ 07961

### NOTES:

- PRIOR TO ANY EXCAVATION, CONTRACTOR MUST HAVE ALL UTILITIES MARKED OUT BY THE APPROPRIATE UTILITY COMPANIES BY CALLING 1-800-272-1000.
- ALL DIMENSIONS SHOWN ON THIS SET ARE IN ENGLISH UNITS.
- ALL CONSTRUCTION SHOWN HEREON UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2019 EDITION AS AMENDED, NJDOT SPECIAL PROVISIONS, AND MUTCD.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DETAILS ROADWAY-TRAFFIC CONTROL-BRIDGE 2016.



LOCATION MAP

SCALE: 1"=500'

LENGTH OF PROJECT 2,453 FT. OR 0.465 MILES

MARCH 2025

### INDEX OF SHEETS

SHEET	DESCRIPTION
1	COVER SHEET AND LOCATION MAP
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3-5	LAYOUT & TIE PLANS
6-10	CONSTRUCTION PLANS & PROFILES
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20-23	ADA CURB RAMP PLANS
24-29	DETAILS

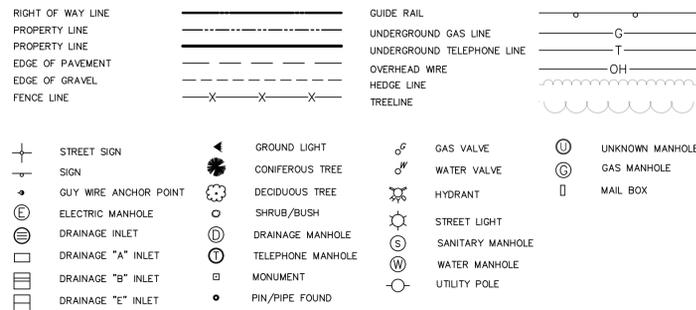
ENGINEER:



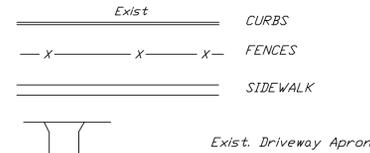
Greenman-Pedersen, Inc.  
301 Gibraltar Drive, Suite 2A  
Morris Plains, NJ 07950  
Certificate of Authorization #24GA27959500

**STANDARD LEGEND**

**EXISTING**



Exist. M.H. (Size And Type) = Exist. Sanitary Sewers And Storm Drains



**PROPOSED**

[Symbol]	SILT FENCE
[Symbol]	MODULAR BLOCK RETAINING WALL
[Symbol]	DRAINAGE PIPE
[Symbol]	HOUSE DRAIN
[Symbol]	PROPOSED INLET
[Symbol]	RESET EXISTING INLET CASTING OR SET NEW INLET CASTING
[Symbol]	RESET EXISTING MANHOLE OR SET NEW MANHOLE CASTING
[Symbol]	RECONSTRUCTED INLET
[Symbol]	RECONSTRUCTED MANHOLE
[Symbol]	RIP RAP STONE
[Symbol]	CONCRETE SIDEWALK
[Symbol]	CONCRETE SIDEWALK, REINFORCED
[Symbol]	RESET EXISTING PAVERS OR SLATE
[Symbol]	CONCRETE VERTICAL CURB OR GRANITE CURB
[Symbol]	THERMOPLASTIC TRAFFIC STRIPES/MARKINGS
[Symbol]	REGULATORY AND WARNING SIGN
[Symbol]	DEMOLITION/REMOVAL
[Symbol]	TOPSOIL STABILIZATION, MAT
[Symbol]	SMALL DECIDUOUS TREE

NOMENCLATURE OF THE LEGEND MAY VARY SLIGHT FROM PROPOSED PAY ITEMS.

**ABBREVIATIONS**

RD	Roof Drain	GR	Grote
HMA	Hot Mix Asphalt	INV.	Invert Elevation
CONC.	Concrete	STA.	Station
M.S.	Monument Stone	SAN.	Sanitary Sewer
MH	Manhole	DGABC	Dense Graded Aggregate Base Course
BVCS	Beginning Vertical Curve Station	BVCE	Beginning Vertical Curve Elevation
EVCS	Ending Vertical Curve Station	EVCE	Ending Vertical Curve Elevation
PVI	Point of Vertical Intersection	VC	Vertical Curve
ELEV.	Elevation	FOC	Face of Curb
L.O.C.	Limit of Construction		

**GENERAL NOTES**

- THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019 EDITION, AS PUBLISHED BY THE NEW JERSEY DEPARTMENT OF TRANSPORTATION, THE PLANS, TECHNICAL SPECIFICATIONS, ADVERTISEMENT, CONTRACTOR'S PROPOSAL AND INCLUDING BUT NOT LIMITED TO THE AMENDMENTS CONTAINED HEREINAFTER SHALL COMPRISE THE CONTRACT.
- IN ADDITION TO THE CONSTRUCTION DETAIL PROVIDED HEREIN, THE CONTRACTOR WILL ALSO REFERENCE THE STATE OF NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD ROADWAY CONSTRUCTION - TRAFFIC CONTROL - BRIDGE CONSTRUCTION DETAILS, 2016, AS AMENDED. NJDOT DETAILS CONTROL CONSTRUCTION PRACTICES FOR WORK ITEMS THAT DETAILS HAVE NOT BEEN INCLUDED IN THESE PLANS. THE CONTRACTOR SHOULD HAVE A SET OF NJDOT DETAILS AVAILABLE ON-SITE FOR REVIEW AT ALL TIMES. DETAILS ARE AVAILABLE AT: <https://www.state.nj.us/transportation/eng/CADD/v8/>
- IN THE EVENT A SITUATION ARISES IN WHICH MATERIALS NOT SPECIFIED ON THE PLANS OR INDICATED AS NOT APPLICABLE IN THE SPECIFICATION GUIDE ARE TO BE USED FOR EXTRA WORK, THEN THE STANDARD SPECIFICATIONS OR THE SUPPLEMENTS WHICH EVER GOVERNS, WILL BE USED.
- THE CONTRACTOR IS TO REFER TO THE "TECHNICAL SPECIFICATIONS" WHICH INDICATES WHEN THE STANDARD SPECIFICATIONS, AND/OR THE AMENDMENTS THAT FOLLOW SHOULD APPLY.
- THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES, ORDERS AND REGULATIONS RELATING TO THE PERFORMANCE OF THE WORK, THE PROTECTION OF ADJACENT PROPERTY AND THE MAINTENANCE OF PASSAGEWAYS.
- EACH AND EVERY PROVISION OF LAW AND CLAUSE REQUIRED BY LAW TO BE INSERTED IN THIS CONTRACT SHALL BE DEEMED TO BE INSERTED HEREIN AND THE CONTRACT SHALL BE READ AND ENFORCED AS THOUGH IT WERE INCLUDED HEREIN, AND IF THROUGH MISTAKE OR OTHERWISE ANY SUCH PROVISION IS NOT INSERTED, OR IS NOT CORRECTLY INSERTED, THEN UPON THE APPLICATION OF EITHER PARTY THE CONTRACT SHALL FORTHWITH BE PHYSICALLY AMENDED TO MAKE SUCH INSERTION OR CORRECTION.
- ANYTHING SHOWN ON THE PLANS AND NOT MENTIONED IN THE SPECIFICATIONS, OR MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE PLANS, AND ALL WORK AND MATERIALS NECESSARY FOR THE COMPLETION OF THE WORK ACCORDING TO THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS, SHALL BE FURNISHED, PERFORMED AND DONE, AS IF THE SAME WERE BOTH MENTIONED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS. ANY CONFLICT OR INCONSISTENCY BETWEEN THE PLANS AND SPECIFICATIONS, OR ANY DISCREPANCY BETWEEN THE FIGURES AND SCALE OF DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER IN ADVANCE, WHOSE DECISION THEREON SHALL BE CONCLUSIVE. THE DECISION OF THE ENGINEER AS TO WHICH SPECIFICATION WILL GOVERN WILL BE CONCLUSIVE AND FINAL.
- IN THE EVENT THE MEANING OF ANY PORTION OF THE SPECIFICATIONS OR DRAWINGS OR ANY SUPPLEMENTARY DRAWINGS OR INSTRUCTIONS OF THE ENGINEER IS DOUBTFUL, THE SAME SHALL BE UNDERSTOOD TO CALL FOR THE BEST TYPE OF CONSTRUCTION, BOTH AS TO MATERIALS AND WORKMANSHIP, WHICH REASONABLY CAN BE INTERPRETED.
- THIS CONTRACT INCLUDES STATE WAGE RATES.

**CONSTRUCTION NOTES**

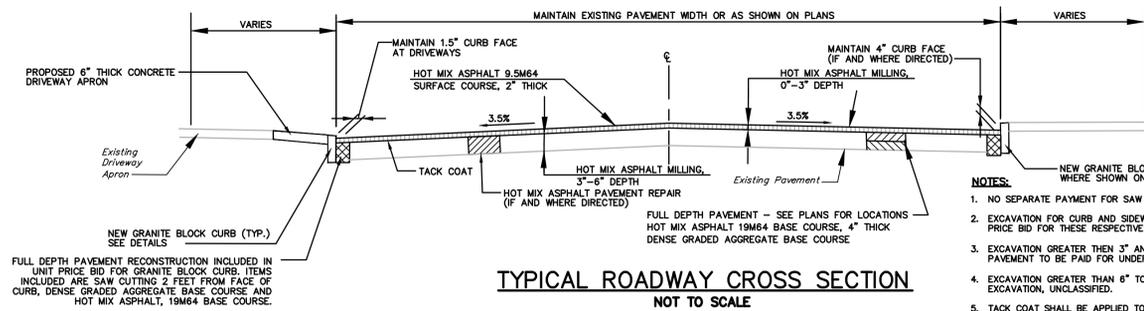
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE MORRIS TOWNSHIP POLICE DEPARTMENT FOR TRAFFIC OPERATIONS AND PARKING PROHIBITIONS DURING CONSTRUCTION.
- THE TOWNSHIP SHALL DETERMINE AT ITS SOLE DISCRETION WHICH CONSTRUCTION ACTIVITIES WARRANT UNIFORMED TRAFFIC DIRECTORS OR TRAFFIC FLAGGERS.
- THE LOCATIONS OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST TWO (2) WEEKS PRIOR TO CONSTRUCTION FOR PHYSICAL MARKOUTS OF UTILITIES.
- SEPARATE PAYMENT WILL NOT BE MADE FOR CONSTRUCTION LAYOUT, MONUMENTS, OR MONUMENT BOXES. CONTRACTOR IS RESPONSIBLE FOR SETTING CONSTRUCTION STAKES ESTABLISHING LINES AND CONTINUOUS PROFILE GRADE IN ROADWORK. STAKEOUT SHALL BE 4' OFFSETS AT 25' INTERVALS. ALL COSTS SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS IN THE CONTRACT.
- ALL INFORMATION SHOWN OR NOTED FOR EXISTING FACILITIES, GRADES, ROADWAYS AND MATERIALS IS APPROXIMATE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL INFORMATION WHICH MAY AFFECT HIS WORK. LOCATION AND DEPTH OF EXISTING UTILITIES ARE ONLY INDICATED TO BRING ATTENTION TO POSSIBLE CONFLICT. SHOULD ANY CONFLICTS BE ENCOUNTERED, THEY SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
- ANY DAMAGE TO UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND ALL COSTS FOR REPAIRS SHALL BE BORNE BY THE CONTRACTOR INCLUDING THE COST OF UNIFORMED TRAFFIC DIRECTORS USED DURING THE REPAIR OF ANY DAMAGED UTILITIES.
- ALL DISTURBED SHRUBS, FENCING, SIGNS, MAIL BOXES, DRIVEWAYS, SPRINKLERS, EXISTING BEM GUIDE RAIL ETC., SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE OWNER. NO SEPARATE PAYMENT SHALL BE MADE FOR THIS RESTORATION UNLESS SPECIFIED ELSEWHERE.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS, RAMPS AT ALL CURB OPENINGS FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE AND MAINTAIN RAMPS AROUND ALL EXPOSED CASTINGS, BOTH PUBLIC AND PRIVATE, WHICH HAVE BEEN UNCOVERED OR RESET DURING CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN DUST CONTROL AS REQUIRED OR DIRECTED BY THE ENGINEER. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS SHALL BE MAINTAINED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PERFORM ONLY THE AMOUNT OF WORK WHICH CAN BE COMPLETED THE SAME DAY. THE ENTIRE ROADWAY SHALL BE OPENED TO TRAFFIC AFTER WORK HOURS. TEMPORARY PAVEMENT SHALL BE PLACED IN CONSTRUCTION AREAS TO PROVIDE A SMOOTH, SAFE SURFACE FOR VEHICULAR TRAFFIC. THE COST FOR TEMPORARY PAVEMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR VARIOUS ROADWAY RECONSTRUCTION ITEMS. STEEL PLATES MAY BE USED, AT THE APPROVAL OF THE ENGINEER. NO SEPARATE PAYMENT SHALL BE MADE FOR STEEL PLATES.
- ASPHALT DENSITY TESTING TO BE COMPLETED BY TOWNSHIP.
- CONTRACTOR IS RESPONSIBLE FOR RESETTING OR REPLACING ANY EXISTING FEATURES ALONG INDIVIDUAL PROPERTIES (I.E. MAILBOXES, WALLS, GRANITE CURB, LANDSCAPE PLANTERS, RAILROAD TIES, STONES, ETC.) IF THEY ARE DISTURBED DURING CONSTRUCTION AND RESETTING ALL SHALL BE INCLUDED IN THE OVERALL SCOPE OF THE PROJECT AND MUST BE COMPLETED TO THE SATISFACTION OF THE ENGINEER. NO SEPARATE PAYMENT.
- CONTRACTOR SHALL SUBMIT FOR APPROVAL, SHOP DRAWINGS FOR ALL PROPOSED DRAINAGE IMPROVEMENTS AND FEATURES PROPOSED FOR THIS PROJECT PRIOR TO THE START OF CONSTRUCTION.
- ALL UTILITY CASTINGS, INCLUDING WATER AND GAS VALVES LOCATED WITHIN THE LIMITS OF THE PROPOSED ROAD IMPROVEMENTS SHALL BE ADJUSTED TO GRADE. THE COST OF RESETTING THE CASTINGS TO GRADE SHALL BE INCLUDED IN THE ITEM HOT MIX ASPHALT 9.5M64 SURFACE COURSE.
- INLET FILTERS SHALL BE PLACED IN ALL EXISTING AND PROPOSED INLETS UNTIL CONSTRUCTION IS COMPLETE. NO SEPARATE PAYMENT WILL BE MADE FOR SOIL EROSION AND SEDIMENT CONTROL MEASURES.
- "SET INLET TYPE 'B'" INCLUDES PROVIDING A NEW CURB PIECE AND BICYCLE SAFE GRATE.
- ALL INLETS WITHIN THE PROJECT LIMITS SHALL BE NJDOT COMPLIANT WITH ECO CURB PIECE AND BICYCLE SAFE GRATE.

**MAINTENANCE & PROTECTION OF TRAFFIC**

- ALL DEVICES AND PROCEDURES FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS. THE CONTRACTOR SHALL PLAN AND CARRY OUT HIS WORK TO PROVIDE FOR THE CONVENIENT AND SAFE PASSAGE OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC.
- THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED TRAFFIC CONTROL PROCEDURES. IF THE CONTRACTOR DESIRES TO CHANGE THE PROCEDURE, HE SHALL PRESENT HIS CHANGES IN WRITING TO THE ENGINEER FOR REVIEW AND APPROVAL. THERE MAY BE UTILITY RELOCATIONS, ADJUSTMENTS, AND IMPROVEMENTS WHICH ARE NECESSITATED BY THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH EACH OF THE UTILITY COMPANIES LOCATED WITHIN THE PROJECT LIMITS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT THE DURATION OF CONSTRUCTION. NO SEPARATE PAYMENTS WILL BE MADE FOR RELOCATING THE DEVICES AS REQUIRED, OR AS DIRECTED BY THE ENGINEER, DURING THE COURSE OF CONSTRUCTION.
- THE CONTRACTOR WILL ONLY BE PERMITTED TO WORK ON THE STREET BETWEEN 7:00 A.M. AND 5:00 P.M. THE CONTRACTOR SHALL PROVIDE MEANS OF ACCESS AT ALL TIMES FOR PEDESTRIANS AFFECTED BY THE WORK OF THIS CONTRACT. DURING CONSTRUCTION, IN THE VICINITY OF A DRIVEWAY, THE ACCESS WIDTH AT THE DRIVEWAY ENTRANCE SHALL BE PLAINLY MARKED BY LIGHTS, BARRICADES, OR OTHER SUCH DEVICES APPROVED BY THE ENGINEER.
- ALL DRIVEWAYS MUST BE ACCESSIBLE AT THE END OF EACH WORK DAY.
- THE CONTRACTOR SHALL OPEN UP THE ENTIRE ROAD BY 5:00 P.M.
- DURING CONSTRUCTION, ALL ROADS SHALL BE PROPERLY MAINTAINED TO ACCOMMODATE EMERGENCY VEHICLES AT ALL TIMES.
- ALL BARRICADES SHALL BE TYPE III BREAKAWAY BARRICADES.
- ALL CONSTRUCTION ACTIVITIES EXCEPT AUTHORIZED WORK WITHIN TRAFFIC CONTROL PLAN FOR CURB AND UTILITY CONSTRUCTION MUST BE PERFORMED WITHIN THE APPROPRIATE PHASE TRAFFIC CONTROL PLAN AND DETOUR.
- SIGNS W8-1(S) 'BUMP' SHALL BE RELOCATED TO THE LIMIT OF DAILY CONSTRUCTION ACTIVITY WHERE RAMP FROM NEW CONSTRUCTION MEETS EXISTING CONDITIONS.

**SURVEY NOTES:**

- HORIZONTAL DATUM IS BASED UPON NAD'83.
- VERTICAL DATUM IS BASED UPON NAVD'88.
- UTILITY LOCATIONS SHOWN HEREON ARE FROM ABOVE GROUND OBSERVATIONS. THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE USER OF THIS SURVEY IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATIONS OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY.
- BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON TAKEN FROM A DRAWING ENTITLED, "TOWNSHIP OF MORRIS, IMPROVEMENTS TO DELMAR AVENUE, RIDGEWOOD ROAD & BRIANT AVENUE, TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY, EXISTING CONDITIONS AND TOPOGRAPHIC SURVEY PLAN" BY GREENMAN-PEDERSEN, INC., DATED OCTOBER 10, 2024. LOT AND BLOCK NUMBERS SHOWN HEREON ARE BASED UPON THE CURRENT TAX MAPS OF THE TOWNSHIP OF MORRIS.



**TYPICAL ROADWAY CROSS SECTION**  
NOT TO SCALE

- NOTES:**
- NO SEPARATE PAYMENT FOR SAW CUTTING
  - EXCAVATION FOR CURB AND SIDEWALK INCLUDED IN UNIT PRICE BID FOR THESE RESPECTIVE ITEMS.
  - EXCAVATION GREATER THEN 3" AND LESS THAN 6" IN PAVEMENT TO BE PAID FOR UNDER REMOVAL OF PAVEMENT.
  - EXCAVATION GREATER THAN 6" TO BE PAID FOR UNDER EXCAVATION, UNCLASSIFIED.
  - TACK COAT SHALL BE APPLIED TO ALL SURFACES IN ACCORDANCE WITH SUBSECTION 401.03.05 OF THE SPECIFICATIONS PRIOR TO PAVING. PAYMENT INCLUDED IN UNIT PRICE BID FOR HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK.

**ESTIMATE OF QUANTITIES**

PAY ITEM NO.	DESCRIPTION	UNIT	PLAN QUANTITY	IF & WHERE DIRECTED	TOTAL CONTRACT QUANTITY
1	MOBILIZATION	LS			1
2	BREAKAWAY BARRICADE	UNIT			10
3	DRUM	UNIT			30
4	TRAFFIC CONE	UNIT			30
5	CONSTRUCTION IDENTIFICATION SIGNS, 84"x42" (ON OR ABOUT - START DATE OF CONSTRUCTION)	UNIT			2
6	CONSTRUCTION SIGNS	SF			100
7	TRAFFIC DIRECTOR, FLAGGER	MH			360
8	POLICE TRAFFIC DIRECTORS	LS			1
9	FUEL PRICE ADJUSTMENT	DOL			3,000
10	ASPHALT PRICE ADJUSTMENT	DOL			6,300
11	CLEARING SITE	LS			1
12	EXCAVATION, TEST PIT (IF AND WHERE DIRECTED)	CY	20	20	20
13	EXCAVATION, UNCLASSIFIED	CY	931		931
14	REMOVAL OF PAVEMENT	SY	2,785		2,785
15	DENSE-GRADED AGGREGATE BASE COURSE, VARIABLE THICKNESS	CY	931		931
16	HMA MILLING, 3" OR LESS	SY	7,569		7,569
17	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	1,003		1,003
18	HOT MIX ASPHALT 9.5M64 INTERMEDIATE COURSE (IF AND WHERE DIRECTED)	TON	0	200	200
19	HOT MIX ASPHALT 19M64 BASE COURSE, 4" THICK	TON	741		741
20	UNDERDRAIN, 6" PERFORATED HIGH DENSITY POLYETHYLENE PIPE	LF	40		40
21	12" HIGH PERFORMANCE POLYPROPYLENE PIPE	LF	315	15	330
22	15" HIGH PERFORMANCE POLYPROPYLENE PIPE	LF	395	20	415
23	18" HIGH PERFORMANCE POLYPROPYLENE PIPE	LF	748	38	786
24	4" PVC PIPE, SCHEDULE 40 (IF AND WHERE DIRECTED)	LF	0	20	20
25	6" PVC PIPE, SCHEDULE 40 (IF AND WHERE DIRECTED)	LF	0	20	20
26	INLET, TYPE B	UNIT	17		17
27	LAWN INLET	UNIT	1		1
28	RECONSTRUCTED INLET, TYPE A NON-STANDARD, USING EXISTING CASTING	UNIT	1		1
29	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	6		6
30	RECONSTRUCTED INLET, TYPE B, USING NEW CASTING	UNIT	1		1
31	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	1		1
32	SET MANHOLE CASTING	UNIT	1		1
33	RETROFIT COVER PLATE FOR INLET CURB PIECE	UNIT	3		3
34	CONCRETE SIDEWALK, 4" THICK	SY	388	39	427
35	CONCRETE SIDEWALK, REINFORCED, 6" THICK	SY	64	6	70
36	HOT MIX ASPHALT DRIVEWAY, 3" THICK	SY	686	44	730
37	DETECTABLE WARNING SURFACE	SY	13		13
38	9"x18" CONCRETE VERTICAL CURB	LF	48	5	53
39	GRANITE BLOCK CURB	LF	4,485	225	4,710
40	REPOINT GRANITE BLOCK CURB (IF AND WHERE DIRECTED)	LF	0	100	100
41	RESET PAVERS	SY	25	5	30
42	MODULAR BLOCK WALL	SF	160		160
43	TRAFFIC MARKING LINES, 4"	LF	500		500
44	TRAFFIC MARKING LINES, 24"	LF	306		306
45	TRAFFIC SIGNAGE WITH BREAKAWAY POSTS (IF AND WHERE DIRECTED)	SF	0	50	50
46	REGULATORY AND WARNING SIGN	SF	59		59
47	GUIDE SIGN, TYPE GA, STEEL "U" OR SQUARE TUBE POST SUPPORTS	SF	20		20
48	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	UNIT	9		9
49	RESET MANHOLE, SANITARY SEWER, USING NEW CASTING (IF AND WHERE DIRECTED)	UNIT	0	1	1
50	TREE REMOVAL, OVER 12" TO 24" DIAMETER	UNIT	2		2
51	TOPSOIL SPREADING, 4" THICK	SY	2,000		2,000
52	FERTILIZING AND SEEDING, TYPE A-3	SY	2,000		2,000
53	STRAW MULCHING	SY	2,000		2,000



REVISIONS

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TOWNSHIP OF MORRIS  
 DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
 PROJECT NO.: 2400052  
 TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
 CLIENT: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_  
 DRAWING TITLE: GENERAL NOTES, LEGEND AND ESTIMATE OF QUANTITIES



SCALE: NONE

DRAWN BY: MEP

CHECKED BY: AC

DATE: 3/21/2025

DRAWING NUMBER: **2**

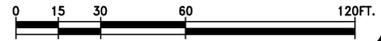
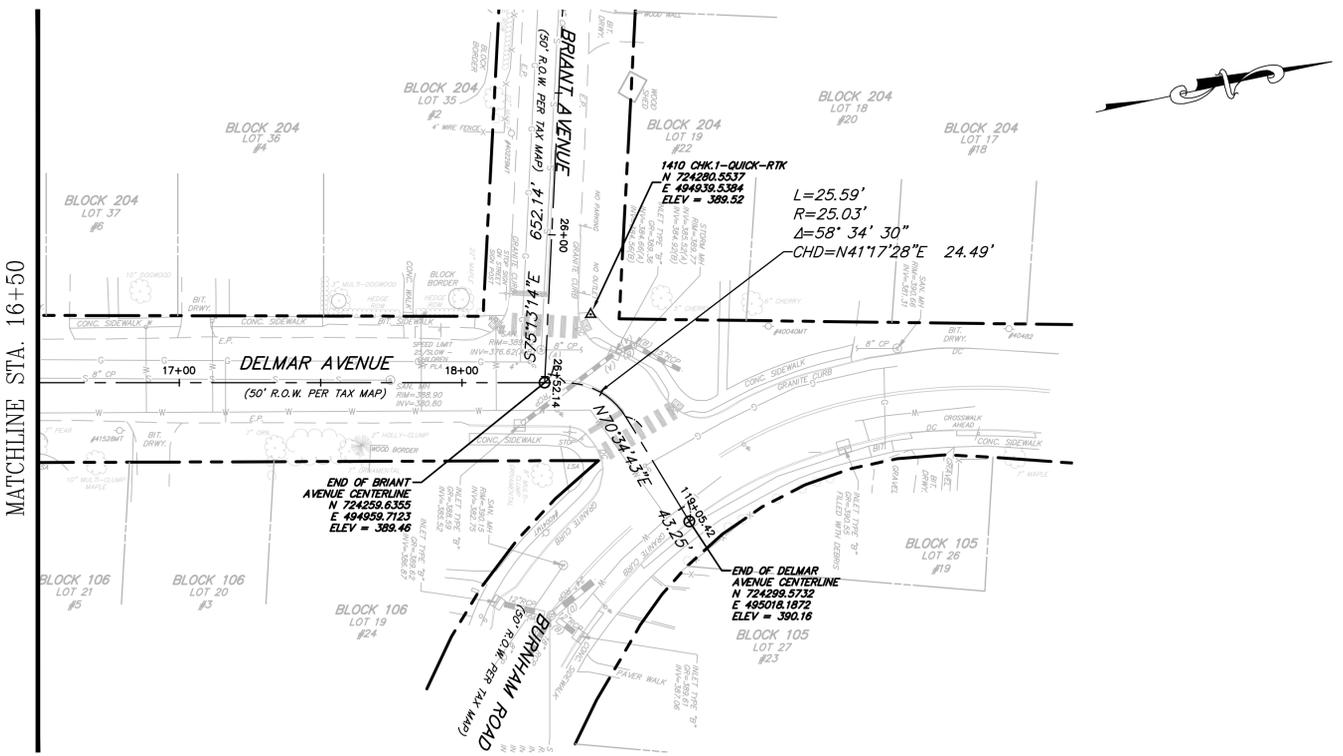
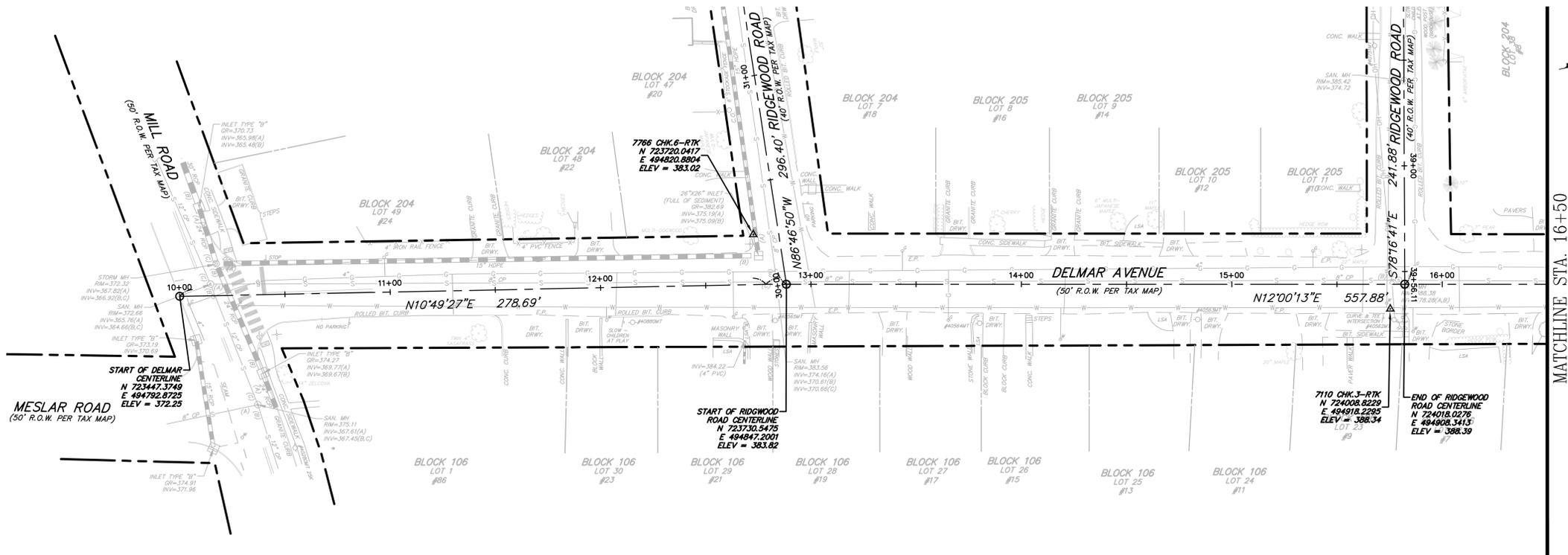
SHEET NUMBER: 2 OF 29

PROJECT NO.: 2400052

PHASE: ENGINEERING

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Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG6 CONSTRUCTION DRAWINGS\2400052-03-LAYOUT-DELMAR.DWG Plot Date: 3/19/2025 10:28 AM Plotted By: MICHAEL PIROG



**GPI** Engineering  
Design  
Planning  
Construction Management  
973.377.8500 GPINET.COM

Greenman-Pedersen, Inc.  
301 Gibraltar Drive, Suite 2A  
Morris Plains, NJ 07950  
Certificates of Authorization #24GA27959500  
#21MH00012700



