PRELIMINARY AND FINAL PLAT-MAJOR SITE PLAN FOR 45 ROUTE 520

LOTS 66, 67, 68 & 69
BLOCK 268

SITUATED IN

TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

PROPERTY OWNERS WITHIN 200 FT.

Marlboro Township
Parcel Offset List

Target Parcel(s): Block-Lot: 268-68
51 ROUTE 520, LLC
51 ROUTE 520
Block-Lot: 268-69
49 ROUTE 520 LLC
49 ROUTE 520
Block-Lot: 268-67
45 ROUTE 520, LLC
45 ROUTE 520

12 parcels fall within 205 feet of this parcel(s).

Block-Lot: 176-38.01
MARLBORO PROPERTY OWNER, LLC
820 BEAR TAVERN ROAD
WEST TRENTON, NJ 08628
RE: 52 ROUTE 520

Block-Lot: 176-37
MILLENNIUM CHILDCARE @ JACKSON LLC
50 ROUTE 520
MORGANVILLE, NJ 07751
RE: 50 ROUTE 520

Block-Lot: 176-34.01
TD BANK
10B-380 WELLINGTON ST
LONDON,ON N6A 4S4 CANADA 00000
RE: 46 ROUTE 520

Block-Lot: 176.06-1
CHEONG,SUI HONG ZHAO & JIMMY MANSAN
4 BLUFFS COURT
MORGANVILLE, NJ 07751
RE: 4 BLUFFS COURT

Block-Lot: 268-80
MARLBORO PLAZA & UNIONDALE WG LLC
151 IRVING PLACE
WOODMERE, NY 11598
RE: 37 ROUTE 520

Block-Lot: 268-71
I, CONG
55 ROUTE 520
ENGLISHTOWN, NJ 07726
RE: 55 ROUTE 520

Block-Lot: 268-72
GATTO, DOMENIC & ANNE & JOANNE,ETAL
57 COUNTY ROAD 520
ENGLISHTOWN, NJ 07726
RE: 57 ROUTE 520

Block-Lot: 268-79
ARKYS AUTO SALES
8600 NATIVE DANCER RD N
PALM BEACH GARDENS, FL 33418
RE: 77 ROUTE 520

Block-Lot: 268-70
VAN FOSSEN, RUSSELL J & PATRICIA M
53 ROUTE 520
ENGLISHTOWN, NJ 07726
RE: 53 ROUTE 520

Block-Lot: 268-66
PODSTAWSKI, STANLEY & JOAN
43 ROUTE 520
ENGLISHTOWN, NJ 07726
RE: 43 ROUTE 520

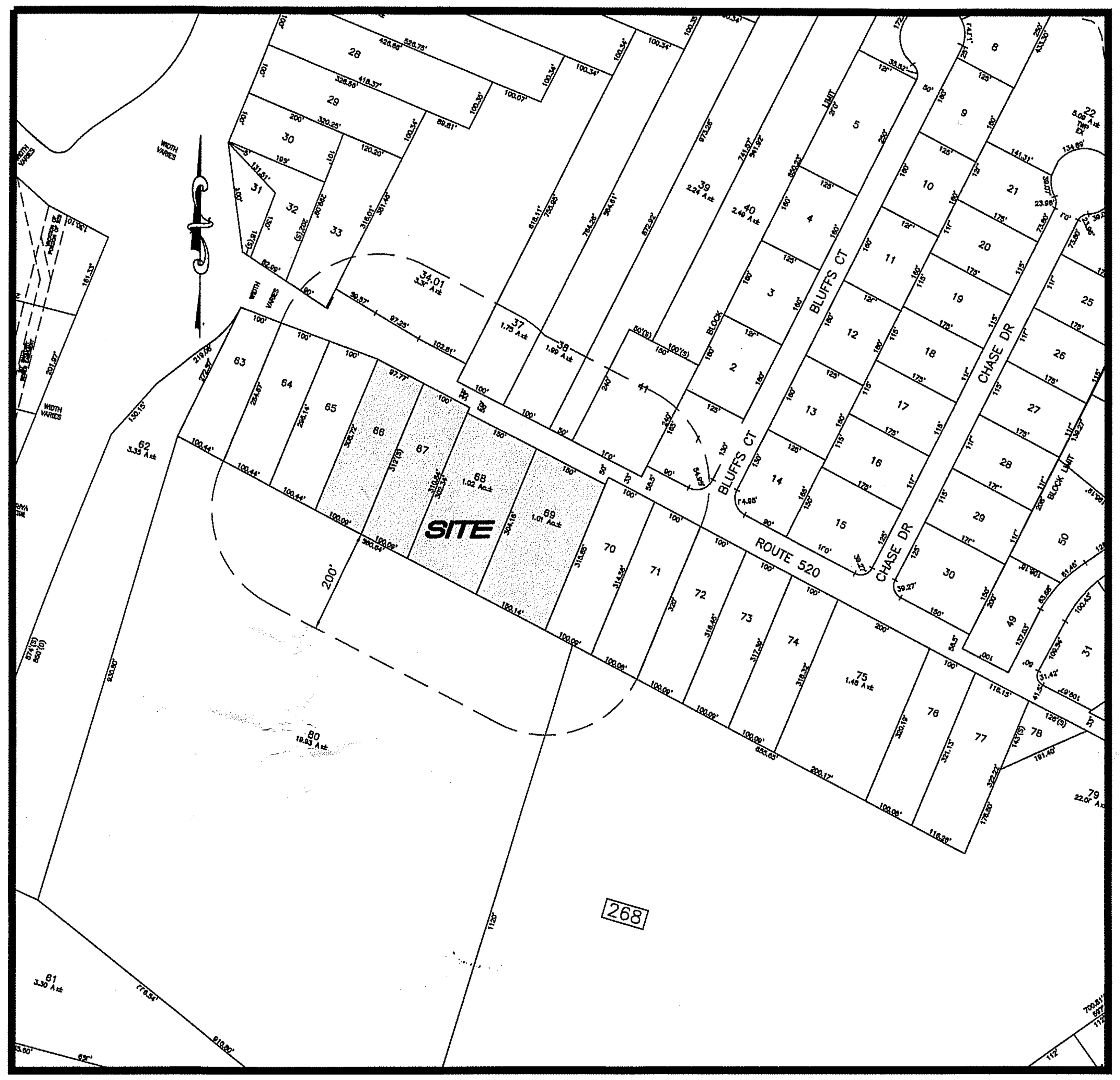
Block-Lot: 268-65
MARLBORO PLAZA & UNIONDALE WG LLC
151 IRVING PLACE
WOODMERE, NY 11598
RE: 37 ROUTE 520

Block-Lot: 268-64
TRATCH, JOHN & AUDREY
39 ROUTE 520
ENGLISHTOWN, NJ 07726
RE: 39 ROUTE 520

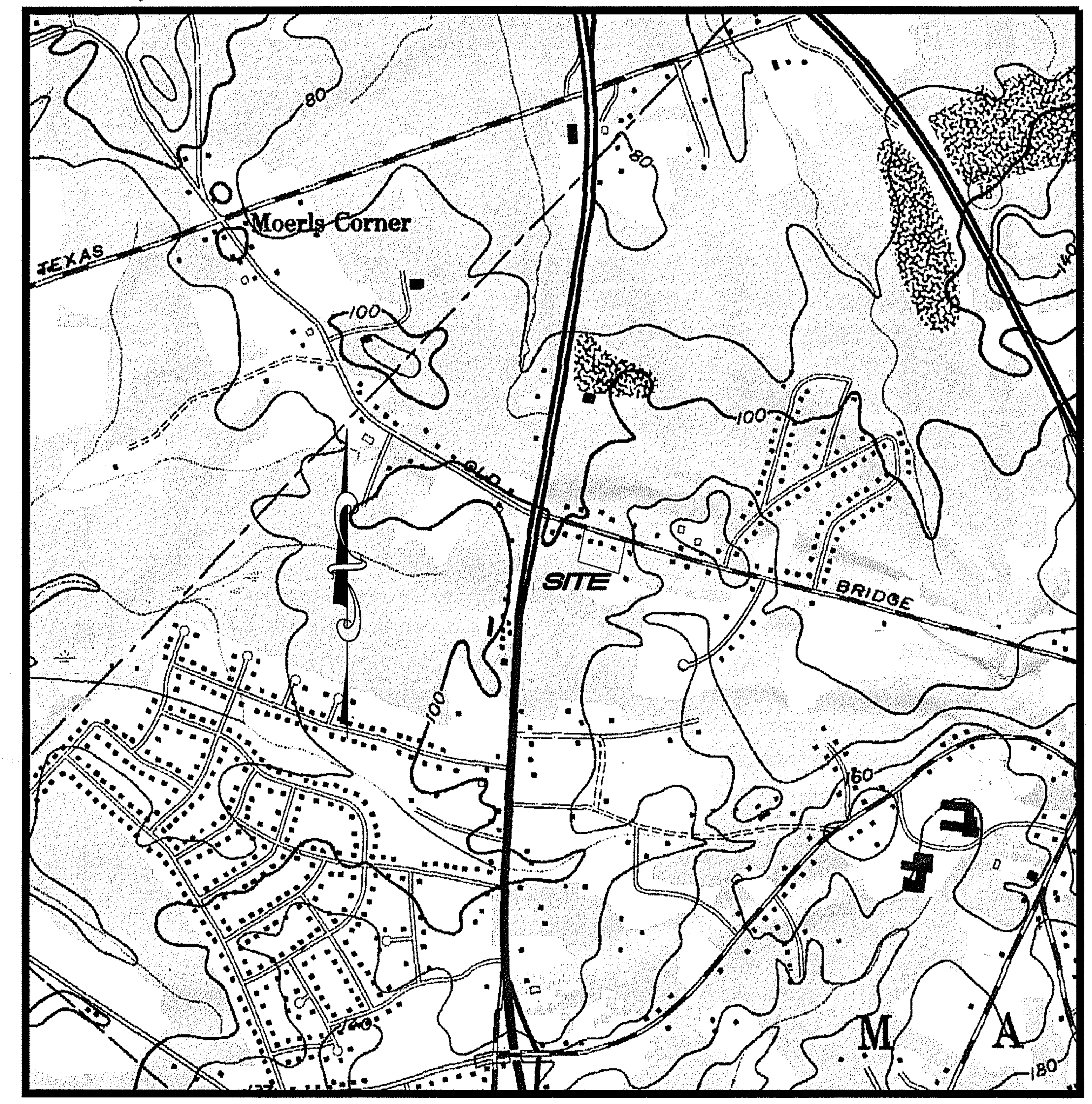
O W N E R & A D D R E S S R E P O R T

MARLBORO — 200 FOOT LIST, BLOCK 268 LOT 66 — 08/11/21 Page 1 of 1

BLOCK	LOT	QUAL	CLA	PROPERTY OWNER	PROPERTY LOCATION	Add'l Lots
176	30		4A	PMG NEW JERSEY II LLC 2900 TELESTAR COURT FALLS CHURCH, VA 22042	38 ROUTE 9	31,32,33
176	34.01		4A	TD BANK 10B-380 WELLINGTON ST LONDON,ON N6A 4S4 CANADA 00000	46 ROUTE 520	
176	37		4A	MILLENNIUM CHILDCARE @ JACKSON LLC 50 ROUTE 520 MORGANVILLE, NJ 07751	50 ROUTE 520	
176	38.01		4A	MARLBORO PROPERTY OWNER, LLC 820 BEAR TAVERN ROAD WEST TRENTON, NJ 08628	52 ROUTE 520	
268	62		4A	MARLBORO PLAZA & UNIONDALE WG LLC 151 IRVING PLACE WOODMERE, NY 11598	37 ROUTE 520	65,80
268	63		4A	ATLANTIS REALTY ASSOC. LLC 105 CRANMOOR DRIVE TOMS RIVER, NJ 08754	74 ROUTE 9	
268	64		2	TRATCH, JOHN & AUDREY 39 ROUTE 520 ENGLISHTOWN, NJ 07726	39 ROUTE 520	
268	67		2	45 ROUTE 520, LLC 79 ROUTE 520 ENGLISHTOWN, NJ 07726	45 ROUTE 520	
268	68		2	51 ROUTE 520, LLC 51 ROUTE 520 ENGLISHTOWN, NJ 07726	51 ROUTE 520	



TAX MAP
1"=300'



U.S.G.S. MAP
FREEHOLD QUADRANGLE
1" = 1000'

GENERAL NOTES:

1. PROPERTY BEING KNOWN AS LOTS 66, 67, 68, & 69, BLOCK 268 AS SHOWN ON THE TOWNSHIP OF MARLBORO TAX MAPS, TAX MAP SHEET NUMBER 79 AND DESCRIBED IN:
DEED BOOK 8025 PAGE 8601
DEED BOOK 9349 PAGE 7935
DEED BOOK 9363 PAGE 6009
DEED BOOK 9458 PAGE 7567

2. OWNER/APPLICANT: 45 ROUTE 520 LLC
51 ROUTE 520 LLC
49 ROUTE 520 LLC
FELIX BRUSELOVSKY
79 ROUTE 520
ENGLISHTOWN, NEW JERSEY 07726

3. PROPERTY IS LOCATED IN FLOOD ZONE "X" AS SHOWN ON F.I.R.M. 34025C00135F DATED SEPT. 25, 2009. PRELIMINARY F.I.R.M. HAS NOT BEEN ISSUED FOR THIS SITE.

