

PRELIMINARY AND FINAL SITE PLAN

FOR

108-126 SOUTH AVENUE EAST 32 & 41 HIGH STREET & 2 CHESTNUT STREET

BLOCK 478, LOTS 2, 3, 4, 5, AND 6 BLOCK 483, LOT 18, AND 17.01

TOWNSHIP OF CRANFORD UNION COUNTY, NEW JERSEY

NJDEP ELECTRONIC APPROVAL STAMP

GENERAL NOTES:

1. THE SUBJECT PROPERTY IS KNOWN AND DESIGNATED AS BLOCK 478, LOTS 2, 3, 4, 5, 6, AND BLOCK 483, LOTS 18 AND 17.01 AS SHOWN ON THE CURRENT TAX ASSESSMENT MAP OF THE TOWNSHIP OF CRANFORD, SHEET NOS. 105 AND 106 AND IS SITUATED IN THE "D-C" (DOWNTOWN CORE) ZONING DISTRICT, DT-DOWNTOWN TRANSITION DISTRICT, AND BUSINESS ZONE DISTRICT, AND WITHIN SUBDISTRICT 1 OF THE SOUTH AVENUE & CHESTNUT STREET REDEVELOPMENT PLAN ("RDP"). THE SUBJECT PROPERTY CONTAINS A TOTAL OF 35,080 SF, ±0.81 ACRES.

2. **PROPERTY OWNERS*/CO-APPLICANT: (*SEE OWNERS LIST)**

IRON ORE PROPERTIES LLC,
C/O PROPERTY OWNERS
55 BLEEKER STREET, 2ND FLOOR
MILBURN, NEW JERSEY 07041

I HEREBY CERTIFY THAT I AM THE CO-APPLICANT AND RE-DEVELOPER ON BEHALF OF THE OWNERS OF RECORD OF THE PLAN HEREIN DEPICTED AND THAT I CONCUR WITH THE PLAN.

CO-APPLICANT, IRON ORE PROPERTIES LLC

3. **EXISTING USE:** MIXED USE
PROPOSED USE: NO CHANGE

4. BASE MAP INFORMATION WAS OBTAINED FROM THE FOLLOWING SOURCES:

- TOPOGRAPHIC INFORMATION TAKEN FROM A PLAN ENTITLED "TOPOGRAPHIC SURVEY PREPARED FOR LOTS 2, 3, 4, 5, AND 6 BLOCK 478 SITUATED IN TOWNSHIP OF CRANFORD, UNION COUNTY, NEW JERSEY" PREPARED BY BUTLER SURVEYING AND MAPPING, INC.
- TOPOGRAPHIC SURVEY TAX LOT 18 BLOCK 483 2 CHESTNUT STREET, BOROUGH OF CRANFORD, UNION COUNTY, NEW JERSEY PREPARED BY BUTLER SURVEYING AND MAPPING, INC., LAST REVISED 11/07/2022

5. **AREA AND BULK ZONE REQUIREMENTS FOR SUBDISTRICT 1 OF THE SOUTH AVENUE & CHESTNUT STREET REDEVELOPMENT PLAN WITHIN THE D-T "DOWNTOWN TRANSITION DISTRICT, CORE, AND BUSINESS ZONE DISTRICTS"**

	PERMITTED:	EXISTING:	PROPOSED:
MINIMUM LOT REQUIREMENTS			
MINIMUM LOT AREA	0.75 ACRES	0.803	0.803
PRINCIPAL BUILDING REQUIREMENTS			
MINIMUM FRONT YARD	9 FT. FROM FACE OF CURB	9.5 FT.	9.8 FT.
MINIMUM SIDE YARD	10 FT. FROM CURB, OTHERWISE 0	12.6 FT.	13.4 FT.
MINIMUM REAR YARD	9 FT. BETWEEN BUILDINGS OR 5 FT. BETWEEN PROPERTY LINE AND BUILDING FACADE	95.0 FT.	9 FT.
MAXIMUM BUILDING HEIGHT	55 FT. / 4 STORIES	2 1/2 STORIES	LESS THAN 55 FT. / 4 STORIES
MAXIMUM BUILDING COVERAGE	90%	29.6%	75.8%
MAXIMUM LOT COVERAGE	96%	96.0%	96.0%

6. OFF-STREET PARKING REQUIREMENTS - USE: DWELLING, MULTI-FAMILY

REQUIRED	PROVIDED
1.4 SPACES PER UNIT X 55 UNITS = 77 AT LEAST 15% TO BE ELECTRIC VEHICLE MAKE-READY PARKING SPACES = 11.55 OR 12.	57 PARKING SPACES ON-SITE INCLUDING 2 ADA PARKING SPACES 20 PARKING SPACES +9 NET SPACES AT 2 CHESTNUT STREET +6 STREET PARKING SPACES ON CHESTNUT STREET +3 STREET PARKING SPACES ON SOUTH AVENUE EAST +2 STREET PARKING SPACES ON HIGH STREET TOTAL 77 PARKING SPACES, INCLUDING 12 ELECTRIC VEHICLE MAKE-READY PARKING SPACES 10% CREDIT FOR PROVIDING ELECTRIC VEHICLE SPACES = 7

BICYCLE PARKING:

USE	REQUIRED	PROVIDED
DWELLING, MULTIFAMILY	INDOOR : 0.25 SPACES PER UNIT X 55 UNITS = 13.75, OR 14 OUTDOOR : 0.10 SPACES PER UNIT X 55 UNITS = 5.5 OR 6	16 SPACES 9 SPACES

7. RDP REQUIRES A MINIMUM OF 8,000 SQUARE-FOOT OF NON-RESIDENTIAL USES ON BLOCK 478, LOTS 1.01 THROUGH 6. APPLICANT PROPOSES ±5,672 SQUARE-FOOT OF COMMERCIAL USES ON THE SUBJECT PROPERTY. BLOCK 478, LOTS 1.01 & 1.02 CONTRIBUTE AN ADDITIONAL 7,500 SQUARE-FOOT OF NON-RESIDENTIAL USES, THEREFORE COLLECTIVELY SATISFYING THIS REQUIREMENT.

8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWNSHIP OF CRANFORD DESIGN STANDARDS AND DETAILS.

9. TRASH AND RECYCLING DISPOSAL SHALL BE IN ACCORDANCE WITH THE TOWNSHIP OF CRANFORD DEPARTMENT OF PUBLIC UTILITIES REQUIREMENTS.

10. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED ON THE DRAWINGS AND EACH DRAWING HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION".

11. ALL DESIGN FEATURES DEPICTED HEREON WERE BASED ON CONSTRAINTS AND REGULATIONS IN EFFECT AT THE TIME OF PREPARATION AND INITIAL PRESENTATION OF THIS PLAN. ALL CURRENT DEVELOPMENT CONSTRAINTS SHOULD BE INVESTIGATED PRIOR TO COMMENCEMENT OF ANY ACTIVITY BASED ON THIS PLAN.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES FOR GAS, ELECTRIC, PHONE AND CABLE TV SERVICE LOCATIONS. LOCATION OF UTILITIES AS SHOWN ON THESE PLANS ARE PLOTTED FROM AVAILABLE DATA ON FILE WITH THE UTILITY COMPANIES AND IS NOT GUARANTEED AS TO EXACTNESS. THE CONTRACTOR IS TO CONTACT UTILITY COMPANIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE EXACT LOCATION. THE CONTRACTOR SHALL USE THE UTILITY LOCATIONS SHOWN AS AN AID IN DETERMINING EXACT LOCATIONS. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS PRIOR TO PERFORMING ANY CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGES ASSOCIATED WITH THE UTILITIES. ALL REPAIRS SHALL BE TO THE SATISFACTION OF THE AGENCIES GOVERNING THOSE UTILITIES.

13. ANY CONFLICTS ENCOUNTERED WITH EXISTING UTILITIES MUST BE ADDRESSED. COORDINATE RELOCATION WITH RESPECTIVE UTILITY COMPANY.

14. ANY IMPORTED FILL SHALL MEET THE DEFINITION OF CLEAN FILL, PURSUANT TO THE TECHNICAL REQUIREMENTS FOR SITE REMEDIATION (NJAC 7:26E-1.8).

15. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING ANY AREA THAT HE/SHE DISTURBED BEYOND THE PROPERTY LIMITS TO ITS ORIGINAL CONDITION.

16. CONTRACTOR TO PROVIDE NECESSARY FOUNDATION DRAINS AND WATER-PROOFING AROUND FOUNDATION. COORDINATE WITH ARCHITECT AS REQUIRED.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ANY ROAD OPENING PERMITS THAT MAY BE REQUIRED FOR THE INSTALLATION OF NEW UTILITY SERVICES OR DRIVEWAY OPENINGS.

18. REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN FOR REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES.

19. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE. NO MATERIAL IS TO BE STORED ON TOWNSHIP PROPERTY UNLESS PRIOR APPROVAL IS OBTAINED FROM THE TOWNSHIP ENGINEER. UNDER NO CIRCUMSTANCES CAN THE CONTRACTOR PLACE EXCAVATED MATERIAL WITHIN TOWNSHIP-OWNED PROPERTY. ANY SOIL DISTURBANCE SHALL BE DONE AS SET FORTH BY SUBSECTION 351.

SHEET INDEX			
SHEET NUMBER	SHEET TITLE	DATE	REVISION DATE
1	COVER SHEET	2/19/2021	03/01/2023
2	EXISTING CONDITIONS PLAN	2/19/2021	03/01/2023
3	SITE PLAN - TRACT 1	2/19/2021	03/01/2023
4	GRADING AND DRAINAGE PLAN - TRACT 1	2/19/2021	03/01/2023
5	SITE AND GRADING PLAN - TRACT 2	2/19/2021	03/01/2023
6	SOIL EROSION AND SEDIMENT CONTROL PLAN (1)	2/19/2021	03/01/2023
7	SOIL EROSION AND SEDIMENT CONTROL PLAN (2)	2/19/2021	03/01/2023
8	SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	2/19/2021	03/01/2023
9	LANDSCAPING PLAN - TRACT 1	2/19/2021	03/01/2023
10	LANDSCAPING PLAN - TRACT 2	2/19/2021	03/01/2023
11	LANDSCAPING NOTES AND DETAILS	2/19/2021	03/01/2023
12	LIGHTING PLAN - TRACT 1	2/19/2021	03/01/2023
13	LIGHTING PLAN - TRACT 2	2/19/2021	03/01/2023
14	CONSTRUCTION DETAILS 1	2/19/2021	03/01/2023
15	CONSTRUCTION DETAILS 2	2/19/2021	03/01/2023

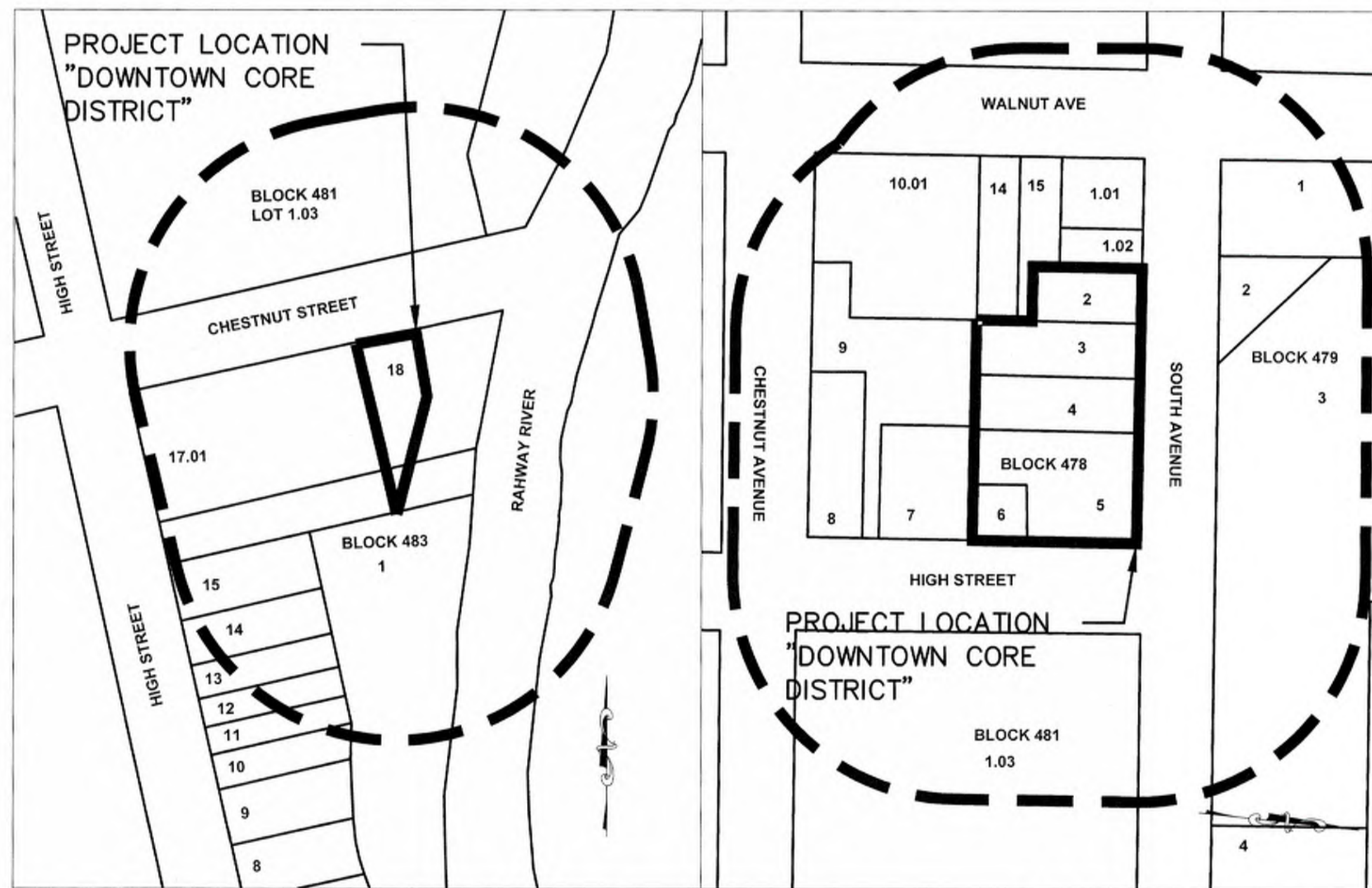
REGULATORY BODIES AND UTILITY PROVIDERS

PROPERTY OWNERS WITHIN 200'

Depau, Nancy 103 High Street Cranford, New Jersey 07016	Di Tullio & La Corte Associates 102-108 Walnut Avenue Cranford, New Jersey 07016	Township of Cranford - Construction Official 8 Springfield Avenue Cranford, New Jersey 07016
Minitelli, Paul & Judy 109 High Street Cranford, New Jersey 07016	IOP Cranford 100 South LLC 55 Bleeker Street 2 nd Floor Millburn, New Jersey 07041	Township of Cranford - Environmental Commission 8 Springfield Avenue Cranford, New Jersey 07016
Union County Court House Elizabeth, New Jersey 07207	116 Walnut Avenue, LLC 206 Avenue F Matamoras, PA 18336	Township of Cranford - Planning Board 10 Elizabethtown Plaza Cranford, New Jersey 07016
Riverfront Developers, LLC 820 Morris Turnpike Short Hills, New Jersey 07078	East Coast Cranford Crossing, LLC PO Box 182585 Mail Stop #3 Columbus, Ohio 43218	Union County Planning Board 10 Elizabethtown Plaza Elizabeth, New Jersey 07202
Rennie, Kimberly A 101 High Street Cranford, New Jersey 07016	DB Walnut Ave, LLC 55 Bleeker Street, 2 nd Floor Millburn, New Jersey 07041	Somerset Union Soil Conservation Dist. 308 Milltown Road Bridgewater, New Jersey 08801
Curtis, Vera 107 High Street Cranford, New Jersey 07016	Union County Economic Dev. Corp 76 Chestnut Street Cranford, New Jersey 07016	Comcast Cablevision C/O Corporation Trust Co. 820 Bear Tavern Road West Trenton, New Jersey 08628
Titre, Sherwin & Nivine 105 High Street Cranford, New Jersey 07016	EFRUS JED 114 Orchard Street Cranford, New Jersey 07015	NIAW- GIS Supervisor 1025 Laurel Oak Road Voorhees, New Jersey 08043
Smith Cleveland C 111 High Street Cranford, New Jersey 07016	Sunkin Properties, LLC PO Bo 636 Inlet, New York 13360	Verizon - Executive Offices Corporate Secretary One Verizon Way Basking Ridge, New Jersey 07920
Township of Cranford 8 Springfield Avenue Cranford, New Jersey 07016	O V A Realty 206 Stoughton Avenue Cranford, New Jersey 07016	Elizabethtown Gas Company Engineering Department 520 Green Lane Union, New Jersey 07083
CRFD Cong of Jehovahs Wit. 77 Chestnut Street Cranford, New Jersey 07016	St. Mark AME Church 34 High Street Cranford, New Jersey 07016	PSE&G - Manager Corp. Properties 80 Park Plaza T68 Newark, New Jersey 07101
109 South Avenue, LLC 206 Avenue F Matamoras, PA 18336	Junior League of Eliz & Cranford Inc. 110 Walnut Avenue Cranford, New Jersey 07016	Rahway Valley Sewerage Authority Chief Engineer 1050 East Hazelwood Avenue Rahway, New Jersey 07065
NJ Transit Corp. PO Bo 10009 Newark, New Jersey 07101		Union County Div Parks & Recreation Admin Bldg/Elizabethtown Plaza Elizabeth, New Jersey 07207

***OWNERS LIST**

EXHIBIT A				
Property Address	Block	Lot	Owner	
108 South Avenue E	478	2	108 South Ave E LLC	
112 South Avenue E	478	3	112 South Avenue E LLC	
118 South Avenue E	478	4	Boffard Holdings LLC	
122-126 South Avenue E	478	5	VIBO Holdings LLC	
32 High Street	478	6	Boffard Holdings LLC	
2 Chestnut Street	483	18	2 Chestnut St LLC	
41 High Street	483	17.01	Township of Cranford	



KEY MAP
NOT TO SCALE

I HAVE CAREFULLY EXAMINED THIS MAP AND FIND IT CONFORMS TO THE PROVISIONS OF THE MAP FILING LAW AND MUNICIPAL ORDINANCES AND REQUIREMENTS THERETO

TOWNSHIP ENGINEER (AFFIX SEAL)

DATE

THIS APPLICATION NO. _____ IS APPROVED BY THE CRANFORD TOWNSHIP PLANNING BOARD AS A MAJOR DEVELOPMENT

CHAIRPERSON

DATE

SECRETARY

DATE

05	03/01/2023	Revised for Planning Board Submission		
04	02/21/2023	Revised per DRC Meeting	JB	BF
03	01/26/2023	Revised per Completeness Review dated 01/20/2023		
02	11/07/2022	Revised for Township Submission	MS	BF
01	05/20/2021	Revised per NJDEP Comments	SP	BF
No.	Date	Revision	Revised By	Checked By

SCALE IN FEET



BAHRAM FARZANEH, PE, PP
PROFESSIONAL ENGINEER, NJ LIC. No. 24GE03454800

COVER SHEET
FOR
PRELIMINARY AND FINAL SITE PLAN
FOR
MIXED USE DEVELOPMENT
BLOCK 478, LOTS 2, 3, 4, 5, AND 6
BLOCK 483, LOT 18, AND 17.01
TOWNSHIP OF CRANFORD
UNION COUNTY NEW JERSEY

DATE: 2/19/2021	DESIGNED BY: WGS	SCALE: AS SHOWN	PROJECT NUMBER: 16753.001
DRAWN BY: WGS	CHECKED BY: BF	FIELD BOOK:	SHEET: 1 of 15

NJDEP ELECTRONIC APPROVAL STAMP

GENERAL NOTES:

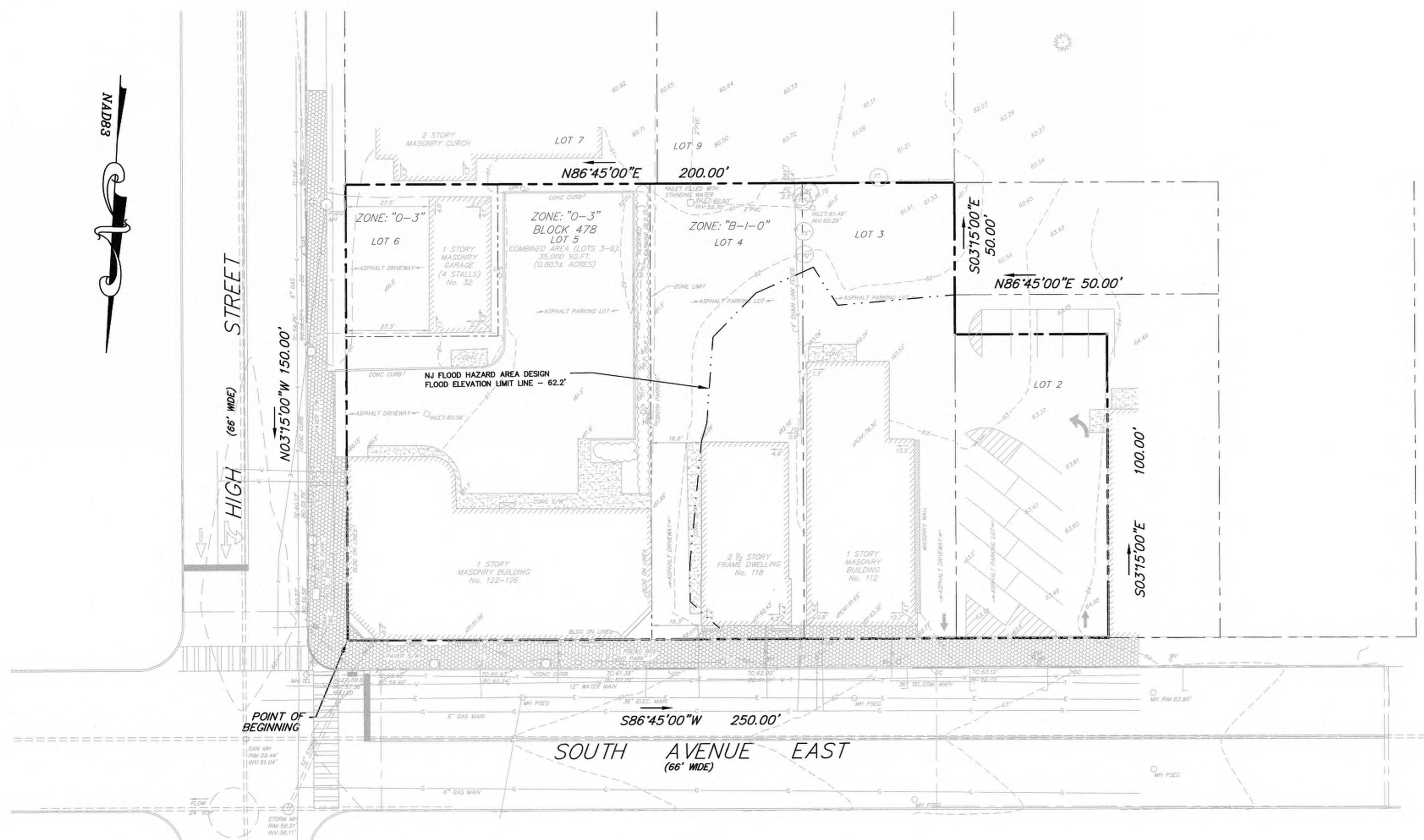
1. SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR FOR THE DURATION OF THE DEMOLITION PROJECT. ALL PERSONNEL WORKING OR VISITING THE SITE SHALL BE PROVIDED A PROJECT SAFETY BRIEFING. THE CONTRACTOR SHALL DESIGNATE A TRAINED, RESPONSIBLE INDIVIDUAL FOR ALL SAFETY RELATED ITEMS. THIS PERSON SHALL HAVE THE AUTHORITY TO SUSPEND WORK SHOULD AN UNSAFE CONDITION BE ENCOUNTERED.
2. THE CONTRACTOR SHALL ERECT AND MAINTAIN FENCING AROUND THE PERIMETER OF THE WORK AREAS. AN EIGHT FOOT HIGH CHAIN LINK FENCE SHALL BE USED. DURING THE DEMOLITION OPERATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE PERIMETER FENCING, LOCATED ALONG THE LIMITS OF EACH DESIGNATED DEMOLITION AREA AND SHALL REPLACE ANY DAMAGED SECTIONS TO THE SATISFACTION OF THE OWNER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TEMPORARY OFFICE TRAILERS, ON-SITE DECONTAMINATION AREAS, DISPOSAL CONTAINERS AND ALL OTHER ITEMS AS MAY BE REQUIRED TO PERFORM HIS ACTIVITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND LICENSES REQUIRED TO CARRY OUT HIS WORK IN FULL ACCORDANCE WITH REQUIREMENTS OF ALL REGULATIONS AND AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS AND ALL CODES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITY CONTROLLING OR LIMITING THE METHODS, MATERIAL TO BE USED, OR THE ACTIONS OF THOSE EMPLOYED IN WORK OF THIS KIND. ALL WORK, LABOR OR MATERIAL NECESSARY TO COMPLY WITH THESE LAWS, CODES, RULES AND REGULATIONS SHALL BE PERFORMED AND FURNISHED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FERTILIZING AND SEEDING ALL AREAS DISTURBED BY HIS/HER ACTIVITIES WITHIN THE LIMITS OF THE PROJECT SITE. ROAD PAVEMENT REPLACEMENT AND ALL OTHER RESTORATION WORK WITHIN THE CITY OF PATERSON RIGHT-OF-WAY SHALL MEET THE REQUIREMENTS OF THE CITY ENGINEER.
6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY EQUIPMENT AND METHODS TO KEEP EXCAVATIONS FREE OF WATER AND PROTECT WORK AND ADJACENT STRUCTURES FROM DAMAGE BY WATER DURING ALL STAGES OF HIS/HER ACTIVITIES.

UTILITY NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES PRIOR TO DEMOLITION OR CONSTRUCTION ACTIVITIES TO DETERMINE THE EXACT LOCATIONS AS NECESSARY AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. UTILITY LOCATIONS SHOWN ON THESE PLANS ARE FROM ABOVE-GROUND OBSERVATIONS AND FROM RECORD INFORMATION PROVIDED BY THE UTILITY COMPANIES. IN ADDITION, THE LOCATION AND TYPE OF THE EXISTING UTILITIES SHOWN ON THESE PLANS IS NOT GUARANTEED TO BE ACCURATE NOR ALL INCLUSIVE. THE CONTRACTOR SHALL USE THE EXISTING UTILITY LOCATIONS SHOWN AS AN AID IN DETERMINING EXACT LOCATIONS. THE CONTRACTOR MUST CONTACT THE "ONE CALL SYSTEM" AT 1-800-272-1000 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION, SCHEDULING AND ALL COSTS REQUIRED TO CAP, DISCONNECT AND REMOVE THE UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY AGENCY OR THE AUTHORITY HAVING JURISDICTION. IN ADDITION, IF ANY EXISTING IMPROVEMENTS LOCATED WITHIN THE BOROUGH RIGHT-OF-WAY ARE DISTURBED BY THE CONTRACTOR OR THE UTILITY COMPANIES, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF THE IMPROVEMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE BOROUGH ENGINEER. THE CONTRACTOR SHALL CALL THE PSE&G DEMOLITION CENTER AT 1-800-817-3366 TO SCHEDULE THE INDIVIDUAL METER REMOVAL AND CUTTING OF SERVICE LINES FOR EACH STRUCTURE THAT IS TO BE DEMOLISHED. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS REQUIRED BY THE BOROUGH OF SAYREVILLE BUILDING BUREAU FOR THIS WORK, INCLUDING LETTERS FROM THE WATER, GAS AND ELECTRICAL COMPANIES, WHICH INDICATES ALL UTILITIES TO BE REMOVED ARE CLEARED FOR DEMOLITION AND/OR EXCAVATION.
3. IF ANY UTILITY FACILITIES, INCLUDING DISTRIBUTION MAINS OR SERVICES FOR ADJACENT PROPERTIES, ARE DISRUPTED OR DAMAGED DURING THE CONSTRUCTION WORK ASSOCIATED WITH THIS PROJECT, THEN THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE UTILITY FACILITIES BY THE END OF THE WORKING DAY AT NO ADDITIONAL EXPENSE TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS INCURRED TO REMOVE OR TEMPORARILY SUPPORT.
4. ANY UTILITY POLE AND/OR GUY ANCHORS THAT MAY BE IN CONFLICT WITH HIS ACTIVITIES. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EXISTING FACILITIES FROM THESE POLES, INCLUDING ALL LIGHTS, ELECTRICAL LINES, TELEPHONE LINES, CABLE LINES AND ALL ELSE AS REQUIRED TO REMOVE THE UTILITY POLES OR GUY ANCHORS. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR THE REMOVAL OF ANY EXISTING FACILITIES THAT ARE NOT PRIVATELY OWNED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION, INSTALLATION AND SUPPLY OF ANY UTILITY SERVICE REQUIRED FOR THIS PROJECT, INCLUDING TEMPORARY POWER AND TELEPHONE SERVICES. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THIS PROJECT.

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE TO INSURE THE SAFE, ORDERLY AND EXPEDITIOUS CIRCULATION OF VEHICULAR AND PEDESTRIAN TRAFFIC FLOW AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 12 FEET WIDE TRAVEL LANE FOR EACH DIRECTION OF TRAFFIC FLOW ALONG THE ADJACENT ROADWAYS, AT ALL TIMES DURING HIS/HER CONSTRUCTION ACTIVITIES, TO ALLOW LOCAL AND EMERGENCY TRAFFIC ACCESS.
2. WATCHMEN AND FLAGMEN SHALL BE EMPLOYED BY THE CONTRACTOR FOR THE PROTECTION OF ANY EQUIPMENT ENTERING, LEAVING OR CROSSING ACTIVE TRAFFIC LANES, OR AS MAY BE REQUIRED FOR ROUTING OF ANY TRAFFIC AROUND OR THROUGH THE CONSTRUCTION. WATCHMEN AND FLAGMEN WILL BE EMPLOYED BY THE CONTRACTOR AT HIS OWN EXPENSE.
3. BEFORE BEGINNING WORK ON ANY STAGE OF THE PROJECT, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL WARNING SIGNS, BARRICADES, TRAFFIC GUIDES, LIGHTS, SAFETY CONES AND OTHER DEVICES AS NECESSARY TO PROTECT THE PUBLIC DURING THAT PHASE OF HIS OPERATIONS. IN ADDITION, THE CONTRACTOR MUST NOTIFY ANY TENANTS OR PROPERTY OWNERS AT LEAST ONE WEEK PRIOR TO ANY ACTIVITIES THAT MAY EFFECT EXISTING OFF-STREET PARKING AND/OR THE FLOW OF TRAFFIC.
4. ALL NECESSARY REGULATORY AND WARNING SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LAST REVISED AND SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.



