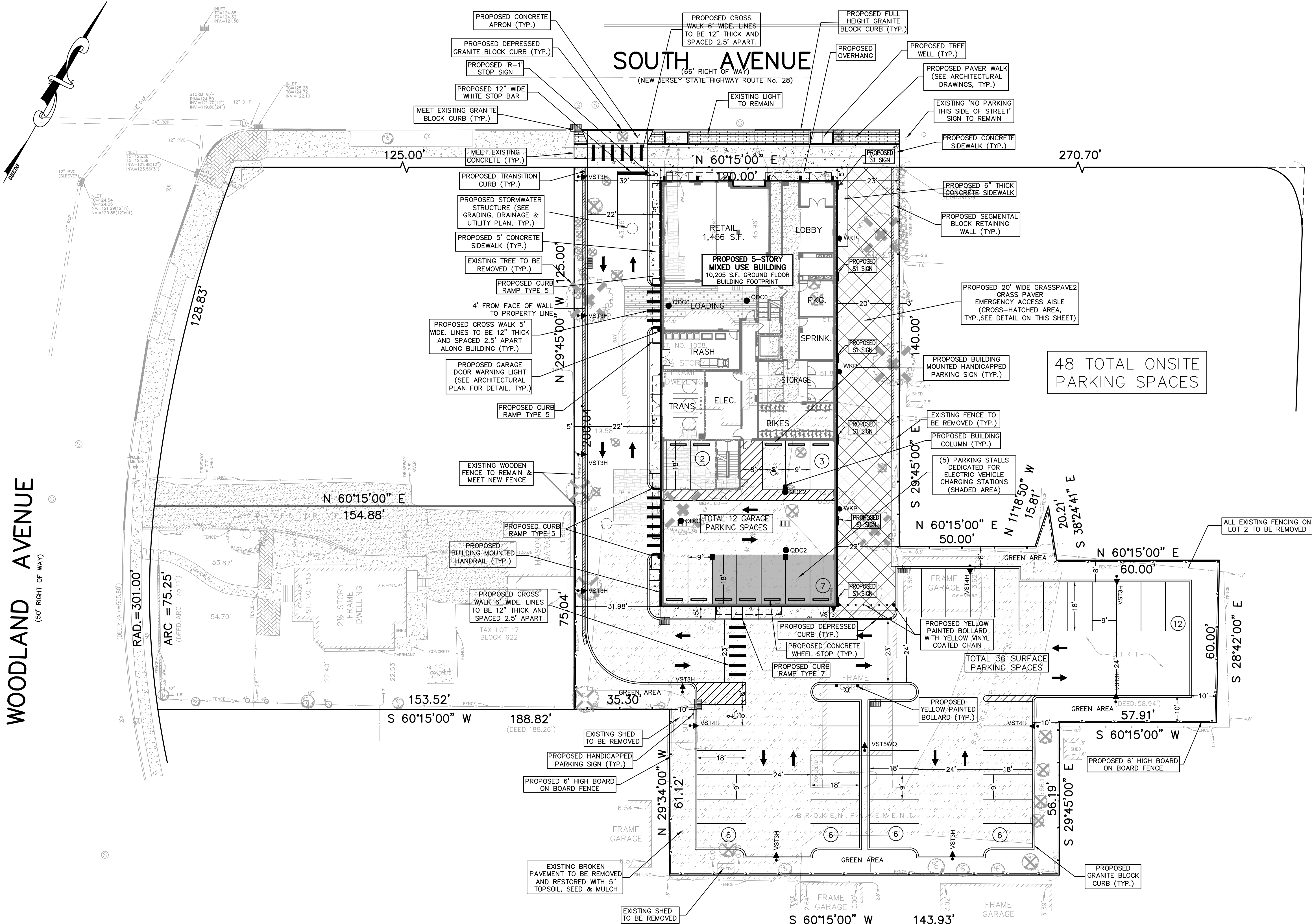


WOODLAND AVENUE
(50' RIGHT OF WAY)

BELVIDERE AVENUE
(50' RIGHT OF WAY)

SOUTH AVENUE
(NEW JERSEY STATE HIGHWAY ROUTE No. 28)



SANITARY SEWER FLOW CALCULATIONS

THE FOLLOWING SANITARY SEWER FLOW CALCULATIONS WERE PREPARED IN ACCORDANCE WITH N.J.A.C. 7:14A-23.3.

PROPOSED CONDITIONS

TYPE OF ESTABLISHMENT: 1 BEDROOM/STUDIO UNITS
REQUIREMENT: 150 G.P.D. PER BEDROOM UNIT
34 UNITS X 150 G.P.D. = 5,100 G.P.D.

TYPE OF ESTABLISHMENT: 2 BEDROOM UNITS
REQUIREMENT: 225 G.P.D. PER BEDROOM UNIT
8 UNIT X 225 G.P.D. = 1,800 G.P.D.

TYPE OF ESTABLISHMENT: RETAIL
REQUIREMENT: 0.10 G.P.D. PER SQ. FT. FLOOR AREA
1,800 S.F. X (0.10 G.P.D./SQ. FT.) = 180 G.P.D.

TOTAL PROPOSED FLOW = 7,080 G.P.D. < 8,000 G.P.D. (TWA PERMIT NOT REQUIRED)

DOMESTIC WATER DEMAND CALCULATIONS

THE FOLLOWING DOMESTIC WATER DEMAND CALCULATIONS WERE PREPARED IN ACCORDANCE WITH N.J.A.C. 8:21 TABLE 5.1 FOR THE RESIDENTIAL COMPONENT AND N.J.A.C. 7:10-12.6(b)(2) FOR THE RETAIL COMPONENT:

PROPOSED CONDITIONS

TYPE OF ESTABLISHMENT: ONE BEDROOM UNIT (GARDEN APARTMENT)
REQUIREMENT: 120 G.P.D.
34 UNITS X 120 G.P.D. = 4,080 G.P.D.

TYPE OF ESTABLISHMENT: TWO BEDROOM UNIT (GARDEN APARTMENT)
REQUIREMENT: 175 G.P.D.
8 UNIT X 175 G.P.D. = 1,400 G.P.D.

TYPE OF ESTABLISHMENT: RETAIL
REQUIREMENT: 0.125 GAL/SQ. FT.
1,800 S.F. X (0.125 GAL/SQ. FT.) = 225 G.P.D.

TOTAL DEMAND = 5,705 G.P.D. < 12,000 G.P.D. (PERMIT NOT REQUIRED)

GRAPHIC SCALE



LEGEND

	- EXISTING SIDEWALK ELEVATION		- PROPOSED CONTOUR
	- EXISTING GROUND ELEVATION		- PROPOSED SPOT ELEVATION
	- EXISTING CENTERLINE ELEVATION		- EXISTING PAVEMENT ELEVATION
	- EXISTING TOP OF CURB ELEVATION		- EXISTING GRAVEL ELEVATION
	- EXISTING BOTTOM OF CURB ELEVATION		- EXISTING BUILDING ELEVATION
	- EXISTING DEPRESSED CURB		- EXISTING CONCRETE ELEVATION
	- EXISTING SANITARY MANHOLE		- EXISTING TOP OF GRATE ELEVATION
	- EXISTING STORM MANHOLE		- EXISTING INVERT
	- EXISTING UTILITY POLE		- EXISTING SPOT ELEVATION
	- EXISTING WATER VALVE		- EXISTING EDGE OF PAVEMENT ELEVATION
	- EXISTING TREE AND SIZE		- EXISTING CONTOUR
	- EXISTING TREES TO BE REMOVED		

GENERAL NOTES:

- THIS DRAWING REFERENCES A TOPOGRAPHIC SURVEY PREPARED BY:
EKA ASSOCIATES, P.A.
328 PARK AVENUE
SCOTCH PLAINS, NJ 07076
DATED 7/23/18
REVISED 7/31/18
- THIS PARCEL IS KNOWN AS LOT 2 IN BLOCK 622 AS SHOWN ON SHEET 36 OF THE TAX MAPS OF THE CITY OF PLAINFIELD
- AREA OF PARCEL = 39,895 S.F. OR 0.92 ACRES
- THIS PARCEL IS LOCATED ENTIRELY IN THE TDON/TSC & TDON/PO2 ZONE AS SHOWN ON THE ZONING MAP OF THE CITY OF PLAINFIELD.
- THIS PARCEL MAY BE SUBJECT TO UNDERGROUND UTILITIES AND/OR EASEMENTS WHICH ARE NOT SHOWN.
- IF THIS DOCUMENT DOES NOT CONTAIN A RAISED IMPRESSION SEAL OF THE PROFESSIONAL, IT IS NOT AN AUTHORIZED ORIGINAL AND MAY HAVE BEEN ALTERED.
- NO DETERMINATION WAS MADE AS TO THE PRESENCE AND/OR NONEXISTENCE OF TOXIC WASTES. ALSO NO DETERMINATION OF DEPTH TO GROUND WATER WAS MADE. THE CLIENT SHOULD PURSUE THESE MATTERS AS ITEMS SEPARATE AND APART FROM THIS PLAN.
- DATUM INFORMATION: ELEVATIONS SHOWN HEREON ARE BASED UPON THE CITY OF PLAINFIELD TOPOGRAPHIC MAPS (N.G.V.D 1929) LOCAL BENCHMARK IS THE RIM OF A SANITARY SEWER MANHOLE LOCATED IN SOUTH AVENUE, APPROXIMATELY IN LINE WITH THE WESTERLY LINE OF TAX LOT 2, BLOCK 622. RIM ELEVATION = 127.67 (N.G.V.D. 1929).
- DO NOT SCALE DRAWINGS FOR LOCATIONS OF ADJACENT STRUCTURES AND SURROUNDING PHYSICAL CONDITIONS. THESE ITEMS MAY BE SCHEMATIC ONLY EXCEPT WHERE DIMENSIONS ARE SHOWN THEREON.
- THIS IS A SITE PLAN AND UNLESS SPECIFICALLY NOTED ELSEWHERE HEREON IS NOT A SURVEY.
- THIS PLAN HAS BEEN PREPARED FOR PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS PLAN SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS OR DIGITAL STAKEOUT UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND THE DRAWINGS MARKED "ISSUED FOR CONSTRUCTION AND DIGITAL STAKEOUT".
- EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY AND COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL UTILITY INFORMATION TO HIS SATISFACTION PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL PERFORM TEST PITS WHERE EXISTING UTILITIES ARE TO BE CROSSED. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS MAY BE REQUIRED TO AVOID CONFLICTS.
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- ALL MATERIAL, WORKMANSHIP AND CONSTRUCTION FOR SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:
 - NDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AS CURRENTLY AMENDED.
 - CURRENT PREVALING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
 - CURRENT PREVALING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
- ALL EXISTING IMPERVIOUS SURFACES NOT TO REMAIN SHALL BE RESTORED WITH A MINIMUM OF 5" TOPSOIL, SEED AND MULCH.
- EXISTING WATER, GAS & SEWER CONNECTIONS TO BE UTILIZED IF POSSIBLE. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY.
- NO WATERCOURSES, WETLANDS OR OTHER SIGNIFICANT FEATURES, SUCH AS WOODED AREAS, PONDS OR MARSHES, ARE LOCATED ON OR WITHIN 200 FEET OF THE SUBJECT SITE.
- THE ENTIRE PROPERTY IS LOCATED IN ZONE X (AREAS OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN); AS PER FIRM MAP No. 34039C0029F DATED SEPTEMBER 20, 2006.
- NO EASEMENTS, COVENANTS OR DEED RESTRICTIONS EXIST ON THE SUBJECT PROPERTY.
- ALL PROPOSED ADA ACCESSIBLE FACILITIES SHALL COMPLY WITH THE LATEST ADA STANDARDS FOR ACCESSIBLE DESIGN.
- THE APPLICANT SHALL BE RESPONSIBLE FOR REPLACING AND/OR RECONSTRUCTION ANY EXISTING IMPROVEMENTS LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY IF DAMAGED DURING CONSTRUCTION. ANY REPLACED/RECONSTRUCTED ELEMENTS SHALL BE IN ACCORDANCE WITH THE CITY'S DESIGN STANDARDS.
- TOTAL EXISTING ON-SITE IMPERVIOUS COVERAGE = 21,284 S.F.
TOTAL PROPOSED ON-SITE IMPERVIOUS COVERAGE = 30,384 S.F.
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SHEET	TITLE	ISSUED	REVISED
1	SITE PLAN	7/9/2021	9/21/2021
2	GRADING, DRAINAGE & UTILITY PLAN	7/9/2021	9/21/2021
3	LIGHTING PLAN	7/9/2021	9/21/2021
4	LANDSCAPE PLAN	7/9/2021	9/21/2021
5	SOIL EROSION & SEDIMENT CONTROL PLAN	7/9/2021	9/21/2021
6	SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS	7/9/2021	9/21/2021
7	CONSTRUCTION DETAILS 1	7/9/2021	9/21/2021
8	CONSTRUCTION DETAILS 2	7/9/2021	9/21/2021
1 OF 1	FIRE TRUCK MANEUVERING PLAN	7/9/2021	9/21/2021
1 OF 1	TOPOGRAPHIC SURVEY	7/23/18	7/31/18

SITE PLAN
PRELIMINARY & FINAL SITE PLAN
TAX LOT 2, BLOCK 622
CITY OF PLAINFIELD, UNION COUNTY, NEW JERSEY

EKA ASSOCIATES, P.A.

Engineers • Surveyors • Planners
328 Park Avenue, Scotch Plains, N.J. 07076
908-322-2030

REVISIONS:
9/21/2021 - REVISED PER PLANNER COMMENTS

THOMAS J. QUINN, P.E., C.M.E.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 24GE04107200

WOODLAND AVENUE
(50' RIGHT OF WAY)

SOUTH AVENUE
(66' RIGHT OF WAY)
(NEW JERSEY STATE HIGHWAY ROUTE No. 28)

BELVIDERE AVENUE
(50' RIGHT OF WAY)

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LEGEND

-sw	- EXISTING SIDEWALK ELEVATION	160	- PROPOSED CONTOUR
-grd	- EXISTING GROUND ELEVATION	160.0	- PROPOSED SPOT ELEVATION
-cl	- EXISTING CENTERLINE ELEVATION	-grd	- EXISTING PAVEMENT ELEVATION
-tc	- EXISTING TOP OF CURB ELEVATION	-grd	- EXISTING GRAVEL ELEVATION
-bc	- EXISTING BOTTOM OF CURB ELEVATION	-swg	- EXISTING BUILDING ELEVATION
-dc	- EXISTING DEPRESSED CURB	-conc	- EXISTING CONCRETE ELEVATION
-sm	- EXISTING SANITARY MANHOLE	-tc	- EXISTING TOP OF GRATE ELEVATION
-st	- EXISTING STORM MANHOLE	-inv	- EXISTING INVERT
-up	- EXISTING UTILITY POLE	-sp	- EXISTING SPOT ELEVATION
-wv	- EXISTING WATER VALVE	-e.p.	- EXISTING EDGE OF PAVEMENT ELEVATION
-ts	- EXISTING TREE AND SIZE	-200	- EXISTING CONTOUR
-tr	- EXISTING TREES TO BE REMOVED		

GRAPHIC SCALE



GRADING, DRAINAGE & UTILITY PLAN
PRELIMINARY & FINAL SITE PLAN
TAX LOT 2, BLOCK 622
CITY OF PLAINFIELD, UNION COUNTY, NEW JERSEY

EKA ASSOCIATES, P.A.