NO.	REVISIONS
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CLIENT: TOWNSHIP OF MORRIS

PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

DRAWING TITLE: LAYOUT & TIE PLAN - DELMAR AVENUE

STATE OF NEW JERSEY  
ANDREW C. GIANGIACOMO  
Professional Engineer  
License #4311

SCALE: 1"=30'

DRAWN BY: MEP

CHECKED BY: AC

DATE: 3/21/2025

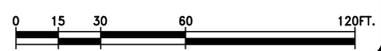
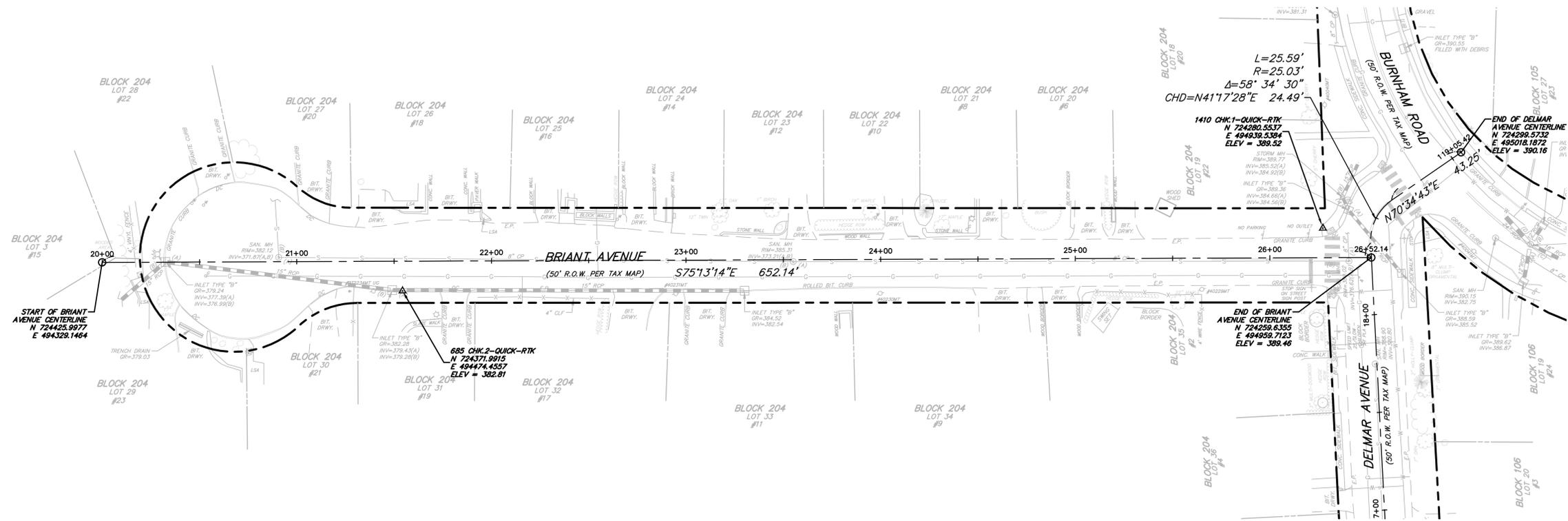
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**3**

SHEET NUMBER: 3 OF 29

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Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\...ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-04-LAYOUT-BRIANT.DWG Plot Date: 3/19/2025 10:28 AM Plotted By: MICHAEL PIROG



**GPI** Engineering  
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REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: LAYOUT & TIE PLAN - BRIANT AVENUE

STATE OF NEW JERSEY  
ANDREW CHANG  
Professional Engineer  
License #4311

SCALE: 1"=30'

DRAWN BY: MEP

CHECKED BY: AC

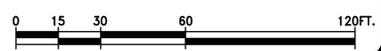
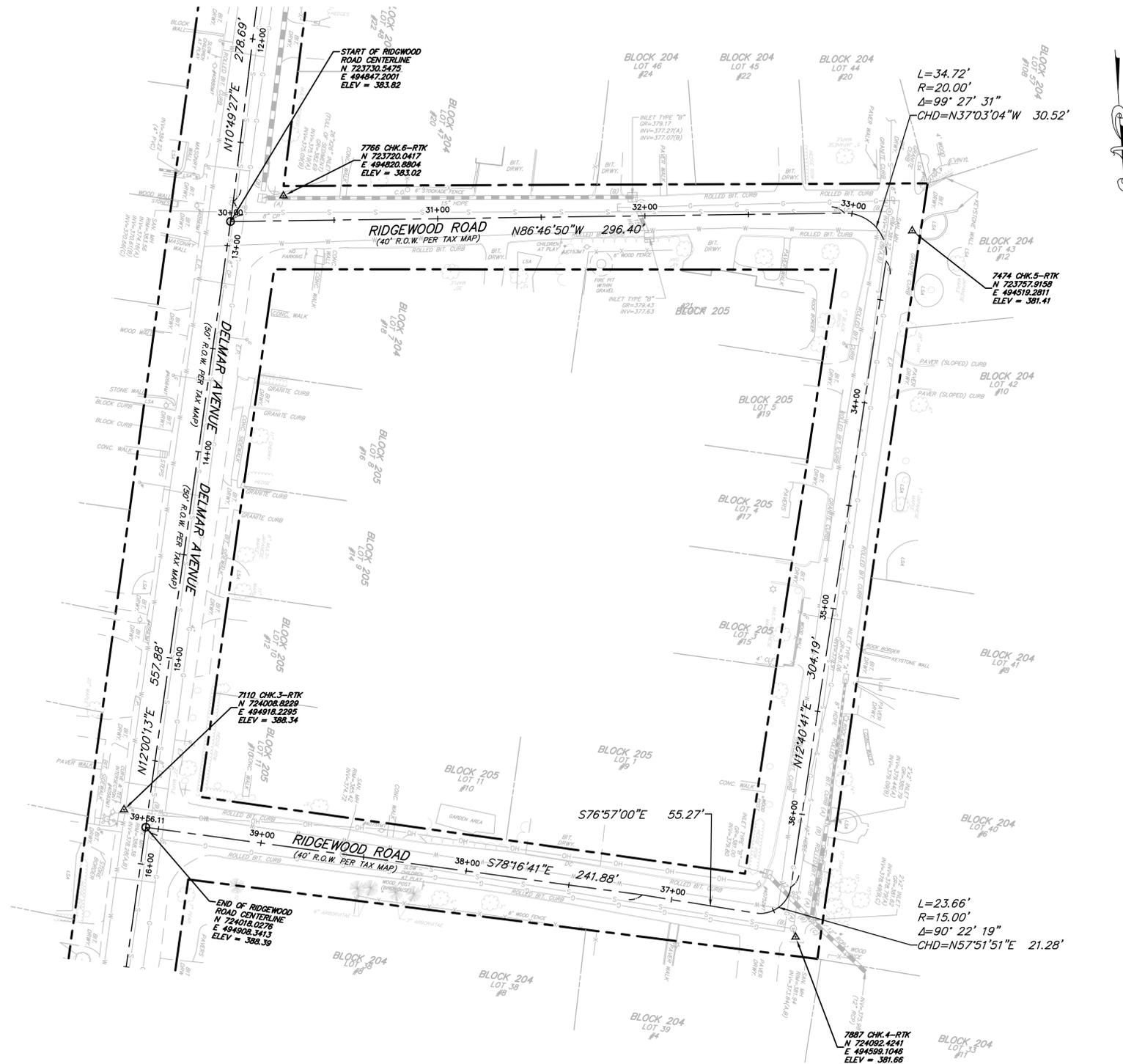
DATE: 3/21/2025

DRAWING NUMBER:  
**4**

SHEET NUMBER: 4 OF 29

PROJECT NO: 2400052

PHASE: ENGINEERING



**GPI** Engineering  
Design  
Planning  
Construction Management  
973.377.8500 GPINET.COM  
Greenman-Pedersen, Inc.  
301 Gibraltar Drive, Suite 2A  
Morris Plains, NJ 07950  
Certificates of Authorization #24GA27959500  
#21MH00012700



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REVISIONS

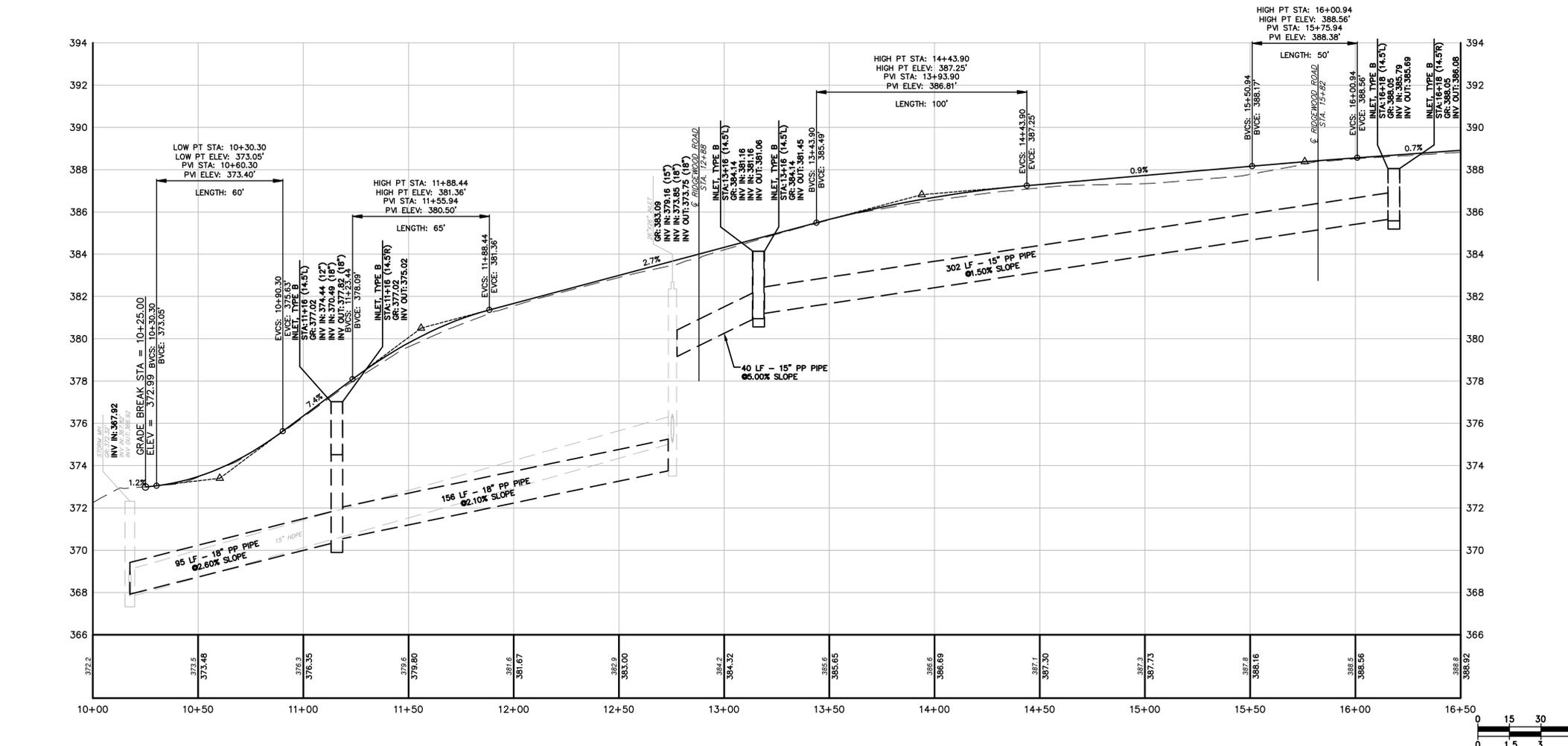
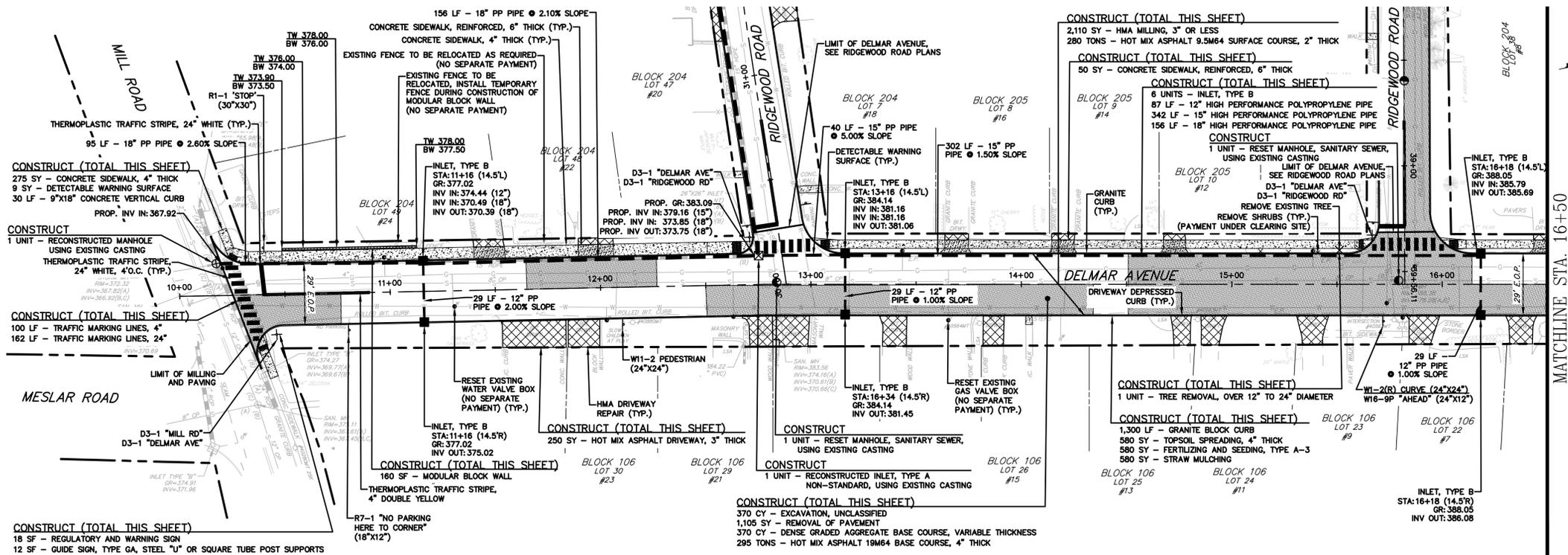
**TOWNSHIP OF MORRIS**  
DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD  
IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

CLIENT:  
PROJECT:  
DRAWING TITLE:  
**LAYOUT & TIE PLAN - RIDGEWOOD ROAD**



SCALE: 1"=30'  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**5**  
SHEET NUMBER: 5 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-06-PLAN-PROF-DELMAR.DWG Plot Date: 3/19/2025 10:29 AM Plotted By: MICHAEL PIROG



MATCHLINE STA. 16+50

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 Greenman-Pedersen, Inc.  
 301 Gibraltar Drive, Suite 2A  
 Morris Plains, NJ 07950  
 Certificates of Authorization #24GA27959500 #21MH00012700



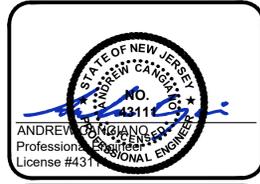
REVISIONS

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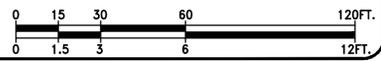
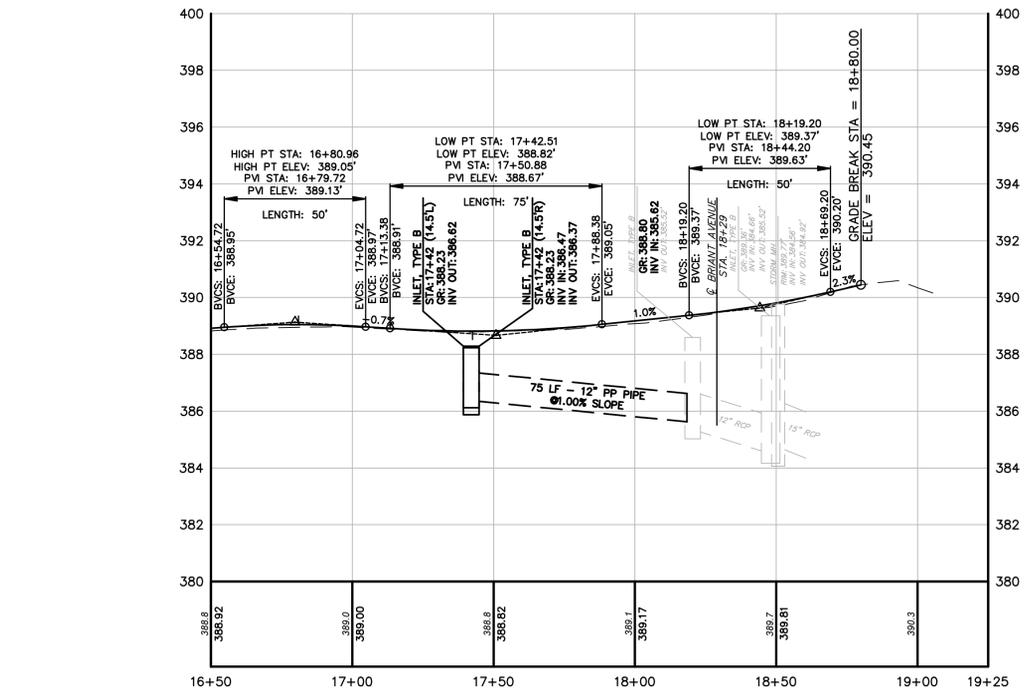
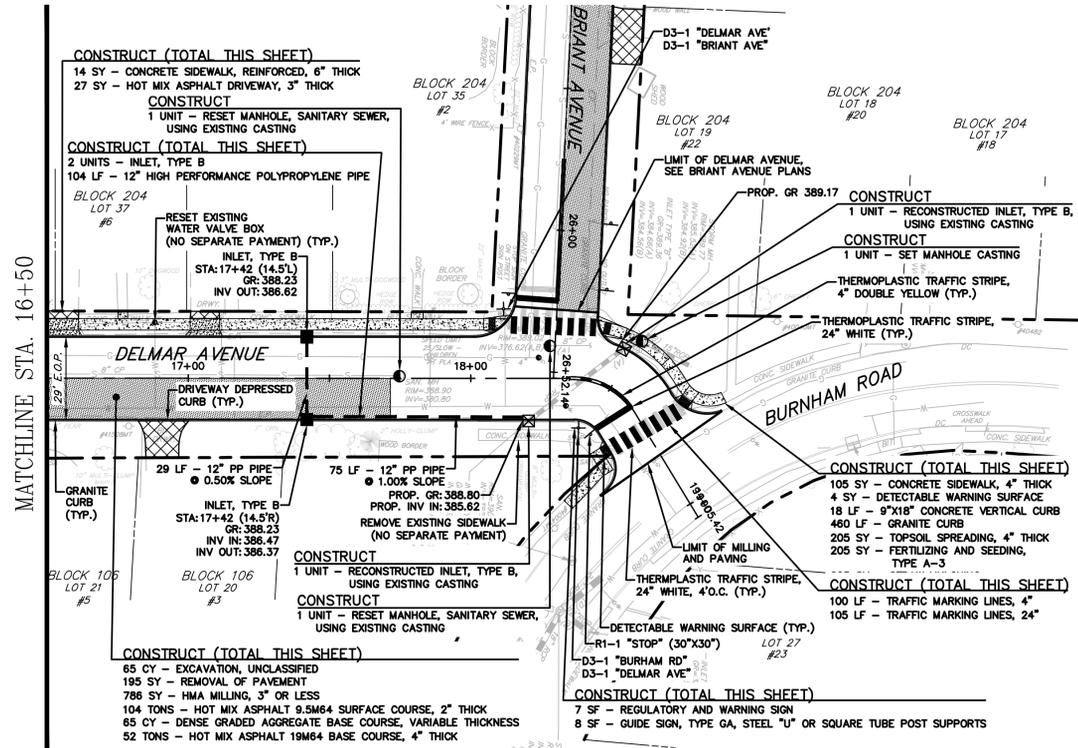
TOWNSHIP OF MORRIS  
 DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
 PROJECT NO. 07E-2025-02  
 TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

CONSTRUCTION PLAN & PROFILE - DELMAR AVENUE

CLIENT: TOWNSHIP OF MORRIS  
 PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
 DRAWING TITLE: CONSTRUCTION PLAN & PROFILE - DELMAR AVENUE



SCALE: 1"=30'H, 1"=3'V  
 DRAWN BY: MEP  
 CHECKED BY: AC  
 DATE: 3/21/2025  
 DRAWING NUMBER:  
**6**  
 SHEET NUMBER: 6 OF 29  
 PROJECT NO: 2400052  
 PHASE: ENGINEERING



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 Construction Management  
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 Morris Plains, NJ 07950  
 Certificates of Authorization #24GA27959500  
 #21MH00012700



REVISIONS

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CLIENT: TOWNSHIP OF MORRIS  
 PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
 PROJECT NO. OTE: 2023-02  
 TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

DRAWING TITLE: CONSTRUCTION PLAN & PROFILE - DELMAR AVENUE



SCALE: 1"=30'H, 1"=3'V

DRAWN BY: MEP

CHECKED BY: AC

DATE: 3/21/2025

DRAWING NUMBER: 7

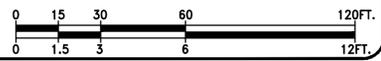
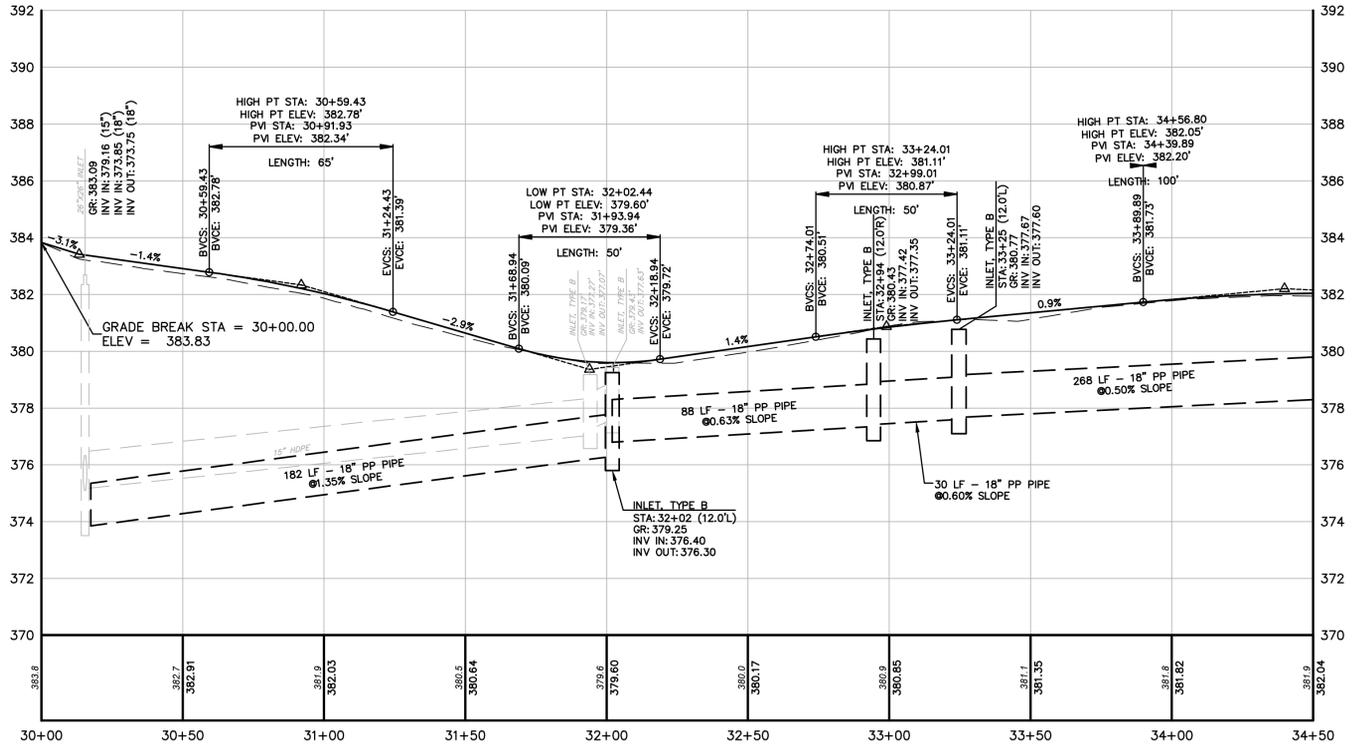
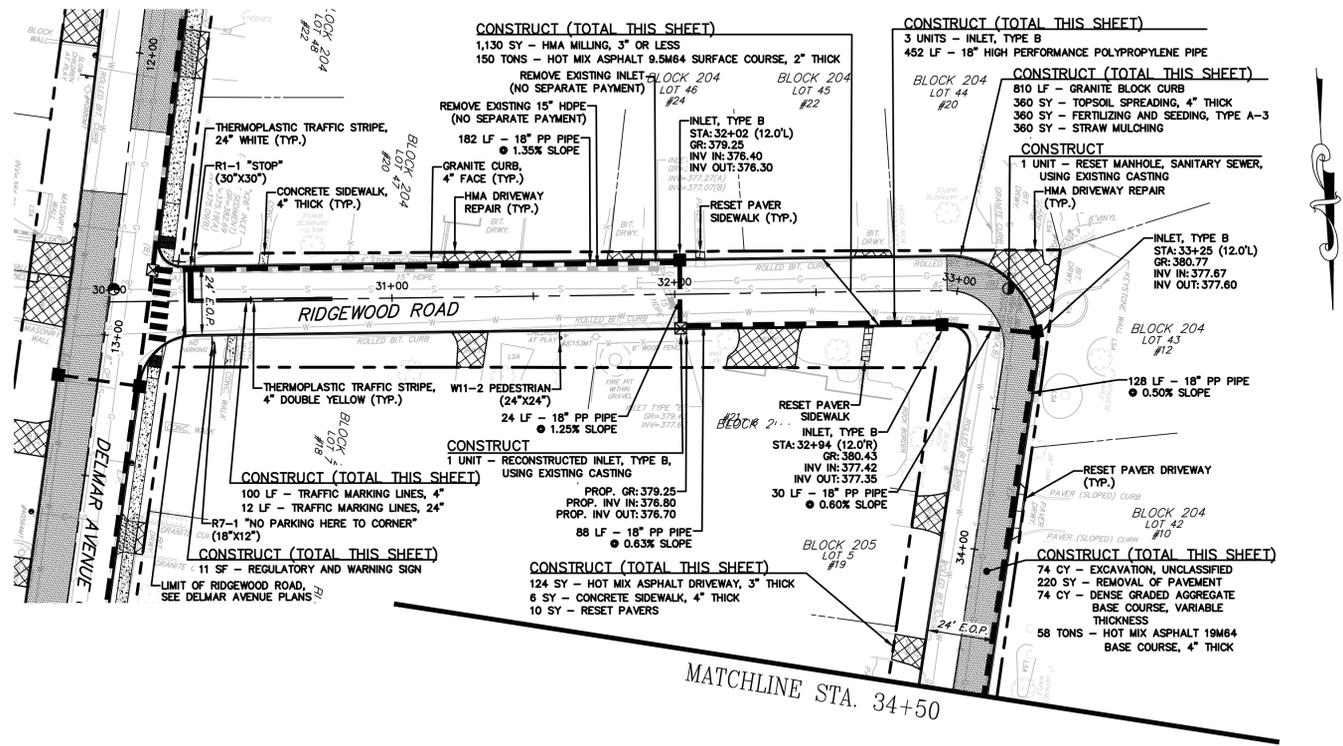
SHEET NUMBER: 7 OF 29

PROJECT NO: 2400052

PHASE: ENGINEERING



Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-08-PLAN-PROF-RIDGEWOOD.DWG Plot Date: 3/19/2025 10:29 AM Plotted By: MICHAEL PIROG



