MICHIGAN AVENUE IMPROVEMENT PROJECT

ENTIRE LENGTH OF MICHIGAN AVENUE & FAITOUTE COURT

CITY OF SUMMIT

UNION COUNTY, NEW JERSEY

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE SUMMIT POLICE DEPARTMENT 72 HOURS PRIOR TO THE START OF ANY WORK AND SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITHIN 30 DAYS OF THE DAY THE PROJECT IS AWARDED TO CONTRACTOR.

2. NO SEPARATE PAYMENT SHALL BE MADE FOR FLAGGERS. ALL COSTS FOR FLAGGERS SHALL BE INCLUDED IN VARIOUS ITEMS IN THE BID PROPOSAL.

3. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL AND MAINTAIN DENSE GRADED AGGREGATE OR HOT MIX ASPHALT TO PROVIDE A RIDING SURFACE FOR VEHICLE ACCESS TO EACH PROPERTY. NO SEPARATE PAYMENT SHALL BE MADE FOR MAINTAINING ACCESS TO DRIVEWAYS. ALL DRIVEWAY ACCESS COSTS SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT.

4. THE ROAD IS TO BE PROOF ROLLED AFTER MILLING IS COMPLETED BUT BEFORE FINAL PAVING. PROOF ROLLING MUST BE COMPLETED WITH A LOADED DUMP TRUCK IN THE PRESENCE OF THE ENGINEER OR PROJECT INSPECTOR. ALL COSTS ASSOCIATED WITH PROOF ROLLING SHALL BE INCLUDED IN BID ITEM FOR MILLING.

5. THE CONTRACTOR SHALL LEAVE THE MILLED ROAD UNPAVED FOR AT LEAST 48 HOURS AND SHALL PROOF ROLL PRIOR TO PAVING. THE CONTRACTOR SHALL INSTALL HOT MIX ASPHALT BASE COURSE AS A TEMPORARY SURFACE IN AREAS DEEMED NECESSARY BY THE ENGINEER. NO SEPARATE PAYMENT SHALL BE MADE FOR TEMPORARY PAVEMENT. ALL TEMPORARY PAVEMENT COSTS SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT.

6. ALLOWABLE HOURS OF WORK ARE 8:00 AM TO 4:30 PM. THE CONTRACTOR SHALL MAKE PROVISIONS FOR MATERIAL AND EQUIPMENT STORAGE. THE CONTRACTOR SHALL COORDINATE THE STORAGE OF MATERIAL AND EQUIPMENT WITH THE ENGINEER AND THE POLICE DEPARTMENT. ALL COSTS FOR MATERIAL AND EQUIPMENT STORAGE SHALL BE INCLUDED IN THE BID ITEM "MOBILIZATION".

7. ALL TRAFFIC CONTROL AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. AND MUNICIPAL TRAFFIC ORDINANCES. THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO THE POLICE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK. TRAFFIC CONTROL PLANS SHALL INCLUDE AT A MINIMUM, THE FOLLOWING SITUATIONS: 1)ROAD CLOSED, 2)LANE CLOSED, SHOULDER CLOSED. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THE PROJECT. ALL REQUESTS FOR POLICE SERVICE FROM THE CITY SHALL BE SUBMITTED 72 HOURS BEFORE BEGINNING CONSTRUCTION OPERATIONS THAT REQUIRE POLICE SERVICES. CONTRACTOR MUST NOTIFY POLICE DEPARTMENT OF CANCELLATIONS 24 HOURS IN ADVANCE OR WILL BE SOLELY RESPONSIBLE FOR A MINIMUM CHARGE OF (4) HOURS. THE CITY OF SUMMIT WILL PAY THE COST OF POLICE SERVICES DIRECTLY TO THE OFFICERS HIRED FOR THE SCHEDULED TIMES.

8. NO HOUSE LEADER DRAINS ARE TO BE INSTALLED UNDER DRIVEWAY APRONS OR THROUGH DROP CURBS.

9. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ALL UTILITIES TO RAISE OR LOWER MANHOLES, METERS, VALVES, ETC. TO GRADE AS WORK PROGRESSES. ALL COSTS FOR COORDINATION WITH UTILITY COMPANIES SHALL BE INCLUDED IN THE BID ITEM "UTILITY COORDINATION". THE LOCATIONS OF SUBSURFACE UTILITIES ARE APPROXIMATE AND ARE SHOWN FOR ILLUSTRATIVE PURPOSES. THE CONTRACTOR IS RESPONSIBLE TO CALL FOR A MARK OUT OF UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT/RESTORATION OF ANY SIDEWALK, CURB OR PAVEMENT WHICH IS DAMAGED DURING CONSTRUCTION. ALL REPLACEMENT/RESTORATION MUST BE COMPLETED BEFORE ACCEPTANCE OF THE PROJECT BY THE CITY AT NO ADDITIONAL COST.

11. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL TREES WITHIN THE PROJECT DURING CONSTRUCTION, UNLESS OTHERWISE NOTED. DAMAGE TO EXISTING TREES WILL BE EVALUATED BY THE CITY FORESTER. THE PROJECT SPECIFICATIONS IMPOSES A PENALTY OF $500 PER INCIDENT OF DAMAGE TO ANY TREE. ALL COSTS RELATED TO TREE PROTECTION ARE TO BE INCLUDED IN THE BID ITEM "MOBILIZATION". ANY EXISTING TREES WHICH ARE COMPROMISED DURING EXCAVATION FOR CURB INSTALLATION SHALL BE EVALUATED BY THE CITY FORESTER, AND IF DEEMED APPROPRIATE, SHALL BE REMOVED BY THE CONTRACTOR. COST FOR TREE REMOVAL ARE TO BE INCLUDED IN THE BID ITEM "TREE REMOVAL, IF AND WHERE DIRECTED."

12. NO SEPARATE PAYMENT SHALL BE MADE FOR ANY SAW CUTTING REQUIRED ON THE PROJECT. COSTS FOR SAW CUTTING SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE BID PROPOSAL.

13. THE CONTRACTOR IS RESPONSIBLE TO REPLACE/RESET ANY SPRINKLERS AND DOG FENCING DAMAGED/DISTURBED DURING CONSTRUCTION. THE COST FOR REPAIR/RESETTING SPRINKLERS AND REPAIRING DOG FENCING SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNERS FOR THE LOCATION OF THE SPRINKLERS AND DOG FENCES PRIOR TO THE START OF WORK.

14. ALL COSTS ASSOCIATED WITH THE RESETTING OR REPLACEMENT OF ANY WALKWAYS CONSTRUCTED OF GRANITE BLOCK, BRICK, BRICK PAVERS, STONE, SLATE, ETC. SHALL BE INCLUDED IN THE BID ITEM FOR "CONCRETE SIDEWALK." NO SEPARATE PAYMENT SHALL BE MADE FOR THE INSTALLATION, RECONSTRUCTION OR RESETTING OF CURB ALONG THE SIDES OF A DRIVEWAY LEADING TO THE SIDEWALK WHERE CURBING CURRENTLY EXISTS.

15. NO SEPARATE PAYMENT SHALL BE MADE FOR THE EXCAVATION OF UNCLASSIFIED MATERIAL ASSOCIATED WITH FULL DEPTH REPAIR. ALL COSTS ASSOCIATED WITH THE EXCAVATION, UNCLASSIFIED, AND DISPOSAL OF THE EXISTING SUBBASE AND PLACEMENT OF DENSE GRADED AGGREGATE SHALL BE INCLUDED IN THE BID ITEM "FULL DEPTH REPAIR, IF AND WHERE DIRECTED."

16. NO SEPARATE PAYMENT SHALL BE MADE FOR THE EXCAVATION OF UNCLASSIFIED MATERIAL BEHIND THE CURB. ALL COSTS ASSOCIATED WITH THE REMOVAL OF ANY EXISTING MATERIAL BEHIND THE PROPOSED CURB SHALL BE INCLUDED IN THE BID ITEM "GRANITE BLOCK CURB".

17. NO SEPARATE PAYMENT SHALL BE MADE FOR THE INSTALLATION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES. ALL COSTS ARE TO BE INCLUDED IN THE BID ITEM "MOBILIZATION". INLET FILTERS SHALL BE INSTALLED AT ALL EXISTING OR NEW CATCH BASINS AND SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED AND THE SURFACE COURSE IS INSTALLED.

18. THE CONTRACTOR IS RESPONSIBLE FOR THE STAKEOUT AND LAYOUT OF THE PROJECT. THE STAKEOUT AND LAYOUT IS TO BE PERFORMED BY A NEW JERSEY PROFESSIONAL LAND SURVEYOR. ALL COSTS ASSOCIATED WITH THE STAKEOUT AND LAYOUT OF THE PROJECT ARE TO BE INCLUDED IN THE BID ITEM "CONSTRUCTION LAYOUT". ALL GRADES ARE TO BE SET IN THE FIELD BY THE LAND SURVEYOR. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER A PROFILE WITH THE SET GRADES PRIOR TO THE BEGINNING OF CONSTRUCTION. THE PROFILE IS SUBJECT TO THE APPROVAL OF THE ENGINEER.

19. SHOP DRAWINGS ARE TO BE SUBMITTED AT A MINIMUM OF THREE (3) WEEKS PRIOR TO CONSTRUCTION FOR ALL PROPOSED DRAINAGE STRUCTURES, SIGNS & POSTS, ANY CONCRETE FOOTINGS AND RRFB SETUPS. ALL DRAINAGE STRUCTURES AND FOOTINGS MUST BE DESIGNED BY A NEW JERSEY PROFESSIONAL ENGINEER. ALL SHOP DRAWINGS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.

20. SITE SURVEY PROVIDED BY STONEFIELD ENGINEERING & DESIGN, (201) 340 - 4468. SUPPLEMENTAL TOPOGRAPHY ALONG FAITOUTE COURT SHOWN HEREIN IS BASED ON THE CITY'S AERIAL TOPOGRAPHY.

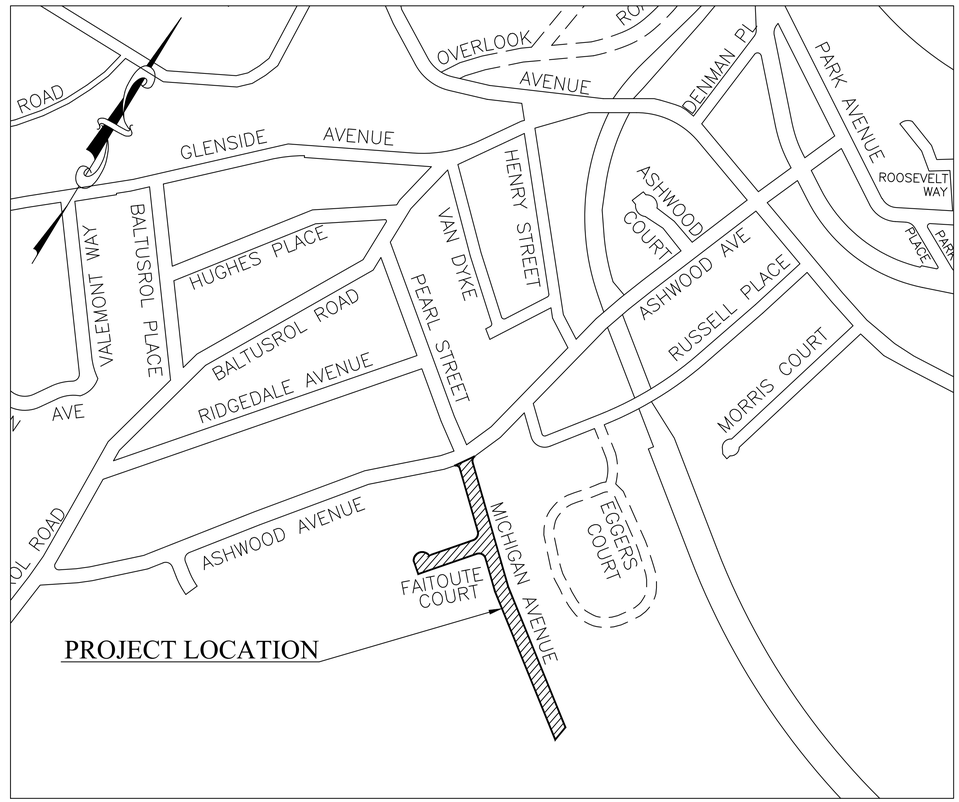
21. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR THE IMPROVEMENTS SHOWN SHALL BE IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019" AND ALL APPLICABLE AMENDMENTS.