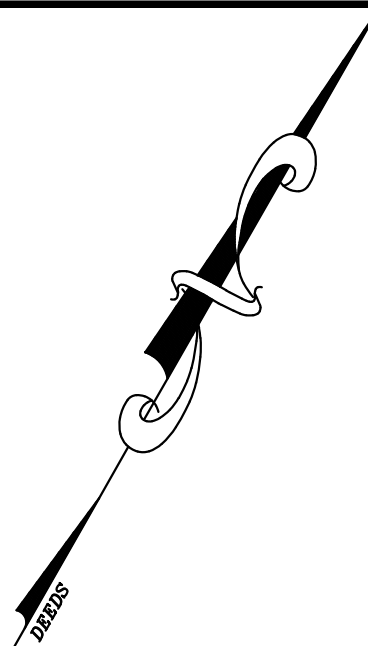
Engineers • Surveyors • Planners
328 Park Avenue, Scotch Plains, N.J. 07076
908-322-2030

REVISIONS:
9/21/2021 - REVISED PER PLANNER COMMENTS

THOMAS J. QUINN, P.E., C.M.E.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 24GE04107200

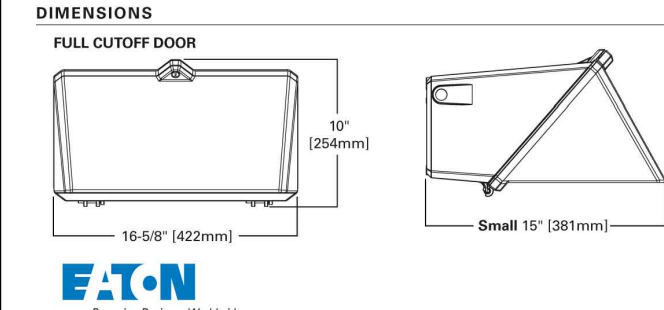
Job No. 845985 Date 7/9/2021 Scale 1" = 20' Drawn MW Map No. FILE Sheet 2 of 8

WOODLAND AVENUE
(50' RIGHT OF WAY)

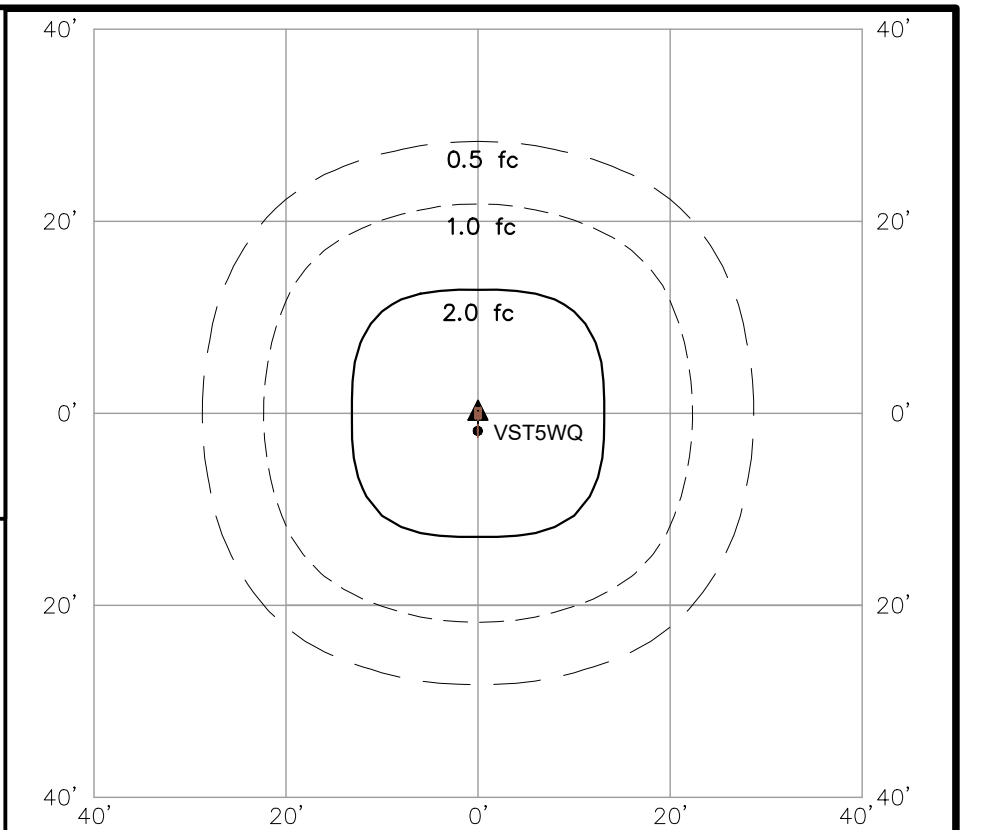


SOUTH AVENUE
(66' RIGHT OF WAY)
(NEW JERSEY STATE HIGHWAY ROUTE NO. 28)

Streetworks



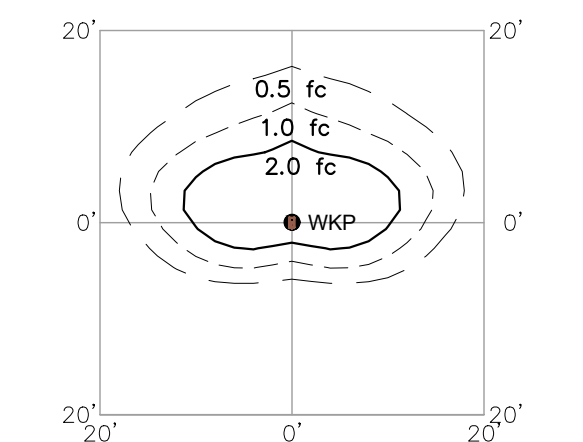
WKP WAL-PAK
27W
LED
WALL MOUNT LUMINAIRE



ISOFOOTCANDLE PLOT OF COOPER LIGHTING VST, 2 BAR, LED, TYPE 5,
AT 10' MOUNTING HEIGHT, 0° VERTICAL TILT

LIGHT FIXTURE DETAIL

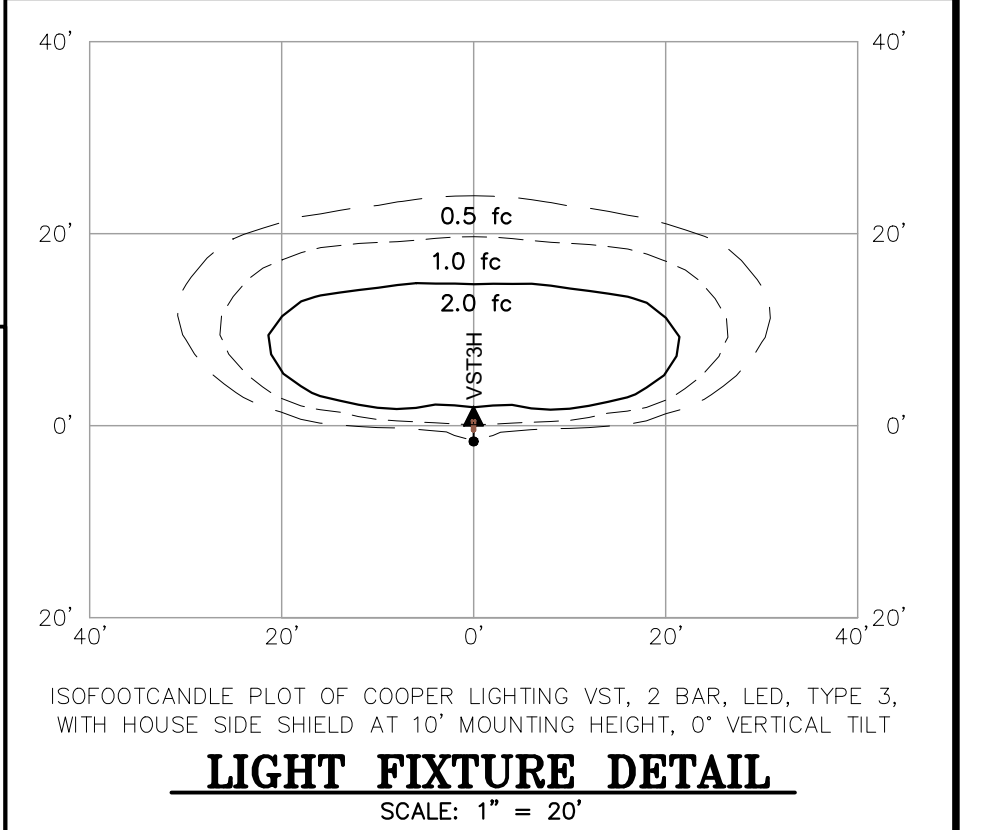
SCALE: 1" = 20'



ISOFOOTCANDLE PLOT OF COOPER LIGHTING WAL-PAK, 27W LED, FULL
CUTOFF AT 10' MOUNTING HEIGHT, 0° VERTICAL TILT

LIGHT FIXTURE DETAIL

SCALE: 1" = 20'

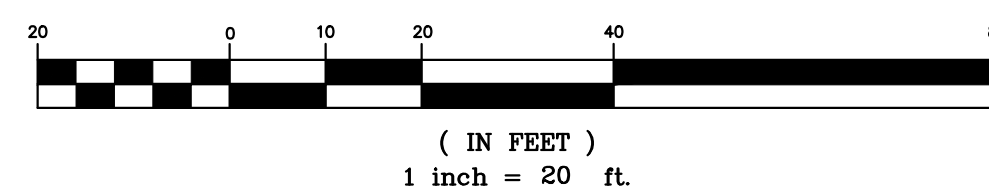


ISOFOOTCANDLE PLOT OF COOPER LIGHTING VST, 2 BAR, LED, TYPE 3,
WITH HOUSE SIDE SHIELD AT 10' MOUNTING HEIGHT, 0° VERTICAL TILT

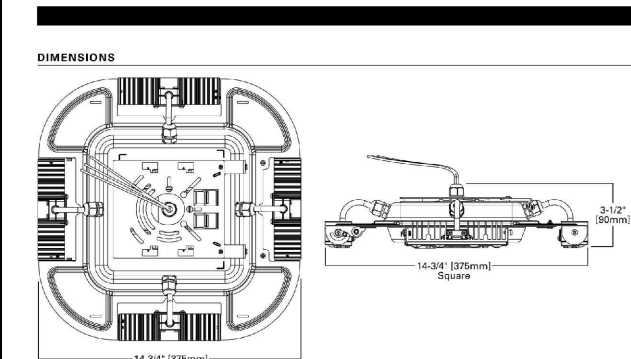
LIGHT FIXTURE DETAIL

SCALE: 1" = 20'

GRAPHIC SCALE



Lumark



GD QUADCAST
Solid State LED
PARKING GARAGE
CANOPY LUMINAIRE

Streetworks

Dimensional Data	Weight	EPA Spacing Feet
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'
1' x 1' x 1' (1' x 1' x 1')	100 lbs	100'

VST
2-12 LightBARS
Solid State LED
AREA LUMINAIRE

Legend	Legend
-swe - EXISTING SIDEWALK ELEVATION	-PROPOSED CONTOUR
-gnd - EXISTING GROUND ELEVATION	-PROPOSED SPOT ELEVATION
-cl - EXISTING CENTERLINE ELEVATION	-EXISTING PAVEMENT ELEVATION
-tc - EXISTING TOP OF CURB ELEVATION	-EXISTING GRAVEL ELEVATION
-bc - EXISTING BOTTOM OF CURB ELEVATION	-EXISTING BUILDING ELEVATION
-dc - EXISTING DEPRESSED CURB	-EXISTING CONCRETE ELEVATION
-sm - EXISTING SANITARY MANHOLE	-EXISTING TOP OF GRATE ELEVATION
-stm - EXISTING STORM MANHOLE	-EXISTING INVERT
-up - EXISTING UTILITY POLE	-EXISTING SPOT ELEVATION
-wv - EXISTING WATER VALVE	-EXISTING EDGE OF PAVEMENT ELEVATION
-et - EXISTING TREE AND SIZE	-EXISTING CONTOUR
-rt - EXISTING TREES TO BE REMOVED	

LIGHTING PLAN
PRELIMINARY & FINAL SITE PLAN
TAX LOT 2, BLOCK 622
CITY OF PLAINFIELD, UNION COUNTY, NEW JERSEY

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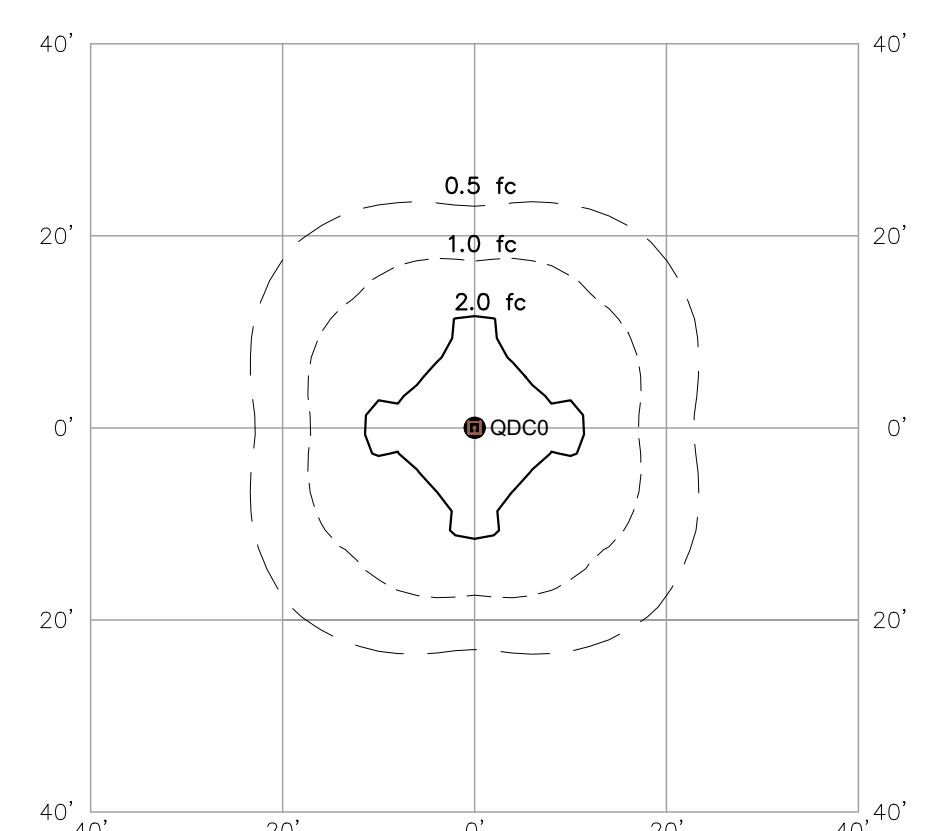
THOMAS J. QUINN, P.E., C.M.E.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 24604107200

Job No. 845985 Date 7/9/2021 Scale 1" = 20' Drawn MW Map No. FILE Sheet 3 of 8

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Max/Avg
PARKING LOT	Illuminance	Fc	1.97	6.4	0.5	3.94	12.80	3.25
PARKING GARAGE	Illuminance	Fc	2.35	9.0	0.4	5.88	22.50	3.83
LOADING GARAGE	Illuminance	Fc	4.96	6.3	4.0	1.24	1.58	1.27
EMERGENCY DRIVE	Illuminance	Fc	1.13	4.6	0.1	11.30	46.00	4.07