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 #21MH00012700



REVISIONS

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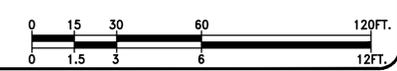
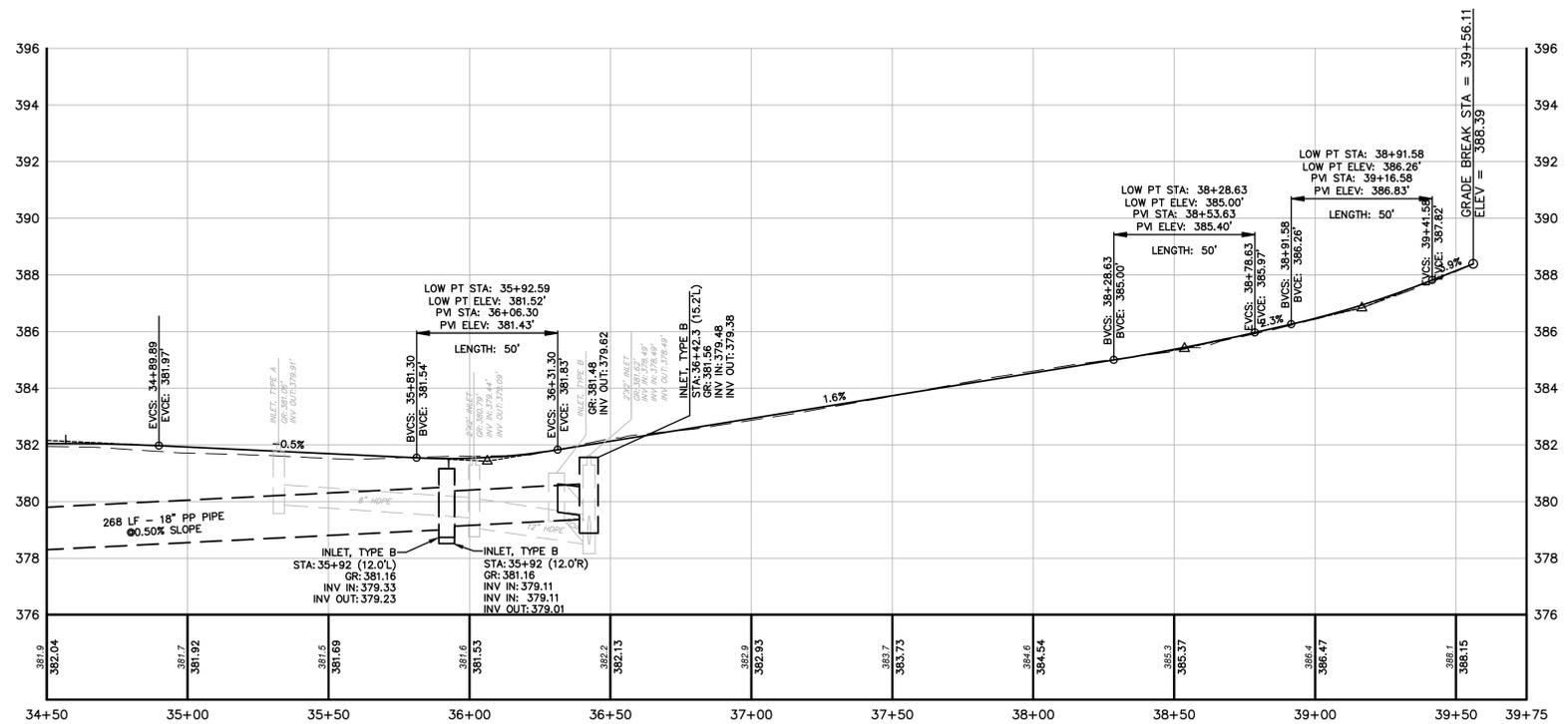
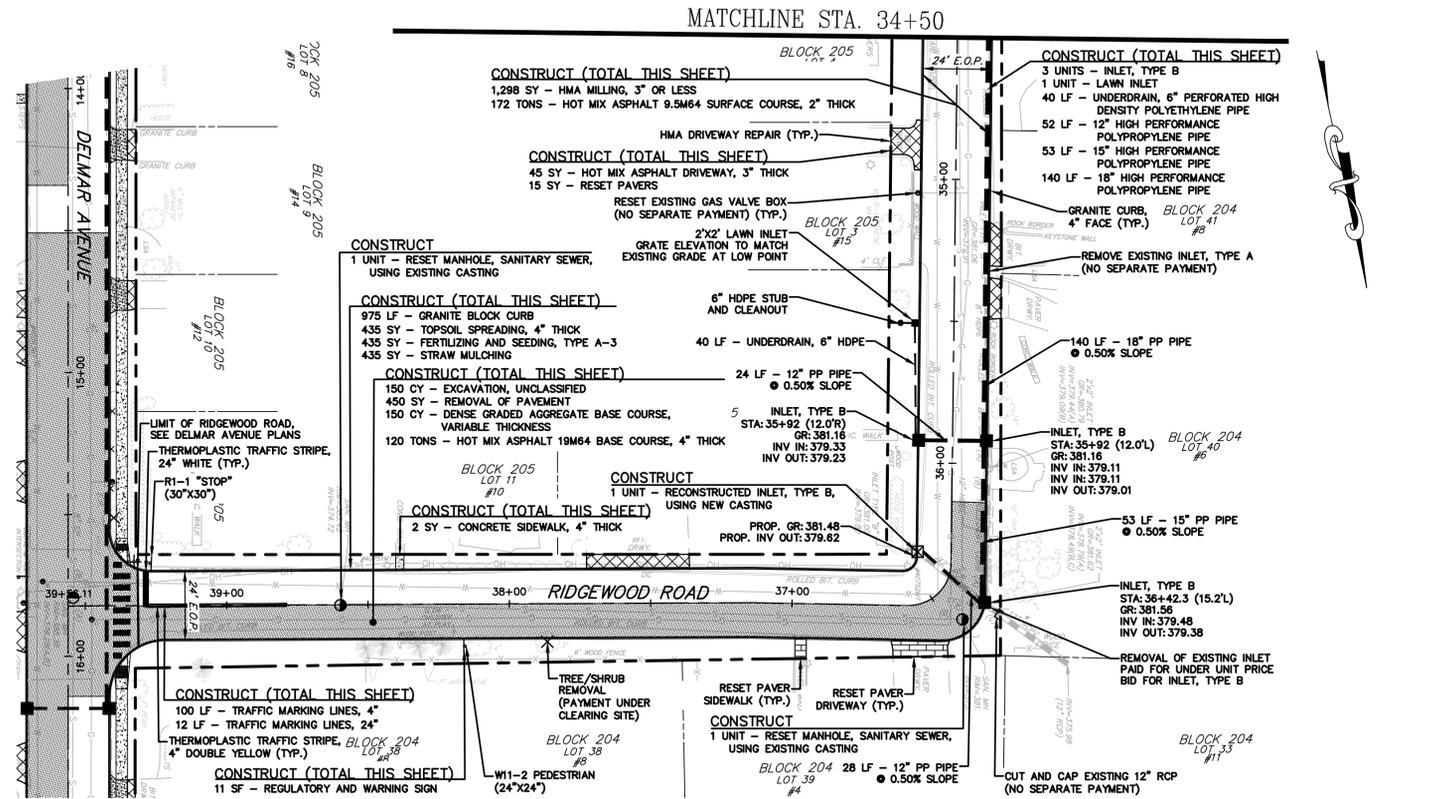
TOWNSHIP OF MORRIS  
 DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD  
 IMPROVEMENTS PROJECT  
 PROJECT NO. OTE: 2025-02  
 TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

CLIENT:  
 PROJECT:  
 DRAWING TITLE:  
**CONSTRUCTION PLAN & PROFILE - RIDGEWOOD ROAD**



SCALE: 1"=30'H, 1"=3'V  
 DRAWN BY: MEP  
 CHECKED BY: AC  
 DATE: 3/21/2025  
 DRAWING NUMBER:  
**9**  
 SHEET NUMBER: 9 OF 29  
 PROJECT NO: 2400052  
 PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-08-PLAN-PROF-RIDGEWOOD.DWG Plot Date: 3/19/2025 10:29 AM Plotted By: MICHAEL PIROG



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Certificates of Authorization #24GA27959500  
#21MH0012700



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REVISIONS

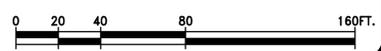
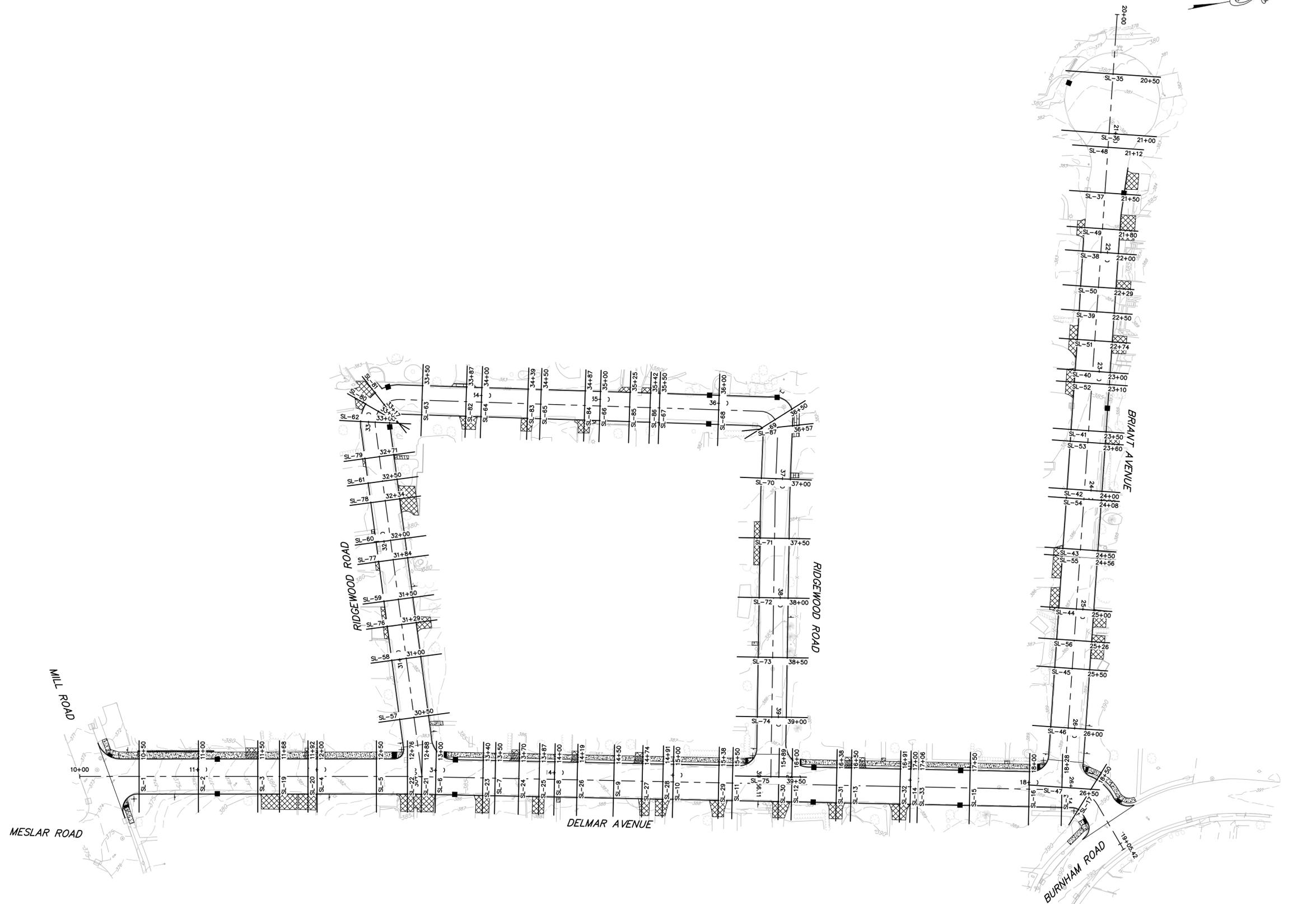
**TOWNSHIP OF MORRIS**  
DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD  
IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

CLIENT:  
PROJECT:  
DRAWING TITLE:  
**CONSTRUCTION PLAN & PROFILE - RIDGEWOOD ROAD**

STATE OF NEW JERSEY  
ANDREW CUANCA  
Professional Engineer  
License #4311

SCALE: 1"=30'H, 1"=3'V  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**10**  
SHEET NUMBER: 10 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-09A-METHOD OF SECTIONS.DWG Plot Date: 3/19/2025 10:29 AM Plotted By: MICHAEL PIROG



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REVISIONS

CLIENT: TOWNSHIP OF MORRIS

PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

DRAWING TITLE: METHOD OF CROSS-SECTIONS PLAN

STATE OF NEW JERSEY  
ANDREW G. GIANGIACOMO  
Professional Engineer  
License #4311

SCALE: 1"=40'

DRAWN BY: MEP

CHECKED BY: AC

DATE: 3/21/2025

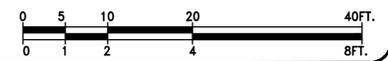
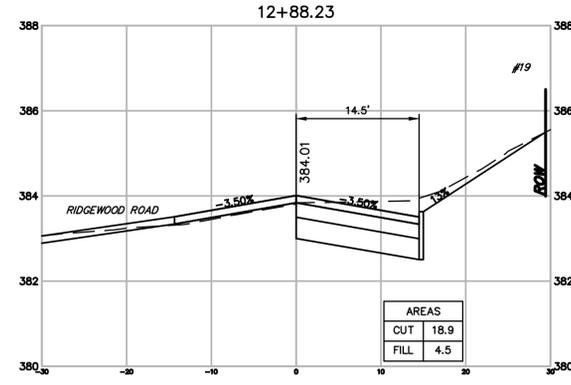
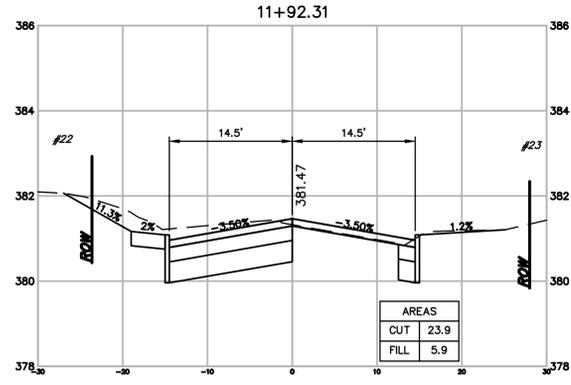
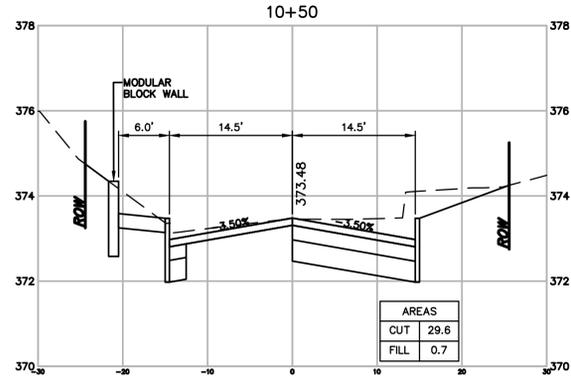
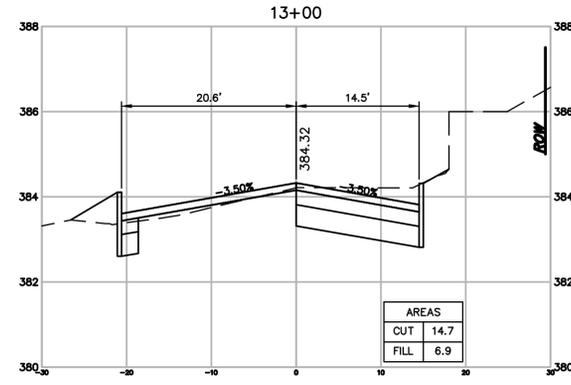
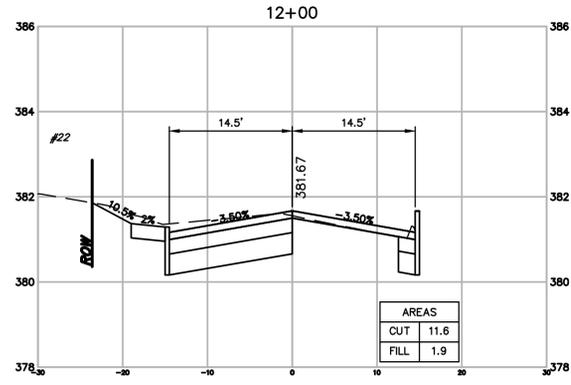
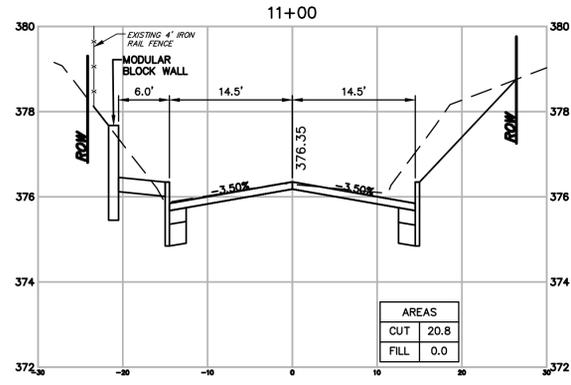
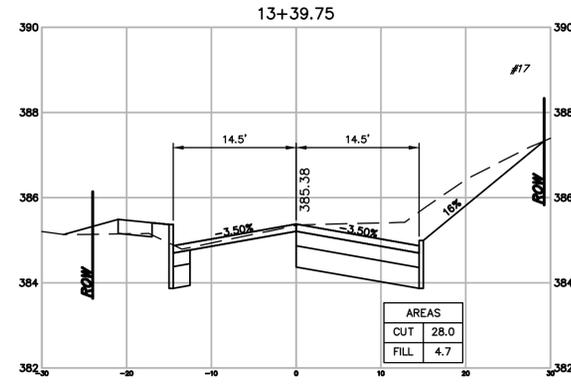
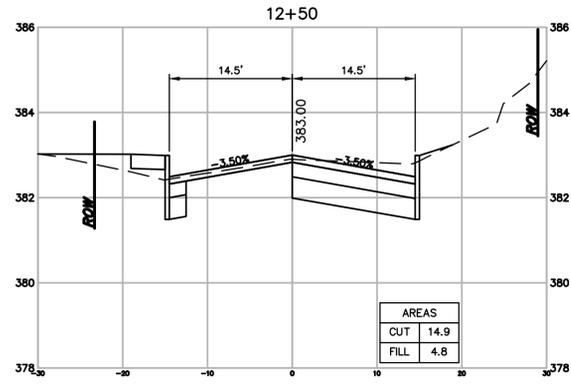
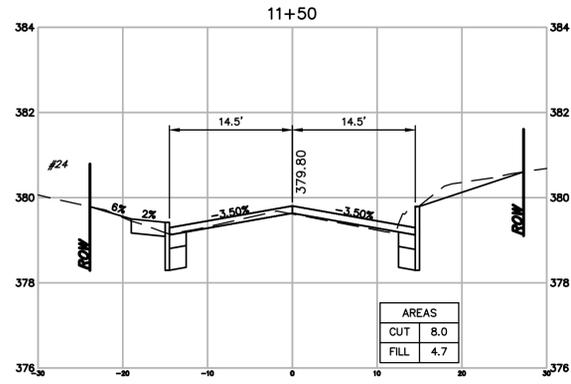
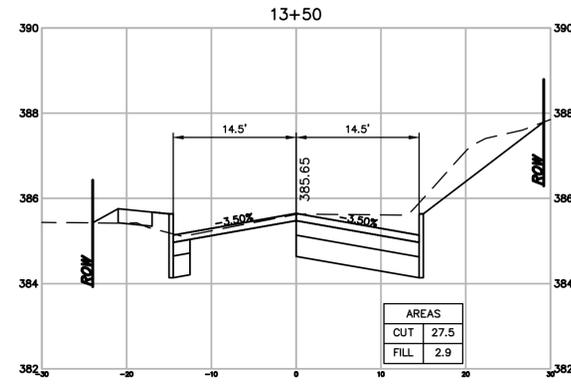
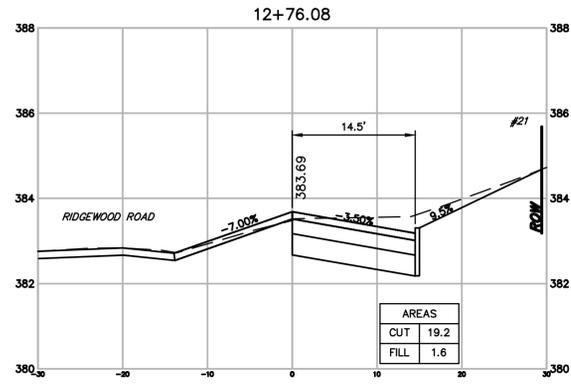
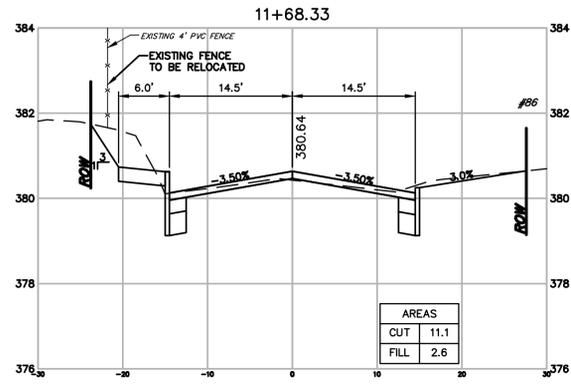
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SHEET NUMBER: 11 OF 29

PROJECT NO: 2400052

PHASE: ENGINEERING

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#21MH00012700



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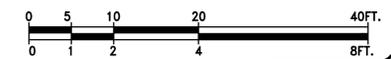
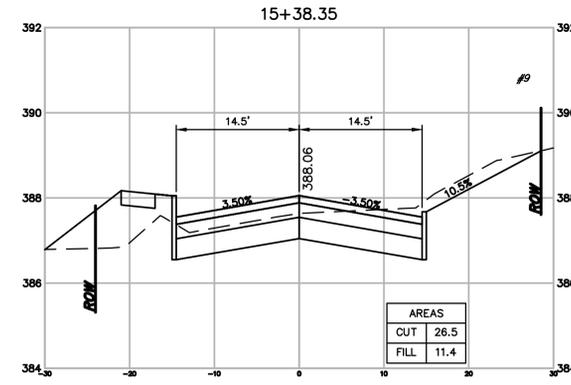
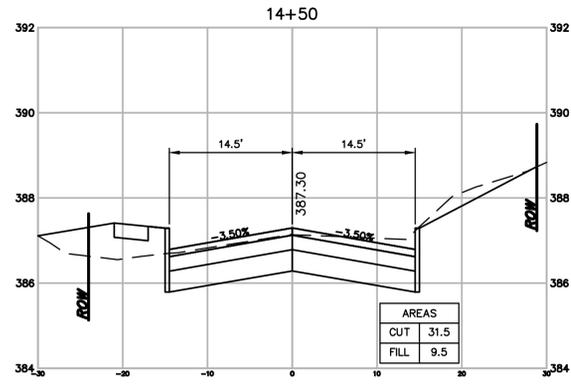
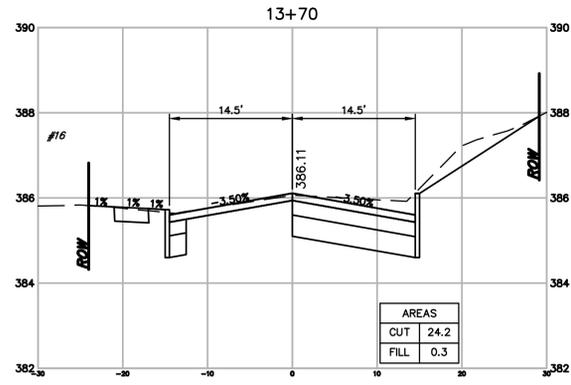
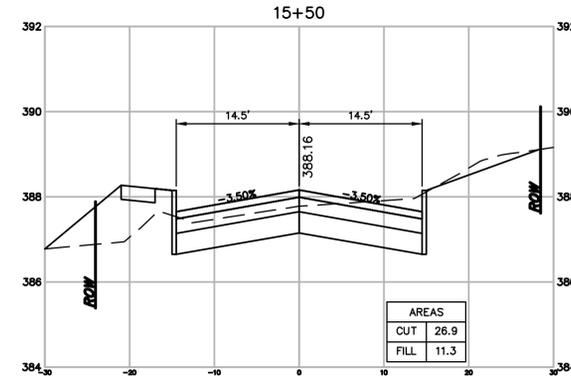
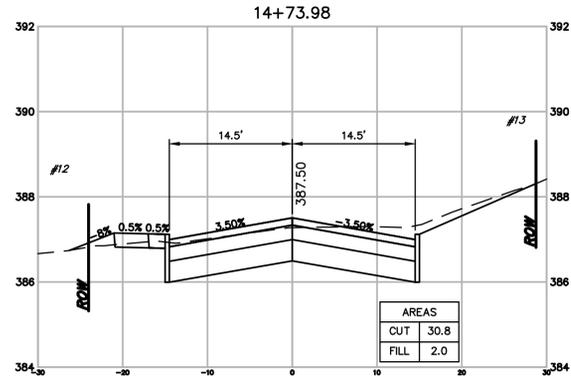
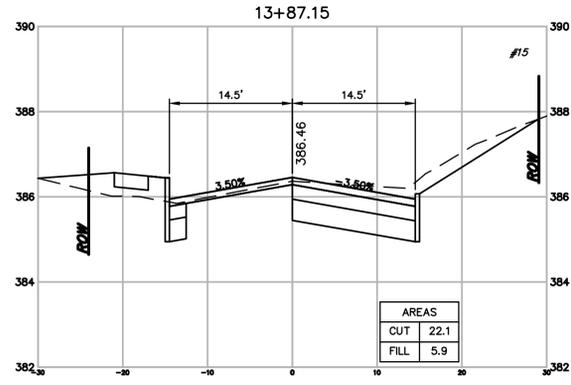
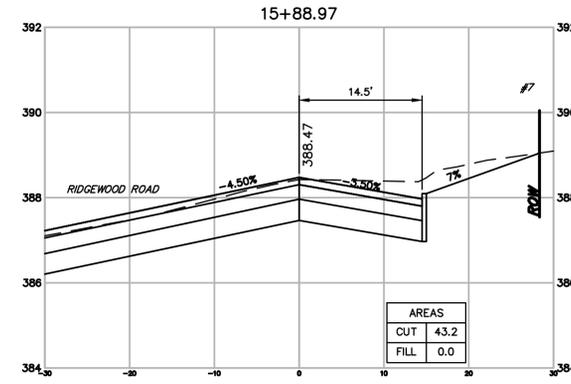
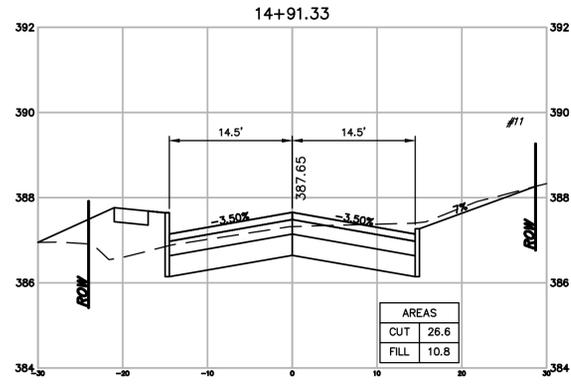
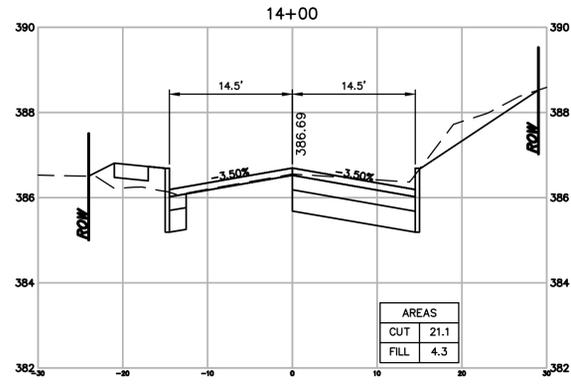
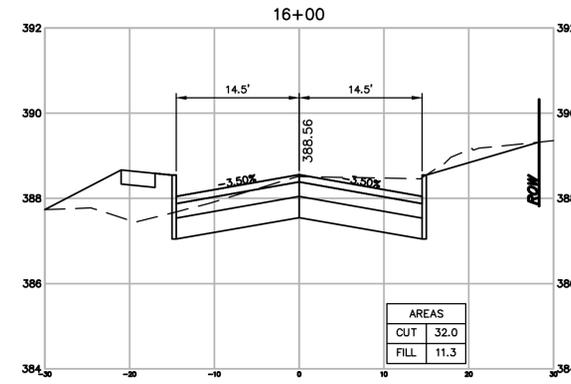
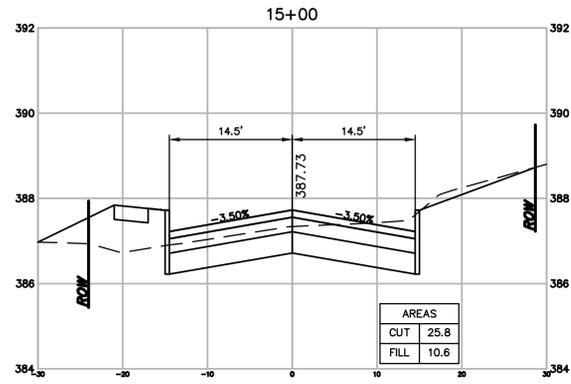
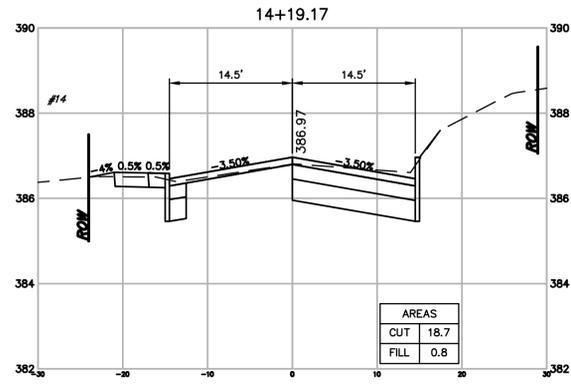
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CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO.: 2400052-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: CROSS-SECTIONS - DELMAR AVENUE



SCALE: 1"=10'H, 1"=2'V  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**12**  
SHEET NUMBER: 12 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-09-CROSS-SECTIONS.DWG Plot Date: 3/19/2025 10:29 AM Plotted By: MICHAEL PIROG