4. PROPERTY LOCATED IN ZONE OPT-1 (OFFICE TRANSITION) AS PER THE TOWNSHIP OF MARLBORO ZONING MAP. THE REQUIRED ZONE SCHEDULE IS SHOWN ON THIS SHEET.

5. PARKING STALL SIZE: 10' X 20' REQUIRED 9' X 18' PROVIDED. WAIVER REQUIRED.

6. PARKING WAS DESIGNED PER TOWNSHIP OF MARLBORO ORDINANCE 220-97 FLOOR AREA = 39,360 SF; 1 SPACE PER 250 SF OF GROSS FLOOR AREA. THE PROJECT REQUIRES 158 SPACES AND 188 SPACES ARE PROVIDED.

7. BOUNDARY AND TOPOGRAPHIC SURVEY PREPARED BY CHALLONER AND ASSOCIATES, L.L.C. ERROR OF CLOSURE IS LESS THAN 1:15,000.

8. ELEVATION BENCHMARK IS SHOWN ON PLAN AS SANITARY MANHOLE RIM 121.42

9. PROPOSED BUILDING USE SHALL BE FOR GENERAL OFFICE.

10. DO NOT SCALE DRAWINGS AS THEY PERTAIN TO ADJACENT AND SURROUNDING PHYSICAL CONDITIONS, BUILDINGS, STRUCTURES, ETC. THEY ARE SCHEMATIC ONLY, BASED ON AERIAL PHOTOGRAPHY, EXCEPT WHEN DIMENSIONS ARE SHOWN THERETO.

11. ALL UTILITIES SHALL BE CONSTRUCTED UNDERGROUND.

12. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS SATISFACTION PRIOR TO EXCAVATION. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION. TO ASCERTAIN EXISTING MATERIALS, INVERTS AND SIZES, TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENT AS REQUIRED TO AVOID CONFLICTS.

13. CONTRACTOR MUST NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD OR SOIL CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HERON. SUCH CONDITIONS COULD RENDER THE DESIGNS SHOWN HERON INAPPROPRIATE OR INEFFECTIVE.

14. ALL FILL AREAS UNDER ROADWAY AND STRUCTURES TO BE COMPACTED TO A MINIMUM OF 135% COMPACTION OF PROCTOR.

15. GROUND SIGNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWNSHIP OF MARLBORO ORDINANCE.

16. FACADE SIGN IS PROPOSED. SEE PLAN FOR LOCATION.

17. ALL TRAFFIC SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

18. ALL ON SITE LIGHTING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWNSHIP OF MARLBORO ORDINANCE. ENTIRE PARKING LOT WILL BE SUPPLIED WITH AT LEAST 1/2 A FOOTCANDLE. ALL ONSITE LIGHTING TO BE REFLECTED/DEFLECTED AWAY FROM RESIDENTIAL AREAS AND PUBLIC RIGHTS-OF-WAY.

19. ALL REFUSE AND RECYCLABLES SHALL BE STORED IN CONTAINERS MAINTAINED WITHIN THE REFUSE AREA. NO CONTAINERS SHALL BE MAINTAINED ANYWHERE ON- SITE EXCEPT IN REFUSE AREA.

20. THE STORM WATER MANAGEMENT FACILITY PROPOSED ON THE SITE WILL BE PRIVATELY OWNED AND MAINTAINED.

21. ALL PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWNSHIP OF MARLBORO ORDINANCE.

22. THERE WILL NOT BE ANY STORAGE, PARKING TRUCKS/TRAILERS ON SITE.

23. THERE WILL NOT BE ANY OUTSIDE STORAGE/DISPLAY ON SITE.

24. BEFORE CONSTRUCTION OR CLEARANCE COMMENCES, THE TREE LINE SHALL BE STAKED OFF WITH A TREE SAVE FENCE (SILT FENCE), AND BE INSPECTED BY THE TOWNSHIP ENGINEERS OFFICE FOR COMPLIANCE WITH THE APPROVED PLANS.

25. ALL AREAS THAT REMAIN WOODED SHALL BE CLEARED OF DEBRIS, IF ANY.

26. THERE ARE NO HYDRIC SOILS, WETLANDS, EXCESSIVE SLOPES LOCATED WITHIN THIS SITE.

27. APPLICANT SHALL COMPLY WITH THE PERFORMANCE STANDARDS OF MARLBORO TOWNSHIP ORDINANCE.

28. THIS PLAN IS SUBJECT TO ANY EASEMENT OF RECORD, NEW JERSEY TIDELANDS CLAIM OR OTHER PERTINENT FACTS WHICH MAY BE DISCOVERED BY A TITLE SEARCH.

29. ALL IMPORTED FILL MUST BE CERTIFIED CLEAN.

30. SIGHT LIGHTS TO BE EQUIPPED WITH A TIMER TO DIM DURING NON-OPERATIONAL HOURS (10 PM TO 8 AM).

31. HEATING OIL TANKS ON SITE TO BE REMOVED IN ACCORDANCE WITH TOWNSHIP, COUNTY AND NJDEP REQUIREMENTS.

BUREAU OF FIRE PREVENTION NOTES:

1. PAVEMENT SHALL BE PAINTED EVERY ONE HUNDRED FEET (100') DOWN THE DRIVEWAY AISLE TO STATE:
"NO PARKING
FIRE LANE"

2. THE SIGNS SHALL BE PLACED BETWEEN THE PAVEMENT MARKINGS SO THAT PROPER INDICATION IS MADE EVERY FIFTY FEET (50') TO INDICATE THAT PARKING IS PROHIBITED IN THIS AREA, SIGNS TO STATE:
"NO PARKING
FIRE LANE"

3. FIRE LANE PRINTING AND SIGNS SHALL BE IN ACCORDANCE WITH TOWNSHIP ORDINANCE.
4. IF REQUIRED, INSTALL AND MAINTAIN APPROVED MONITORING FIRE AND CARBON DIOXIDE ALARM SYSTEM IN THE PROPOSED BUILDING. OWNER TO SUBMIT ANNUAL TEST/CERTIFICATION RECORDS TO THE FIRE BUREAU.
5. IF REQUIRED, INSTALL AND MAINTAIN AN APPROVED EMERGENCY RADIO REPEATER SYSTEM IN ACCORDANCE WITH THE MARLBORO TOWNSHIP POLICE COMMUNICATIONS IN THE PROPOSED BUILDING. ANNUAL TEST/CERTIFICATION REQUIRED AND ALL REPORTS TO BE SUBMITTED TO THE FIRE BUREAU.
6. IF REQUIRED, INSTALL AND MAINTAIN AN APPROVED RAPID ENTRY SYSTEM (KNOX BOX) AND A MASTER KEY AND/OR ACCESS CARD/FOB FOR ALL SECURED LOCATIONS IN THE PROPOSED BUILDING.
7. IF REQUIRED, INSTALL AND MAINTAIN THE APPROPRIATE TRUSS SIGN FOR THE CONSTRUCTION OF THE BUILDING TO BE PROVIDED.
8. INSTALL AN APPROVED FIRE SPRINKLER SYSTEM.
9. IF REQUIRED INSTALL AND MAINTAIN STAIRWAY LABELS ON EXTERIOR DOORS LEADING TO STAIRWAYS.
10. IF REQUIRED, INSTALL AND MAINTAIN SIGNS FOR SPRINKLER ROOM, FIRE ALARM, AND EQUIPMENTS CONTROLS/MECHANICAL ROOMS.
11. IF REQUIRED INSTALL AND MAINTAIN APPROVED FIRE EXTINGUISHERS AT EACH EXIT DOOR.

OPT 1 OFFICE PROFESSIONAL TRANSITION DISTRICT 1 ZONE REQUIREMENTS

	REQUIRED	EXISTING	PROPOSED	CONSOLIDATED LOTS AFTER ROW DEDICATION
MINIMUM LOT AREA	30,000 SF	152,510 SF	152,510 SF	138,310 SF
MINIMUM LOT FRONTAGE	100 FT	500.00 FT	500.00 FT	500.00 FT
MINIMUM LOT WIDTH	100 FT	500.00 FT	500.00 FT	500.00 FT
MINIMUM LOT DEPTH	150 FT	303.75 FT	303.75 FT	276.38 FT
MINIMUM FRONT YARD SETBACK	40 FT	65.9 FT	124.9 FT	99.94 FT
MINIMUM SIDE YARD SETBACK-EACH	10 FT	15.4 FT	18 FT	18 FT
MINIMUM REAR YARD SETBACK	20 FT	154.9 FT	23 FT	23 FT
MAXIMUM BUILDING HEIGHT	35 FT	< 35 FT	< 35 FT	< 35 FT
MINIMUM GROSS FLOOR AREA	1,200 SF	15,683 SF	39,360 SF	39,360 SF
MINIMUM GROUND FLOOR AREA	1,000 SF	9,003 SF	19,680 SF	19,680 SF
MAXIMUM LOT COVERAGE-BUILDINGS	25 %	7.4 %	12.9 %	14.2 %
MAXIMUM IMPERVIOUS LOT COVERAGE	50 %	28.6 %	59.3 % *	65.4 %
ACCESSORY BUILDING				
MINIMUM SIDE YARD SETBACK-EACH	10 FT	10.6 FT	N/A	N/A
MINIMUM REAR YARD SETBACK	10 FT	174.48 FT	N/A	N/A
MAXIMUM BUILDING HEIGHT	15 FT	< 15 FT	N/A	N/A

* INDICATES VARIANCE REQUIRED

COMPLIANCE
Per Resolution Dated 5/4/22

Approved by the Marlboro Township Planning Board on 5/4/22 Resolution # 1227-21

Chairman ______ Date

Secretary ______ Date

Engineer ______ Date

INDEX OF SHEETS

I HEREBY CERTIFY THAT I AM THE RECORD OWNER OF TITLE OF LOTS 67, 68 & 69, BLOCK 268 AND CONSENT TO THE FILING OF THIS APPLICATION.

______
FELIX BRUSELOVSKY

SWORN TO AND SUBSCRIBED TO BEFORE ME THIS ______ DAY OF ______ 20___
NOTARY PUBLIC OF THE STATE OF NEW JERSEY.

______
NOTARY PUBLIC

MY COMMISSION EXPIRES: ______

DATE	REVISION
FEB. 17, 2023	PER MARLBORO TWP WATER COMMENTS
FEB. 9, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 26, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
OCT. 05, 2022	PER BOARD ENGINER'S COMMENTS
SEPT. 26, 2022	RESOLUTION COMPLIANCE REVIEW
JULY 8, 2022	RESOLUTION COMPLIANCE
MAR. 9, 2022	PER COUNTY PLANNING BOARD COMMENTS
FEB. 17, 2022	PER FREEHOLD SCD COMMENTS
FEB. 8, 2022	PER COUNTY PLANNING BOARD COMMENTS
JAN. 25, 2022	REVISION PER CHECKLIST COMPLIANCE

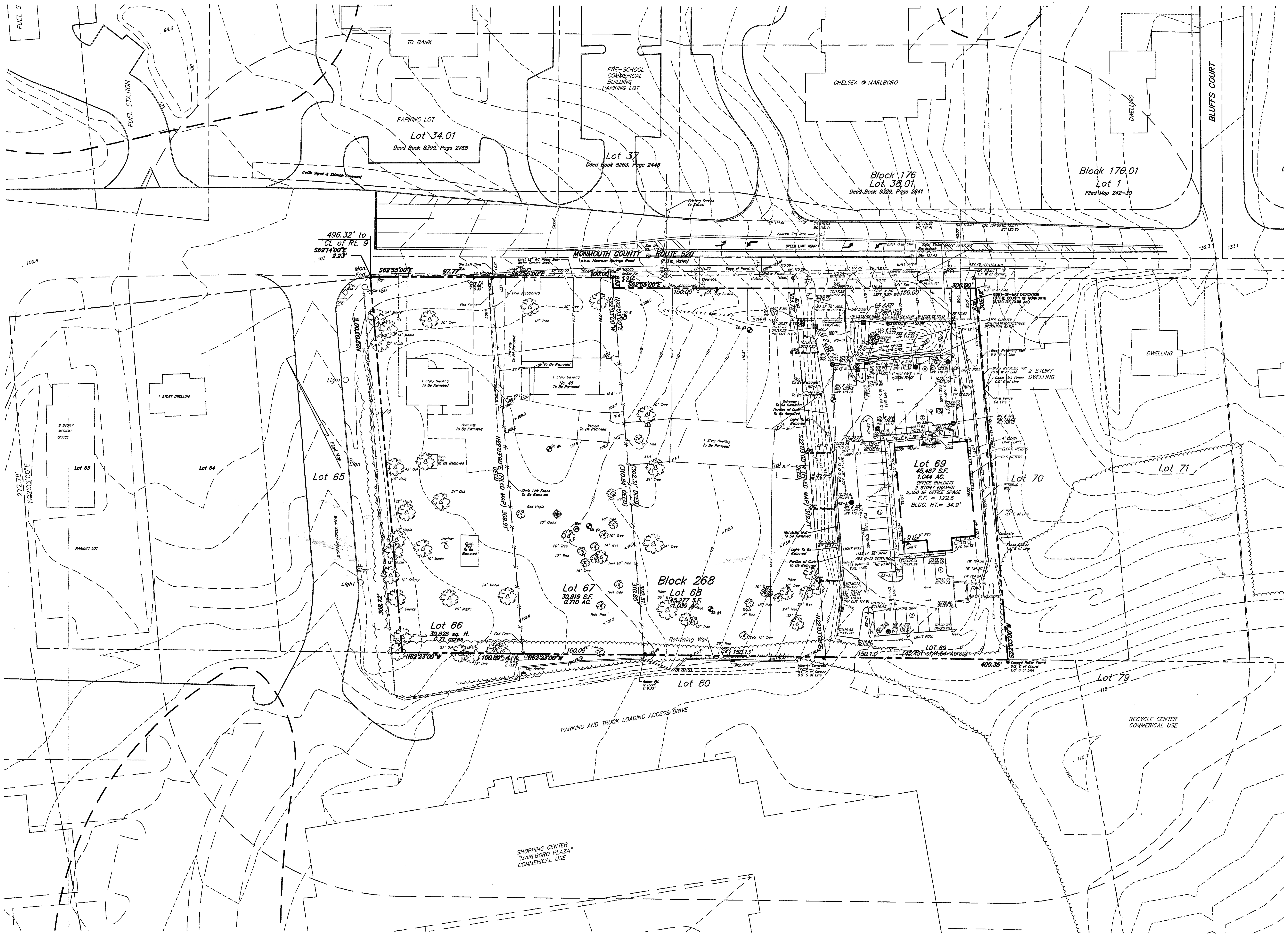
STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	AS NOTED	UHDEN	S.C.C.	19022		1 of 13