No.	Date	Revision	Revised By	Checked By
05	03/01/2023	Revise for Planning Board Submission	JB	BF
04	02/21/2023	Revise per DRC Meeting		BF
03	01/26/2023	Revised per Completeness Review dated 01/20/2023		
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FPA
FRENCH & PARRELLO
 ASSOCIATES

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 732.312.9800
 FPAengineers.com

New Jersey • New York • Pennsylvania • Georgia

BAHRAM FARZANEH, PE, PP
 PROFESSIONAL ENGINEER, NJ LIC. No. 246E03454800

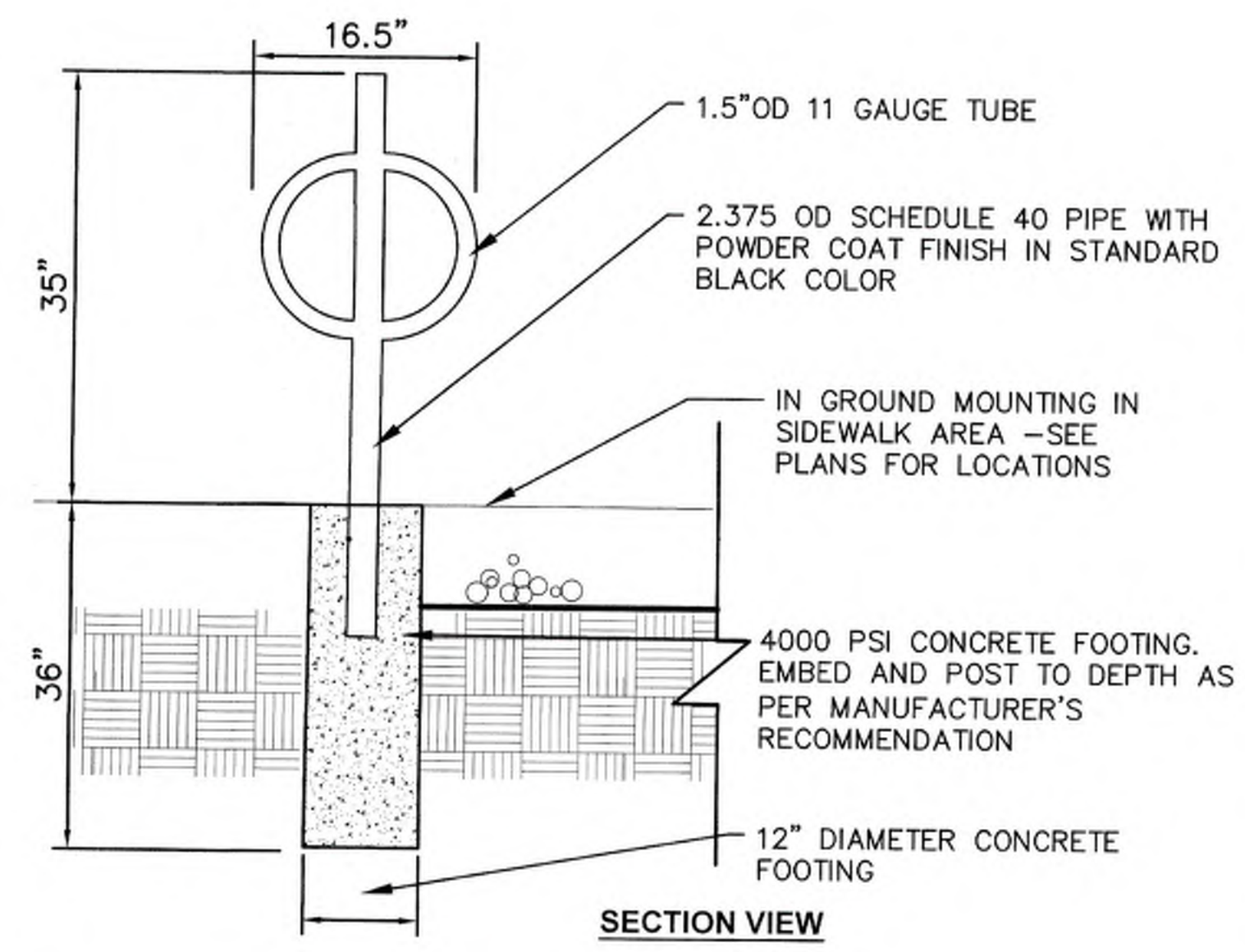
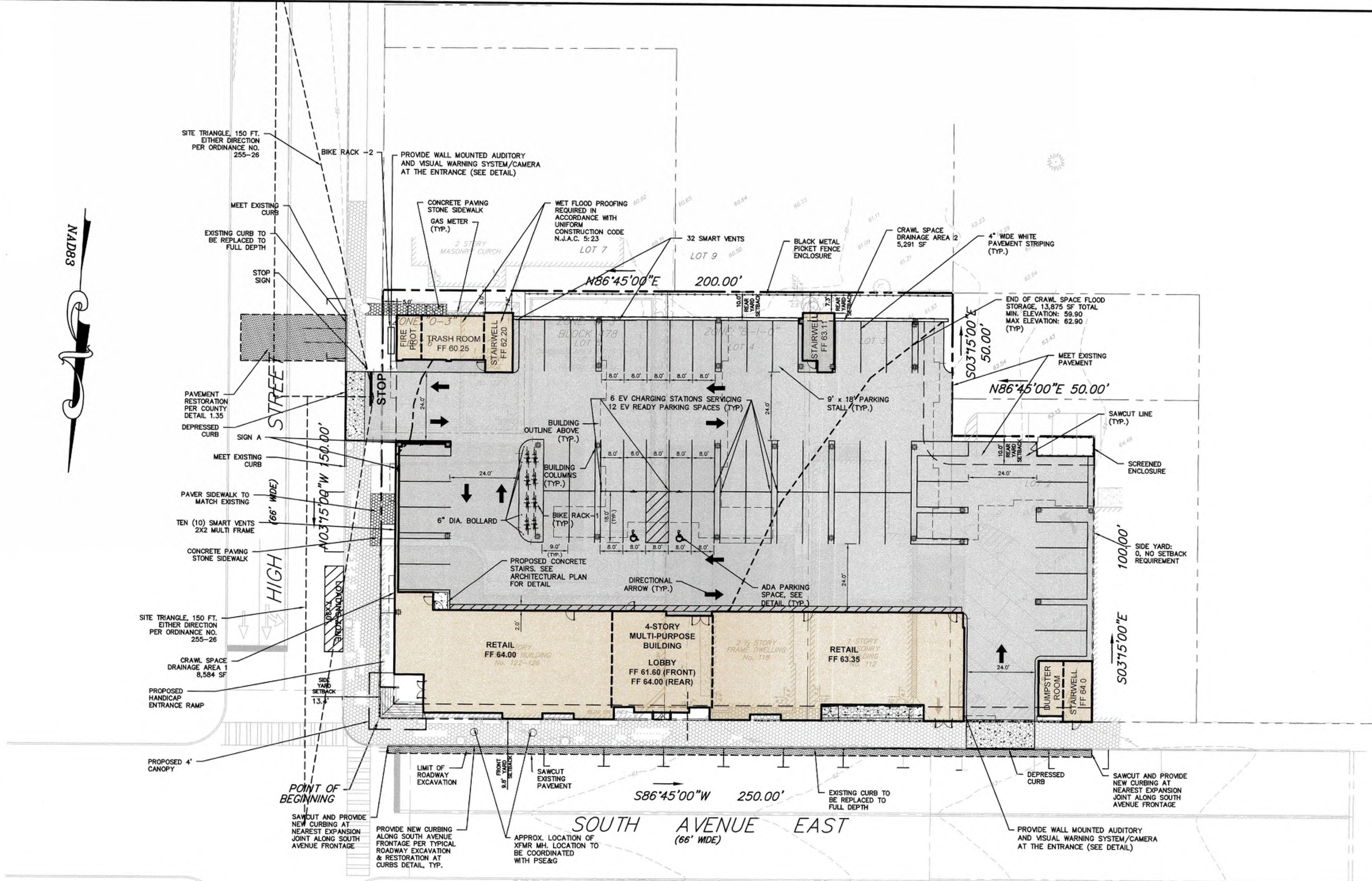
EXISTING CONDITIONS PLAN
FOR
PRELIMINARY AND FINAL SITE PLAN
FOR
MIXED USE DEVELOPMENT
BLOCK 478, LOTS 2, 3, 4, 5, AND 6
BLOCK 483, LOT 18, AND 17.01
 TOWNSHIP OF CRANFORD
 UNION COUNTY NEW JERSEY

DATE: 2/19/2021
 DESIGNED BY: MS
 DRAWN BY: MS

SCALE: 1" = 20'
 FIELD BOOK: MS

PROJECT NUMBER: 16753.001
 SHEET: 2 of 15

C:\16753\16753\16753 - South Avenue East - Cranford\CADD\DWG\16753.001 - EXIST.dwg EXIST



NOTES:

- 2-BIKE HITCH POST STEEL BIKE RACK SHALL BE MANUFACTURED BY DERO, A PLAYCORE COMPANY, MINNEAPOLIS, MN OR APPROVED EQUAL (WWW.DERO.COM) CONTACT: BEN CRAMER 1-917-463-3769
- FINISH SHALL BE POWDER COAT IN STANDARD BLACK COLOR.
- BIKE RACKS SHALL BE INSTALLED USING THE IN GROUND MOUNT OPTION IN LOCATIONS AS SHOWN ON THE PLAN.
- LOCATIONS OF BIKE RACKS SHALL BE FIELD ADJUSTED AS REQUIRED BY THE PROJECT PROFESSIONAL PRIOR TO INSTALLATION

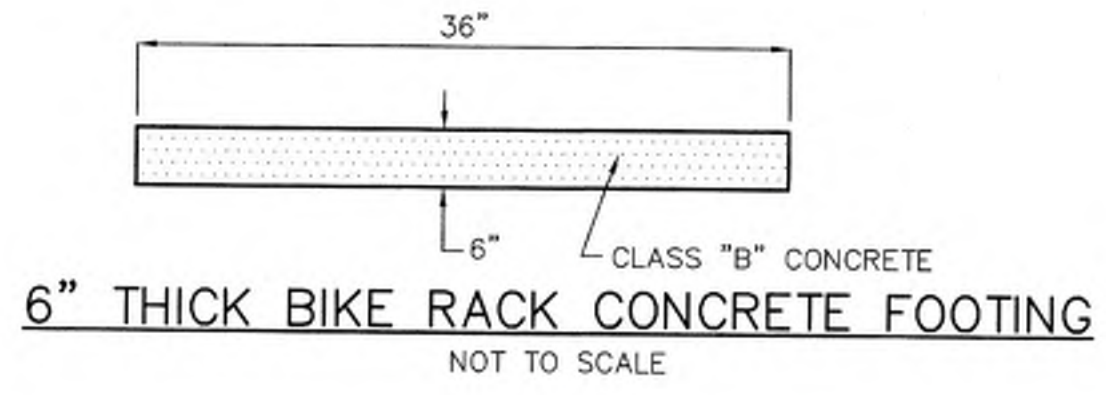
BIKE RACK DETAIL-1
NOT TO SCALE



NOTES:

- BIKE RACK SHALL BE MANUFACTURED BY GLOBAL INDUSTRIES OR APPROVED EQUAL (WWW.GLOBALINDUSTRIES.COM) 1-888-978-7759
- FINISH SHALL BE POWDER COAT IN STANDARD BLACK COLOR.
- BIKE RACKS SHALL BE INSTALLED USING THE IN GROUND MOUNT OPTION IN LOCATIONS AS SHOWN ON THE PLAN.
- LOCATIONS OF BIKE RACKS SHALL BE FIELD ADJUSTED AS REQUIRED BY THE PROJECT PROFESSIONAL PRIOR TO INSTALLATION
- BIKE RACK TO BE ANCHORED TO 6" THICK CONCRETE FOOTING

BIKE RACK - 2 DETAIL
NOT TO SCALE

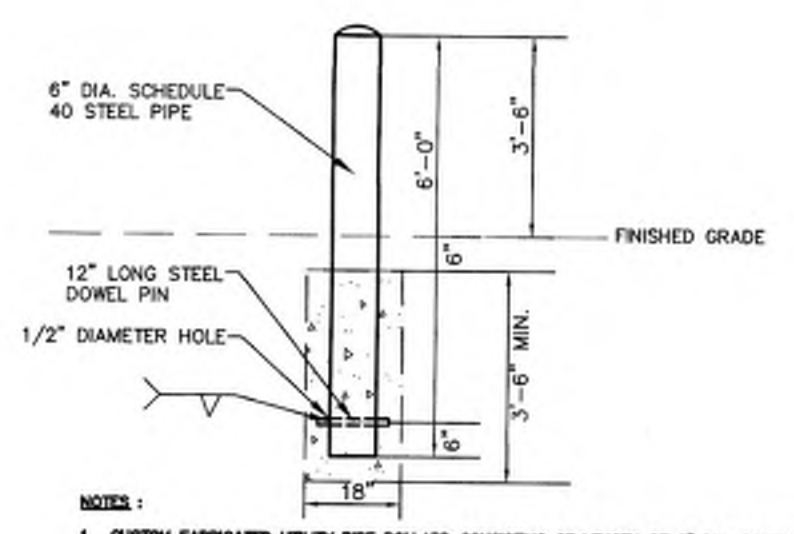


CAR COMING KIT
Wall Mount • 40" X 10" • 2-sided
PIN: CC4008V-KIT-DL

- PASS Signs Controller (PSC) with audio board*
- Power Supply*
- Speaker*
- Direction-Logic Motion Detector

Pre-Wired Inside Sign

CAR WARNING KIT
HTTPS:PASSSIGNS.COM/WARNING-SIGNS/
CAR-COMING-SIGN OR APPROVED EQUAL
AUDIO VISUAL WARNING SYSTEM
NOT TO SCALE



- NOTES:
- CUSTOM FABRICATED UTILITY PIPE BOLLARD CONSISTING OF LENGTH OF 6" DIA. SCHEDULE 40 STEEL PIPE PROVIDED AT PARKING LOT AND SERVICE AREA ONLY.
 - PROVIDE STEEL PIPES 6'-0" LONG OVERALL WITH TWO 1/2" DIA. HOLES DRILLED 6" UP FROM THE BOTTOM TO ACCEPT A 1/2" LONG STEEL DOWEL PIN WELDED TO PIPE WALLS.
 - EXPOSED PORTION OF BOLLARD SHALL BE 3'-6" ABOVE ADJACENT FINISH GRADE.
 - FILL PIPE COMPLETELY WITH CONCRETE AFTER INSTALLATION.
 - DO NOT CONCRETE SURFACE ABOVE THE TOP OF THE PIPE, FINISH NEATLY TO PREVENT WATER INFILTRATION.
 - PROVIDE 10" DIA. 3'-6" DEEP CONCRETE FOOTING AT EACH UTILITY BOLLARD LOCATION. EXCESS FOOTING TOP A MINIMUM OF 6" BELOW ADJACENT CONCRETE SIDEWALK OR ASPHALT SURFACES.
 - APPLY TWO COATS OF GALVANIZING AND TWO FULL WET SHOP APPLIED COATS OF METAL PRIMER TO INSIDE AND OUTSIDE SURFACES AND ALL EDGES OF PIPES AFTER FABRICATION.
 - PRIMER BASES OF DESIGN HOLLOW SECTION RODDING GALVANIZED METAL PRIMER AND CONCRETE FILLING.
 - TOP COAT COLOR FEDERAL SPECIFICATIONS YELLOW ALL LOCATIONS EXCEPT AT HANDICAP PARKING SIGN LOCATIONS WHERE BOLLARD TO BE BLUE.

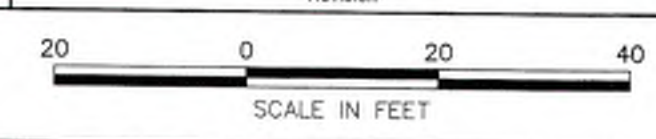
METAL BOLLARD DETAIL
NOT TO SCALE

FLOOD VENT CALCULATIONS:

CRAWL SPACE FLOOD STORAGE AREA: 13,875 SF
SMART VENT CAPACITY: 200 SF
SMART VENT 2X2 MULTI-FRAME CAPACITY: 800 SF
USE 32 SINGLE VENTS X 200 SF +
10-2X2 MULTI-FRAME VENTS X 800 SF
= 14,400 SF > 13,875 SF OK

NOTE: NO BASEMENT IS PROPOSED

No.	Date	Revision	Revised By	Checked By
05	03/01/2023	Revise for Planning Board Submission	J.B	BF
04	02/21/2023	Revise per DRC Meeting		BF
03	01/26/2023	Revised per Completeness Review dated 01/20/2023		BF
02	11/07/2022	Revised for Township Submission	MS	BF
01	05/20/2021	Revised per NJDEP Comments	SP	BF



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BAHRAM FARZANEH, PE, PP
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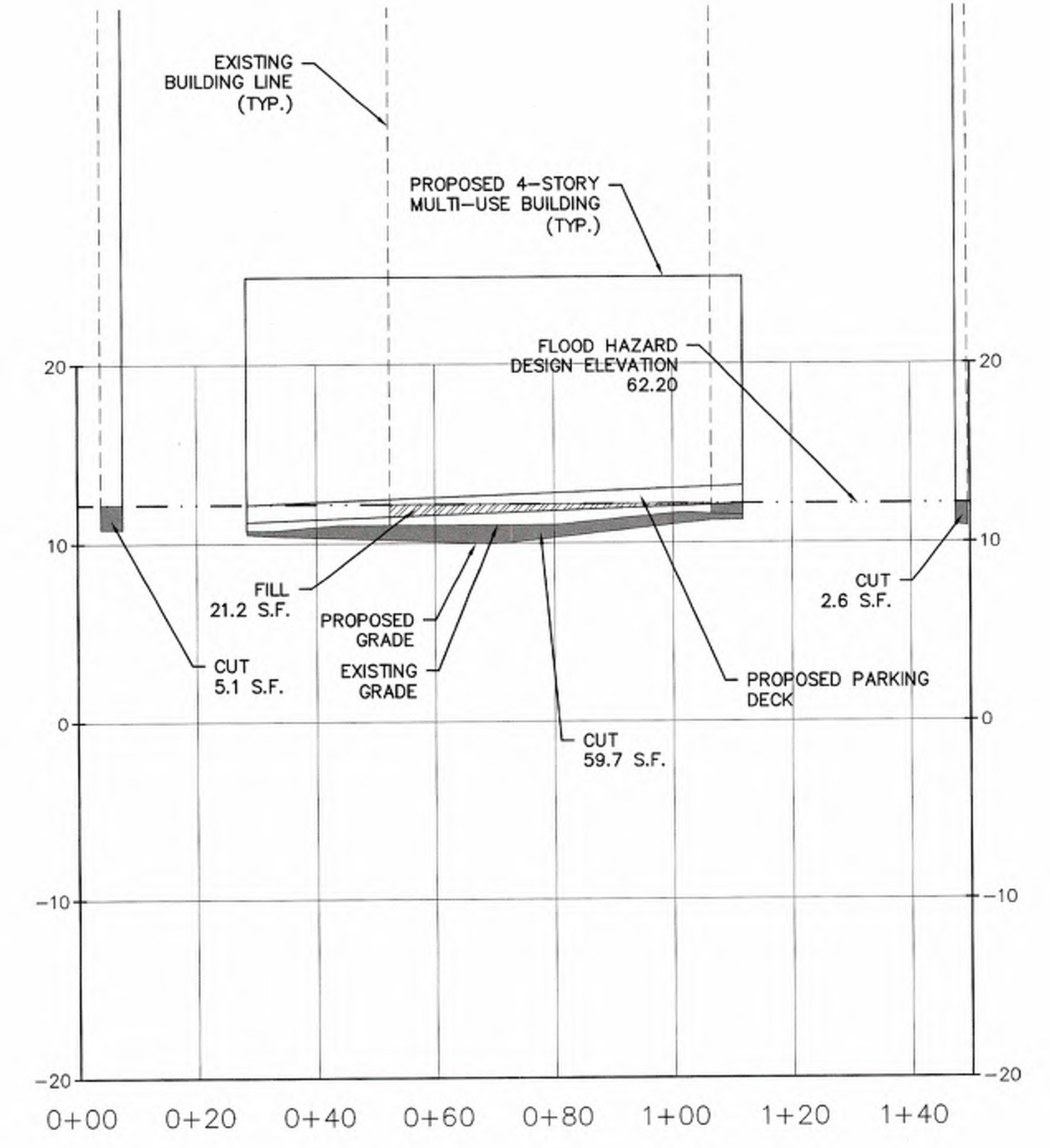
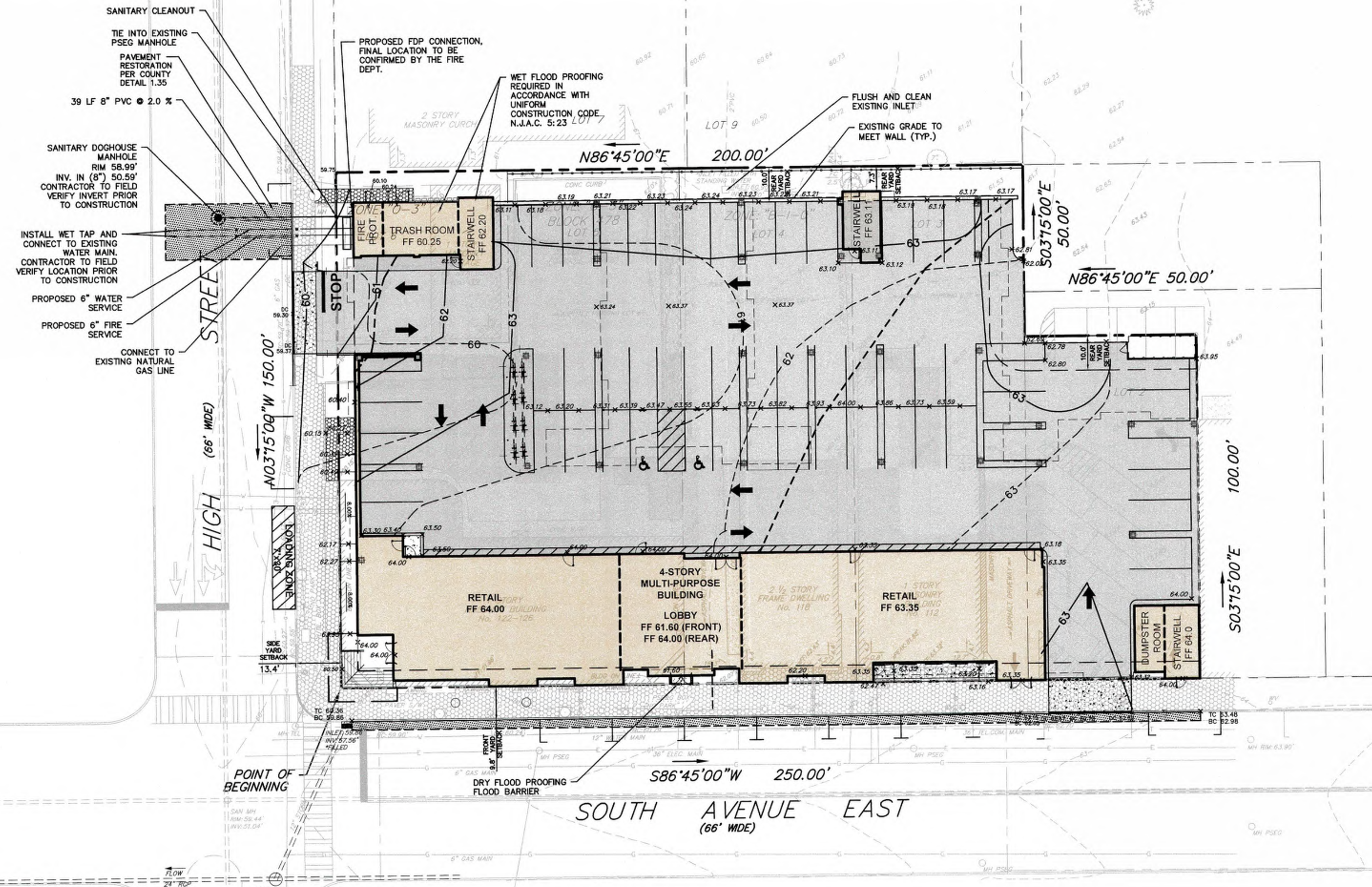
SITE PLAN - TRACT 1
FOR
PRELIMINARY AND FINAL SITE PLAN
FOR
MIXED USE DEVELOPMENT
BLOCK 478, LOTS 2, 3, 4, 5, AND 6
BLOCK 483, LOT 18, AND 17.01
TOWNSHIP OF CRANFORD
UNION COUNTY NEW JERSEY

DATE: 2/19/2021
DESIGNED BY: BF
DRAWN BY: SP

SCALE: 1" = 20'
FIELD BOOK

PROJECT NUMBER: 16753.001
SHEET: 3 of 15

NAD83



TYPICAL SECTION THROUGH SITE - CRAWL SPACE FLOOD STORAGE

LEGEND

- PROPOSED CRAWL SPACE/ FLOOD STORAGE CONTOURS
- PROPOSED PARKING DECK CONTOURS

NOTE: NO BASEMENT IS PROPOSED

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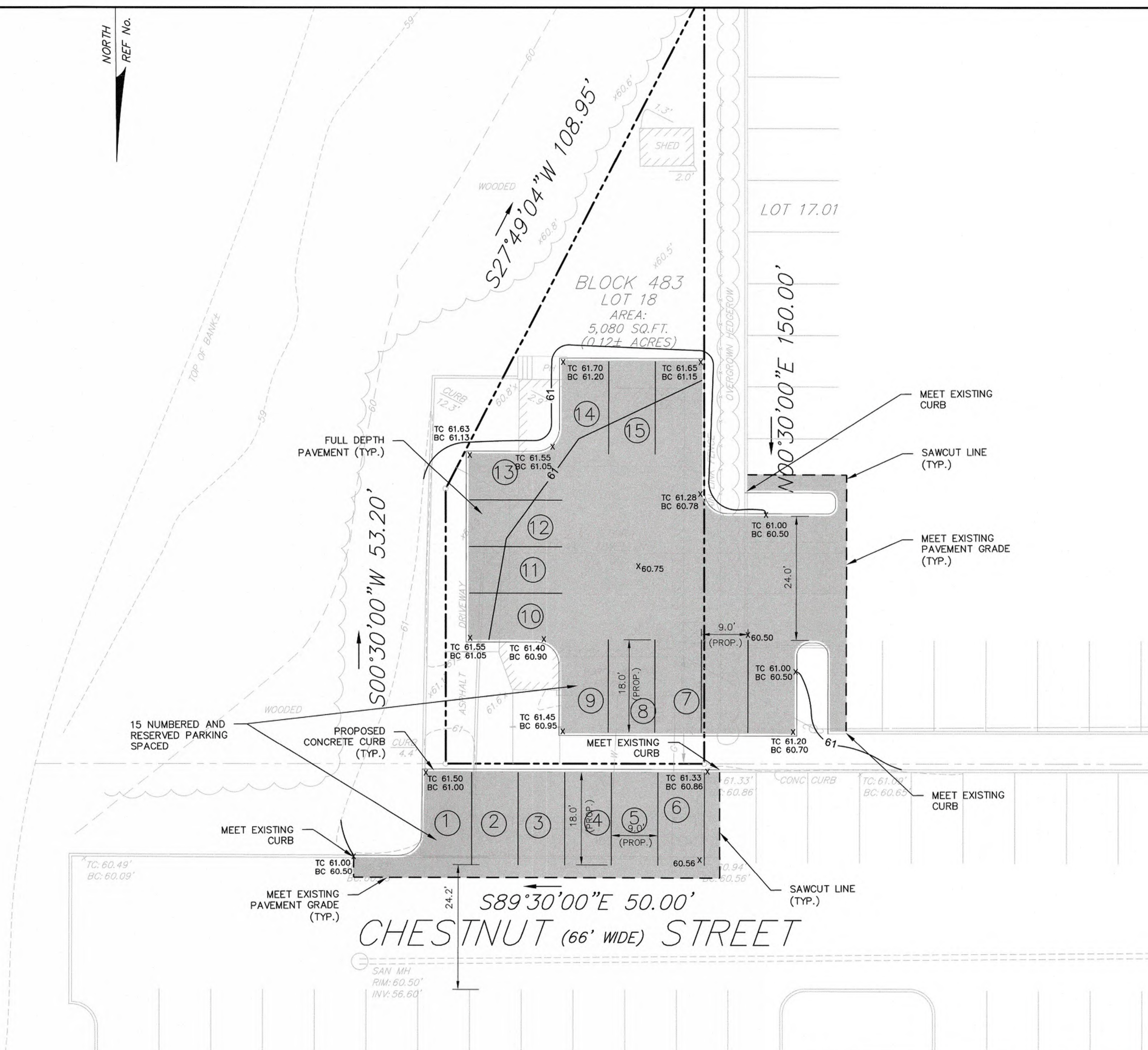
GRADING AND DRAINAGE PLAN - TRACT 1
FOR
PRELIMINARY AND FINAL SITE PLAN
FOR

MIXED USE DEVELOPMENT
BLOCK 478, LOTS 2, 3, 4, 5, AND 6
BLOCK 483, LOT 18, AND 17.01
TOWNSHIP OF CRANFORD
UNION COUNTY NEW JERSEY

DATE:	DESIGNED BY:	SCALE:	PROJECT NUMBER:
2/19/2021	BF	1" = 20'	16753.001
DRAWN BY:	CHECKED BY:	FIELD BOOK:	SHEET:
SP	BF		4 of 15

NORTH
REF No.

NJDEP ELECTRONIC APPROVAL STAMP



D:\16700\16753 - South Avenue East, Cranford\CAD\DWG\16753.001 - SP - SMALL SITE.dwg SP--SMALL

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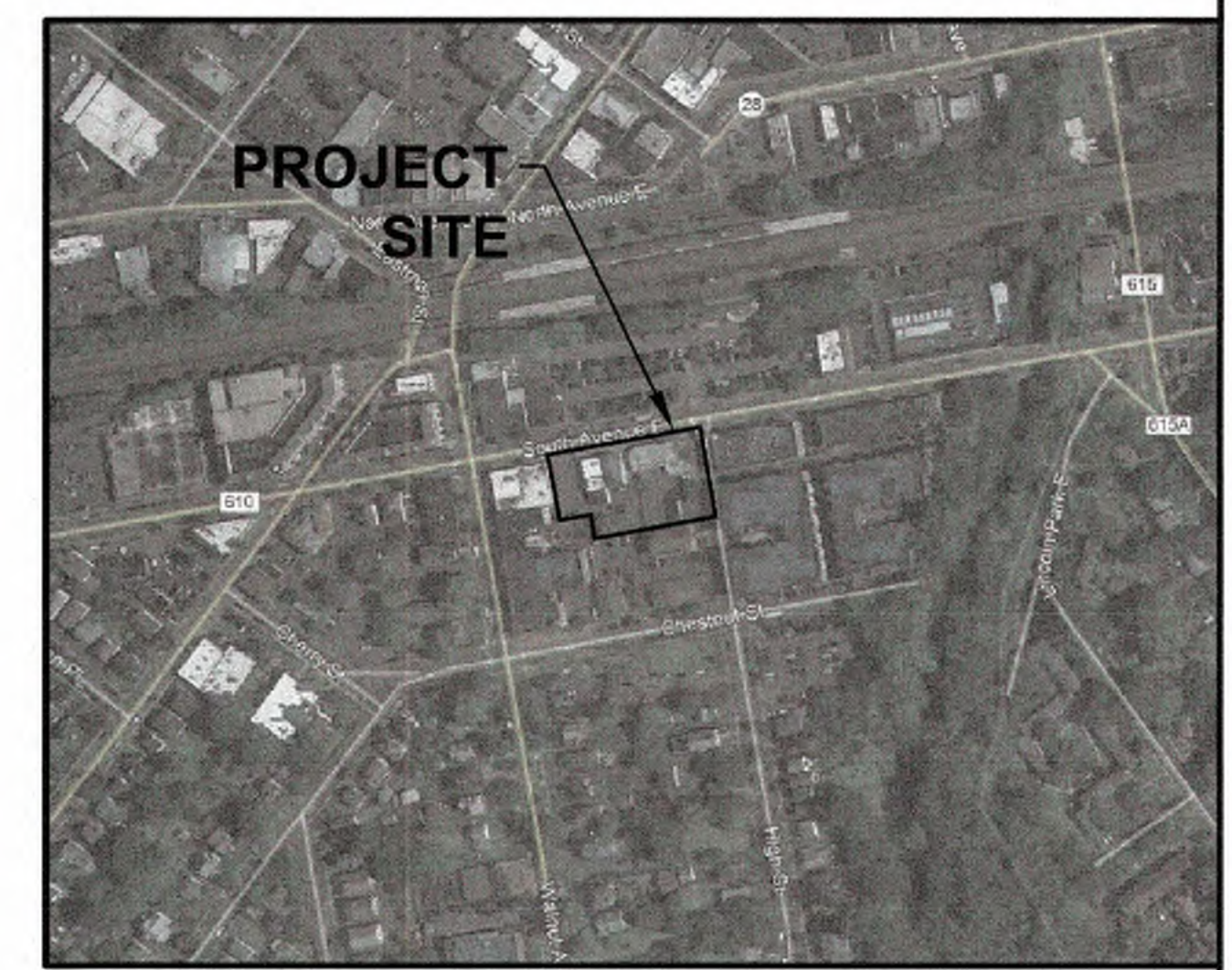
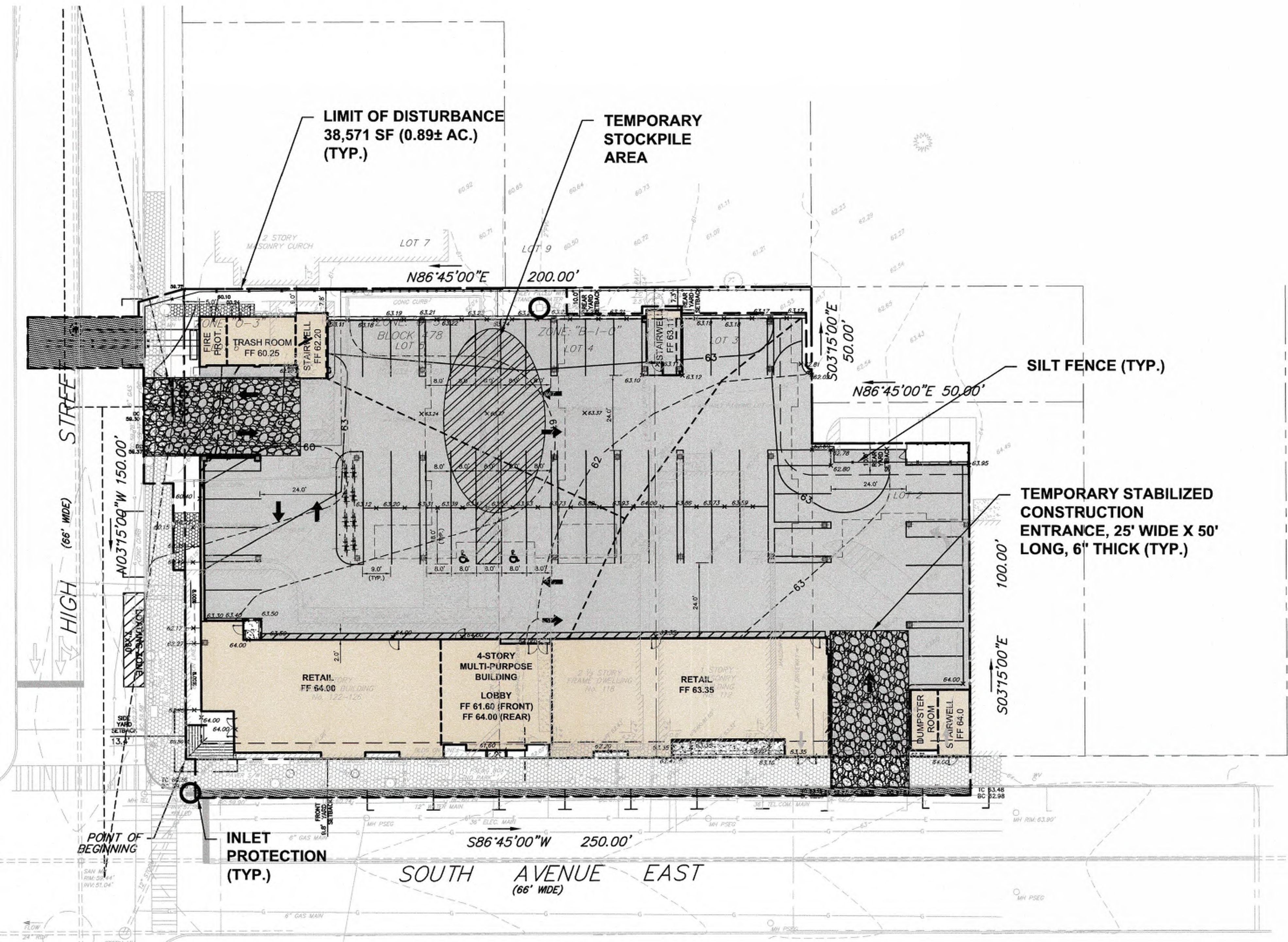
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SITE AND GRADING PLAN - TRACT 2
FOR
PRELIMINARY AND FINAL SITE PLAN
FOR
MIXED USE DEVELOPMENT
BLOCK 478, LOTS 2, 3, 4, 5, AND 6
BLOCK 483, LOT 18, AND 17.01
TOWNSHIP OF CRANFORD
UNION COUNTY NEW JERSEY