NO.	DESCRIPTION
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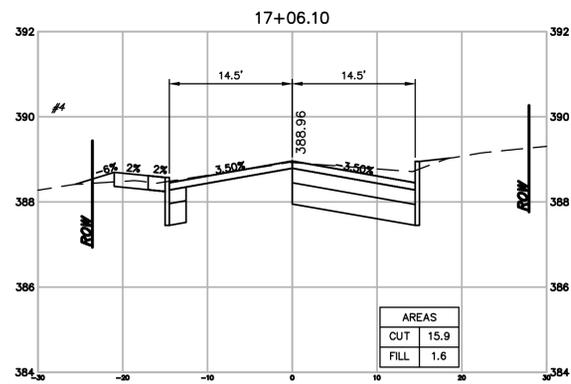
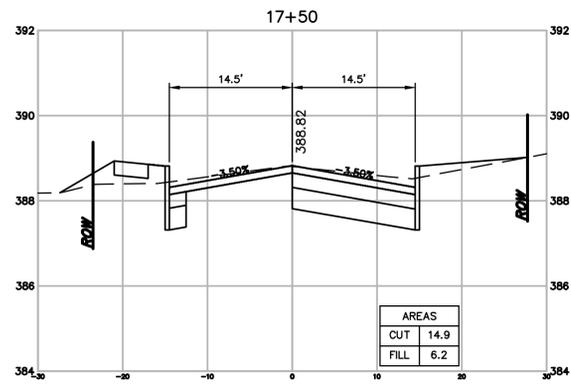
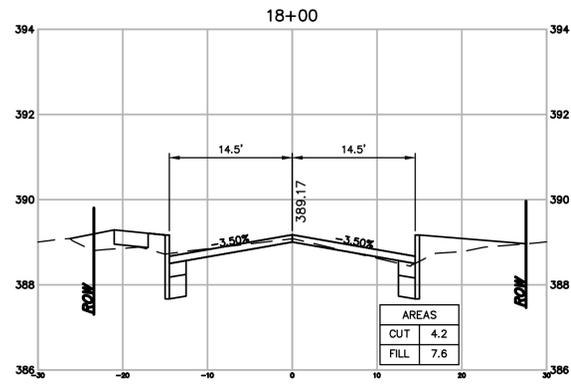
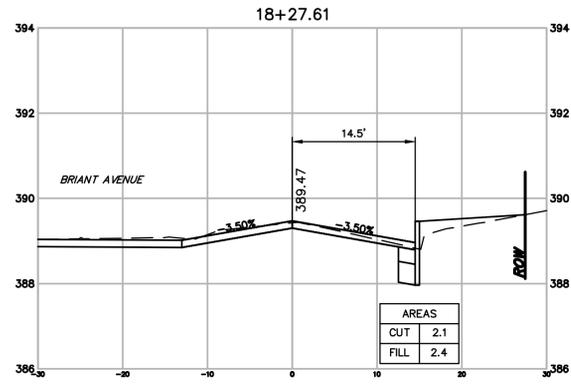
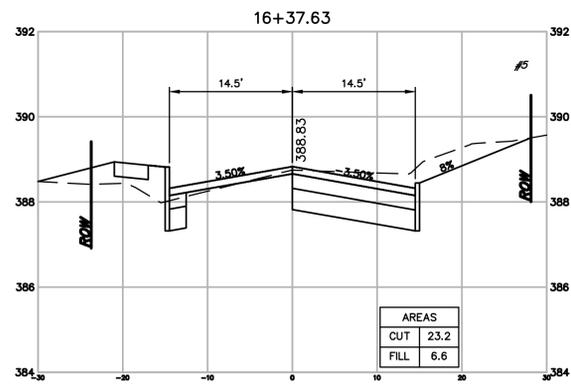
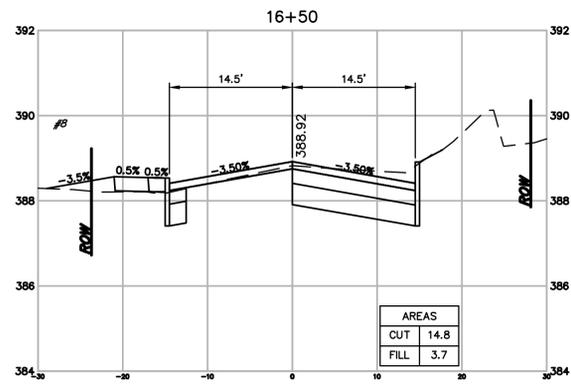
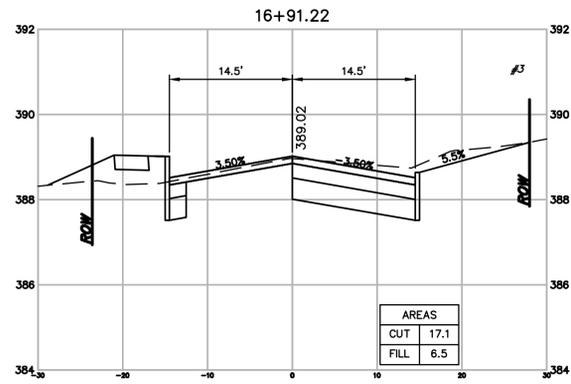
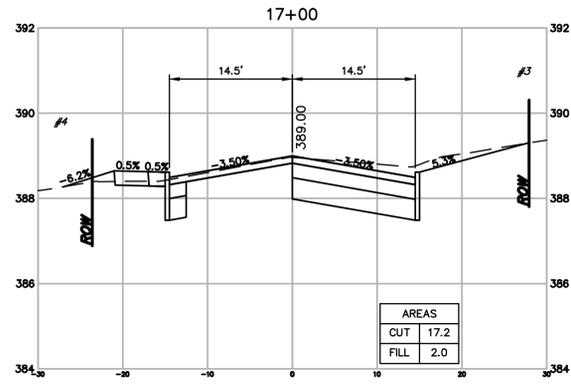
REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO.: 2400052-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: CROSS-SECTIONS - DELMAR AVENUE



SCALE: 1"=10'H, 1"=2'V  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**13**  
SHEET NUMBER: 13 OF 29  
PROJECT NO.: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-09-CROSS-SECTIONS.DWG Plot Date: 3/19/2025 10:29 AM Plotted By: MICHAEL PIROG



### Total Volume Table – Delmar Avenue

Station	Fill Area (ft <sup>2</sup> .)	Cut Area (ft <sup>2</sup> .)	Distance (ft.)	Fill Volume (ft <sup>3</sup> .)	Cut Volume (ft <sup>3</sup> .)	Cumulative Fill Vol. (ft <sup>3</sup> .)	Cumulative Cut Vol. (ft <sup>3</sup> .)
10+50	0.7	29.6	0	0	0	0	0
11+00	0.0	20.8	50	0	1,040	0	1,040
11+50	4.7	8.0	50	235	400	235	1,440
11+68	2.6	11.1	18	47	200	282	1,640
11+92	5.9	23.9	74	437	1,769	718	3,408
12+00	1.9	11.6	8	15	93	734	3,501
12+50	4.8	14.9	50	240	745	974	4,246
12+76	1.8	19.2	26	47	499	1,020	4,745
12+88	4.5	18.9	12	54	227	1,074	4,972
13+00	6.9	14.7	12	83	176	1,157	5,149
13+39	4.7	28.0	39	183	1,092	1,341	6,241
13+50	2.9	27.5	11	32	303	1,372	6,543
13+70	0.3	24.2	20	6	484	1,378	7,027
13+87	5.9	22.1	17	100	376	1,479	7,403
14+00	4.3	21.1	13	56	274	1,535	7,677
14+19	0.8	18.7	19	15	355	1,550	8,032
14+50	9.5	31.5	31	295	977	1,844	9,009
14+73	2.0	30.8	23	46	708	1,890	9,717
14+91	10.8	26.6	18	194	479	2,085	10,196
15+00	10.6	25.6	9	95	230	2,180	10,427
15+38	11.4	28.5	38	433	1,083	2,613	11,510
15+50	11.3	26.9	12	136	323	2,749	11,832
15+88	0.0	43.2	38	0	1,642	2,749	13,474
16+00	11.3	32.0	12	136	384	2,885	13,858
16+37	6.6	23.2	37	244	858	3,129	14,716
16+50	3.7	14.8	13	48	192	3,177	14,909
16+91	6.5	17.1	41	267	701	3,443	15,610
17+00	2.0	17.2	9	18	155	3,461	15,765
17+06	1.6	15.9	6	10	95	3,471	15,860
17+50	6.2	14.9	44	273	656	3,744	16,516
18+00	7.6	4.2	50	380	210	4,124	16,726
18+27	2.4	2.1	27	65	57	4,189	16,782
18+50	2.4	5.5	23	55	127	4,244	16,909

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Morris Plains, NJ 07950  
Certificates of Authorization #24GA27959500  
#21MH00012700

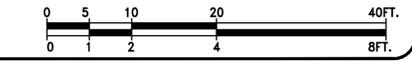


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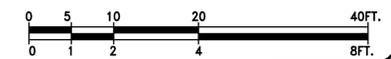
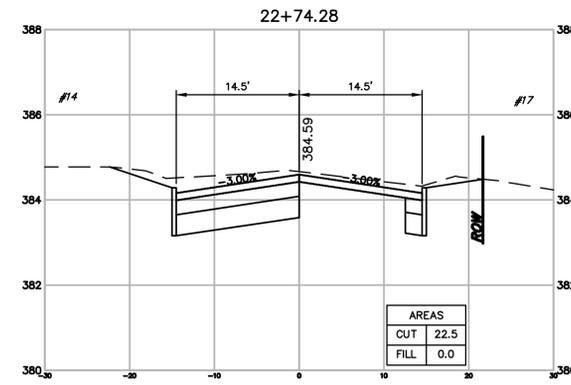
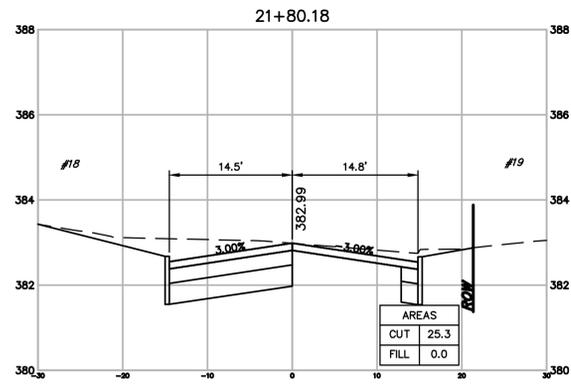
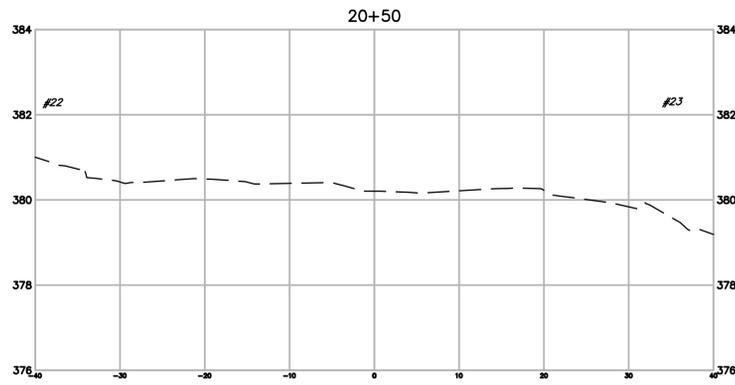
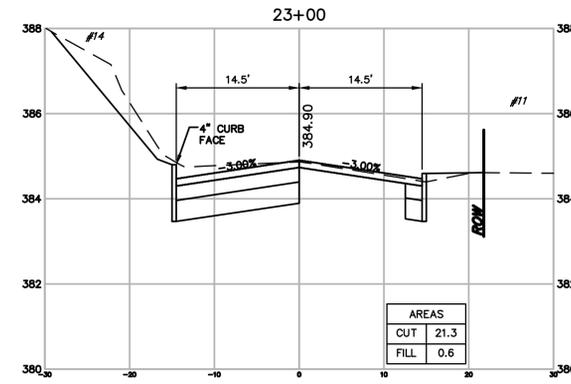
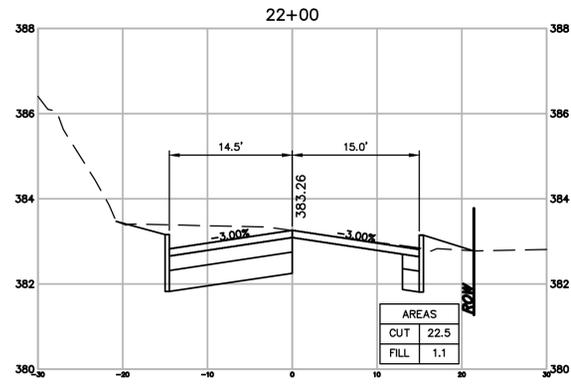
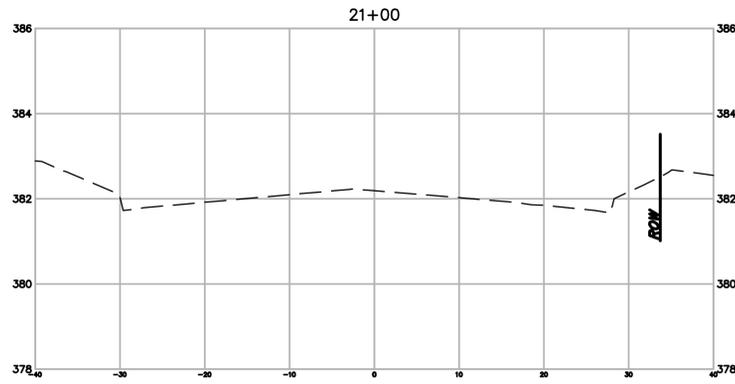
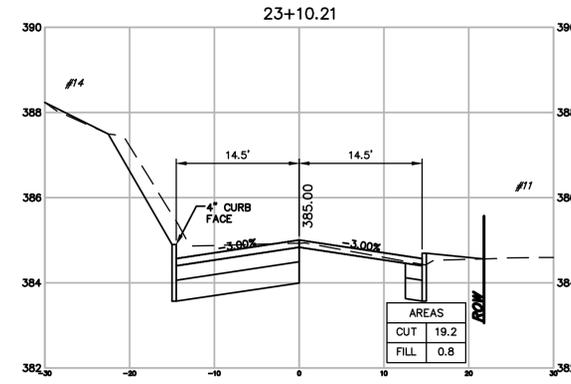
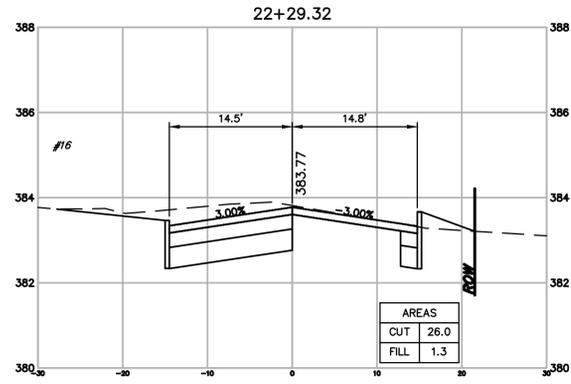
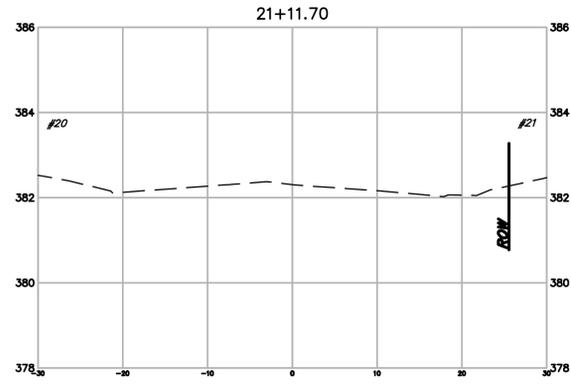
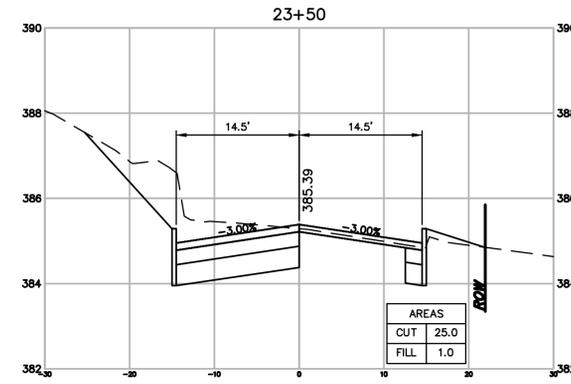
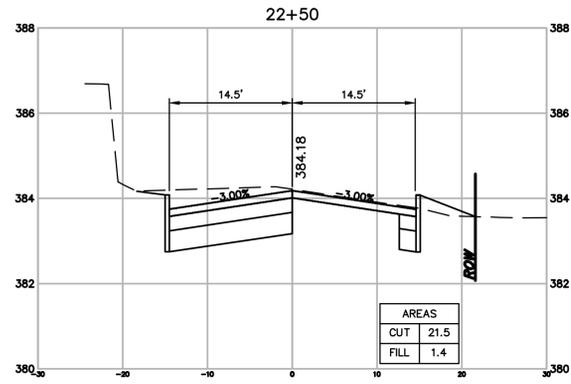
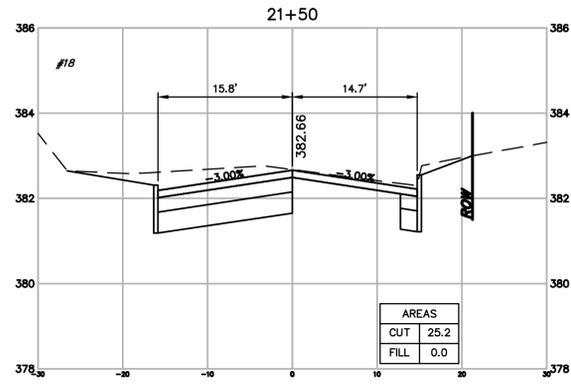
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PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO.: OTE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: CROSS-SECTIONS - DELMAR AVENUE



SCALE: 1"=10'H, 1"=2'V  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**14**  
SHEET NUMBER: 14 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING



Filename: R:\2024\NJ-2400052-00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\CONSTRUCTION DRAWINGS\2400052-09-CROSS-SECTIONS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



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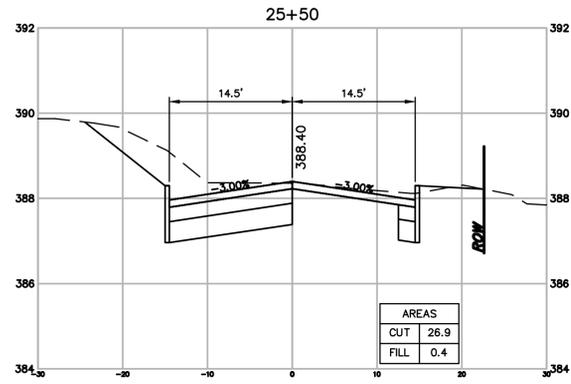
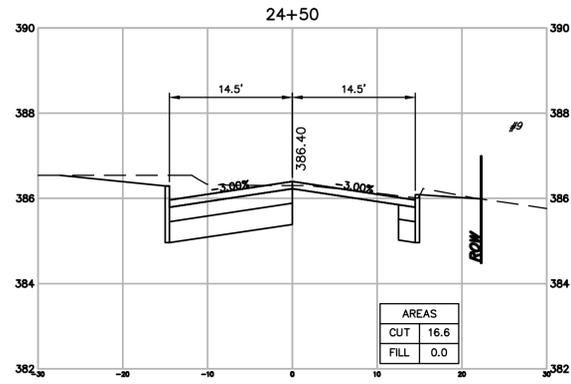
REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO.: 2400052-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: CROSS-SECTIONS - BRIANT AVENUE



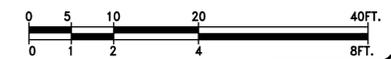
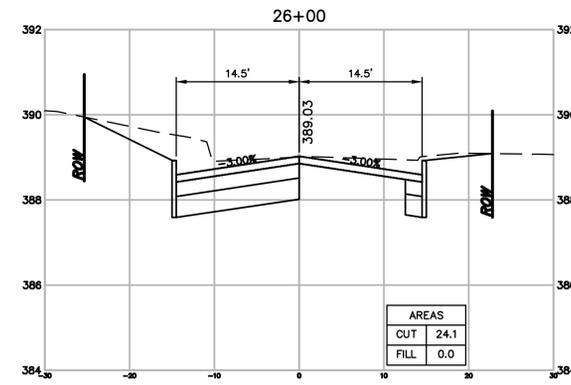
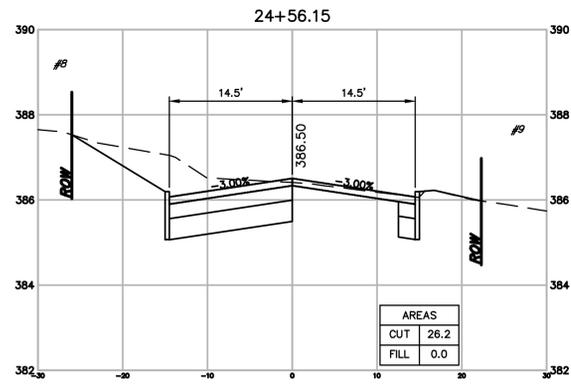
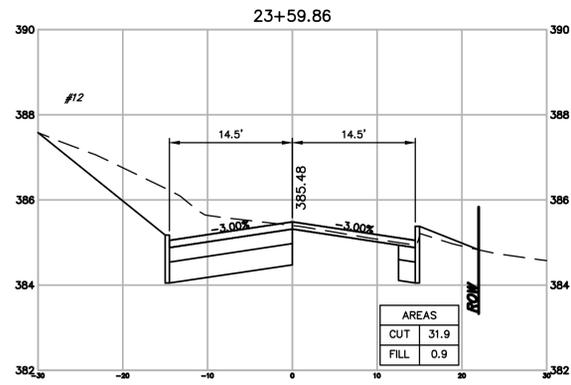
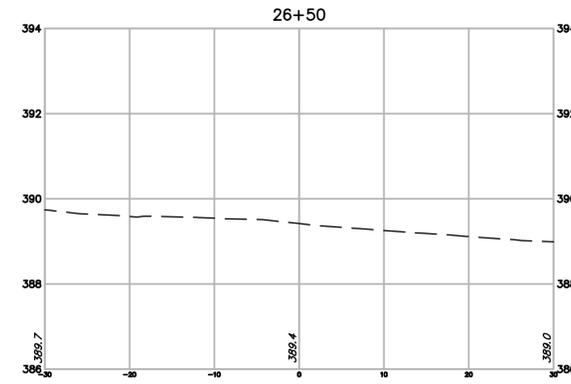
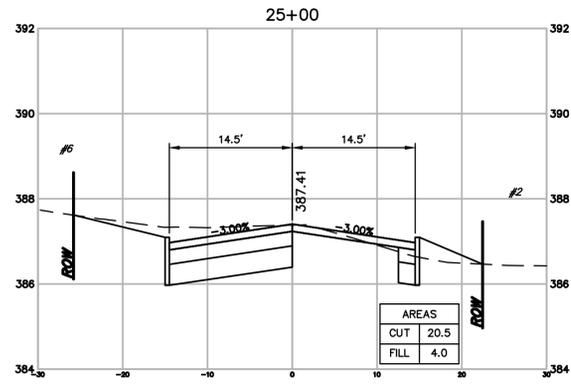
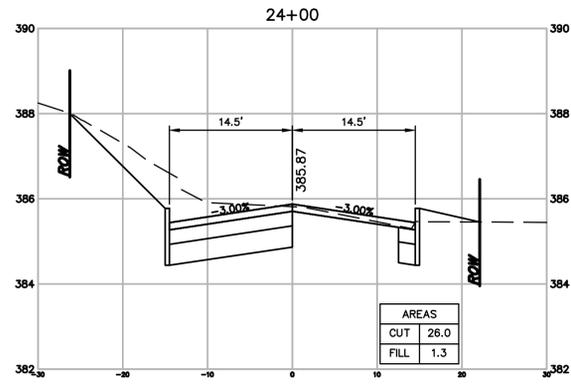
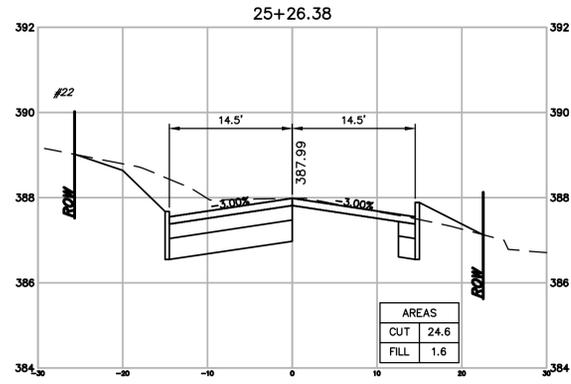
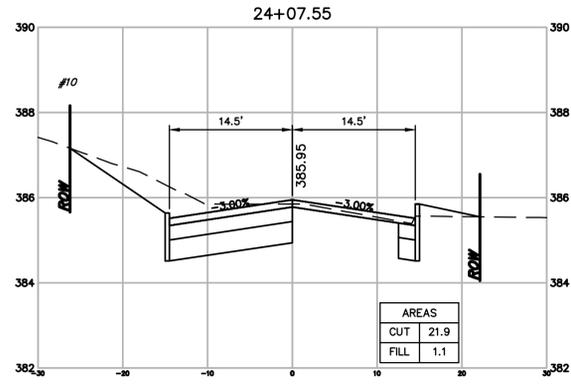
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DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**15**  
SHEET NUMBER: 15 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\CONSTRUCTION DRAWINGS\2400052-09-CROSS-SECTIONS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



### Total Volume Table – Briant Avenue

Station	Fill Area (ft <sup>2</sup> )	Cut Area (ft <sup>2</sup> )	Distance (ft.)	Fill Volume (ft <sup>3</sup> )	Cut Volume (ft <sup>3</sup> )	Cumulative Fill Vol. (ft <sup>3</sup> )	Cumulative Cut Vol. (ft <sup>3</sup> )
20+50	0.0	0.0	0	0	0	0	0
21+00	0.0	0.0	50	0	0	0	0
21+11	0.0	0.0	11	0	0	0	0
21+50	0.0	25.2	39	0	983	0	983
21+80	0.0	25.3	30	0	759	0	1,742
22+00	1.1	22.5	20	22	450	22	2,192
22+29	1.3	26.0	29	38	754	60	2,946
22+50	1.4	21.5	21	29	452	89	3,397
22+74	0.0	22.5	24	0	540	89	3,937
23+00	0.6	21.3	26	16	554	105	4,491
23+10	0.8	19.2	10	8	192	113	4,683
23+50	1.0	25.0	40	40	1,000	153	5,683
23+59	0.9	31.9	9	8	287	161	5,970
24+00	1.3	26.0	41	53	1,066	214	7,036
24+07	1.1	21.9	7	8	153	222	7,190
24+50	0.0	16.6	43	0	714	222	7,903
24+56	0.0	26.2	6	0	157	222	8,061
25+00	4.0	20.5	44	176	902	398	8,963
25+26	1.6	24.6	26	42	640	439	9,602
25+50	0.4	26.9	24	10	646	449	10,248
26+00	0.0	24.1	50	0	1,205	449	11,453
25+50	0.0	0.0	50	0	0	449	11,453



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#21MH0012700



### REVISIONS

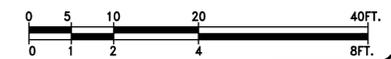
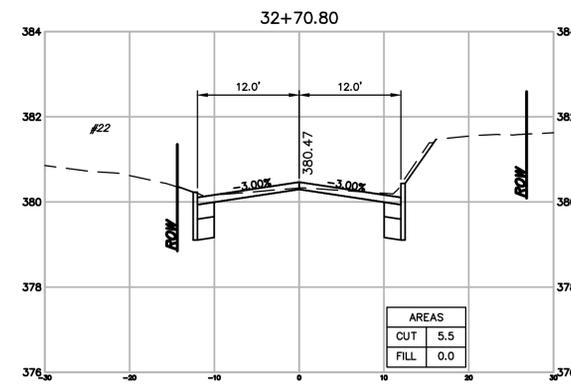
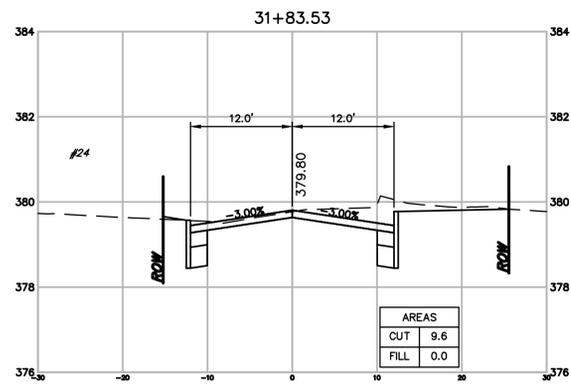
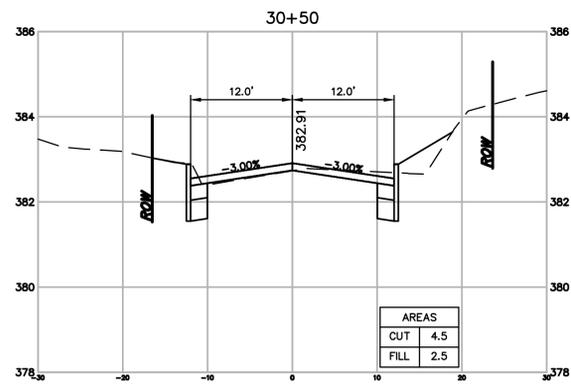
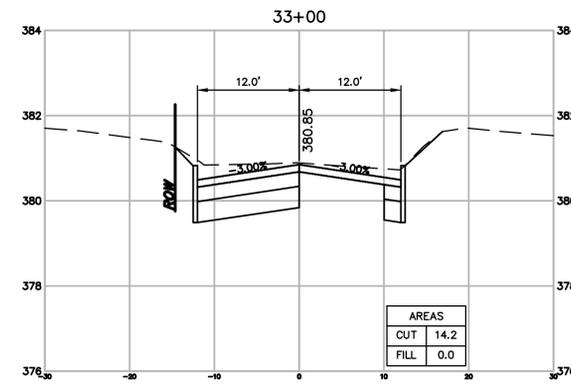
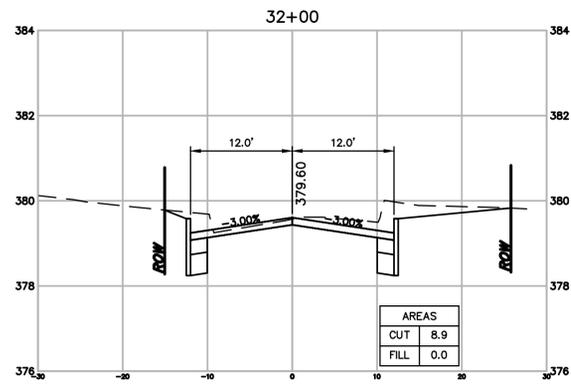
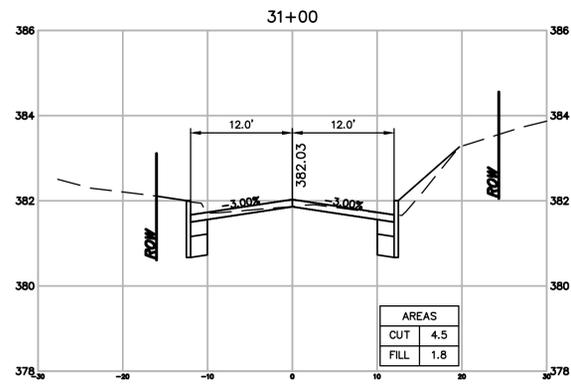
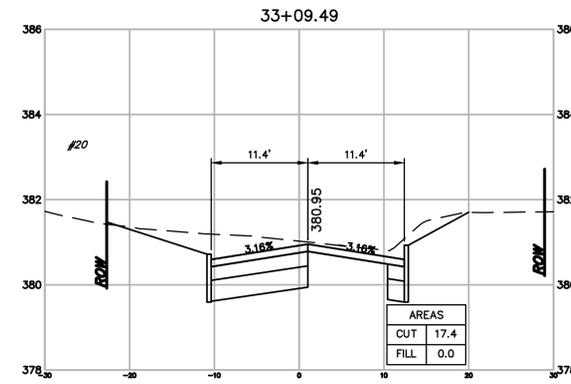
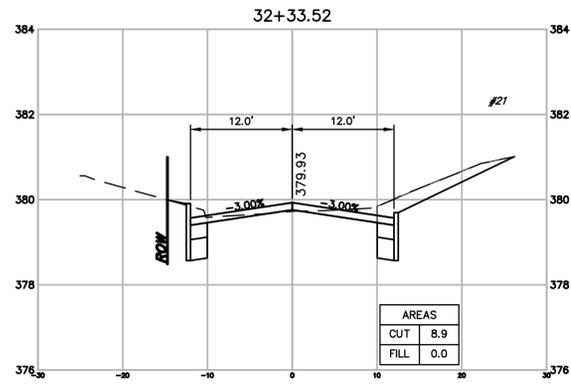
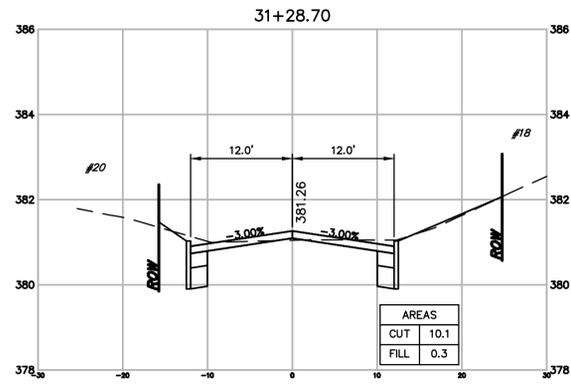
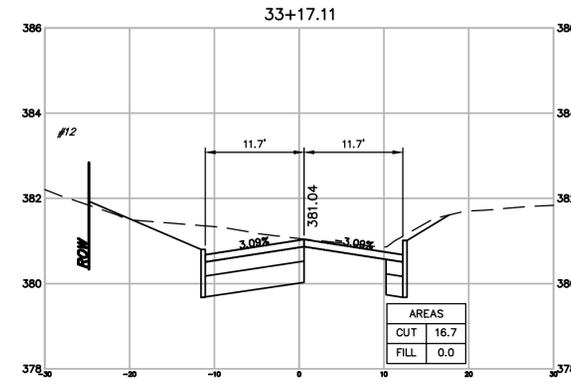
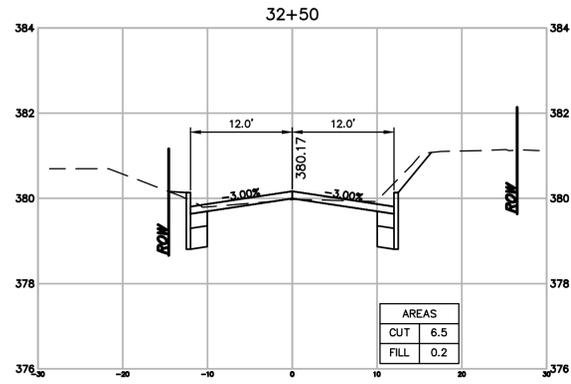
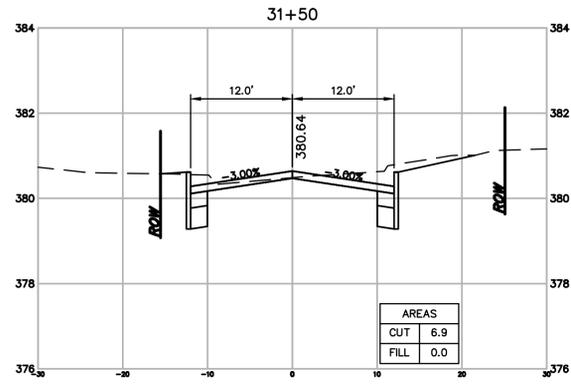
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CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: CROSS-SECTIONS - BRIANT AVENUE