COVER SHEET

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY



NOTES:

1. Property being known as Lots 66, 67, 68 & 69, Block 268, as shown on the Township of Marlboro Tax Maps, Tax Map sheet number 79 and described in Instrument No. 2019045171 filed in the Monmouth County Clerk's Office, and further described in
   DEED BOOK 8025 PAGE 8601
   DEED BOOK 9349 PAGE 7935
   DEED BOOK 9363 PAGE 6009
   DEED BOOK 9458 PAGE 7567

2. Property formerly known as Lots 33, 34, Lot 35, Lot 36, and Lot 37 as shown on a filed map entitled "Sub-Division of Property of Joseph Riccardi, Section No. 1, Marlboro Twp., Monmouth Co., N.J." filed in the Monmouth County Clerk's Office on June 19, 1953 as Case number 19-16.

3. Property is also known as No. 45 Route 520, aka Newman Springs Road, Marlboro, N.J.

4. Property is located within Zone X (Area of Minimal Flood Hazard) as shown on FEMA F.I.R.M. 34025C0153F, effective 9/25/2009. There is no preliminary F.I.R.M. for that panel.

5. This property subject to any Easement(s) of Record, N.J. Tidelands Claim, or other pertinent facts which may be disclosed by a title search.

6. Underground utilities and/or encroachments, if any, have not been located by this survey.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

Approved by the Marlboro Township Planning Board
on__________ Resolution # ________

Chairman Date

Secretary Date

Engineer Date

DATE	REVISION
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
JULY 8, 2022	RESOLUTION COMPLIANCE
JAN. 25, 2022	SHOW ALL LOTS WITHIN 200'

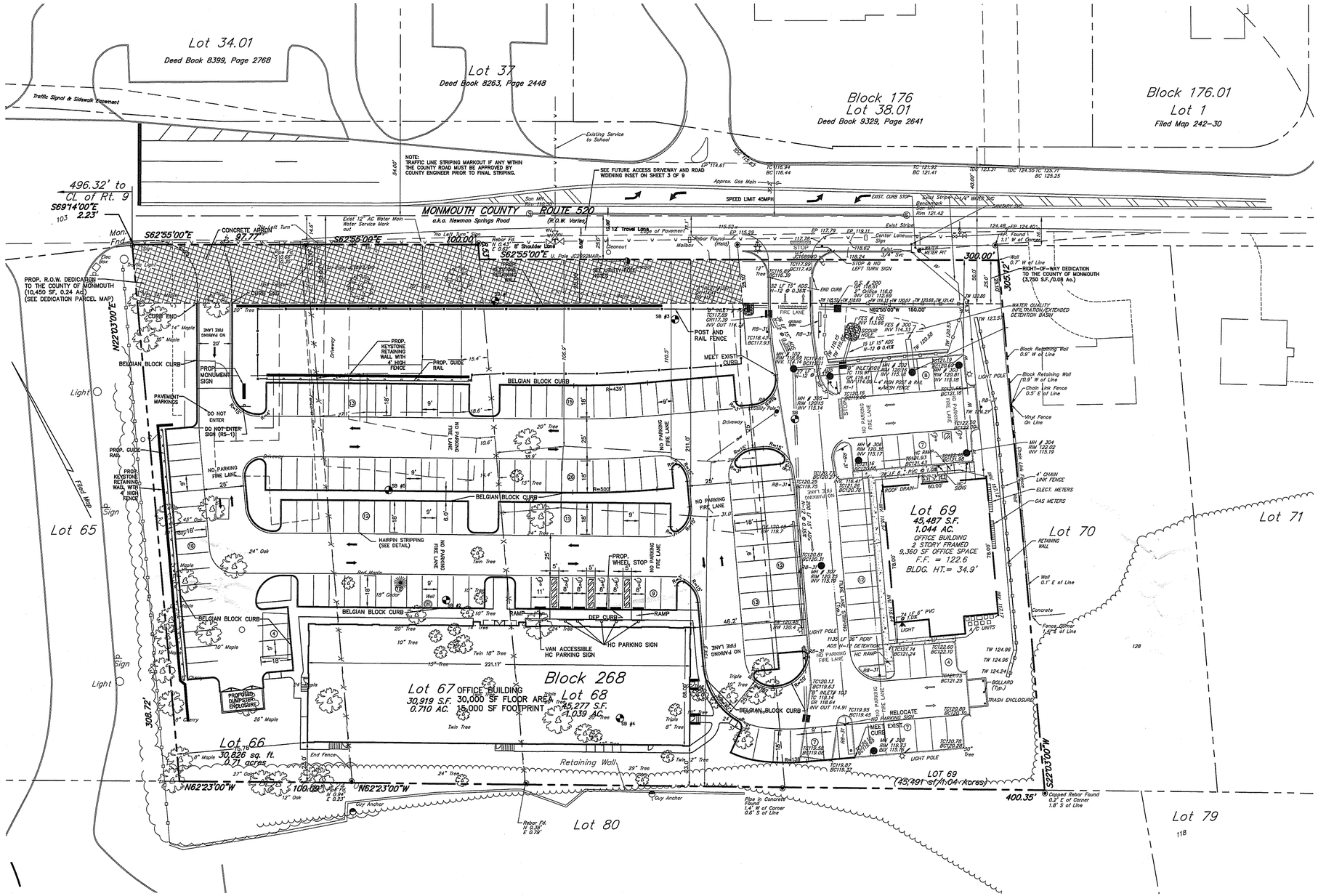
EDWIN J. HALE, P.L.S.
PROFESSIONAL LAND SURVEYOR N.J. LIC. NO. 35842

CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

EXISTING CONDITIONS PLAN

45 ROUTE 520
LOTS 66, 67, 68, & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	1"=40'	SCC	EJH	19022		2 of 13



NOTES:
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DEED BOOK 9349 PAGE 7935
DEED BOOK 9363 PAGE 6009
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3. ABOVE GROUND AND UNDERGROUND ELEMENTS OF THE STORMWATER BASIN SHALL NOT BE ENCROACH INTO THE C.R. 520, NEWMAN SPRINGS ROAD RIGHT-OF-WAY. IF INSPECTION REVEALS ENCROACHMENT INTO C.R. 520, NEWMAN SPRINGS ROAD RIGHT-OF-WAY, RELOCATION SHALL BE AT THE CONTRACTORS EXPENSE.

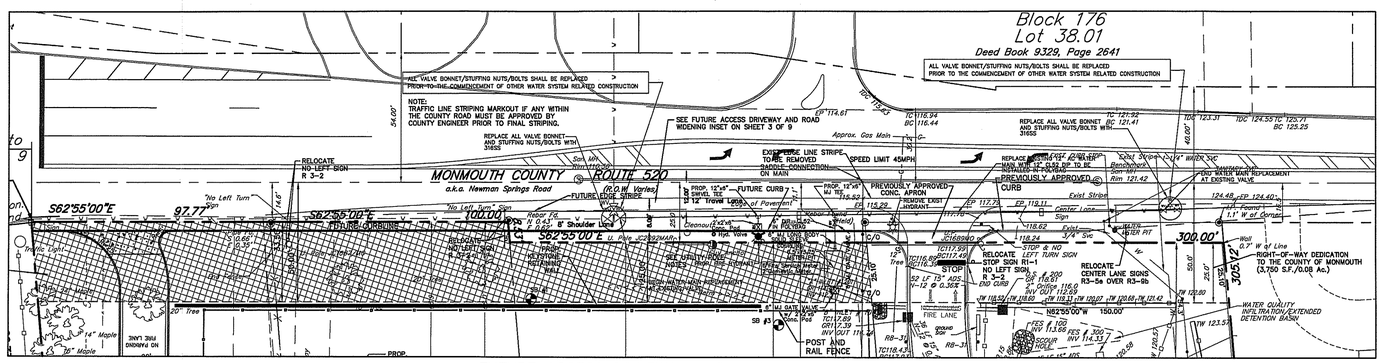
4. ALL UTILITY POLES ARE TO BE RELOCATED TO SIX (6) FEET FROM THE EDGE OF PAVEMENT OR CURB LINE IN ACCORDANCE WITH THE MONMOUTH COUNTY STANDARD.

Approved by the Marlboro Township Planning Board
on_____ Resolution # _____

Chairman Date

Secretary Date

Engineer Date



FUTURE ACCESS DRIVEWAY AND ROAD WIDENING INSET
SCALE 1"=30'

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

DATE	REVISION
FEB. 17, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
SEPT. 26, 2022	RESOLUTION COMPLIANCE REVIEW
JULY 8, 2022	RESOLUTION COMPLIANCE
FEB. 8, 2022	PER COUNTY PLANNING BOARD COMMENTS
JAN. 25, 2022	REVISED DRIVEWAY WIDTH & STRIPPING

STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34937
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

CHALLONER & ASSOCIATES L.L.C.
Certificate of Auth. No. 24GA28057700
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201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

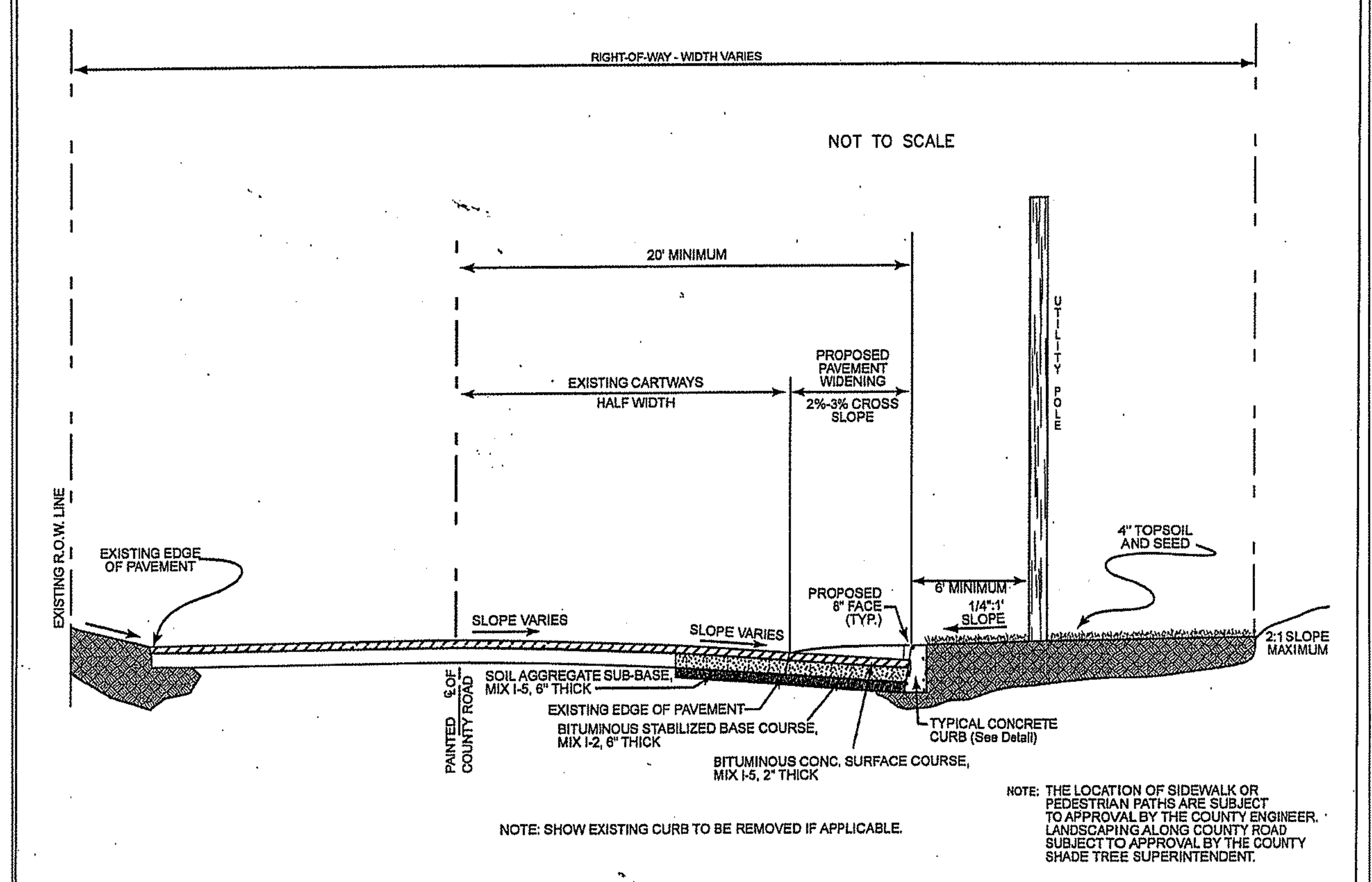
Date:	Scale:	Drawn By:	Checked By:
OCT. 7, 2021	1"=30'	SCC	S.C.C.