DATE: 2/19/2021	DESIGNED BY: BF	SCALE: 1" = 10'	PROJECT NUMBER: 16753.001
DRAWN BY: MS	CHECKED BY: BF	FIELD BOOK	SHEET: 5 of 15

NAD83

NJDEP ELECTRONIC APPROVAL STAMP



KEY MAP
SCALE: NOT TO SCALE

TOTAL DISTURBANCE AREA
AREA = 38,878 SF ± (0.89 AC ±)

No.	Date	Revision	Revised By	Checked By
05	03/01/2023	Revise for Planning Board Submission	JB	BF
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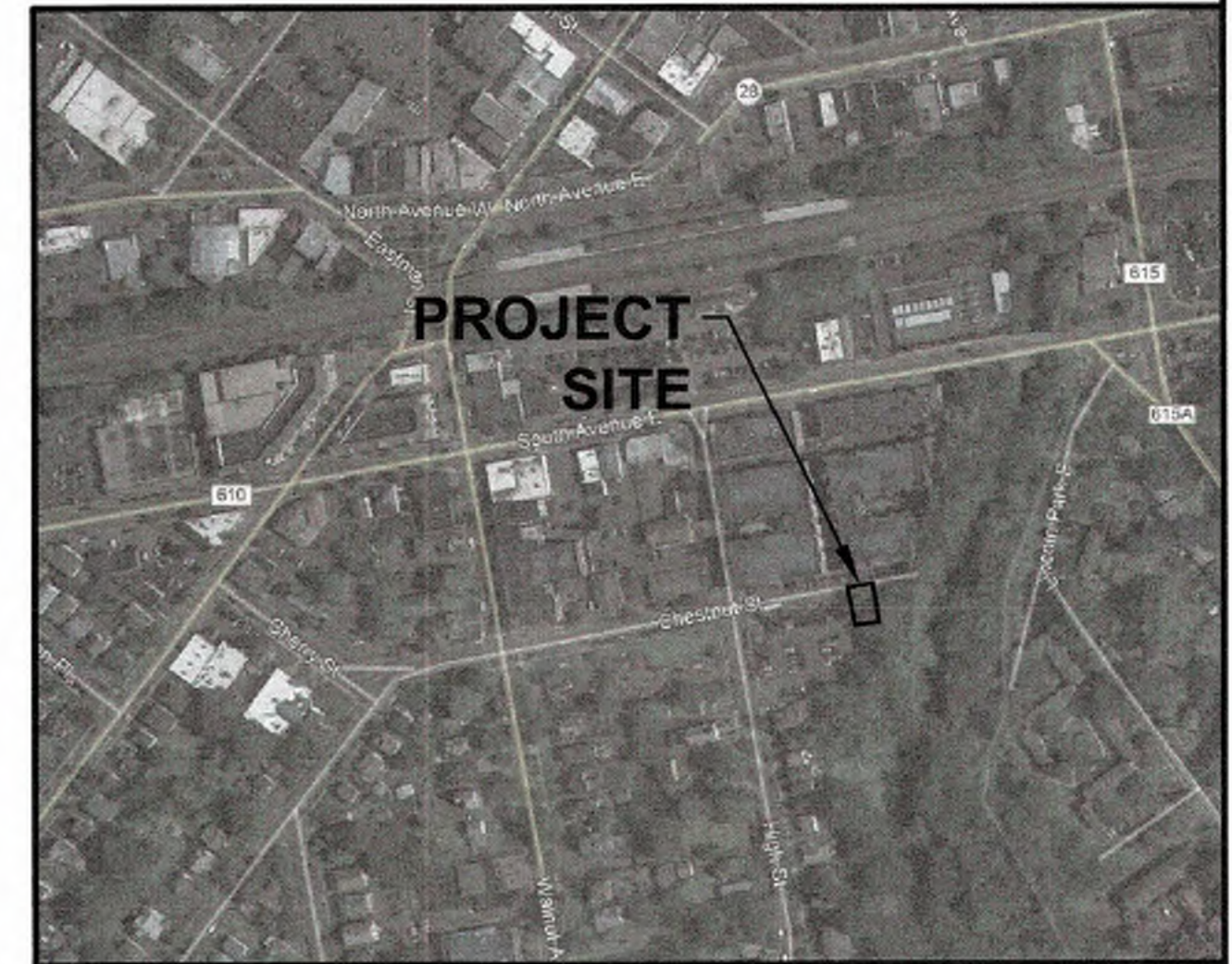
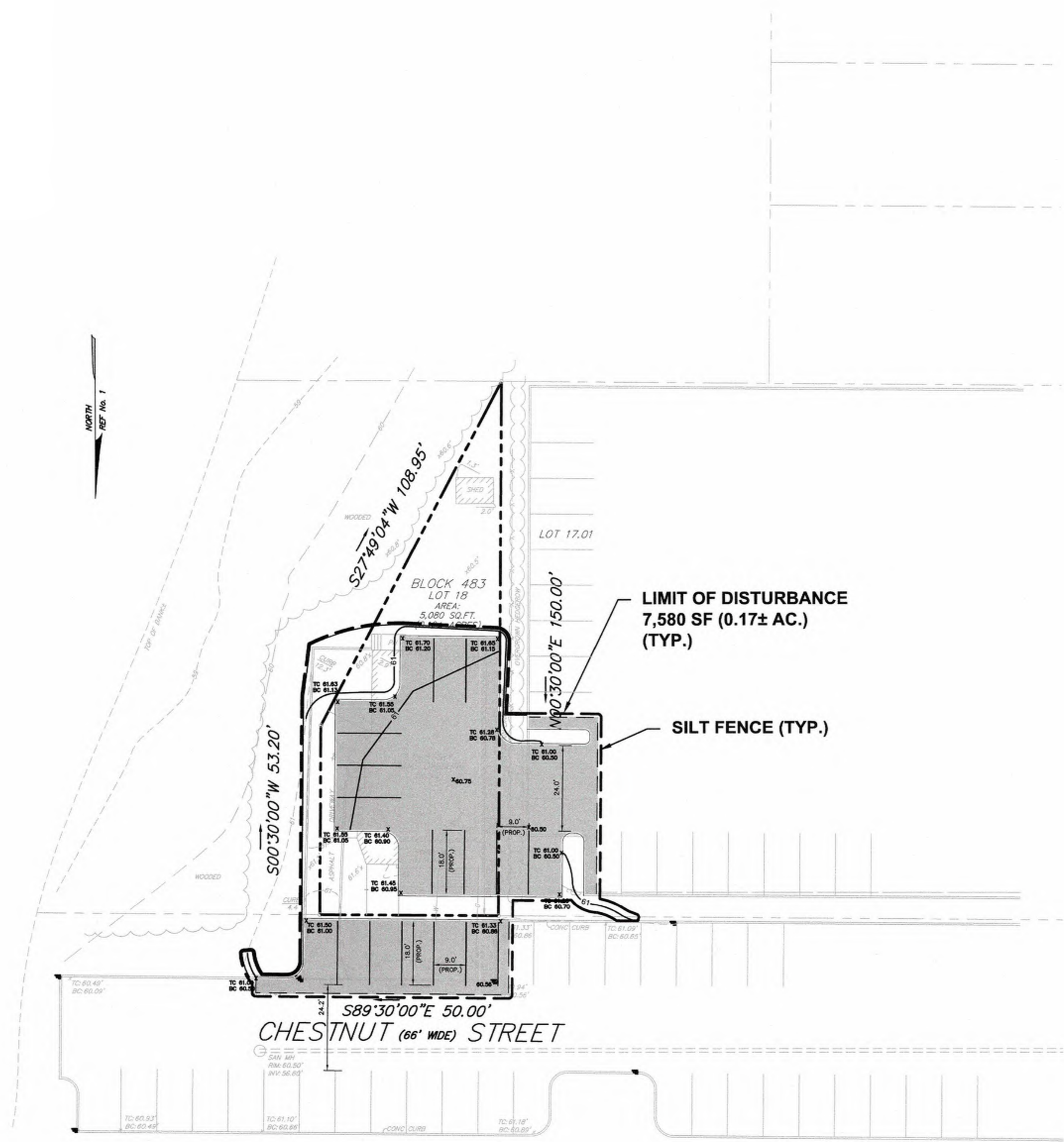
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PROFESSIONAL ENGINEER, NJ LIC. No. 24GE03454900

SOIL EROSION AND SEDIMENT CONTROL PLAN (1) FOR PRELIMINARY AND FINAL SITE PLAN FOR MIXED USE DEVELOPMENT BLOCK 478, LOTS 2, 3, 4, 5, AND 6 BLOCK 483, LOT 18, AND 17.01 TOWNSHIP OF CRANFORD UNION COUNTY NEW JERSEY			
DATE: 2/19/2021	DESIGNED BY: BF	SCALE: 1" = 20'	PROJECT NUMBER: 16753.001
DRAWN BY: SP	CHECKED BY: BF	FIELD BOOK	SHEET: 6 of 15

C:\JK\16700\16753 - South Avenue East - Cranford\CAD\DWG\16753.001 - SCS.dwg SCS



KEY MAP
SCALE: NOT TO SCALE

TOTAL DISTURBANCE AREA
AREA = 7,580 SF ± (0.17 AC ±)

No.	Date	Revision	Revised By	Checked By
05	03/01/2023	Revise for Planning Board Submission	JB	BF
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BAHRAM FARZANEH, PE, PP
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SOIL EROSION AND SEDIMENT CONTROL PLAN (2)			
FOR PRELIMINARY AND FINAL SITE PLAN FOR MIXED USE DEVELOPMENT			
BLOCK 478, LOTS 2, 3, 4, 5, AND 6 BLOCK 483, LOT 18, AND 17.01			
TOWNSHIP OF CRANFORD UNION COUNTY NEW JERSEY			
DATE:	DESIGNED BY:	SCALE:	PROJECT NUMBER:
2/19/2021	BF	1" = 20'	16753.001
DRAWN BY:	CHECKED BY:	FIELD BOOK:	SHEET:
SP	BF		7 of 15

SOIL EROSION AND SEDIMENT CONTROL NOTES

- 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.
- 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 STATE STANDARDS.
- PERMANENT VEGETATION SHALL BE SEED OR SODED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH WILL BE USED FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NJ STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
- 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.
- 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.
- ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E.: SLOPES GREATER THAN 3:1)
- 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.
- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING 48 HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY.
- 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 BE EMPLOYED. TOPSOIL SHALL 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.
- 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 AND 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.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- 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.
- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN OWNERSHIP.
- MULCHING TO THE NJ STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONALS ARE ONLY ISSUED WHEN THE SEASON PROHIBITS SEEDING.
- CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAR DURING LIFE OF CONSTRUCTION PROJECT.
- 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.
- 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, HYDROSEED MULCH SHOULD BE APPLIED AT A RATE OF 1000 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.

SOMERSET-UNION SOIL CONSERVATION DISTRICT

SOMERSET COUNTY 4-H CENTER
308 MILLTOWN ROAD
BRIDGEWATER NEW JERSEY 08807
(908) 526-2701

ACID SOILS NOTES

- IN ORDER TO PROVIDE SUITABLE CONDITIONS FOR GROWTH AND VEGETATION AND TO PREVENT THE ACIDIFYING OF DRAINAGE WATER IN THOSE AREAS UNDERLAIN WITH ACID FORMATIONS WITH A pH BELOW 4.0 THE FOLLOWING REQUIREMENT SHALL BE MET:
- LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID PRODUCING SOILS ARE ENCOUNTERED.
 - TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOILS.
 - STOCKPILES OF HIGH ACID PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THIS MATERIAL HAS A HIGH CLAY CONTENT.
 - TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOIL MATERIAL TO BE STORED MORE THAN 48 HOURS SHOULD BE COVERED WITH PROPERLY ANCHORED, HEAVY GRADE SHEETS OF POLYETHYLENE WHERE POSSIBLE. IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. SILT FENCE SHALL BE INSTALLED AT THE TOE OF SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH ACID PRODUCING SOIL.
 - HIGH ACID PRODUCING SOILS WITH A PH OF 4 OR LESS, OR CONTAINING IRON SULFIDE, (INCLUDING BORROW FROM CUTS OR DREGGED SEDIMENT) SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS PER ACRE (OR 450 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A PH OF 5 OR MORE EXCEPT AS FOLLOWS:
 - AREAS WHERE TREES OR SHRUBS ARE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A PH OF 5 OR MORE.
 - DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24" OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES AND OTHERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.
 - EQUIPMENT USED FOR MOVEMENT OF HIGH ACID-PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID-PRODUCING SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.
 - NON-VEGETATIVE EROSION CONTROL PRACTICES (STONE TREATMENT PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SEDIMENT BARRIER, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS FROM, AROUND, OR OFF THE SITE.
 - FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING), MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ENSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID-PRODUCING SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST, THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM.

CONSTRUCTION SCHEDULE AND PROCEDURE FOR IMPLEMENTATION OF SOIL EROSION AND SEDIMENT CONTROL MEASURES

- PROVIDE TEMPORARY STABILIZATION OF ALL DISTURBED AREAS AND INSTALL SILT FENCE, TREE PROTECTION, INLET PROTECTION, STABILIZED CONSTRUCTION ENTRANCES AND ALL OTHER NECESSARY SOIL EROSION MEASURES. (1 WEEK)
- REMOVE EXISTING SITE IMPROVEMENTS. (3 WEEK)
- CLEAR AND ESTABLISH ROUGH GRADINGS AS NECESSARY TO CONSTRUCT SITE IMPROVEMENTS. (2 WEEKS)
- INSTALL ALL UNDERGROUND UTILITIES AND ADDITIONAL ADDITIONAL INLET PROTECTION AS NECESSARY (2 WEEKS)
- CONSTRUCT PROPOSED BUILDING AND PARKING AREAS (24 WEEKS)
- ESTABLISH FINISHED GRADE, AND PROVIDE PERMANENT VEGETATIVE COVER. (1 WEEK)
- REMOVE ACCESS PROTECTION, INLET PROTECTION, TREE PROTECTION AND SILT FENCE AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED. (2 DAYS)

THE ABOVE SCHEDULE IS FOR THE IMPLEMENTATION AND INSTALLATION OF SOIL EROSION AND SEDIMENT CONTROL MEASURES ONLY. CONTRACTOR MAY MODIFY AND/OR CREATE HIS OWN SCHEDULE. IF THE CONSTRUCTION SCHEDULE IS MODIFIED, A REVISION TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

- SITE PREPARATION
 - 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.
 - IMMEDIATELY PRIOR TO SEEDING AND TOPSOILING APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
 - 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.
 - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
- SEEDBED PREPARATION
 - UNIFORMLY APPLY GROUND LIME 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 CO-OPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COEQU/V/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 S.F. 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 THE SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.
 - WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A 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.
 - HIGH ACID PRODUCING 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 PREPARATION. SEE ACID SOIL NOTES.

- SEEDING
 - PERMANENT SEEDING SHALL CONSISTING OF THE FOLLOWING MIXES OR APPROVED EQUAL - ACCEPTABLE SEEDING DATES ARE BETWEEN MARCH 1 THRU APRIL 30 AND OPTIMAL SEEDING DATES ARE AUGUST 15 THRU OCTOBER 15:

HARD FESCUE	4.0#/1,000 S.F.
PERENNIAL RYEGRASS	1.0#/1,000 S.F.
KENTUCKY BLUEGRASS	1.0#/1,000 S.F.

PERMANENT SEEDING SHALL BE PROVIDED ON ALL THE DETENTION BASIN SIDE SLOPES AND BASIN BOTTOM. THE SEED MIX SHALL BE SEED MIXTURE 17 AND CONSIST OF THE FOLLOWING MIXTURE OR APPROVED EQUAL - ACCEPTABLE SEEDING DATES ARE BETWEEN MARCH 1 THRU AUGUST 14 AND OPTIMAL SEEDING DATES ARE AUGUST 15 THRU OCTOBER 1:

- | | |
|---------------------|-----------------|
| CREeping BENTGRASS | 0.1#/1,000 S.F. |
| CREeping RED FESCUE | 0.1#/1,000 S.F. |
| ALKALI SALTBASS | 0.1#/1,000 S.F. |

- PLEASE NOTE THAT OTHER SEED MIXTURES CAN BE USED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
- CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDER OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/2 TO 3/4 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/2 INCH DEEPER ON COARSE-TEXTURED SOIL.
 - AFTER SEEDING, FIRING 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.
 - 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-FINERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN PEG SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

- 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 REQUIREMENT.

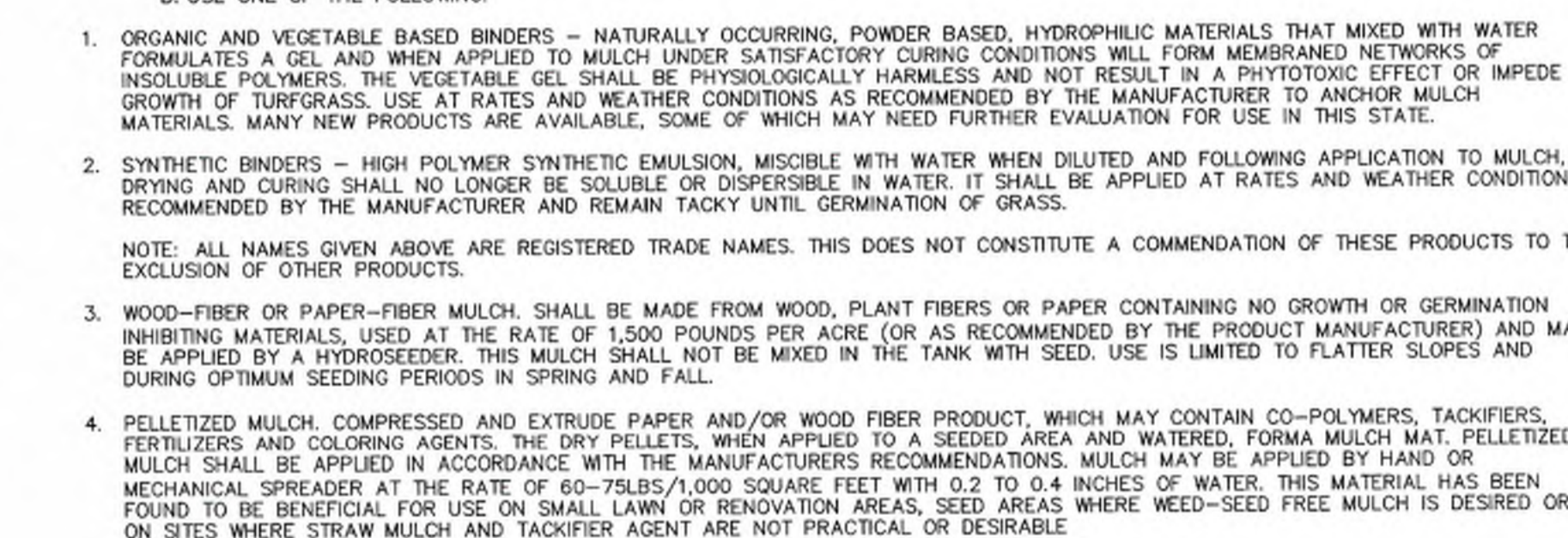
 - STRAW OR HAY, UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1 1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO 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 MULCH, SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITH 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.
 - 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.
 - MULCH NETTING, STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTING TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
 - CRIMPER (MULCH ANCHORING COUPLER 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.
 - LIQUID MULCH BINDERS-MAY BE USED TO ANCHOR SALT HAY OR STRAW MULCH.
 - APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
 - USE ONE OF THE FOLLOWING:
 - ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT 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 PHYTOXIC 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.
 - 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 AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

- AREAS WHERE TREES OR SHRUBS ARE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A PH OF 5 OR MORE.
- DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24" OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES AND OTHERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.

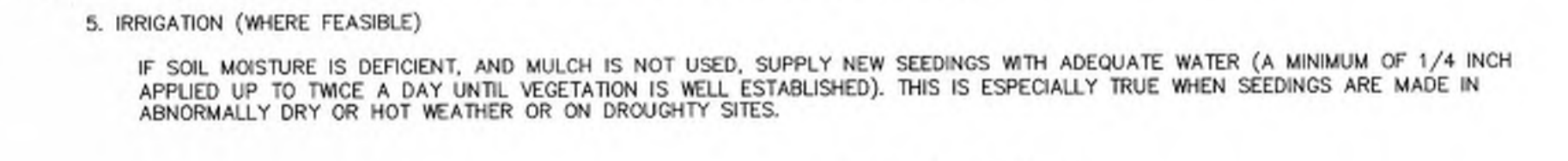
- EQUIPMENT USED FOR MOVEMENT OF HIGH ACID-PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID-PRODUCING SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.
- NON-VEGETATIVE EROSION CONTROL PRACTICES (STONE TREATMENT PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SEDIMENT BARRIER, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS FROM, AROUND, OR OFF THE SITE.
- FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING), MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ENSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID-PRODUCING SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST, THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM.

- APPLY THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETED 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, AND MULCH IS NOT USED, SUPPLY NEW SEEDINGS 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.



WITH METAL FASTNERS AND REINFORCEMENT BETWEEN FASTNER AND FABRIC.



DIG 6" IN DEEP TRENCH BURY BOTTOM FLAP, TAMP IN PLACE.

SILT FENCE

NOT TO SCALE

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

- SITE PREPARATION
 - 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.
 - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
 - 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
 - APPLY GROUND LIME AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS CO-OPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 S.F. OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT THE RATE AS ESTABLISHED BY SOIL TESTING. 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.
 - WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A 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.
 - INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RECTIFIED IN ACCORDANCE WITH THE ABOVE.
 - SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS, SEE ACID SOIL NOTES.

- SEEDING
 - TEMPORARY SEEDING SHALL CONSISTING OF THE FOLLOWING SEED SELECTIONS OR APPROVED EQUAL:

COOL SEASON GRASSES	
SPRING OATS	2.0#/1,000 S.F., WITH OPTIMUM SEED DEPTH OF 1.0 INCH
WINTER CEREAL RYE	2.8#/1,000 S.F., WITH OPTIMUM SEED DEPTH OF 1.0 INCH
WARM SEASON GRASSES	
PEARL MILLET	0.5#/1,000 S.F. WITH OPTIMUM SEED DEPTH OF 1.0 INCH

PLEASE NOTE THAT OTHER SEED SELECTIONS CAN BE USED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.

- CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDER OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/2 TO 3/4 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/2 INCH DEEPER ON COARSE-TEXTURED SOIL.
- 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-FINERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN PEG SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.
- AFTER SEEDING, FIRING 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

REFER TO THE MULCH NOTES, NOTE 4 UNDER THE PERMANENT VEGETATIVE COVER SECTION.

STABILIZATION WITH MULCH

METHODS AND MATERIALS

- SITE PREPARATION
 - 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.
 - 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.
- PROTECTIVE MATERIALS
 - UN-ROTTED SMALL-GRAIN STRAW, OR SALT HAY AT 2.0 TO 2.5 TONS PER ACRE IS SPREAD UNIFORMLY AT 90 TO 115 POUNDS PER 1,000 SQUARE FEET AND ANCHORED WITH A MULCH ANCHORING TOOL. LIQUID MULCH BINDERS OR NETTING TO SOIL SURFACE. OTHER SUITABLE MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT. THE APPROVED RATES ABOVE HAVE BEEN MET WHEN THE MULCH COVERS THE GROUND COMPLETELY UPON VISUAL INSPECTION, I.E. THE SOIL CAN NOT BE BELOW THE MULCH.
 - ASPHALT EMULSION IS RECOMMENDED AT THE RATE OF 600 TO 1,200 GALLONS PER ACRE. THIS IS SUITABLE FOR A LIMITED PERIOD OF TIME WHERE TRAVEL BY PEOPLE, ANIMALS OR MACHINES IS NOT A PROBLEM.
 - SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER.
 - WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE (OR ACCORDING TO THE MANUFACTURER'S REQUIREMENTS) MAY BE APPLIED BY A HYDROSEEDER.
 - MULCH NETTING, SUCH AS PAPER JUTE, EXCELSIOR, COTTON, OR PLASTIC, MAY BE USED.
 - WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED ON AREAS WHERE FLOWING WATER COULD WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT.
 - GRAVEL, CRUSHED STONE, OR SAG AT THE RATE OF 9 CUBIC YARDS PER 1,000 SQ. FT. APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 3 INCHES MAY BE USED. SIZE 2 OR 3 (ASTM-C-33) IS RECOMMENDED.

- MULCH ANCHORING - SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA AND STEEPNESS OF SLOPES:
 - 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.
 - MULCH NETTING - STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.
 - CRIMPER (MULCH ANCHORING COUPLER TOOL) - A TRACTOR-DRAWN IMPLEMENT ESPECIALLY DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SURFACE. THIS PRACTICE AFFORDS MAXIMUM EROSION CONTROL, BUT IS LIMITED TO THOSE SLOPES UPON WHICH THE TRACTOR CAN OPERATE SAFELY. SOIL PENETRATION SHOULD BE ABOUT 3 TO 4 INCHES. ON SLOPING LAND, THE OPERATION SHOULD BE ON THE CONTOUR.
 - LIQUID MULCH - BINDERS
 - APPLICATION SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
 - USE ONE OF THE FOLLOWING:
 - ORGANIC AND VEGETABLE BASED BINDER - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT 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 PHYTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. USE AT RATES AND WEATHER CONDITIONS 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.
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- DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24" OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES AND OTHERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.

- EQUIPMENT USED FOR MOVEMENT OF HIGH ACID-PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID-PRODUCING SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.
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- FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING), MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ENSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID-PRODUCING SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST, THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM.

- APPLY THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETED 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, AND MULCH IS NOT USED, SUPPLY NEW SEEDINGS 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.



STOCKPILE TOP AND SIDES TO BE IMMEDIATELY STABILIZED WITH TEMPORARY VEGETATIVE COVER.

EXISTING GRADE (TYP.)

SILT FENCE (TYP.)

NOTES:

- TOPSOIL STOCKPILES TO BE PLACED AS DETERMINED IN THE FIELD.
- STOCKPILE NOT TO BE PLACED IN AREA WITH CONCENTRATED FLOW, WETLANDS, EXTREME SLOPE OR WITHIN 100' OF A NATURAL STREAM.

TEMPORARY STOCKPILE

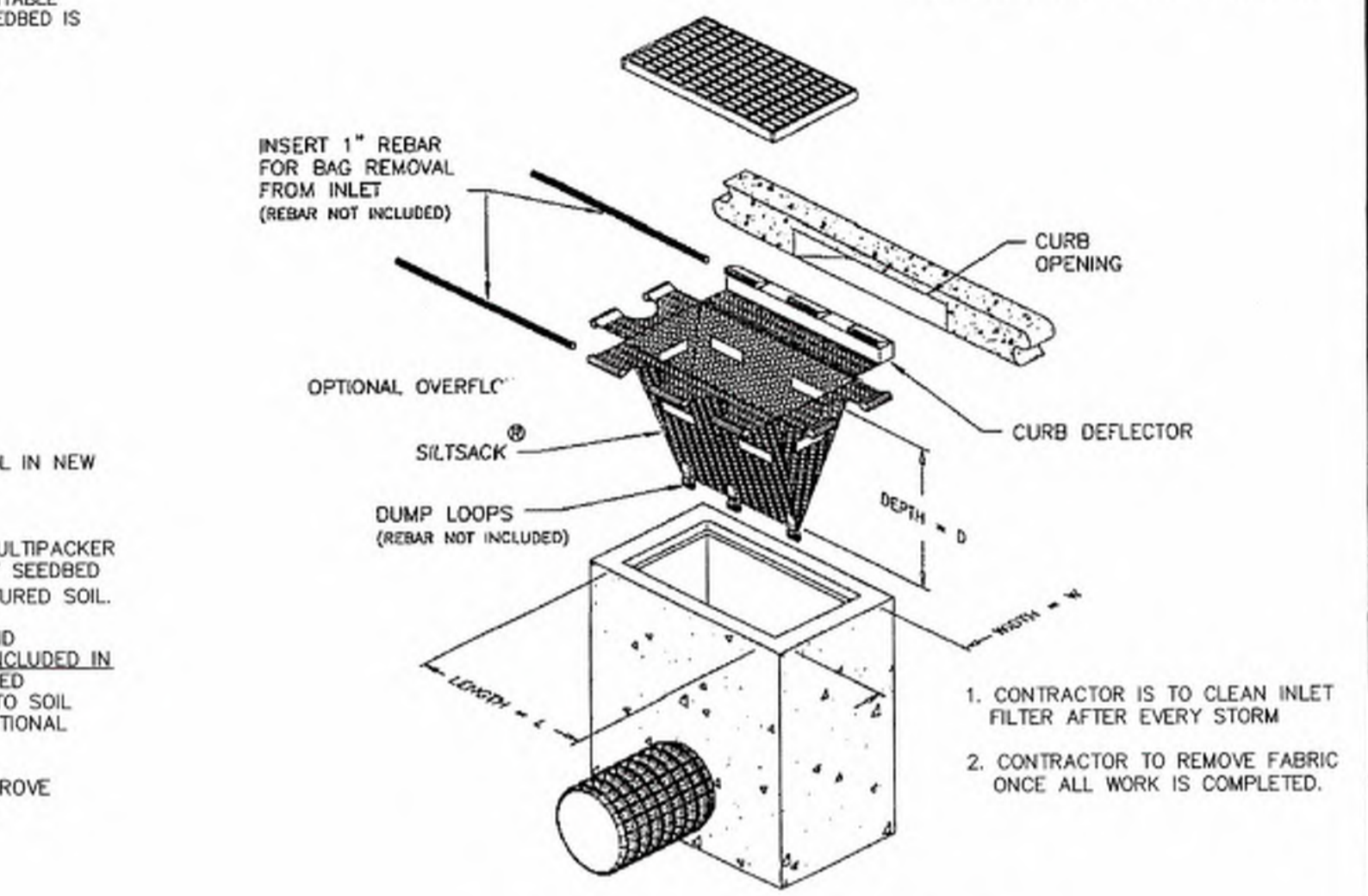
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No.	Date	Revision	Revised By	Checked By
05	03/01/2023	Revise for Planning Board Submission		JB BF
04	02/21/2023	Revise per DRC Meeting		BF
03	01/26/2023	Revised per Completeness Review dated 01/20/2023		MS BF
02	11/07/2022	Revised for Township Submission		MS BF
01	05/20/2021	Revised per NJDEP Comments		SP BF