22. ALL REGULATORY, WARNING, AND GUIDE SINGS, AS WELL AS STREET NAME SIGNAGE, WITHIN PROJECT LIMITS ARE TO BE REPLACED WITH NEW PLAQUES AND POSTS, UNLESS NOTED OTHERWISE.

23. ANY TYPE 'B' OR TYPE 'D' INLETS IDENTIFIED HEREIN FOR RECONSTRUCTION SHALL INCLUDE NEW NEW TYPE 'N' ECO-HEAD CURB PIECE AND BICYCLE SAFE GRATE. ALL COSTS ARE TO BE INCLUDED IN THE BID ITEM FOR RECONSTRUCTED INLET.

24. ANY PROPOSED PAVEMENT THICKNESS NOTED HEREIN SHALL BE POST-COMPACTION, UNLESS OTHERWISE NOTED.

25. ALL PAVEMENT STRIPING & MARKINGS SHALL BE THERMOPLASTIC PER NJDOT STANDARDS.



LOCATION MAP
N.T.S.

SUMMARY OF QUANTITIES

BASE BID ITEM	DESCRIPTION	UNIT	QTY
	GENERAL WORK		
1	MOBILIZATION	LS	1
2	CLEARING SITE	LS	1
3	FINAL CLEANUP	LS	1
4	BREAKAWAY BARRICADE	UNIT	2
5	DRUM	UNIT	10
6	TRAFFIC CONE	UNIT	20
7	CONSTRUCTION SIGNS	SF	25
8	CONSTRUCTION IDENTIFICATION SIGNS, 18" X 36"	UNIT	1
9	CONSTRUCTION LAYOUT	LS	1
10	UTILITY COORDINATION	LS	1
11	INLET FILTERS, TYPE 1	SF	56
12	FUEL PRICE ADJUSTMENT	ALLOW	ALLOW
	ROADWAY, CURBING & ADA		
13	HMA MILLING, 2" OR LESS	SY	3,000
14	FULL DEPTH REPAIR, IF AND WHERE DIRECTED	SY	300
15	HOT MIX ASPHALT 9.5M64 SURFACE COURSE	TON	450
16	EXCAVATION, TEST PIT	CY	25
17	EXCAVATION, UNCLASSIFIED	CY	100
18	GRANITE BLOCK CURB	LF	2,300
19	CONCRETE SIDEWALK, 4" THICK	SY	20
20	DETECTABLE WARNING SURFACE	SY	3
21	GRAVEL DRIVEWAY, 8" THICK	SY	34
22	HOT MIX ASPHALT DRIVEWAY 6" THICK	SY	400
23	TRAFFIC STRIPES, 4" THICK	LF	650
	UTILITIES		
24	RESET MANHOLE, SANITARY SEWER, USING NEW CASTING	UNIT	8
25	VIDEO INSPECTION OF SEWER	LF	1,200
26	SET MANHOLE CASTING	UNIT	5
27	RECONSTRUCTED INLET, TYPE B, USING NEW CASTING	UNIT	3
28	INLET TYPE B	UNIT	4
29	MANHOLE, 4' DIAMETER	UNIT	1
30	RECONSTRUCT MANHOLE, IF AND WHERE DIRECTED	UNIT	2
31	4" SCHEDULE 40 PVC PIPE	LF	16
32	10" HDPE PIPE	LF	25
33	15" REINFORCED CONCRETE PIPE, CLASS IV	LF	232
34	24" REINFORCED CONCRETE PIPE, CLASS IV	LF	252
35	VIDEO INSPECTION OF PIPE	LF	1,000
36	RESET GAS VALVE BOX	UNIT	10
37	RESET WATER VALVE BOX	UNIT	10
	LANDSCAPING		
38	TOP SOIL SPREADING, 5" THICK	SY	1000
39	BORROW TOPSOIL	CY	20
40	FERTILIZING AND SEEDING, TYPE A-3,	SY	1000
41	REMOVAL OF PAVEMENT	SY	150
42	TREE REMOVAL, OVER 6" to 36", IF AND WHERE DIRECTED	UNIT	6
43	TREE REMOVAL, OVER 36", IF AND WHERE DIRECTED	UNIT	3
44	I-14 SOIL AGGREGATE	CY	20
	STREET SIGNS		
45	GUIDE SIGN, TYPE GA, BREAKAWAY SUPPORTS	SF	70
46	REGULATORY AND WARNING SIGN	SF	70
47	STREET NAME SIGN POSTS	UNIT	1

INDEX OF SHEETS

SHEET	DESCRIPTION
1	COVER SHEET
2	CONSTRUCTION PLAN
3	GRADING & DRAINAGE PLAN
4	SOIL EROSION & SEDIMENT CONTROL PLAN
5	SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS
6	CONSTRUCTION DETAILS
7	CONSTRUCTION DETAILS
1 OF 1	MAP OF SURVEY (PROVIDED BY STONEFIELD)

Funding Note:
This project is funded by the City of Summit

Survey Note:
The contractor is responsible for stakeout and vertical control of the project. Stakeout is required for the project. AutoCAD drawings are availabe for this project upon request. Cut sheets shall be submitted prior to the start of any work.

UTILITIES

Public Service Electric & Gas Co.
48 Middle Avenue
Summit, NJ 07901

Jersey Central Power and Light
300 Madison Avenue
Morristown, NJ 07960

Comcast Cablevision of New Jersey
300 Rahway Avenue 07901
Union, NJ 07083

Verizon
445 Georges Road
North Brunswick, NJ 08902

City of Summit
Division of Public Works
41 Chatham Road
Summit, NJ 07901

New Jersey American Water Co.
167 JFK Parkway
Short Hills, NJ 07078

Project Safety Note:
The contractor(s) working on the project are responsible to ensure that all safety regulations of the Occupational Safety and Health Administration (OSHA) and the requirements of the State of New Jersey Department of Labor and Industry shall be adhered to on this project and that he or she shall instruct his or her personnel to follow these regulations. These regulations include, but are not limited to, the regulations concerning Trench Excavation, Competent Persons and Confined Space Regulations.

Specifications Note:
New Jersey Department of Transportation Standard Specifications for Road and Bridge Construciton 2019 and all of its amendments and Baseline Document Changes are to govern all construction here in.

REVISIONS

NO.	DATE	DESCRIPTION

MICHIGAN AVENUE IMPROVEMENT PROJECT
ENTIRE LENGTH OF MICHIGAN AVENUE & FAITOUTE COURT
COVER SHEET

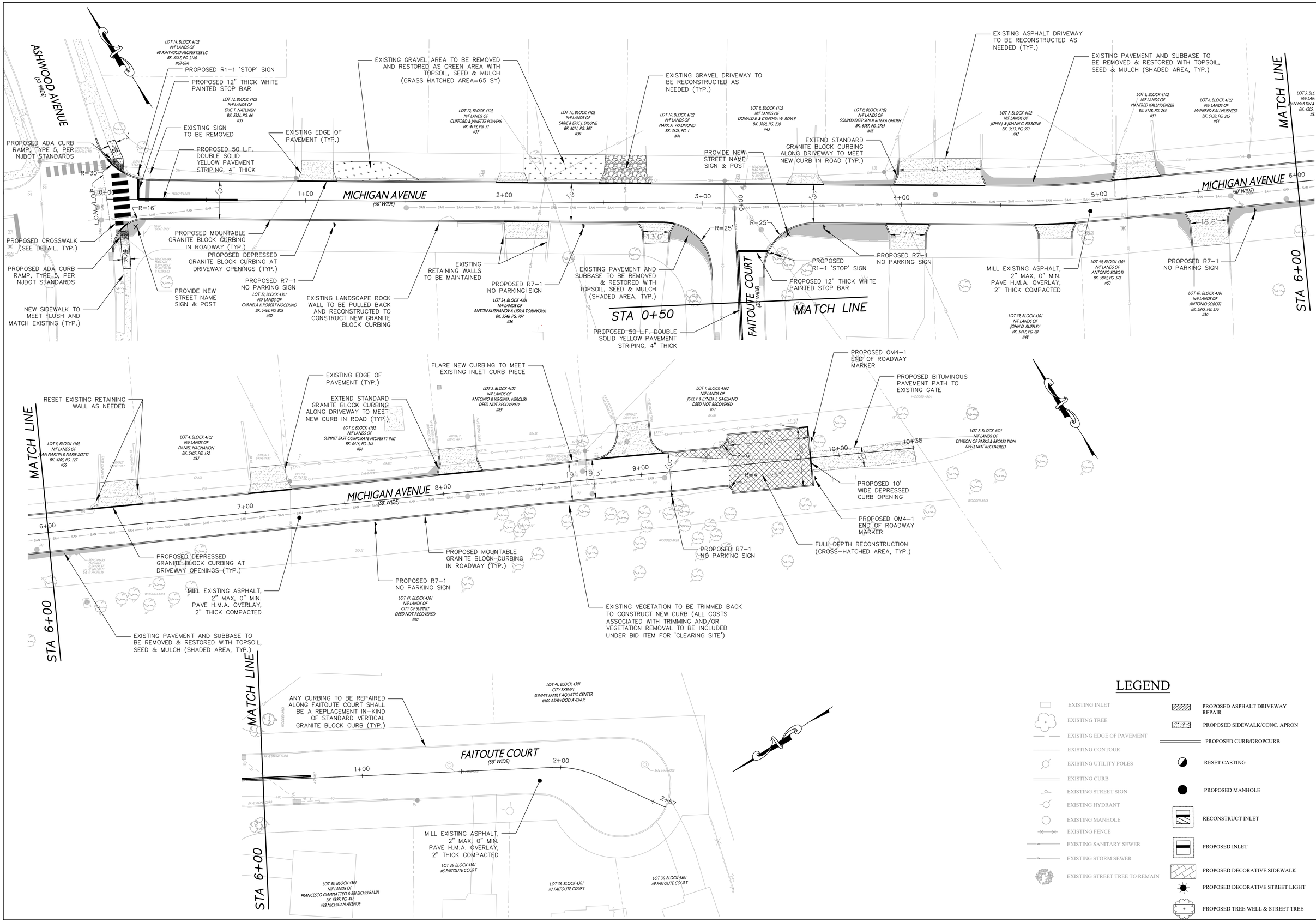
CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
SUMMIT NJ 07901
UNION COUNTY