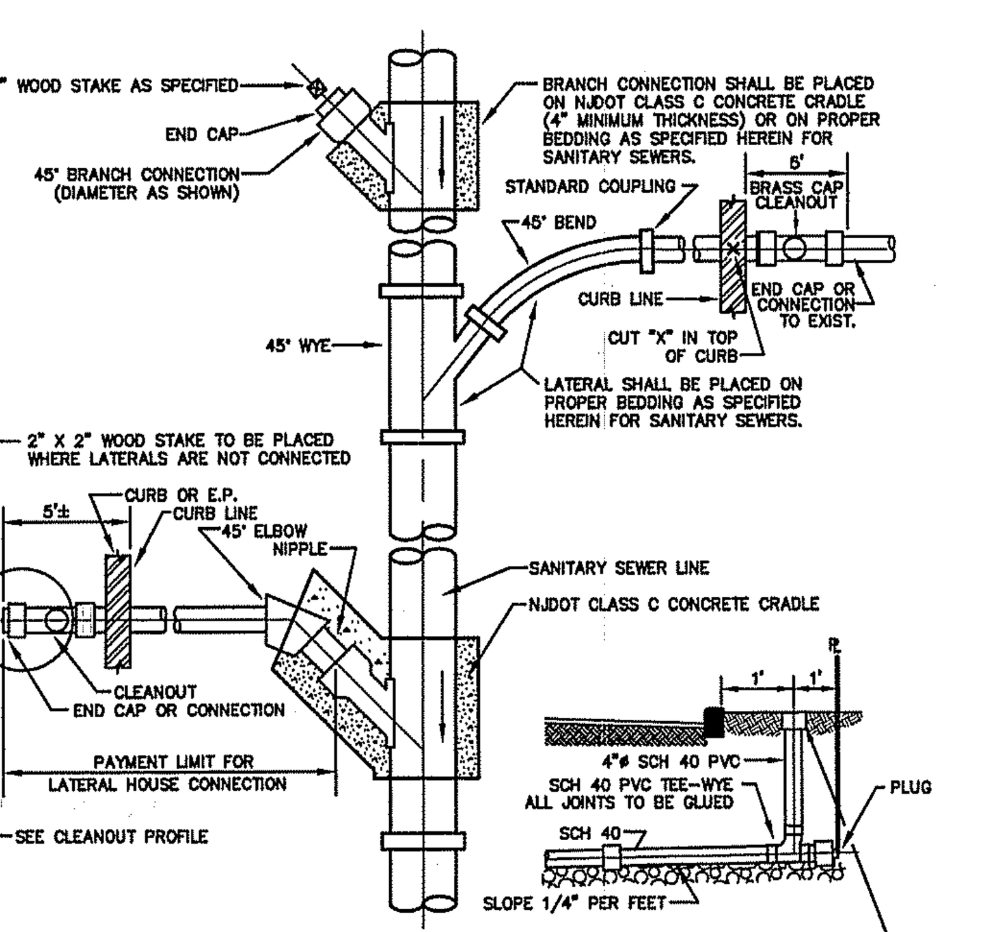
SITE PLAN

45 ROUTE 520
LOTS 66, 67, 68, & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

File No.:	Field Book:	Sheet No.:
19022		3 of 13

TYPICAL COUNTY ROAD SECTION





ISTRUCTION NOTES:

ETAIL SHOWS CONSTRUCTION OF A "BRANCH CONNECTION" AND OF TWO DIFFERENT ES OF "LATERAL HOUSE CONNECTION". TYPE OF CONNECTION IS AT CONTRACTOR'S ON.

IZE OF LATERAL TO BE AS SHOWN ON THE PLANS OR AS DIRECTED, 4" MINIMUM.

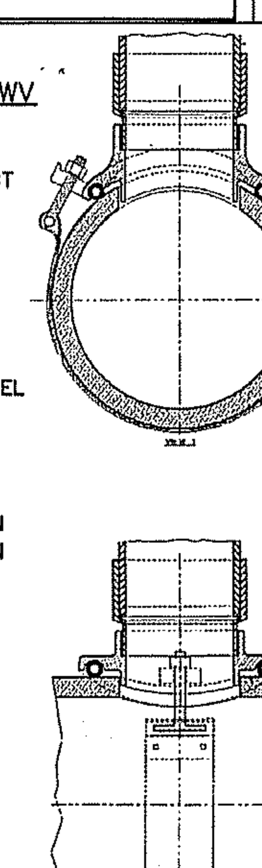
LEAN-OUTS IN DRIVEWAYS SHALL BE COVERED WITH A MONUMENT BOX – PBELL PATTERN NO. 4155 OR EQUAL.

LL LATERAL PIPES AND FITTINGS SHALL BE SCHEDULED 40 SOLVENT WELDED PVC.

BRANCH AND LATERAL HOUSE CONNECTIONS

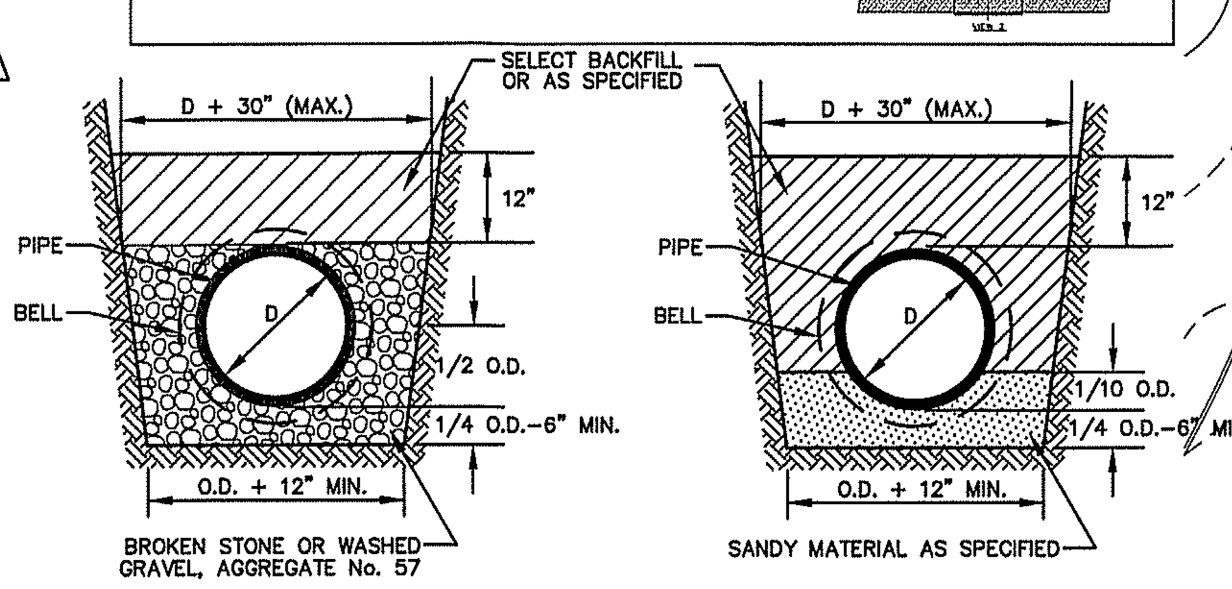
NOTES: INLET – SOLVENT HUB – Sch 40 PVC DWV

1. BASE CASTING IS ASTM-48 CLASS 30 CAST IRON
2. BASE CASTING HAS AN ALIGNMENT FLANGE WHICH PROTRUDES INTO THE TAPPED HOLE TO ASSURE PERFECT ALIGNMENT
3. PVC ADAPTER IS A SOLVENT HUB TO ACCEPT SCH. 40 DWV
4. ADAPTER IS CEMENTED PERMANENTLY IN PLACE WITH TWO-PART URETHANE ADHESIVE
5. BASE OF SADDLE IS DIP-COATED IN WATERBASED BITUMINOUS COATING
6. STRAP IS 24 GA. X 2.5" WIDE TYPE 304 STAINLESS STEEL
7. STRAP PINS ARE .75" DIA. TYPE 303 STAINLESS STEEL
8. T-BOLTS ARE .375" – 16 TYPE 304 STAINLESS STEEL
9. NUTS AND WASHERS ARE TYPE 18-8 STAINLESS STEEL
10. O-RING IS ASTM C-361-77 TUBULAR POLYISOPRENE
11. 4" INLET REQUIRES A 4.5" DIA. TAP IN THE SEWER MAIN
12. 6" INLET REQUIRES A 6.5" DIA. TAP IN THE SEWER MAIN (SEWER MUST BE AT LEAST 8" DIA.)
13. SADDLE SHALL BE MODEL F40P, AS MANUFACTURED BY THE GENERAL ENGINEERING COMPANY



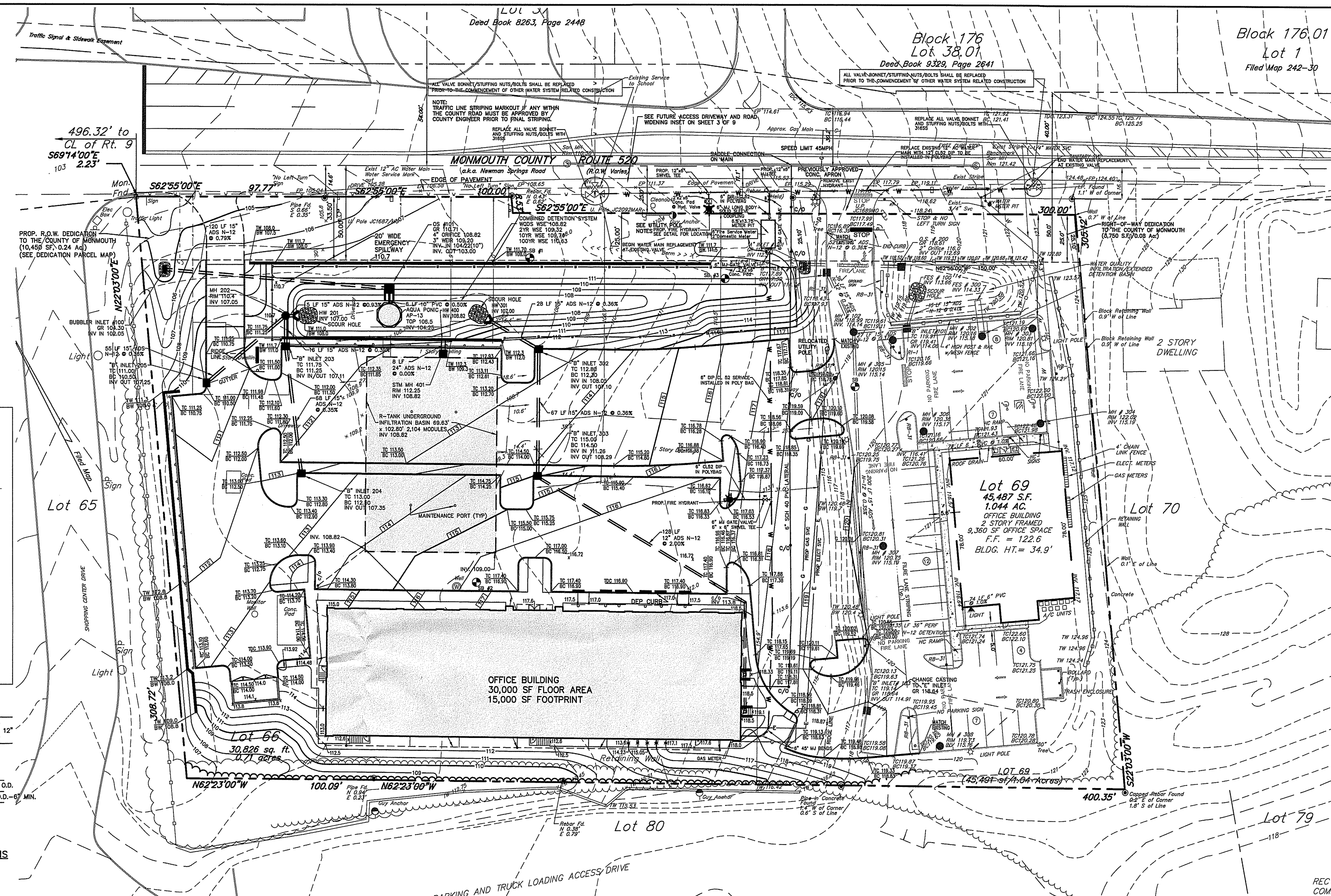
GRAVITY SEWER SADDLE

N.T.S.



SANITARY SEWER PIPE BEDDING DETAIL

N.T.S.