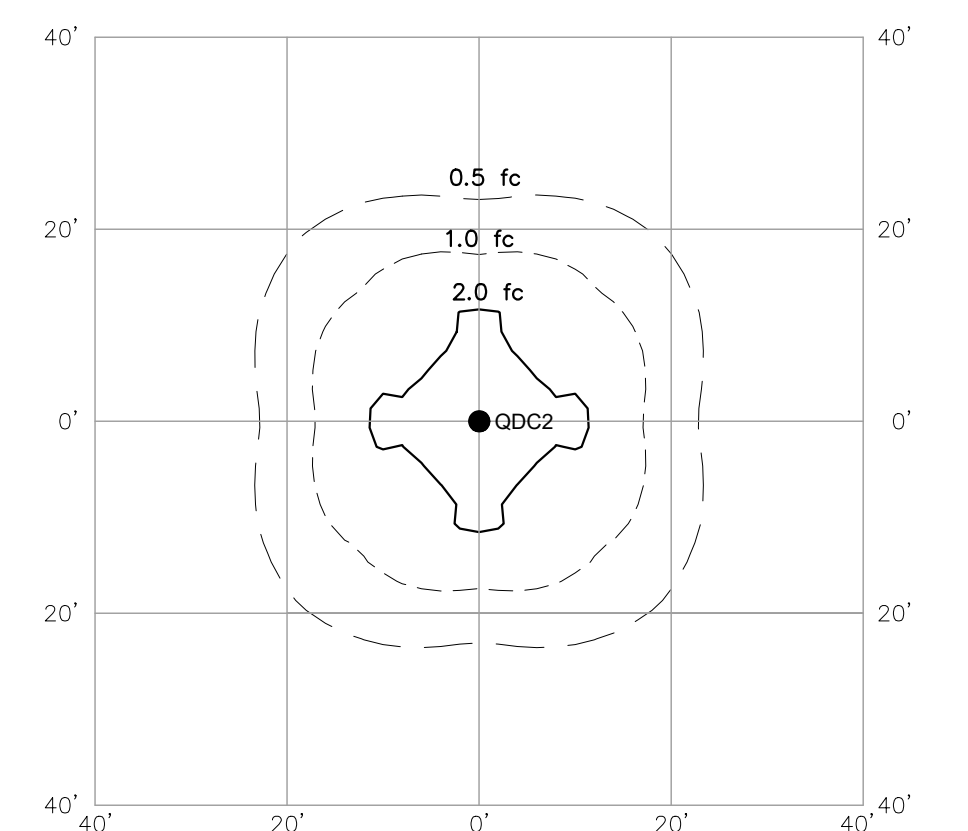
PROPOSED LUMINAIRE SCHEDULE

Symbol	Qty	Label	Arrangement	Tilt	Height	LLF	Description
• VST4H	3	VST-E02-LED-E-U-SL4-HSS	SINGLE	0°	10'	0.76	COOPER LIGHTING VST, 2 BAR, LED, TYPE 4, HOUSE SIDE SHIELD
• VST3H	9	VST-E02-LED-E-U-SL3-HSS	SINGLE	0°	15'	0.76	COOPER LIGHTING VST, 2 BAR, LED, TYPE 2, HOUSE SIDE SHIELD
• VST5WQ	1	VST-E02-LED-E-U-SL2-HSS	SINGLE	0°	15'	0.76	COOPER LIGHTING VST, 2 BAR, LED, TYPE 2, HOUSE SIDE SHIELD
• VST3	1	VST-E02-LED-E-U-SL2	SINGLE	0°	15'	0.76	COOPER LIGHTING VST, 2 BAR, LED, TYPE 2
• QDC2	3	QDCASTB-4 PANELS 20 DEGREE	SINGLE	0°	10'	0.76	COOPER LIGHTING QD QUADCAST, 4 PANEL, LED, 20 DEGREE
• QDC0	2	QDCASTB-4 PANELS 0 DEGREE	SINGLE	0°	13.5'	0.76	COOPER LIGHTING QD QUADCAST, 4 PANEL, LED, 0 DEGREE
• WKP	3	WKP-36-LED-ED-FC-7040	SINGLE	0°	10'	0.76	COOPER LIGHTING WAL-PAK, 27W LED, FULL CUTOFF



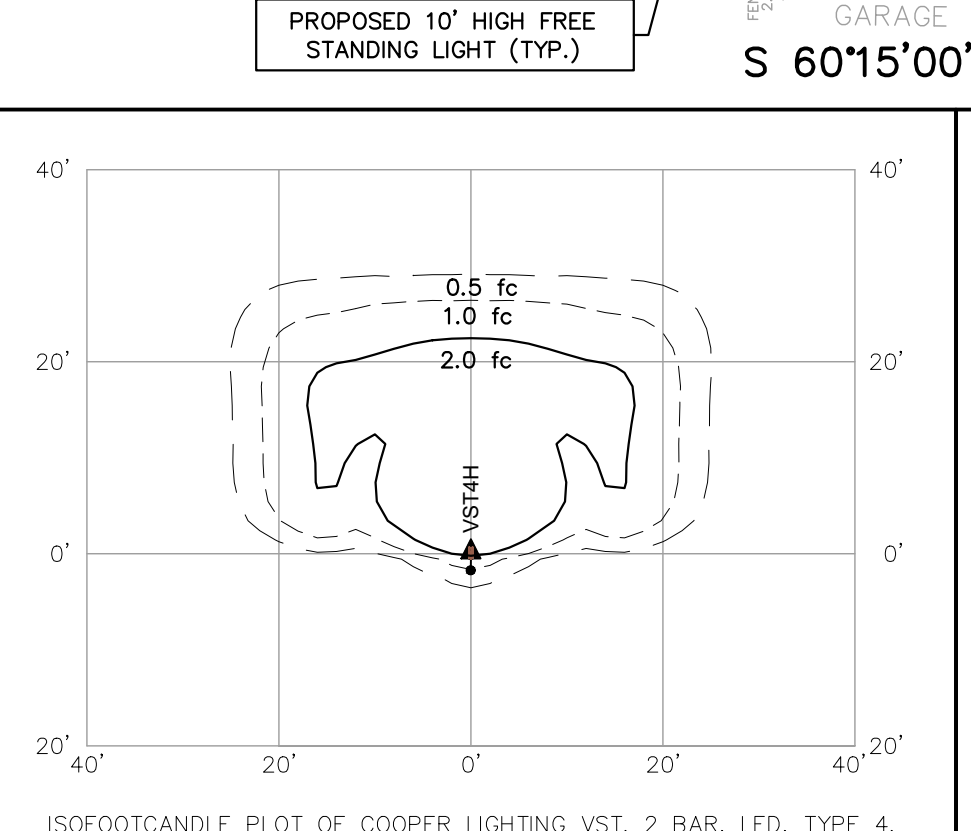
LIGHT FIXTURE DETAIL

SCALE: 1" = 20'



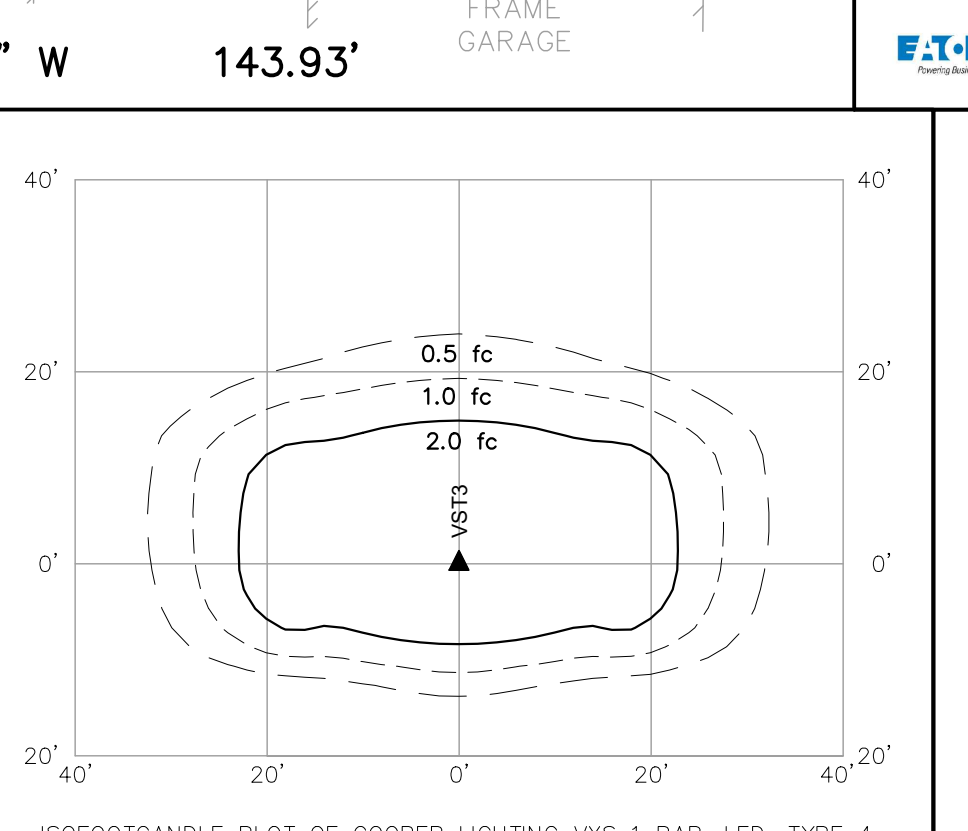
LIGHT FIXTURE DETAIL

SCALE: 1" = 20'



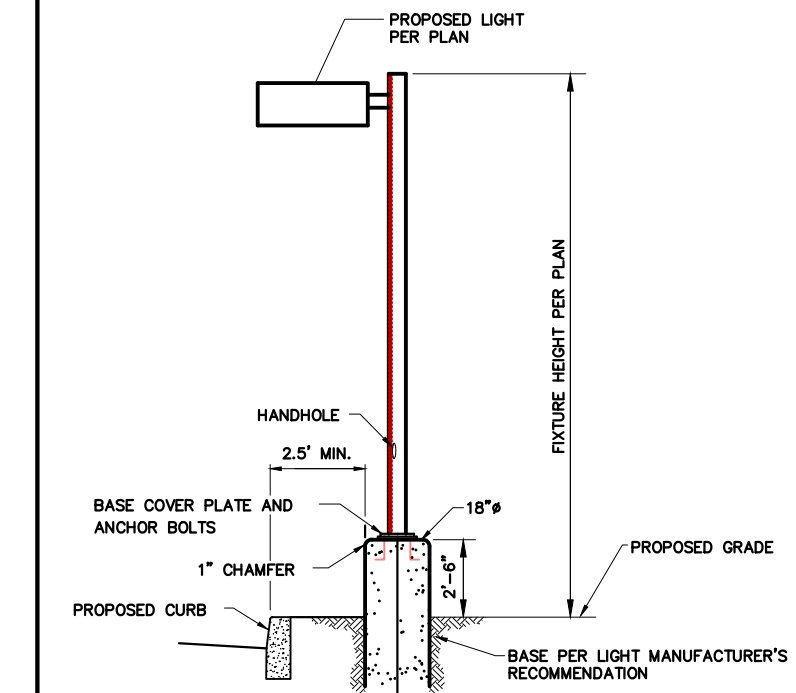
LIGHT FIXTURE DETAIL

SCALE: 1" = 20'



LIGHT FIXTURE DETAIL

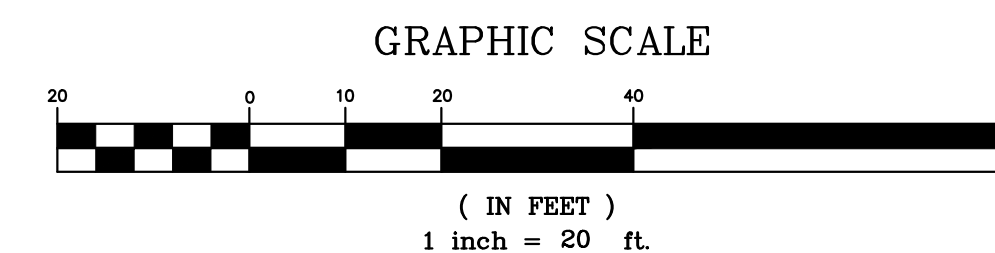
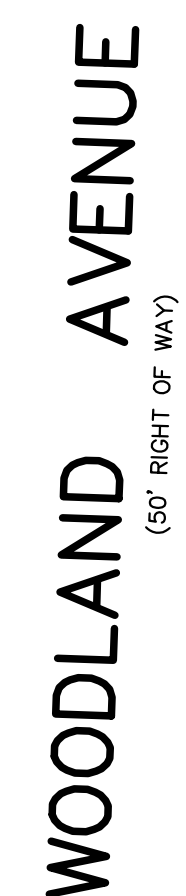
SCALE: 1" = 20'



LIGHT POLE DETAIL

NOT TO SCALE

NOTE:
BASES REQUIRED WHEN LIGHT POLE DISTANCE BEHIND CURB IS LESS THAN THREE FEET.



LEGEND	
-sw	- EXISTING SIDEWALK ELEVATION
-grd	- EXISTING GROUND ELEVATION
-cl	- EXISTING CENTERLINE ELEVATION
-tc	- EXISTING TOP OF CURB ELEVATION
-bc	- EXISTING BOTTOM OF CURB ELEVATION
	- EXISTING DEPRESSED CURB
	- EXISTING SANITARY MANHOLE
	- EXISTING STORM MANHOLE
	- EXISTING UTILITY POLE
	- EXISTING WATER VALVE
	- EXISTING TREE AND SIZE
	- EXISTING TREES TO BE REMOVED
	- PROPOSED CONTOUR
	- PROPOSED SPOT ELEVATION
-grd	- EXISTING PAVEMENT ELEVATION
-	- EXISTING GRAVEL ELEVATION
-bdg	- EXISTING BUILDING ELEVATION
-conc	- EXISTING CONCRETE ELEVATION
IG	- EXISTING TOP OF GRATE ELEVATION
INV.	- EXISTING INVERT
	- EXISTING SPOT ELEVATION
-6.0 ft	- EXISTING EDGE OF PAVEMENT ELEVATION
	- EXISTING CONTOUR



NOTE: THE CONTRACTOR SHALL BE REQUIRED TO REPLACE DEAD OR DYING PLANT MATERIAL FOR A PERIOD OF TWO YEARS FROM THE DATE OF RELEASE OF THE PERFORMANCE GUARANTEE AND SHALL POST A MAINTENANCE GUARANTEE FOR SUCH.