Aaron J. Schrager
Professional Engineer
New Jersey Lic. No. 46143
City Engineer

DATE:
6/6/2022

DRAWN BY: SK

SCALE AS SHOWN



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NO.	DATE	DESCRIPTION

MICHIGAN AVENUE IMPROVEMENT PROJECT
ENTIRE LENGTH OF MICHIGAN AVENUE & FAITOUTE COURT
CONSTRUCTION PLAN

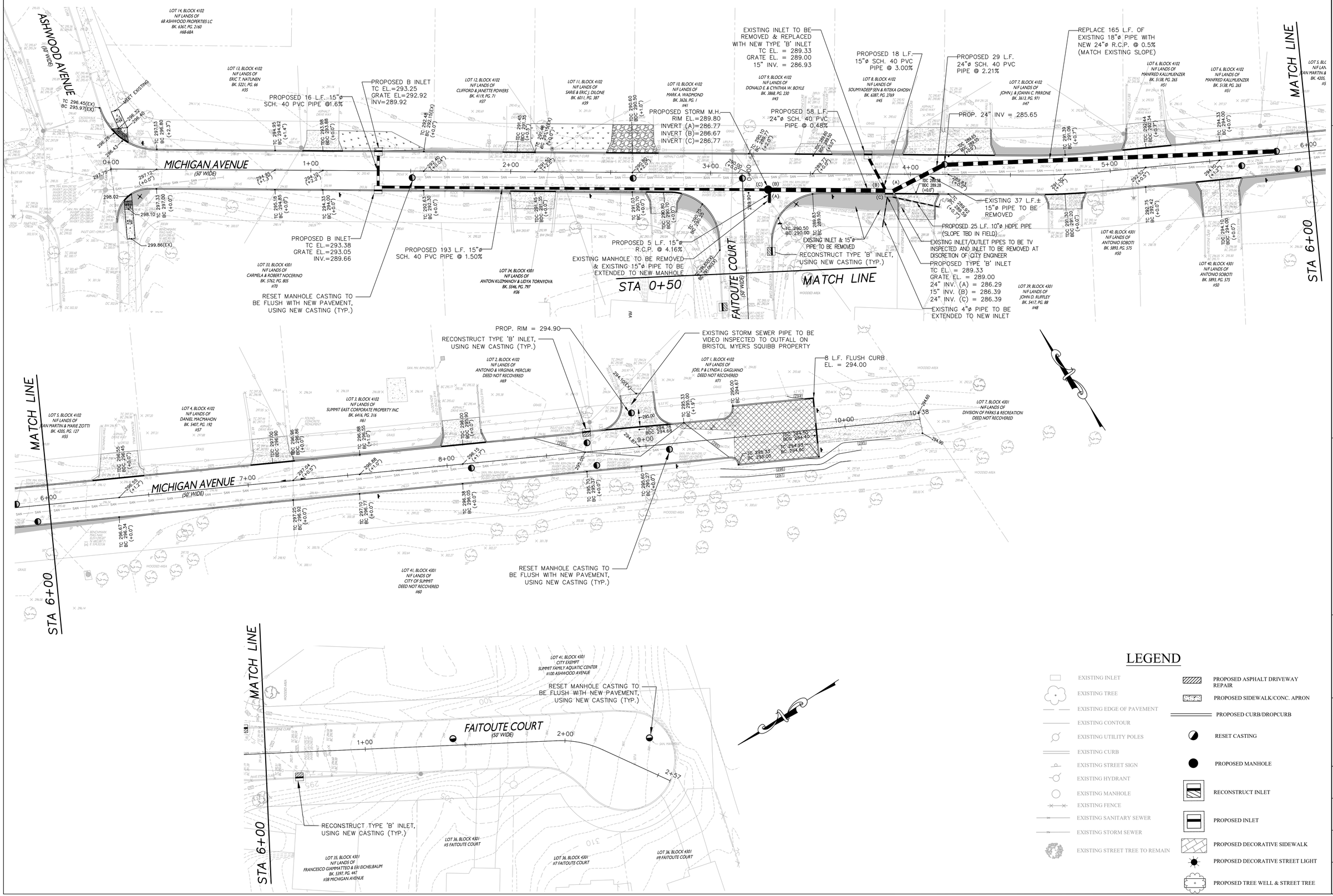
CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
SUMMIT NJ 07901
UNION COUNTY

Aaron J. Schrager
Professional Engineer
New Jersey Lic. No. 46143
City Engineer

DATE: 3/7/2022

DRAWN BY: SK

SCALE 1"=20'



LEGEND

- EXISTING INLET
- EXISTING TREE
- EXISTING EDGE OF PAVEMENT
- EXISTING CONTOUR
- EXISTING UTILITY POLES
- EXISTING CURB
- EXISTING STREET SIGN
- EXISTING HYDRANT
- EXISTING MANHOLE
- EXISTING FENCE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING STREET TREE TO REMAIN
- PROPOSED ASPHALT DRIVEWAY REPAIR
- PROPOSED SIDEWALK/CONC. APRON
- PROPOSED CURB/DROPCURB
- RESET CASTING
- PROPOSED MANHOLE
- RECONSTRUCT INLET
- PROPOSED INLET
- PROPOSED DECORATIVE SIDEWALK
- PROPOSED DECORATIVE STREET LIGHT
- PROPOSED TREE WELL & STREET TREE

REVISIONS

NO.	DATE	DESCRIPTION

MICHIGAN AVENUE IMPROVEMENT PROJECT
ENTIRE LENGTH OF MICHIGAN AVENUE & FAITOUTE COURT
GRADING & DRAINAGE PLAN

CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
SUMMIT NJ 07901
UNION COUNTY

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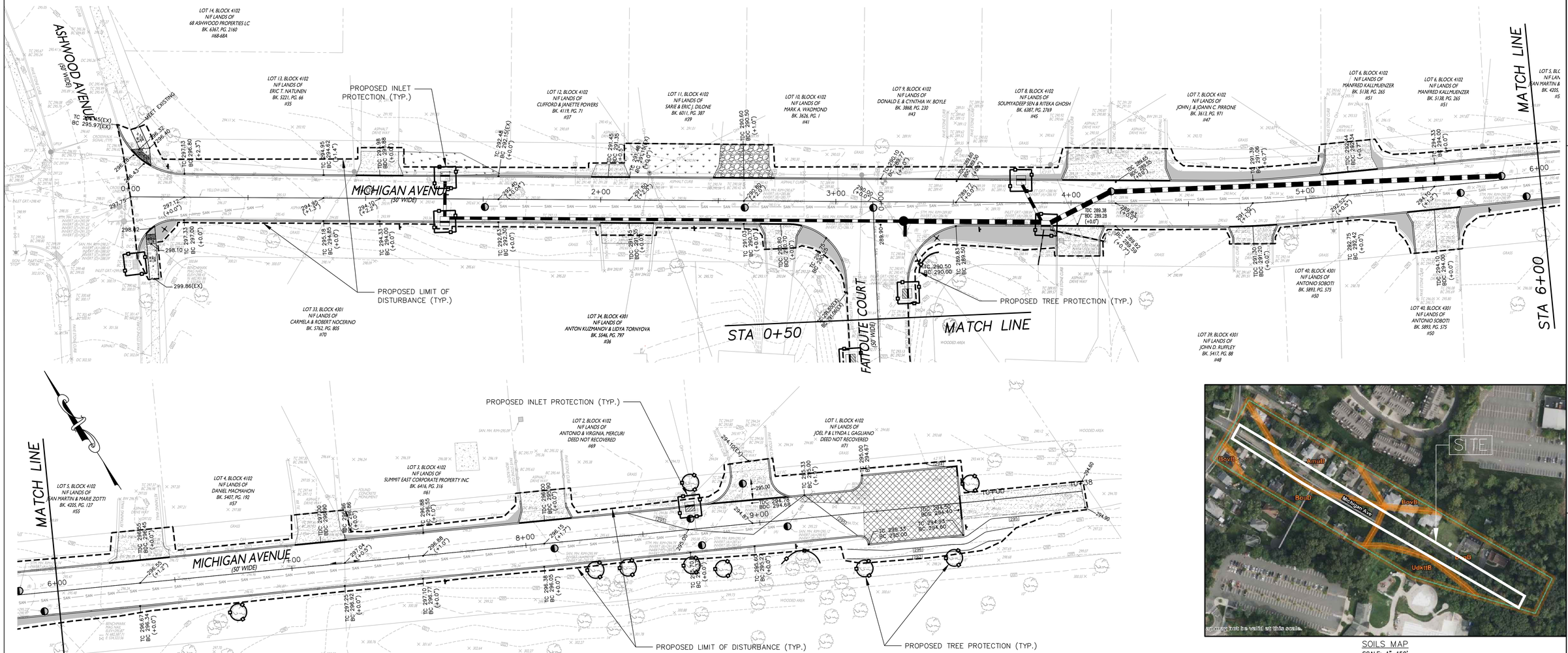
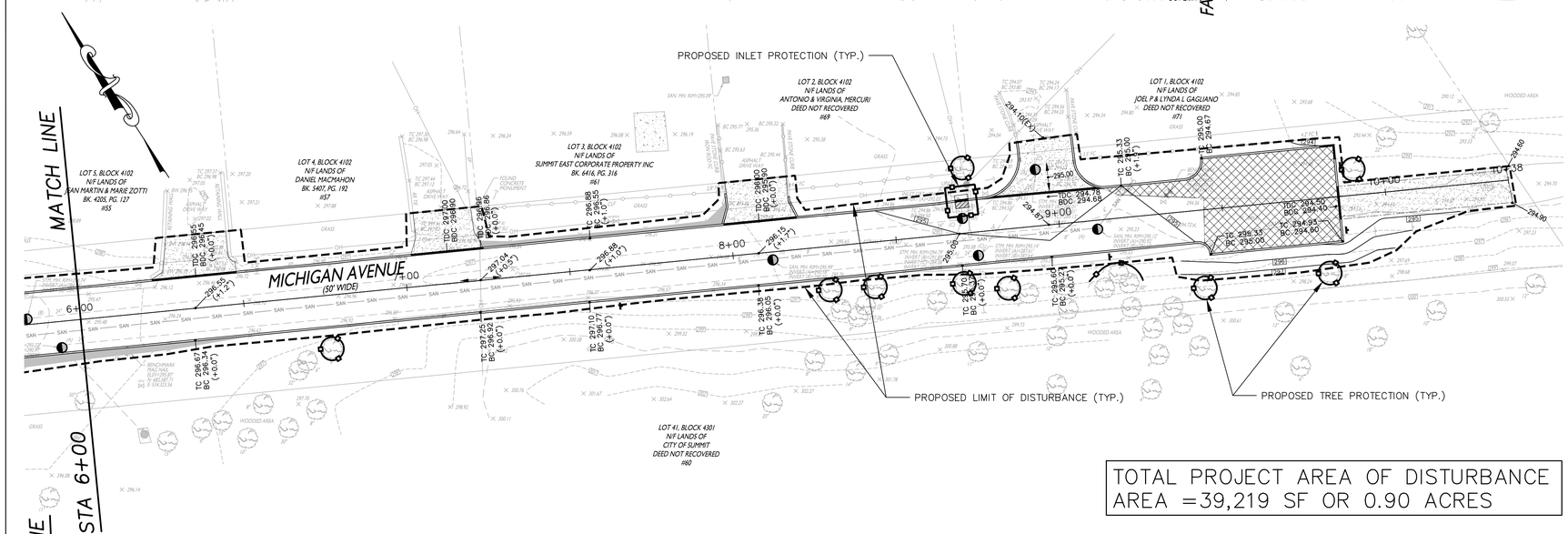
SCALE 1"=20'





SOILS MAP

SCALE: 1"=150'

MAP SOURCED FROM USDA WEB SOIL SURVEY

THE SITE IS MADE UP OF:

AmuB (AMWELL-URBAN LAND COMPLEX, 0 TO 6 PERCENT SLOPES)

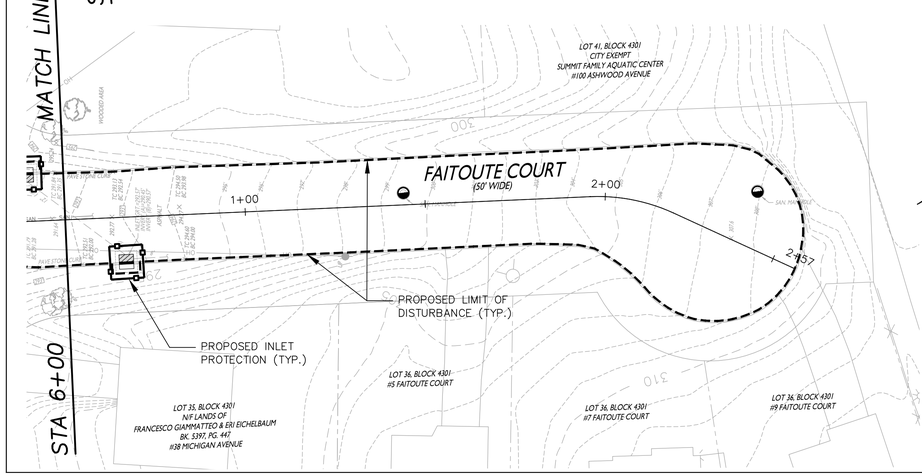
BogB (BOONTON LOAM, 3 TO 8 PERCENT SLOPES)

BouD (BOONTON-URBAN LAND COMPLEX, 15 TO 25 PERCENT SLOPES)

BovB (BOONTON-URBAN LAND-HALEDON COMPLEX, 0 TO 8 PERCENT SLOPES)

UdkttB (UDORTHENTS, LOAMY SUBSTRATUM, 0 TO 8 PERCENT SLOPES)

TOTAL PROJECT AREA OF DISTURBANCE AREA =39,219 SF OR 0.90 ACRES



PROJECT EXEMPTIONS:

1. THIS PROJECT IS EXEMPT FROM SOIL COMPACTION TESTING REQUIREMENTS BECAUSE IT IS WITHIN URBAN REDEVELOPMENT ZONE PA-1 AND IS PREVIOUSLY DEVELOPED.