NOTES:

1. PROPERTY BEING KNOWN AS LOTS 67, 68 & 69, BLOCK 268, AS SHOWN ON THE TOWNSHIP OF MARLBORO TAX MAPS, TAX MAP SHEET NUMBER 79 AND DESCRIBED IN INSTRUMENT NO. 2019045171 FILED IN THE MONMOUTH COUNTY CLERK'S OFFICE, AND FURTHER DESCRIBED IN

   DEED BOOK 8025 PAGE 8601
   DEED BOOK 9349 PAGE 7935
   DEED BOOK 9363 PAGE 6009
   DEED BOOK 9458 PAGE 7567

2. PROPERTY FORMERLY KNOWN AS LOT 34, LOT 35, LOT 36, AND LOT 37 AS SHOWN ON A FILED MAP ENTITLED "SUB-DIVISION OF PROPERTY OF JOSEPH RICCARDI, SECTION NO. 1, MARLBORO TWP., MONMOUTH CO., N.J." FILED IN THE MONMOUTH COUNTY CLERK'S OFFICE ON JUNE 19, 1953 AS CASE NUMBER 19-16.

3. ABOVE GROUND AND UNDERGROUND ELEMENTS OF THE STORMWATER BASIN SHALL NOT BE ENCROACH INTO THE C.R. 520. NEWMAN SPRINGS ROAD RIGHT-OF-WAY. IF INSPECTION REVEALS ENCROACHMENT INTO C.R. 520, NEWMAN SPRINGS ROAD RIGHT-OF-WAY, RELOCATION SHALL BE AT THE CONTRACTORS EXPENSE.

4. CONTRACTOR TO DISCONNECT AND CAP THE EXISTING 4" LATERALS. THE DISCONNECTS MUST BE INSPECTED BY THE WESTERN MONMOUTH UTILITIES AUTHORITY.

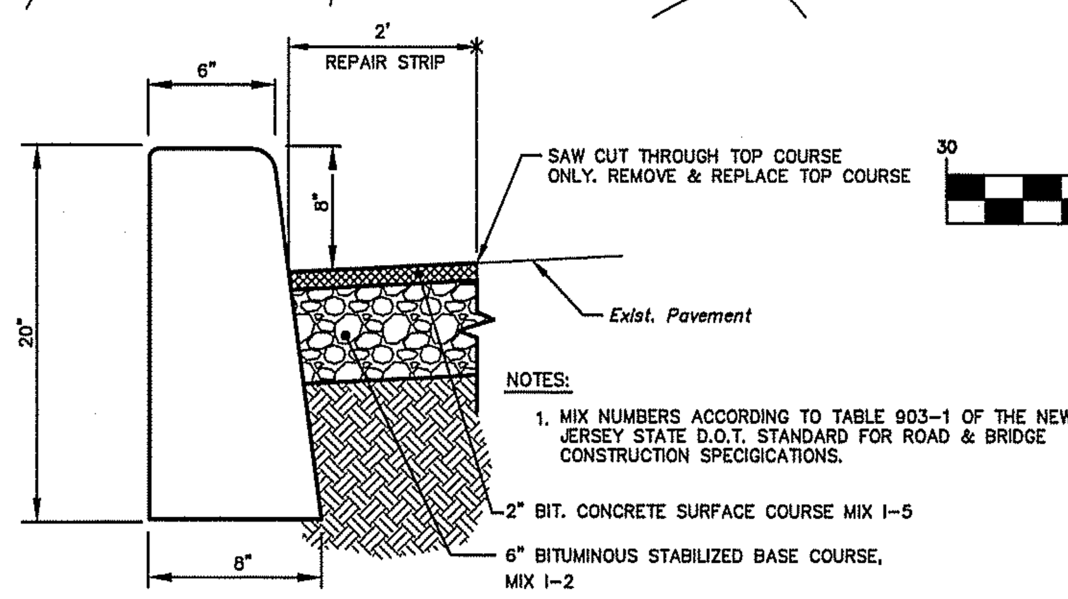
5. ALL UTILITY POLES ARE TO BE RELOCATED TO SIX (6) FEET FROM THE EDGE OF PAVEMENT OR CURB LINE IN ACCORDANCE WITH THE MONMOUTH COUNTY STANDARD.

6. CONTRACTOR TO DISCONNECT EXISTING WATER SERVICES FOR LOTS 66, 67, & 68 IN ACCORDANCE WITH THE MARLBORO TOWNSHIP PROCEDURES FOR PERMANENT SERVICE LINE DISCONNECTION.

7. ALL FIRE AND DOMESTIC SERVICE LINES SHALL HAVE A RPZ BACKFLOW PREVENTER INSTALLED INSIDE THE BUILDING.

8. ALL WATER MAINS SHALL BE INSTALLED WITH A "POLY-BAG".

9. ALL EXISTING VALVES SHALL HAVE THEIR BONNET AND STUFFING BOLTS/NUTS REPLACED WITH 316SS BOLTS/NUTS. VALVES SHALL THEN BE COVERED IN POLYBAG AND BAKFILLED WITH CLEAN SAND TO TOP OF VALVE AND 3/4" CLEAN STONE AFTER.



PAVEMENT REPAIR DETAIL

N.T.S.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

Approved by the Marlboro Township Planning Board
on________________ Resolution # ________

Chairman ____ Date

Secretary ____ Date

Engineer ____ Date

DATE	REVISION
FEB. 17, 2023	PER MARLBORO TWP WATER COMMENTS
FEB.9, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
SEPT. 26, 2022	RESOLUTION COMPLIANCE REVIEW
AUG. 31, 2022	ADD ROOF DRAIN AT FRONT
JULY 8, 2022	RESOLUTION COMPLIANCE
FEB. 17, 2022	PER FREEHOLD SCD COMMENTS
JAN. 25, 2022	REVISED GRADES NEAR BUILDING

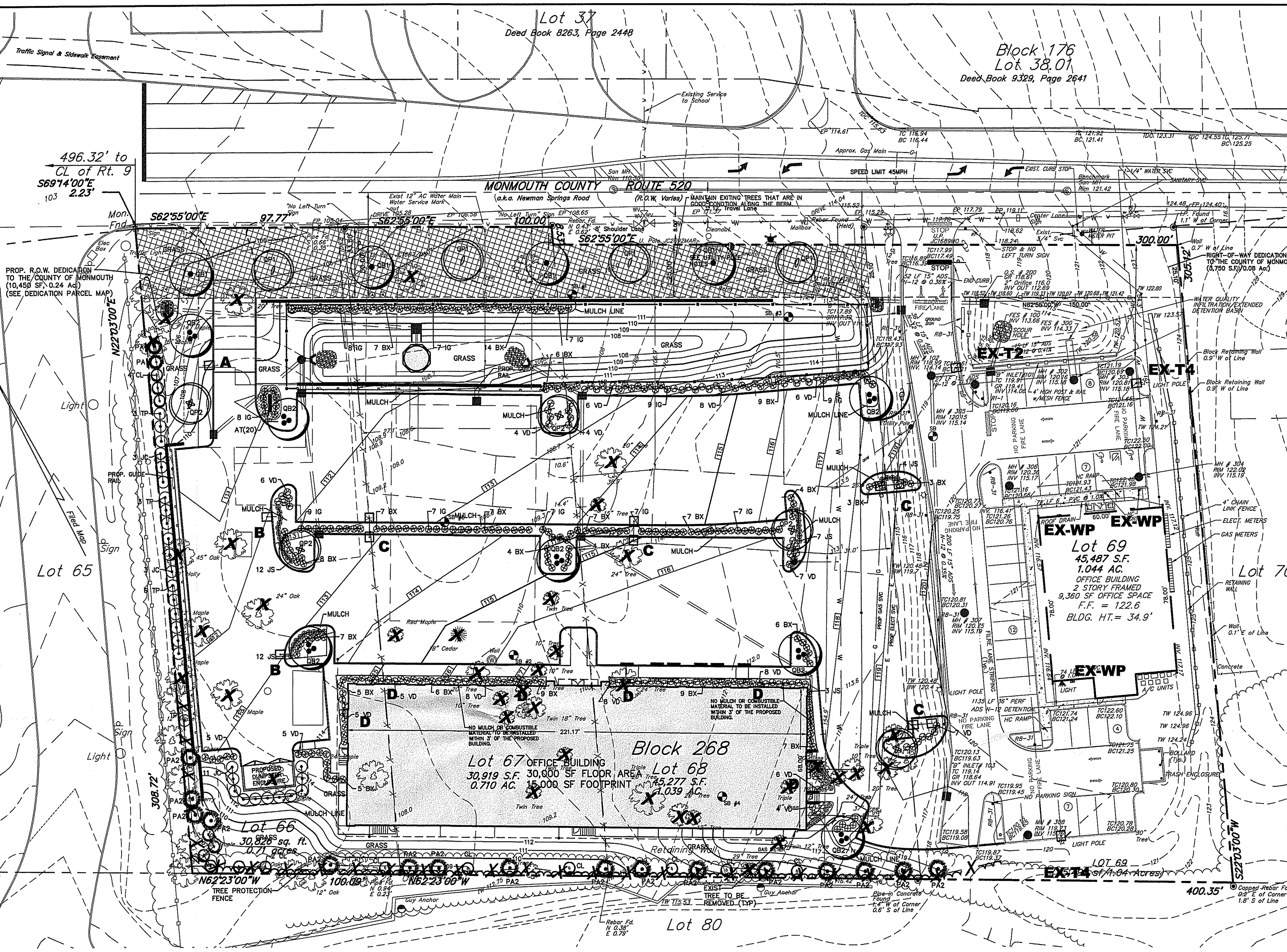
STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

GRADING, DRAINAGE & UTILITY PLAN

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	1"=30'	SGP	S.C.C.	19022		4 of 13



PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	PLANTING SIZE	QTY.	REMARKS
BX	BUXUS GREEN VELVET	GREEN VELVET BOXWOOD	18" HT	149	3 GALLON
QB1	QUERCUS BICOLOR	SWAMP WHITE OAK	2.5"–3.0" CAL.	4	B&B
QB2	QUERCUS BICOLOR	SWAMP WHITE OAK	3" CALIPER	7	3" B&B
QP1	QUERCUS PRINUS	CHESTNUT OAK	2.5"–3.0" CAL.	4	B&B
QP2	QUERCUS PRINUS	CHESTNUT OAK	3" CALIPER	5	3" B&B
PA	PICEA ABIES	NORWAY SPRUCE	7'–8' B&B	2	B&B
PA2	PICEA ABIES	NORWAY SPRUCE	10'–12' (3"CAL.)	16	B&B
CL	CUPRESSOCYPARIS LEYLANDI	LEYLAND CYPRESS	7'–8' B&B	15	B&B
TP	THUJA PLICATA	GREEN GIANT WESTERN ARBORVITAE	7'–8' B&B	12	B&B
JC	JUNIPERUS CHINESIS	SPARTAN JUNIPER	7'–8' B&B	18	B&B
JS	JUNIPERUS SARGENTI	SARGENT JUNIPER	18" HT	38	6" TO 12"
VD	VIBURNUM DENTATUM	ARROW WOOD VIBURNUM	18" HT	102	3 GALLON
IG	Ilex glabra 'Shamrock'	SHAMROCK COMPACT INKBERRY HOLLY	24"–30"	85	3 GALLON
AT	Asclepias tuberosa	ORANGE BUTTERFLY MILKWEED	FLATS	20	FLATS

TREE REPLACEMENT CALCULATION

SIZE	# OF TREE TO BE REMOVED	REQUIRED REPLACEMENT	PROPOSED REPLACEMENT
4"–12"	11	11	47 (2"–2 1/2" cal.) (EXLUDING TREES ALONG ROUTE 520)
12"–18"	18	36	
18"–24"	10	20 (3" cal.)	28 (3" cal.)
> 24"	4	8 (3" cal.)	

NOTES

1. A TREE REMOVAL PERMIT SHALL BE SECURED PRIOR TO ANY SITE DISTURBANCE.
2. PLANT MATERIAL SHALL BE FIELD LOCATED IN AREAS WITH EXISTING TREES.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

TOPSOIL

Topsoil shall be used where soils are to be disturbed and will be revegetated.

Materials:

1. Topsoil should be friable, loamy, free of debris, objectionable weeds and stones, and contain no toxic substance or adverse chemical or physical condition that may be harmful to plant growth. Soluble salts should not be excessive (conductivity less than 0.5 millimhos per centimeter. More than 0.5 millimhos may desiccate seeding and adversely impact growth). Topsoil hauled in from offsite should have a minimum organic matter content of 2.75 percent. Organic matter content may be raised by additives.
2. Topsoil substitute is a soil material which may have been amended with sand, silt, clay, organic matter, fertilizer or lime and has the appearance of topsoil. Topsoil substitutes may be utilized on sites with insufficient topsoil for establishing permanent vegetation. All topsoil substitute material shall meet the requirements of topsoil noted above. Soil tests shall be performed to determine the components of sand, silt, clay, organic matter, soluble salts and pH level.

SEEDBED AND SODDING PREPARATION

1. Apply ground limestone and fertilizer according to soil test recommendations such as offered by Rutgers Cooperative Extension. Soil sample mailers are available from the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Apply limestone at the rate of 2 tons/acre unless soil testing indicates otherwise.