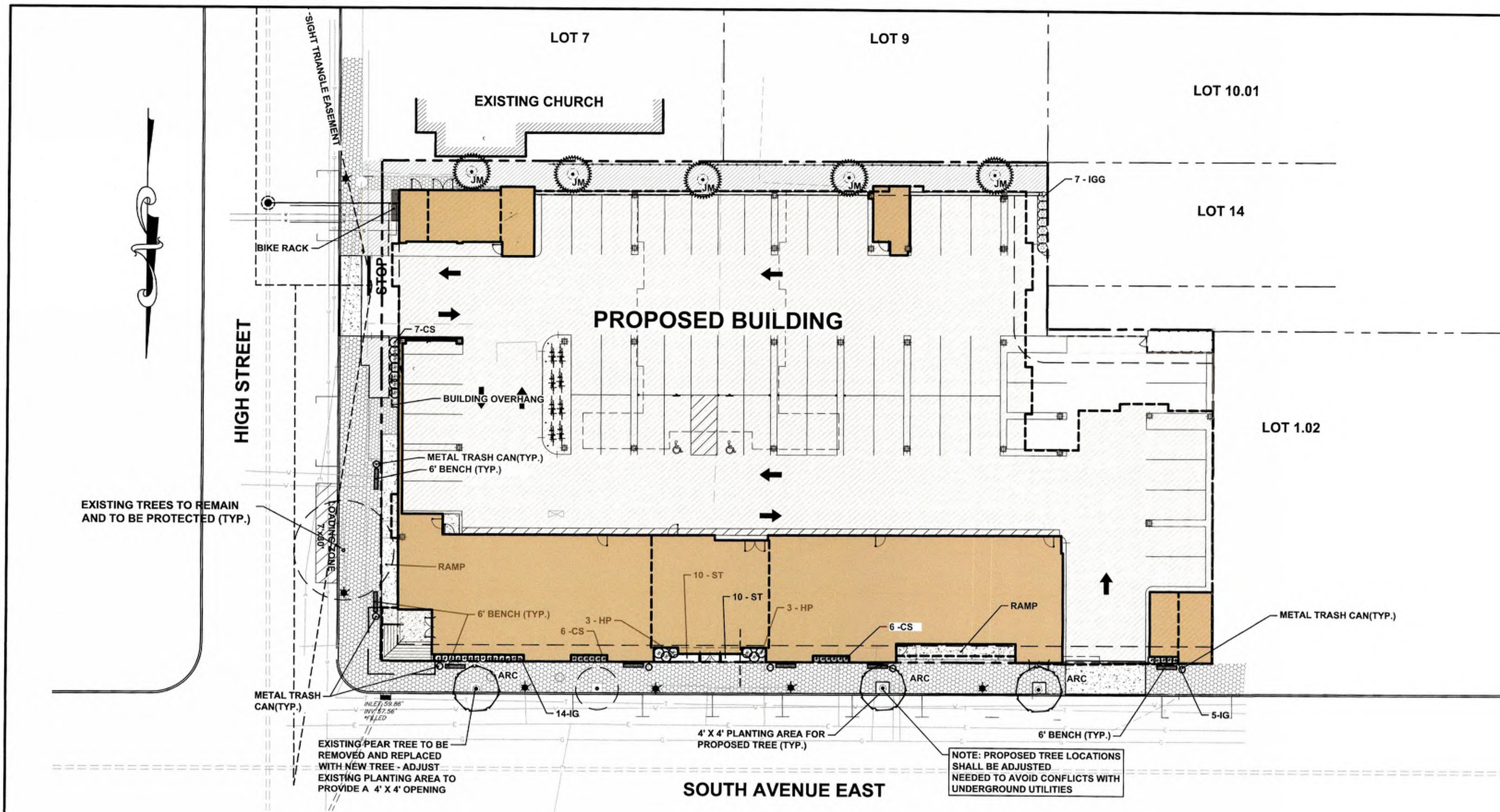
AS SHOWN

SCALE IN FEET

NJDEP ELECTRONIC APPROVAL STAMP



INLET PROTECTION DETAIL



LEGEND

- SODDED LAWN (TYP.)
- EXISTING STREET LIGHT FIXTURE
- EXISTING TREE TO REMAIN
- PROPOSED PLANT MATERIAL
- APPROXIMATE INSTALLED SIZE
- APPROXIMATE SIZE AT 15 TO 20 YRS GROWTH

PLANTING NOTES

1. THE LANDSCAPE PLAN SHALL BE USED FOR LANDSCAPING PURPOSES ONLY. THE CONTRACTOR SHOULD EXAMINE ALL ENGINEERING DRAWINGS AND FIELD CONDITIONS FOR EXACT LOCATIONS OF UTILITIES, DRAINS, ETC., AND NOTIFY THE OWNER ABOUT ANY DISCREPANCIES BEFORE STARTING WORK.
2. ALL PLANTING SHALL BE IN CONFORMANCE WITH THE AMERICAN NURSERYMEN'S ASSOCIATION STANDARDS, CURRENT EDITION. ALL PLANT MATERIALS USED SHALL BE TRUE TO NAME AND SIZE IN CONFORMITY WITH THE CURRENT EDITION OF THE AMERICAN STANDARD OF NURSERY STOCK AND SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. ALL PLANTS SHALL HAVE NORMAL, WELL-DEVELOPED BRANCHES AND VIGOROUS ROOT SYSTEMS. THEY SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM DEFECTS, DISFIGURING KNOTS, ABRASIONS OF THE BARK, SUN SCALD INJURIES, PLANT DISEASES, INSECT EGGS, BORERS, AND ALL OTHER FORMS OF INFECTION. ALL PLANTS SHALL BE NURSERY GROWN. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY SOURCE AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY ANY PERSON, VEHICLE, EQUIPMENT, OR TOOLS RELATED TO THE EXECUTION OF THIS CONTRACT.
4. EXCAVATION NEAR EXISTING UTILITIES TO BE CAREFULLY PERFORMED BY HAND.
5. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT BORE TO EXISTING GRADE AT THE NURSERY. ALL PLANT MATERIAL SHALL BE PLANTED SO THAT THE TOP OF THE ROOTBALL IS NO HIGHER OR LOWER THAN THE EXISTING/FINISHED GRADE DEPENDENT UPON SOIL CONDITIONS.
6. IN THE EVENT THAT PLANTING DISCREPANCIES OR MATERIAL OMISSIONS OCCUR IN THE PLANT MATERIALS LIST, THE LANDSCAPING PLAN SHALL GOVERN. THE USE AND PLANTING OF BARE ROOT MATERIAL SHALL BE PROHIBITED.
7. ANY SUBSTITUTIONS OF PLANT MATERIAL WITH REGARDS TO SIZE, SPECIES, VARIETY, ETC., SHALL BE SUBJECT TO APPROVAL BY THE OWNER.
8. PLANTS SHALL ONLY BE INSTALLED WHEN THE SOIL IS FROST FREE.
9. UNDER NO CIRCUMSTANCES SHOULD THE MAIN LEADER OF A DECIDUOUS OR EVERGREEN TREE BE TOPPED. DECIDUOUS TREES SHALL BE PRUNED BY REMOVAL OF 1/3 OF THE INTERIOR BRANCHING STRUCTURE WITHOUT ALTERING THE ORIGINAL BRANCHING FORM OF THE TREE.
10. ALL DISTURBED AREAS, NOT BEING PLANTED, SHALL BE TOPSOILED 4" THICK, FERTILIZED, SEEDED, AND MULCHED WITH APPROVED MULCH. TOPSOIL SHALL BE NATURAL FRIABLE, FERTILE SOIL CHARACTERISTIC OF PRODUCTIVE SOIL IN THE VICINITY. IT SHALL BE FREE OF LUMPS OF CLAY, STONES, ROOTS, AND OTHER FOREIGN MATTER.
11. CUT AND LOOSEN SISAL HEMP CHOKER THE AROUND TREE TRUNK. ALL PLASTIC MATERIAL SHALL NOT BE PERMITTED. ALL WIRE BASKETS AND PLASTIC LINERS OF CONTAINER GROWN TREES AND SHRUBS MUST BE COMPLETELY REMOVED. NO CONTAINER GROWN MATERIAL WILL BE ACCEPTED IF IT IS ROOT BOUND AND NOT ROOT PRUNED. THE USE OF NYLON TWINE ON ROOT BALLS IS PROHIBITED.
12. THE DEPTH OF PLANT PITS SHALL BE INCREASED BY 12" THROUGH THE ADDITION OF LOOSE AGGREGATE (3/4" TO 1 1/2" DIAMETER) WHEREVER POOR DRAINAGE OCCURS OR WHERE DIRECTED BY THE OWNER.
13. GUY WIRES SHALL BE LOCATED SO THAT THEY WILL NOT PULL CROUCH APART. GUY WIRES TO SECOND BRANCH (MINIMUM ONE-THIRD HEIGHT OF TREE). USE THREE GUYS PER TREE UNLESS OTHERWISE INDICATED. ALL TREE STAKES, GUY WIRES, TREE WRAPPING AND SAUCERS SHALL BE REMOVED AFTER ONE GROWING SEASON.
14. PLANTS PLANTED IN ROWS SHALL BE MATCHED SPECIMENS AND BE UNIFORM IN SIZE AND FORM.
15. IN THE EVENT THAT EXISTING VEGETATION IS REMOVED BEYOND THE CLEARING LIMITS SHOWN ON THE PLANS, ADDITIONAL PLANTING MUST BE PROVIDED AS APPROVED BY THE TOWNSHIP AND AT NO COST TO THE OWNER.
16. PLANTING BACKFILL MIXTURE SHALL CONSIST OF ONE PART TOPSOIL, ONE PART NATIVE SOIL AND ONE PART PEAT MOSS. NOTE THAT PLANTING MIXTURE MAY CHANGE BASED UPON SOIL CONDITIONS.
17. MULCH, 4" IN DEPTH, SHALL BE TREATED SHREDDED HARDWOOD BARK NOT EXCEEDING 2" IN GREATEST DIMENSION. MULCH SHALL BE INSTALLED WITH A MAXIMUM OF ONE (1) INCH WITHIN ONE (1) FOOT ON THE TREE'S ROOT FLARE. A NON-PLASTIC WEED RETARDANT BARRIER SHALL BE USED IN ALL NON GRASSED AREAS. MULCH SHALL BE FINE GRADED FOR A PLEASING APPEARANCE. THE USE OF MARBLE OR PINE BARK CHIPS IS PROHIBITED. MULCH VOLCANOES ARE NOT PERMITTED.
18. ALL PLANT MATERIAL SHALL BE GIVEN A MINIMUM OF 5 GALLONS OF WATER AT THE TIME OF INSTALLATION AND SHALL BE WATERED AT INTERVALS DURING ESTABLISHMENT TO ENSURE ADAPTATION TO THE SITE. PRIOR TO THE INSTALLATION OF THE PLANT MATERIAL, THE CONTRACTOR SHALL FILL EACH PLANTING PIT WITH WATER AND ALLOW IT TO FULLY PERCOLATE INTO THE GROUND PRIOR TO PLACEMENT OF THE PLANT. THE CONTRACTOR SHALL NOTIFY EITHER THE OWNER OR PROJECT LANDSCAPE ARCHITECT OF ANY PERCOLATION PROBLEMS PRIOR TO INSTALLATION.
19. PREFERRED PLANTING TIME PERIODS ARE FROM SEPTEMBER 1 TO NOVEMBER 30 OR MARCH 20 TO MAY 31. NO PLANTING SHALL BE EXECUTED DURING ABNORMALLY HOT WEATHER NOR WHEN THE GROUND IS FROZEN.
20. THE CONTRACTOR SHALL REMOVE ALL DAMAGED BRANCHES AND NURSERY TAGS AT THE TIME OF INSTALLATION.
21. ALL TURF SHALL RECEIVE FERTILIZER CONSISTING OF 10-6-4 (50% ORGANIC) COMPOSITION, APPLIED AT 3 LB. PER 100 SQ. FT. SLOW RELEASE FERTILIZER TABLETS OR PACKETS OF 20-10-5 COMPOSITION SHALL BE ADDED TO ALL PLANTING PITS AT THE FOLLOWING RATIOS: 1 PER SHRUB, 2 PER DECIDUOUS OR EVERGREEN TREES UP TO 2" IN CALIPER AND 3 FOR DECIDUOUS AND EVERGREEN TREES ABOVE 2" IN CALIPER.
22. EACH TREE THAT IS PLANTED MUST BE TAGGED WITH A DURABLE LABEL BEARING THE GENUS, SPECIES, VARIETY, PLANT PATENT NUMBER (IF APPLICABLE) AND CULTURAL REQUIREMENTS AND MUST BE INSPECTED PRIOR TO REMOVAL.
23. ALL GROUPED SHRUBS SHALL BE MULCHED TOGETHER TO FORM ONE CONTINUOUS PLANTING BED.
24. CONTRACTOR TO BE RESPONSIBLE FOR SODDING AREAS BEING DISTURBED BY CONSTRUCTION. SOD TO BE IN ACCORDANCE WITH SOIL CONSERVATION DISTRICT'S STANDARDS.
25. ALL TREES FOUR (4) FEET OR GREATER IN HEIGHT SHALL BE STAKED PER TOWNSHIP DESIGN STANDARDS.
26. ALL PLANT RELOCATIONS SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
27. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR PERIOD OF ONE YEAR FROM THE TIME OF PLANTING.
28. ALL TREE "GATOR" IRRIGATION BAGS SHALL BE MAINTAINED FOR SIX MONTHS AND THEN REMOVED.

PLANT LIST

TREES	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER TYPE	MATURE SIZE	REMARKS
ARC	N*	3	ACER RUBRUM COLUMNARE "ARMSTRONG"	ARMSTRONG COLUMNAR RED MAPLE	3" CAL.	B&B	40' HEIGHT, 15' SPREAD	COLUMNAR VERSION OF RED MAPLE. SINGLE TRUNK ONLY
JM	N#&	5	JUNIPERUS SCOPIOLORUM "MOONGLOW"	MOONGLOW JUNIPER	8"-10" HEIGHT	B&B	20' HEIGHT, 8"-10" SPREAD	BLUE GREEN FOLIAGE. EVERGREEN, NARROW HABIT
SHRUBS AND PERENNIALS AND GRASSES	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER TYPE	MATURE SIZE	REMARKS
CS	N*	8	ARONIA MELANOCARPA LOW SCAPE MOUND	LOW SCAPE MOUND CHOKEBERRY	8' HEIGHT	1 GALLON CONT	18"-24" HEIGHT AND SPREAD	COMPACT DECIDUOUS SHRUB. WHITE FLOWERS IN SPRING
HP	N&	6	HYDRANGEA QUERCIFOLIA "RUBY SLIPPERS"	RUBY SLIPPERS OAKLEAF HYDRANGEA	1.5' HT.	3 GALLON CONT	3'-4' HEIGHT AND SPREAD	DECIDUOUS SHRUB. WHITE FLOWERS. SUMMER
IG	N#&	19	ILEX GLABRA "SHAMROCK"	SHAMROCK INKERRY HOLLY	2'-3' HEIGHT	B & B	4' HEIGHT AND SPREAD	EVERGREEN SHRUB. COMPACT FORM
IGG	N#&	18	ILEX GLABRA	INKBERRY HOLLY	2'-3' HEIGHT	B & B	6'-8' HEIGHT AND SPREAD	EVERGREEN SHRUB
ST	N#&	20	SEDUM TERNATUM	THREE LEAF STONECROP	2" HEIGHT	1 GAL. CONT.	6"-8" HEIGHT AND SPREAD	SUCCULENT TRAILING GROUNDCOVER. WHITE FLOWERS. JUNE

KEY:

- N = NATIVE PLANT OF NORTH AMERICA
- & = SALT SPRAY TOLERANT
- * = SPRING INSTALLATION ONLY
- # = SELDOM OR RARELY DAMAGED BY DEER AS PER RUTGERS AG AGENCY (HTTP://NJAES.RUTGERS.EDU)

SODDING SPECIFICATIONS

THE CONTRACTOR WILL BE RESPONSIBLE FOR RE-ESTABLISHING ALL AREAS DISTURBED BY CONSTRUCTION. THE SODDING WILL BE IN ACCORDANCE WITH UNION COUNTY SOIL CONSERVATION DISTRICT STANDARDS. SPECIFIC SEED TYPES SHALL BE USED AS FOLLOWS:

- A. ALL DISTURBED AREAS SHALL BE SODDED AS SHOWN ON THE LANDSCAPE PLAN WITH ERNST SEED CO. (ERNSTSEED.COM) ATHLETIC FIELD MIXTURE #ERNMX-106 OR APPROVED EQUAL. SOD SHALL BE INSTALLED DURING THE GROWING SEASON ONLY.
- B. SLOPED AREAS 3:1 AND GREATER SHALL RECEIVE IN COMBINATION WITH THE ABOVE SPECIFIED GRASS MIXTURE AN EROSION CONTROL MATTING BY BONTERRA AMERICA, PINELANDS NURSERIES, COLUMBUS, NJ, MODEL # C52 OR APPROVED EQUAL.

LANDSCAPE PLAN UTILITY NOTE:

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THIS PLAN SHALL BE USED FOR LANDSCAPING PURPOSES ONLY.

No.	Date	Revision	Revised By	Checked By
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SARAH REBAR BISAHA, LLA, PP
 LICENSED LANDSCAPE ARCHITECT NJ LIC NO AS006039

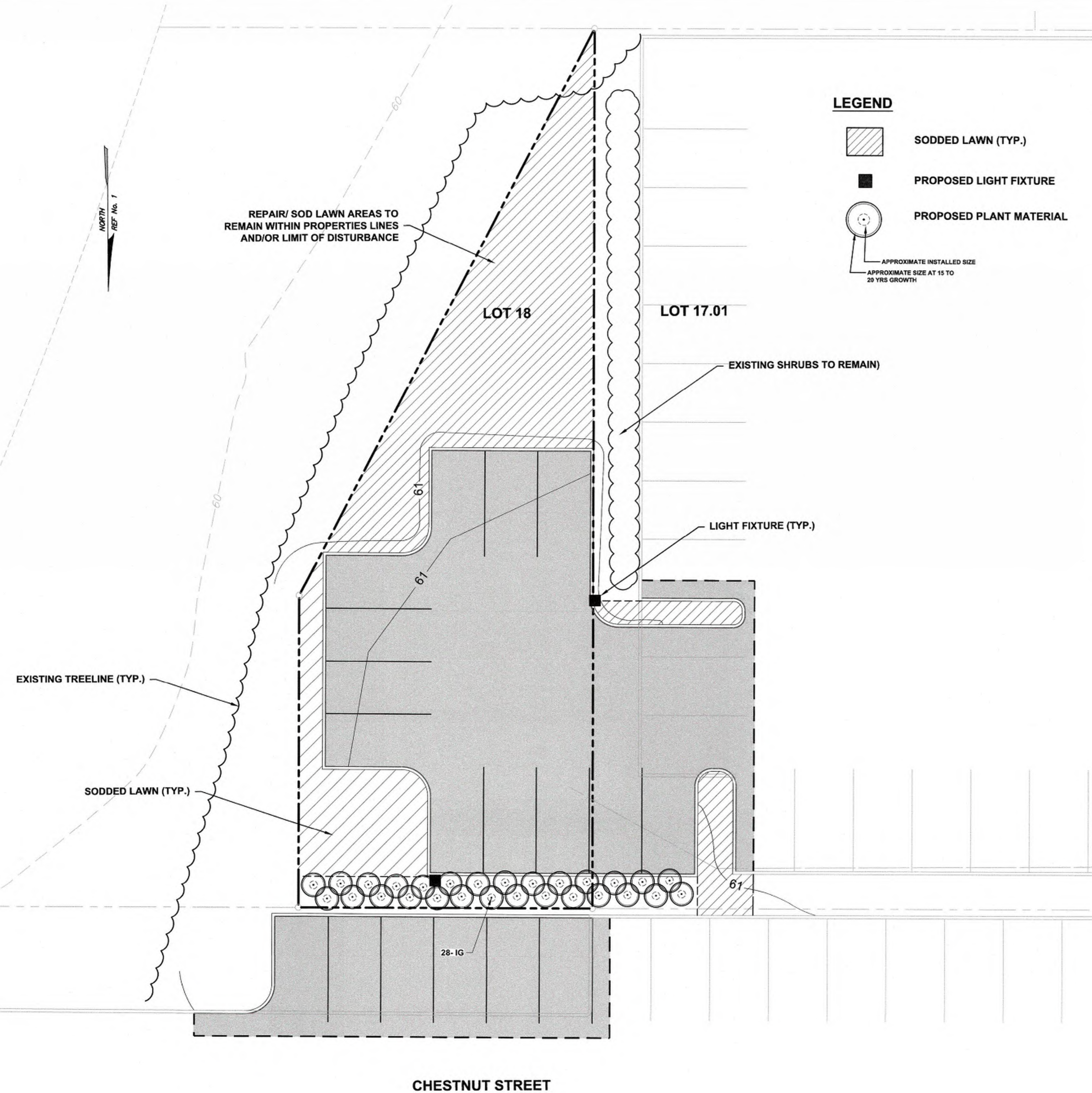
LANDSCAPING PLAN - TRACT 1
 FOR PRELIMINARY AND FINAL SITE PLAN FOR MIXED USE DEVELOPMENT
 BLOCK 478, LOTS 2, 3, 4, 5, AND 6
 BLOCK 483, LOT 18, AND 17.01
 TOWNSHIP OF CRANFORD
 UNION COUNTY NEW JERSEY

DATE: 2/19/2021
 DESIGNED BY: SRB
 DRAWN BY: SRB





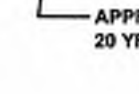
SCALE: 1"=20'
 FIELD BOOK

PROJECT NUMBER: 16753.001
 SHEET: 9 of 15

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LEGEND

-  SODDED LAWN (TYP.)
-  PROPOSED LIGHT FIXTURE
-  PROPOSED PLANT MATERIAL
-  APPROXIMATE INSTALLED SIZE
-  APPROXIMATE SIZE AT 15 TO 20 YRS GROWTH

PLANTING NOTES

1. THE LANDSCAPE PLAN SHALL BE USED FOR LANDSCAPING PURPOSES ONLY. THE CONTRACTOR SHOULD EXAMINE ALL ENGINEERING DRAWINGS AND FIELD CONDITIONS FOR EXACT LOCATIONS OF UTILITIES, DRAINS, ETC., AND NOTIFY THE OWNER ABOUT ANY DISCREPANCIES BEFORE STARTING WORK.
2. ALL PLANTING SHALL BE IN CONFORMANCE WITH THE AMERICAN NURSERYMEN'S ASSOCIATION STANDARDS, CURRENT EDITION. ALL PLANT MATERIALS USED SHALL BE TRUE TO NAME AND SIZE IN CONFORMANCE WITH THE CURRENT EDITION OF THE AMERICAN STANDARD OF NURSERY STOCK AND SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. ALL PLANTS SHALL HAVE NORMAL, WELL-DEVELOPED BRANCHES AND VIGOROUS ROOT SYSTEMS. THEY SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM DEFECTS, DISFIGURING KNOTS, ABRASIONS OF THE BARK, SUN SCALD INJURIES, PLANT DISEASES, INSECT EGGS, BORERS, AND ALL OTHER FORMS OF INFECTION. ALL PLANTS SHALL BE NURSERY GROWN. ALL PLANT MATERIAL SHALL BE TAGGED AT THE NURSERY SOURCE AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY ANY PERSON, VEHICLE, EQUIPMENT, OR TOOLS RELATED TO THE EXECUTION OF THIS CONTRACT.
4. EXCAVATION NEAR EXISTING UTILITIES TO BE CAREFULLY PERFORMED BY HAND.
5. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT BORE TO EXISTING GRADE AT THE NURSERY. ALL PLANT MATERIAL SHALL BE PLANTED SO THAT THE TOP OF THE ROOTBALL IS NO HIGHER OR LOWER THAN THE EXISTING/FINISHED GRADE DEPENDENT UPON SOIL CONDITIONS.
6. IN THE EVENT THAT PLANTING DISCREPANCIES OR MATERIAL OMISSIONS OCCUR IN THE PLANT MATERIALS LIST, THE LANDSCAPING PLAN SHALL GOVERN. THE USE AND PLANTING OF BARE ROOT MATERIAL SHALL BE PROHIBITED.
7. ANY SUBSTITUTIONS OF PLANT MATERIAL WITH REGARDS TO SIZE, SPECIES, VARIETY, ETC., SHALL BE SUBJECT TO APPROVAL BY THE OWNER.
8. PLANTS SHALL ONLY BE INSTALLED WHEN THE SOIL IS FROST FREE.
9. ALL DISTURBED AREAS, NOT BEING PLANTED, SHALL BE TOPSOILED 4" THICK, FERTILIZED, SEEDED, AND MULCHED WITH APPROVED MULCH. TOPSOIL SHALL BE NATURAL FRIABLE, FERTILE SOIL CHARACTERISTIC OF PRODUCTIVE SOIL IN THE VICINITY. IT SHALL BE FREE OF LUMPS OF CLAY, STONES, ROOTS, AND OTHER FOREIGN MATTER.
10. CUT AND LOOSEN SISAL HEMP CHOKIE TIE AROUND SHRUBS. ALL PLASTIC MATERIAL SHALL NOT BE PERMITTED. ALL WIRE BASKETS AND PLASTIC LINERS OF CONTAINER GROWN TREES AND SHRUBS MUST BE COMPLETELY REMOVED. NO CONTAINER GROWN MATERIAL WILL BE ACCEPTED IF IT IS ROOT BOUND AND NOT ROOT PRUNED. THE USE OF NYLON TWINE ON ROOT BALLS IS PROHIBITED.
11. THE DEPTH OF PLANT PITS SHALL BE INCREASED BY 12" THROUGH THE ADDITION OF LOOSE AGGREGATE (3/4" TO 1 1/2" DIAMETER) WHEREVER POOR DRAINAGE OCCURS OR WHERE DIRECTED BY THE OWNER.
12. PLANTS PLANTED IN ROWS SHALL BE MATCHED SPECIMENS AND BE UNIFORM IN SIZE AND FORM.
13. IN THE EVENT THAT EXISTING VEGETATION IS REMOVED BEYOND THE CLEARING LIMITS SHOWN ON THE PLANS, ADDITIONAL PLANTING MUST BE PROVIDED AS APPROVED BY THE TOWNSHIP AND AT NO COST TO THE OWNER.
14. PLANTING BACKFILL MIXTURE SHALL CONSIST OF ONE PART TOPSOIL, ONE PART NATIVE SOIL AND ONE PART PEAT MOSS. NOTE THAT PLANTING MIXTURE MAY CHANGE BASED UPON SOIL CONDITIONS.
15. MULCH, 4" IN DEPTH, SHALL BE TREATED SHREDDED HARDWOOD BARK NOT EXCEEDING 2" IN GREATEST DIMENSION. MULCH SHALL BE INSTALLED WITH A MAXIMUM OF ONE (1) INCH WITHIN ONE (1) FOOT ON THE TREE'S ROOT FLARE. A NON-PLASTIC WEED RETARDANT BARRIER SHALL BE USED IN ALL NON GRASSSED AREAS. MULCH SHALL BE FINE GRADED FOR A PLEASING APPEARANCE. THE USE OF MARBLE OR PINE BARK CHIPS IS PROHIBITED. MULCH VOLCANOES ARE NOT PERMITTED.
16. ALL PLANT MATERIAL SHALL BE GIVEN A MINIMUM OF 5 GALLONS OF WATER AT THE TIME OF INSTALLATION AND SHALL BE WATERED AT INTERVALS DURING ESTABLISHMENT TO ENSURE ADAPTATION TO THE SITE. PRIOR TO THE INSTALLATION OF THE PLANT MATERIAL, THE CONTRACTOR SHALL FILL EACH PLANTING PIT WITH WATER AND ALLOW IT TO FULLY PERCOLATE INTO THE GROUND PRIOR TO PLACEMENT OF THE PLANT. THE CONTRACTOR SHALL NOTIFY EITHER THE OWNER OR PROJECT LANDSCAPE ARCHITECT OF ANY PERCOLATION PROBLEMS PRIOR TO INSTALLATION.
17. PREFERRED PLANTING TIME PERIODS ARE FROM SEPTEMBER 1 TO NOVEMBER 30 OR MARCH 20 TO MAY 31. NO PLANTING SHALL BE EXECUTED DURING ABNORMALLY HOT WEATHER NOR WHEN THE GROUND IS FROZEN.
18. THE CONTRACTOR SHALL REMOVE ALL DAMAGED BRANCHES AND NURSERY TAGS AT THE TIME OF INSTALLATION.
19. ALL TURF SHALL RECEIVE FERTILIZER CONSISTING OF 10-6-4 (50% ORGANIC) COMPOSITION, APPLIED AT 3 LB. PER 100 SQ. FT. SLOW RELEASE FERTILIZER TABLETS OR PACKETS OF 20-10-5 COMPOSITION SHALL BE ADDED TO ALL PLANTING PITS AT THE FOLLOWING RATIOS: 1 PER SHRUB, 2 PER DECIDUOUS OR EVERGREEN TREES UP TO 2" IN CALIPER AND 3 FOR DECIDUOUS AND EVERGREEN TREES ABOVE 2" IN CALIPER.
20. EACH TREE THAT IS PLANTED MUST BE TAGGED WITH A DURABLE LABEL BEARING THE GENUS, SPECIES, VARIETY, PLANT PATENT NUMBER (IF APPLICABLE) AND CULTURAL REQUIREMENTS AND MUST BE INSPECTED PRIOR TO REMOVAL.
21. ALL GROUPED SHRUBS SHALL BE MULCHED TOGETHER TO FORM ONE CONTINUOUS PLANTING BED.
22. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR PERIOD OF ONE YEAR FROM THE TIME OF PLANTING.

PLANT LIST

SHRUBS	KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER TYPE	MATURE SIZE	REMARKS
IG	N#&	28	ILEX GLABRA	INKBERRY HOLLY	2'-3' HEIGHT	B & B	6'-8' HEIGHT AND SPREAD	EVERGREEN SHRUB

KEY:
 N = NATIVE PLANT OF NORTH AMERICA * = SPRING INSTALLATION ONLY
 & = SALT SPRAY TOLERANT # = SELDOM OR RARELY DAMAGED BY DEER AS PER RUTGERS AG AGENCY (HTTP://NJAES.RUTGERS.EDU)

SOD NOTES:

- THE CONTRACTOR WILL BE RESPONSIBLE FOR RE-ESTABLISHING ALL AREAS DISTURBED BY CONSTRUCTION. SEEDING WILL BE DONE IN ACCORDANCE WITH UNION COUNTY SOIL CONSERVATION DISTRICT STANDARDS. SPECIFIC SEED TYPES SHALL BE USED AS FOLLOWS:
- A. ALL DISTURBED AREAS SHALL BE SODDED AS SHOWN ON THE LANDSCAPE PLAN WITH ERNST SEED CO. (ERNSTSEED.COM) ATHLETIC FIELD MIXTURE #ERNMX-106 OR APPROVED EQUAL. SOD SHALL BE INSTALLED DURING THE GROWING SEASON ONLY.
 - B. SLOPED AREAS 3:1 AND GREATER SHALL RECEIVE IN COMBINATION WITH THE ABOVE SPECIFIED GRASS MIXTURE AN EROSION CONTROL MATTING BY BONTERRA AMERICA, PINELANDS NURSERIES, COLUMBUS, NJ, MODEL # CS2 OR APPROVED EQUAL.

LANDSCAPE PLAN UTILITY NOTE:

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THIS PLAN SHALL BE USED FOR LANDSCAPING PURPOSES ONLY.

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 ASSOCIATES

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[Signature]
SARAH REBAR BISAHA, LLA, PP
 LICENSED LANDSCAPE ARCHITECT NJ LIC NO AS000039

LANDSCAPING PLAN FOR PRELIMINARY AND FINAL SITE PLAN FOR MIXED USE DEVELOPMENT			
BLOCK 478, LOTS 2, 3, 4, 5, AND 6 BLOCK 483, LOT 18, AND 17.01			
TOWNSHIP OF CRANFORD UNION COUNTY, NEW JERSEY			
DATE: 2/19/2021	DESIGNED BY: JB	SCALE: 1" = 10'	PROJECT NUMBER: 16753.001
DRAWN BY: JB	CHECKED BY: SRB	FIELD BOOK:	SHEET: 10 of 15

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METAL BENCH DETAIL

NOTES: NOT TO SCALE

- 6' LONG METAL BENCH SHALL BE MANUFACTURED THOMAS STEELE, (THOMAS-STEEL.COM) MODEL "CARNIVAL", 6 FT BENCH #CRB-6 WITH BACK AND ARMS
- POWDER COATED COLOR FINISH TO BE SELECTED BY OWNER FROM STANDARD AVAILABLE COLORS
- BENCH SHALL HAVE PREDRILLED MOUNTING HOLES FOR SURFACE MOUNT



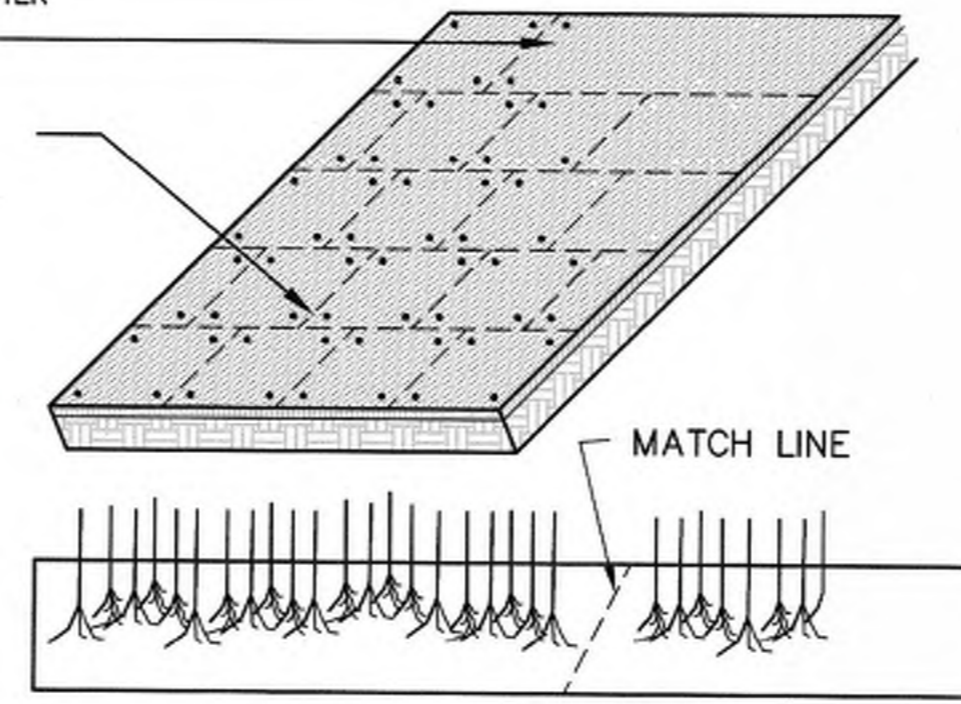
METAL TRASH RECEPTACLE DETAIL

NOT TO SCALE

- NOTES:
- TRASH RECEPTACLES SHALL BE OUTDOOR SLATTED STEEL TRASH CAN WITH FLAT LID, 36 GALLON, BLACK, AS MANUFACTURED BY GLOBAL INDUSTRIAL™ MODEL 237726BK. COLOR TO BE BRONZE OR AS PER OWNER'S SELECTION FROM FULL RANGE OF STANDARD COLORS PROVIDED BY THE MANUFACTURER.