LANDSCAPE PLAN
PRELIMINARY & FINAL SITE PLAN
TAX LOT 2, BLOCK 622
CITY OF PLAINFIELD, UNION COUNTY, NEW JERSEY

EKA ASSOCIATES, P.A.
Engineers • Surveyors • Planners
328 Park Avenue, Scotch Plains, N.J. 07076
908-322-2030

REVISIONS:
9/21/2021 – REVISED PER PLANNER COMMENTS


 THOMAS J. QUINN, P.E., C.M.E.
 PROFESSIONAL ENGINEER
 N.J. LICENSE NO. 24GE04107200

WOODLAND AVENUE
(50' RIGHT OF WAY)

SOUTH AVENUE
(66' RIGHT OF WAY)
(NEW JERSEY STATE HIGHWAY ROUTE No. 28)

BELVIDERE AVENUE
(50' RIGHT OF WAY)



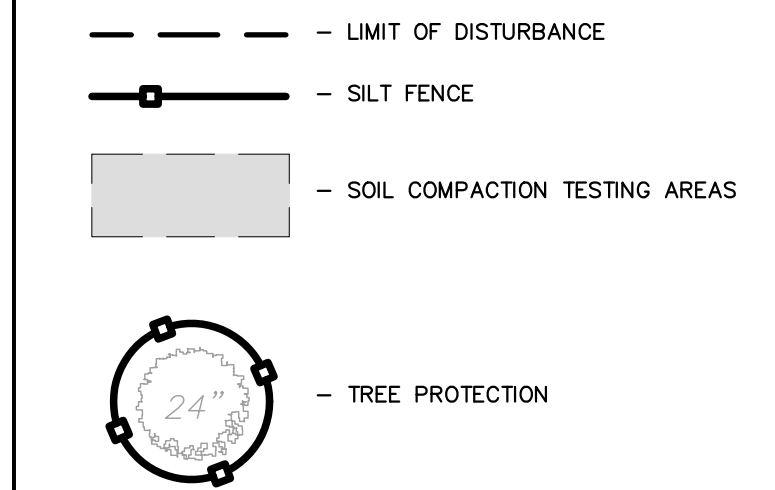
SOILS MAP

SCALE: 1"=60'
MAP SOURCED FROM USDA WEB SOIL SURVEY

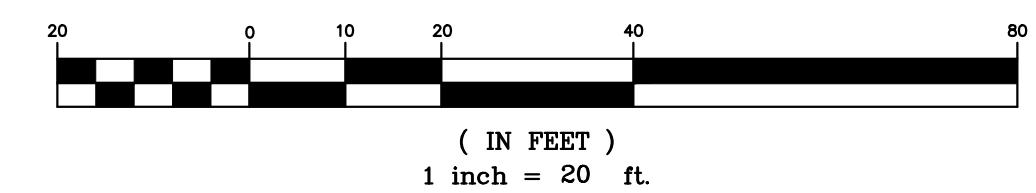
THE SITE IS MADE UP OF:

BhpBr (BIRDSBORO-URBAN LAND COMPLEX, 0 TO 6 PERCENT SLOPES, RARELY FLOODED)
BovB (BOONTON-URBAN LAND-HALEDON COMPLEX, 0 TO 8 PERCENT SLOPES)
UR (URBAN LAND)

SOILS EROSION AND SEDIMENT CONTROL LEGEND



GRAPHIC SCALE



LEGEND

-sw	- EXISTING SIDEWALK ELEVATION	180	- PROPOSED CONTOUR
-gd	- EXISTING GROUND ELEVATION	180	- PROPOSED SPOT ELEVATION
-cl	- EXISTING CENTERLINE ELEVATION	-gd	- EXISTING PAVEMENT ELEVATION
-tc	- EXISTING TOP OF CURB ELEVATION	-gd	- EXISTING GRAVEL ELEVATION
-bc	- EXISTING BOTTOM OF CURB ELEVATION	-bdg	- EXISTING BUILDING ELEVATION
-	- EXISTING DEPRESSED CURB	-conc	- EXISTING CONCRETE ELEVATION
⊙	- EXISTING SANITARY MANHOLE	7G	- EXISTING TOP OF GRATE ELEVATION
⊙	- EXISTING STORM MANHOLE	INV	- EXISTING INVERT
⊙	- EXISTING UTILITY POLE	-E.G.P.	- EXISTING SPOT ELEVATION
⊙	- EXISTING WATER VALVE	-200	- EXISTING EDGE OF PAVEMENT ELEVATION
⊙	- EXISTING TREE AND SIZE		- EXISTING CONTOUR
⊙	- EXISTING TREES TO BE REMOVED		

TOTAL AREA OF DISTURBANCE
AREA = 42,270 S.F. OR 0.97 AC.

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.

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

SOIL EROSION & SEDIMENT CONTROL PLAN
PRELIMINARY & FINAL SITE PLAN
TAX LOT 2, BLOCK 622
CITY OF PLAINFIELD, UNION COUNTY, NEW JERSEY

EKA ASSOCIATES, P.A.

Engineers • Surveyors • Planners
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908-322-2030

REVISIONS:
9/21/2021 - REVISED PER PLANNER COMMENTS

THOMAS J. QUINN, P.E., C.M.E.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 24GE04107200

Job No. 845985 Date 7/9/2021 Scale 1" = 20' Drawn MW Map No. FILE Sheet 5 of 8

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 require 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 State 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 than 1:1)

9. Traffic Control Standards require the installation of a 50x30x6"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 N.J.S.A. 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. Conditions 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 remedying 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, hydramulch shall be applied at a rate of 1500 lbs. per acre in second step. The use of hydramulch, as opposed to straw, is limited to optimum seeding periods 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 silt fence prior to any major soil disturbance.

Maintenance until permanent protection is established.

Week 1

Construct stabilized construction access. Demolish existing buildings, remove all existing impervious surfaces, clear and remove all existing vegetation in those areas where necessary. All remaining vegetation and trees to be properly protected and to remain in its natural state.

Week 2-3

Rough grade site and construct retaining walls.

Week 3-5

Construct building footings.

Week 5-20

Construct stormwater management facilities and conveyance. Provide inlet protection until completion of project.

Week 21-24

Continue with construction of new building.

Week 25-45

Construct curbing and walkways.

Week 46-48

Install pavement base course.

Week 49

Final grading of all lawn and landscape areas.

Week 50

Complete all landscaping and vegetative cover.

Week 51

Installation of all pavement surface course

Week 52

Removal of all temporary sediment and erosion control devices.

upon completion

SEEDING

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

TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH.

SEED SELECTIONS	SEEDING RATE ¹ (pounds) Per Acre	OPTIMUM SEEDING RATE ² Based on Plant Hardiness Zone ³	SEEDING DATES ⁴			OPTIMUM SEEDING DEPTH ⁵ (inches)
			ZONE 5a, 6a	ZONE 6b	ZONE 7a,b	
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	3/1-6/1 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 to 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 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.

MULCHING

Mulching is required on all seeding. Mulch will insure against erosion before grass is established and will promote faster and earlier establishment. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.

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 must be at least 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 foot 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 availability of adhesive agent is required.

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 criss-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 anchored to soil by 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 turfgrasses. 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 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 weed-free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable.

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

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 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 - Seeded Preparation in this Standard, no follow-up of topdressing is mandatory. An excessive amount of topdressing may be made where nitrogen deficiency exists in the soil to the extent that vegetation may develop. In that instance, topdress with 10-10-10 or equivalent at 300 pounds per acre or 70 pounds per 1,000 square feet every 3 to 5 weeks until the gross nitrogen deficiency in the turf is eliminated.

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 seed 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.

DEFINITION

Establishment of permanent vegetative cover on exposed soils where permanent 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 seeded 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 mappers 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 10-20-10 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 retified 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 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 released.

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 is requested. 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 must be at least 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 foot 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 availability of adhesive agent is required.

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 criss-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 coultter 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 soil 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 membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrasses. 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 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 - Seeded Preparation in this Standard, no follow-up of topdressing is mandatory. An excessive amount of topdressing may be made where nitrogen deficiency exists in the soil to the extent that vegetation may develop. In that instance, topdress with 10-10-10 or equivalent at 300 pounds per acre or 70 pounds per 1,000 square feet every 3 to 5 weeks until the gross nitrogen deficiency in the turf is eliminated.

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 seed 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.

DEFINITION

Establishment of permanent vegetative cover on exposed soils where permanent 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 seeded 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 mappers 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 10-20-10 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.

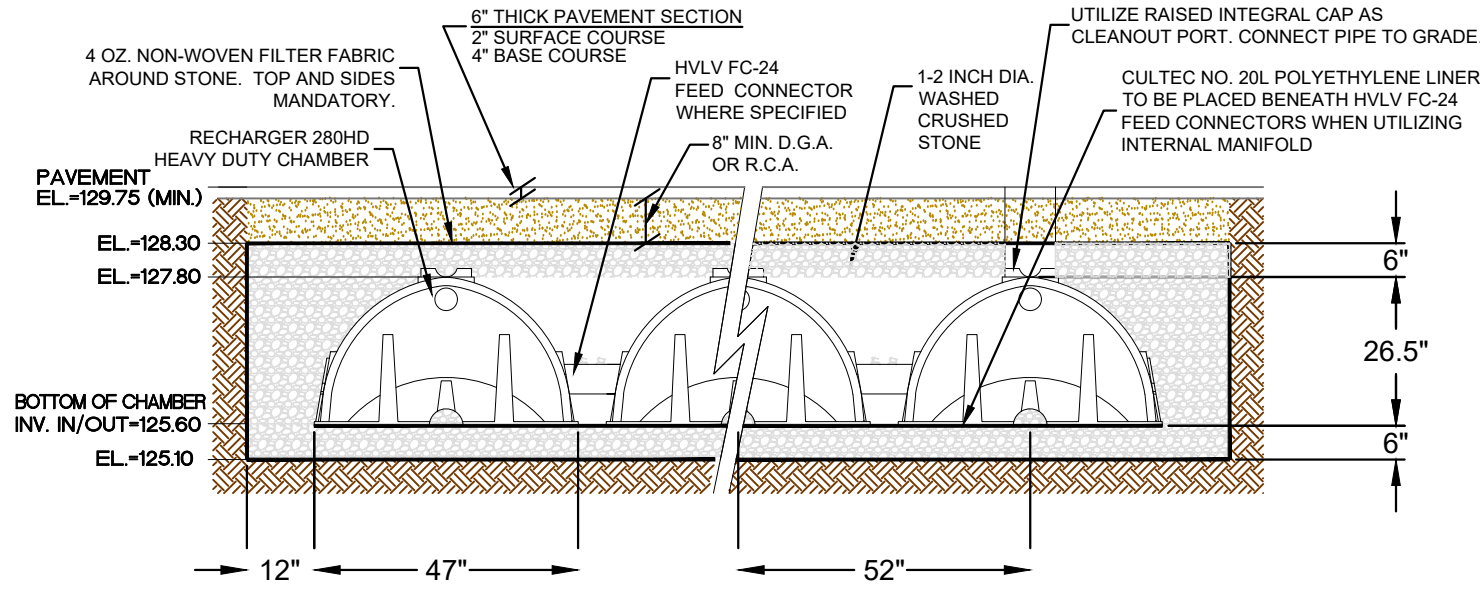
C. Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retified in accordance with the above.

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

TABLE 4-3

PERMANENT VEGETATIVE MIXTURES, PLANTING RATES AND PLANTING DATES¹

SEED MIXTURE ²	PLANTING RATE ³ (pounds) Per Acre	PLANTING DATES												REMARKS
		PLANT HARDINESS ZONES (see Figure 4-1)												
		Zone 5a, 6a				Zone 6b				Zone 7a, 7b				
1. Switchgrass and/or Coastal perennialgrass plus or flutepes	15 35 20 45	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	
2. Deertongue or Switchgrass Ratpao	15 35 20 45	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	Use Deertongue if Switchgrass is superior wildlife plant. Use for waterways. Remove provides quick cover.
3. Switchgrass Deertongue Little Bluestem Sheep fescue plus Portulaca sp.	15 35 20 45	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	Pinelands mixture.
4. Switchgrass Big Bluestem Little Bluestem Sand lovegrass Coastal perennialgrass plus White clover	10 25 10 45 10 25	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	Native warm - season mixture.
5. Bermudagrass Zoyisgrass(weed) or (sprigs)	15 35 20 45	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	A-D	Bermudagrass has superior soil tolerance. Zoyia has greater wear tolerance.
6. Fine Fescue Hard Fescue Dewclaw fescue Strong Creeping Red Fescue Kentucky Bluegrass	45 10 25 10 25 5	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	B-D	General low-maintenance mixture.
7. Strong Creeping red fescue Kentucky bluegrass Perennial ryegrass or Ratpao plus White clover	130 3 5 10 25 5	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	B-D	Suitable wetway mix. Kentucky bluegrass more drought tolerant. Used Redtop for drainage tolerance.
8. Tall Fescue Kentucky bluegrass or Strong Creeping red fescue Perennial ryegrass flutepes	30 7 30 7 25 60	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	B-D	Tall fescue best for droughty conditions. Kentucky bluegrass in heavy shade. Use flutepes to anchor seedling vegetation.
9. Deertongue Kentucky bluegrass Wild rye(Elymus) Switchgrass	20 45 15 35 25 60	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	Native wet mix.
10. Tall fescue Kentucky bluegrass Perennial ryegrass or White clover	25 60 10 25 5	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	White clover can be seeded on lawn sites.
11. Kentucky bluegrass turf-type tall fescue	15 45 1 5	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	Filter strip use for nutrient uptake.
12. Turf-type tall fescue (Seed of 3 cultivars)	350 8	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	3/1-5/15 8/15-10/1	C-D	Use in a managed filter strip for nutrient uptake.
13. Hard Fescue Creeping red fescue or Strong Creeping Red Fescue Perennial ryegrass or Kentucky bluegrass	175 45 1 45 1	3/15-6/1 8/1-9/15												

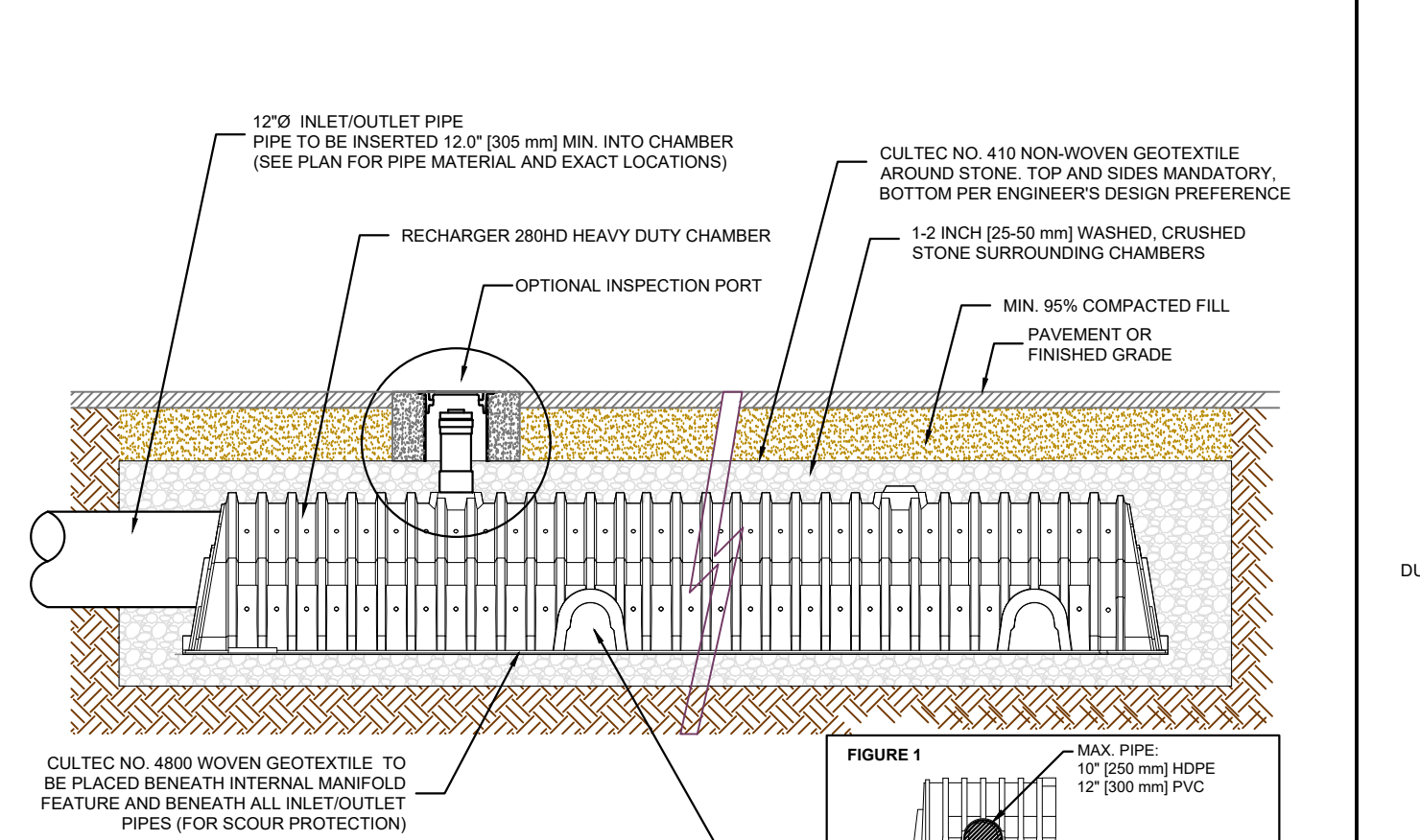


GENERAL NOTES:

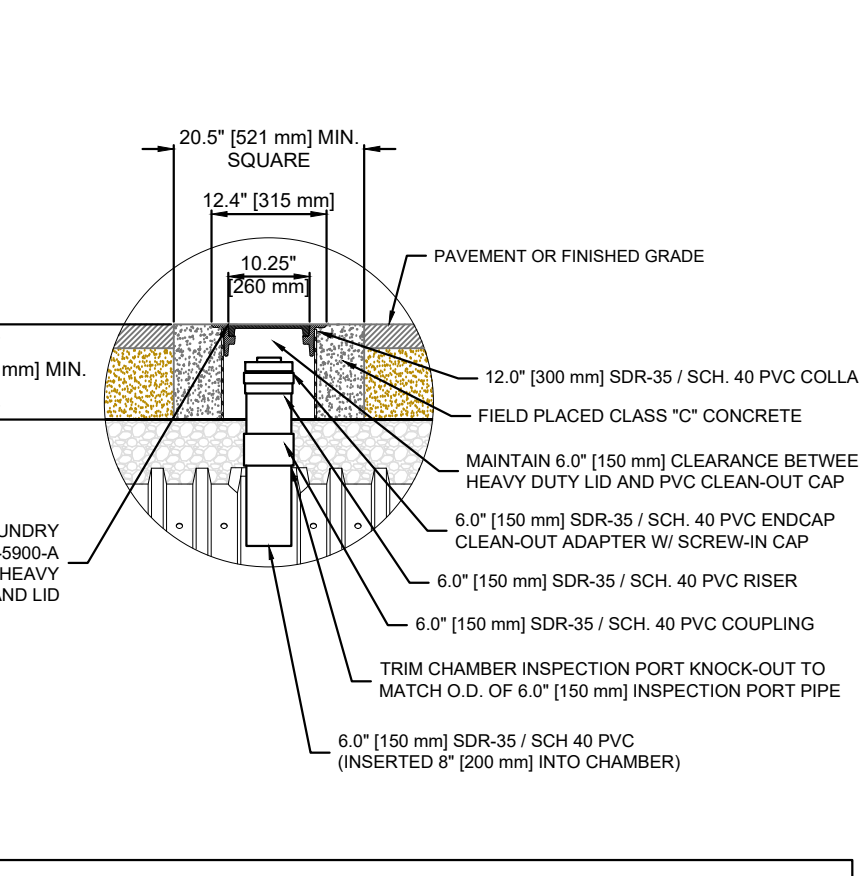
- RECHARGER 280HD BY CULTEC, INC. OF BROOKFIELD, CT. REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
- MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12" (0.5m).
- THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- ALL RECHARGER 280HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
- ALL RECHARGER 280HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
- EXPLORATORY SOIL TEST PIT SHALL BE PERFORMED IN LOCATION OF PROPOSED BASIN TO CONFIRM THE ELEVATION OF THE SEASONAL HIGH WATER SURFACE ELEVATION.
- AN INSPECTION OF THE EXCAVATION FOR THIS SYSTEM SHALL BE MADE BY THE CITY ENGINEER PRIOR TO THE INSTALLATION OF THE DETENTION BASIN.

Chamber Specifications	
Height	26.5 inches
Width	47.00 inches
Length	8.00 feet
Installed Length	7.50 feet
Blank Chamber Volume	42.55 cu. feet
Installed Chamber Volume	58.39 cu. feet
Image for visual reference only. May not reflect selected model.	
Bed Depth	3.63 feet
Bed Width	14.58 feet
Storage Volume Provided	2118.29 cu. feet
Number of Rows Wide	3 pieces
Number of Chambers Long	11 pieces
Chamber Row Width	12.58 feet
Chamber Row Length	78.00 feet
Bed Width	14.58 feet
Bed Length	80.00 feet
Bed Area Required	1166.67 sq. feet

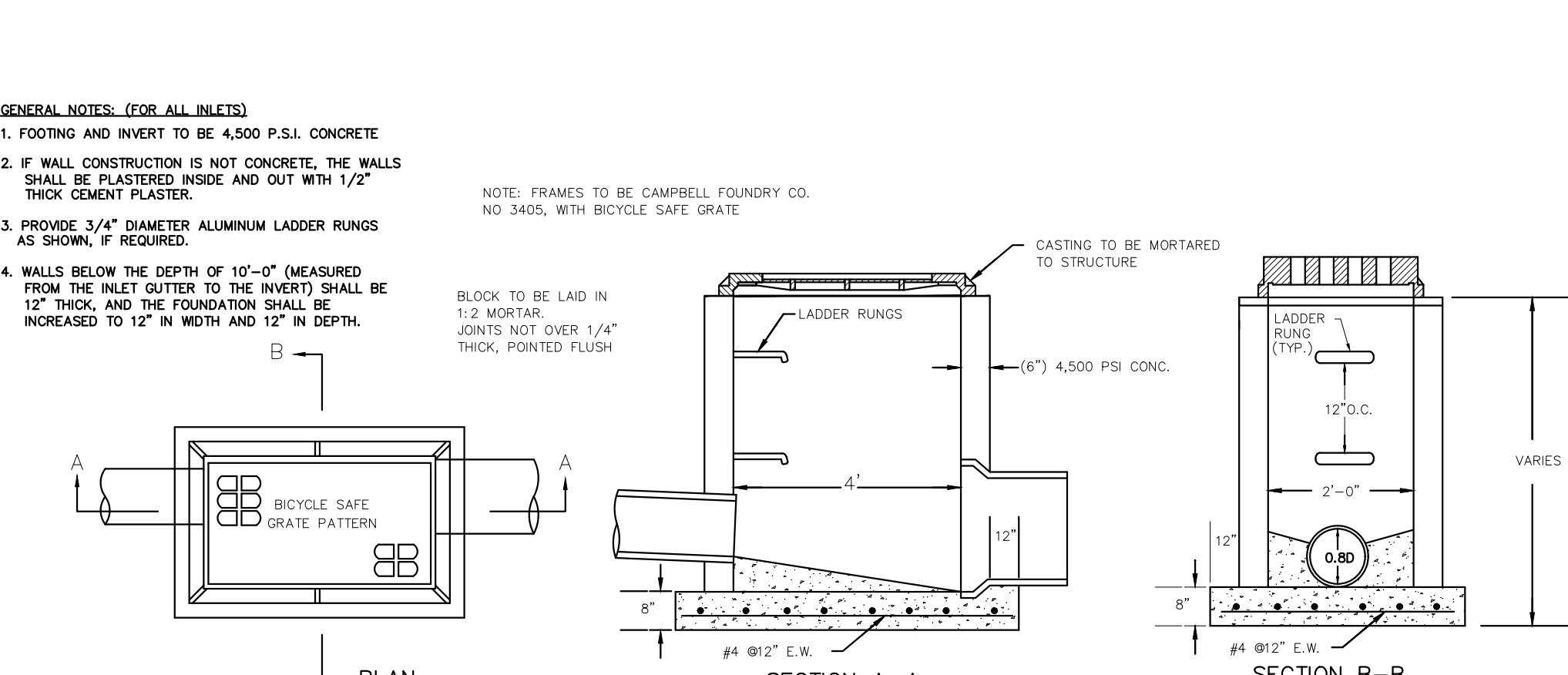
TYPICAL CROSS SECTION RECHARGER 280HD HEAVY DUTY PAVED TRAFFIC APPLICATION
N.T.S.



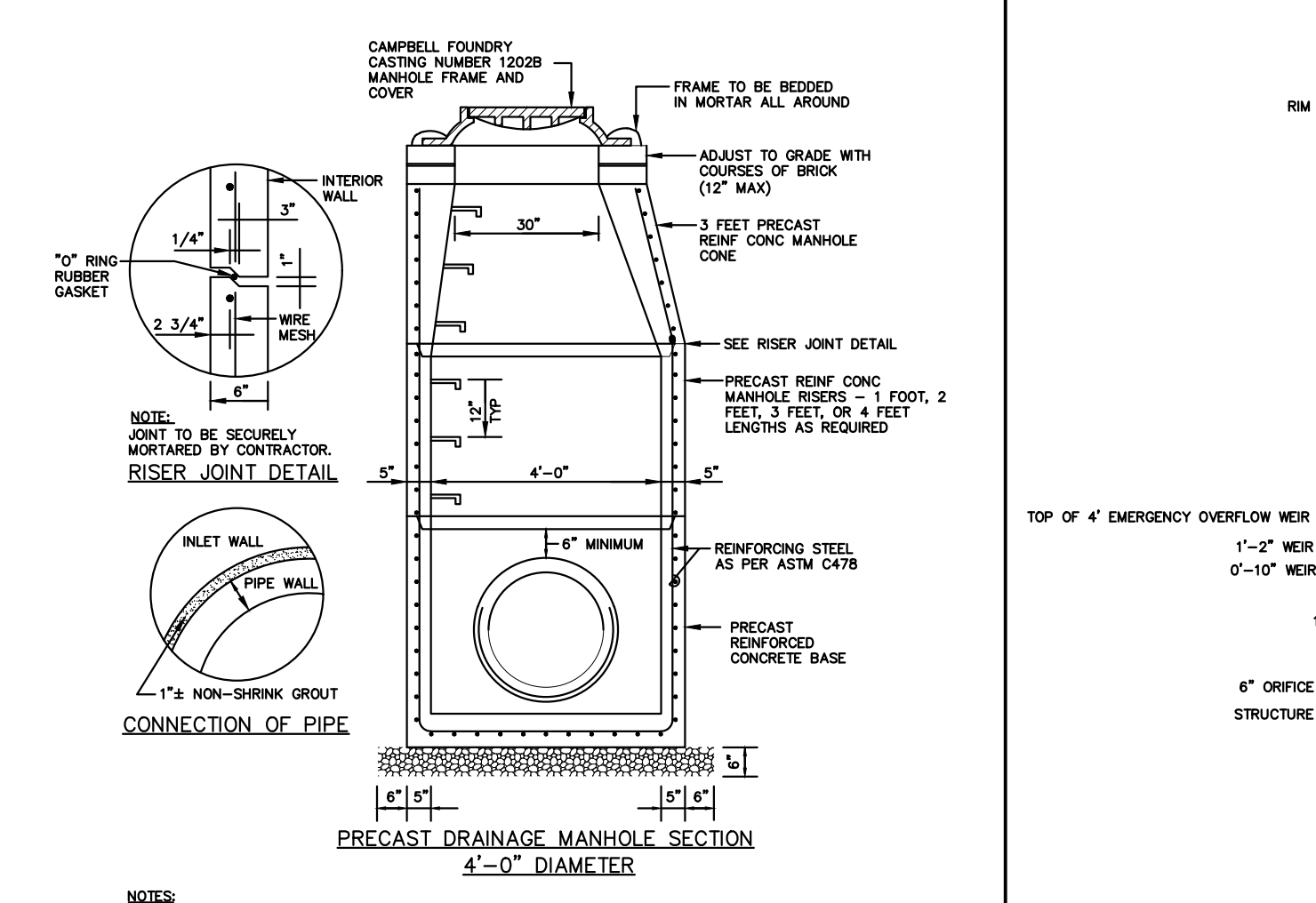
DETAIL OF INTERNAL CULTEC MANIFOLDS
NOT TO SCALE