Limestone Application Rate By Soil Texture		
SOIL TEXTURE	TONS/ACRES	LBS./1000 SQ. FT.
Clay, clay loam and high organic soil	3	135
Sandy loam, loam, silt loam	2	90
Loamy sand, sand	1	45

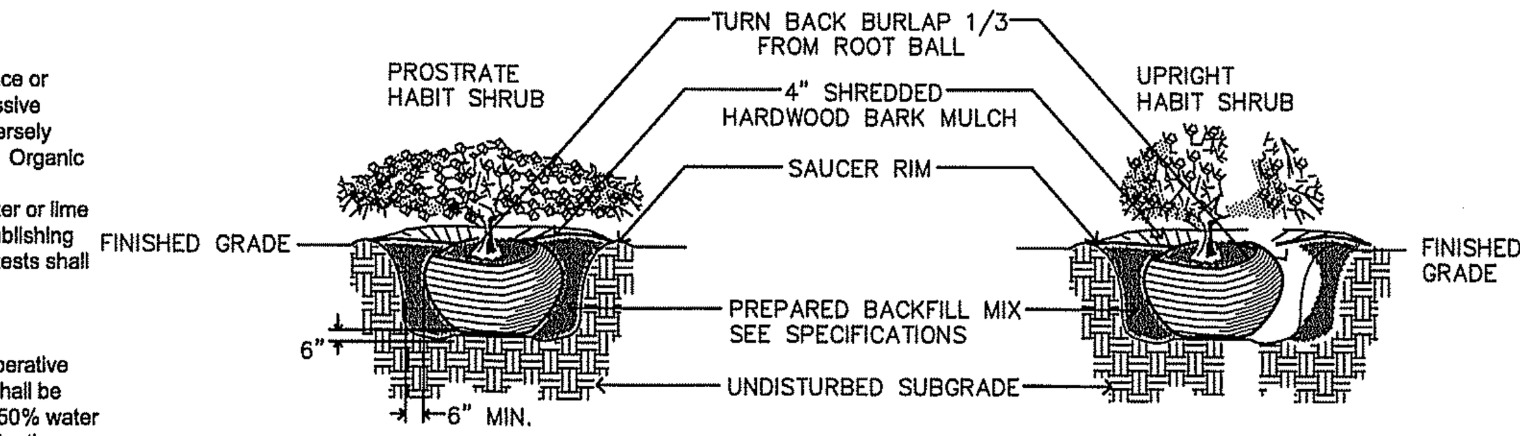
2. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, springtooth harrow, or other suitable equipment. The final harrowing or discing operation should be on the general contour. Continue tillage until a reasonable uniform seedbed is prepared.
3. Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled in accordance with the above.
4. For seeding, soils high in sulfides or having a pH of 4 or less, refer to Standard for Management of High Acid Producing Soils.
5. Remove from the surface all objects that would prevent good sod to topsoil contact and remove all other debris, such as wire, cable, tree roots, pieces of concrete, clods, lumps, or other suitable material.

SEEDING

1. Conventional seeding - Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil, to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse textured soil.
2. 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 the seed. Short fibered mulch may be applied with a hydroseeder following seeding. (also see Section IV Mulching) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to transverse or too obstructed with rocks, stumps, etc..
3. After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore capillarity, and improve seeding emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.
4. Mulching is required on all seeding as per standards for soil erosion and sediment control in New Jersey by one of the following methods:
   1.) Straw or hay with anchoring
   2.) Wood fiber or paper fiber mulch
   3.) Pelletized mulch

LANDSCAPING NOTES

1. Plant materials shall be furnished and installed as indicated on plan; including all labor, materials, plants, equipment, incidentals and cleanup.
2. Responsibilities for installation and maintenance of plantings shall be arranged between Owner and Landscape Contractor.
3. Landscaping plan is intended for approximate location of plants only. In the event that discrepancies occur between the quantities of plants indicated on the Plant Schedule and those graphically depicted on the plans, the plant quantities indicated on the plan shall govern. All revisions and substitutions must be approved by the Landscape Architect. The Contractor must comply to Township Ordinances.
4. All plant material shall be tagged at nursery indicating scientific name, common name, variety and size. All plant material is to conform to American Standard for Nursery Stock, ANSI 1260.1, latest edition. All shade trees are 1.75" to 2" minimum at a height of one (1) foot above the root ball.
5. Insofar as it is practical, plant material shall be planted on day of delivery. In the event this is not possible, the Contractor shall protect shrubs from drying out. Plants shall not remain unplanted for longer than three (3) days after delivery.
6. Plants shall be typical of their species and variety; have normal growth habits; well developed branches; densely foliated vigorous root systems and be free from defects and injuries.
7. The Contractor shall report any soil or drainage conditions considered detrimental to the growth of plant material.
8. The Contractor shall be responsible for planting at correct grades and alignment. All plants to be set plum and straight. All plants to be planted as per planting details. Trees above two (2) inch caliper to be guyed and staked parallel to street and as per detail. Stakes must be milled hardwood lumber, small tree trunks or branches are not a suitable substitute. Set at such levels that, after settlement, a natural relationship occurs between the crown and ground surface will be established. Remove platforms, wire and binding from top and sides of ball, but leave burlap under ball. Fill pit to finish grade, thoroughly soak and repeat filling until all settlement has taken place.
9. On all regraded surfaces, Contractor shall provide a minimum of four (4) inch even cover of topsoil to all disturbed areas. Topsoil mixture shall consist of two (2) parts by volume of Loamy Topsoil mixed thoroughly with one (1) part Peat Moss. Apply 10-6-4 Starter Fertilizer as per manufacturer's recommendation. All plants shall be planted in topsoil that is thoroughly watered and tamped as backfilling progresses. Nothing but suitable topsoil, free of dry sod, stiff clay, litter, etc., shall be used for planting.
10. All shrub beds shall be rototilled and pH adjusted (where necessary) and fertilized. All planting beds shall provide for weed protection in the form of a pre-emergent herbicide and/or filter fabric. Non-porous black plastic material shall not be utilized. Mulch all trees and shrubs with a minimum of 4" double shredded bark mulch. Where bed line is not indicated, mulch individual saucers. Shrub plantings are in a planting bed and defined by a three (3) inch deep edge.
11. All plant material to be guaranteed for one (1) year following installation and replaced in kind. Plants shall be replaced if dead, not showing active and vigorous growth or otherwise in poor condition. Replacement shall be made at the beginning of the first succeeding planting season and all replacements shall have a growth guarantee equal to the above stated..
12. Prior to the Owner's inspection and acceptance or rejection of work, the Landscape Contractor shall prepare a written maintenance schedule for the first year for the Owner. The maintenance shall provide sufficient information as to water, fertilizing and other horticultural practices or methods to adequately establish, nurture and grow the plants for the first year. Should the Owner elect to retain the Contractor for the purposes of maintaining the plants for the first year, the requirement of a written maintenance schedule submission is deleted. However, the plant growth guarantee is still in place.
13. The Landscape Contractor is advised to periodically check if the Owner is following the maintenance schedule and it is suggested that nonconformity's be directed in writing to the Owner.
14. Site Contractor should examine all engineering and field conditions for exact locations of utilities, driveways, drains, swales, etc., and adjust plantings accordingly. All trees shall be located five (5) feet from utilities. The Contractor shall call N.J. underground utility location service a minimum of three (3) days prior to any excavation. The Contractor shall be advised of existing underground utilities on the site. Their exact location shall be verified in the field with the Owner or General Contractor prior to commencement of any digging operations. In the event they are uncovered, the Contractor shall be held responsible for all damage to utilities and such damage shall not result in any additional expenses to the Owner. Any damage of unreported lines shall not be the responsibility of the Contractor.
15. No plants, except ground covers, shall be planted less than two (2) feet from existing structures and sidewalks.
16. All plants shall be neatly pruned or clipped to preserve the natural character of the plants and in a manner appropriate to the particular requirements of each plant and to the satisfaction of the Landscape architect. No plants shall be pruned or clipped prior to delivery except with the permission of the Landscape Architect. The central leader of all trees should never be removed. Broken or badly bruised branches shall be removed with a clean cut. All pruning shall be done with sharp tools.
17. Acer Rubrum, Quercus species, Tilia Tomentosa, Zelkova, Liquidambar, Crataegus, Betula species and Cornus Florida trees are not to be planted during the fall season.
18. All lawn areas shall have a uniform stand of grass.
19. Refer to other general notes on plans that will also relate to landscaping issues such as; tree protection, clearing limits, soil stabilization, etc.
20. All plan substitutions and relocations shall be approved by the Township Engineer prior to installation.
21. In the event that plant quantities discrepancies or material omissions occur in the plan schedule, the plan shall govern.

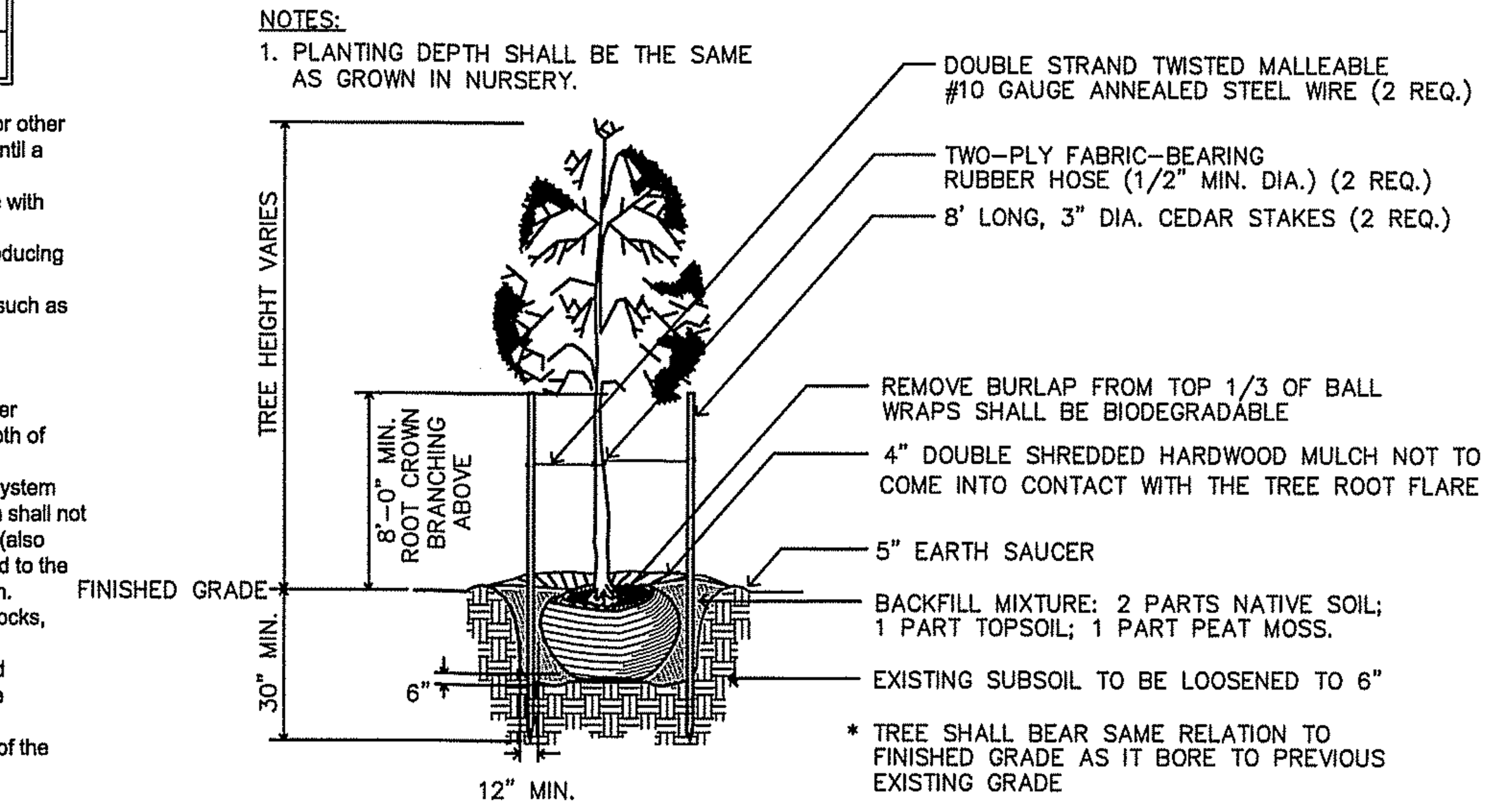


PLANTING NOTES:
1. PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.

SHRUB PLANTING DETAIL

N.T.S.

NOTES:
1. PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.