PEG ON SLOPES GREATER THAN 3 : 1

STAGGERED SOD PANEL JOINTS



NOTES :

- CULTIVATED SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS.
- APPLY FERTILIZER AT THE RATE OF 500 POUNDS PER ACRE USING 10-20-10 RATIO OR AS DETERMINED BY SOIL TESTING.
- SUPPLY PULVERIZED DOLOMITIC LIMESTONE AT THE RATE OF 2 TONS PER ACRE OR AS DETERMINED BY SOIL TESTING.
- APPLY 300 POUNDS 38-0-0 PER ACRE IN LIEU OF TOP DRESSING OR AS DETERMINED BY SOIL TESTING.
- PLACE SOD STRIPS ON THE CONTOUR STARTING AT THE BOTTOM.
- PLACE SOD WITH SNUG EVEN JOINTS THAT ARE STAGGERED.
- ROLL OR TAMP SOD IMMEDIATELY FOLLOWING PLACEMENT.
- ON SLOPES GREATER THAN 3 TO 1 SECURE SOD TO SURFACE SOIL WITH WOOD PEGS, WIRE STAPLES, OR SPLIT SHINGLES (8 TO 10 INCHES LONG BY 3/4 OF AN INCH).
- ANCHOR SOD IN WATER CARRYING CHANNELS WITH HEAVY JUTE OR PLASTIC NETTING.
- SOD SHOULD BE WATERED UNTIL MOISTURE PENETRATES THE SOIL LAYER BENEATH THE SOD TO A DEPTH OF 4 INCHES. MAINTAIN OPTIMUM MOISTURE FOR AT LEAST TWO WEEKS.

SOD INSTALLATION DETAIL

NOT TO SCALE

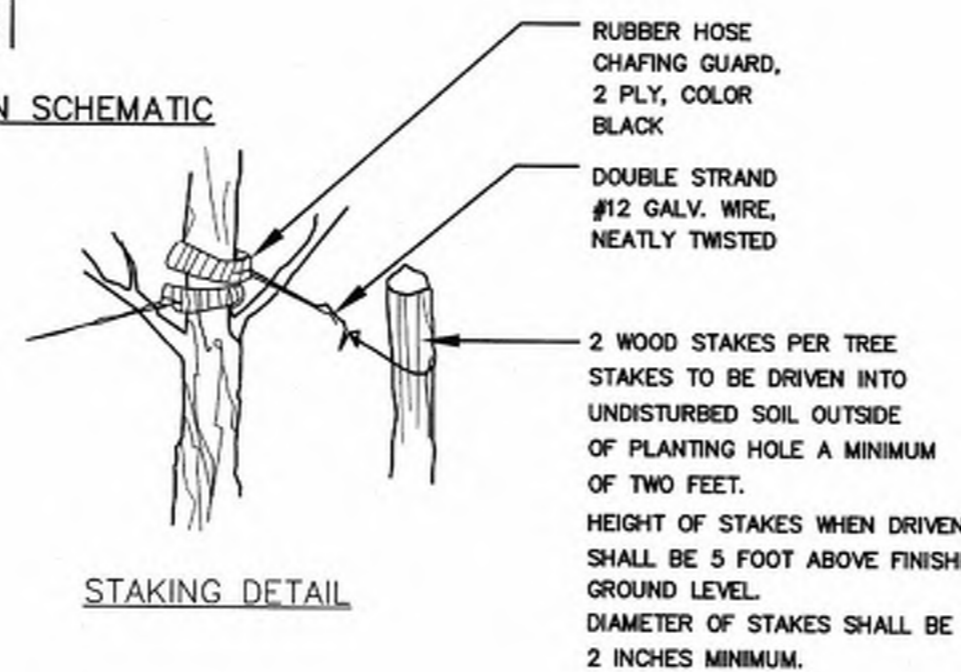
SODDING SPECIFICATIONS

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- ALL DISTURBED AREAS SHALL BE SODDED AS SHOWN ON THE LANDSCAPE PLAN WITH ERNST ATHLETIC FIELD MIXTURE OR APPROVED EQUAL. SEED SHALL BE APPLIED AT A RATE OF 170 LBS/ACRE BETWEEN THE PERIODS OF EITHER 4/1 TO 5/31 OR 8/15 TO 10/16.
- SLOPED AREAS 3:1 AND GREATER SHALL RECEIVE IN COMBINATION WITH THE ABOVE SPECIFIED GRASS MIXTURE AN EROSION CONTROL MATTING BY BONTERRA AMERICA, PINELANDS NURSERIES, COLUMBUS, NJ, MODEL # C32 OR APPROVED EQUAL.



STAKING PLAN SCHEMATIC



TREE STAKING DETAIL

NOT TO SCALE

NOTES:

- ALL TREES UNDER 3" IN CALIPER SHALL BE STAKED ALL TREES 3" IN CALIPER AND GREATER SHALL BE GUYED
- TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE
- SET STAKES VERTICAL AND AT SAME HEIGHT
- REMOVE ALL WIRE BASKETS PRIOR TO BACKFILLING THE PLANTING PIT.
- ALL WIRE BASKETS SHALL BE REMOVED PRIOR TO BACKFILLING THE PLANTING PIT.

STAKES TO BE SET 2/3RDS UP TREE OR JUST AT FIRST BRANCHES SEE TREE STAKING AND GUYING DETAIL

20 GALLON TREE GATOR SLOW RELEASE WATERING BAG MODEL #98183 OR APPROVED EQUAL. PROVIDE ONE BAG PER INSTALLED TREE FOR TREES LESS THAN 4" IN CALIPER, PROVIDE TWO PER TREE FOR LARGER SIZES- BAGS TO BE REMOVED AFTER 6 MONTHS

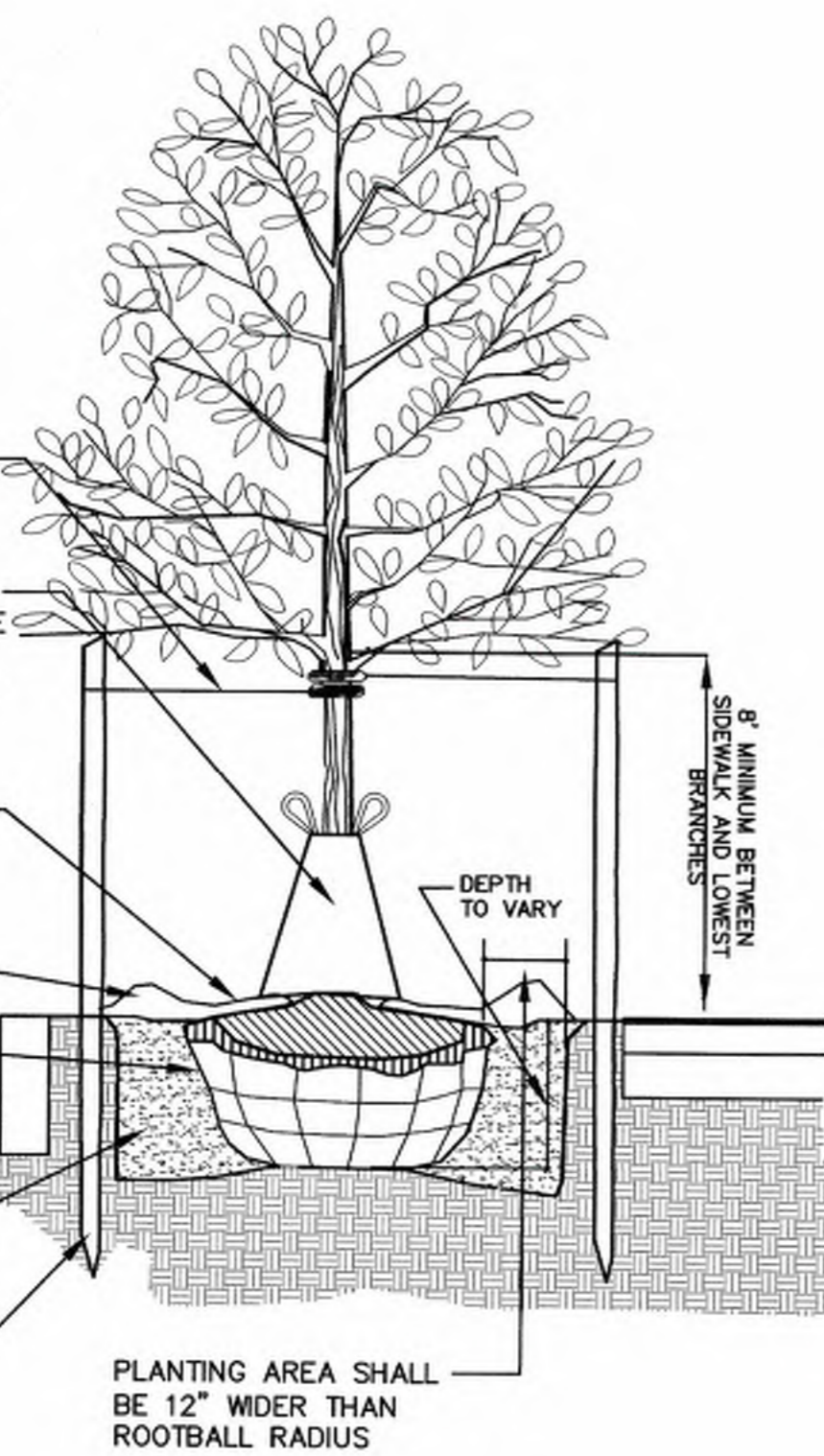
4" SHREDDED HARDWOOD MULCH- KEEP MULCH AWAY FROM ROOT COLLAR AS DESCRIBED IN PLANTING NOTES. MULCH VOLCANOES ARE NOT PERMITTED

6" SOIL MOUND FOR FOR WATER RETENTION

REMOVE ALL PLASTIC MATERIAL, BURLAP SYNTHETIC BURLAP, STRING OR CONTAINERS AT THE TIME OF PLANTING

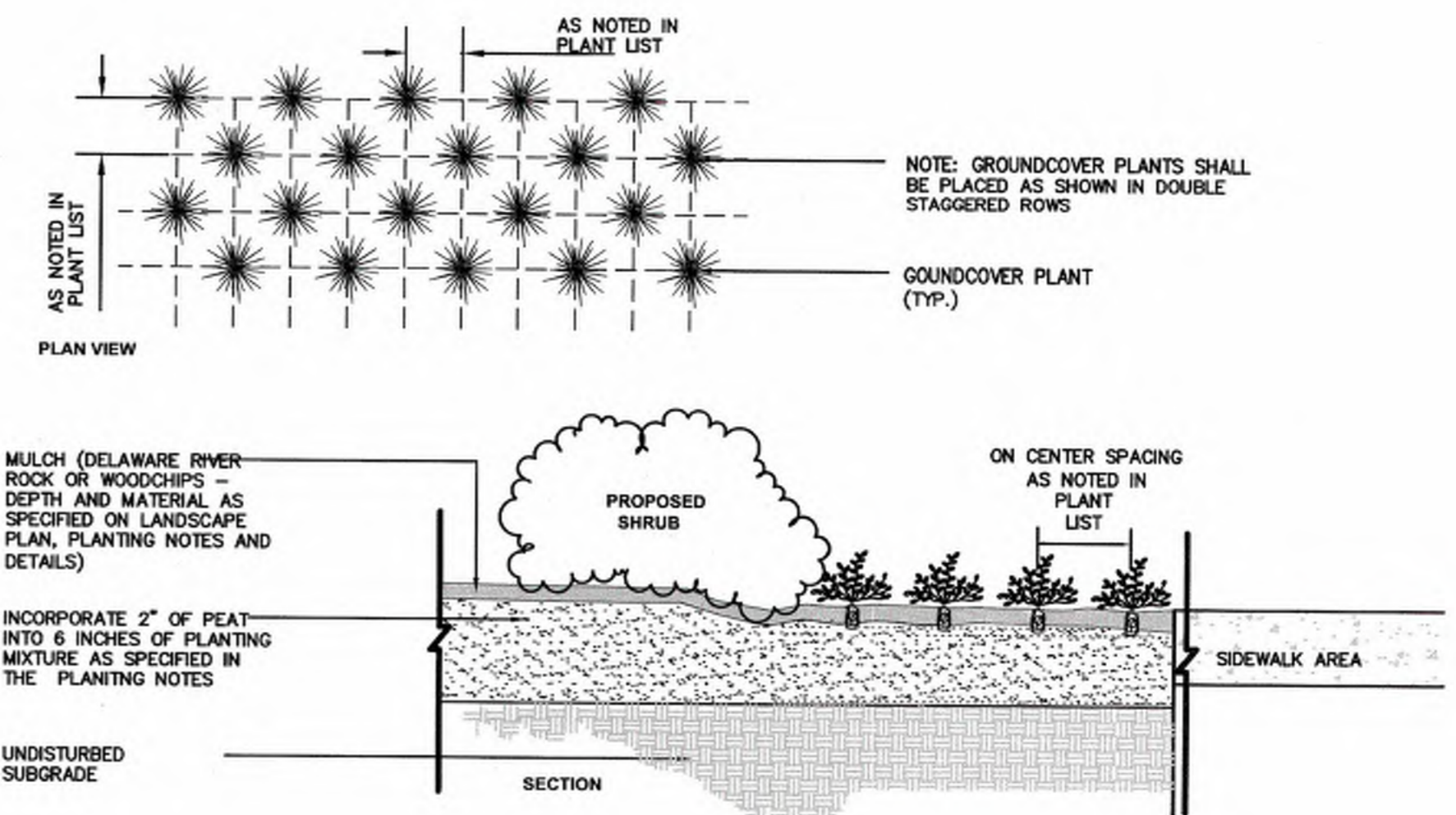
BACKFILL AUGMENTED WITH TOPSOIL

STAKES TO EXTEND 18" BELOW TREE PIT IN UNDISTURBED GROUND



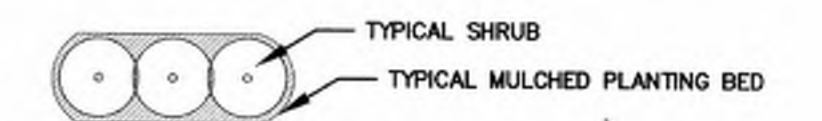
DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

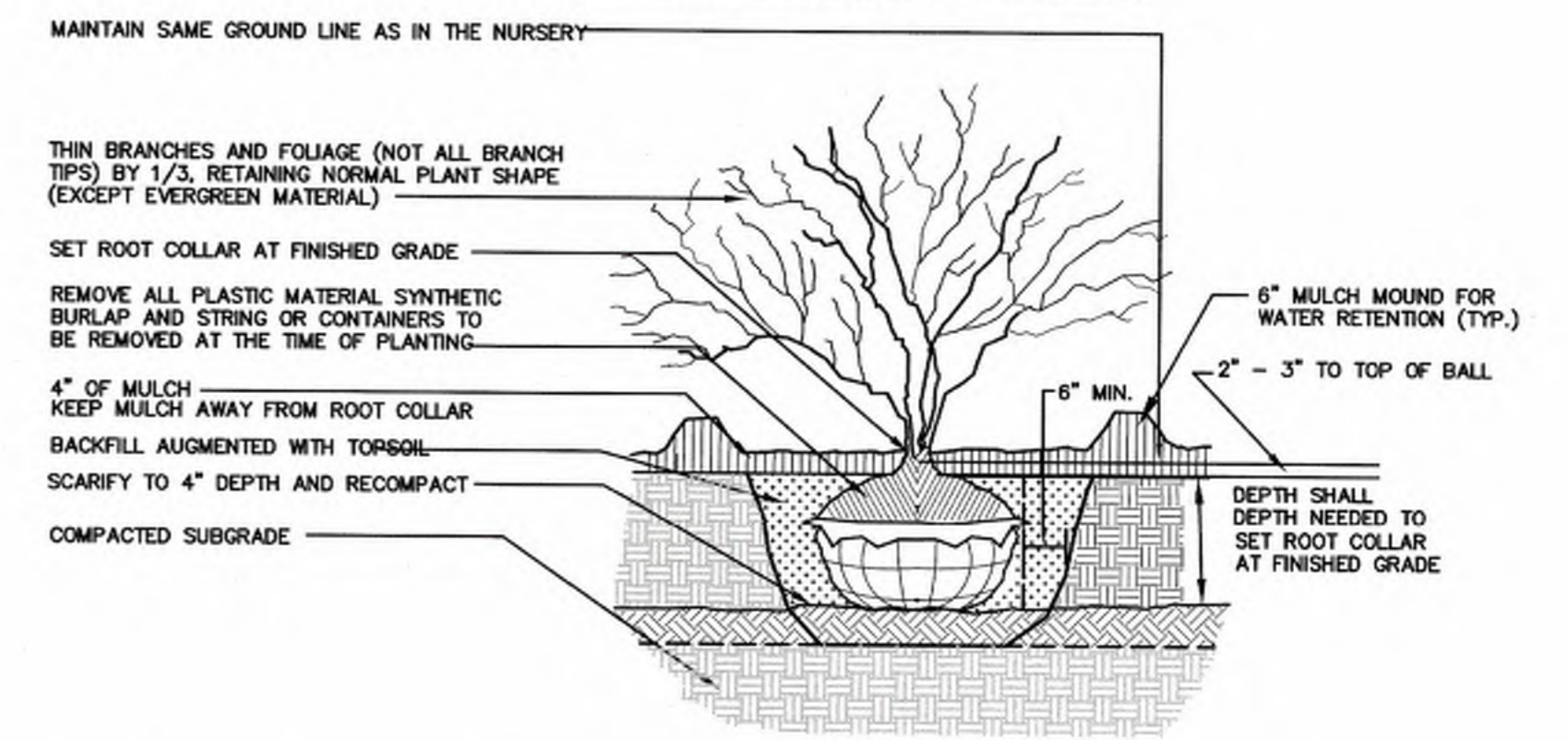


GROUNDCOVER PLANTING DETAIL

NOT TO SCALE



NOTE: CONTRACTOR TO PROVIDE A MULCHED PLANTING BED FOR SHRUBS GROUPED TOGETHER. MULCHED BEDS MAY VARY IN SHAPE AND SIZE TO CONFORM WITH SHRUB LAYOUT.



SHRUB PLANTING DETAIL

NOT TO SCALE

NJDEP ELECTRONIC APPROVAL STAMP

C:\166\16700\16753 - South Avenue East, Cranford\CAD\DWG\16753.001 - LA.dwg LA NOTES

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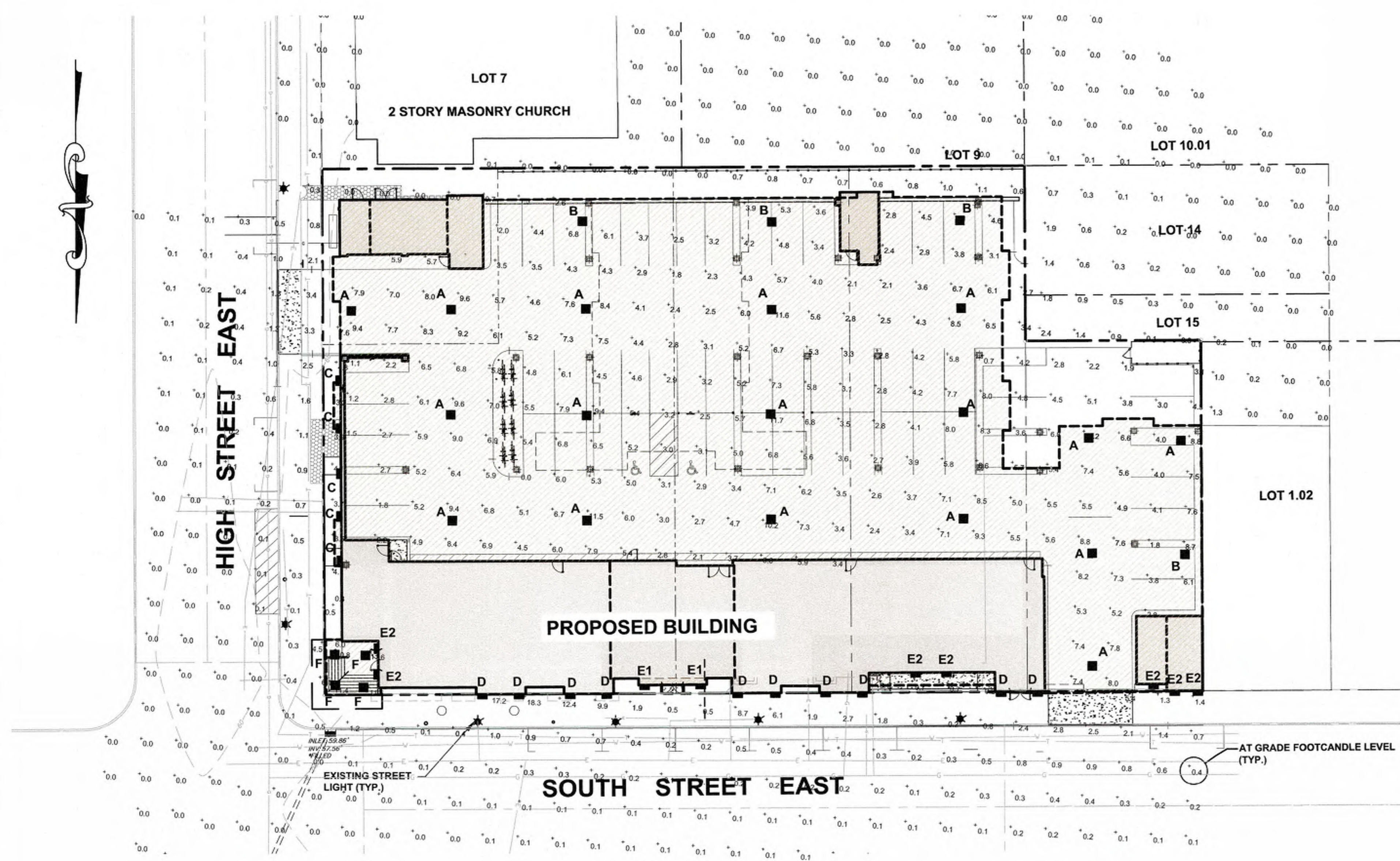
SCALE IN FEET



New Jersey • New York • Pennsylvania • Georgia
SARAH REBAR BISAHA, LLA, PP
 LICENSED LANDSCAPE ARCHITECT NJ LIC NO A5000639

LANDSCAPING DETAILS FOR PRELIMINARY AND FINAL SITE PLAN FOR MIXED USE DEVELOPMENT			
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DRAWN BY:	CHECKED BY:	FIELD BOOK:	SHEET:
SRB	BF		11 of 15

NJDEP ELECTRONIC APPROVAL STAMP



CEILING MOUNTED LIGHT FIXTURE TYPE A AND B SHALL BE MANUFACTURED BY COOPER LIGHTING SOLUTIONS (WWW.COOPERLIGHTING.COM) OR APPROVED EQUAL, MODEL VPL VALET LED LIGHT SOURCE, HOUSING COLOR TO BE SELECTED BY OWNER FROM AVAILABLE STANDARD COLORS

CEILING MOUNTED LIGHT FIXTURE TYPE A, B

NOT TO SCALE



CEILING MOUNTED LIGHT FIXTURE TYPE D SHALL BE MANUFACTURED BY TECH LIGHTING (WWW.TECHLIGHTING.COM) OR APPROVED EQUAL, MODEL TEGEL 18 OUTDOOR WALL LED LIGHT SOURCE, HOUSING COLOR TO BE SELECTED BY OWNER FROM AVAILABLE STANDARD COLORS

WALL MOUNTED LIGHT FIXTURE TYPE D

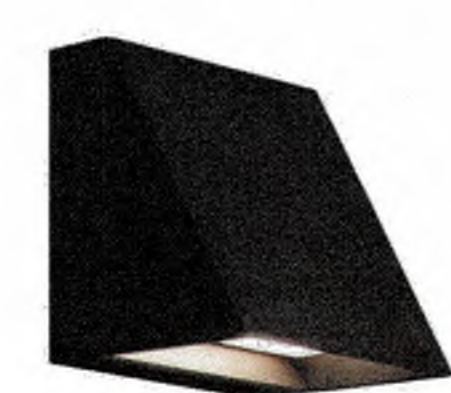
NOT TO SCALE



CEILING MOUNTED LIGHT FIXTURE TYPE E2 SHALL BE MANUFACTURED BY TECH LIGHTING (WWW.TECHLIGHTING.COM) OR APPROVED EQUAL, MODEL WINDFALL 16 WALL SCONCE LED LIGHT SOURCE, HOUSING COLOR TO BE SELECTED BY OWNER FROM AVAILABLE STANDARD COLORS

WALL MOUNTED LIGHT FIXTURE TYPE E2

NOT TO SCALE



CEILING MOUNTED LIGHT FIXTURE TYPE C SHALL BE MANUFACTURED BY TECH LIGHTING (WWW.TECHLIGHTING.COM) OR APPROVED EQUAL, MODEL PITCH SINGLE OUTDOOR WALL LED LIGHT SOURCE, HOUSING COLOR TO BE SELECTED BY OWNER FROM AVAILABLE STANDARD COLORS

WALL MOUNTED LIGHT FIXTURE TYPE C

NOT TO SCALE



CEILING MOUNTED LIGHT FIXTURE TYPE E1 SHALL BE MANUFACTURED BY TECH LIGHTING (WWW.TECHLIGHTING.COM) OR APPROVED EQUAL, MODEL WINDFALL WALL SCONCE LED LIGHT SOURCE, HOUSING COLOR TO BE SELECTED BY OWNER FROM AVAILABLE STANDARD COLORS

WALL MOUNTED LIGHT FIXTURE TYPE E1

NOT TO SCALE

CEILING MOUNTED LIGHT FIXTURE TYPE F SHALL BE MANUFACTURED BY TECH LIGHTING (WWW.TECHLIGHTING.COM) OR APPROVED EQUAL, MODEL ENTRA CL 3" LED LED LIGHT SOURCE, HOUSING COLOR TO BE SELECTED BY OWNER FROM AVAILABLE STANDARD COLORS

CEILING MOUNTED LIGHT FIXTURE TYPE F

NOT TO SCALE

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Area South and West	Illuminance	Fc	0.1	2.6	0.0	N.A.	N.A.
Corner Entrance	Illuminance	Fc	11.3	11.6	10.8	1.1	1.1
High Street and Sidewalk	Illuminance	Fc	0.6	7.6	0.0	N.A.	N.A.
Parking Garage	Illuminance	Fc	5.2	11.7	0.0	N.A.	N.A.
Ramp	Illuminance	Fc	3.6	8.0	0.4	9.1	15.0
South Ave and Sidewalk	Illuminance	Fc	0.8	18.3	0.0	N.A.	N.A.

Symbol	Label	Description	Arr. Watts	Arr. Lum. Lumens	LLF
■	A	MCGRW #VPL-E03-LED-E1-WQ	75.2	9276	0.900
■	B	MCGRW #VPL-E01-LED-E1-RW	24.7	3004	0.900
■	C	TECH PITCH #7000WSPITSB-LED830-VOLT	26.2	803	0.900
■	D	TECH TEGAL 18 #7000WTEG830W18BUNV	30	2426	0.900
■	E1	TECH WINDFALL #7000WWDNB-LED	20	184	0.900
■	E2	TECH WINDFALL #7000WWDNB-LED	16.5	184	0.900
■	F	TECH #ENCL3-TBD-F-L121+ ENCL3-TBD-FD-9308B + 353LEDGATOPT80	11.7	1122	0.900

LIGHTING NOTES

1. SEE ARCHITECTURAL PLANS FOR PROPOSED STREET SIDE LIGHTING.
2. LIGHTING LEVELS SHOWN ON THIS PLAN DO NOT INCLUDE ANY CONTRIBUTIONS FROM EXISTING STREET LIGHT FIXTURES.
3. FIXTURE ARE CALCULATED WITH 0.9 LIGHT LOSS FACTOR. INITIAL FC LEVELS WILL BE APPROXIMATELY 10% HIGHER.
4. FIXTURES ARE DIMMABLE WITH 0-10V CONTROLS.

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BAHRAM FARZANEH, PE, PP
PROFESSIONAL ENGINEER, NJ LIC. No. 24GE03454800

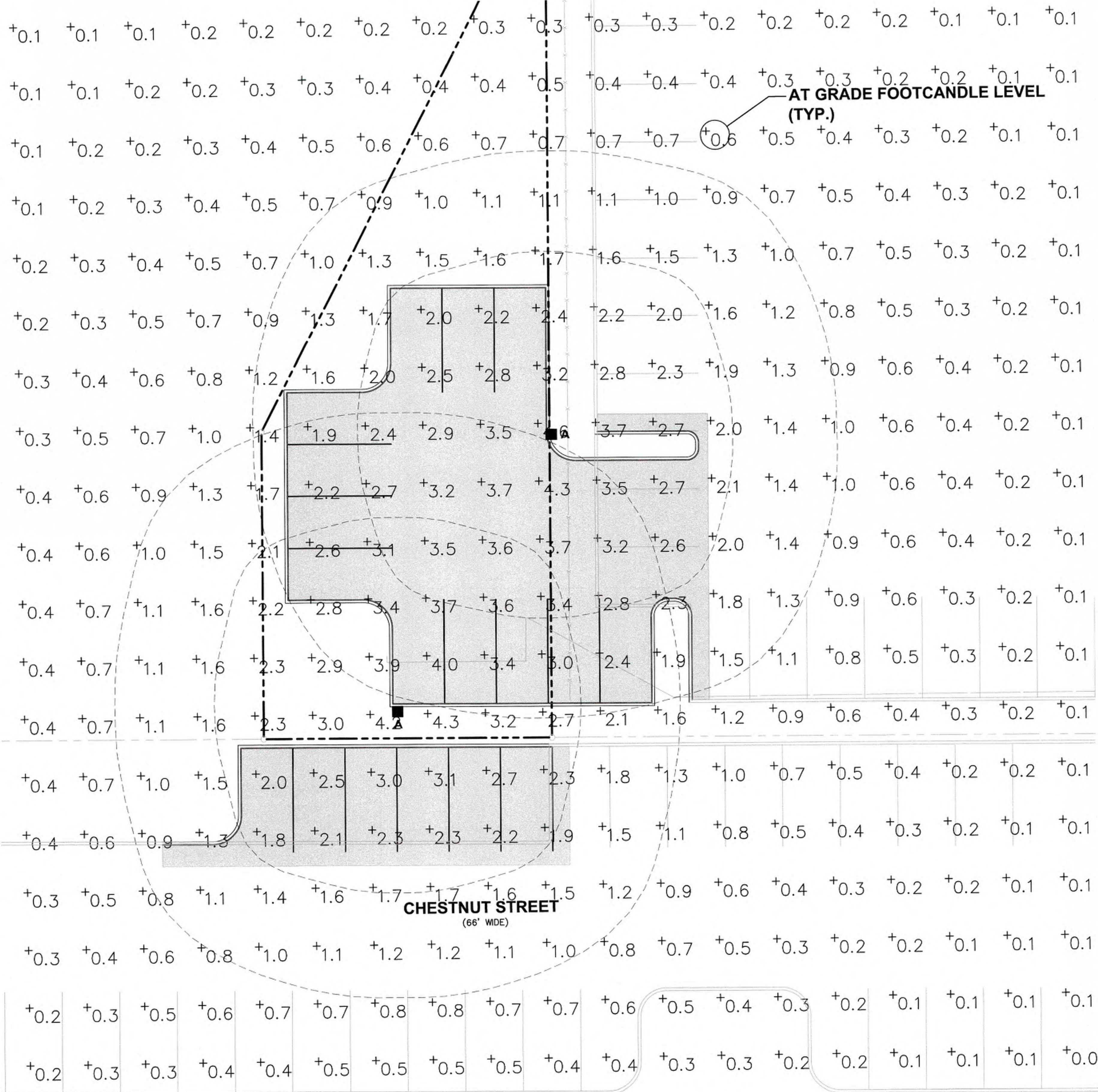
LIGHTING PLAN - TRACT 1
FOR
PRELIMINARY AND FINAL SITE PLAN
FOR
MIXED USE DEVELOPMENT
BLOCK 478, LOTS 2, 3, 4, 5, AND 6
BLOCK 483, LOT 18, AND 17.01
TOWNSHIP OF CRANFORD
UNION COUNTY NEW JERSEY

DATE: 2/19/2021
DESIGNED BY: SRB
DRAWN BY: SRB

SCALE: 1" = 20'
CHECKED BY: BF
FIELD BOOK:

PROJECT NUMBER: 16753.001
SHEET: 12 of 15

C:\16753\16753 - South Avenue East - Cranford CAD\DWG\16753.001 - Lighting.dwg

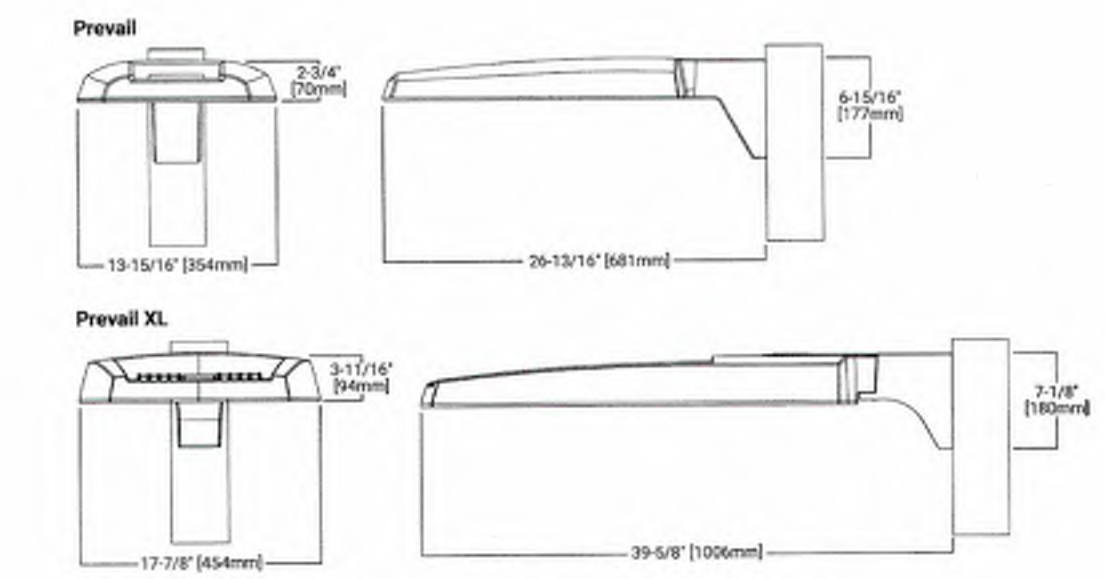
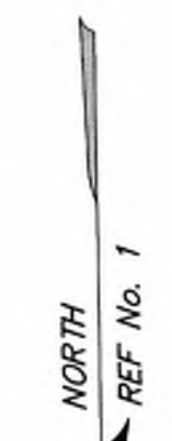


AT GRADE FOOTCANDLE LEVEL (TYP.)