STATE OF NEW JERSEY  
ANDREW C. ANGIANO  
Professional Engineer  
License #4311

SCALE: 1"=10'H, 1"=2'V  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**16**  
SHEET NUMBER: 16 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ-2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-09-CROSS-SECTIONS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



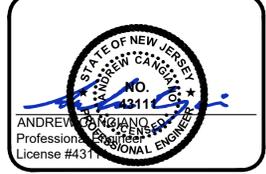
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Greenman-Pedersen, Inc.  
301 Gibraltar Drive, Suite 2A  
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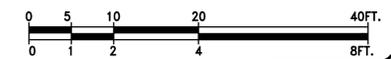
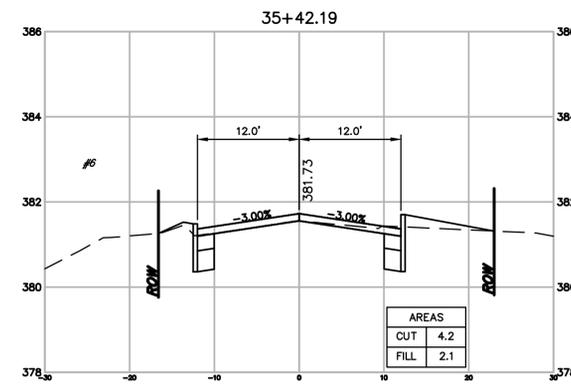
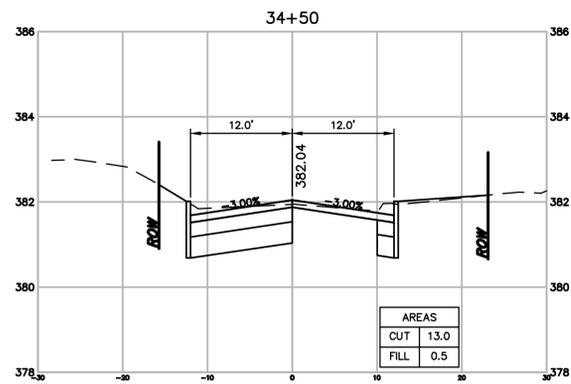
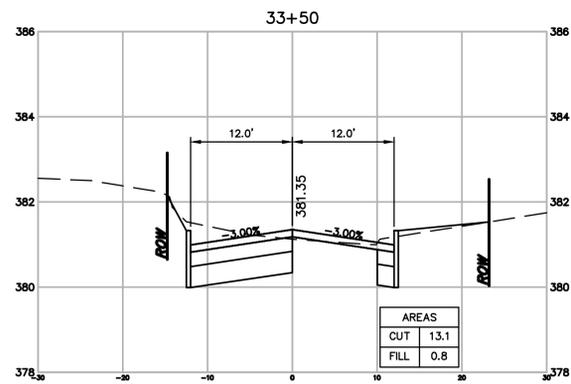
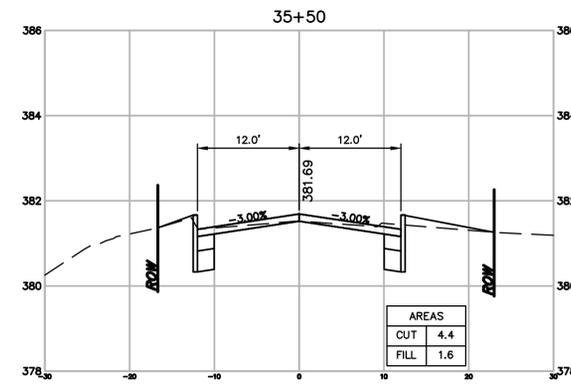
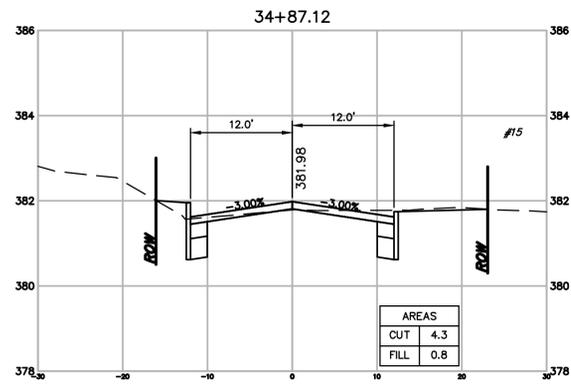
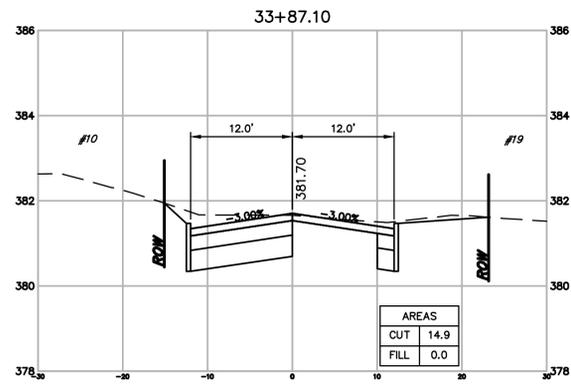
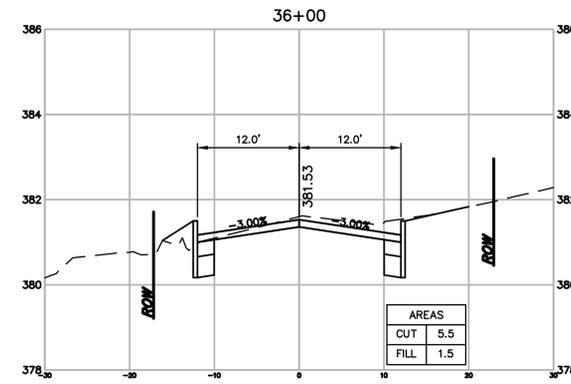
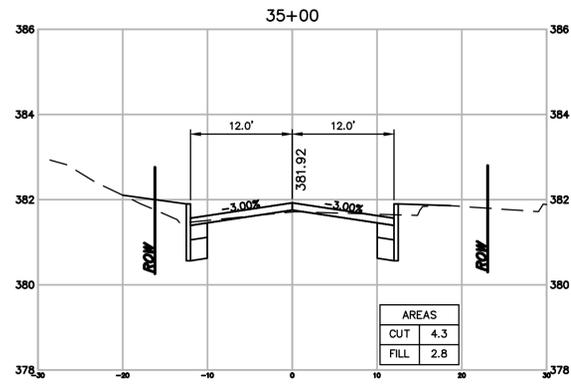
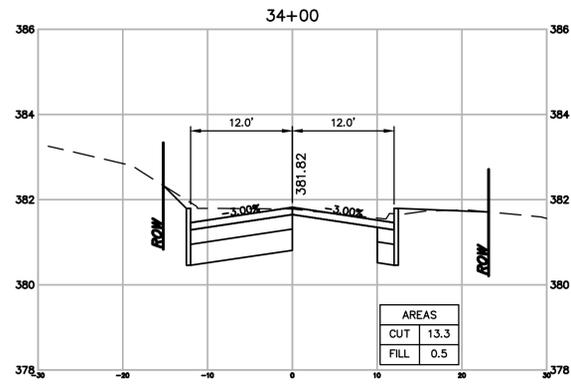
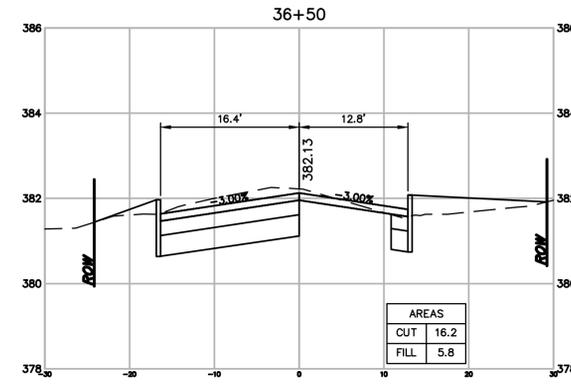
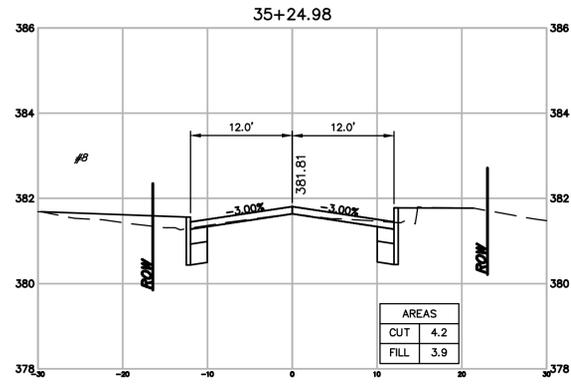
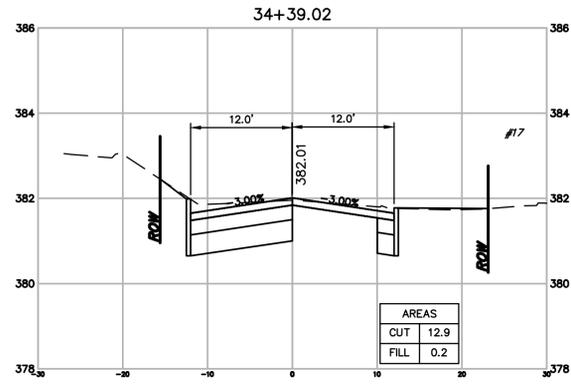
REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: CROSS-SECTIONS - RIDGEWOOD ROAD



SCALE: 1"=10'H, 1"=2'V  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**17**  
SHEET NUMBER: 17 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-09-CROSS-SECTIONS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



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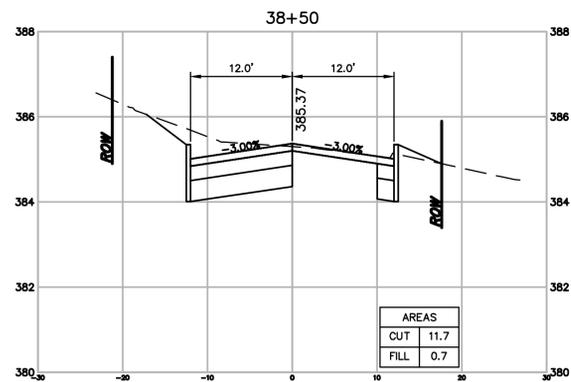
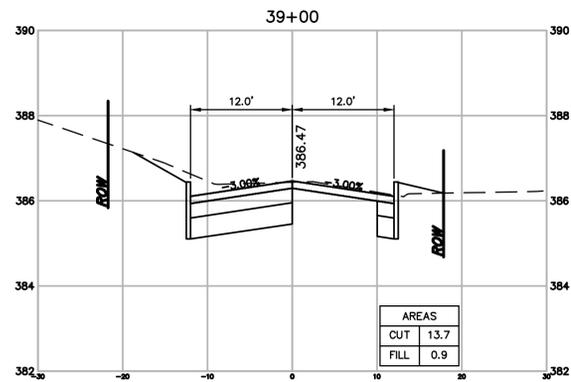
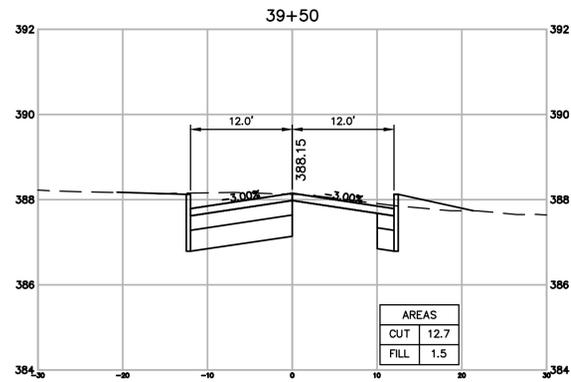
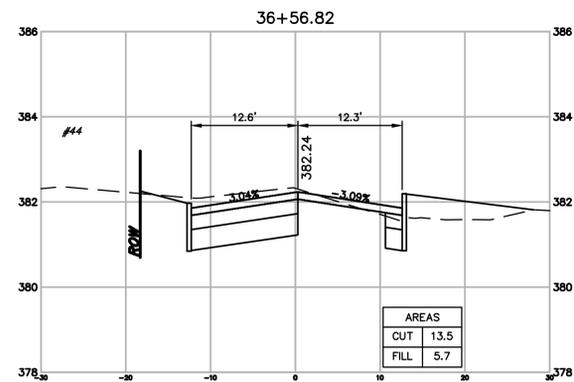
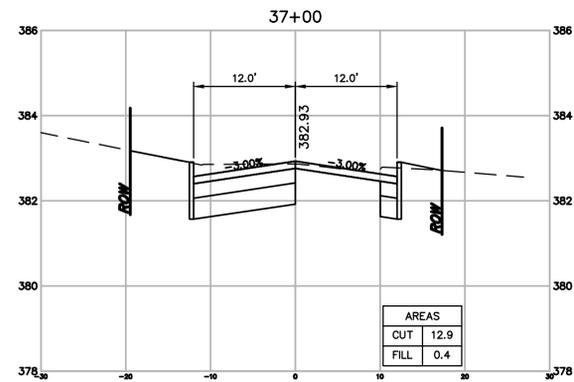
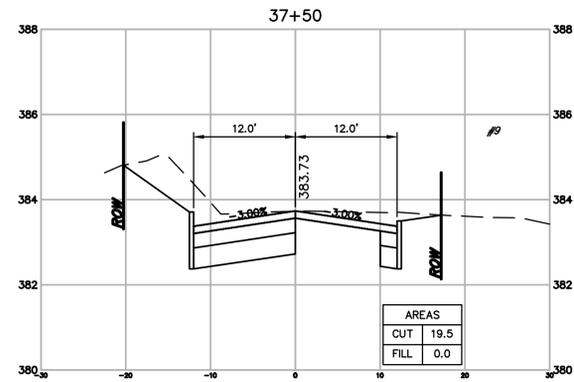
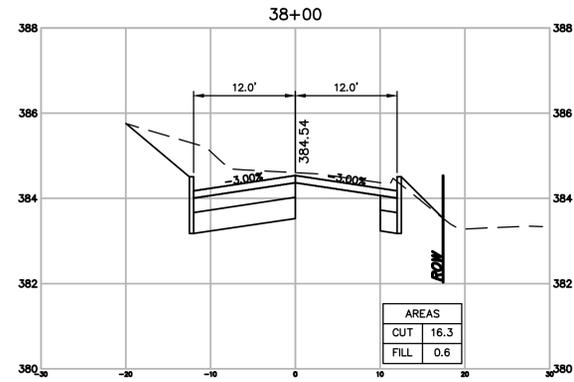
REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO.: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: CROSS-SECTIONS - RIDGEWOOD ROAD



SCALE: 1"=10'H, 1"=2'V  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**18**  
SHEET NUMBER: 18 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\CONSTRUCTION DRAWINGS\2400052-09-CROSS-SECTIONS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



### Total Volume Table – Ridgewood Road

Station	Fill Area (ft <sup>2</sup> .)	Cut Area (ft <sup>2</sup> .)	Distance (ft.)	Fill Volume (ft <sup>3</sup> .)	Cut Volume (ft <sup>3</sup> .)	Cumulative Fill Vol. (ft <sup>3</sup> .)	Cumulative Cut Vol. (ft <sup>3</sup> .)
30+50	2.5	4.5	0	0	0	0	0
31+00	1.8	4.5	50	90	225	90	225
31+28	0.3	10.1	28	8	283	98	508
31+50	0.0	6.9	22	0	152	98	660
31+83	0.0	9.6	33	0	317	98	976
32+00	0.0	6.9	17	0	117	98	1,094
32+33	0.0	8.9	33	0	294	98	1,387
32+50	0.2	6.5	17	3	111	102	1,498
32+70	0.0	5.5	20	0	110	102	1,608
33+00	0.0	14.2	30	0	426	102	2,034
33+09	0.0	17.4	9	0	157	102	2,191
33+17	0.0	16.7	8	0	134	102	2,324
33+50	0.8	13.1	33	26	432	128	2,756
33+87	0.0	14.9	37	0	551	128	3,308
34+00	0.5	13.3	13	7	173	135	3,481
34+39	0.2	12.9	39	8	503	143	3,984
34+50	0.5	13.0	11	6	143	148	4,127
34+87	0.8	4.3	37	30	159	178	4,286
35+00	2.8	4.3	13	36	56	214	4,342
35+24	3.9	4.2	24	94	101	308	4,443
35+42	2.1	4.2	18	38	76	345	4,518
35+50	1.6	4.4	8	13	35	358	4,553
36+00	1.5	5.5	50	75	275	433	4,828
36+50	5.8	16.2	50	290	810	723	5,638
36+56	5.7	13.5	6	34	81	757	5,719
37+00	0.4	12.9	44	18	568	775	6,287
37+50	0.0	19.5	50	0	975	775	7,262
38+00	0.6	16.3	50	30	815	805	8,077
38+50	0.7	11.7	50	35	585	840	8,662
39+00	0.9	13.7	50	45	685	885	9,347
39+50	1.5	12.7	50	75	635	960	9,982

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NO.	DATE	DESCRIPTION
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REVISIONS

CLIENT: TOWNSHIP OF MORRIS

PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

DRAWING TITLE: CROSS-SECTIONS - RIDGEWOOD ROAD

STATE OF NEW JERSEY  
ANDREW CUANIG  
Professional Engineer  
License #4311

SCALE: 1"=10'H, 1"=2'V

DRAWN BY: MEP

CHECKED BY: AC

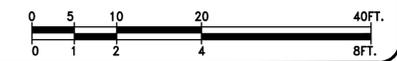
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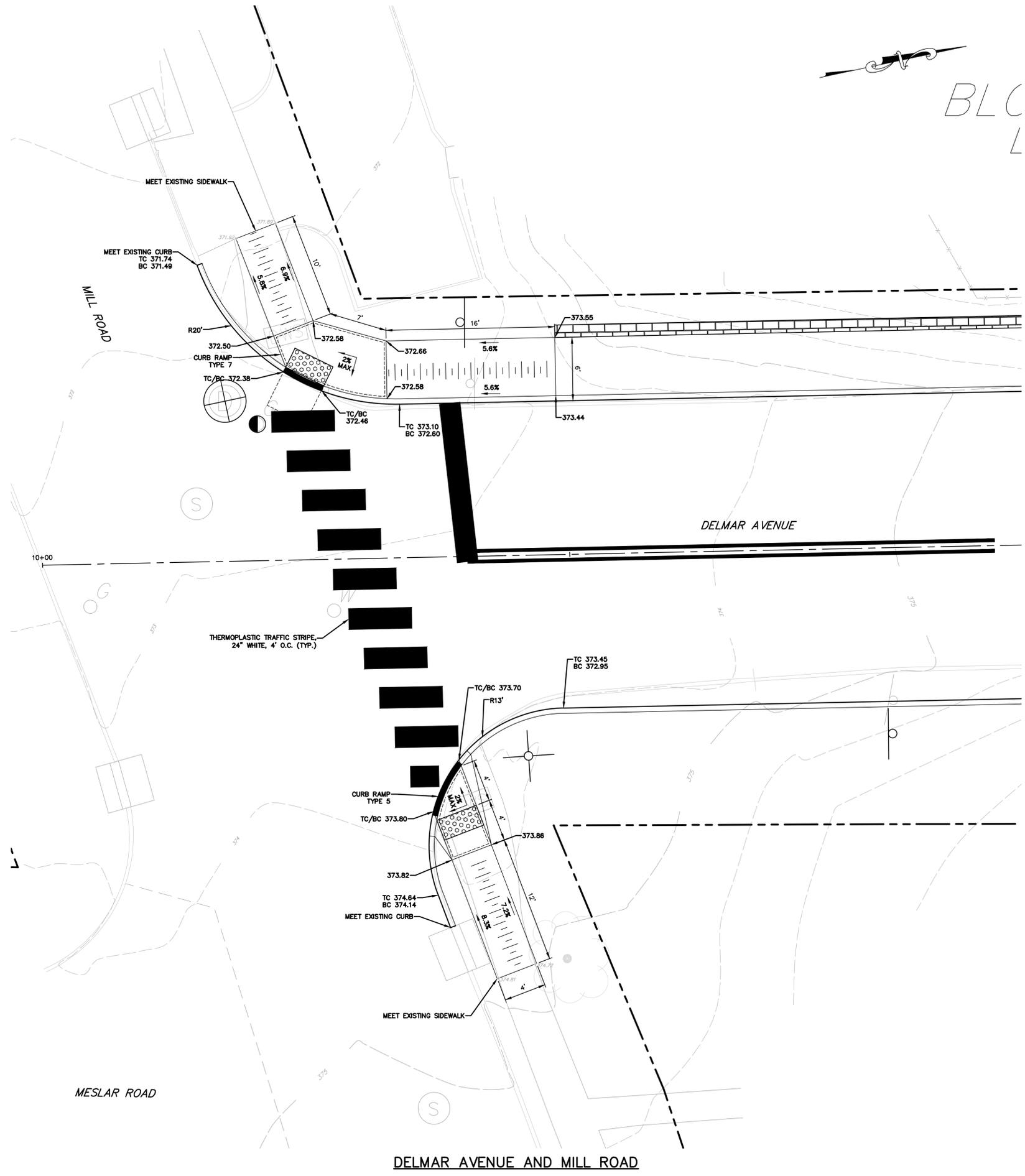
SHEET NUMBER: 19 OF 29

PROJECT NO: 2400052

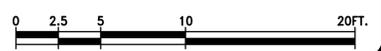
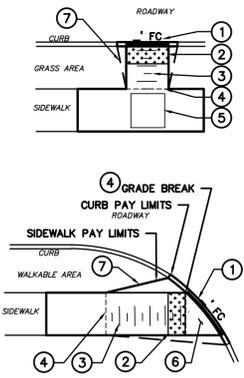
PHASE: ENGINEERING



Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CAD\DWG\CONSTRUCTION DRAWINGS\2400052-10-ADA-RAMP-PLANS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



**CURB RAMP LEGEND - ALTERATION WORK**  
 NOTES:  
 1. DENOTES DEPRESSED FLUSH CURB (FC) AT THE ROADWAY. CROSS SLOPE <2% PREFERRED BUT ROAD GUTTER SLOPE TO BE MET. WIDTH OF RAMP 4' OR 5' AS SHOWN ON PLANS.  
 2. DENOTES DETECTABLE WARNING SURFACE. DWS TO EXTEND THE WIDTH OF FLUSH CURB. DETECTABLE WARNING SURFACE TO BE COLOR BRICK RED.  
 3. DENOTES CONCRETE RAMP. RUNNING SLOPE CANNOT EXCEED 8.3% AND CROSS SLOPE AT TOP OF RAMP NOT TO EXCEED 2%.  
 4. DENOTES A GRADE BREAK IN THE SIDEWALK RAMP. GRADE BREAKS MUST ALWAYS BE PERPENDICULAR (OR RADIAL) TO THE DIRECTION OF TRAVEL OF THE PEDESTRIAN.  
 5. SQUARE DENOTES A 4' X 4' MINIMUM TURNING LANDING; THE CROSS SLOPES FOR THIS AREA CANNOT EXCEED 2% IN BOTH DIRECTIONS.  
 6. TRIANGULAR WEDGE ON CURB RETURNS: RUNNING SLOPE <2% CROSS SLOPE <2% OR BEST MEET EXISTING ROAD GUTTER GRADE.  
 7. RAMP FLARES, CONCRETE AT 10:1 GRADE ADJACENT TO PAVED WALKABLE AREAS. FLARE ADJACENT TO GRASS OR LANDSCAPED AREAS ARE NOT PAVED AND GRADED TO RAMP, 3:1 MAX.



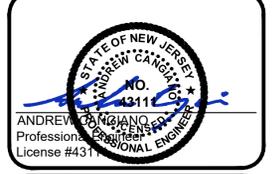
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 #21MH00012700



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REVISIONS

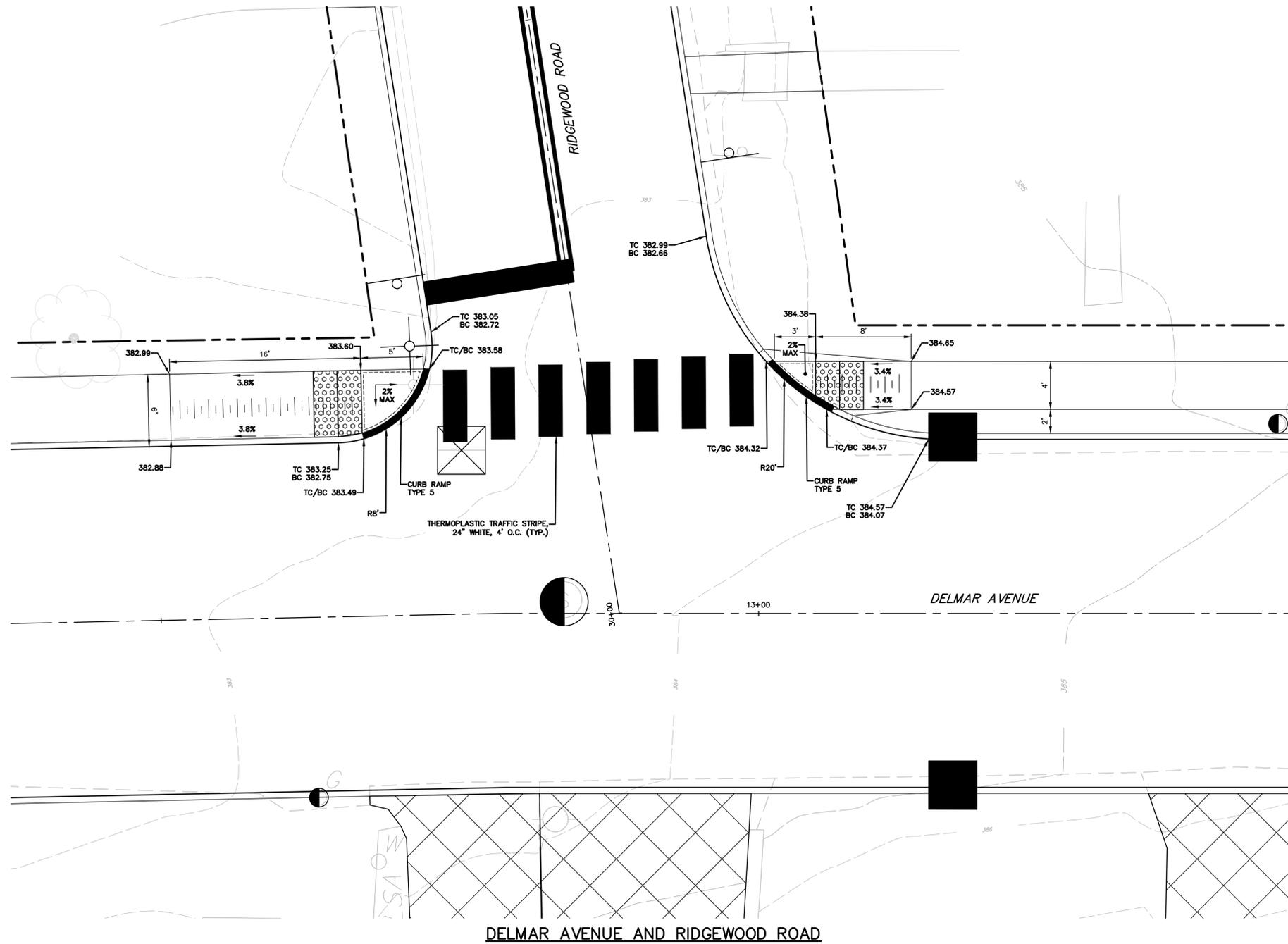
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 PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
 PROJECT NO.: OTE: 2025-02  
 TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
 DRAWING TITLE: ADA CURB RAMP PLAN



SCALE: 1"=5'

DRAWN BY: MEP  
 CHECKED BY: AC  
 DATE: 3/21/2025  
 DRAWING NUMBER:  
**20**  
 SHEET NUMBER: 20 OF 29  
 PROJECT NO: 2400052  
 PHASE: ENGINEERING

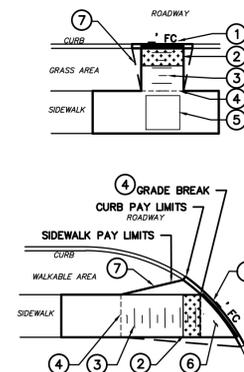
Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-10-ADA-RAMP-PLANS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