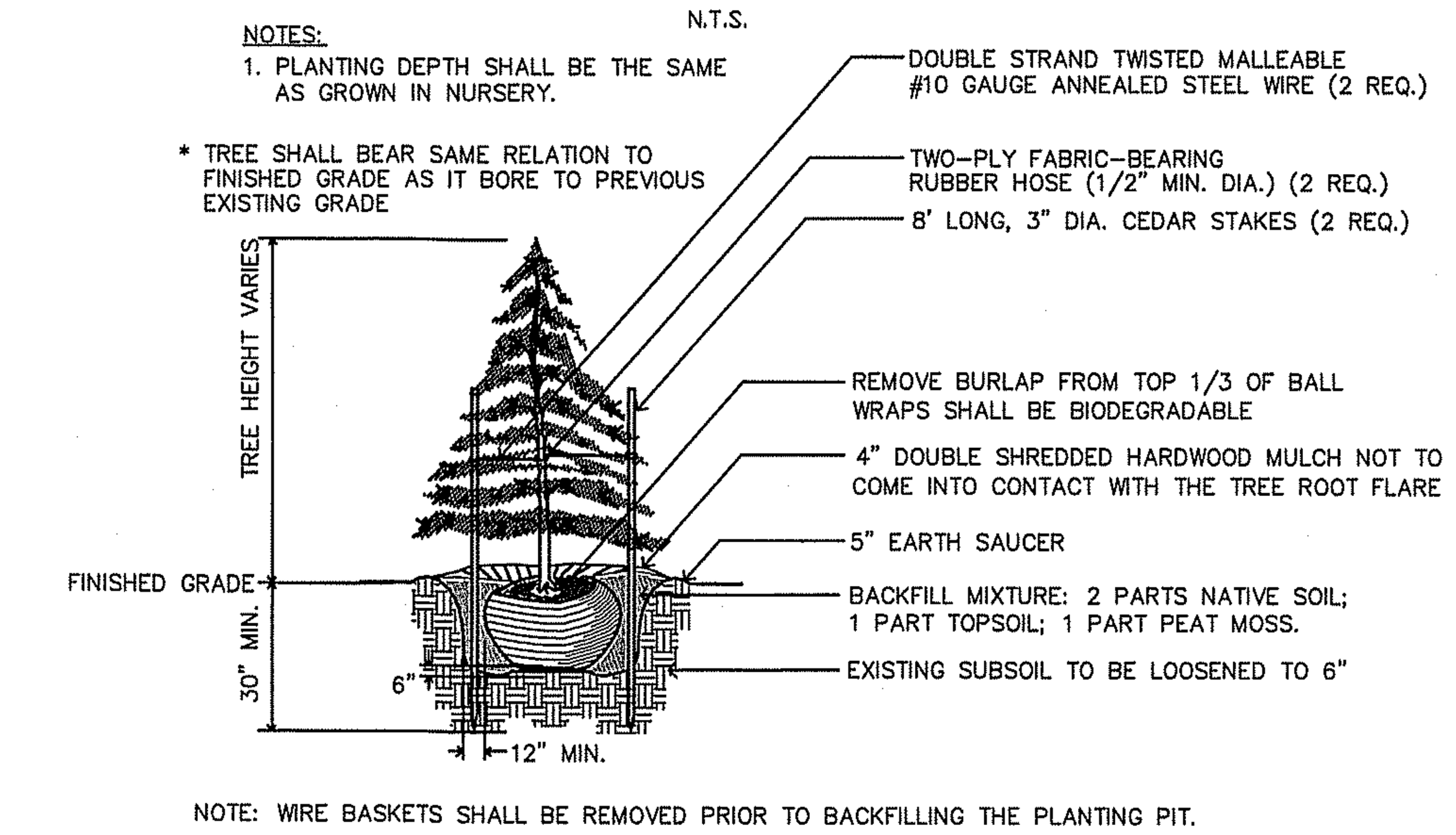
NOTES:
1. CENTRAL LEADER SHALL NOT BE CUT OR DAMAGED.
2. WIRE BASKETS SHALL BE REMOVED PRIOR TO BACKFILLING THE PLANTING PIT. PROVIDE TRUNK PROTECTION SEE "TREE PROTECTION FROM DEER DETAIL"

DECIDUOUS TREE PLANTING DETAIL

N.T.S.

NOTES:
1. PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.

* TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE



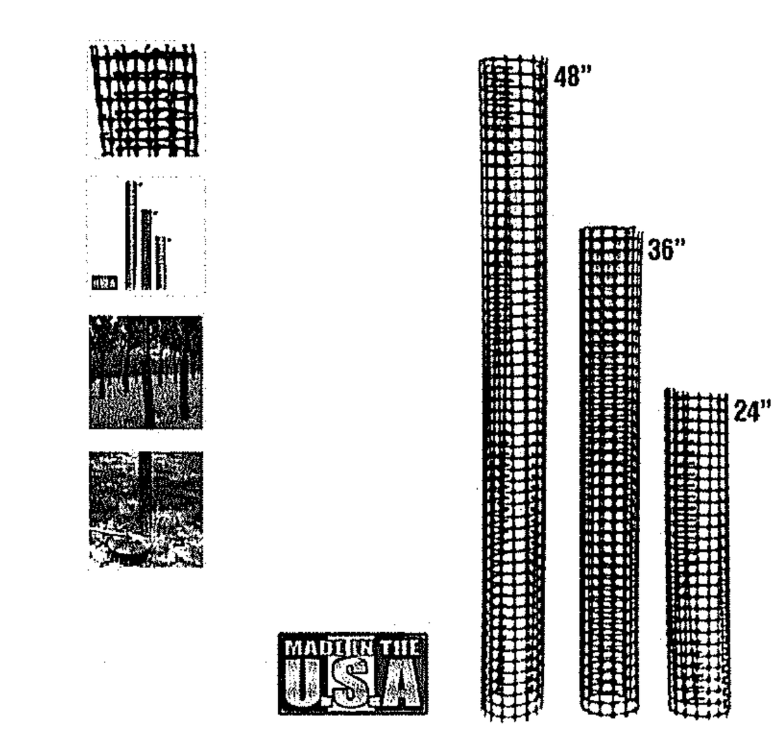
NOTE: WIRE BASKETS SHALL BE REMOVED PRIOR TO BACKFILLING THE PLANTING PIT.

CONIFEROUS TREE PLANTING DETAIL

N.T.S.

Leonard Rigid Plastic Mesh Tree Guards, 4-Inch Diameter

★★★★★ Read all 34 Reviews Write a Review



TREE PROTECTION FROM DEER

N.T.S.

DATE	REVISION
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
SEPT. 26, 2022	RESOLUTION COMPLIANCE REVIEW
JULY 8, 2022	RESOLUTION COMPLIANCE
FEB. 17, 2022	PER FREEHOLD SCD COMMENTS
JAN. 25, 2022	ADDITIONAL PLANTINGS PROPOSED

STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
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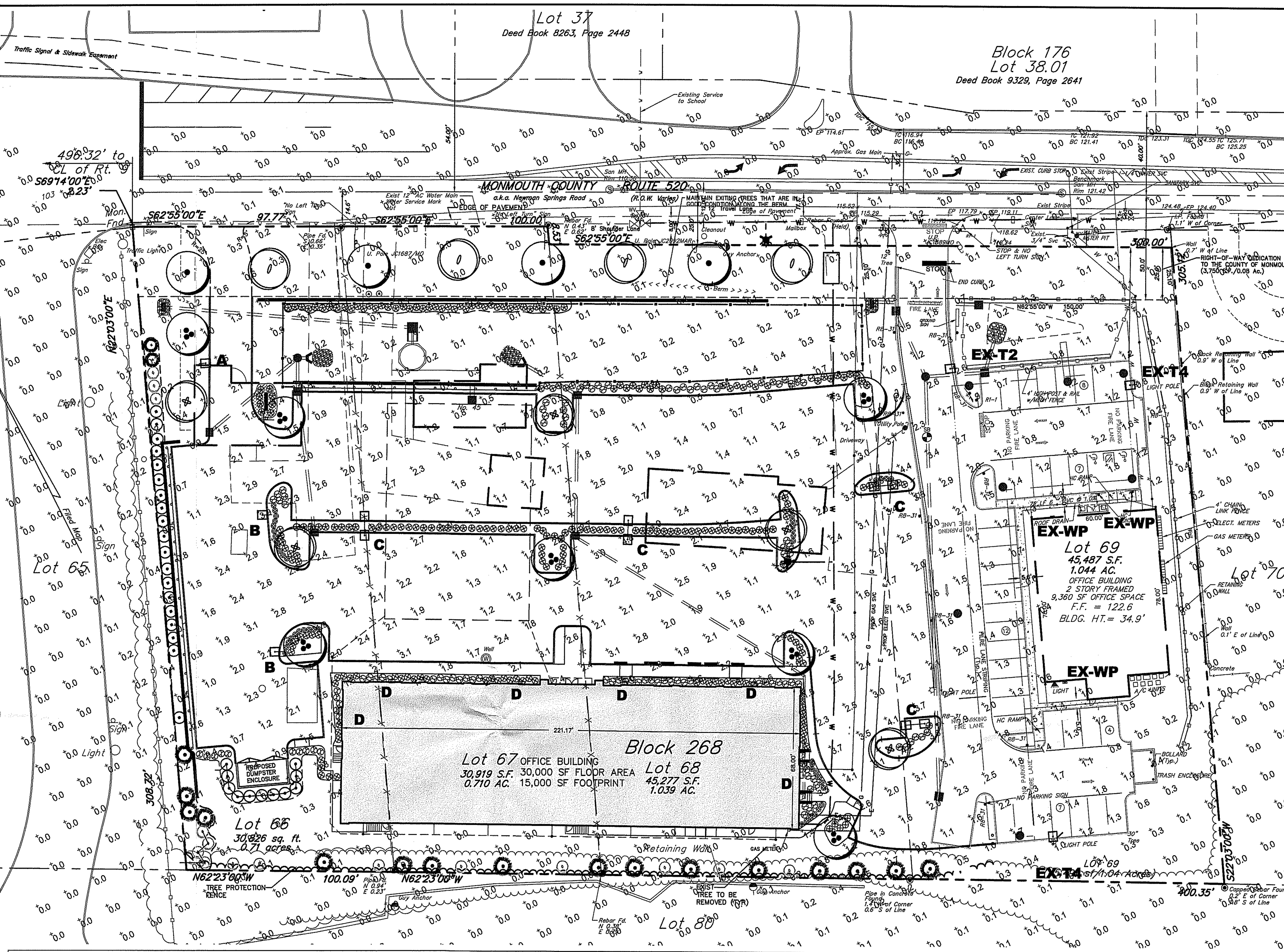
Phone: 732-818-9980 Fax: 732-818-9981

LANDSCAPING & WOODLANDS MANAGEMENT PLAN

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	1"=30'	SGP	S.C.C.	19022		5 of 13



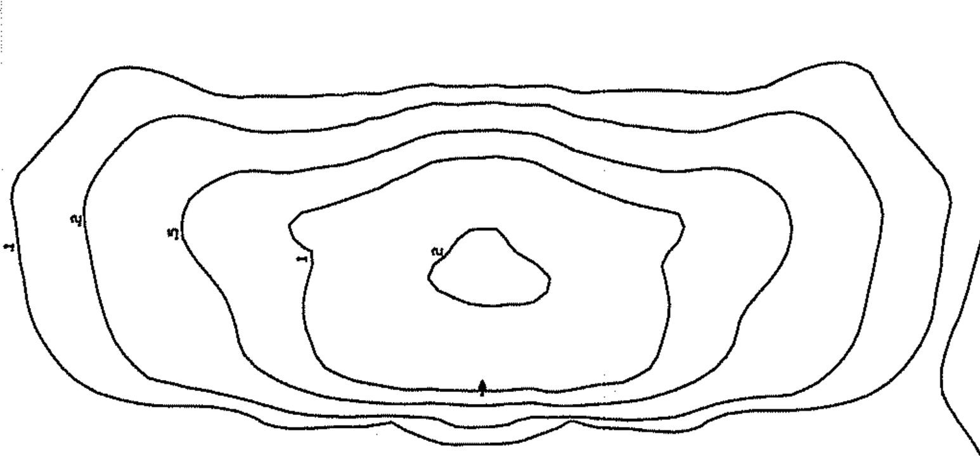
DLA Luminaire Schedule

Symbol	Arrangement	Qty	Type	Manufacturer	Product Code	Lum. Watts	Array Watts	Lum. Lumens	LLF
	SINGLE	1	A	HUBBELL	CL1-A-30L-U-4K-3-BRONZE-MWS-BC w/ SSS-H-20-40-A-1-S2-BRONZE (MOUNTED AT 20' AFG)	70	70	5132	0.950
	Single	2	B	HUBBELL	CL1-A-30L-U-4K-4-BRONZE-MWS w/ SSS-H-20-40-A-2-S2- BRONZE (MOUNTED AT 20' AFG)	70	70	7728	0.950
	Back-Back	4	C	HUBBELL	CL1-A-60L-U-4K-5W- BRONZE-MWS w/ SSS-H-20-40-A-2-S2- BRONZE (MOUNTED AT 20' AFG)	135	270	14891	0.950
	SINGLE	6	D	HUBBELL	LNC2-18L-4K-070-3-U- BRONZE (MOUNTED AT 15' AFG)	43.2	43.2	4014	0.950
	SINGLE	1	EX-T2	HUBBELL	EXISTING CL1-A-30L-U-4K-2- BRONZE-MWS-BC w/ SSS-H-20-40-A-1-B3- BRONZE (MOUNTED AT 20' AFG)	70	70	5634	0.850
	SINGLE	2	EX-T4	HUBBELL	EXISTING CL1-A-30L-U-4K-4- BRONZE-MWS-BC w/ SSS-H-20-40-A-1-B3- BRONZE (MOUNTED AT 20' AFG)	70	70	6318	0.850
	SINGLE	3	EX-WP	HUBBELL	EXISTING LNC-9LU-4K-4-U- BRONZE (MOUNTED AT 15' AFG)	22.2	22.2	2059	0.850