1. THIS PLAN IS TO BE USED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY.
2. STREET SWEEPING TO BE IMPLEMENTED ON ADJACENT ROAD WAYS IF REQUIRED TO MAINTAIN SOIL AND DUST FREE CONDITION.

SOILS EROSION AND SEDIMENT CONTROL LEGEND

- LIMIT OF DISTURBANCE
- SILT FENCE
- TREE PROTECTION
- INLET PROTECTION

LEGEND

- EXISTING INLET
- EXISTING TREE
- EXISTING EDGE OF PAVEMENT
- EXISTING CONTOUR
- EXISTING UTILITY POLES
- EXISTING CURB
- EXISTING STREET SIGN
- EXISTING HYDRANT
- EXISTING MANHOLE
- EXISTING FENCE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
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MICHIGAN AVENUE IMPROVEMENT PROJECT
ENTIRE LENGTH OF MICHIGAN AVENUE & FAITOUTE COURT
SOIL EROSION & SEDIMENT CONTROL PLAN

CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
SUMMIT NJ 07901
UNION COUNTY

Aaron J. Schrager
Professional Engineer
New Jersey Lic. No. 46143
City Engineer

DATE: 3/7/2022

DRAWN BY: SK

SCALE 1"=20'

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. The Somerset-Union Soil Conservation District shall be notified in writing 48 hours in advance of any land disturbing activity.

2. All Soil Erosion and Sediment Control practices shall be installed prior to any major soil disturbances, or in their proper sequence and maintained until permanent protection is established.

3. Any Disturbed areas that will be left exposed more than 30 Days and not subject to construction traffic, will immediately receive a temporary seeding. If the season prevents the establishment of a temporary cover, the disturbed areas will be mulched with straw, or equivalent material, at a rate of two (2) tons per acre, according to Nj Soil Erosion Standards

4. Permanent Vegetation shall be seeded or sodded on all exposed areas within ten (10) days after final grading. Mulch will be used for protection until seeding is established

5. All work shall be done in accordance with the NJ State Standards for Soil Erosion and Sediment Control in New Jersey.

6. A sub-base course will be applied immediately following rough grading and installation of improvements in order to stabilize streets, roads, driveways and parking areas. In areas where no utilities are present, the sub-base shall be installed within 15 days or preliminary grading.

7. Immediately following initial disturbance or rough grading all critical areas subject to erosion (i.e.: steep slopes, roadway embankments) will receive a temporary seeding in combination with straw mulch or a suitable equivalent, at a rate of two (2) tons per acre, according to the NJ State Standards.

8. Any steep slopes receiving pipeline installation will be backfilled and stabilized daily, as the installation proceeds (i.e.: slopes greater that 3:1)

9. Traffic control Standards require the installation of a 50'x30'x6'pad of 1 1/2"or 2" stone, at all construction driveways, immediately after initial site disturbance.

10. At the time when the site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will not provide a suitable environment to support adequate vegetative ground cover, shall be removed or treated in such a way that will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, non-vegetative means of permanent ground stabilization will have to be employed.

11. In that NJSA 4:24-39 et seq., requires that no Certificate of Occupancy be issued before the provisions of the Certified Plan for Soil Erosion and Sediment Control have been complied with for permanent measures, all site work for site plans and all work around individual lots in subdivisions, will have to be completed prior to the District issuing a Report of Compliance for the issuance of a Certificate of Occupancy by the Municipality.

12. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational.

13. Any changes to the Certified Soil Erosion and Sediment Control Plan will require the submission of revised Soil Erosion and Sediment Control Plans to the District for recertification. The revised plans must meet all current NJ State Soil Erosion & Sediment Control Standards.

14. The Somerset-Union Soil Conservation District shall be notified of any changes in ownership.

15. Mulching to the NJ Standards is required for obtaining a Conditional Report of Compliance. Conditionals are only issued when the season prohibits seeding.

16. Contractor is responsible for keeping all adjacent roads clean during life of construction project.

17. The developer shall be responsible for remediating any erosion or sediment problems that arise as a result of ongoing construction at the request of the Somerset-Union Soil Conservation District.

18. Hydro seeding is a two- step process. The first step includes seed, fertilizer, lime, etc., along with minimal amounts of mulch to promote consistency, good seed to soil contact, and give a visual indication of coverage. Upon completion of seeding operation, hydromulch should be applied at a rate of 1500 lbs. per acre in second step. The use of hydromulch, as opposed to straw, is limited to optimum seeding dates as listed in the NJ Standards.

19. Unfiltered dewatering is not permitted. Necessary precautions must be taken during all dewatering operations to minimize soil transfer. Any dewatering methods used must be in accordance with the Standard for Dewatering.
Revised 5/15/15

PROPOSED SEQUENCE OF DEVELOPMENT

Installation of any silt fence prior to any major soil disturbance.	Week 1
Maintenance until permanent protection is established. Install and maintain inlet protection at any existing storm sewer inlets, as shown on the plans, until project is complete and permanently stabilized.	
Clear and remove all existing vegetation in those areas where necessary. Any remaining vegetation and trees to be properly protected and to remain in its natural state.	Week 1
Install stormwater conveyance	Week 2–3
Construct new curbing and repair driveway aprons.	Week 3–4
Mill existing roadway	Week 5
Perform full depth pavement reconstruction as required.	Week 6
Construct pavement surface course	Week 7
Fine grading of all lawn and landscape areas.	Week 8
Removal of all temporary sediment and erosion control devices.	upon completion

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

DEFINITION
Establishment of temporary vegetative cover on soils exposed for periods of two to 6 months which are not being graded, not under active construction or not scheduled for permanent seeding within 60 days.

PURPOSE
To temporarily stabilize the soil and reduce damage from wind and water erosion until permanent stabilization is accomplished.

WATER QUALITY ENHANCEMENT
Provides temporary protection against the impacts of wind and rain, slows the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or other stormwater conveyances.

WHERE APPLICABLE
On exposed soils that have the potential for causing off-site environmental damage.

METHODS AND MATERIALS

SITE PREPARATION

A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading, pg. 19–1.

B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

C. Immediately prior to seeding, the surface should be scarified 6" to 12" where there has been soil compaction. This practice is permissible only where there is no danger to underground utilities (cables, irrigation systems, etc.).

SEEDBED PREPARATION

A. Apply ground limestone and fertilizer according to soil test recommendations such as offered by Rutgers Co-operative Extension. Soil sample mailers are available from the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10–20–10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Apply limestone at the rate of 2 tons/acre unless soil testing indicates otherwise. Calcium carbonate is the equivalent and standard for measuring the ability of liming materials to neutralize soil acidity and supply calcium and magnesium to grasses and legumes.

B. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, springtooth harrow, or other suitable equipment. The final harrowing or disking operation should be on the general contour. Continue tillage until a reasonable uniform seedbed is prepared.

C. Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled
in accordance with the above.

D. Soils high in sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils, pg. 1–1.

SEEDING

A. Select seed from recommendations in Table 7–2.

TABLE 7–2
TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH.

SEED SELECTIONS	SEEDING RATE[1] (pounds) Per Acre	Per 1000 Sq. Ft.	OPTIMUM SEEDING DATE[2] Based on Plant Hardiness Zone[3] ZONE 5b,6s	ZONE 6b	ZONE 7a,b	OPTIMUM SEEDING DEPTH[4] (inches)
COLD SEASON GRASSES						
1. Perennial ryegrass	100	1.0	3/15–6/1 8/1–9/15	3/1–5/15 8/15–10/1	2/15–5/1 8/15–10/15	0.5
2. Spring oats	86	2.0	3/15–6/1 8/1–9/15	3/1–5/15 8/15–10/1	2/15–5/1 8/15–10/15	1.0
3. Winter Barley	96	2.2	8/1–9/15	8/15–10/1	8/15–10/15	1.0
4. Annual Ryegrass	100	1.0	3/15–6/1 8/1–9/15	3/1–6/1 8/1–9/15	2/15–5/1 8/15–10/15	0.5
5. Winter Cereal Rye	112	2.8	8/1–11/1	8/1–11/15	8/1–12/15	1.0
WARM SEASON GRASSES						
6. Pearl millet	20	0.5	6/1–8/1	5/15–8/15	5/1–9/1	1.0
7. Millet (German or Hungarian)	30	0.7	6/1–8/1	5/15–8/15	5/1–9/1	1.0

1 Seeding rate for warm season grass, selections 5 – 7 shall be adjusted to reflect the amount of Pure Live Seed (PLS) as determined by a germination test result. No adjustment is required for cool season grasses.
2 May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
3 Plant Hardiness Zone (see figure 7–1, pg. 7–4.)
4 Twice the depth for sandy soils

B. Conventional Seeding. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil, to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse textured soil.

C. Hydroseeding is a broadcast seeding method usually involving a truck or trailer mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short fibered mulch may be applied with a hydroseeder following seeding. (also see Section IV Mulching) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied on the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.

D. After seeding, firming the soil with a corrugated roller will assure good seed–to–soil contact, restore capillarity, and improve seeding emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.

MULCHING

Mulching is required on all seeding. Mulch will insure against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.

A. Straw or Hay. Unrotted small grain straw, hay free of seeds, applied at the rate of 1–1/2 to 2 tons per acre (70 to 90 pounds per 1,000 square feet), except that where a crimper is used instead of a liquid mulch–binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper–blowers must not grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed. Application – Spread mulch uniformly by hand or mechanically so that approximately 95% of the soil surface will be covered. For uniform distribution of hand–spread mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section.
Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and costs.

1. Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a cris–cross and a square pattern. Secure twine around each peg with two or more round turns.

2. Mulch Nettings – Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed. 3. Crimper (mulch anchoring tool). A tractor–drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.

4. Liquid Mulch–Binders. –May be used to anchor hay or straw mulch.

a. Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests of banks. The remainder of the area should be uniform in appearance.

b. Use one of the following:

(1) Organic and Vegetable Based Binders –Naturally occurring, powder based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.

(2) Synthetic Binders –High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates recommended by the manufacturer and remain tacky until germination of grass.

Note: All names give above are registered trade names. This does not constitute a commendation of these products to the exclusion of other products.