**DELMAR AVENUE AND RIDGEWOOD ROAD**

**CURB RAMP LEGEND - ALTERATION WORK**

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#21MH00012700



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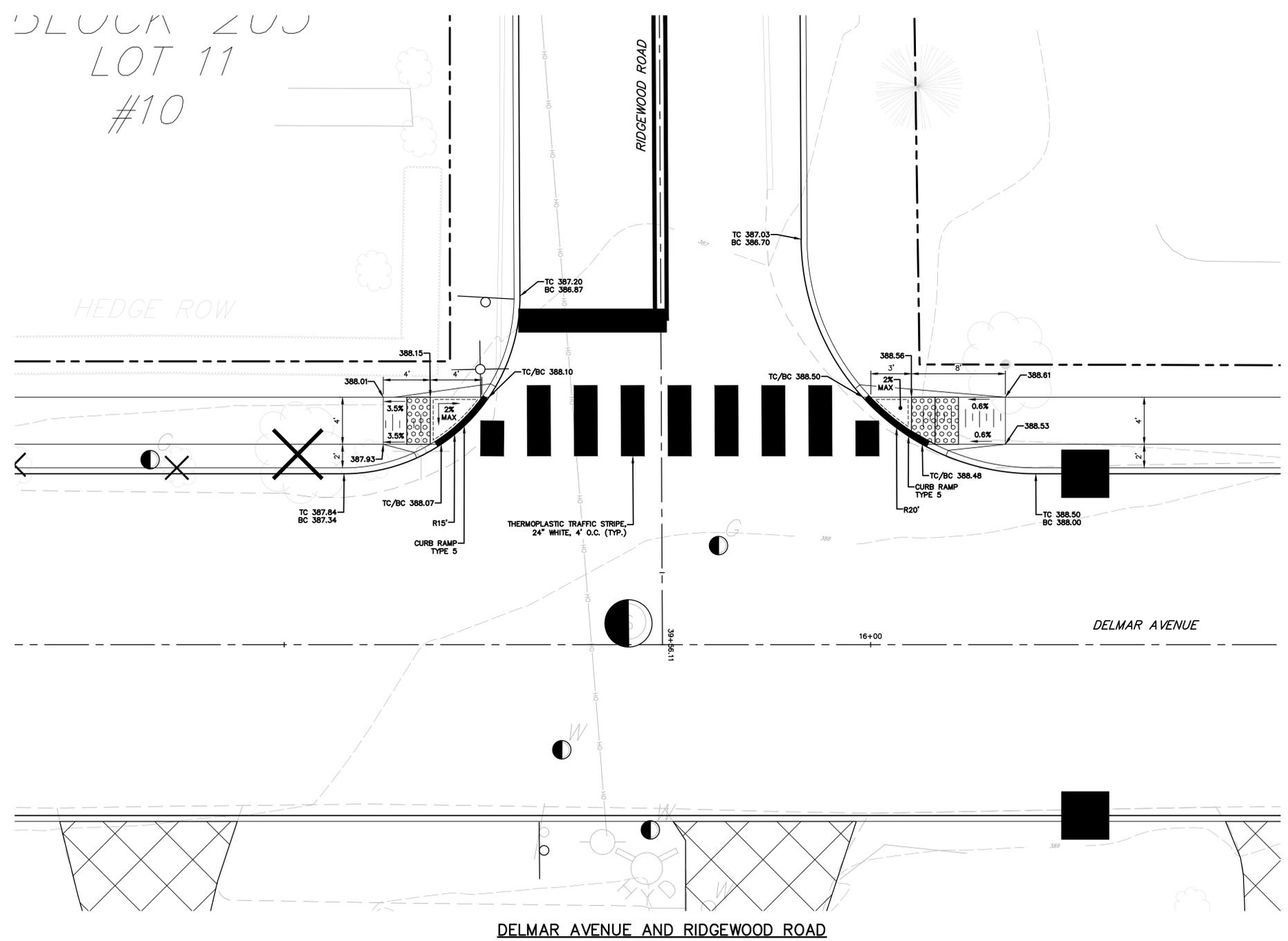
REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: ADA CURB RAMP PLAN



SCALE: 1"=5'  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**21**  
SHEET NUMBER: 21 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-10-ADA-RAMP-PLANS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



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HEDGE ROW

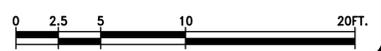
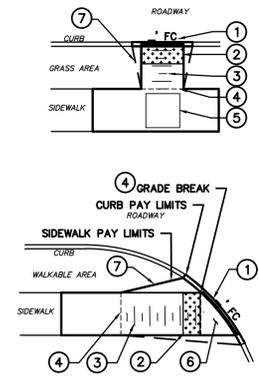
RIDGEWOOD ROAD

DELMAR AVENUE

DELMAR AVENUE AND RIDGEWOOD ROAD

**CURB RAMP LEGEND - ALTERATION WORK**

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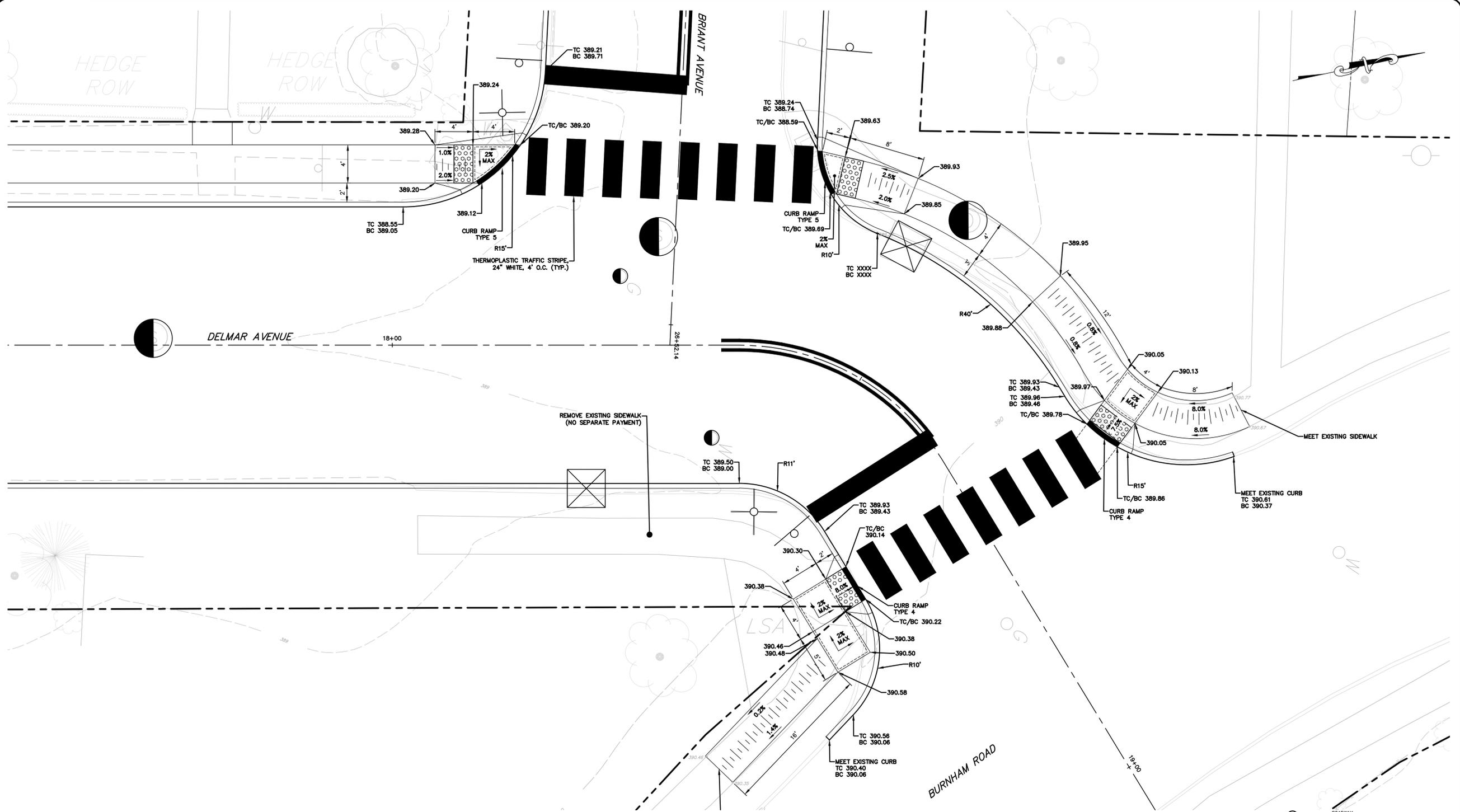
REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: ADA CURB RAMP PLAN

STATE OF NEW JERSEY  
ANDREW CHANG  
Professional Engineer  
License #4311

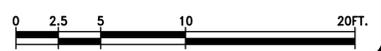
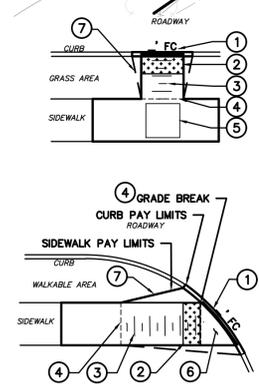
SCALE: 1"=5'  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**22**  
SHEET NUMBER: 22 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-10-ADA-RAMP-PLANS.DWG Plot Date: 3/19/2025 10:30 AM Plotted By: MICHAEL PIROG



**DELMAR AVENUE, BRIANT ROAD, AND BURNHAM ROAD**

**CURB RAMP LEGEND - ALTERATION WORK**  
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REVISIONS

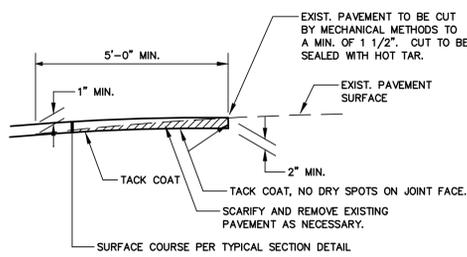
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 PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
 PROJECT NO.: OTE: 2025-02  
 TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
 DRAWING TITLE: ADA CURB RAMP PLAN

STATE OF NEW JERSEY  
 ANDREW CHANG  
 License #43111  
 PROFESSIONAL ENGINEER

SCALE: 1"=5'  
 DRAWN BY: MEP  
 CHECKED BY: AC  
 DATE: 3/21/2025  
 DRAWING NUMBER:  
**23**  
 SHEET NUMBER: 23 OF 29  
 PROJECT NO: 2400052  
 PHASE: ENGINEERING

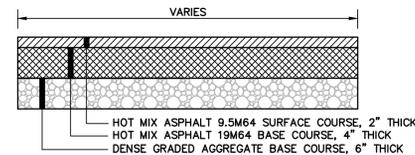
**RESURFACING NOTES**

- NO SEPARATE PAYMENT SHALL BE MADE FOR SAWCUTTING EXISTING ASPHALT PAVEMENT WHERE REQUIRED.
- THE EQUIPMENT USED FOR MILLING OR PROFILING:
  - SHALL BE A SELF-PROPELLED, POWER OPERATED PLANING, GRINDING OR CUTTING MACHINE CAPABLE OF REMOVING THE SPECIFIED LAYER OF PAVEMENT.
  - THE EQUIPMENT SHALL BE CAPABLE OF ACCURATELY ESTABLISHING PROFILE GRADES BY REFERENCING FROM EITHER THE EXISTING PAVEMENT OR FROM AN INDEPENDENT GRADE CONTROL AND SHALL HAVE POSITIVE MEANS FOR CONTROLLING CROSS SLOPE ELEVATIONS.
  - THE OPERATING SPEED OF THE MACHINE SHALL BE VARIABLE AND ADEQUATE TO PRODUCE MILLED MATERIAL OF APPROXIMATELY TWO (2) INCHES IN DEPTH.
  - THE EQUIPMENT SHALL ALSO HAVE AN EFFECTIVE MEANS FOR REMOVING MILLED MATERIAL FROM THE SURFACE AND FOR PREVENTING DUST AND OTHER PARTICULATE MATTER FROM THE MILLING AND LOADING OPERATIONS FROM ESCAPING INTO THE AIR.
- MILLING OR PROFILING OPERATIONS:
  - MILLING SHALL CONSIST OF THE REMOVAL OF ALL OR PART OF AN IN-PLACE HOT MIX ASPHALT TO THE DEPTH(S), CROSS SLOPE AND PROFILE SHOWN ON THE PLANS OR AS DIRECTED IN THE FIELD BY THE ENGINEER OR ITS REPRESENTATIVE.
  - THE CONTRACTOR SHALL DISPOSE OF THE SWEEPINGS AND ANY MILLED MATERIAL NOT REQUIRED OR DEEMED ACCEPTABLE FOR USE AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL UTILIZE ONE OF THE NJDOT CERTIFIED RECYCLING FACILITIES TO DISPOSE OF THE SWEEPINGS AND MILLED MATERIAL.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS FROM LOCAL, STATE OR OTHER AGENCIES THAT MIGHT BE NECESSARY TO ACCOMPLISH THE STOCKPILING OF MILLED MATERIALS.
  - THE PAVEMENT SHALL BE SWEEP CLEAN BY MECHANICAL BROOMING CONCURRENT WITH THE MILLING OPERATION.
  - MILLING SHALL START AT THE LOW END AND PROGRESS TOWARD THE HIGH SIDE. THE CONTRACTOR SHALL MAKE PROVISIONS FOR ANY WATER THAT MAY BE TRAPPED DUE TO THE MILLING OPERATION, SUCH AS LATERAL SAW CUTS INTO THE SHOULDER AREA.
  - A SMOOTH TRANSITION SHALL BE PROVIDED AT THE ENDS OF ALL THE MILLED AREAS, WHICH ARE OPENED TO TRAFFIC AT THE END OF ANY GIVEN WORKDAY.
  - IN AREAS WITH EXISTING CURB WHERE PAVEMENT IS TO BE MILLED FULL WIDTH OF ROADWAY, CONTRACTOR SHALL OBSERVE CARE IN REMOVING PAVEMENT AND ANY CURB WHICH IS DISTURBED AND/OR DAMAGED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
  - ANY MANHOLE, DRAINAGE, OR VALVE BOX CASTINGS, WHICH ARE DAMAGED BY MILLING EQUIPMENT, SHALL BE REPLACED BY AND AT THE CONTRACTOR'S EXPENSE.
  - IF TEETH IN THE MILLING DRUM BECOME DISLODGED OR BROKEN, THEY SHALL BE REPLACED IMMEDIATELY WITH TEETH THAT ARE OF THE SAME LENGTH AS THE REMAINING TEETH IN THAT ROW. REPLACEMENT OF TEETH IS THE RESPONSIBILITY OF THE CONTRACTOR AND NO COMPENSATION WILL BE MADE BY THE DEPARTMENT TO REPLACE ANY TEETH.
  - MILLED SURFACES SHALL NOT BE LEFT UNPAVED FOR LONGER THAN 72 HOURS AFTER THE COMPLETION OF THE MILLING OPERATION. THE CONTRACTOR SHALL ENSURE COORDINATION FOR ANY AND ALL WORK WHICH MAY IMPACT THE PAVING OPERATION, PAVING SHALL COMMENCE WITHIN 72 HOURS OF THE COMPLETION OF MILLING.
  - A PENALTY EQUAL TO THE AMOUNT FOR LIQUIDATED DAMAGES STATED HEREIN SHALL BE ASSESSED FOR EACH DAY THE ROADWAY REMAINS MILLED AFTER THE 72 HOURS HAS PASSED WHETHER OR NOT THE CONTRACTOR AND/OR SUBCONTRACTORS ARE WORKING ON THE ROADWAY. WORK TASKS SHALL OVERLAP WHENEVER POSSIBLE AND NOT BE COMPLETED TASK BY TASK.
- REPAIRING HMA PAVEMENT BASE & SUB BASE
  - A PROOF ROLL INSPECTION UNDER SUPERVISION OF THE INSPECTOR WILL BE PERFORMED BY CONTRACTOR IMMEDIATELY FOLLOWING MILLING OPERATIONS UTILIZING A FULLY LOADED TANDEM TO DETERMINE LIMITS OF ANY REQUIRED HMA BASE OR SUB-BASE REPAIR.
  - WHEN PAVEMENT BELOW THE SPECIFIED LEVEL OF MILLING BECOMES DISLODGED, DELAMINATED, OR IS NON-EXISTENT FROM PRIOR CONSTRUCTION AND/OR RELATED WORK AND WILL NOT PROVIDE SUPPORT FOR THE SURFACE COURSE, IT SHALL BE REMOVED AND REPLACED WITH THE PLAN SPECIFIED HMA BASE COURSE AND DENSE GRADED AGGREGATE BASE COURSE AS DIRECTED BY THE ENGINEER, PRIOR TO RESURFACING.
- TACK COAT APPLICATION
  - UNIFORMLY SPRAY TACK COAT WHEN PLACING HMA ON PAVED SURFACES ENSURING AN EVEN, FULLY COATED SURFACE.
  - TACK COAT THAT IS DRIPPED, NOT SPREAD, SHALL BE REMOVED BY BLOTTING AREA AND CORRECTED.
  - APPLY TACK COAT ONLY TO AREAS TO BE PAVED IN THE SAME DAY.
  - APPLY TACK COAT IN ACCORDANCE WITH PARAGRAPH 401.03.02 OF STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2019 INCLUDING ALL CURRENT BDCs TO DATE.
  - HMA BUTT JOINTS TO EXISTING PAVEMENT SHALL BE FULLY TACKED SO NO DRY AREA EXISTS ON INSIDE FACE OF THE JOINT.
  - UPON COMPLETION OF PAVING HMA BUTT JOINTS TO EXISTING PAVEMENT SURFACE SEAMS SHALL BE SEALED WITH TACK.
  - NO SEPARATE PAYMENT FOR TACK COAT OR SEALING OF JOINTS SHALL BE MADE.



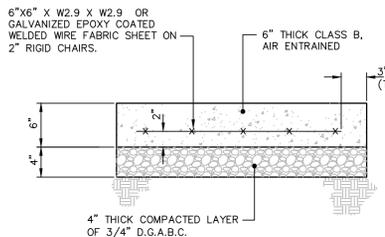
NOTE:  
THE COST OF SAW CUT AND PAVEMENT REMOVAL CALLED FOR IN THIS DETAIL SHALL BE INCLUDED IN THE VARIOUS BID ITEMS.

**BUTT JOINT DETAIL**  
N.T.S.

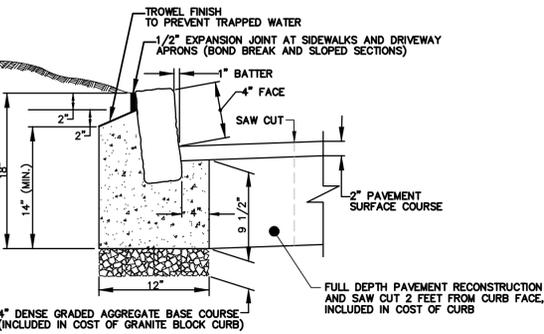


THE FOLLOWING IS INCLUDED UNDER THE UNIT BID PRICE FOR HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK & HOT MIX ASPHALT 19M64 BASE COURSE, 4" THICK:  
1.1. SAWCUTTING  
1.2. TACKING JOINTS  
1.3. EXCAVATION UNCLASSIFIED & DISPOSAL

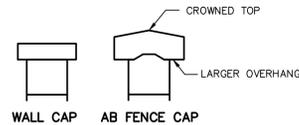
**TYPICAL SECTION MUNICIPAL HOT MIX ASPHALT ROADWAY**  
N.T.S.



**TYPICAL SECTION CONCRETE, 6" THICK (RESIDENTIAL) DRIVEWAY**  
N.T.S.

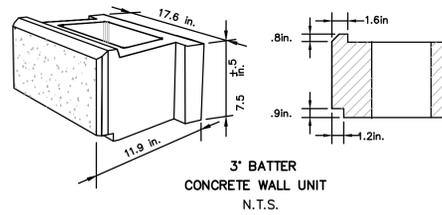
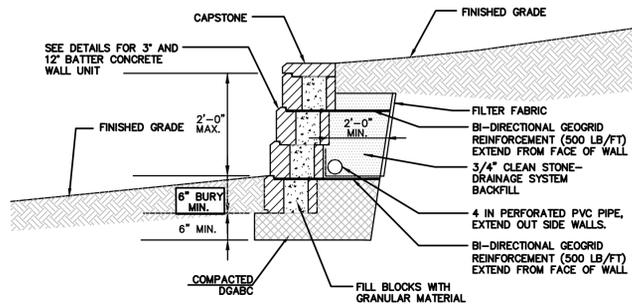


**GRANITE BLOCK CURB DETAILS**  
N.T.S.



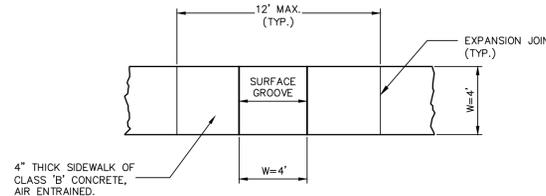
**OPTIONAL AB FENCE CAP**  
N.T.S.

NOTE:  
TYPE OF FENCE CAP TO BE USED SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

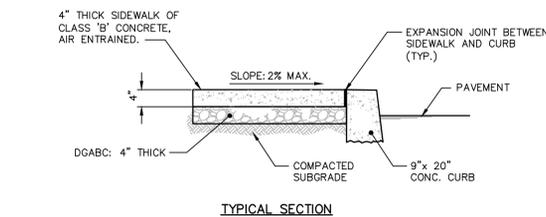


\* CHECK WITH LOCAL SUPPLIER FOR EXACT BLOCK HEIGHTS

**MODULAR BLOCK RETAINING WALL DETAIL**  
N.T.S.



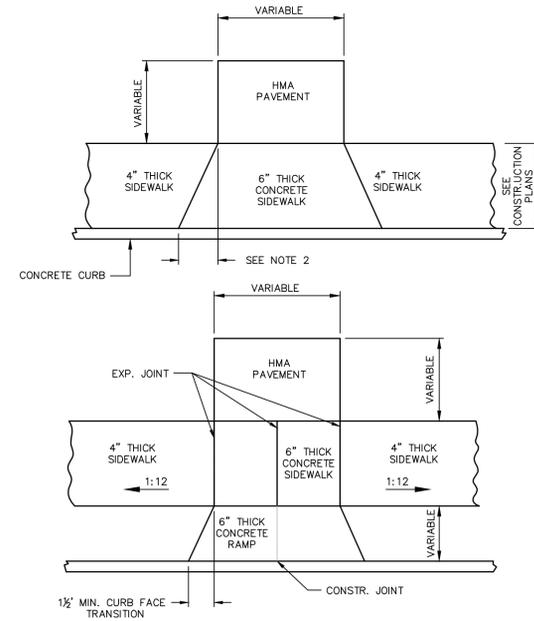
**JOINT PLACEMENT DETAIL**



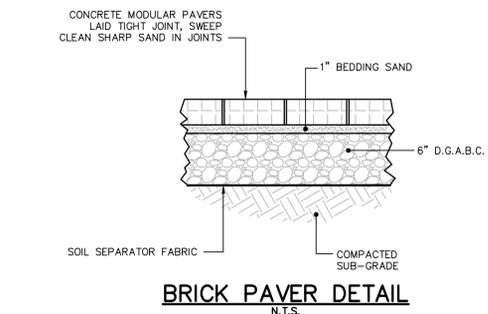
**TYPICAL SECTION**

- NOTES:  
1. SIDEWALKS TO RECEIVE BROOMED SURFACE FINISH WITH CONSTRUCTION AND EXPANSION JOINTS AS SHOWN. SURFACE TO BE FIRM, STABLE, AND SLIP RESISTANT.  
2. SIDEWALK MUST BE CONSTRUCTED FOR FULL ADA COMPLIANCE, INCLUDING BUT NOT LIMITED TO COMPLIANCE IN RUNNING SLOPE, CROSS SLOPE, CLEAR WIDTH, WITH NO VERTICAL DISCONTINUITIES EXCEEDING 1/4" RISE.  
3. REFER TO CURB RAMP DETAILS WHERE SIDEWALK MEETS ROAD AT CROSSWALK LOCATIONS.

**CONCRETE SIDEWALK DETAILS**  
N.T.S.

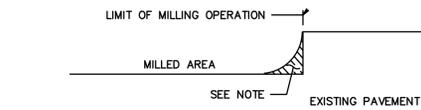


**TYPICAL DRIVEWAYS WITH SIDEWALKS**  
N.T.S.



**BRICK PAVER DETAIL**  
N.T.S.

- NOTES:  
1. THE LIMIT OF HMA PAVEMENT SHALL BE AS SHOWN ON THE PLANS WHEN PROFILE REGRADING, 2" MINIMUM FOR PATCHING OF HMA DRIVEWAY, OR 4" MINIMUM FOR STONE DRIVEWAYS TO PROVIDE SEPARATION BETWEEN THE STONE SURFACE AND THE CONCRETE SIDEWALK.  
2. CONSIDERATION OF THE ADA ACCESSIBLE ROUTE MUST BE MADE IN GRADING OF SIDEWALK ACROSS DRIVEWAYS.  
3. SEE SIDEWALK DETAILS AS WELL AS DETAIL FOR ACCESSIBLE ROUTES AT DRIVEWAYS.



NOTE: REMOVE THE HMA MATERIAL LEFT BY THE DRUM RADIUS AT THE LIMITS OF THE MILLING OPERATION. ENSURE THAT THE FACE IS CLEAN AND VERTICAL BY SAWCUTTING OR TRANSVERSE MILLING. THIS END TREATMENT IS NOT APPLICABLE TO TEMPORARY LIMITS OF MILLING (I.E. END OF WORKDAY). IT IS APPLICABLE TO ALL AREAS WHERE THE COMPLETED MILLING OPERATION MATCHES ANY EXISTING PAVEMENT INCLUDING BRIDGES.

**END TREATMENT FOR MILLING OPERATIONS**  
N.T.S.

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Morris Plains, NJ 07950  
Certificates of Authorization #24GA27959500 #21MH00012700



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REVISIONS

**TOWNSHIP OF MORRIS**  
DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD  
IMPROVEMENTS PROJECT  
PROJECT NO. 0TE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