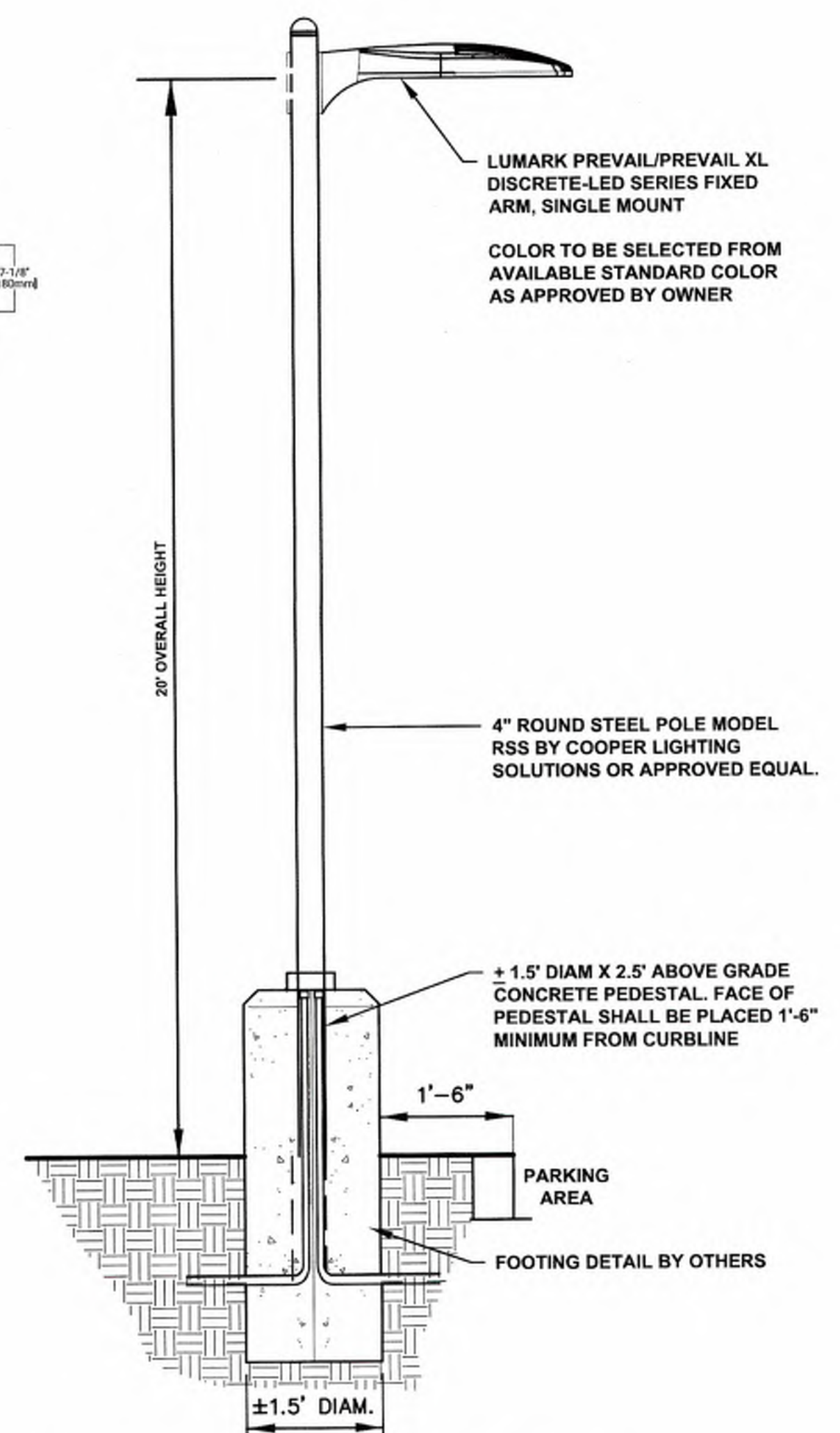
CHESTNUT STREET
(66' WIDE)

LIGHTING NOTES

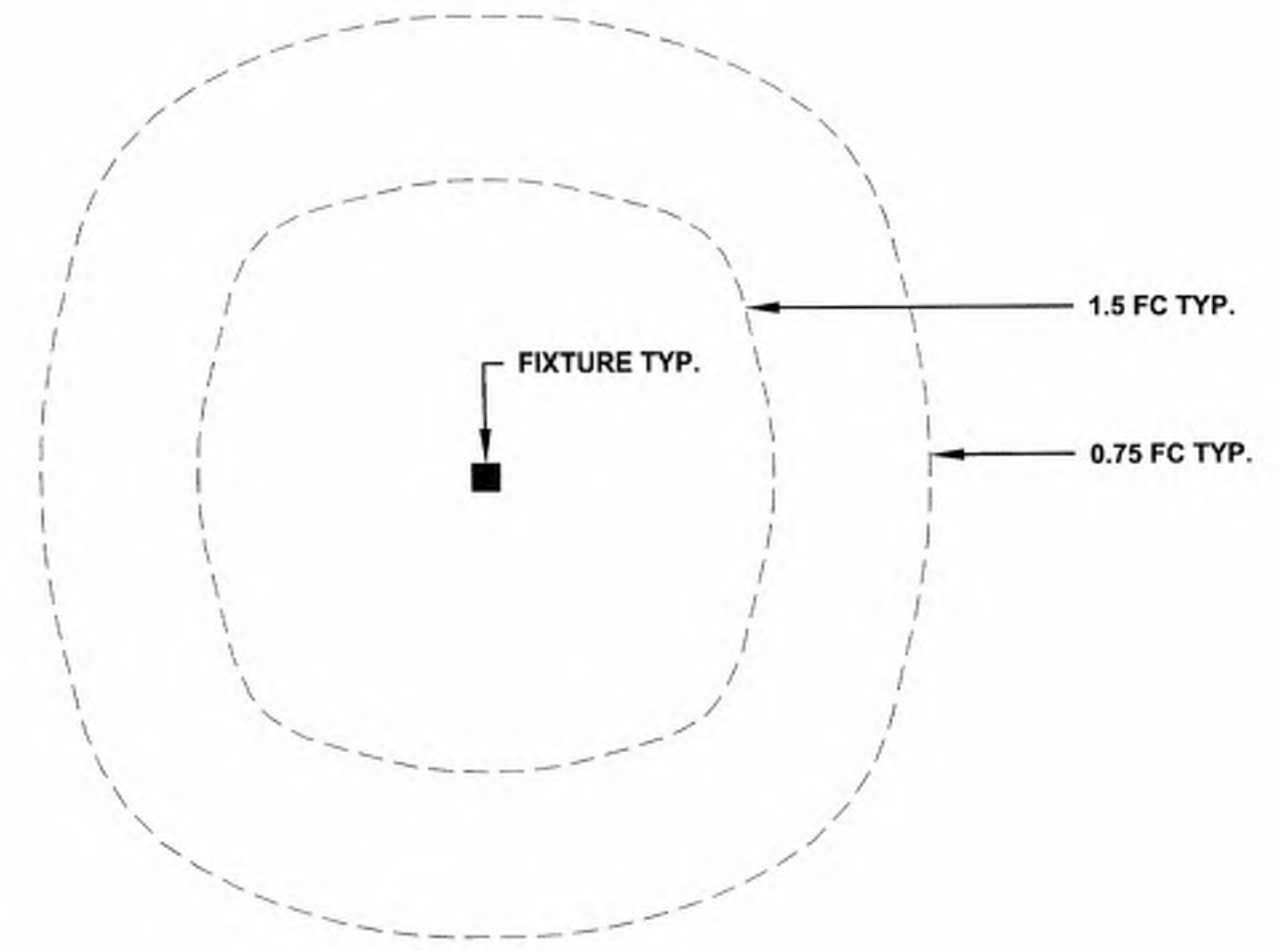
- DO NOT INSTALL PROPOSED LIGHTS ON TOP OF ANY PROPOSED OR EXISTING UNDERGROUND UTILITIES. FIELD ADJUST LIGHTS AS NEEDED AS DIRECTED BY THE PROJECT PROFESSIONAL TO ACCOMMODATE ANY POTENTIAL CONFLICTS.
- ALL POLE MOUNTED FIXTURES SHALL HAVE 2'-6" CONCRETE PEDESTALS.
- LIGHTING LEVELS SHOWN ON THIS PLAN DO INCLUDE ANY CONTRIBUTIONS FROM EXISTING STREET AND/OR PARKING LOT LIGHT FIXTURES.



LUMARK PREVAIL/PREVAIL XL DETAIL
NOT TO SCALE



POLE MOUNTED LIGHT FIXTURE DETAIL
NOT TO SCALE



PHOTOMETRIC CONTOUR DETAIL
NOT TO SCALE

Luminaire Schedule			Arr. Watts	Arr. Lum. Lumens	LLF
Symbol	Label	Description			
■	A	LUMARK #PRV-PA2B-740-U-5WQ 20' OVERALL HEIGHT, INCLUDES 2'-6" CONCRETE PEDESTAL	151	20332	1.000

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Lot Within Property Lines	Illuminance	Fc	2.9	4.6	1.8	1.6	2.6

- SCHEDULE NOTES:
- FIXTURE IS CALCULATED WITH 0.9 LLF. INITIAL FC LEVELS WILL BE APPROXIMATELY 10% HIGHER, THEN SLOWLY DECREASE OVER TIME IN ACCORDANCE WITH TM-21 AND L70 DATA PUBLISHED ON FIXTURE CUTSHEET.
 - FIXTURE IS DIMMABLE WITH 0-10V CONTROLS.

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PROFESSIONAL ENGINEER, NJ LIC. No. 24GE03454800

LIGHTING PLAN - TRACT 2
FOR
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FOR
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UNION COUNTY NEW JERSEY