B. Wood–fiber or paper–fiber mulch. Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the project manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the tank with seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

C. Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which may contain co–polymers, tackifiers, fertilizers and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applies in accordance with the manufacturer's recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60–75 lbs./1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed–seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable.

Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

DEFINITION
Establishment of permanent vegetative cover on exposed soils where perennial vegetation is needed for long term protection.

PURPOSE
To permanently stabilize the soil, assuring conservation of soil and water, and to enhance the environment.

WATER QUALITY ENHANCEMENT
Slows the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or other stormwater conveyances.

WHERE APPLICABLE
On exposed soils that have the potential for causing off–site environmental damage.

SITE PREPARATION

A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standard for Land Grading.

B. Immediately prior to seeding and topsoil application, the subsoil shall be evaluated for compaction in accordance with the Standard for Land Grading .

C. Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 5 inches (unsettled) is required on all sites. Topsoil shall be amended with organic matter, as needed, in accordance with the Standard for Topsoiling.

D. Install needed erosion control practices or facilities such as diversions, grade–stabilization structures, channel stabilization measures, sediment basins, and waterways.

SEEDBED PREPARATION

A. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, according to soil test recommendations such as offered by Rutgers Co–operative Extension Soil sample mailers are available from the local Rutgers Cooperative Extension offices (http://njaes.rutgers.edu/county/). Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10–10–10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches. If fertilizer is not incorporated, apply one–half the rate described above during seedbed preparation and repeat another one–half rate application of the same fertilizer within 3 to 5 weeks after seeding.

B. Work lime and fertilizer into the topsoil as nearly as practical to a depth of 4 inches witha disc, spring–tooth harrow, or other suitable equipment. The final harrowing or disking operation should be on the general contour. Continue tillage until a reasonable uniform seedbed is prepared.

C. High acid producing soil. Soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seedbed reparation. See Standard for Management of High Acid–Producing Soils for specific requirements.

SEEDING

A. Select a mixture from Table 4–3 or use a mixture recommended by Rutgers Cooperative Extension or Natural Resources Conservation Service which is approved by the Soil Conservation District. Seed germination shall have been tested within 12 months of the planting date. No seed shall be accepted with a germination test date more than 12 months old unless retested.

1. Seeding rates specified are required when a report of compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in rates may be used when permanent vegetation is established prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage with the specified seed mixture for the seeded area and mowed once.

2. Warm–season mixtures are grasses and legumes which maximize growth at high temperatures, generally 85o F and above. See Table 4–3 mixtures 1 to 7. Planting rates for warm–season grasses shall be the amount of Pure Live Seed (PLS) as determined by germination testing results.

3. Cool–season mixtures are grasses and legumes which maximize growth at temperatures below 85oF. Many grasses become active at 65oF. See Table 4–3, mixtures 8–20. Adjustment of planting rates to compensate for the amount of PLS is not required for cool season grasses.

B. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse–textured soil.

C. After seeding, firming the soil with a corrugated roller will assure good seed–to–soil contact, restore capillarity, and improve seedling emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.

D. Hydroseeding is a broadcast seeding method usually involving a truck, or trailer–mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Shortfibered mulch may be applied with a hydroseeder following seeding. (also see Section 4–Mulching below). Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. When poor seed to soil contact occurs, there is a reduced seed germination and growth.

MULCHING

Mulching is required on all seeding. Mulch will protect against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.

A. Straw or Hay. Unrotted small grain straw, hay free of seeds, to be applied at the rate of 1–1/2 to 2 tons per acre (70 to 90 pounds per 1,000 square feet), except that where a crimper is used instead of a liquid mulch–binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper–blowers must not grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.
Application – Spread mulch uniformly by hand or mechanically so that at least 85% of the soil surface is covered. For uniform distribution of hand–spread mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section.
Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and costs.

1. Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a cris–cross and a square pattern. Secure twine around each peg with two or more round turns.

2. Mulch Nettings – Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.

3. Crimper (mulch anchoring outlet tool) – A tractor–drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.

4. Liquid Mulch–Binders – May be used to anchor salt hay, hay or straw mulch.

a. Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests of banks. The remainder of the area should be uniform in appearance.

b. Use one of the following:

(1) Organic and Vegetable Based Binders – Naturally occurring, powder–based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membranned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turf grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.

(2) Synthetic Binders – High polymer synthetic emulsion, miscible with water when diluted and, following application of mulch, drying and curing, shall no longer be soluble or dispersible in water. Binder shall be applied at rates recommended by the manufacturer and remain tacky until germination of grass.

Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

B. Wood–fiber or paper–fiber mulch – shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. Mulch shall not be mixed in the tank with seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.

C. Pelletized mulch – compressed and extruded paper and/or wood fiber product, which may contain co–polymers, tackifiers, fertilizers, and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturer's recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60–75 lbs/1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weedseed free mulch is desired, or on sites where straw mulch and tackifier agent are not practical or desirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.

IRRIGATION (where feasible)

If soil moisture is deficient supply new seeding with adequate water (a minimum of 1/4 inch applied up to twice a day until vegetation is well established). This is especially true when seedings are made in abnormally dry or hot weather or on droughty sites.

TOPDRESSING

Since soil organic matter content and slow release nitrogen fertilizer (water insoluble) are prescribed in Section 2A – Seedbed Preparation in this Standard, no follow–up of topdressing is mandatory. An exception may be made where gross nitrogen deficiency exists in the soil to the extent that turf failure may develop. In that instance, topdress with 10–10–10 or equivalent at 300 pounds per acre or 7 pounds per 1,000 square feet every 3 to 5 weeks until the gross nitrogen deficiency in the turf is ameliorated.

ESTABLISHING PERMANENT VEGETATIVE STABILIZATION

The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Table 4–3 are required when a Report of Compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in application rates may be used when permanent vegetation is established prior to requesting a Report of Compliance from the district. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative cover (of the seeded species) and mowed once. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged.

TABLE 4–2
PERMANENT STABILIZATION MIXTURES FOR VARIOUS USES

Application	PLANTING MIXTURES BY SOIL DRAINAGE CLASS/[1] (see Table 4–3) Excessively Drained	Well to Moderately Well Drained	Somewhat Poorly to Poorly Drained
Residential/commercial lots	10, 12, 15	6, 10, 12, 13, 14, 15	16
Pond and channel banks, dikes, berms, and dams	2, 5, 6, 10	5, 6, 7, 8, 9, 15	2, 8, 16, 17
Drainage ditches, swales, detention basins	2, 9, 11	2, 7, 9, 11, 12, 17	2, 9, 16, 17
Filter Strips	12	11, 12	11, 12
Grasses waterway, spillways	2, 3, 9, 10, 12	6, 7, 9, 10, 11, 12	2, 9, 11, 12
Recreation areas, athletic fields	5, 12, 15, 18	12, 13, 14, 15, 18	16
Special Problem Sites Steep slope and banks, roadsides, borrow areas	2, 3, 4, 6	2, 3, 5, 7, 8, 9, 10, 15, 18	2, 9, 10, 11, 12
Sand and gravel pits, Sanitary landfills	1, 2, 3, 4, 6, 20	1, 2, 3, 4, 5, 6, 8, 15, 20	2, 8
Dredged material, spoilbanks, borrow areas	2, 3, 6, 20	2, 3, 6, 11	2, 8
Streambanks & shorelines[2]	2, 8, 20, 21a	2, 8, 19b, 20, 21a, 21b	2,8,19a, 21a,b,c,d
Utility rights–of–way	3, 7, 180	3, 7	8, 9, 17

1. Refer to Soil Surveys for drainage class descriptions.
2. Refer to Soil Bioengineering Standard for additional seed mixtures.
3. Spillways only
4. See Appendix E for description of turf grasses and cultivars

TABLE 4–3
PERMANENT VEGETATIVE MIXTURES, PLANTING RATES AND PLANTING DATES[1]

SEED MIXTURE[2]	PLANTING RATE/[3] lbs./acre	lbs./1000 sq. ft.	PLANTING DATES O = Optimal Planting period A = Acceptable Planting period — PLANT HARDINESS ZONES (see Figure 4–1) Zone 5b, 6a: 3/15–5/31	8/1–7/31	Zone 6b: 3/1–4/30	8/15–10/31	Zone 7a, 7b: 2/1–4/30	8/15–10/15	MAINTENANCE LEVEL/[4]	REMARKS
WARM SEASON SEED MIXTURES										
1A. For pinelands notional reserve seed mixtures see table 4–4 page 4–17				O		O		O		
1. Switchgrass and/or Coastal panicgrass plus or Flatpea	15 20 20	.35 .45 .45	O		O		O		C–D	
2. Deertongue or Switchgrass Redtop	15 20 1 10	.35 .45 .10 .23	O		O		O		C–D	Use Deertongue if pH < 4.0. Switchgrass is superior wildlife plant. Use for waterways. Redtop provides quick cover.
3. Switchgrass Deertongue Little Bluestem Sheep fescue plus Partridge pea	15 10 20 20 10	.35 .25 .45 .45 .25	O		O		O		C–D	Pinelands mixture.
4. Switchgrass Big Bluestem Little Bluestem Sand lovegrass Coastal panicgrass	10 5 5 4 10	.25 .10 .10 .10 .25	O		O		O		C–D	Native warm – season mixture.
5. Bermudagrass Zoysiagrass(seed) Zoysiagrass (sprigs)	15 30	.35 .70	O		O		O		A–D	Bermudagrass has superior salt tolerance. Zoysia has greater wear tolerance.
COOL SEASON SEED MIXTURES	130	3	A	A[5]	O	A	A[5]	O	A	A[5] O	General low –maintenance mixture
6. Fine Fescue (Blend) Hard Fescue Chewings fescue Strong Creeping Red Fescue Kentucky Bluegrass Perennial ryegrass plus White clover	45 20 5	.1 .5 .10							B–D	White clover can be removed when establish lawns
7. Strong Creeping red fescue Perennial ryegrass or Redtop plus White clover	130 50 20 10 5	3 1 .5 .25 .10	A	A[5]	O	A	A[5]	O	A	A[5] O	B–D Suitable waterway mix. Canada bluegrass more drought tolerant. Used Redtop for increased drought tolerance.
8. Tall fescue (turf–type) or Strong Creeping red fescue or Perennial ryegrass plus Flatpea	30 30 30 25	.7 .7 .7 .60	O	A[6]		O	A[6]		O	A[6] O	B–D Tall fescue best selected for droughty conditions. Use Creeping red fescue in heavy shade. Use Flatpea to suppress woody vegetation.
9. Deergrass Redtop Wild rye(Elymus) Switchgrass	20 2 15 25	.45 .05 .35 .60	O		O		O		C–D	Native wet mix.
10. Tall fescue (turf–type) Perennial ryegrass or White clover	265 20 10 5	6 .5 .25 .10	O	A[5]	O	A[5]	O	A[5]	O	A[5] O	C–D White clover can be excluded on lawn sites
11. Kentucky bluegrass Turf–type Tall fescue	15 45 22	0.33 1 .5	A	A[5]	O	A	A[5]	O	A	A[5] O	C–D Filter strip use for nutrient uptake.
12. Turf–type Tall fescue (Blend of 3 cultivars)	350	8	A	A[5]	O	A	A[5]	O	A	A[5] O	C–D Use in a managed filter strip for nutrient uptake.
13. Hard Fescue Chewing fescue and/ or Strong Creeping Red Fescue Perennial ryegrass Ky. bluegrass (seed)	175 45 1 45	4 1 1	"USE THIS SEED MIXTURE"							
			A	A[5]	O	A	A[5]	O	A	A[5] O	A–C General lawn/recreation.
14. Tall Fescue Ky. bluegrass (seed) Pirn. ryegrass (seed)	265 20 20	6 .50 .50	A	A[5]	O	A	A[5]	O	A	A[5] O	A–B Athletic field/Mix 3 cultivars of Kentucky Bluegrass.
15. Hard Fescue Creeping fescue Strong Creeping Red Fescue Perennial ryegrass	130 45 45 10	3 1 1 .25	A	A[5]	O	A	A[5]	O	A	A[5] O	C–D Low maintenance fine fescue lawn mix.
16. Rough bluegrass Strong Creeping red fescue	90 130	2.0 3	A	A[5]	O	A	A[5]	O	A	A[5] O	C–D Moist shade.
17. Creeping Bentgrass Creeping red fescue Alkali Saltgrass	45 45 45	1 1 1	A	A[5]	O	A	A[5]	O	A	A[5] O	B–D Use bentgrass under wetter conditions. Saltgrass will only persistent under daline conditions
18. Hard or Sheeps fescue N.E. Wildflower mixture	25 12	0.60 0.35	O	A	O	O	A	O	O	A	O C–D regional wildflower mix Hydroseeding not recommended
19. a. Smooth cordgrass b. Saltmeadow cordgrass	veg veg				O	Before 7/1		O	Before 7/1		C–D Planted in the intertidal zone. Planted above mean high tide.
20. American beachgrass Coastal panicgrass	veg 20	.45				Before 4/1		O			D Coastal panicgrass may be interseeded between rows of beachgrass
21. a. Purpleosier willow b. Dwarf willow c. Redosier dogwood d. Silky dogwood	veg veg veg veg			Before 5/10		Before 5/10			Before 5/1		D Also refer to chapters 16 and 18 of USDA NRCS engineering field handbook