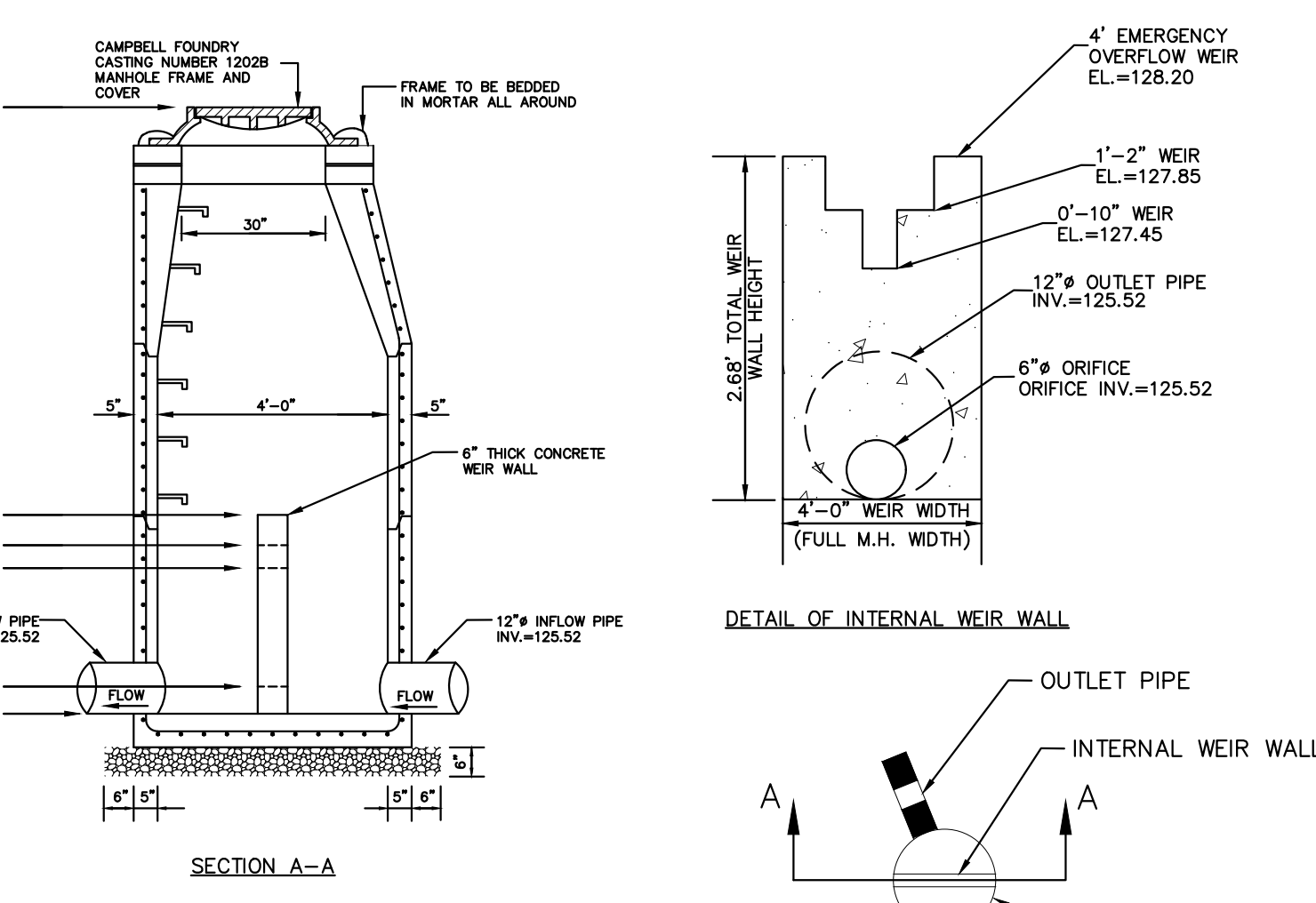
TYPICAL CULTEC CLEANOUT/INSPECTION PORT DETAIL
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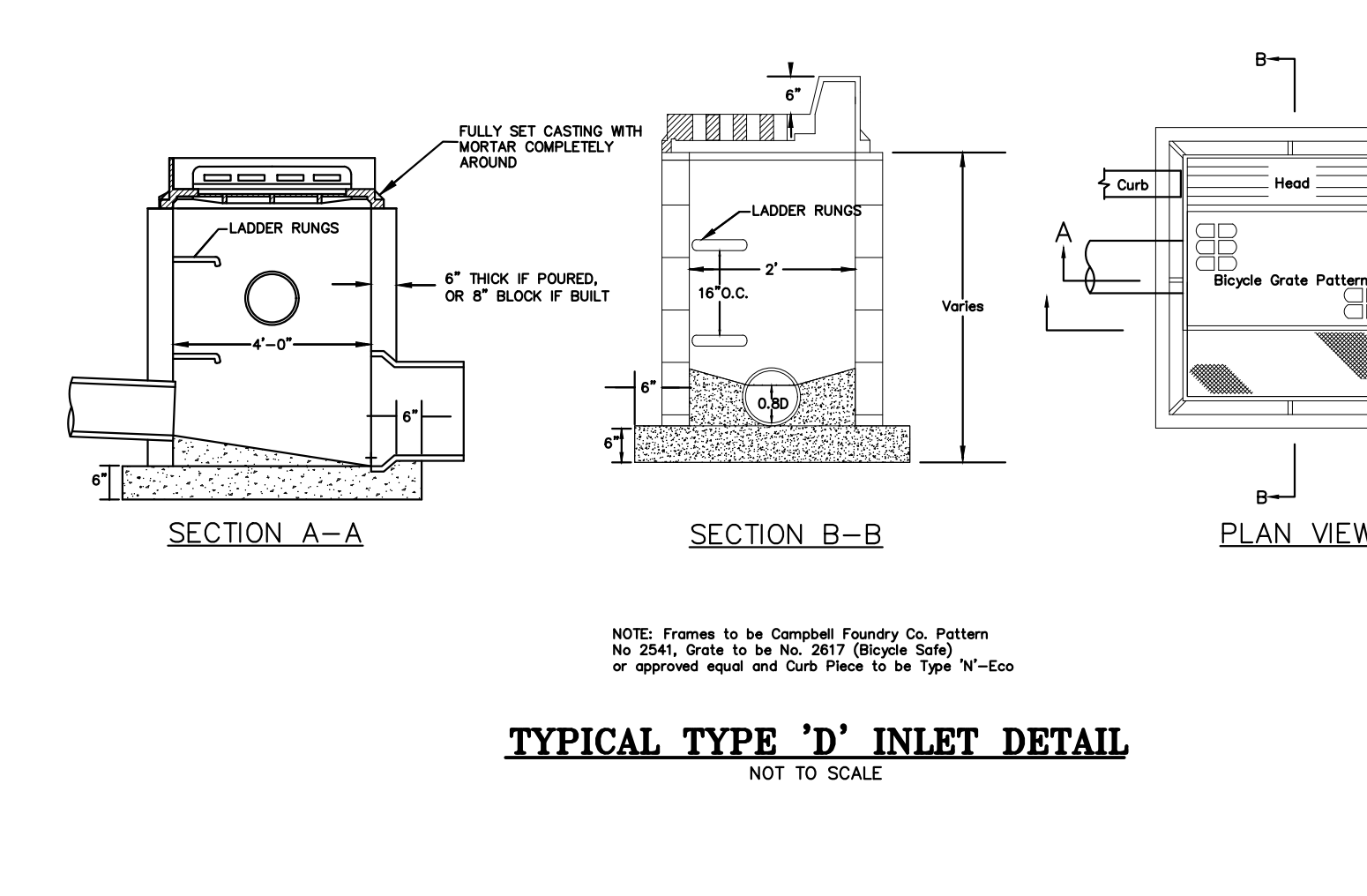
TYPICAL SINGLE GRATE FIELD TYPE "A" STORM SEWER INLET
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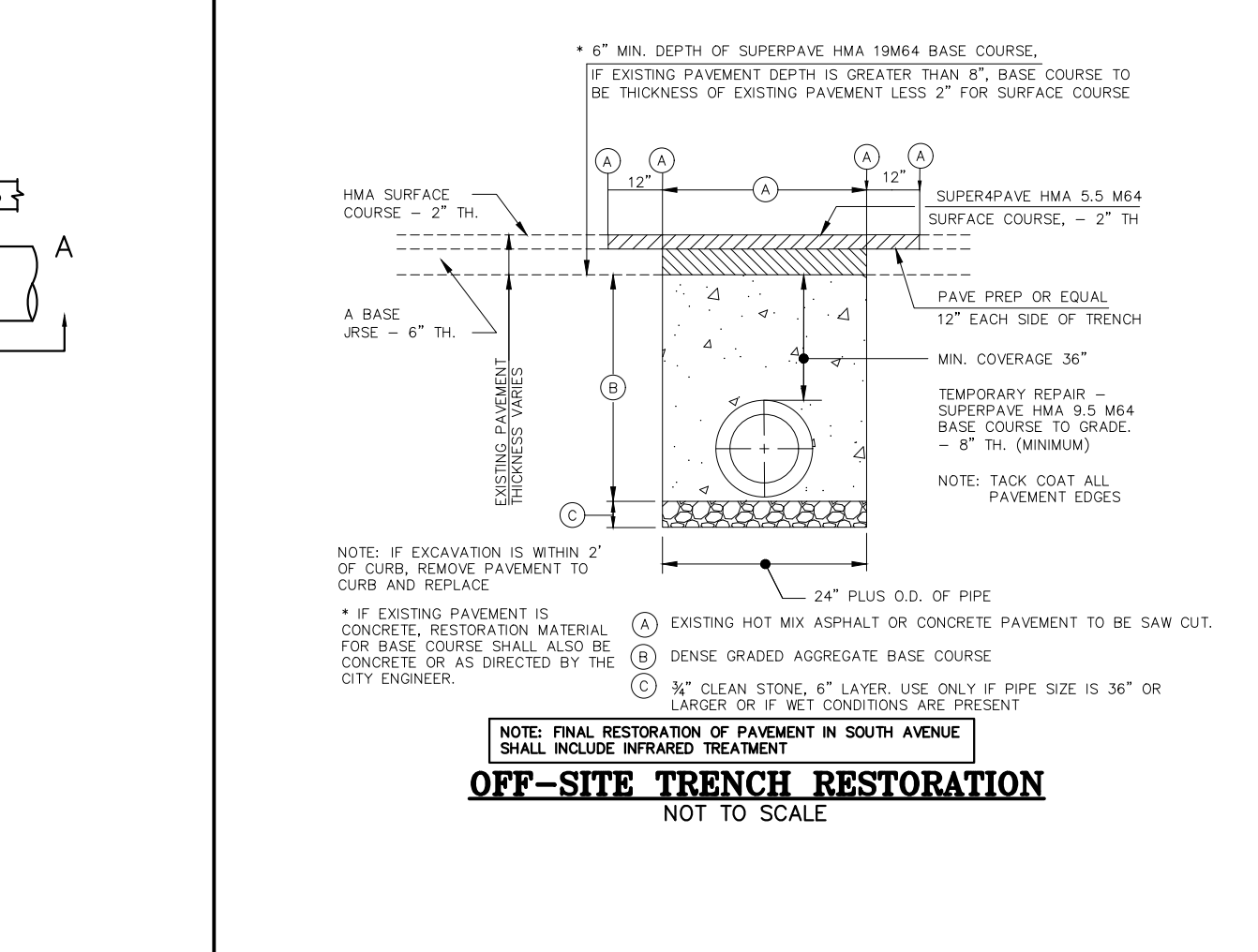
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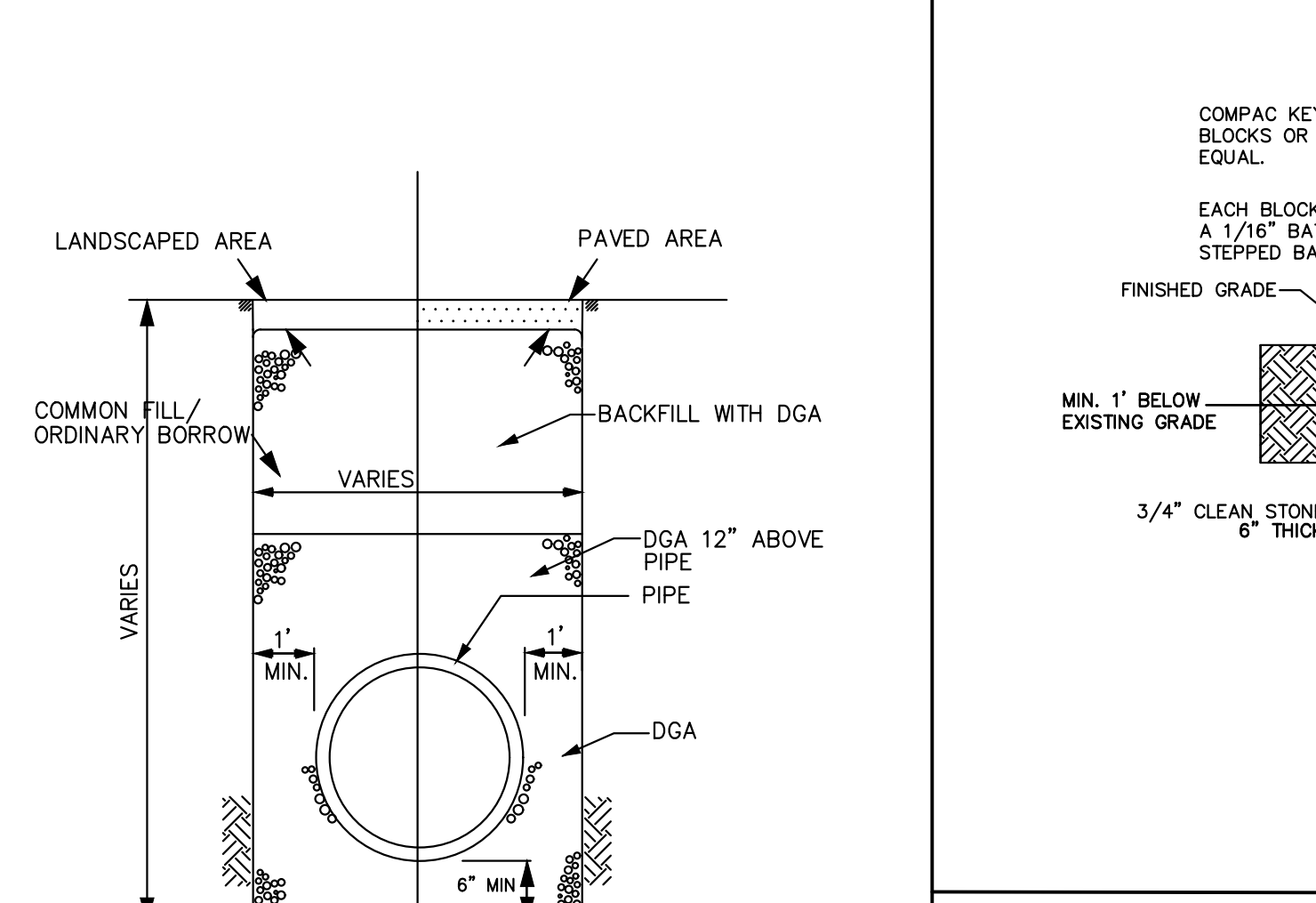
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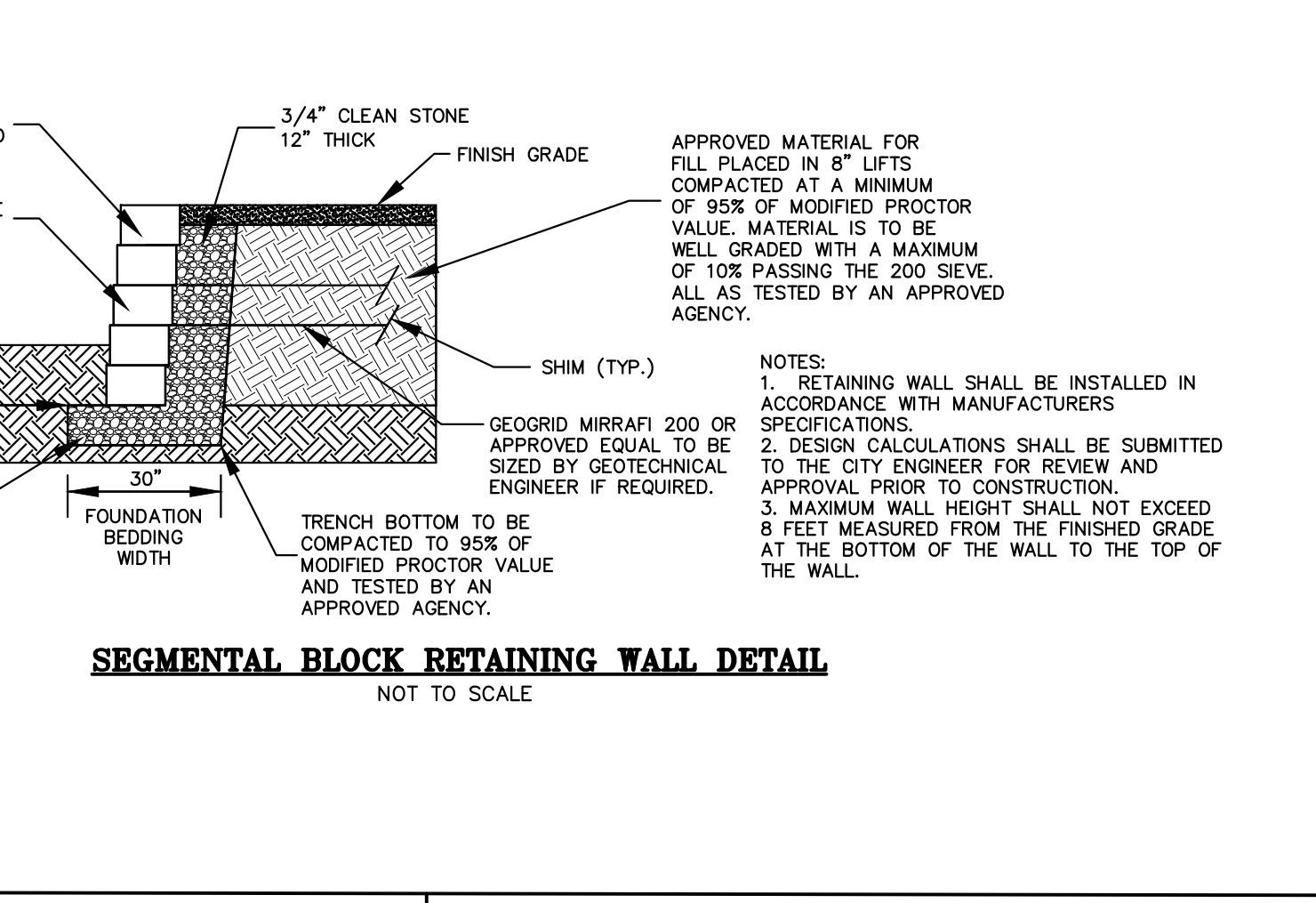
TYPICAL TYPE 'D' INLET DETAIL