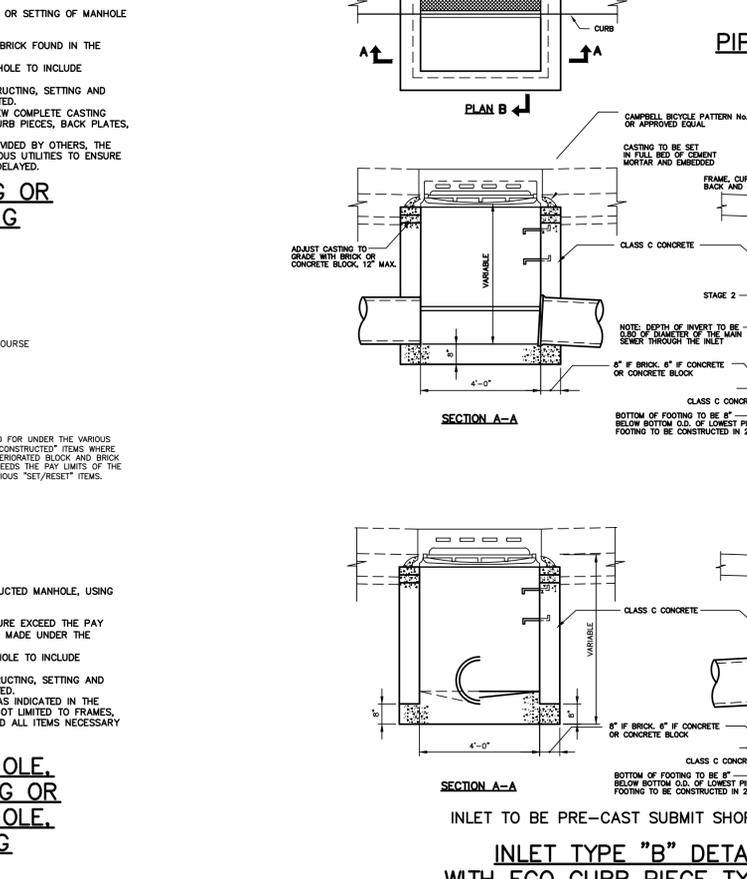
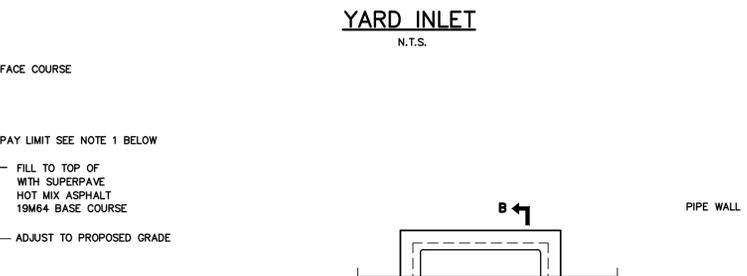
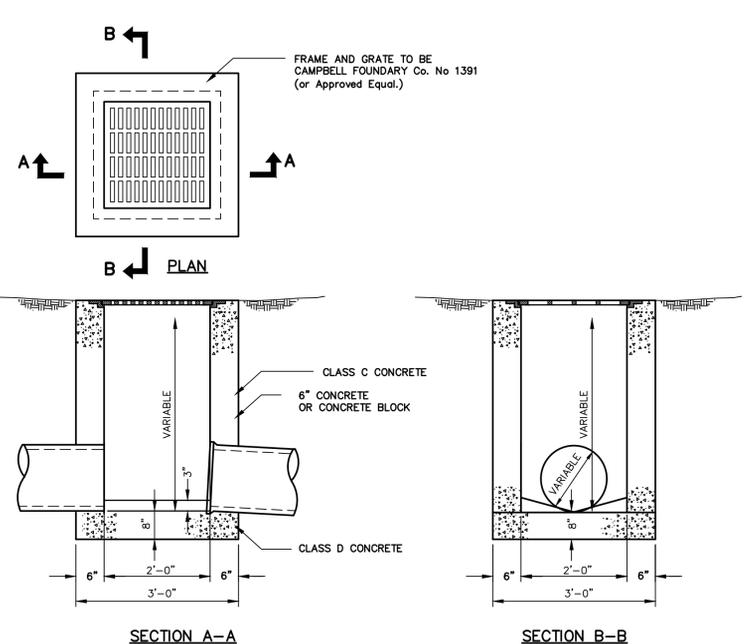
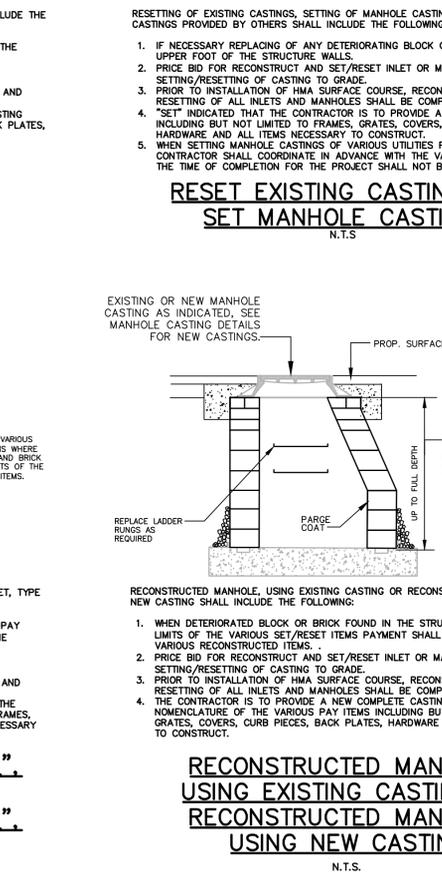
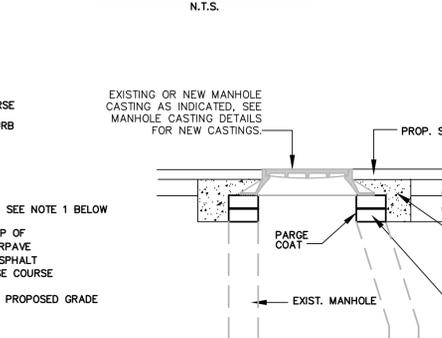
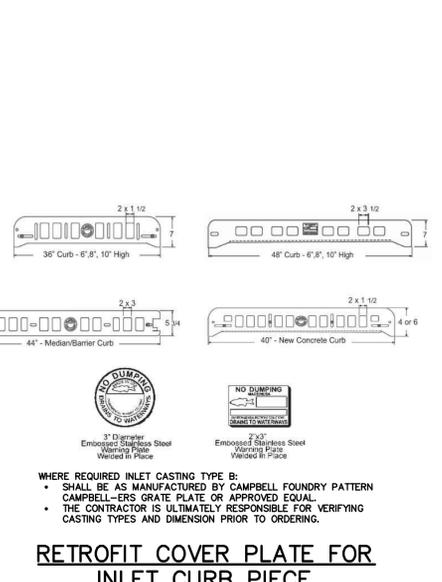
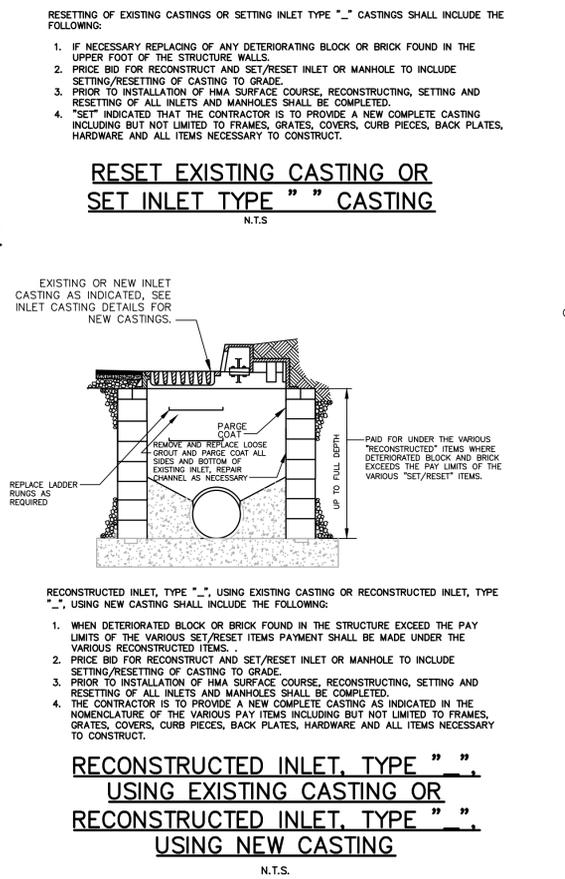
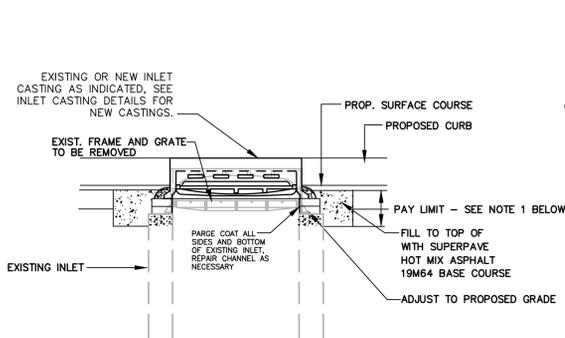
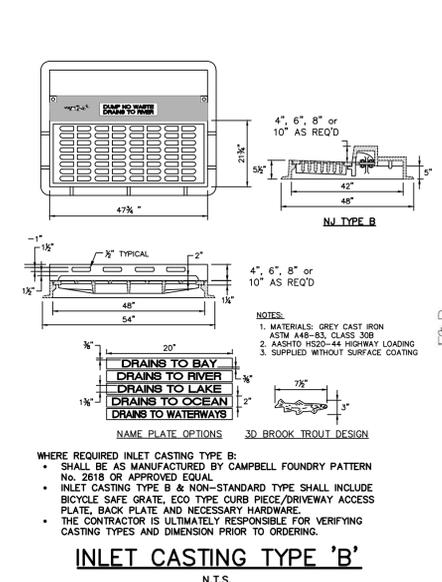
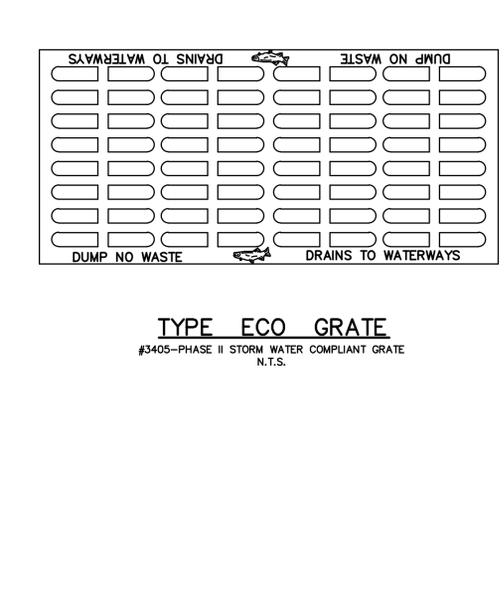
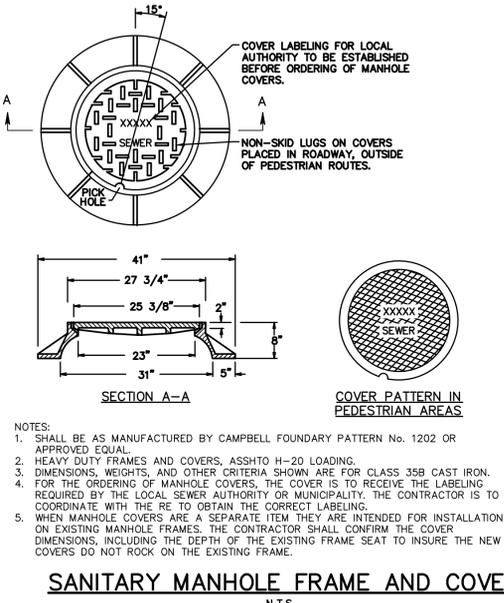
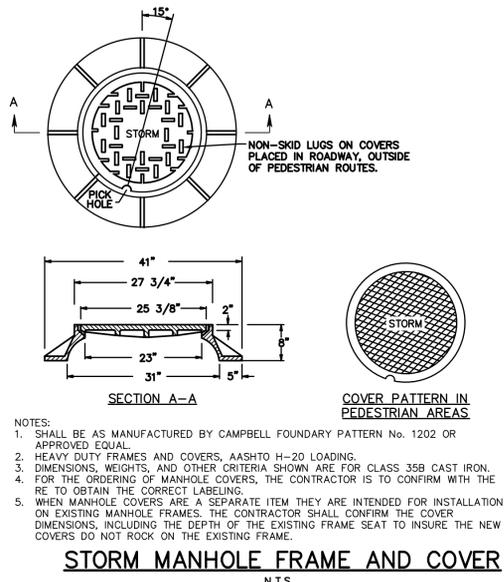
CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. 0TE: 2023-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: DETAILS

STATE OF NEW JERSEY  
Professional Engineer  
ANDREW J. GIANGRANO  
No. 13111  
License #431

SCALE: NONE  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**24**  
SHEET NUMBER: 24 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-11-DETAILS.DWG Plot Date: 3/19/2025 10:31 AM Plotted By: MICHAEL PIROG

Filename: R:\2024\NJ\2400052.D0 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\ALL CADD\DWG\SGNDWG\6 CONSTRUCTION DRAWINGS\2400052-11-DETAILS.DWG Plot Date: 3/19/2025 10:31 AM Plotted By: MICHAEL PIROG



- GENERAL NOTES: CD-602-1.6
- INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK, OR PRECAST CONCRETE. WALLS TO BE 8 INCHES THICK IF BRICK AND 6 INCHES THICK IF CONCRETE, CONCRETE BLOCK, OR PRECAST CONCRETE. INLET FOUNDATIONS AND INVERTS TO BE CLASS B CONCRETE.
  - CORRELLING OF INLET WALLS WILL BE PERMITTED AT THE RATE OF INCH PER 8 INCHES OF HEIGHT; MAXIMUM CORREL 6 INCHES PER WALL.
  - EXCEPT FOR INLETS TYPE A AND C, FOUNDATIONS AND INVERTS TO BE CONSTRUCTED IN TWO STAGES, AND THE BOTTOM OF THE FOOTINGS TO BE 8 INCHES BELOW THE OUTER WALL OF THE LOWEST PIPE IN THE INLET.
  - WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 10 FEET AS MEASURED FROM TOP OF GRATE TO INVERT, WALLS BELOW A DEPTH OF 8 FEET TO BE 12 INCHES THICK AND THE DEPTH OF FOUNDATION INCREASED TO 12 INCHES. WHEN ROCK IS ENCOUNTERED, THE DEPTH OF THE FOUNDATION NOT TO BE INCREASED.
  - PLACE INLET FOUNDATIONS WHICH ARE PRECAST ON A 6 INCH THICK BED OF COMPACTED COARSE AGGREGATE #57. EXTEND THE COARSE AGGREGATE 6 INCHES BEYOND THE HORIZONTAL LIMITS OF THE INLET FOUNDATION.
  - ADJUST CASTINGS FOR PRECAST INLETS TO GRADE WITH COURSES OF BRICK, AS REQUIRED, 12 INCHES MAXIMUM.
  - WHEN THE DEPTH OF A PRECAST INLET EXCEEDS 10 FEET AS MEASURED FROM TOP OF GRATE TO INVERT, THE FOUNDATION IS TO BE INCREASED TO 12 INCHES. WHEN ROCK IS ENCOUNTERED, THE DEPTH OF THE FOUNDATION IS NOT TO BE INCREASED.
  - MINIMUM WALL REINFORCEMENT FOR PRECAST INLETS TYPES A, B, C, E, D-1, D-2, AND B MODIFIED:
 

DEPTH BELOW TOP OF GRATE	HORIZONTAL REINF.	VERTICAL REINF.	WALL THK.
0' TO 10'-0"	#4 @ 10" C.C.	#4 @ 18" C.C.	6"
10'-1" TO 15'-0"	#4 @ 8" C.C.	#4 @ 18" C.C.	6"
15'-1" TO 20'-0"	#4 @ 6" C.C.	#4 @ 18" C.C.	6"
- REINFORCING SHOWN FOR PRECAST INLETS IS THE MINIMUM REQUIRED. ADDITIONAL REINFORCING FOR HANDLING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- DEPTH BELOW TOP OF GRATE
- ALTERNATE REINFORCEMENT
- 0' TO 10'-0" WWF 3 x 6 W6 WIRES SPACED AT 3" TO RUN HORIZONTAL IN ALL CASES.
  - 10'-1" TO 15'-0" WWF 3 x 6 W6 ADD #10 REINFORCEMENT STEEL @ 18" HORIZONTAL.
  - 15'-1" TO 20'-0" WWF 3 x 6 W6 ADD #10 REINFORCEMENT STEEL @ 9" HORIZONTAL OR ADD #13 REINFORCEMENT STEEL AT 15" HORIZONTAL.
9. DIMENSIONS, WEIGHTS, AND OTHER CRITERIA SHOWN ON THESE DETAILS ARE FOR CLASS 35B CAST IRON.

**GPI** Engineering Design Construction Management  
973.377.8500 GPINET.COM

Greenman-Pedersen, Inc.  
301 Gibraltar Drive, Suite 2A  
Morris Plains, NJ 07950  
Certificates of Authorization #24GA27959500 #21MH0012700

THE TOWNSHIP OF MORRIS  
IN THE COUNTY OF MORRIS

REVISIONS

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**TOWNSHIP OF MORRIS**  
DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. 0TE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. 0TE: 2025-02  
DRAWING TITLE: DETAILS

SCALE: NONE  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**25**  
SHEET NUMBER: 25 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

STATE OF NEW JERSEY  
ANDREW NGIANG  
Professional Engineer  
License #4311



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REVISIONS

**TOWNSHIP OF MORRIS**  
DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD  
IMPROVEMENTS PROJECT  
PROJECT NO. 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

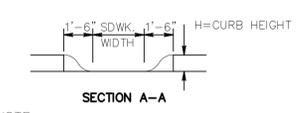
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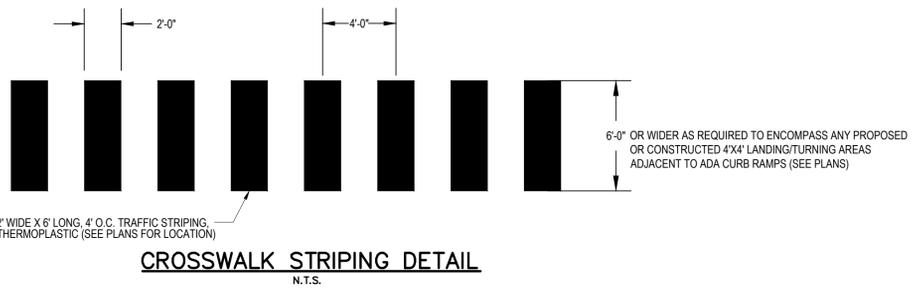
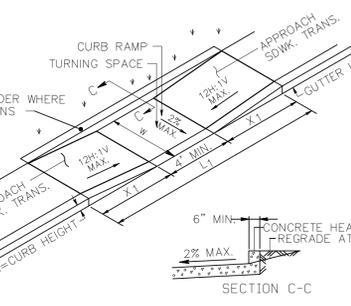
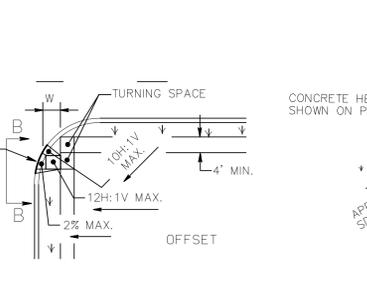
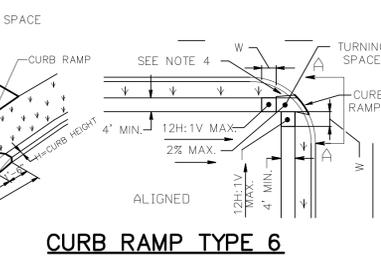
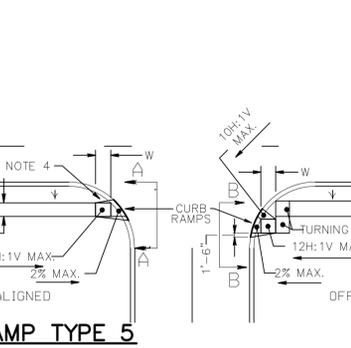
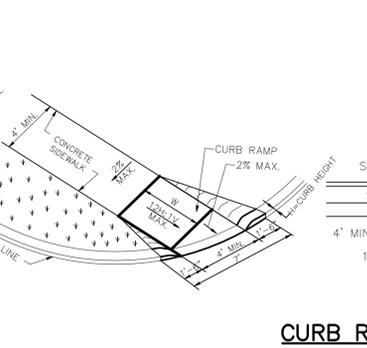
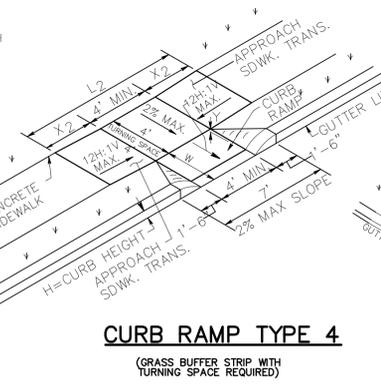
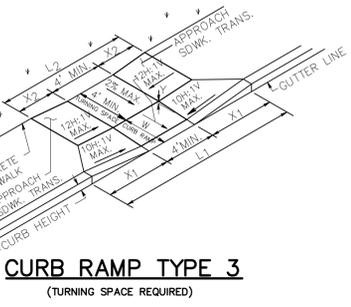
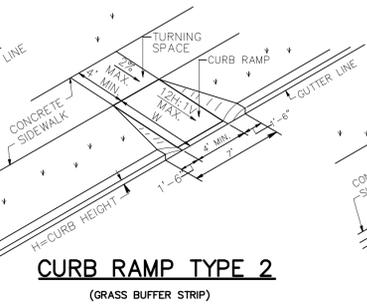
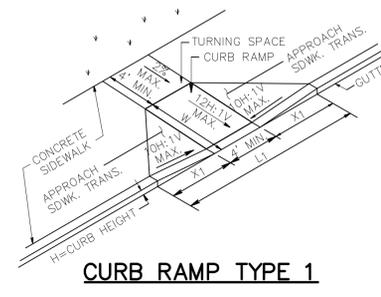
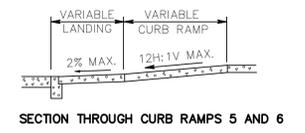
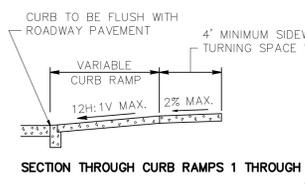
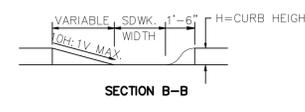
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DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**26**  
SHEET NUMBER: 26 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING

**NOTES:**

- CURB RAMPS MUST NOT EXCEED 8.33% (1:12).
- RAMPS, GUTTERS, SIDEWALKS AND LANDINGS TO BE CONSTRUCTED WITH A MAXIMUM 2 PERCENT CROSS SLOPE.
- TRANSITIONS FROM RAMPS TO GUTTERS AND STREETS SHALL BE FLUSH AND FREE OF LEVEL CHANGES.
- RAMPS, GUTTERS AND LANDINGS TO BE CONSTRUCTED IN ACCORDANCE WITH NJDOT STANDARD CURB RAMP CONSTRUCTION DETAILS.
- SIDEWALK REPLACEMENT SHALL EXTEND TO NEAREST EXPANSION JOINT WHILE COMPLYING WITH ADA ACCESSIBILITY GUIDELINES (ADAAG).
- SIDEWALKS WITH VERTICAL CHANGES IN LEVEL OF 1/4" OR GREATER MUST BE REPLACED.
- WHERE THE DISTANCE FROM THE GUTTERLINE TO THE OUTSIDE EDGE OF SIDEWALK IS LESS THAN 6 FEET, USE CURB RAMP TYPE 7 INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
- TURNING SPACE (LANDING AREA), APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP SHALL BE KEPT CLEAR OF OBSTRUCTIONS.
- FLUSH CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
- THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH.
- SIDEWALK AND CURB RAMP TO BE PAID FOR AS CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
- CONCRETE HEADER AT RAMP TO BE PAID FOR UNDER CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
- CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
- DETECTABLE WARNING SURFACE SHOULD BE SAFETY RED COLOR.



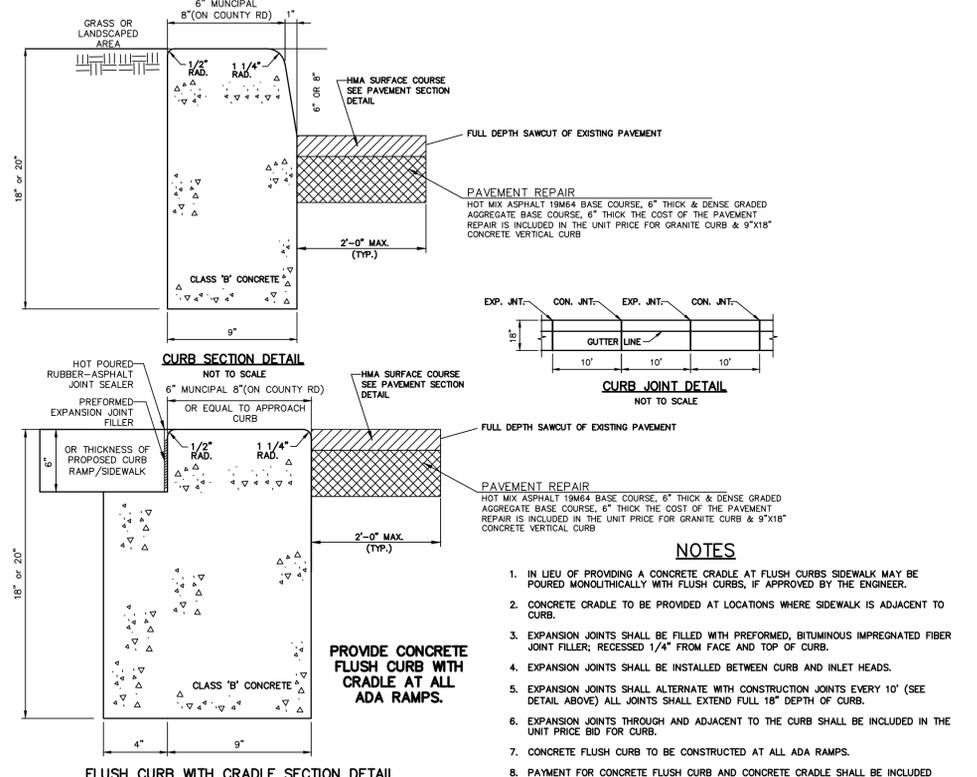
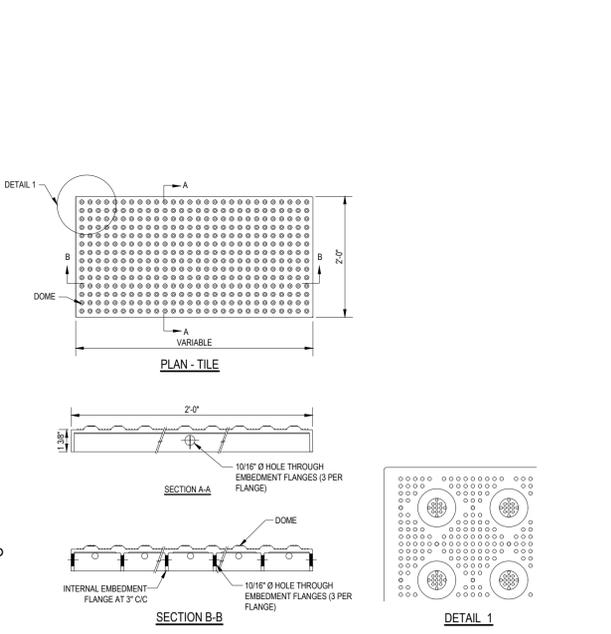
NOTE:  
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



Curb Radius	'A' Dimension	'B' Dimension
10'	2'-8 7/8"	2'-2 7/8"
15'	2'-3 7/8"	1'-11 7/8"
20'	2'-3 7/8"	1'-11 7/8"

Curb Radius (m)	'A' Dimension (mm)	'B' Dimension (mm)
3.05	821	671
4.57	702	955
6.10	687	808

U.S. PATENT #9,365,984  
PROJECT: ADA-REF24RAD  
DATE: 06-15-17  
OR APPROVED EQUAL



**NOTES:**

- IN LIEU OF PROVIDING A CONCRETE CRADLE AT FLUSH CURBS SIDEWALK MAY BE POURED MONOLITHICALLY WITH FLUSH CURBS, IF APPROVED BY THE ENGINEER.
- CONCRETE CRADLE TO BE PROVIDED AT LOCATIONS WHERE SIDEWALK IS ADJACENT TO CURB.
- EXPANSION JOINTS SHALL BE FILLED WITH PREFORMED, BITUMINOUS IMPREGNATED FIBER JOINT FILLER; RECESSED 1/4" FROM FACE AND TOP OF CURB.
- EXPANSION JOINTS SHALL BE INSTALLED BETWEEN CURB AND INLET HEADS.
- EXPANSION JOINTS SHALL ALTERNATE WITH CONSTRUCTION JOINTS EVERY 10' (SEE DETAIL ABOVE) ALL JOINTS SHALL EXTEND FULL 18" DEPTH OF CURB.
- EXPANSION JOINTS THROUGH AND ADJACENT TO THE CURB SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CURB.
- CONCRETE FLUSH CURB TO BE CONSTRUCTED AT ALL ADA RAMPS.
- PAYMENT FOR CONCRETE FLUSH CURB AND CONCRETE CRADLE SHALL BE INCLUDED UNDER THE UNIT PRICE FOR "x" CONCRETE VERTICAL CURB.

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\...\_ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-11-DETAILS.DWG Plot Date: 3/19/2025 10:31 AM Plotted By: MICHAEL PIROG

WHERE INDICATED ON PLANS OR DIRECTED IN THE FIELD THE CONTRACTOR SHALL PROVIDE CAST-IN-PLACE, RADIUS DETECTABLE WARNING SURFACES AS MANUFACTURED

NOTES:  
4. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS

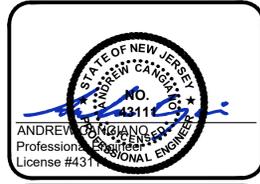


REVISIONS

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**TOWNSHIP OF MORRIS**  
DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD  
IMPROVEMENTS PROJECT  
PROJECT NO. 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
DRAWING TITLE: DETAILS



SCALE: NONE

DRAWN BY: MEP

CHECKED BY: AC

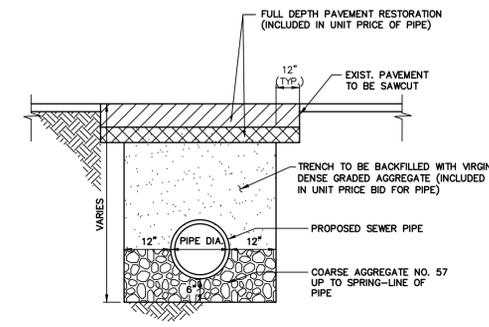
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DRAWING NUMBER:  
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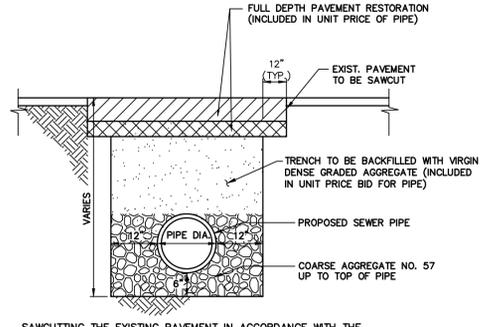
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PROJECT NO: 2400052

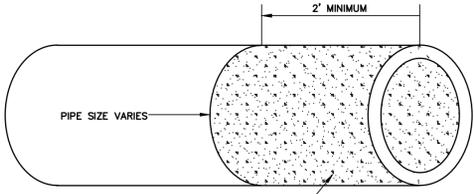
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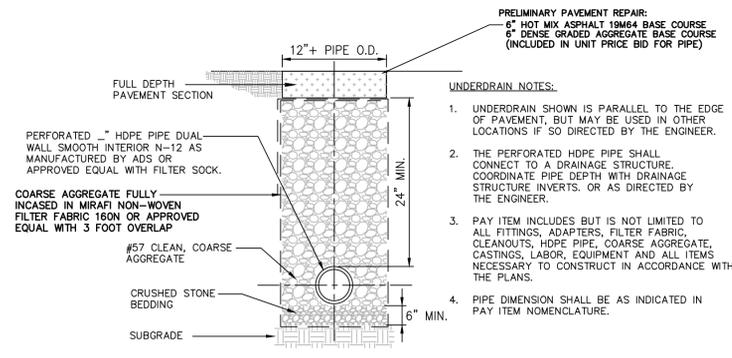
**CONCRETE/DIP PIPE BACKFILL DETAIL**  
N.T.S.



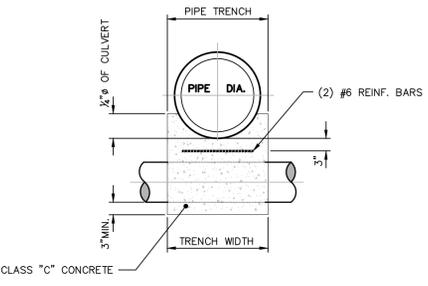
**HDPE/PVC PIPE BACKFILL DETAIL**  
N.T.S.



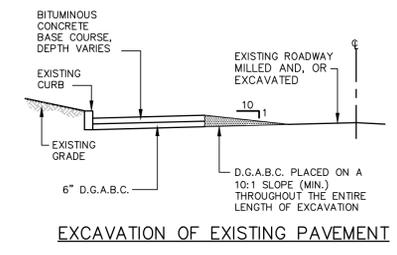
**CONCRETE PLUGS IN ABANDONED PIPES**  
N.T.S.



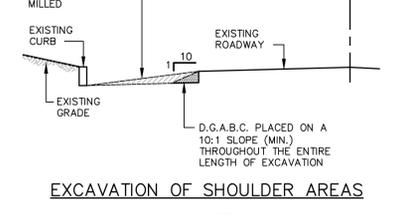
**UNDERDRAIN, 6" HIGH DENSITY POLYETHYLENE PIPE**  
N.T.S.