Table 4–3 Footnotes:
1. See Appendix B for descriptions of turf grass mixtures and cultivars. The actual amount of warm–season
grass mixture used in Table 3 (seed mix 1–7) shall be adjusted to reflect the amount of PLS as determined
by germination testing results. No adjustment is required for cool–season grasses (seed mixtures 8–20).

2. Seeding mixtures and/or rates not listed above may be used if recommended by the local Soil Conservation
District, Natural Resources Conservation Service; recommendations of Rutgers Cooperative Extension may be used if approved by the Soil Conservation District. Legumes (white clover, flatpea, lespedeza) should be mixed with proper innoculant prior to planting.

3. Seeding rates specified are required when a report of compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in rates may be used when permanent vegetation is established prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage of the seeded area and mowed once. Grass seed mixture checked by the State Seed Analyst, New Jersey Department of Agriculture, Trenton, New Jersey, will assure the purchaser that the mixture obtained is the mixture ordered, pursuant to the N.J.State Seed Law, N.J.S.A. 4:8–17.13 et. seq.

O = optimal planting period A = acceptable planting period

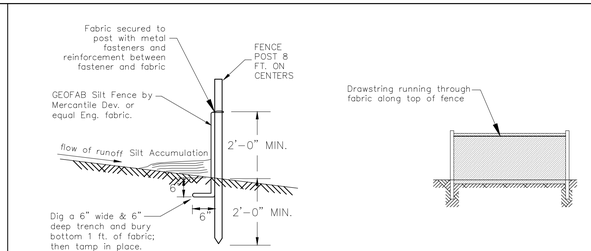
4. Maintenance Level:
A: Intensive mowing, (2–4 days), fertilization, lime, pest control and irrigation (Examples – high–maintenance lawns, commercial and recreation areas, public facilities).

B: Frequent mowing, (4–7 days), occasional fertilization, lime and weed control (Examples – home lawns, commercial sites, school sites).

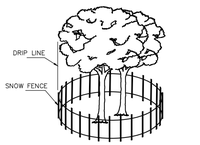
C: Periodic mowing (7–14 days), occasional fertilization and lime (Examples – home lawns, parks).

D: Infrequent or no mowing, fertilization and lime the first year of establishment (Examples – roadsides, recreation areas, public open spaces)

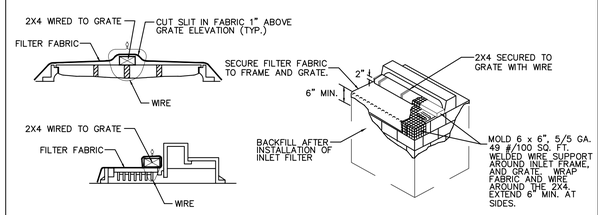
5. Summer seedings should only be conducted when the site is irrigated. Mixes including white clover require that at least six weeks of growing season remain after seeding to ensure establishment before freezing conditions.



SILT FENCE DETAIL
NTS



TREE PROTECTION DETAIL
NOT TO SCALE



NOTE: TWO TRAFFIC CONES TO BE PLACED ON EACH SIDE OF INLET

1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.
2. CONTRACTOR TO REMOVE FABRIC AND MESH JUST PRIOR TO PAVING.
3. IF BOTTOM OF ROADWAY IS BELOW TOP OF INLET GRATE, CONSTRUCT PROPERLY FILTERED OPENING(S) IN INLET WALL TO ALLOW PASSAGE OF WATER.
4. THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

INLET FILTER DETAIL
N.T.S.

STANDARD FOR DUST CONTROL

DEFINITION
The control of dust on construction sites and roads.

PURPOSE
To prevent blowing and movement of dust from exposed soil surfaces, reduced on–site and off–site damage and health hazards and improve traffic safety.

CONDITION WHERE PRACTICE APPLIES
This practice is applicable to areas subject to dust blowing and movement where on–site and off–site damage is likely without treatment. Consult with local municipal ordinances on any restrictions.

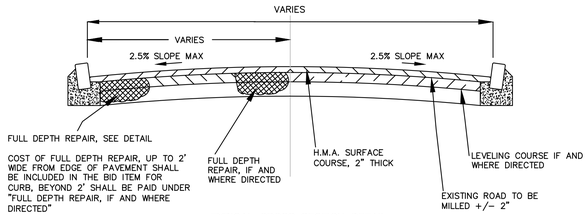
WATER QUALITY ENHANCEMENT
Sediments deposited as "dust"are often fine colloidal material which is extremely difficult to remove from water once it becomes suspended Use of this standard will help to control the generation of dust from construction sites and subsequent blowing and deposition into local surface water resources.

PLANNING CRITERIA
The following methods should be considered for controlling dust:

Mulches – See Standard of Stabilization with Mulches Only, pg. 5–1
Vegetative Cover – See Standard for: Temporary Vegetative Cover, pg. 7–1; Permanent Vegetative Cover for Soil Stabilization pg. 4–1 and Permanent Stabilization with Sod, pg. 6–1
Spray–On Adhesives – On mineral soils (not effective on muck soils). Keep traffic off these areas.

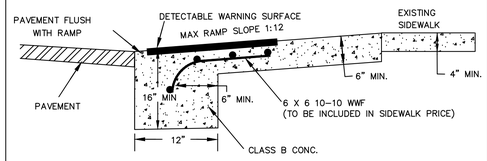
TABLE 16–1
DUST CONTROL MATERIALS

MATERIAL	WATER DILLUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
Anionic asphalt emulstion	7:1	Coarse Spray	1200
Latex emulsion	12.5:1	Fine Spray



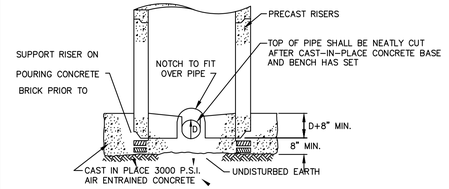
TYPICAL CROSS SECTION DETAIL

N.T.S.



HANDICAP RAMP DETAIL

N.T.S



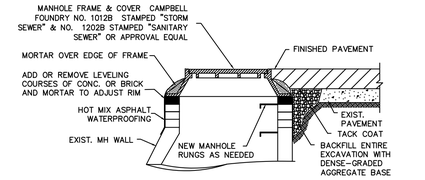
DOG HOUSE MANHOLE

N.T.S.

(FOR INSTALLING NEW MANHOLE ON ACTIVE SEWER)

NOTES:

1. FOR DETAIL OF UPPER PART OF MANHOLE, SEE "STANDARD MANHOLE" DETAIL
2. ACRYLIMIDE GEL GROUT INJECTION SHALL BE USED TO STOP LEAKS, IF ANY, AROUND MANHOLE SEAMS AND PIPES.



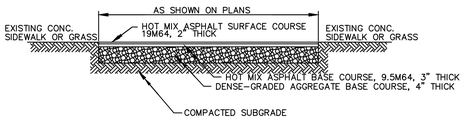
RECONSTRUCT MANHOLE USING NEW CASTING

N.T.S.

NOTES:

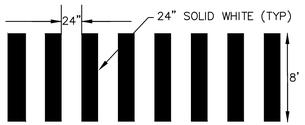
1. ALL MORTAR TO BE 1 PART PORTLAND CEMENT TO 2 PARTS CLEAN SAND.
2. RESET CASTINGS DETAIL IS SUITABLE FOR THE RESETTING OF BOTH INLETS AND MANHOLES.
3. EXTENT OF REPAIRS DEFINED BY NJDOT SPECIFICATION.

REVISIONS		
NO.	DATE	DESCRIPTION



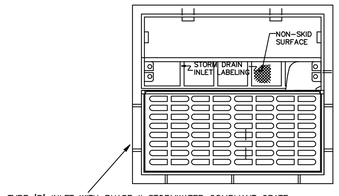
HOT MIX ASPHALT DRIVEWAY, 5" THICK

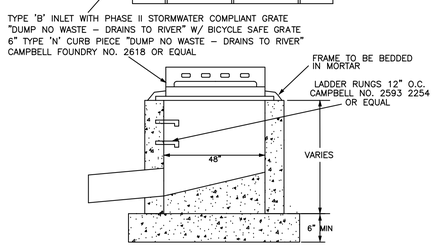
N.T.S.



TYPICAL CROSSWALK DETAIL

N.T.S.





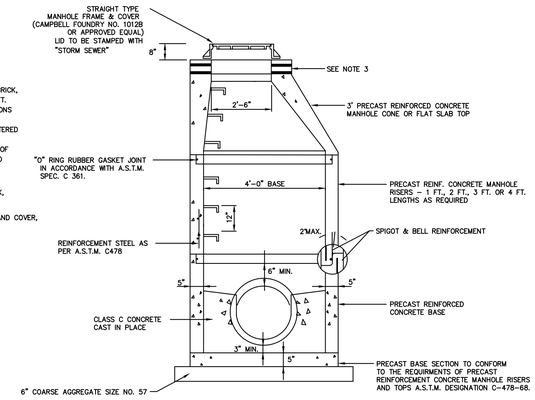
TYPE 'B' INLET (TYP)

N.T.S.