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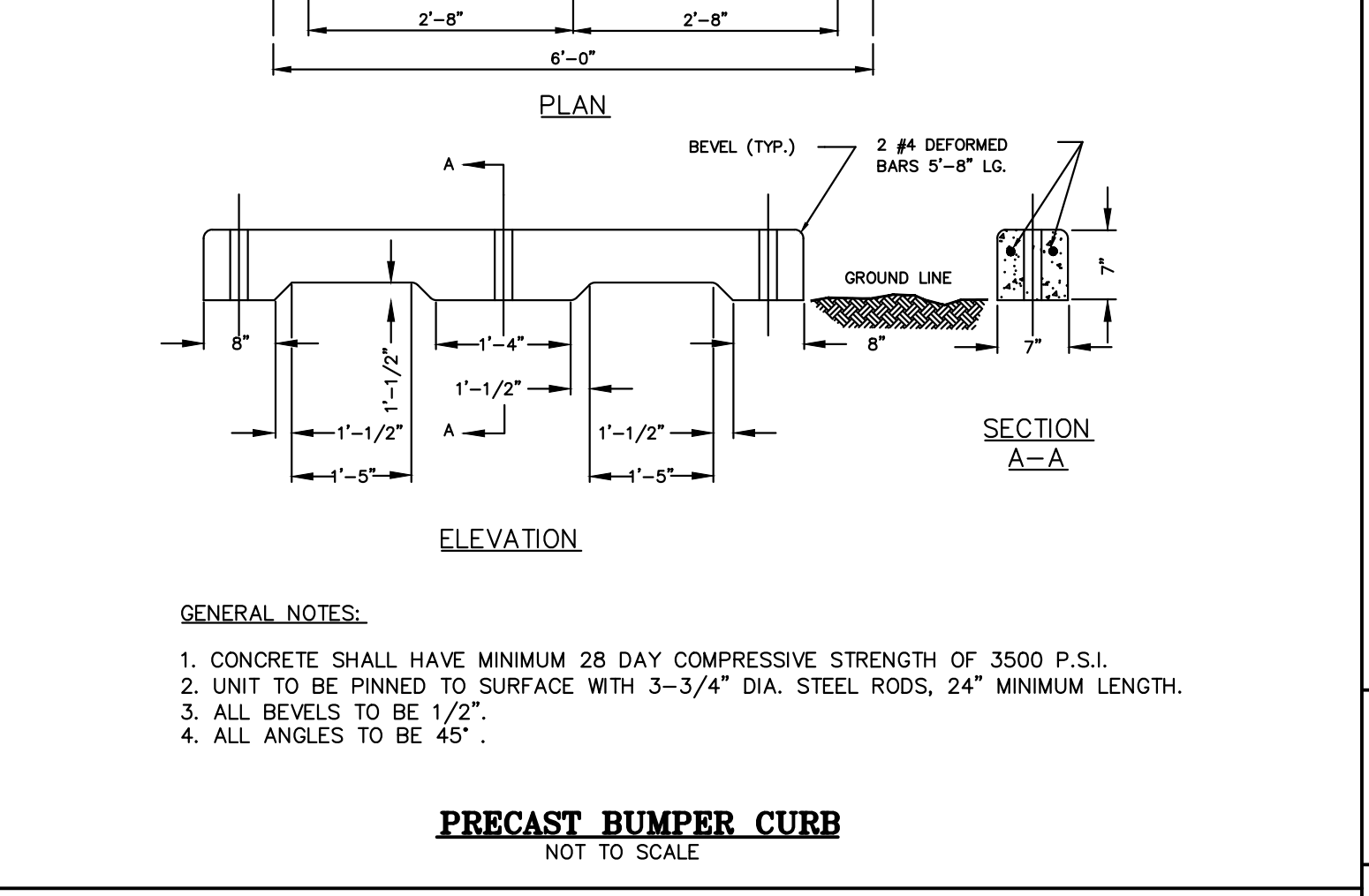
OFF-SITE TRENCH RESTORATION
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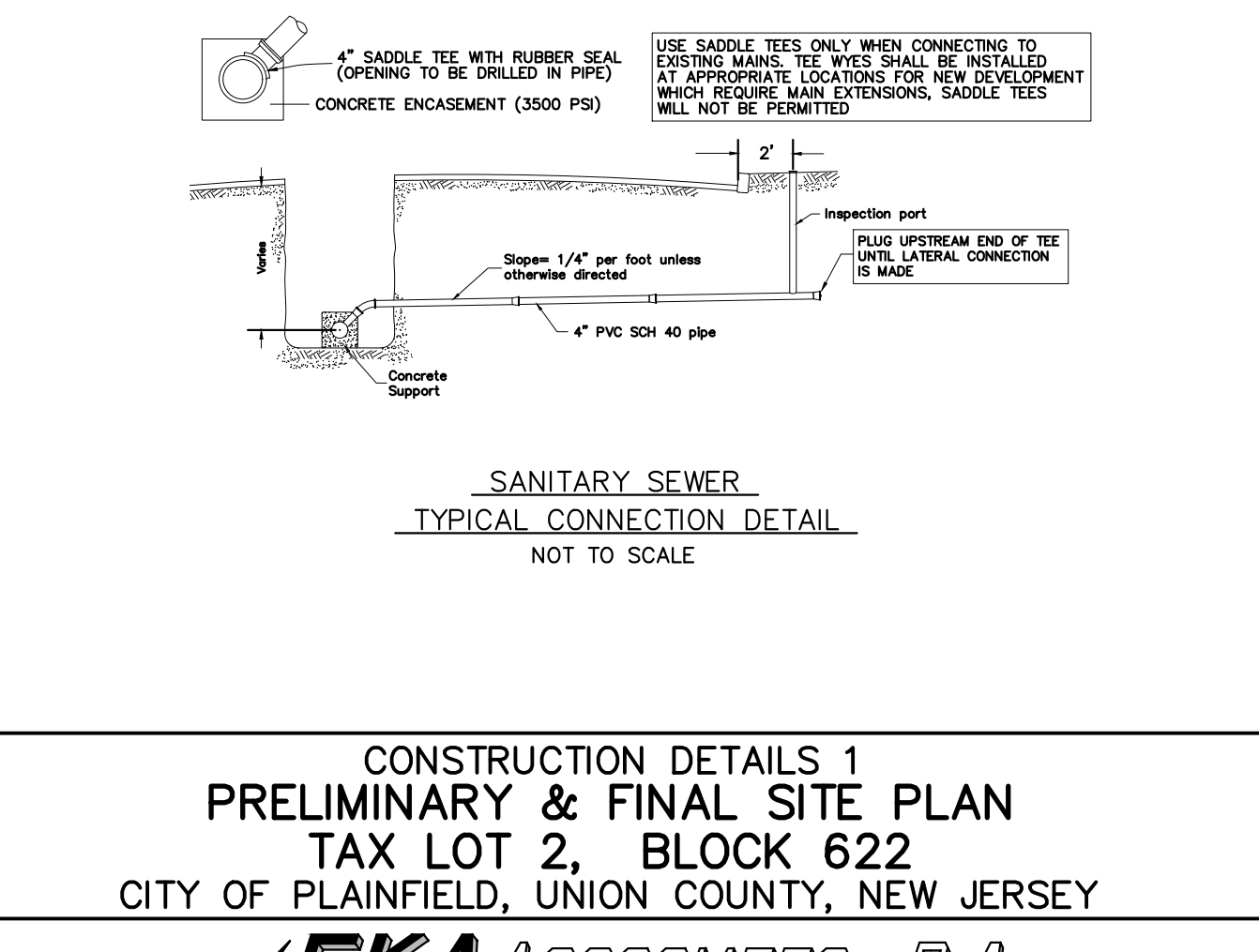
STORM PIPE TRENCH DETAIL
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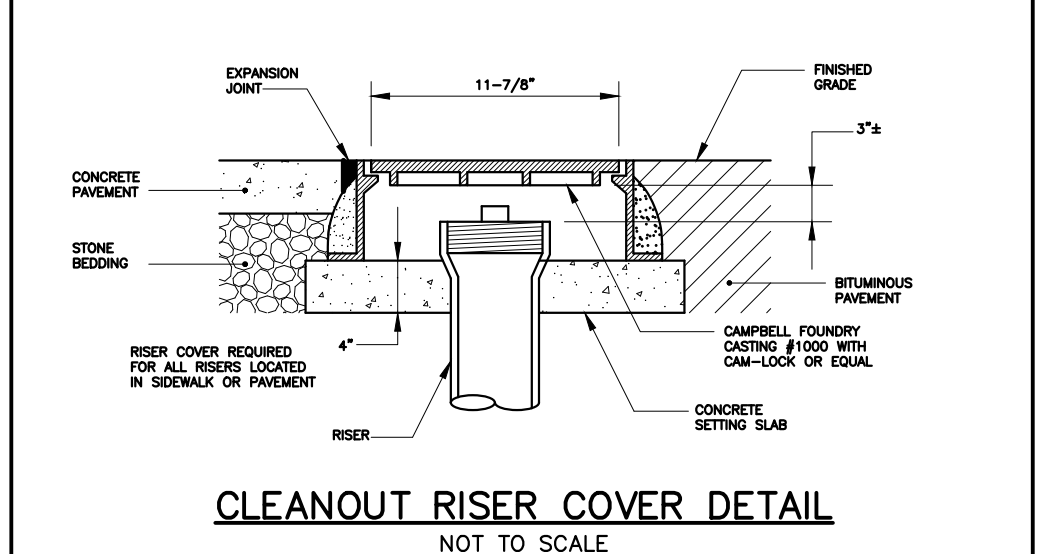
SEGMENTAL BLOCK RETAINING WALL DETAIL
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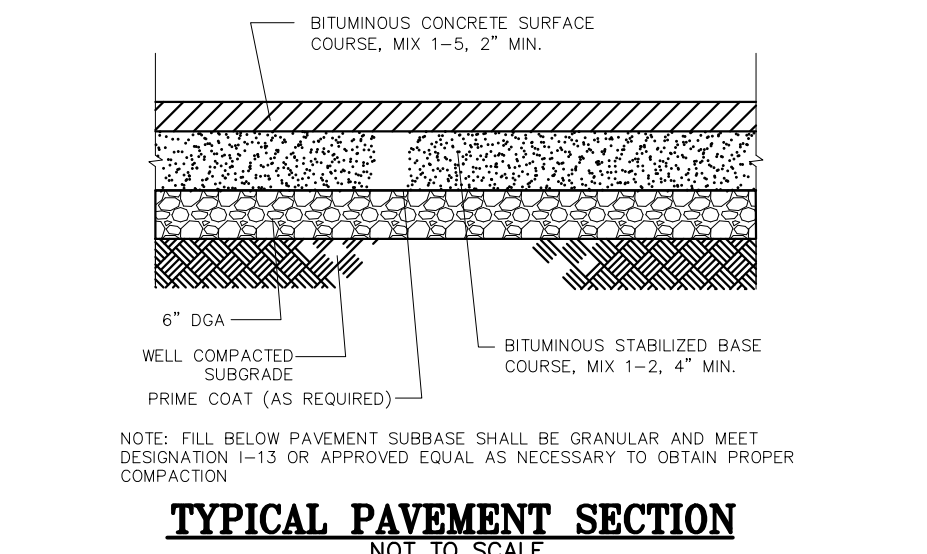
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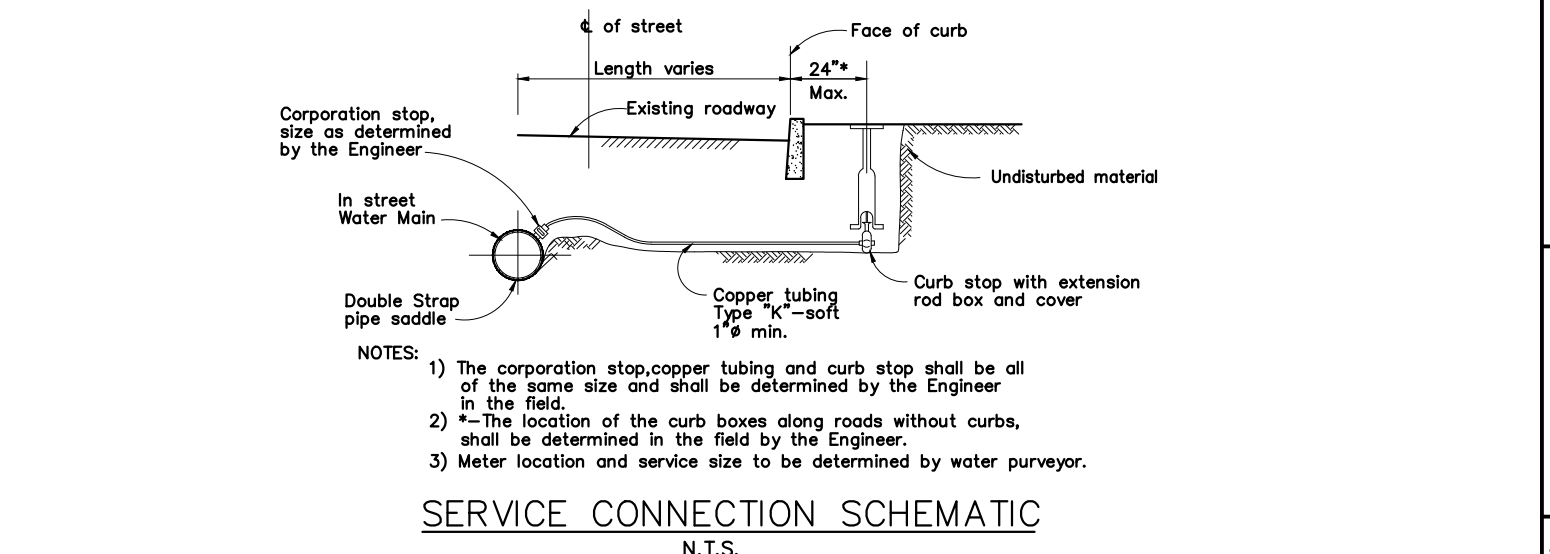
SANITARY SEWER TYPICAL CONNECTION DETAIL
NOT TO SCALE