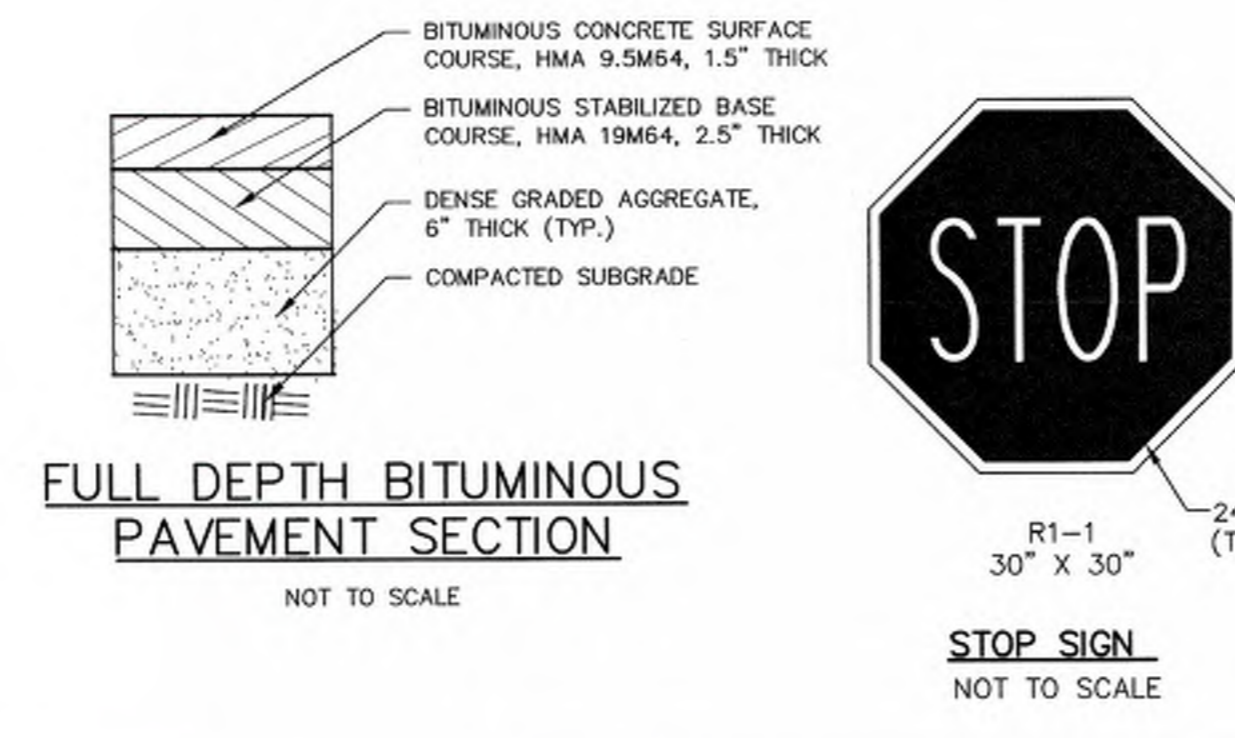
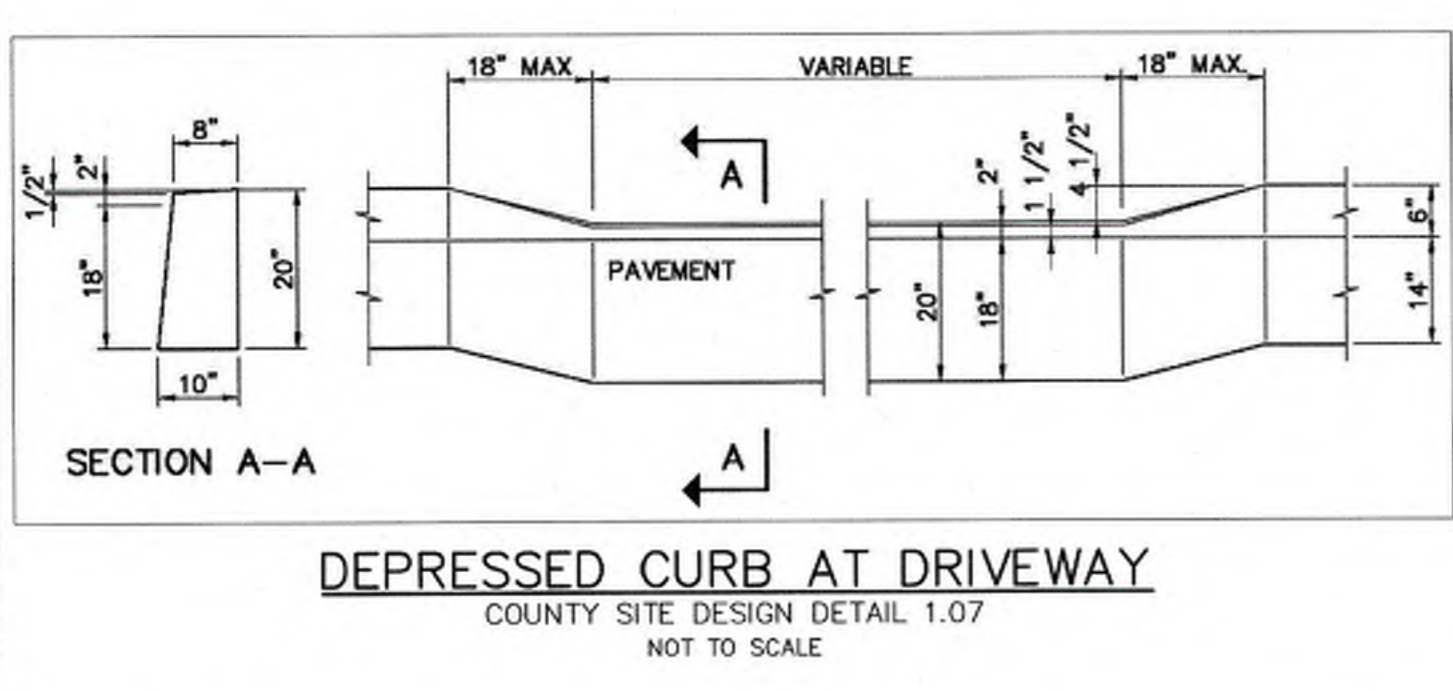
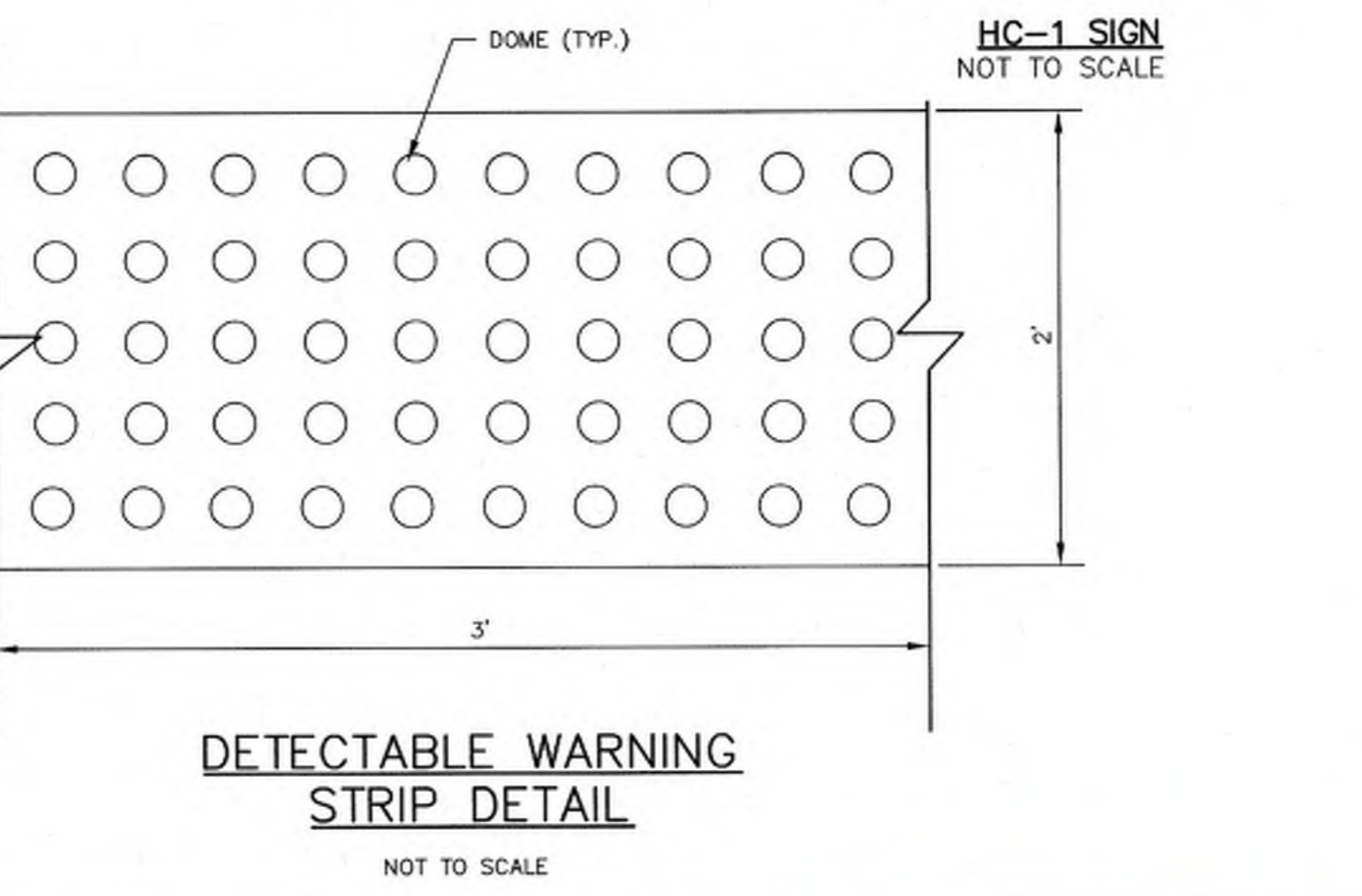
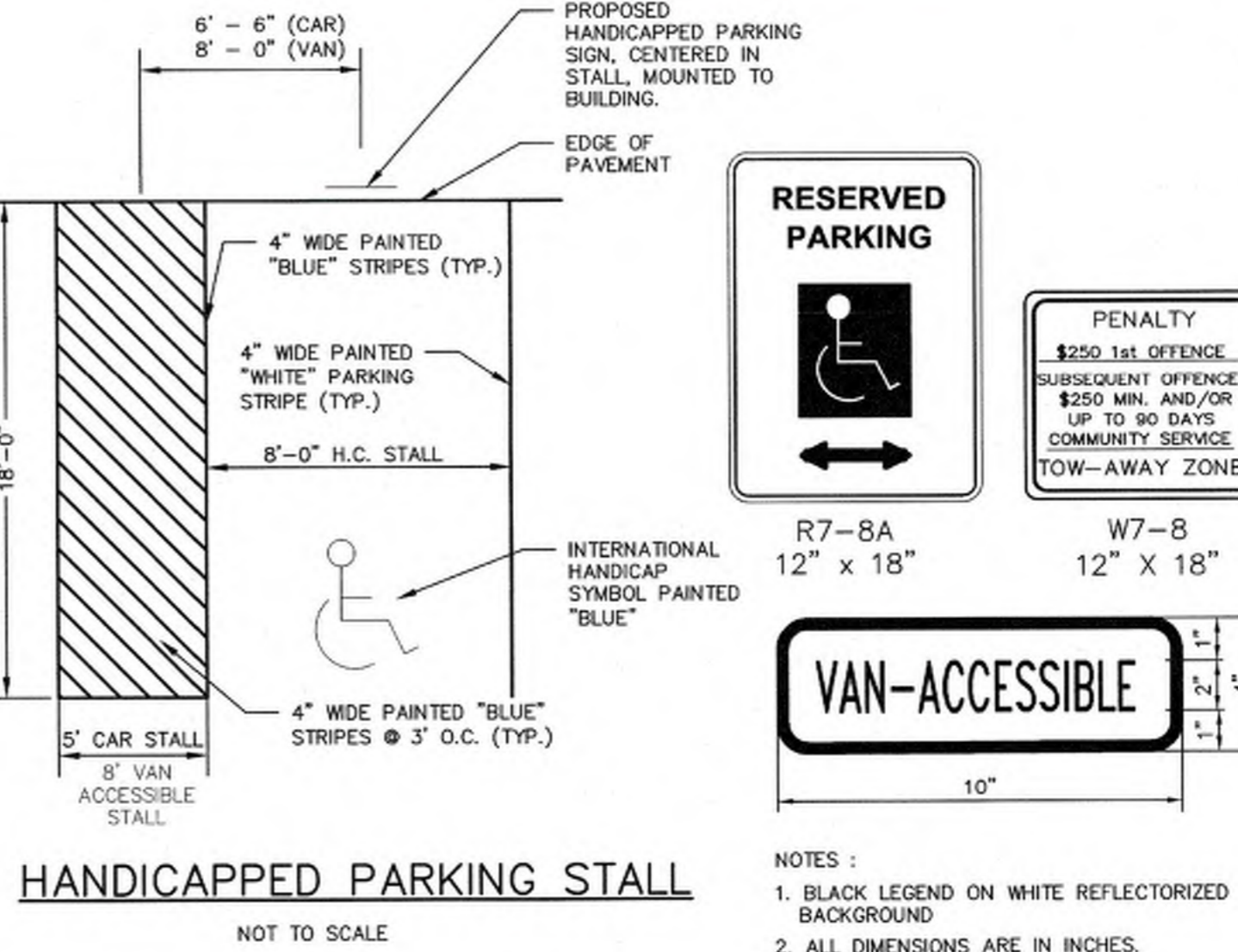
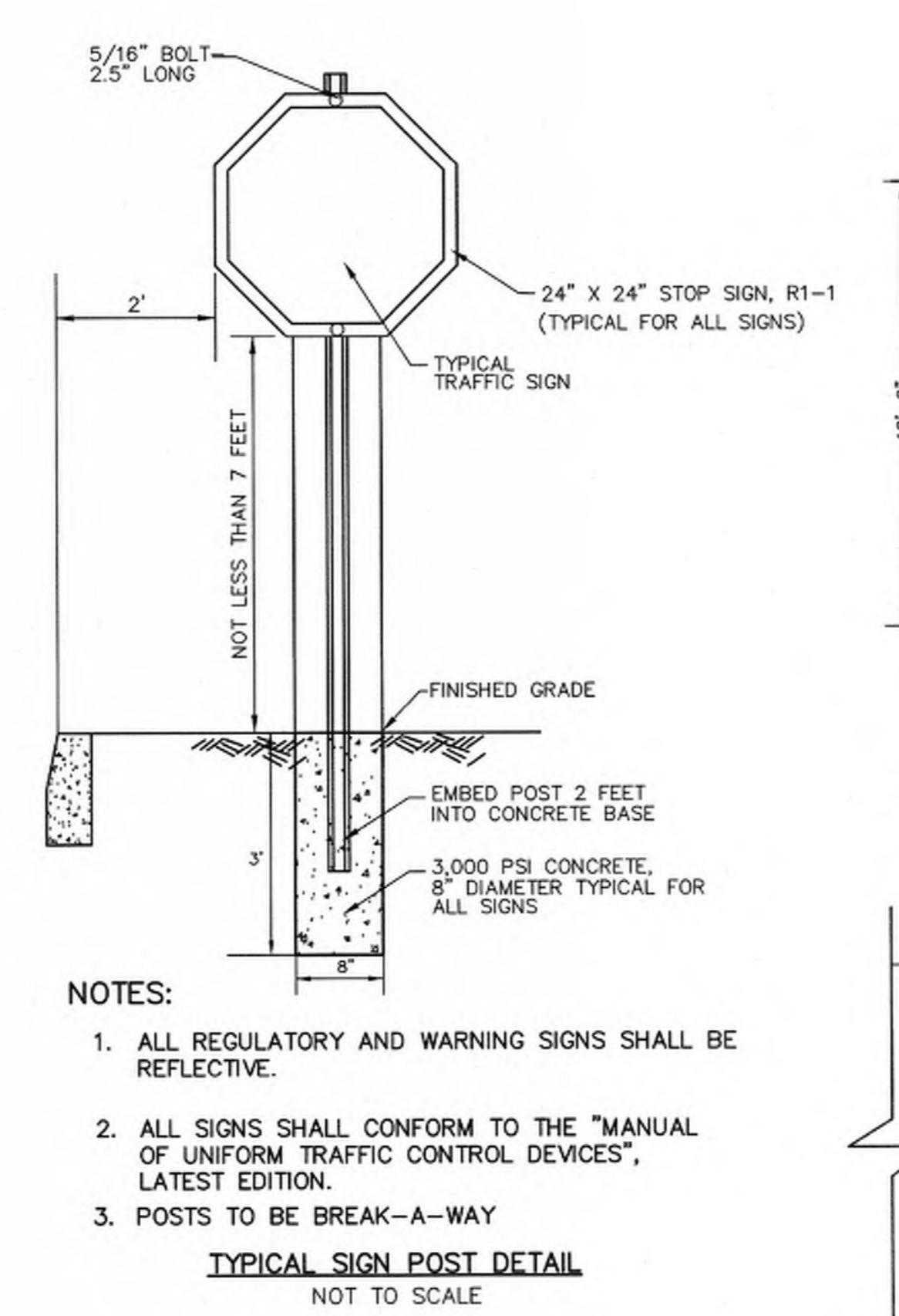
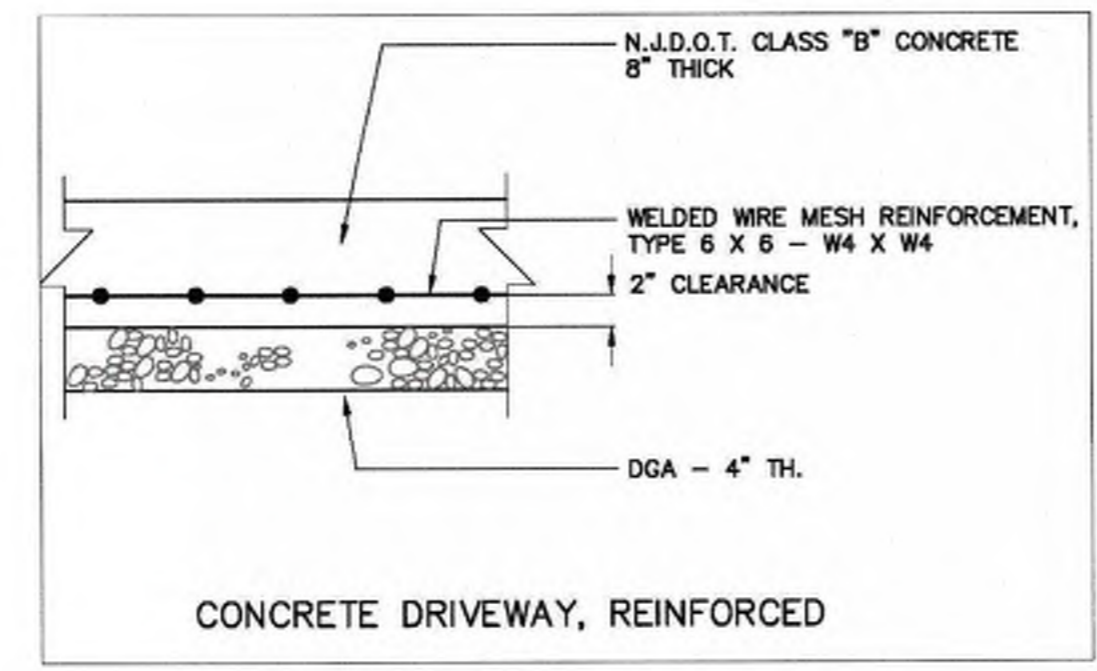
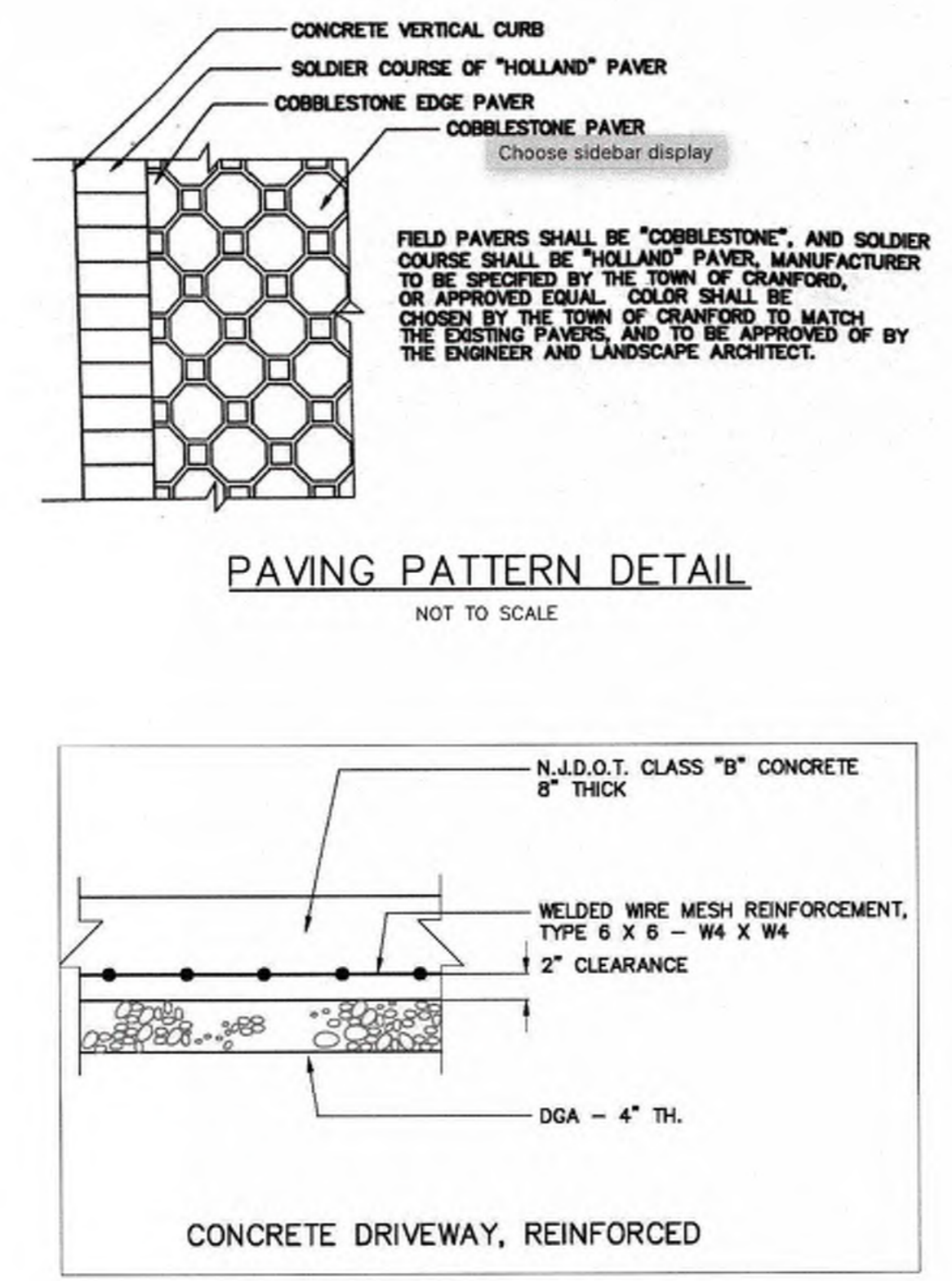
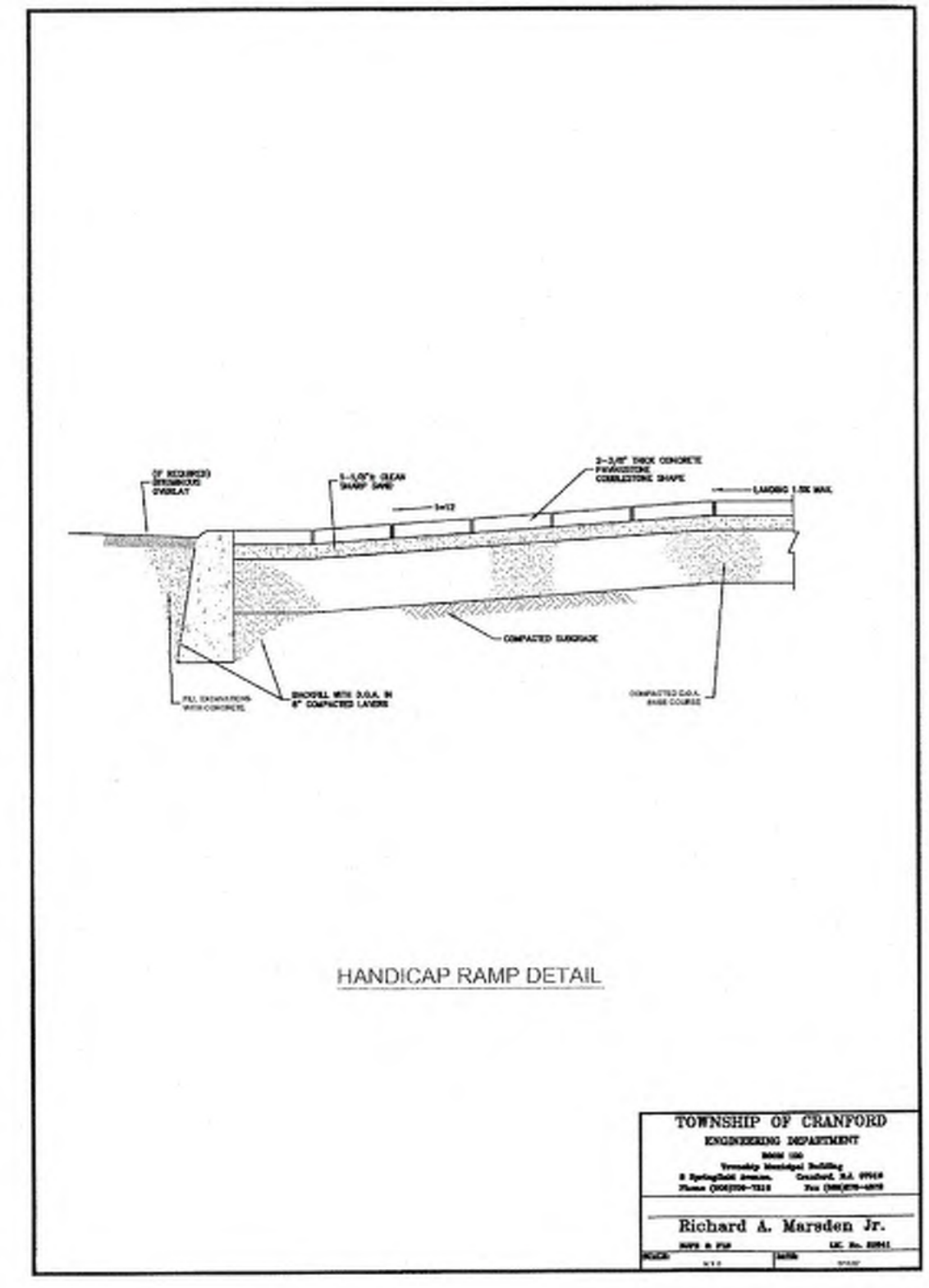
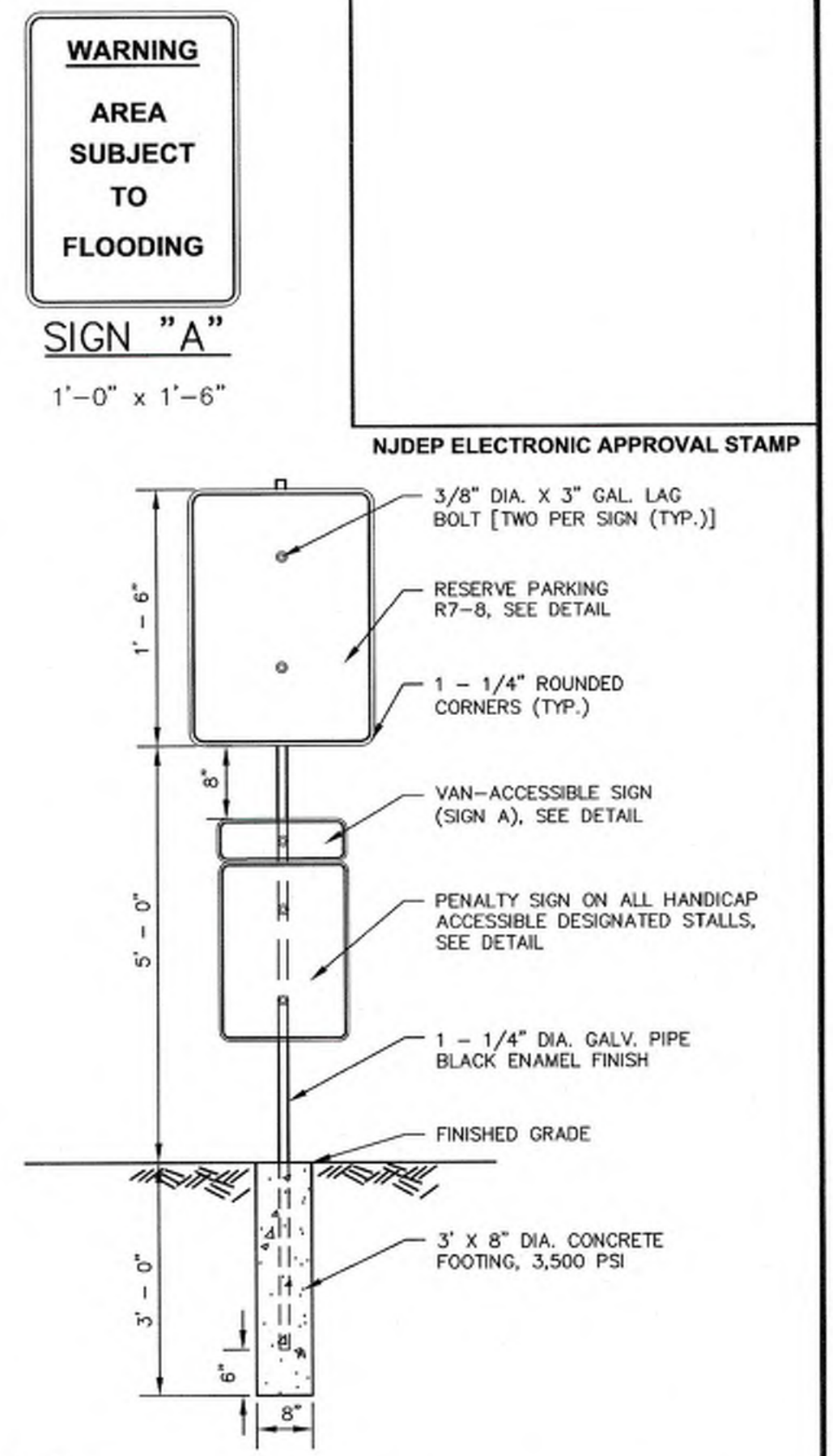
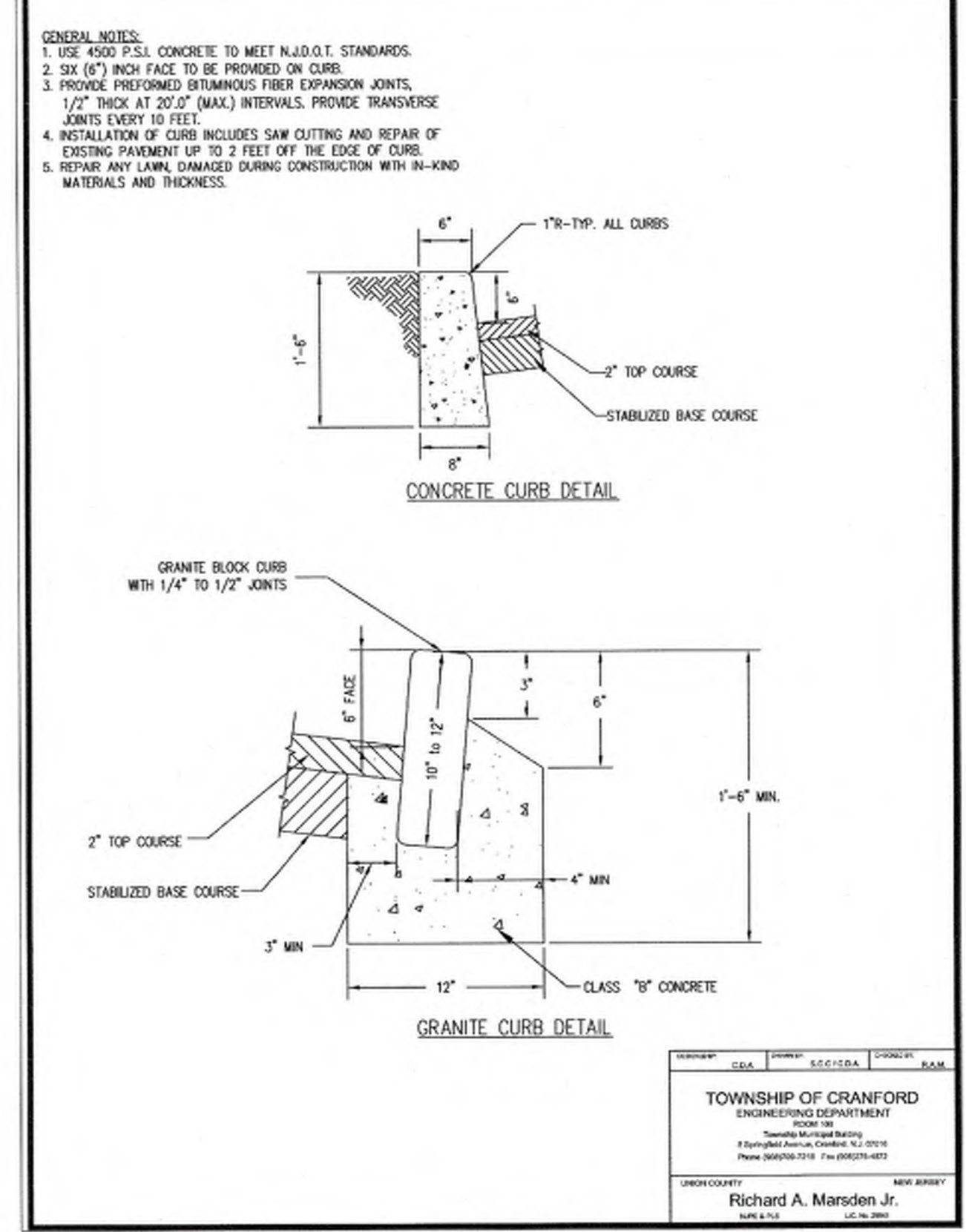
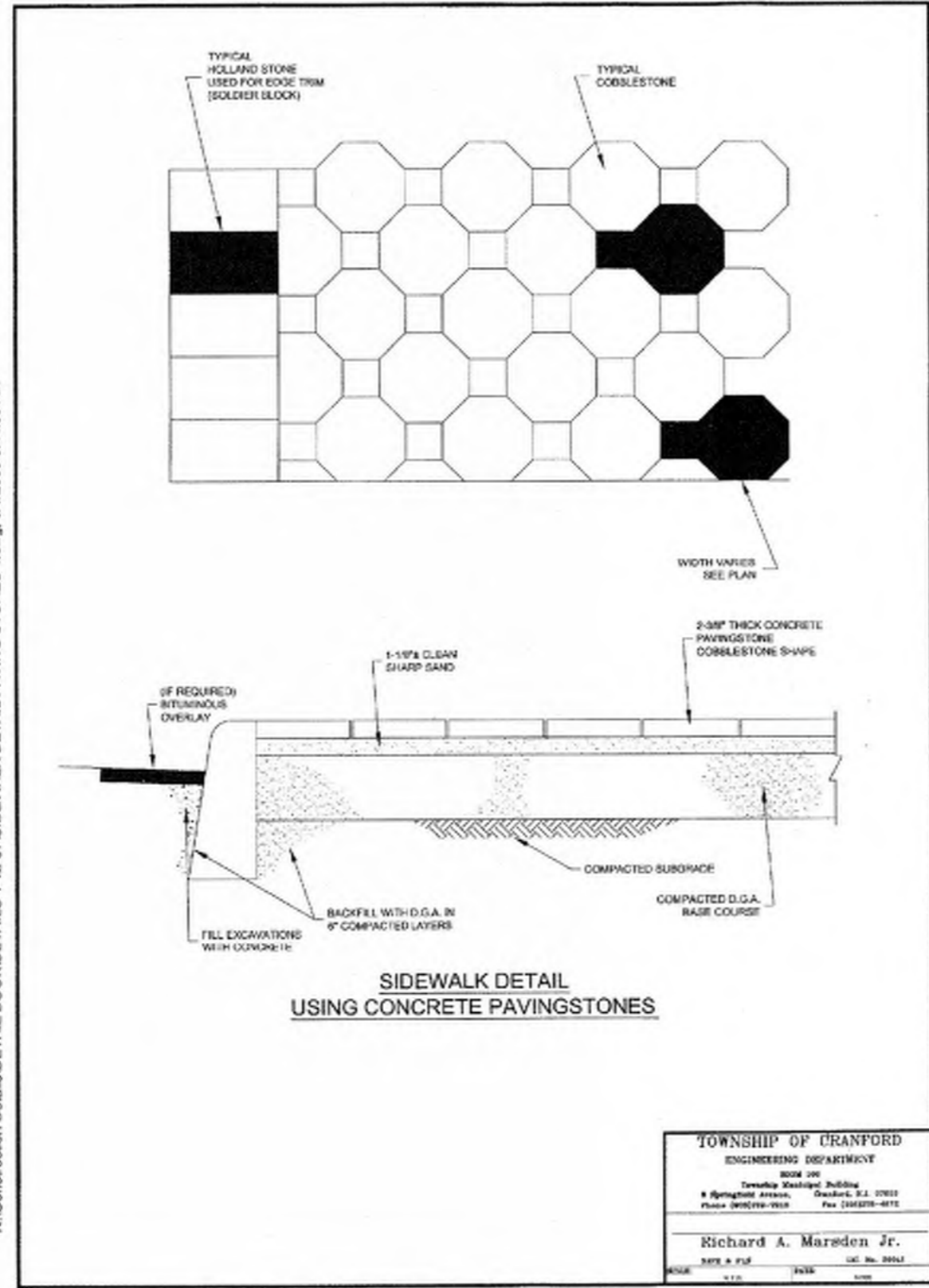
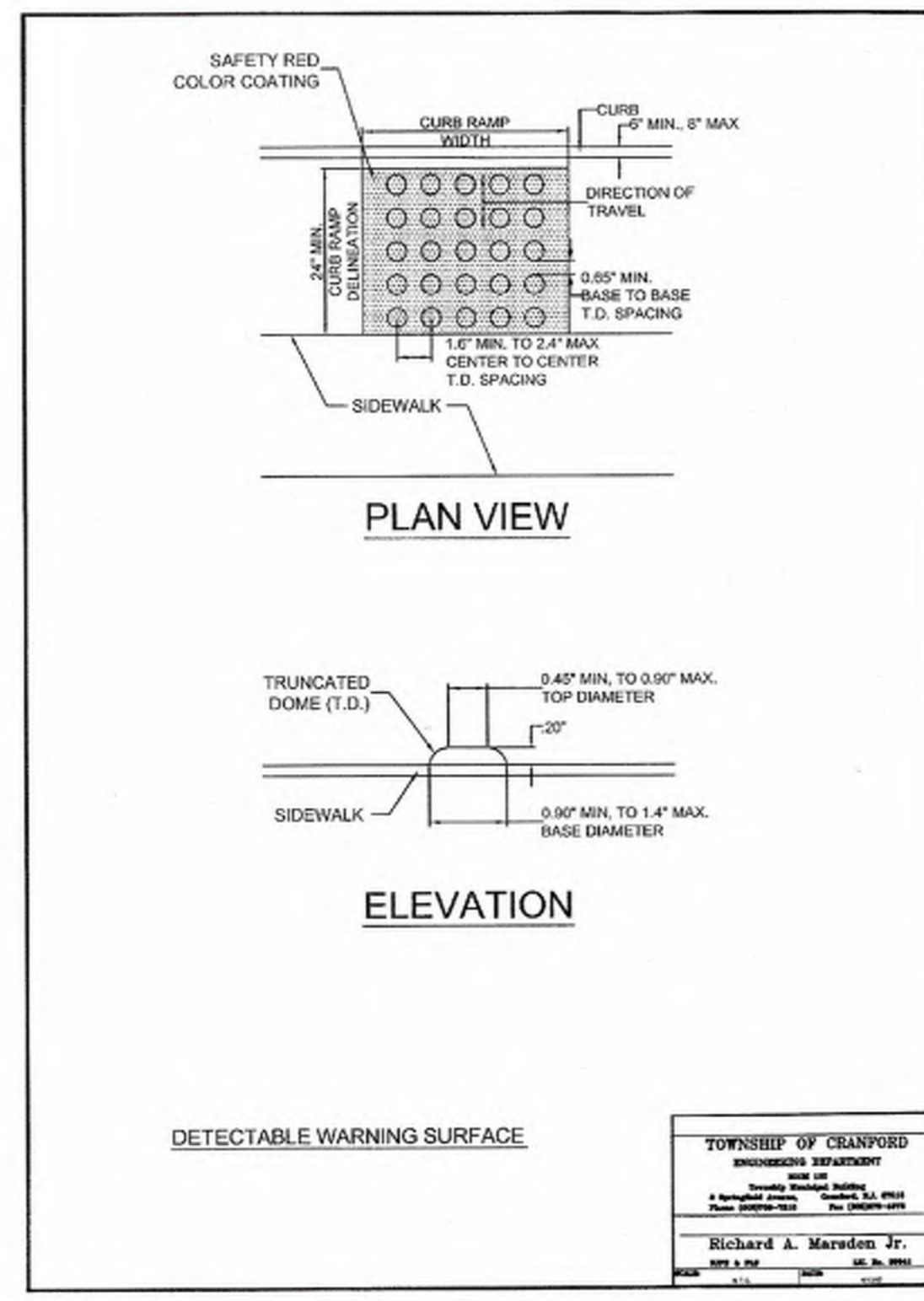
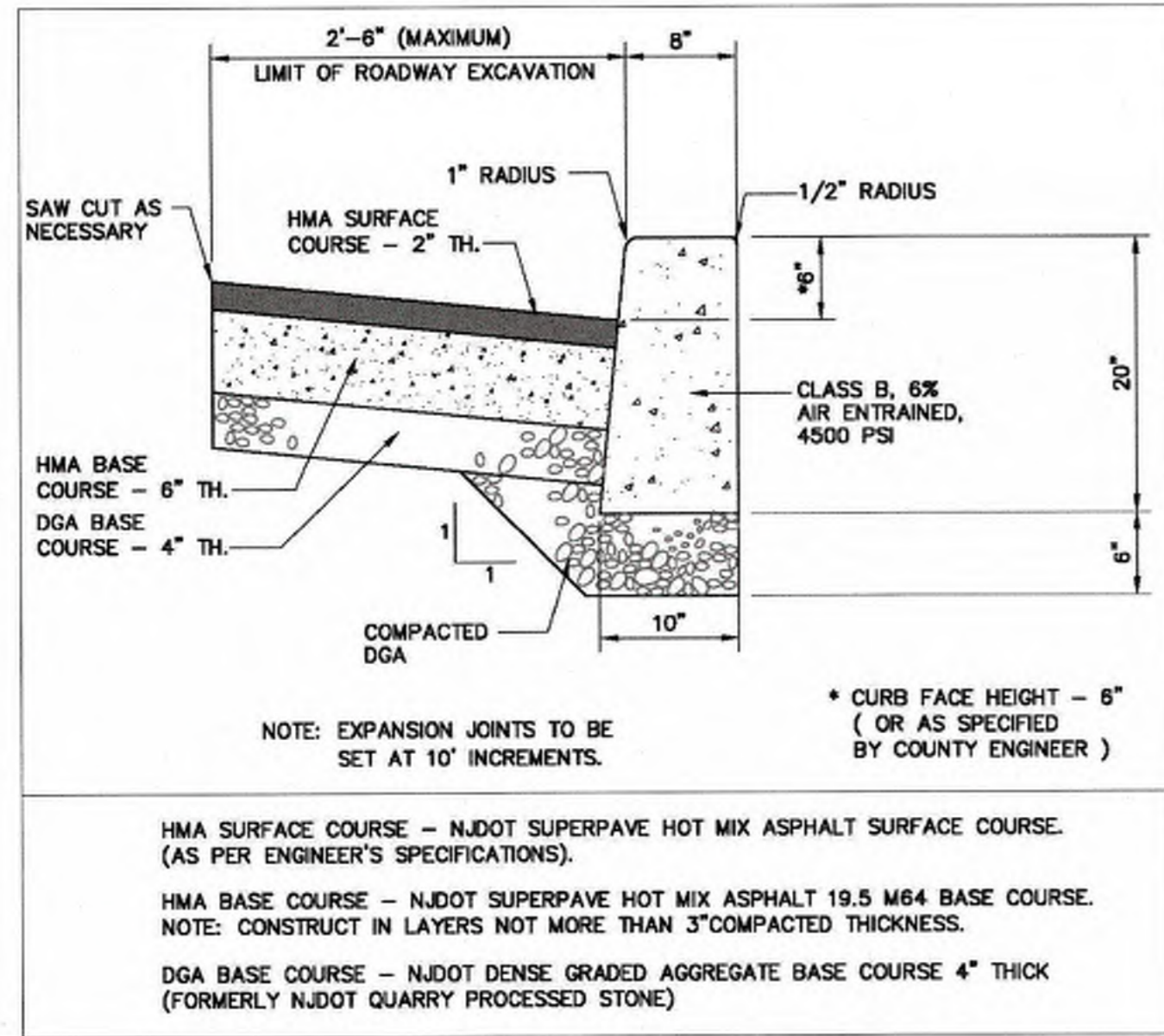
DATE: 2/19/2021
DESIGNED BY: BF
DRAWN BY: DC

SCALE: 1:10
CHECKED BY: BF
FIELD BOOK

PROJECT NUMBER: 16753.001
SHEET: 13 of 15

NJDEP ELECTRONIC APPROVAL STAMP

D:\16753\16753_001 - South Avenue East - Cranford\CAD\DWG\16753.001 - U - SMALL SITE.dwg ILM-001



No.	Date	Revision	Revised By	Checked By
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AS SHOWN
SCALE IN FEET

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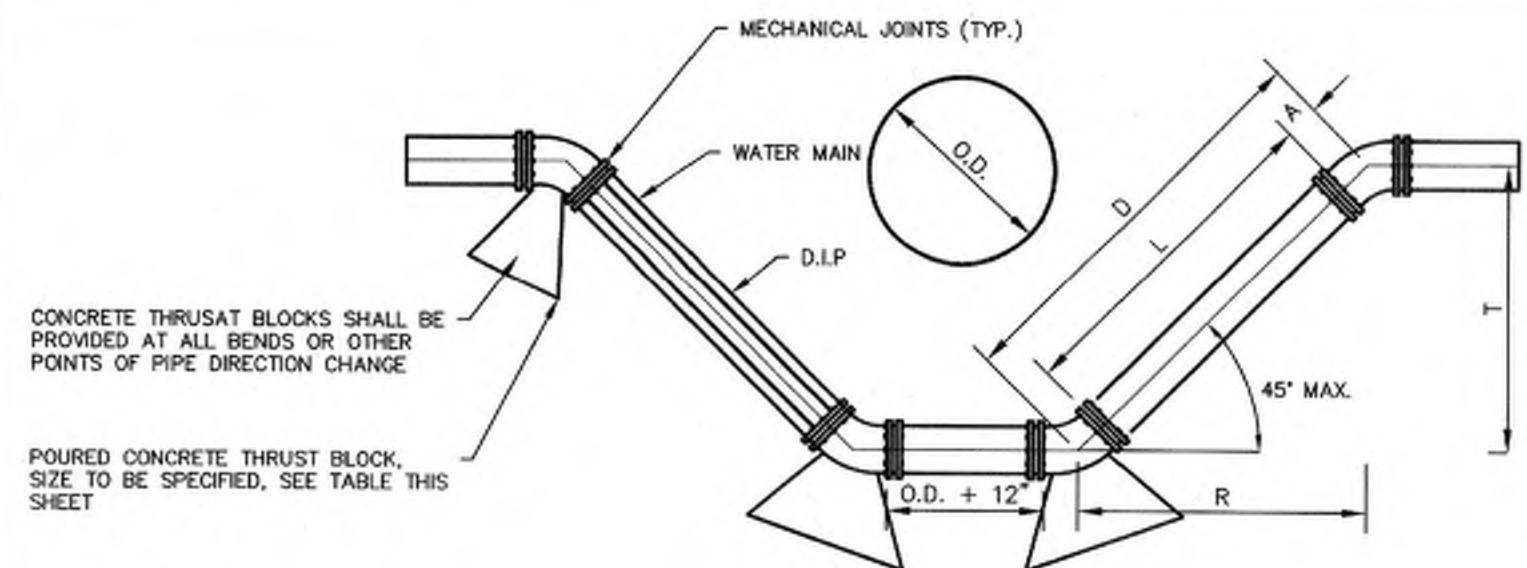
BAHRAM FARZANEH, PE, PP
PROFESSIONAL ENGINEER, N.J. LIC. No. 240E83454800

CONSTRUCTION DETAILS 1
FOR
PRELIMINARY AND FINAL SITE PLAN
FOR
MIXED USE DEVELOPMENT
BLOCK 478, LOTS 2, 3, 4, 5, AND 6
BLOCK 483, LOT 18, AND 17.01

TOWNSHIP OF CRANFORD
UNION COUNTY NEW JERSEY

DATE: 2/19/2021	DESIGNED BY: BF	SCALE: AS SHOWN	PROJECT NUMBER: 16753.001
DRAWN BY: WCS	CHECKED BY: BF	FIELD BOOK	SHEET: 14 of 15

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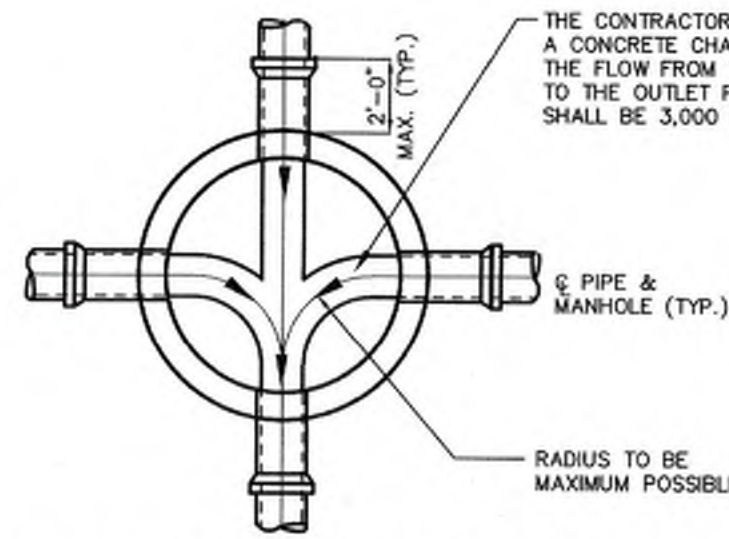
- NOTES:**
1. WATER MAIN MAY BE LOOPED ABOVE OBSTRUCTION, IF 3' MINIMUM COVER IS MAINTAINED ABOVE WATER MAIN
 2. WATER MAIN MAY BE DUCTILE IRON CEMENT LINED PIPE ALL JOINTS SHALL BE MECHANICAL JOINT OR PUSH-ON AND ALL FITTINGS SHALL BE MECHANICAL JOINT CAST IRON
 3. OFFSETS MAY BE SUBSTITUTED FOR A OR T UP TO 24" IF APPROVED BY THE ENGINEER
 4. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS OR OTHER POINTS OF PIPE DIRECTION CHANGE
 5. MINIMUM CLEARANCE BETWEEN OBSTRUCTING PIPE AND WATER MAIN SHALL BE 16" MINIMUM CLEARANCE BETWEEN WATER MAIN AND OTHER OBSTRUCTIONS SHALL BE 6"
 6. THE RODS SHALL BE UTILIZED TO RESTRAIN PIPE JOINTS, DETAILS OF THE "TIE ROD ASSEMBLY SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE RODS SHALL BE SUFFICIENT TO RESTRAIN THE THRUST DEVELOPED AT 100 P.S.I. WORKING PRESSURE

MECHANICAL JOINTS			
ANGLE	"D" EQUALS	"R" EQUALS	"L" EQUALS
45°	Tx1.414	Tx1.000	D-2A
22 1/2°	Tx2.414	Tx2.414	D-2A
11 1/4°	Tx5.126	Tx5.027	D-2A

LOOPING WATER MAIN DETAIL
NOT TO SCALE

MANHOLE NOTES

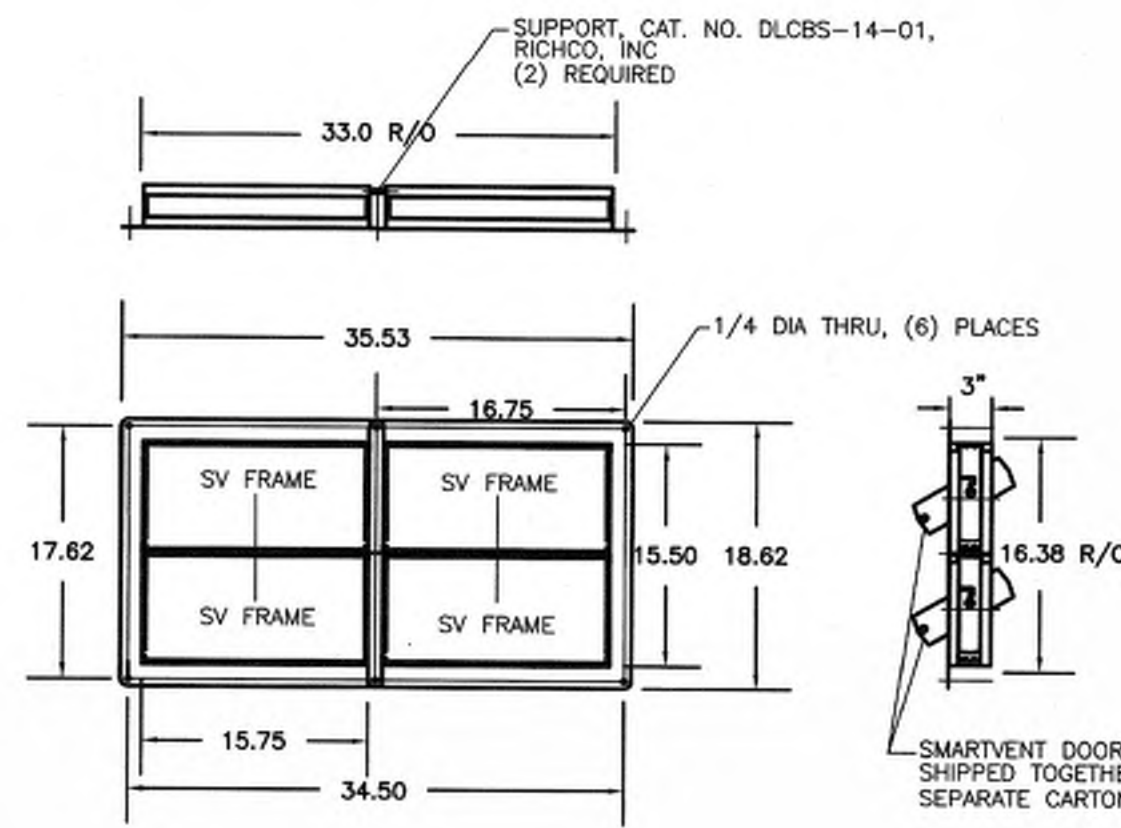
- GENERAL**
1. SHORTS SHALL BE USED AT MANHOLES
 2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST O.S.H.A. STANDARDS, WHERE POSSIBLE
 3. ALL CONSTRUCTION SHALL MEET STANDARD SPECIFICATION, THE LATEST REVISION
- PRECAST CONCRETE MANHOLE (ASTM-478)**
1. WHERE 5' AND 6' I.D. BASES ARE USED A TAPER SECTION CONNECTING BASE SECTION AND RISER SHALL BE REQUIRED AND SHALL HAVE A THICKNESS AS SHOWN. THE BASE SECTION AND RISER ALLOW FOR AT LEAST 6 FOOT MINIMUM VERTICAL CLEARANCE IN THE SCHEDULE.
 2. BASES TO BE AS SHOWN IN THE SCHEDULE.
- BRICK OR CONCRETE BLOCK MANHOLE (NOT SHOWN)**
1. BRICK OR CONCRETE BLOCK MANHOLES MUST BE APPROVED BY THE AUTHORITY ENGINEER
 2. SHOP DRAWING MUST BE SUBMITTED FOR ALL DETAILS.
- WORK AT EXISTING MANHOLE**
1. THE CONTRACTOR SHALL CUT INTO THE MANHOLE AND COMPLETE THE CONNECTION USING A SUITABLE ADAPTOR AS REQUIRED AND APPROVED BY THE AUTHORITY/ENGINEER
 2. THE CONTRACTOR SHALL NOT INTERFERE WITH ANY EXISTING SEWERAGE SERVICE DURING THE PERIOD OF CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTION TO KEEP DEBRIS OUT OF THE MANHOLE.