Note:
1) ALL PIPES ARE TO BE CUT FLUSH WITH BASIN WALL.
2) COST FOR FRAME AND GRATE ARE INCLUDED IN THE BID PRICE FOR THE BASIN.
3) SHOP DRAWINGS MUST BE SUBMITTED BY A NEW JERSEY PROFESSIONALLY LICENSED ENGINEER FOR ALL PROPOSED PRECAST INLETS THREE (3) WEEKS PRIOR TO CONSTRUCTION. SHOP DRAWINGS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.
4) GRATE MUST BE BICYCLE SAFE

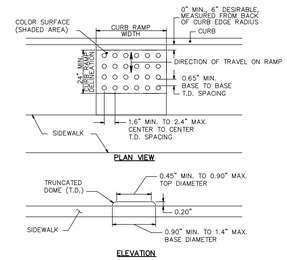
MANHOLE NOTES

1. MANHOLES MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE.
2. WHEN THE DEPTH OF A MANHOLE EXCEEDS 10 FT. AS MEASURED FROM TOP OF COVER TO INVERT, WALLS OF BRICK, CONCRETE OR CONCRETE BLOCK BELOW A DEPTH OF 8 FT. SHALL BE 12" THICK. THE OVERALL HORIZONTAL DIMENSIONS SHALL BE INCREASED 12" AND THE DEPTH OF THE FOUNDATION INCREASED TO 12". WHEN ROCK IS ENCOUNTERED THE HORIZONTAL DIMENSION AND DEPTH OF THE FOUNDATION SHALL NOT BE INCREASED. THE THICKNESS OF PRECAST CONCRETE MANHOLE WALLS DOES NOT HAVE TO BE INCREASED IF THE DEPTH EXCEEDS 10 FEET.
3. CASTINGS OF PRECAST MANHOLES SHALL BE ADJUSTED TO GRADE WITH COURSES OF BRICK OR CONCRETE BLOCK, AS REQUIRED, 12" MAXIMUM.
4. AS AN ALTERNATE TO THE STANDARD MANHOLE FRAME AND COVER, A 39 " DIAMETER FRAME WITH A 4" FLANGE MAY BE FURNISHED WITH ALL OTHER DIMENSIONS AND WEIGHTS REMAINING THE SAME.
5. IN BRICK, CONCRETE OR CONCRETE BLOCK MANHOLES, INVERTS SHALL BE CONSTRUCTED IN TWO STAGES.
6. AS AN ALTERNATE, COPOLYMER POLYPROPYLENE PLASTIC LADDER RUNGS MAY BE FURNISHED IN PRECAST MANHOLES AND INLETS.



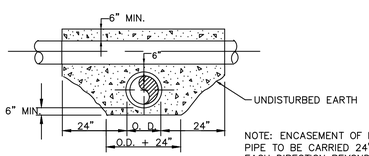
STORM MANHOLE

N.T.S.



DETECTABLE WARNING SURFACE (IN NON-STREETSCAPED AREAS)

N.T.S.



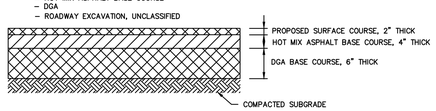
UTILITY CROSSING

N.T.S.

NOTE: ENCASEMENT OF LOWER PIPE TO BE CARRIED 24" IN EACH DIRECTION BEYOND THE WALLS OF THE UPPER CONDUIT.

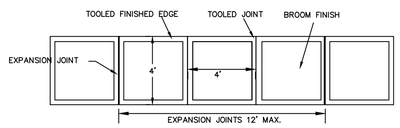
NOTES

1. REMOVE AND REPLACE ROADWAY BASE SHALL CONSIST OF THE REMOVAL OF UNSUITABLE ROADWAY BASE MATERIAL OF WHATEVER NATURE ENCOUNTERED TO A DEPTH OF AT LEAST 10" UNCOVERED AFTER MILLING OR VISIBLE PRIOR TO MILLING OR RESURFACING AND THE INSTALLATION OF AT LEAST 4" HOT MIX ASPHALT BASE COURSE AND 6" DGA. THE PERIMETER OF THE REPAIR SHALL BE SAWCUT.
2. THE FOLLOWING ITEMS OF WORK ARE INCLUDED UNDER REMOVE AND REPLACE ROADWAY BASE:
   - SAWCUT
   - HOT MIX ASPHALT BASE COURSE
   - DGA
   - ROADWAY EXCAVATION, UNCLASSIFIED

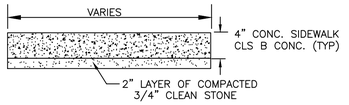


FULL DEPTH REPAIR

N.T.S.



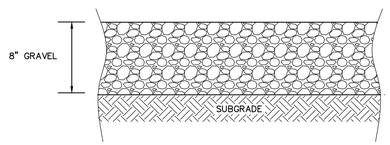
NOTE: 1)ALL SIDEWALK MUST BE SPRAYED WITH WHITE PIGMENTED CURING COMPOUND AFTER BROOM FINISHING.2)CONRETE TO BE POURED OVER 2" LAYER OF COMPACTED CLEAN STONE. 3)CONCRETE TO BE CLASS B 3500LB MIX.



NOTE: 1) CLEAN STONE TO BE INCLUDED IN THE BID PRICE OF SIDEWALK
2) ALL CONCRETE SIDEWALK IS TO HAVE WHITE PIGMENT ADDED TO THE MIXTURE

CONCRETE SIDEWALK DETAIL

N.T.S.



GRAVEL DRIVEWAY DETAIL

N.T.S.

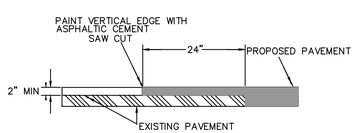
ON OR ABOUT
[DAY], [DD/MM/YYYY]
CONSTRUCTION WILL BEGIN
ON [STREET NAME]

18"x36"

NOTE: 1) THE CONTRACTOR SHALL MOUNT THE SIGN IN ACCORDANCE WITH NJDOT 2019 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION & THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2) EXACT WORDING TO BE APPROVED BY THE CITY ENGINEER

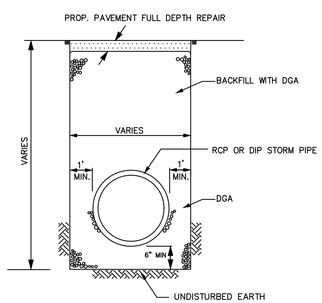
CONSTRUCTION IDENTIFICATION SIGN DETAIL

N.T.S.



PAVEMENT JOINT DETAIL

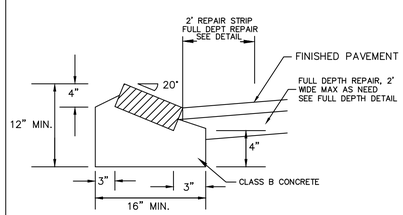
N.T.S.



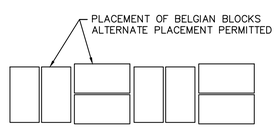
STORM PIPE TRENCH DETAIL

N.T.S.

PIPE ITEM SHALL INCLUDE:
EXCAVATION
REMOVAL/HAULING OF EXCAVATION
PIPE
BEDDING/DGA
BACKFILLING
SAWCUTTING
6" BASE HMA REPAIR/FULL DEPTH REPAIR



SECTION



PLAN

CURB NOTES

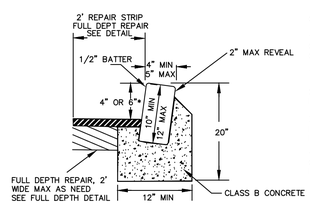
1) 4" THICK, COARSE AGGREGRATE SIZE NO. 57 SHALL BE CONSTRUCTED UNDERNEATH PROPOSED CURB IN WET FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. ALL COSTS FOR 4" THICK, COARSE AGGREGRATE SIZE NO. 57 SHALL BE INCLUDED IN THE VARIOUS ITEMS BID IN THE PROJECT.

2) FULL DEPTH REPAIR TO BE CONSTRUCTED ALONG THE ROAD EDGE OF NEW CURB UP TO 2' WIDE. COST TO BE INCLUDED IN PRICE OF CURB. SEE FULL DEPTH REPAIR DETAIL

3) SAW CUT 1/2" FOOT IN FRONT OF CURB TO REMOVE CONCRETE CURB AND MONOLITHICALLY POURED CONCRETE CURB PRIOR TO REMOVAL, COST TO BE INCLUDED IN THE VARIOUS BID ITEMS

MOUNTABLE GRANITE BLOCK CURB DETAIL

N.T.S.



*EXISTING CURB TO BE REPLACED WITH 6" CURB REVEAL WHERE POSSIBLE WHILE EFFECTING 1.0% MIN. SIDEWALK PITCH TOWARD THE STREET, OTHERWISE, 4" CURB REVEAL SHALL BE CONSTRUCTED.

CURB NOTES

1) 4" THICK, COARSE AGGREGRATE SIZE NO. 57 SHALL BE CONSTRUCTED UNDERNEATH PROPOSED CURB IN WET FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. ALL COSTS FOR 4" THICK, COARSE AGGREGRATE SIZE NO. 57 SHALL BE INCLUDED IN THE VARIOUS ITEMS BID IN THE PROJECT.

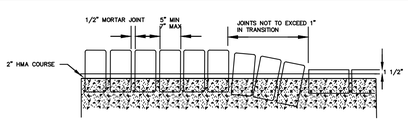
2) TOP OF CURB SHALL NOT BE SET HIGHER THAN ADJACENT EXISTING OR PROPOSED SIDEWALK UNDER ANY CONDITION.

3) FULL DEPTH REPAIR TO BE CONSTRUCTED ALONG THE ROAD EDGE OF NEW CURB UP TO 2' WIDE. COST TO BE INCLUDED IN PRICE OF CURB. SEE FULL DEPTH REPAIR DETAIL

4) SAW CUT 1/2" FOOT IN FRONT OF CURB TO REMOVE CONCRETE CURB AND MONOLITHICALLY POURED CONCRETE CURB PRIOR TO REMOVAL, COST TO BE INCLUDED IN THE VARIOUS BID ITEMS

STANDARD GRANITE BLOCK CURB DETAIL

N.T.S.



DEPRESSED GRANITE BLOCK CURB DETAIL

N.T.S.

MICHIGAN AVENUE IMPROVEMENT PROJECT
ENTIRE LENGTH OF MICHIGAN AVENUE & FAITOUTE COURT
CONSTRUCTION DETAILS

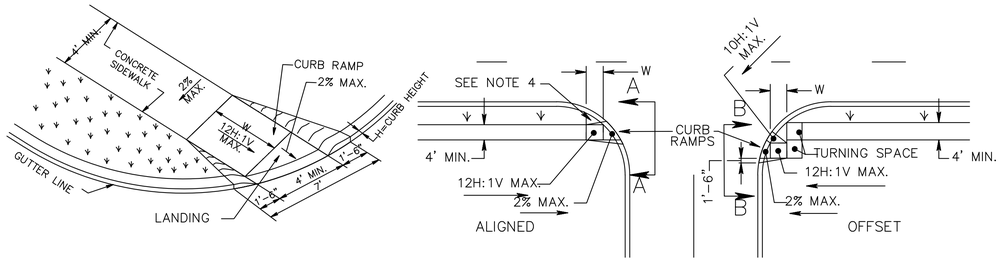
CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
SUMMIT NJ 07901
UNION COUNTY

Aaron J. Schrager
Professional Engineer
New Jersey Lic. No. 46143
City Engineer

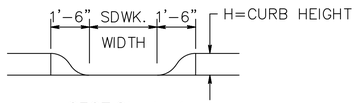
DATE: 6/6/2022

DRAWN BY: SK

SCALE N.T.S.



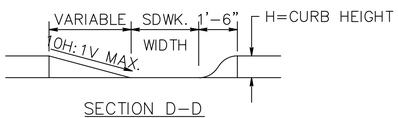
CURB RAMP TYPE 5



SECTION A–A

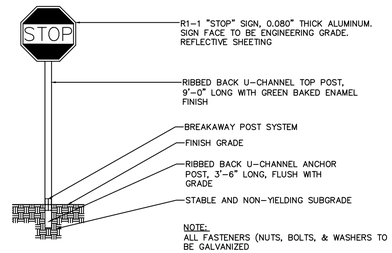
NOTE:
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).