CLEANOUT RISER COVER DETAIL
NOT TO SCALE



TYPICAL PAVEMENT SECTION
NOT TO SCALE



SERVICE CONNECTION SCHEMATIC
N.T.S.

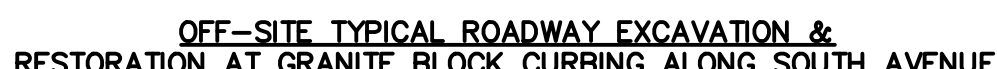
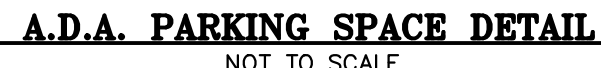
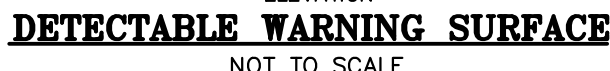
**CONSTRUCTION DETAILS 1
PRELIMINARY & FINAL SITE PLAN
TAX LOT 2, BLOCK 622
CITY OF PLAINFIELD, UNION COUNTY, NEW JERSEY**

EKA ASSOCIATES, P.A.
Engineers • Surveyors • Planners
328 Park Avenue, Scotch Plains, N.J. 07076
908-322-2030

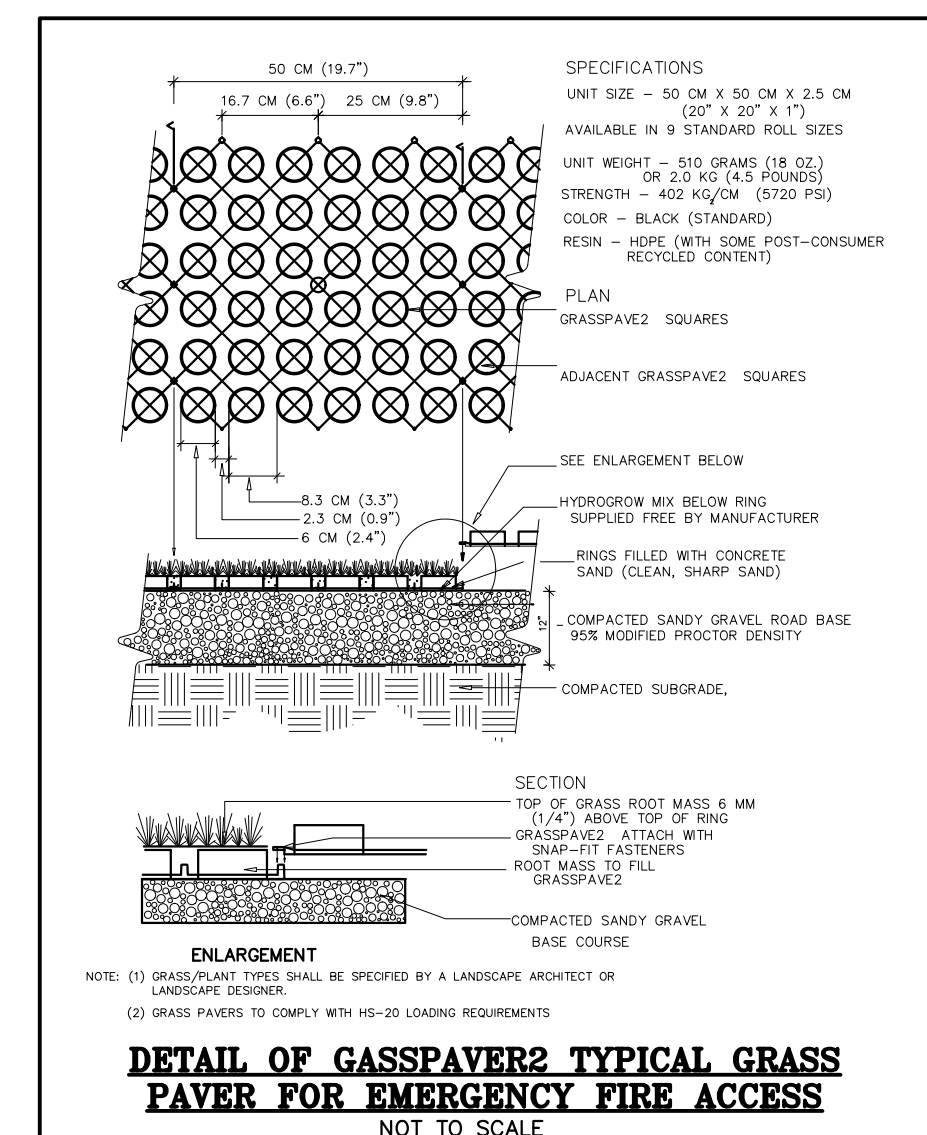
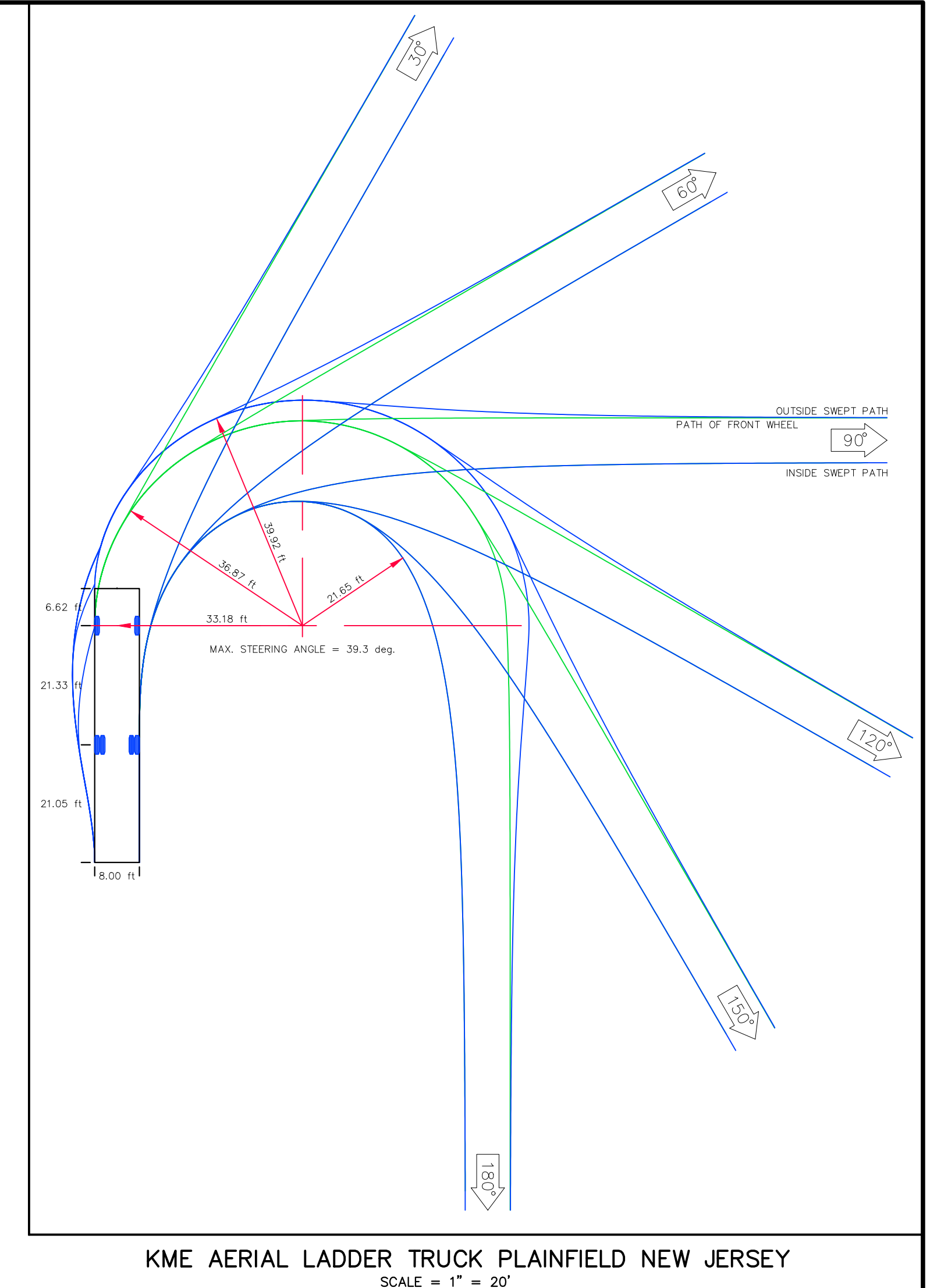
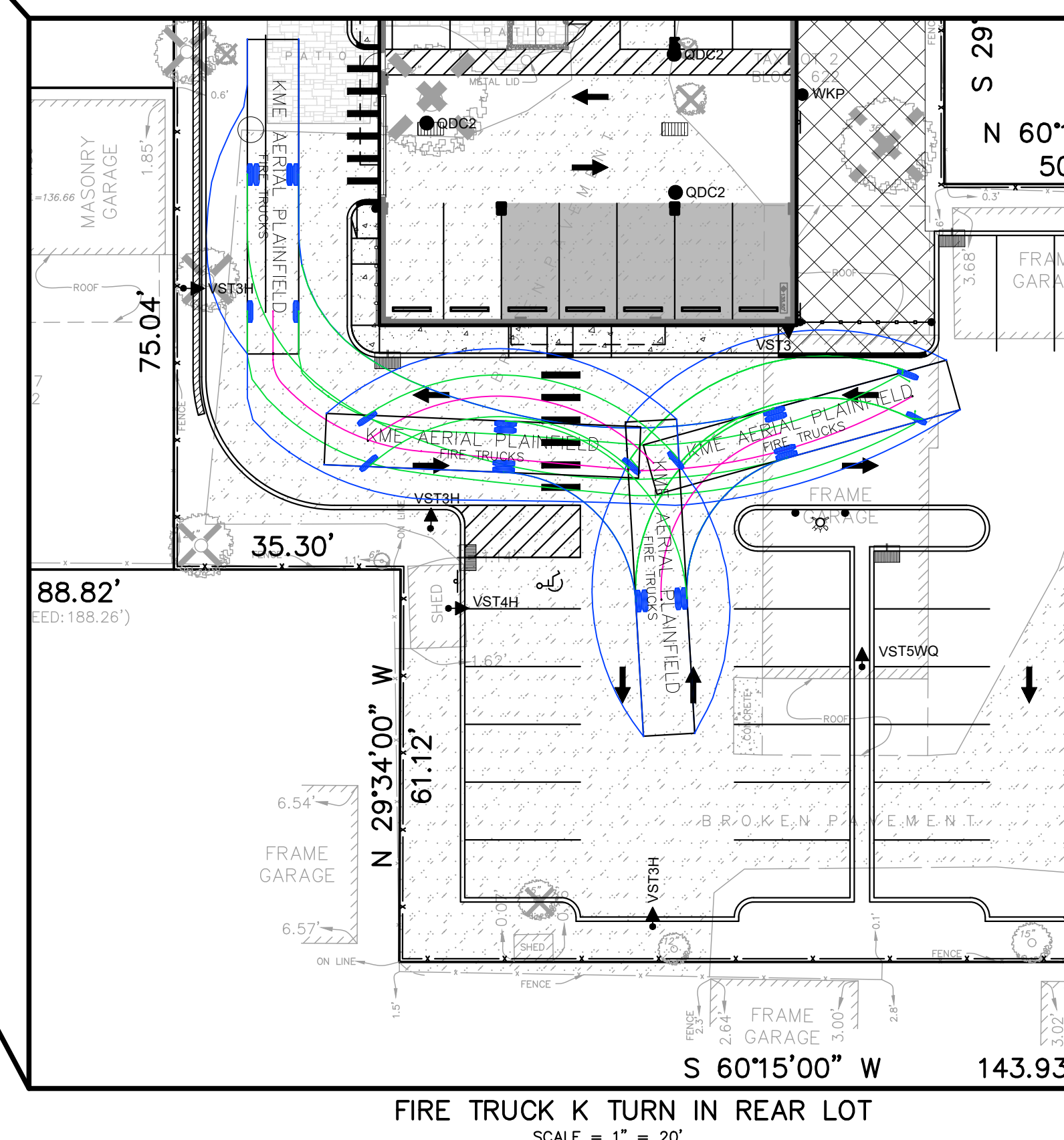
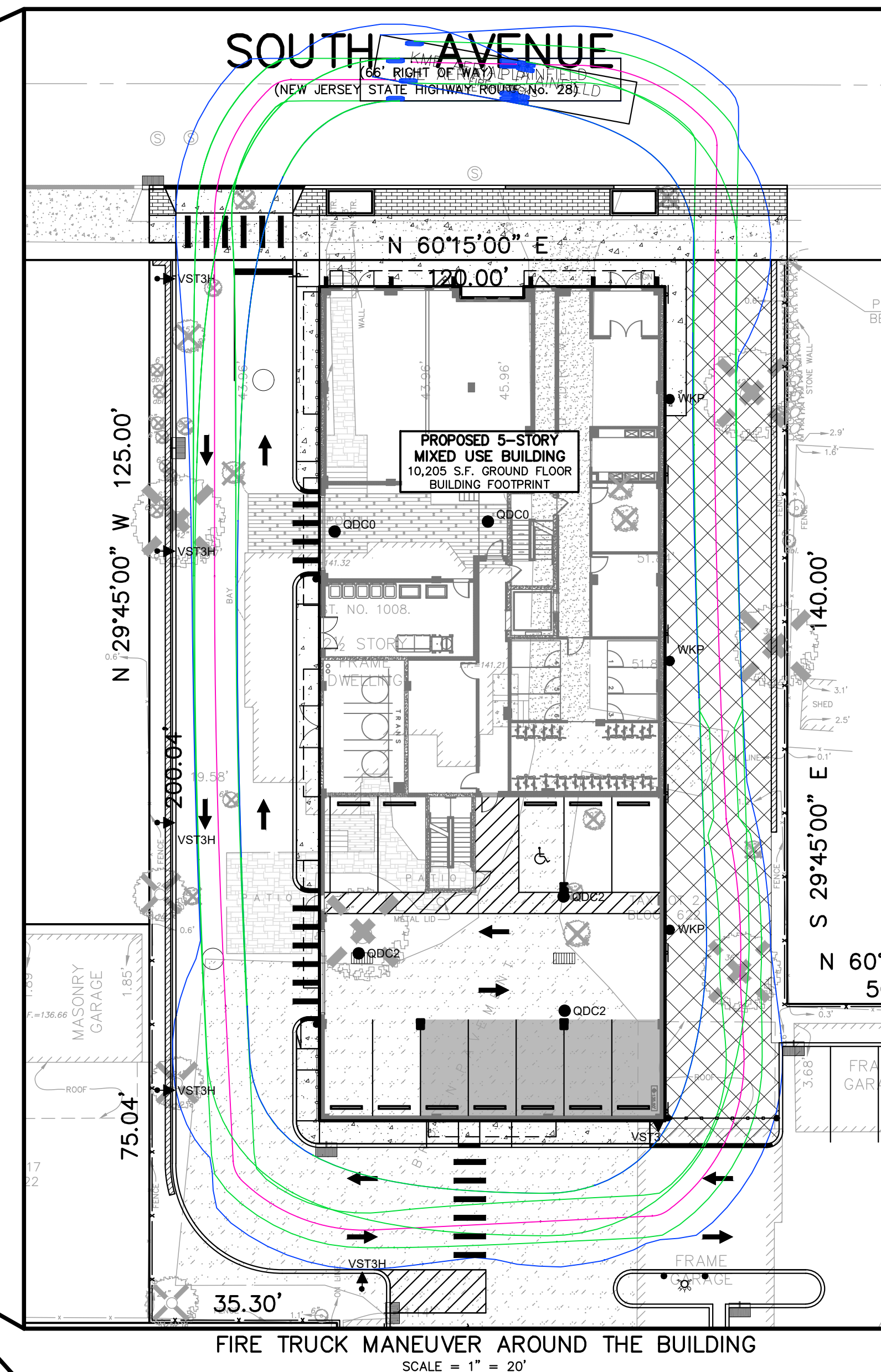
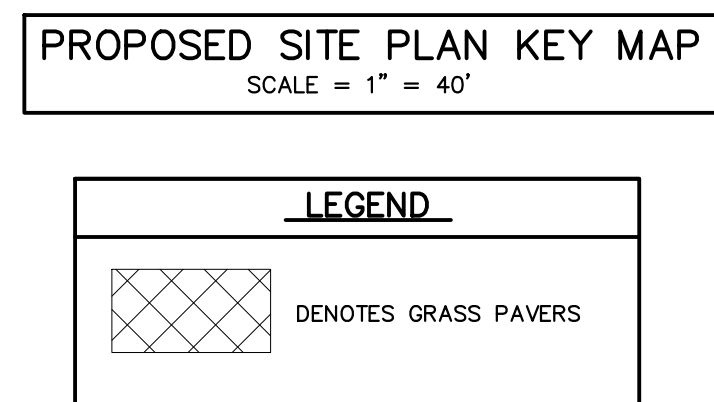
REVISIONS:
9/21/2021 - REVISED PER PLANNER COMMENTS

THOMAS J. QUINN, P.E., C.M.E.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 24GE04107200

Job No. 845985 Date 7/9/2021 Scale 1" = 20' Drawn MW Map No. FILE Sheet 7 of 8



THOMAS J. QUINN, P.E., C.M.E.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 24GE04107200



FIRE TRUCK MANEUVERING PLAN
PRELIMINARY & FINAL SITE PLAN
TAX LOT 2, BLOCK 622
CITY OF PLAINFIELD, UNION COUNTY, NEW JERSEY

EKA ASSOCIATES, P.A.
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328 Park Avenue, Scotch Plains, N.J. 07076
908-322-2030

REVISIONS:
9/21/2021 – REVISED PER PLANNER COMMENTS

THOMAS J. QUINN, P.E., C.M.E.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 246E04107200

Job No. 845985	Date 7/9/2021	Scale AS SHOWN	Drawn MW	Map No. FILE	Sheet 1 of 1
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