**CONCRETE CRADLES**  
N.T.S.

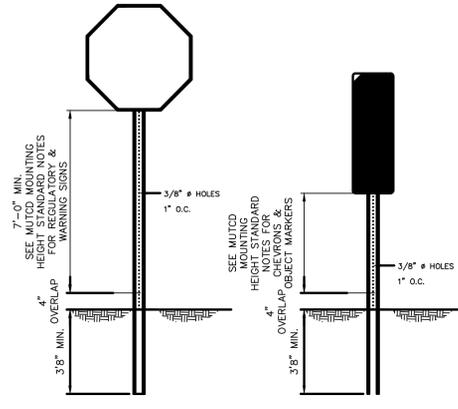


**EXCAVATION OF EXISTING PAVEMENT**



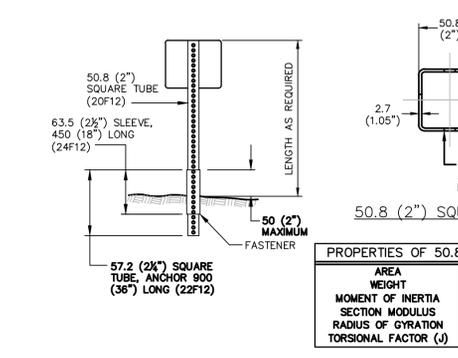
**EXCAVATION OF SHOULDER AREAS**

**TYPICAL RAMPING DETAIL**  
N.T.S.



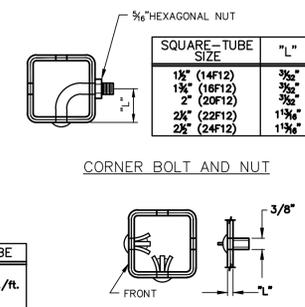
**REGULATORY & WARNING SIGN MOUNTING HEIGHT DETAIL**  
NOT TO SCALE

**REGULATORY & WARNING SIGN MOUNTING HEIGHT DETAIL**  
N.T.S.



PROPERTIES OF 50.8 (2") SQUARE TUBE

AREA	3.81 cm <sup>2</sup> , .590"
WEIGHT	3.60 Kg/m, 2.416 lb./ft.
MOMENT OF INERTIA	15.48 cm <sup>4</sup> , .372"
SECTION MODULUS	5.10 cm <sup>3</sup> , .372"
RADIUS OF GYRATION	2.02 cm, .794"
TORSIONAL FACTOR (J)	20.81 cm <sup>4</sup> , .500"



**CORNER BOLT AND NUT**

**VANDAL-RESISTANT RIVET**  
THE CRIMP LENGTH "L" IS 3/8" OR 1/2".

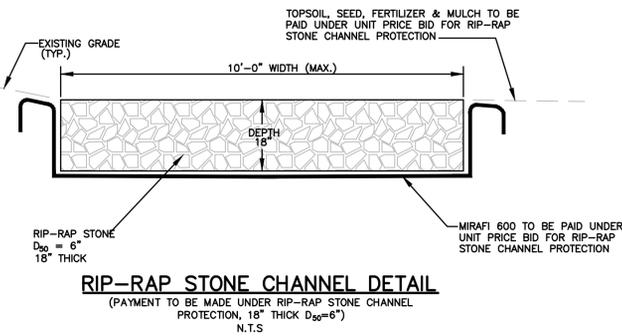
**GENERAL NOTES**

- SQUARE-TUBE SUPPORTS ARE TO BE THE TESPAS SYSTEM BY THE UNISTRUT CORPORATION OR AN APPROVED EQUAL, AND ONLY TYPE III BREAKAWAY UNITS SHALL BE USED.
- BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-307 AND NUTS TO A-563, GRADE A, AND SHALL BE ELECTROGALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM B-633, TYPE III, SC 1.
- THE POSTS SHALL BE 50.8 (2") TUBES FORMED FROM 2.7 (105") THICK STEEL CAREFULLY ROLLED TO SIZE, CORNER-WELDED BY HIGH-FREQUENCY RESISTANCE WELDING AND EXTERNALLY SCARFED TO AGREE WITH THE CORNER RADI. THE POSTS SHALL HAVE 11.1 (7/16") DIAMETER HOLES SPACED 25.4 (1") ON CENTER ALONG THE CENTER LINE OF EACH SIDE.
- THE ANCHOR TUBE SHALL BE A 57.2 (2 1/4") SQUARE TUBE, 750 (30") TO 1200 (48") LONG, INSTALLED IN SOIL 50 (2") TO 75 (3") ABOVE THE GROUND BUT NOT HIGHER THAN 100 (4"). THE UPPER SIGNPOST SHALL TELESCOPE INSIDE THE ANCHOR APPROXIMATELY 200 (8") TO 300 (12").
- A TUBE-REINFORCED SLEEVE, 63.5 (2 1/2") SQUARE AND 450 (18") LONG, SHALL BE INSTALLED OVER THE 57.2 (2 1/4") SQUARE ANCHOR AND FLUSH WITH THE TOP.
- GALVANIZED SIGNPOSTS SHALL BE ROLL FORMED FROM STEEL CONFORMING TO ASTM SPECIFICATION A-446 WITH ZINC COATING DESIGNATION G-90.

**SQUARE-TUBE SUPPORT FOR PERMANENT SIGN**  
N.T.S.

Filename: R:\2024\NJ\2400052.00 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\...\_ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-11-DETAILS.DWG Plot Date: 3/19/2025 10:31 AM Plotted By: MICHAEL PIROG

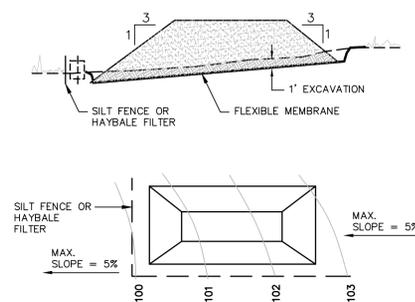
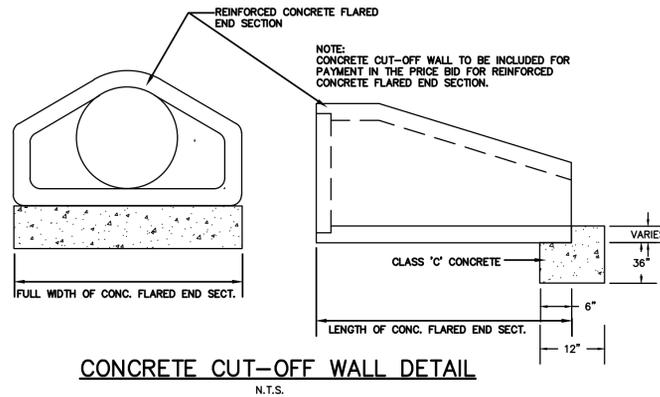
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I.D.	15	18	21	24	27	30	36
A	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	4
R	7 1/2	9	9	10	10	14	14
S	24	24	24	24	24	26	26
T	24	24	24	24	24	30	36
U	4	4	4	4	4	4'-8"	5'-2"
V	28	34	40	48	54	60	72
WT./FT. (POUNDS)	480	640	860	920	1200	1540	2100

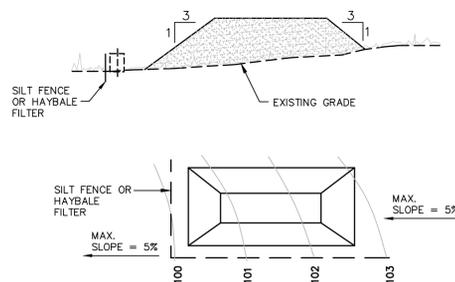
NOTE: ALL NUMBERS REPRESENT INCHES UNLESS OTHERWISE SPECIFIED.

**CONCRETE FLARED END SECTION**  
N.T.S.



**MILLINGS STOCKPILE**  
N.T.S.

NOTES:  
1. PLACE STOCKPILES AT LOCATIONS AS SHOWN ON CONSTRUCTION PLANS OR AS APPROVED BY THE ENGINEER.  
2. ALL SLOPES SHALL BE 3 TO 1 OR FLATTER.  
3. TOPSOIL SHALL BE EXCAVATED TO A DEPTH OF 1' AND PLACED IN A SEPARATE STOCKPILE. A FLEXIBLE MEMBRANE, (SEE SPECIFICATIONS), THEN BE PLACED IN EXCAVATED AREA WITH A MINIMUM 1' OVERLAP.  
4. UPON REMOVAL OF MILLINGS, MEMBRANE IS TO BE REMOVED AND REPLACED WITH TOPSOIL AND FERTILIZED AND SEED AS PER SPECIFICATIONS.  
5. SILT FENCE OR HAYBALE FILTER SHALL BE INSTALLED AS DETAILED HEREON.



**TOPSOIL STOCKPILE**  
N.T.S.

NOTES:  
1. PLACE STOCKPILES AT LOCATIONS AS SHOWN ON CONSTRUCTION PLANS.  
2. ALL SIDE SLOPES SHALL BE 3 TO 1 OR FLATTER.  
3. STOCKPILE SHALL RECEIVE A VEGETATIVE COVER IN ACCORDANCE WITH MINIMUM STABILIZATION REQUIRED.  
4. SILT FENCE OR HAYBALE FILTER SHALL BE INSTALLED AS DETAILED HEREON.

**STANDARD FOR DUST CONTROL**

**DEFINITION**  
THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS.

**PURPOSE**  
TO PREVENT THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON- AND OFF-SITE DAMAGE AND HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

**WHERE APPLICABLE**  
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON- AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT. CONSULT WITH LOCAL MUNICIPAL ORDINANCES ON ANY RESTRICTIONS.

**PLANNING CRITERIA**  
THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:  
MULCHES - SEE STANDARDS FOR STABILIZATION WITH MULCHES ONLY (p.3.1.1).  
VEGETATIVE COVER - SEE STANDARDS FOR: TEMPORARY VEGETATIVE COVER (p. 3.1.1), PERMANENT VEGETATIVE COVER (p. 3.2.1.), AND PERMANENT STABILIZATION WITH SOD (p. 3.6.1).  
SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF OF THESE AREAS.

	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1	FINE SPRAY	233
RESIN IN WATER	4:1	FINE SPRAY	300

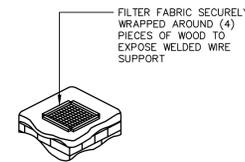
**TILLAGE** - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN BLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12' APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

**SPRINKLING** - SITE IS SPRINKLED UNTIL SURFACE IS WET

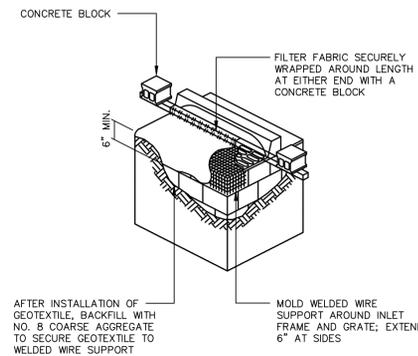
**BARRIERS** - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

**CALCIUM CHLORIDE** - SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS OR ACCUMULATION AROUND PLANTS.

**STONE** - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.



**INLET FILTER INSTALLATION WITHOUT FRAME AND GRATE**  
N.T.S.



**INLET FILTER DETAIL**  
N.T.S.

NOTES:  
1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.  
2. CONTRACTOR IS TO REMOVE FABRIC AND MESH PRIOR TO PAVING.  
3. IF BOTTOM OF ROADWAY IS BELOW TOP OF GRATE, CONSTRUCT OPENINGS IN INLET WALL TO ALLOW WATER TO FLOW IN. COVER OPENINGS WITH WELDED WIRE SUPPORT AND FILTER FABRIC.

**SOIL EROSION & SEDIMENT CONTROL NOTES**

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH STRAW OR HAY AND TACKED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS. SEE NOTE 21 BELOW.
- PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. SEE NOTE 22 BELOW.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS (STEEP SLOPES, SANDY SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTE 21 BELOW.
- TEMPORARY BERMS ARE TO BE INSTALLED ON ALL CLEARED ROADWAYS AND EASEMENT AREAS. SEE THE DIVERSION DETAIL.
- PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE "STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER". SPECIFIED RATES AND LOCATIONS SHALL BE AS ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
- THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
- ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS) WILL BE INSPECTED AND MAINTAINED REGULARLY.
- STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILE BASES SHALL BE HAVE A SILT FENCE PROPERLY ENTRENCHED AT THE TOE OF SLOPE.
- A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER EARTHEN ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL AND CHART FOR DIMENSIONS.
- ALL NEW ROADWAYS WILL BE TREATED WITH A SUITABLE SUBBASE UPON ESTABLISHMENT OF FINAL GRADE ELEVATIONS.
- PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
- BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AS REQUIRED.
- ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA. THE FILTER SHOULD BE COMPOSED OF A FABRIC OR APPROVED MATERIAL. SEE THE DEWATERING DETAIL.
- ALL SEDIMENT BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. A CLEAN OUT ELEVATION WILL BE IDENTIFIED ON THE PLAN AND A MARKER INSTALLED ON THE SITE.
- DURING AND AFTER CONSTRUCTION, THE OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP OF THE DRAINAGE STRUCTURES, VEGETATIVE COVER, AND ANY OTHER MEASURES DEEMED APPROPRIATE BY THE DISTRICT. SAID RESPONSIBILITY WILL END WHEN COMPLETED WORK IS APPROVED BY THE MORRIS COUNTY SOIL CONSERVATION DISTRICT.
- ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN OR THOSE TREES WITHIN THE DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION, ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL.
- THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION.
- THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 72 HOURS PRIOR TO ANY LAND DISTURBANCE, AND A PRE-CONSTRUCTION MEETING HELD.
- TOPSOIL STOCKPILE PROTECTION**  
A) APPLY GROUND LESTONE AT A RATE OF 90 LBS. PER 1,000 SQ. FT.  
B) APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1,000 SQ. FT.  
C) APPLY PERENNIAL RYEGRASS AT A RATE OF 1 LB. PER 1,000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1,000 SQ. FT.  
D) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1,000 SQ. FT.  
E) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.  
F) PROPERLY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.
- TEMPORARY STABILIZATION SPECIFICATIONS**  
A) APPLY GROUND LESTONE AT A RATE OF 90 LBS. PER 1,000 SQ. FT.  
B) APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1,000 SQ. FT.  
C) APPLY PERENNIAL RYEGRASS AT A RATE OF 1 LB. PER 1,000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1,000 SQ. FT.  
D) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1,000 SQ. FT.  
E) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- PERMANENT STABILIZATION SPECIFICATIONS**  
A) APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED).  
B) APPLY GROUND LESTONE AT A RATE OF 90 LBS. PER 1,000 SQ. FT. AND WORK FOUR INCHES INTO SOIL.  
C) APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1,000 SQ. FT.  
D) APPLY HARD FESCUE SEED AT 2.7 LBS. PER 1,000 SQ. FT. AND CREEPING RED FESCUE SEED AT 0.7 LBS. PER 1,000 SQ. FT., AND PERENNIAL RYEGRASS AT A RATE OF 0.25 LBS. PER 1,000 SQ. FT.  
E) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1,000 SQ. FT.  
F) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.

**MORRIS COUNTY SOIL CONSERVATION DISTRICT**  
NOTES FOR ROAD WORK

- The Contractor shall prepare a plan for the proper dewatering of each stream crossing prior to excavating the stream bed. Plan shall be forwarded to the Engineer and Morris County Soil Conservation District for approval. The District will be notified for inspection prior to each stream crossing construction.
  - Any areas used for the Contractor's staging, including but not limited to, temporary storage of stockpiled materials (e.g. crushed stone, quarry process stone, select fill, excavated materials, etc.), shall be entirely protected by a silt fence along the low elevation side to control sediment runoff.
  - Prior to construction, the contractor shall be responsible for notifying the Morris County Soil Conservation District of any staging and/or stockpile location areas and for obtaining a Soil Erosion and Sediment Control Certification for these areas.
  - A crushed stone, vehicle wheel-cleaning blanket shall be installed at the Contractor's staging yard
- Blanket shall be 15 ft. x 50 ft. x 6 in. (minimum), crushed stone 2 1/2 inches in diameter. Said blanket shall be underlain with a suitable synthetic sediment filter fabric and maintained in good order.

**SEQUENCE OF CONSTRUCTION**

- |   |         |
|---|---------|
| 1. INSTALL SOIL EROSION AND SEDIMENT CONTROL MEASURES | 1 DAY   |
| 2. INSTALL STORM DRAINAGE                             | 20 DAYS |
| 3. REMOVE PAVEMENT AND ROADWAY EXCAVATION             | 5 DAYS  |
| 4. CONSTRUCT BASE COURSE PAVEMENT                     | 5 DAYS  |
| 5. CONSTRUCT HOT MIX ASPHALT SURFACE COURSE           | 5 DAYS  |
| 6. TOPSOIL, FERTILIZE AND SEED ALL DISTURBED AREAS    | 5 DAYS  |
| 7. REMOVE SILT FENCE AFTER SITE IS STABILIZED         | 1 DAY   |

**GPI** Engineering Design Construction Management  
973.377.8500 GPINET.COM  
Greenman-Pedersen, Inc.  
301 Gibraltar Drive, Suite 2A  
Morris Plains, NJ 07950  
Certificates of Authorization #24GA27959500 #21MH00012700



REVISIONS

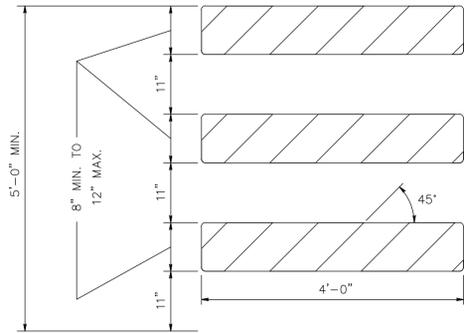
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**TOWNSHIP OF MORRIS**  
DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

CLIENT: \_\_\_\_\_  
PROJECT: \_\_\_\_\_  
DRAWING TITLE: \_\_\_\_\_

STATE OF NEW JERSEY  
ANDREW DI GIACOMO  
Professional Engineer  
License #4311

SCALE: NONE  
DRAWN BY: MEP  
CHECKED BY: AC  
DATE: 3/21/2025  
DRAWING NUMBER:  
**28**  
SHEET NUMBER: 28 OF 29  
PROJECT NO: 2400052  
PHASE: ENGINEERING



TYPE III BARRICADE - FRONT VIEW

NOTES:

- ENSURE THE 8" MIN. x 48", TO 12" MAX. x 48" BARRICADE RAILS TO BE ATTACHED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.
- ENSURE ORANGE AND SILVER (WHITE) STRIPES TO BE RETROREFLECTIVE SHEETING, ASTM D4956 TYPE III. ALTERNATE ORANGE AND SILVER (WHITE) STRIPES 6" WIDE SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS.
- THE FRAMING, RAILS, AND BALLAST FOR BREAKAWAY BARRICADE TO BE NCHRP-350 CRASHED TESTED AND FHWA APPROVED.
- IF NECESSARY, FABRICATE THE BALLAST AND PLACE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

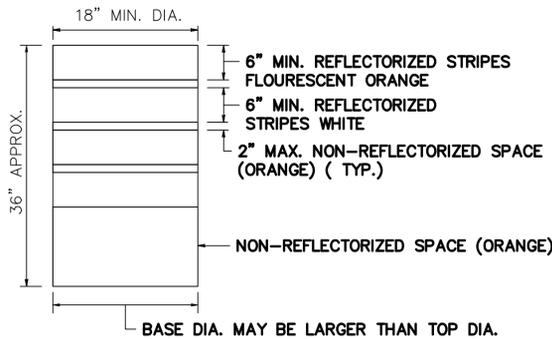
**BREAKAWAY BARRICADES**

N.T.S.

ENSURE DRUMS ARE MADE OF ORANGE PLASTIC WITH A MINIMUM OF FOUR ALTERNATE FLOURESCENT ORANGE AND WHITE RETROREFLECTIVE STRIPES. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE STRIPES, THEY ARE TO BE NO MORE THAN 2" WIDE. ENSURE RETROREFLECTIVE SHEETING FOR STRIPES CONFORMS WITH ASTM D4956 TYPE VII OR VIII WITH S2 REQUIREMENTS.

ENSURE THE TOP OF THE DRUM IS NOT OPEN. CONSTRUCT DRUMS TO INHIBIT ROLLING IF KNOCKED OVER.

ENSURE THE REFLECTORIZED AREA OF DRUMS IS ROUND EXCEPT OTHER SHAPES, WHICH PROVIDE THE SAME VISIBILITY AS AN 18 INCH DIAMETER ROUND DRUM REGARDLESS OF ORIENTATION, MAY BE USED.



BASE DIA. MAY BE LARGER THAN TOP DIA.

WHEN BALLAST IS REQUIRED BY THE RE, USE SAND. THE MAXIMUM WEIGHT OF THE BALLAST IS 50 LBS. AND IS TO BE LOCATED APPROXIMATELY AT GROUND LEVEL. ALTERNATE TYPES OF BALLAST MUST BE APPROVED BY THE RE.

**DRUMS**

N.T.S.

**TRAFFIC CONTROL NOTES**

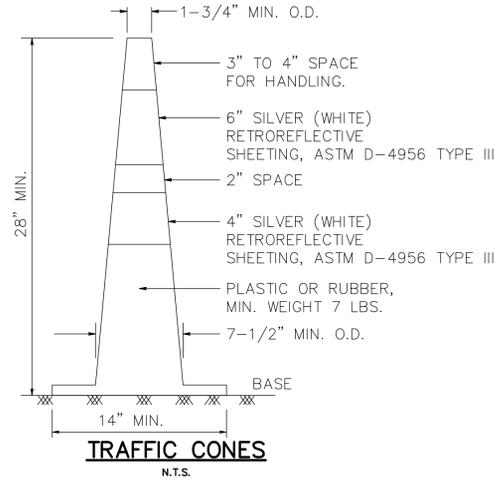
- SPECIAL SIGNS SHALL HAVE A BLACK MESSAGE OR ARROW ON AN ORANGE WIDE-ANGLE PRISMATIC RETROREFLECTIVE BACKGROUND AND SHALL BE FABRICATED FROM THE MATERIAL SPECIFIED IN THE CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" FROM THE NEW JERSEY DEPARTMENT OF TRANSPORTATION. FOR PROPER LETTER STROKE AND DESIGN, REFER TO THE CURRENT EDITION OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" FROM THE FEDERAL HIGHWAY ADMINISTRATION. SPACING BETWEEN WORDS IN A LINE, BETWEEN LINES OF A MESSAGE, AND BORDER REQUIREMENTS SHOULD BE DETERMINED BY GOOD SIGN PAINTING PRACTICES.
- FOR MORE INFORMATION ABOUT STANDARD AND SPECIAL SIGNS, REFER TO THE CURRENT EDITIONS OF "STANDARD HIGHWAY SIGNS" AND "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", BOTH FROM THE FEDERAL HIGHWAY ADMINISTRATION.
- SIGNS WITH ORANGE BACKGROUNDS SHALL CONSIST OF TYPE IV-B (FLUORESCENT ORANGE) SHEETING. SHEETING TYPES ARE LISTED IN SECTION 911.01.01 OF THE NJDOT SPECIFICATIONS.
- ALL SIGNS WILL HAVE A REFLECTIVE QUALITY BACKGROUND AND WILL BE FABRICATED FROM ALUMINUM MATERIAL AS SPECIFIED IN THE NJDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."
- ADVANCE NOTICE OF CONSTRUCTION SIGNS (S-2) ARE TO BE POSTED TWO WEEKS PRIOR TO THE EFFECTIVE DATE OF THE DETOUR.
- ONLY TYPE III, PVC OR TYPE III, PE BREAKAWAY BARRICADES SHALL BE USED. TYPE III WOODEN BARRICADES ARE NOT ALLOWED. IN ADDITION, FLASHING WARNING LIGHTS SHALL NOT BE AFFIXED TO ANY BARRICADE OR SIGN.
- THE CONTRACTOR IS TO NOTIFY THE ENGINEER'S OFFICE AT LEAST 48 HOURS PRIOR TO THE INSTALLATION OF DETOUR SIGNS. CONSTRUCTION SHALL NOT PROCEED ON ANY PORTION OF THE PROJECT UNTIL ALL TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED BY THE CONTRACTOR AND INSPECTED AND APPROVED BY THE ENGINEER.
- UNLESS NOTED OTHERWISE, ALL SIGNS AND BARRICADES SHALL BE FURNISHED BY THE CONTRACTOR AND PLACED BY HIM AT THE LOCATIONS DESIGNATED BY THE ENGINEER. IF SO DIRECTED BY THE ENGINEER, AND AT THE UNIT PRICE BID, THE CONTRACTOR SHALL SUPPLY AND PLACE ADDITIONAL SIGNS AND BARRICADES.
- BREAKAWAY BARRICADES SHALL CONFORM TO NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DETAIL CD-159-1.3.
- THE CONTRACTOR SHALL COVER ANY EXISTING PERMANENT AND CONSTRUCTION SIGNS WITH OPAQUE MATERIAL WHENEVER THE MESSAGE IS NOT APPLICABLE. SUCH SIGNS SHALL BE UNCOVERED WHEN THE MESSAGE IS APPLICABLE.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PRIVATE DRIVEWAYS DURING CONSTRUCTION.
- LOCATION OF SIGNS MAY BE MODIFIED BY THE ENGINEER TO ADJUST FOR ACTUAL FIELD CONDITIONS.
- CONTRACTOR IS DIRECTED TO NOTIFY POLICE AND FIRE DEPARTMENT ONE WEEK PRIOR TO START OF CONSTRUCTION AND 24 HOURS PRIOR TO IMPLEMENTATION.

NOTES:

TRAFFIC CONES MUST BE PREDOMINATELY ORANGE IN COLOR.

BASES MAY BE OF BREAKAWAY BALLASTED TYPE.

MINOR MANUFACTURER'S VARIATIONS MAY BE ACCEPTABLE UPON APPROVAL OF THE RE.



**TRAFFIC CONES**

N.T.S.

R 1 - 1  
24"x 24",  
8" C LETTERS

WHITE MESSAGE AND BORDER ON RED BACKGROUND.



STOP VIEW

NON-REFLECTIVE BLACK  
24"x 24",  
8" B LETTERS  
BLACK MESSAGE AND BORDER ON ORANGE BACKGROUND.



SLOW VIEW

NOTE:

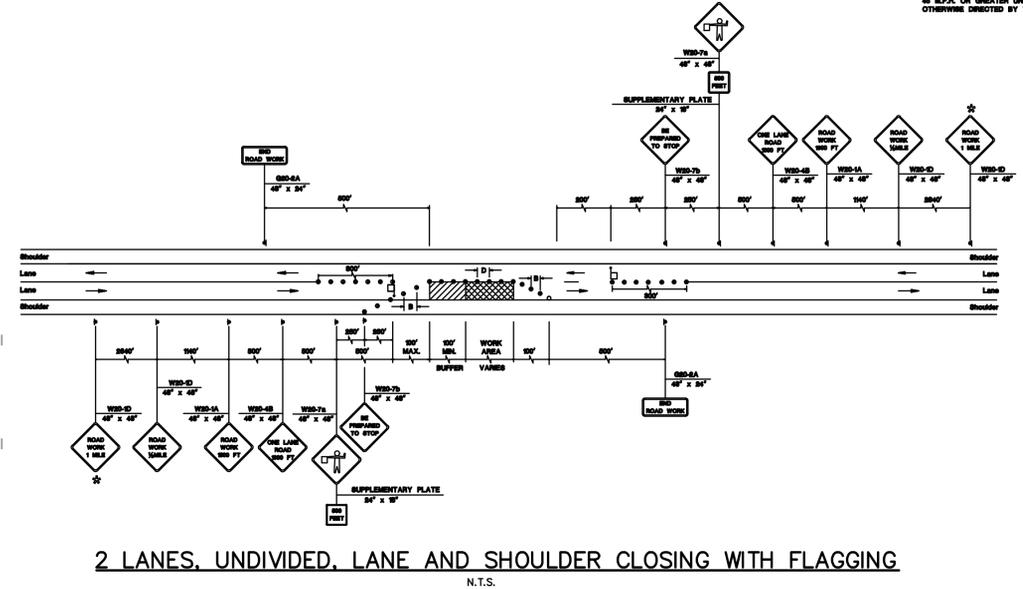
SIGN FACES TO BE RETROREFLECTIVE SHEETING, ASTM D4956 TYPE III.

**STOP/SLOW PADDLE**

N.T.S.

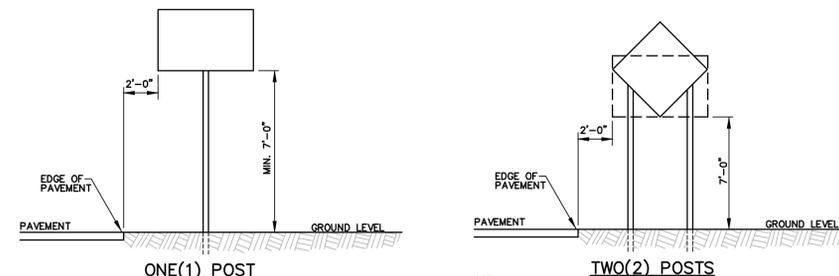
REGULATORY APPROACH SPEED OF TRAFFIC (MILES / HOUR)	RECOMMENDED TAPER LENGTH AND SPACING FOR CHANNELIZING TAPES			RECOMMENDED SPACING ALONG TANGENTS	
	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	MINIMUM TAPER LENGTH L - FOR LANE WIDTHS	MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	MAXIMUM DEVICE (D) SPACING ALONG TANGENTS IN FEET	
25	10.5:1	105	115	125	25
30	15:1	150	165	180	30
35	20.5:1	205	225	245	35
40	27:1	270	300	325	40
45	45:1	450	495	540	45
50	50:1	500	550	600	50
55	55:1	550	605	660	55
60	60:1	600	660	720	60
65	65:1	650	715	780	65

NOTE:  
THE MAXIMUM DEVICE SPACING ALONG CURVES IS DEFINED FOR TAPERS (B) IN THE ABOVE TABLE.



**2 LANES, UNDIVIDED, LANE AND SHOULDER CLOSING WITH FLAGGING**

N.T.S.



ONE(1) POST

TWO(2) POSTS

NOTE:  
ALL SUPPORTS (PROPERLY PAINTED) SHALL BE STEEL CHANNEL POSTS EXCEPT WHERE WOODEN POSTS (OF ADEQUATE STRENGTH) ARE NEEDED TO SUPPORT LARGER SIGNS.

**TYPICAL CONSTRUCTION SIGN MOUNTING**

N.T.S.



8 ---
7 ---
6 ---
5 ---
4 ---
3 ---
2 ---
1 ---

REVISIONS

CLIENT: TOWNSHIP OF MORRIS  
PROJECT: DELMAR AVENUE, BRIANT AVENUE AND RIDGEWOOD ROAD IMPROVEMENTS PROJECT  
PROJECT NO. OTE: 2025-02  
TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY  
DRAWING TITLE: DETAILS



SCALE: NONE

DRAWN BY: MEP

CHECKED BY: AC

DATE: 3/21/2025

DRAWING NUMBER: 29

SHEET NUMBER: 29 OF 29

PROJECT NO: 2400052

PHASE: ENGINEERING

Filename: R:\2024\NJ\2400052.D0 DELMAR, BRIANT & RIDGEWOOD RD IMPROVEMENTS\...\_ALL CADD\DWG\DSGNDWG\6 CONSTRUCTION DRAWINGS\2400052-1-1-DETAILS.DWG Plot Date: 3/19/2025 10:31 AM Plotted By: MICHAEL PIROG