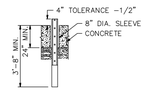
CURB RAMP TYPE 2, 5 OR 6	
H INCHES	W FEET
3	3
4	4
5	5
6	6
7	7
8	8
9	9



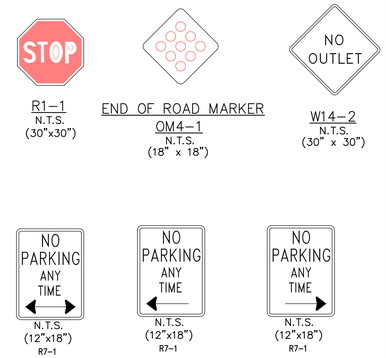
SECTION D–D

GENERAL NOTES:
1. LANDING AREA, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP SHALL BE KEPT CLEAR OF OBSTRUCTIONS.
2. DIMENSIONS SHOWN IN TABLES ARE FOR RELATIVELY FLAT SIDEWALK AREAS. CARE SHOULD BE TAKEN WHEN DETERMINING CURB RAMP SIZE BASED ON CURB HEIGHT (H) WHERE ELEVATION OF CURB AND SIDEWALK VARY DRASTICALLY IN AREA OF PROPOSED CURB RAMP.
3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
7. WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, CURB RAMP TYPE 7 SHOULD BE USED, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
8. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
9. PREFERRED AND ALTERNATE TREATMENTS SHOULD NOT BE INTERMIXED WITHIN THE SAME INTERSECTION.
10. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.





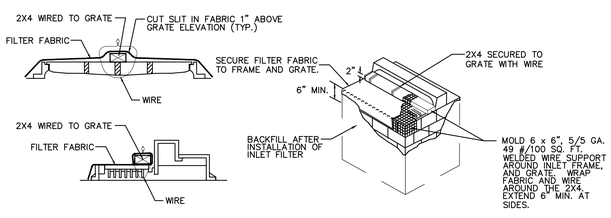
CONCRETE INSTALLATION



SIGN DETAILS
N.T.S.

NOTES:
1) SIGNS TO BE MOUNTED ON A 2 3/8" OD 10' BLACK POWDER COATED POLE
2) POLE TO HAVE A 18" MIN. DIA. X 4'–0" DEEP CONCRETE FOOTING
3) SIGNS TO BE MOUNTED ON A LYLE SIGNS PLACE HOLDER
4) COST FOR POST, HARDWARE, AND FOOTING TO BE INCLUDED IN "STREET NAME SIGN POST"
5) SIGN WIDTHS MAY VARY
6) WHITE BACKGROUND, BLACK LETTERS, BLOCK BORDER
7) MUST MEET MUTCD REFLECTIVE STANDARDS
8) PROOF MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALL

STREET SIGN DETAILS: 9" SIGN (D3–1)
N.T.S.



NOTE: TWO TRAFFIC CONES TO BE PLACED ON EACH SIDE OF INLET

1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.
2. CONTRACTOR TO REMOVE FABRIC AND MESH JUST PRIOR TO PAVING.
3. IF BOTTOM OF ROADWAY IS BELOW TOP OF INLET GRATE, CONSTRUCT PROPERLY FILTERED OPENING(S) IN INLET WALL TO ALLOW PASSAGE OF WATER.
4. THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

INLET FILTER DETAIL
N.T.S.

REVISIONS

NO.	DATE	DESCRIPTION

MICHIGAN AVENUE IMPROVEMENT PROJECT
ENTIRE LENGTH OF MICHIGAN AVENUE & FAITOUTE COURT
CONSTRUCTION DETAILS

CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
SUMMIT NJ 07901
UNION COUNTY

Aaron J. Schrager
Professional Engineer
New Jersey Lic. No. 46143
City Engineer

DATE:
6/6/2022

DRAWN BY: SK

SCALE
N.T.S.

FLOOD NOTE

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE X (UNSHADED) (AREA OF MINIMAL FLOOD HAZARD) OF THE FLOOD INSURANCE RATE MAP, COMMUNITY NO. 340476, MAP NUMBER 34039C0009F WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 20, 2006.

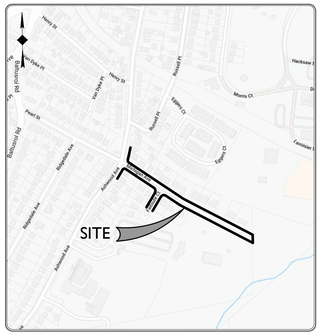
SURVEY REFERENCES

1. MAP TITLED TAX MAP, CITY OF SUMMIT, NEW JERSEY - SHEETS 41 & 43 BY THOMAS F. MILLER PLS DATED APRIL 2012.

SURVEY NOTES

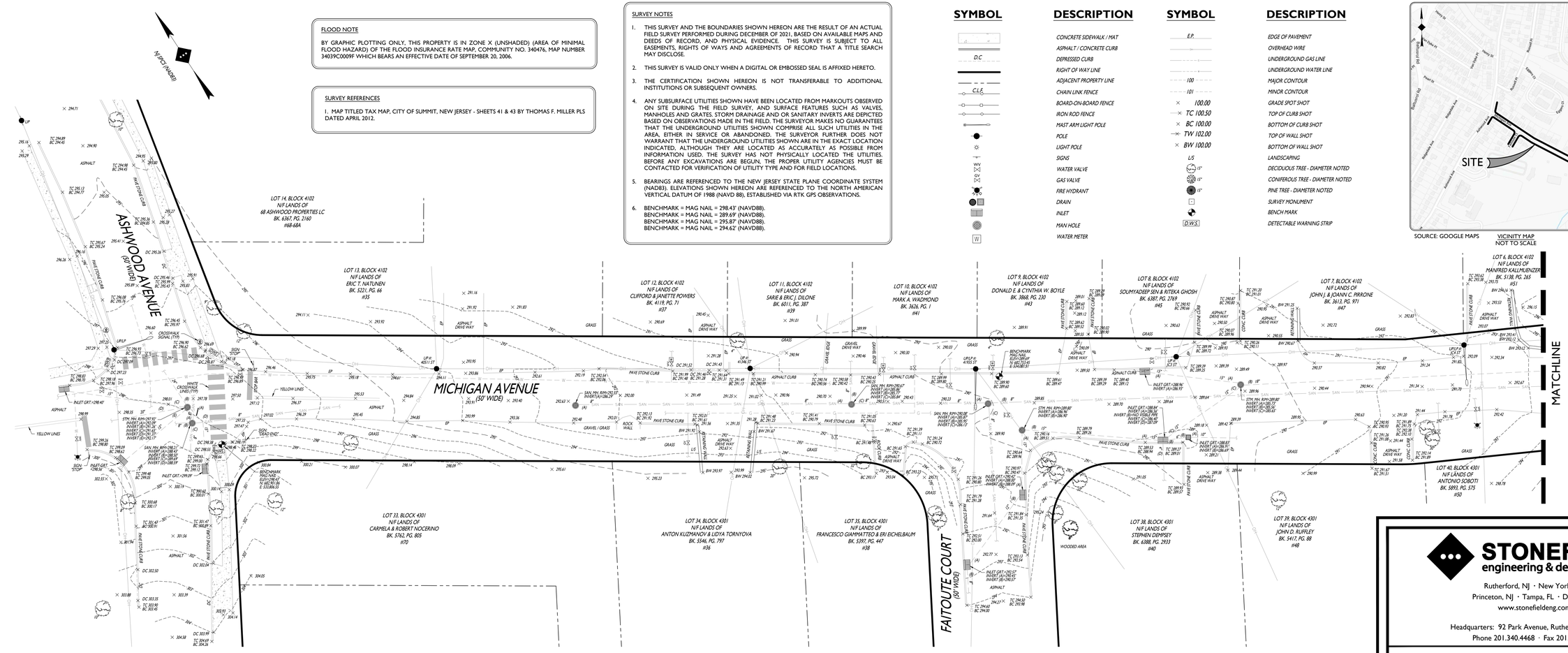
1. THIS SURVEY AND THE BOUNDARIES SHOWN HEREON ARE THE RESULT OF AN ACTUAL FIELD SURVEY PERFORMED DURING DECEMBER OF 2021, BASED ON AVAILABLE MAPS AND DEEDS OF RECORD, AND PHYSICAL EVIDENCE. THIS SURVEY IS SUBJECT TO ALL EASEMENTS, RIGHTS OF WAYS AND AGREEMENTS OF RECORD THAT A TITLE SEARCH MAY DISCLOSE.
2. THIS SURVEY IS VALID ONLY WHEN A DIGITAL OR EMBOSSED SEAL IS AFFIXED HERETO.
3. THE CERTIFICATION SHOWN HEREON IS NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
4. ANY SUBSURFACE UTILITIES SHOWN HAVE BEEN LOCATED FROM MARKOUTS OBSERVED ON SITE DURING THE FIELD SURVEY, AND SURFACE FEATURES SUCH AS VALVES, MANHOLES AND GRATES. STORM DRAINAGE AND OR SANITARY INVERTS ARE DEPICTED BASED ON OBSERVATIONS MADE IN THE FIELD. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION USED. THE SURVEY HAS NOT PHYSICALLY LOCATED THE UTILITIES. BEFORE ANY EXCAVATIONS ARE BEGUN, THE PROPER UTILITY AGENCIES MUST BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND FOR FIELD LOCATIONS.
5. BEARINGS ARE REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD83). ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), ESTABLISHED VIA RTK GPS OBSERVATIONS.
6. BENCHMARK = MAG NAIL = 298.43' (NAVD88).
   BENCHMARK = MAG NAIL = 289.69' (NAVD88).
   BENCHMARK = MAG NAIL = 295.87' (NAVD88).
   BENCHMARK = MAG NAIL = 294.62' (NAVD88).

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CONCRETE SIDEWALK / MAT	E.P.	EDGE OF PAVEMENT
D.C	ASPHALT / CONCRETE CURB		OVERHEAD WIRE
	DEPRESSED CURB		UNDERGROUND GAS LINE
	RIGHT OF WAY LINE		UNDERGROUND WATER LINE
	ADJACENT PROPERTY LINE	100	MAJOR CONTOUR
C.L.F.	CHAIN LINK FENCE	101	MINOR CONTOUR
	BOARD-ON-BOARD FENCE	× 100.00	GRADE SPOT SHOT
	IRON ROD FENCE	× TC 100.50	TOP OF CURB SHOT
	MAST ARM LIGHT POLE	× BC 100.00	BOTTOM OF CURB SHOT
	POLE	× TW 102.00	TOP OF WALL SHOT
	LIGHT POLE	× BW 100.00	BOTTOM OF WALL SHOT
	SIGNS	L/S	LANDSCAPING
	WATER VALVE	15"	DECIDUOUS TREE - DIAMETER NOTED
	GAS VALVE	15"	CONIFEROUS TREE - DIAMETER NOTED
	FIRE HYDRANT	15"	PINE TREE - DIAMETER NOTED
	DRAIN		SURVEY MONUMENT
	INLET		BENCH MARK
	MAN HOLE	D.W.S.	DETECTABLE WARNING STRIP
W	WATER METER		



SOURCE: GOOGLE MAPS

VICINITY MAP
NOT TO SCALE



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ROUTE SURVEY

MAP OF SURVEY OF:

MICHIGAN AVENUE
CITY OF SUMMIT
COUNTY OF UNION, NEW JERSEY

ISSUE	DATE	BY	FIELD DATE	FIELD CREW	DESCRIPTION
2	5/20/2022	DJS	4/12/2022	JD	ADD WATER / GAS UTILITIES
1	12/20/2021	DJS	12/01/2021	JD	FOR ISSUE

SUBJECT TO RESTRICTIONS, EASEMENTS OF RECORD AND OTHER FACTS WHICH A CURRENT TITLE SEARCH MIGHT DISCLOSE.

THOMAS F. MILLER
NEW JERSEY LAND SURVEYOR No. 24GS03626400
LICENSED PROFESSIONAL LAND SURVEYOR
NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24GA28184500

SCALE: 1"=20'	PROJECT ID: PRI-210202	SHEET: 1 OF 1

Z:\PRINCETON\PRI2021\PRI-210202 CITY OF SUMMIT, NEW JERSEY - MARQUIS CITY OF SUMMIT STREETS, SUMMIT, NJ_SURVEY\MICHIGAN\MICHIGAN AVENUE - SUMMIT, NJ V2.DWG