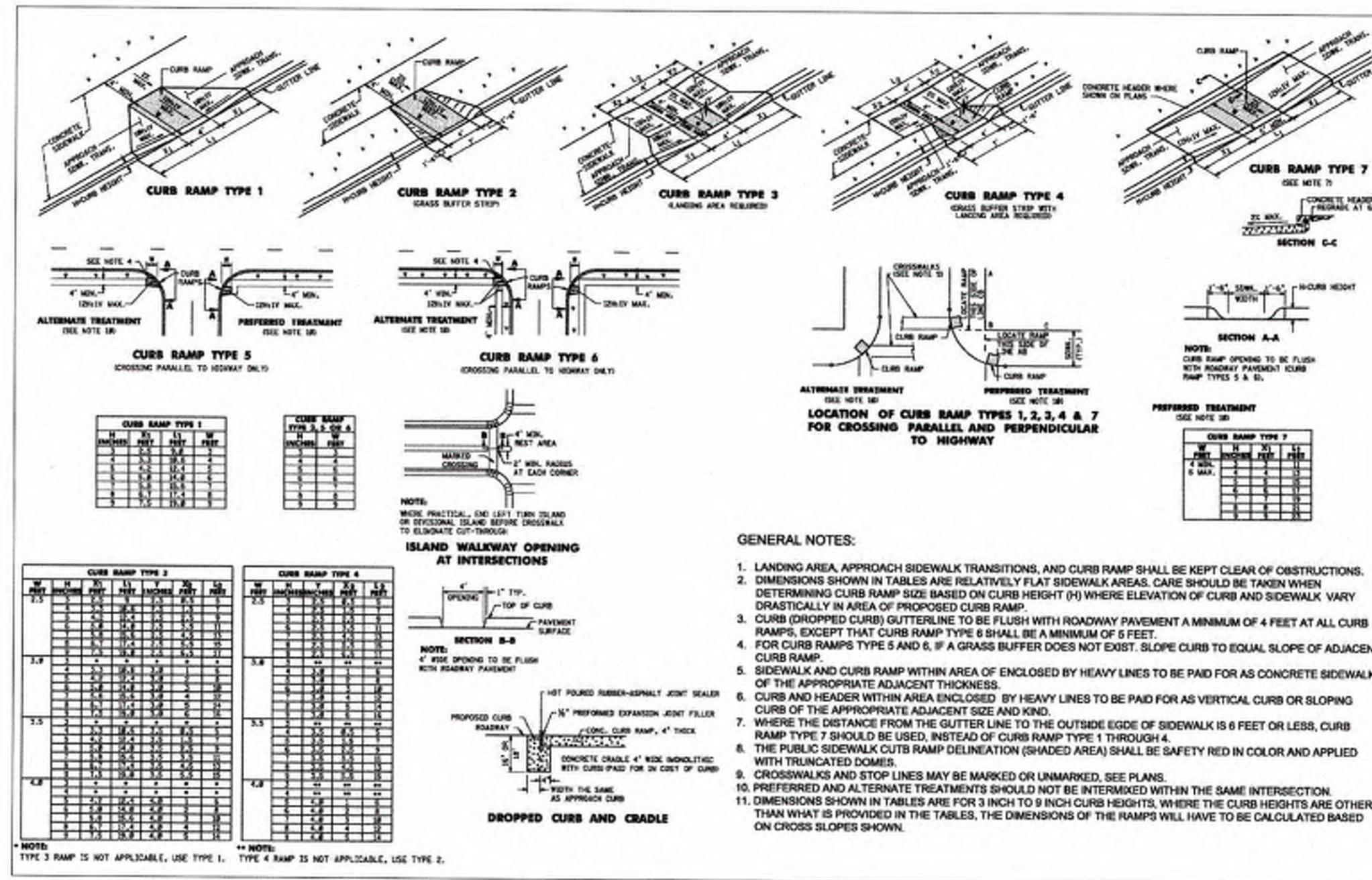
TYPICAL CHANNELING OF MANHOLE BOTTOM
NOT TO SCALE

TRENCH EXCAVATION AND BACKFILL NOTES

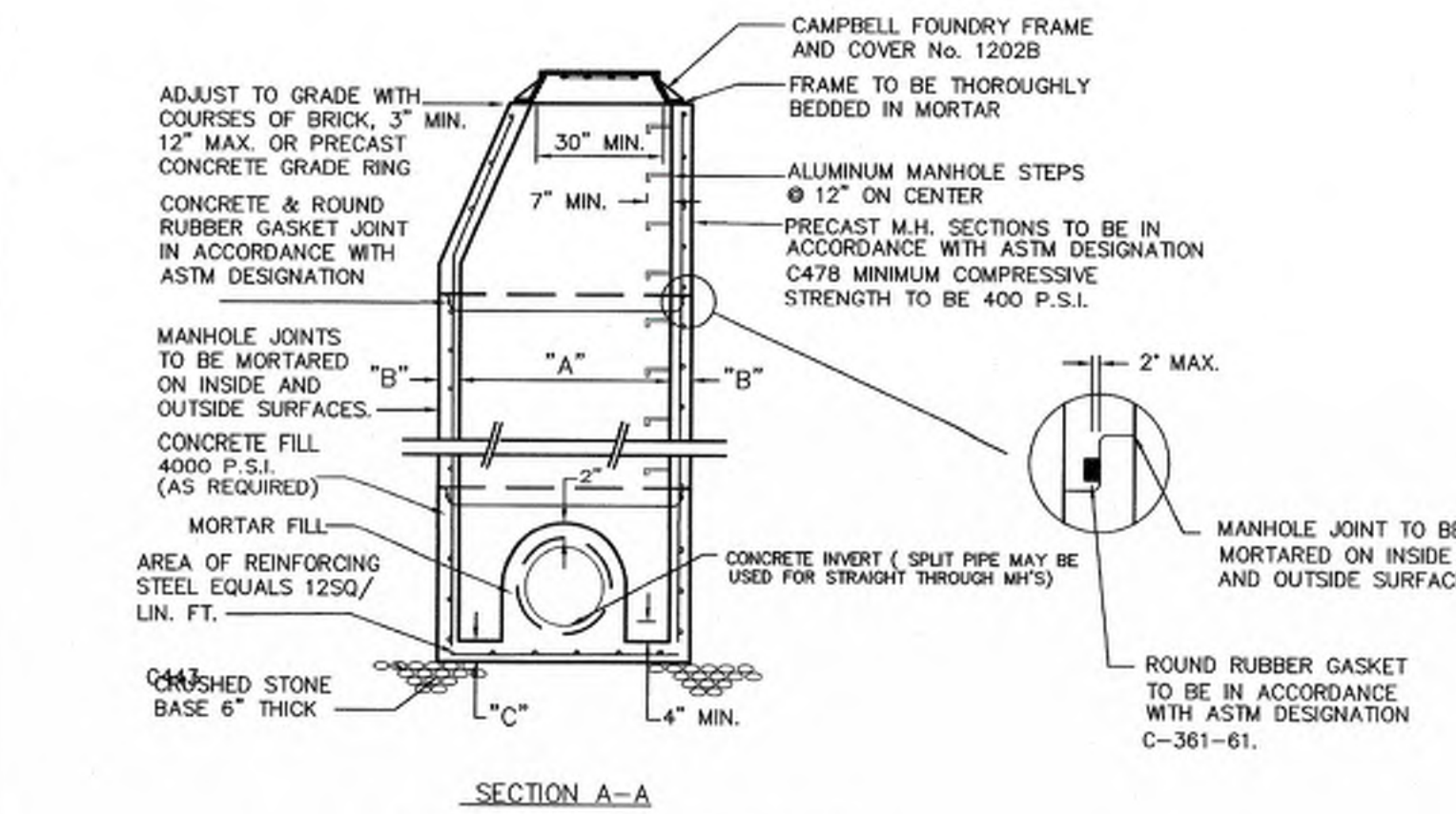
1. THE MAXIMUM DRY DENSITIES SHALL BE DETERMINED IN ACCORDANCE WITH ASTM DESIGNATION D1557. THE MINIMUM PERCENTAGE OF COMPACTION TO BE ACHIEVED BY THE CONTRACTOR IN THE VARIOUS ZONES IS AS FOLLOWS:
- | PIPE MATERIAL | LOCATION | INITIAL COMPACTION |
|-----------------------|----------|--------------------|
| SURFACE ZONE: | ALL | 95% |
| TRENCH BACKFILL ZONE: | ALL | 90% |
| PIPE EMBEDMENT ZONE: | ALL | 95% |
- THE MINIMUM COMPACTION IN EMBANKMENTS SHALL BE 90%
2. THE PIPE EMBEDMENT ZONE WIDTH AND THE MAXIMUM TRENCH WIDTH SHALL NOT EXCEED THE PERMISSIBLE WIDTHS SHOWN. IF THE PERMISSIBLE WIDTH IS EXCEEDED, THE PIPE SHALL BE INSTALLED IN A HIGHER CLASS BEDDING THAN SHOWN ON THE DRAWINGS OR THE SPECIFIED PIPE SHALL BE REPLACED WITH PIPE OF GREATER CRUSHING STRENGTH OR BOTH, TO ACHIEVE SUITABLE CONDITIONS.
 3. SUITABLE MATERIAL FROM EXCAVATIONS SHALL BE FREE FROM OBJECTIONABLE QUANTITIES OF ORGANIC MATTER, CLAYS, TREES, STUMPS, FROZEN MATERIAL, RUBBLE, REFUSE, CONCRETS, ROCK AND OTHER MATERIALS CONSIDERED DELETERIOUS BY THE AUTHORITY AND SHALL NOT HAVE FINES IN EXCESS OF 10 PERCENT PASSING THE NO. 200 SIEVE NOR STONE OR GRAVEL LARGER THAN 2 INCHES.
 4. BACKFILL TO BE MECHANICALLY COMPACTED IN TWELVE INCH LIFTS TO THE SATISFACTION OF THE ENGINEER.
 5. THE CONTRACTOR MUST COMPLY WITH ALL STATE AND FEDERAL CONFINED SPACE RULES, AND ALL APPLICABLE O.S.H.A. REQUIREMENTS.



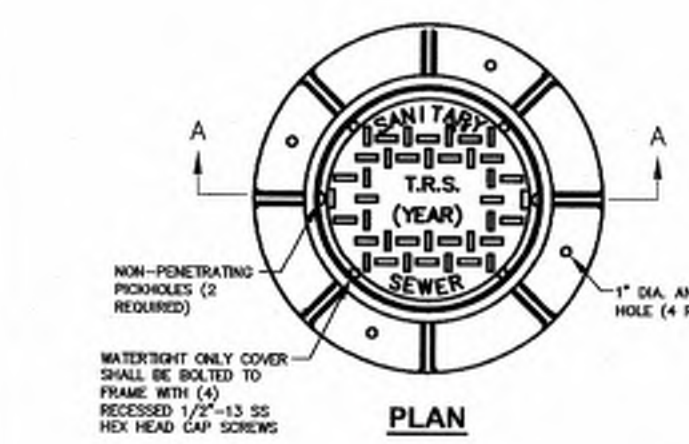
FLOOD VENTS SMART VENT 2x2 MULTI-FRAME
NOT TO SCALE



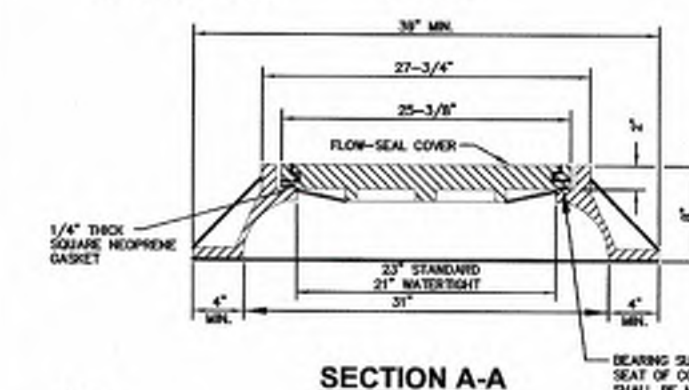
PUBLIC SIDEWALK AND CURB RAMPS
COUNTY SITE DESIGN DETAIL 1.42
NOT TO SCALE



DOGHOUSE MANHOLE DETAIL
SECTION A-A



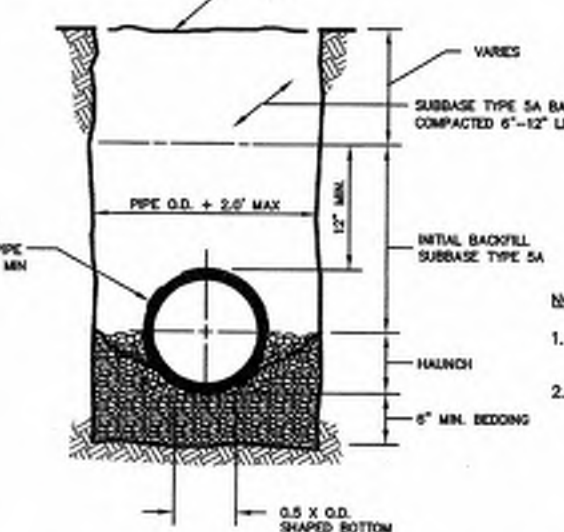
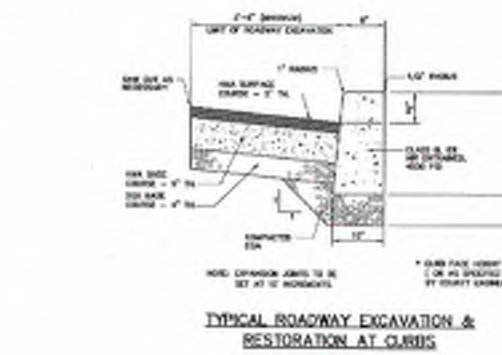
PLAN



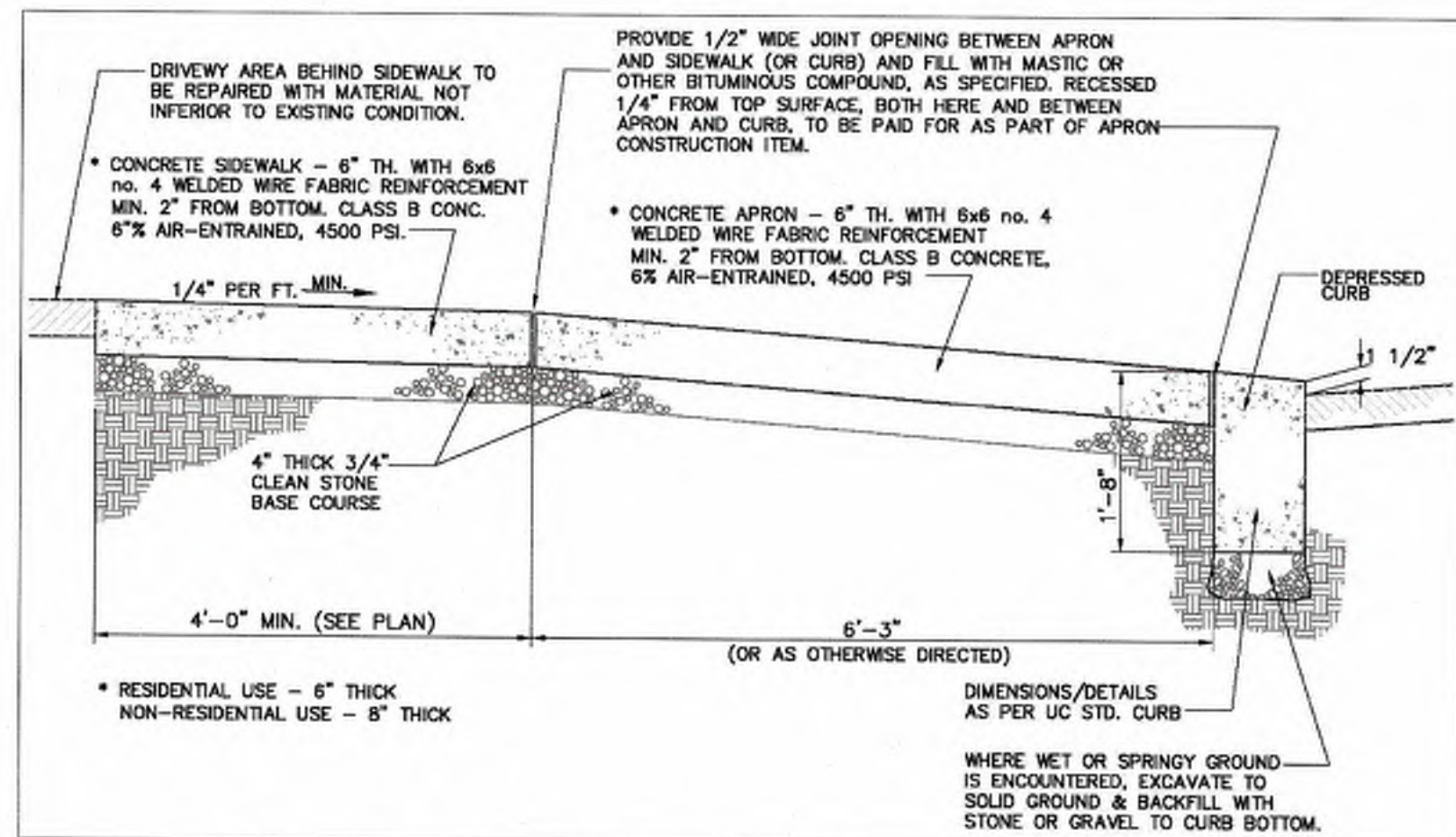
SECTION A-A

- NOTES:**
1. STANDARD MANHOLE FRAME AND COVER SHALL BE PATTERN NO. 12028 W/ FLOW-SEAL COVER AS MANUFACTURED BY THE CAMPBELL FOUNDRY CO., OR APPROVED EQUAL
 2. MANHOLE FRAMES AND COVERS TO BE HEAVY DUTY, CONFORMING TO A.S.T.M. SPECIFICATION A-48 CLASS 30-B WITHOUT SHOP COAT OF ASPHALTIC PITCH, AND SHALL BE DESIGNED FOR AASHTO HS20-44 HIGHWAY LOADING
 3. IN EASEMENTS AND REMOTE AREAS, WATERPROOF COVERS AND FRAMES MUST BE PROVIDED.

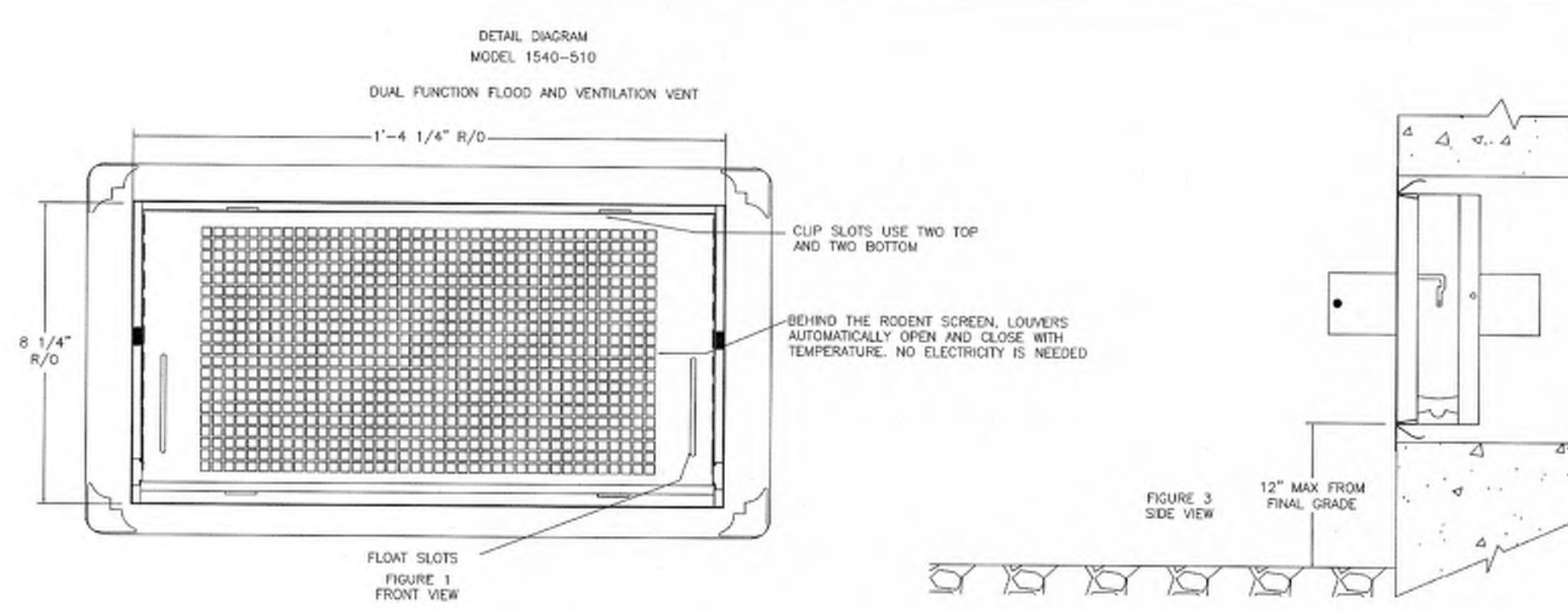
SANITARY SEWER STANDARD OR WATERTIGHT SANITARY MANHOLE FRAME & COVER DETAIL
NOT TO SCALE



SANITARY SEWER STANDARD PIPE BEDDING FOR PVC PIPE DETAIL
NOT TO SCALE

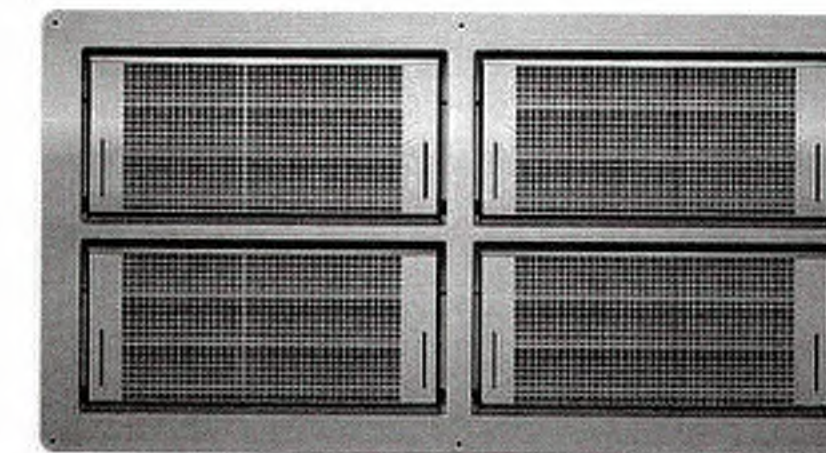


CONCRETE DRIVEWAY APRON TYPICAL SECTION
COUNTY SITE DESIGN DETAIL 1.09
NOT TO SCALE

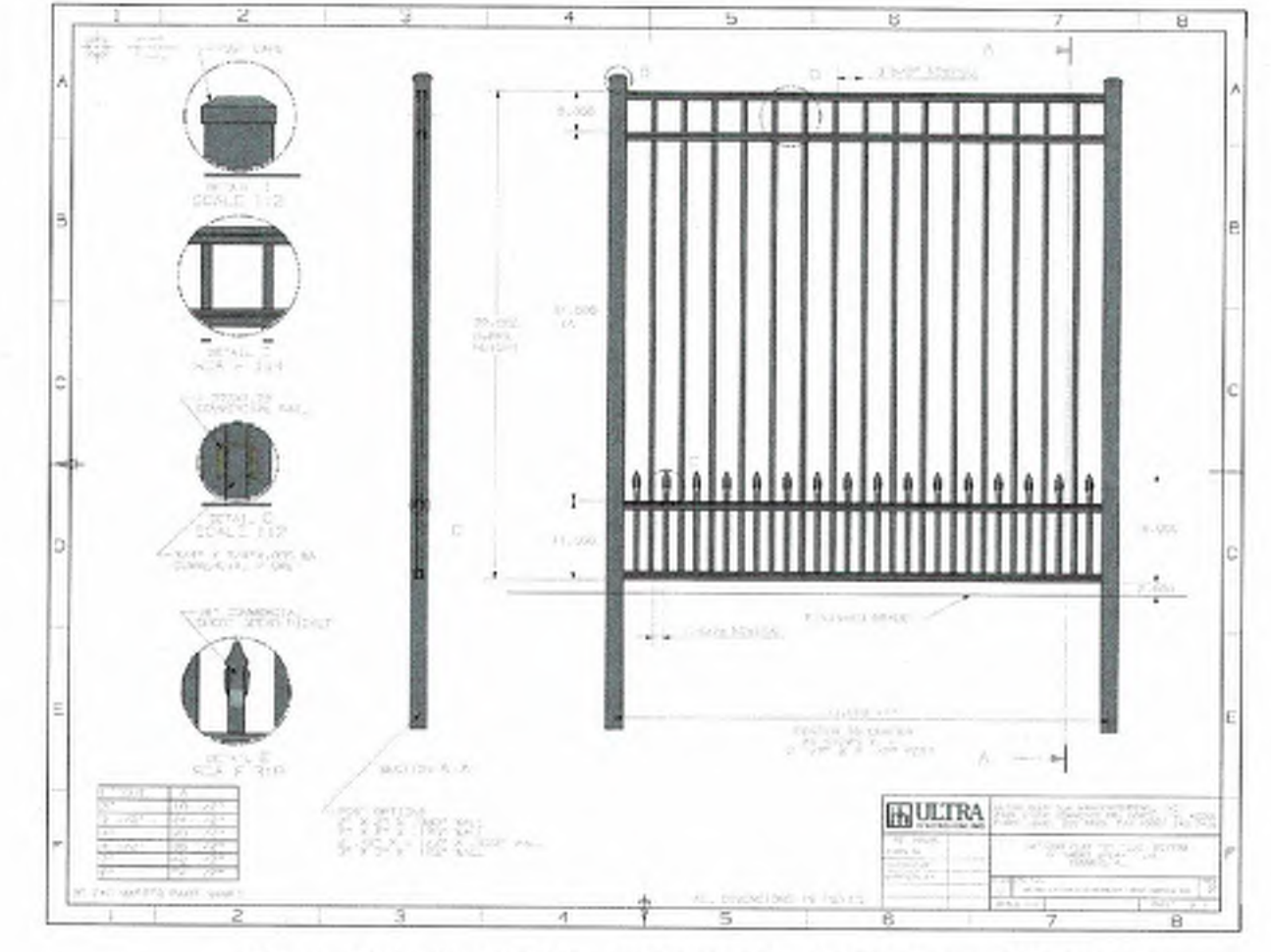


FLOOD VENTS SMART VENT
NOT TO SCALE

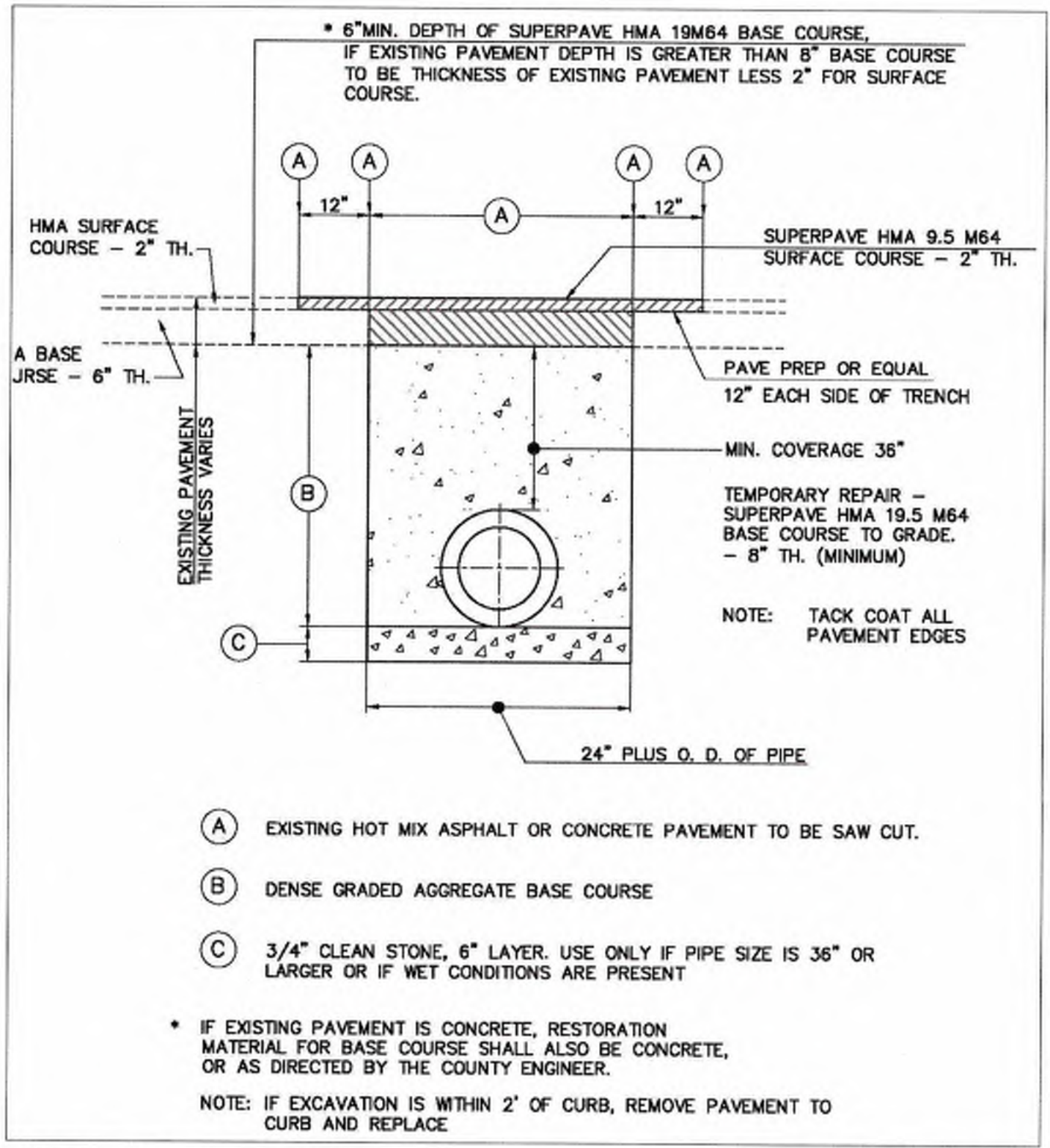
1540-150202E
Dual-Function Doors 1540-0039



Flood Coverage - 800 sq. ft.
Air Ventilation - 204 sq. in.
Rough Opening - 33" x 16 3/8"
Vent Size - 32 1/2" W x 16" H x 3" D



BLACK METAL PICKET FENCE DETAIL
NOT TO SCALE



HOT MIX ASPHALT PAVEMENT TRENCH RESTORATION
COUNTY SITE DESIGN DETAIL 1.35
NOT TO SCALE

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CONSTRUCTION DETAILS 2
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FOR
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TOWNSHIP OF GRANFORD
UNION COUNTY
NEW JERSEY

BAHRAM FARZANEH, PE, PP
PROFESSIONAL ENGINEER, N.J. LIC. NO. 24GE03454800

DATE: 2/19/2021
DESIGNED BY: BF
DRAWN BY: WGS

SCALE: AS SHOWN
CHECKED BY: BF

PROJECT NUMBER: 16753.001
SHEET: 15 OF 15

D:\16K\16720\16723 - South Avenue East - Cranford\CADD\DWG\16723.001 - CD.dwg CD (2)