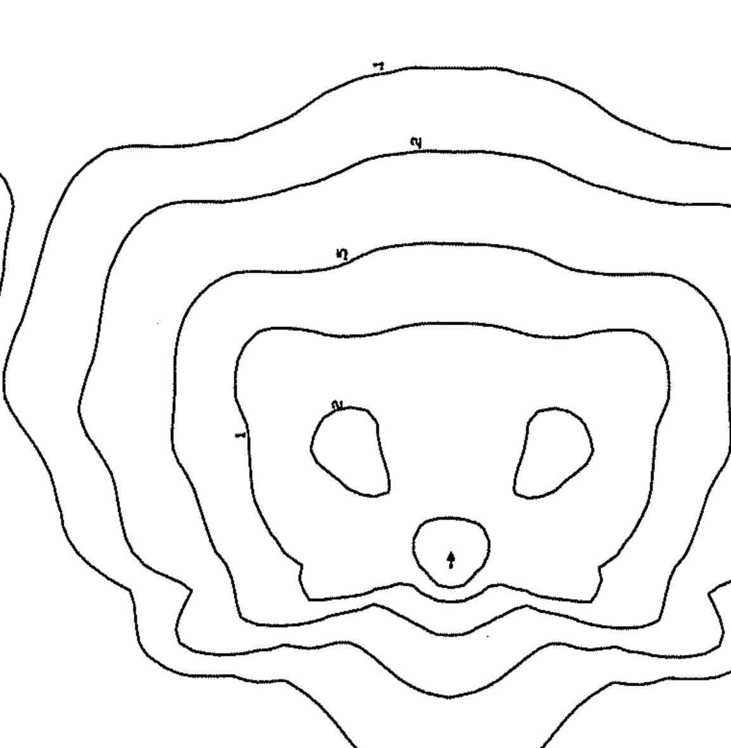
Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
EXISTING PARKING LOT	Illuminance	Fc	1.79	4.7	0.4	4.48	11.75
NEW PARKING ENTRANCE	Illuminance	Fc	1.41	2.1	0.6	2.35	3.50
NEW PARKING LOT	Illuminance	Fc	1.99	5.3	0.5	3.98	10.60

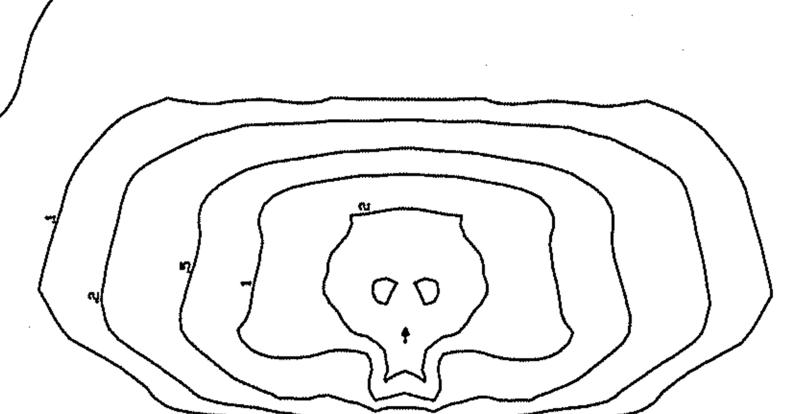
DIVERSIFIED LIGHTING
55 LANE ROAD
FAIRFIELD, NJ 07004
CONTACT: MATTHEW STERNER
(908) 908-8462
MSTERNER@DIVNJ.COM



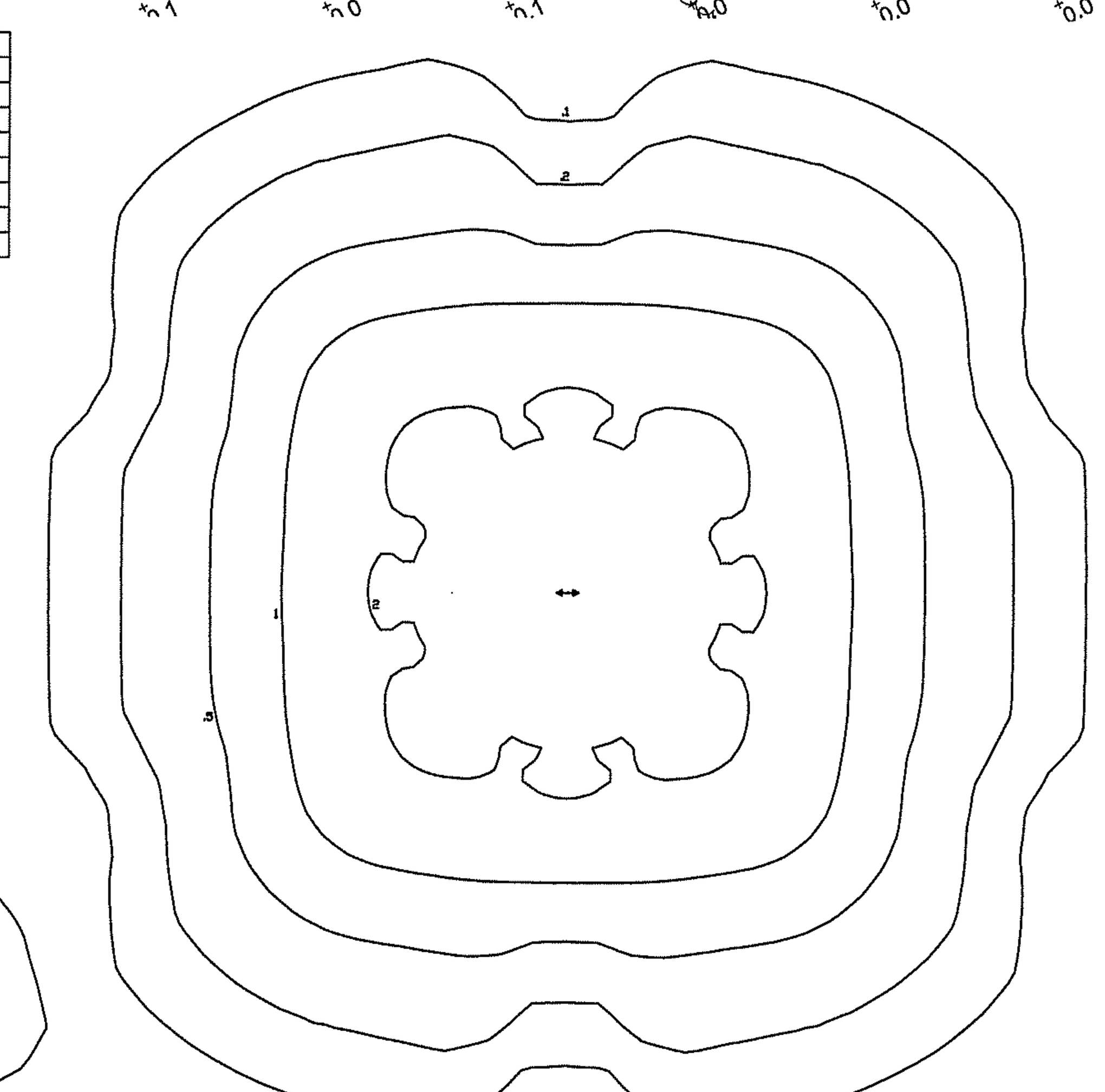
TYPE A ISOLUX PATTERN



TYPE B ISOLUX PATTERN



TYPE D ISOLUX PATTERN



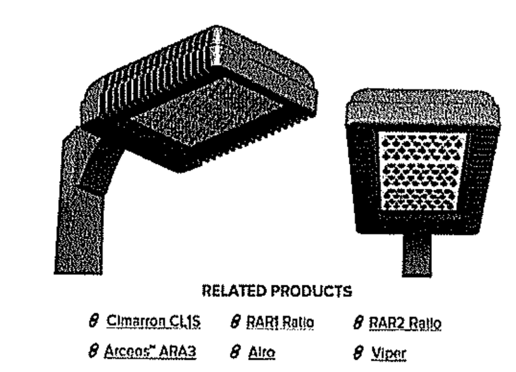
TYPE C ISOLUX PATTERN

HUBBELL Outdoor Lighting

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

Cimarron LED
HIGH PERFORMANCE LED AREA/SITE LIGHTER

FEATURES
- A unique vertically-finned die-cast housing that optimizes heat transfer to keep the fixture cool and maximize component life
- Mounting versatility with choice of traditional straight, architectural upswept die-cast aluminum or mast arm fitter designs
- Optional vandal resistant guard provides additional protection when necessary
- 20KA surge protection with an end of life LED indicator
- Maintenance free housing designed to IP65 and 60,000 hours life



RELATED PRODUCTS
Cimarron CL1S | RAR1 Ratio | RAR2 Ratio
Arcos™ ARA3 | Alto | Viper

PHOTOMETRY | INSTRUCTION SHEET | CL1 PSG PAGE | CL1 & CL1S BROCHURE

SPECIFICATIONS

HOUSING
- Stylish vertically finned die-cast solid top housing for maximum heat dissipation; Stops collection of unsightly debris from gathering on top of the housing
- Rugged lower die-cast aluminum heat sink accelerates thermal management and optimizes PCB and optical performance
- One piece die cut silicone gasket ensures weather proof seal around each individual LED for IP65 rating
- Separate optical and electrical compartment for optimum component operation
- Backlight Control (BC) option available for 85% spill light reduction, doesn't change fixture appearance or EPA, recommended for Type III and Type IV distributions
- Stamped bezel provides mechanical compression to seal the optical assembly
- Suitable for applications requiring 3G testing prescribed by ANSI C136.31
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

OPTICS
- Choice of 30, 60 or 90 high brightness LED with individual acrylic lenses specially designed for IES Type II, III, IV and V distributions

OPTICS (CONT'D)
- Auto optics designed for front row 1A and interior rows 2A
- CCT: 3000K (70 CRI), 4000K (70 CRI), 5000K (70 CRI), and turtle friendly Amber LED options

INSTALLATION
- Two die-cast aluminum arm designs: The decorative arm offers a sleek upswept look while the straight arm follows the housing's contoured lines for continuity of style
- Fixture ships with arm installed for ease of installation and mounts to #2 drill pattern
- Wall bracket, mast arm fitter and pole accessories are also available allowing easy mounting for virtually any application

ELECTRICAL
- Drivers have greater than 90% power factor and less than 10% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Optional continuous dimming to 10% or dual circuitry available
- Universal input voltage 120-277 VAC, 50/60 Hz
- Surge protection – 20KA; Turns fixture off at end of life; Has LED for end of life indication

OPTIONS/CONTROLS
- Drivers are 0-10V dimming standard. Photocell, occupancy sensor and wireless controls available for complete on/off and dimming control

CERTIFICATIONS
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Listed to UL1598 and CSA C22.2#250.024 for wet locations
- IDA approved
- IP65

WARRANTY
- 5 year limited warranty
- See HLI Standard Warranty for additional information

KEY DATA	
Lumen Range	6,500–30,000
Wattage Range	70–350w
Efficacy Range (LPW)	73–122
Fixture Projected Life (Hours)	>60,000
Weights lbs. (kg)	45 (20.4)

Page 1/8 Rev. 09/11/19
CIMARRON LED-SPEC

HUBBELL Outdoor Lighting

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

Cimarron LED
HIGH PERFORMANCE LED AREA/SITE LIGHTER

ORDERING GUIDE

CATALOG #

Example: CL1-A-90LU-5K-3-DB-RPA3

ORDERING INFORMATION

Series	Mounting	No. of LEDs	Voltage	CCT	Distribution	Drive Current
CL1 Cimarron LED	A Arm mount; AD Decorative arm mount; MAF Mast arm fitter	90L 90 High brightness LEDs; 60L 60 High brightness LEDs; 30L 90 High brightness LEDs	U¹ 120-277, 50/60 Hz; 1 120; 2 208; 3 240; 4 277; 5 480, 60 Hz; F 347, 60 Hz; E¹ 220, 50 Hz	3K 3000K; 4K 4000K; 5K 5000K; AM⁴ Amber, 590 nm available	2 Type II; 3 Type III; 4 Type IV; 5M V Medium; 5S V Short; 5W V Wide; L Optic Rotation Left; R Optic Rotation Right	Blank 700A; 035 350mA Amber CCT only; 105 1050mA

ORDERING INFORMATION CONTINUED

Color	Options
DB Dark Bronze	BC⁵ Backlight control
BL Black	CD Continuous dimming
WH White	WB⁶ Wall Bracket
GR Gray	RPA3⁶ 3" Round pole adapter
PS Platinum Silver	RPA4⁶ 4" Round pole adapter
CC Custom Color	RPA5⁶ 5" Round pole adapter
	RPA6⁶ 6" Round pole adapter
	F(X)² Fusing (replace X with voltage: 1-120, 2-208, 3-240, 4-277, 5-480, F-347)
	VG Vandal guard

CONTROLS

Control Options	
Standalone	
7PR	Photocell receptacle
SCO_F	On/Off control
SCL_F	Add on occupancy sensor for use with ext. wireless control device connected thru 7PR receptacle
SWP	SiteSync Pre-Commission
SWPM	SiteSync Pre-Commission w/ Sensor
Networked – Wireless	
WIR	wiSCAPE Fixture Module, in-fixture relay for wireless lighting control
WIRSC	wiSCAPE Fixture Module, in-fixture relay for wireless lighting control and motion/occupancy control

Notes:
1. Fuse option not available with universal voltage
2. Select F3 fusing option for 220V
3. Recommended for Type III and IV distributions only
4. Available in 350mA drive current only Type IV, 5M
5. 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, must order minimum of one SCP-REMOTE control to program dimming settings (see accessories)
6. Not available with AD arm
7. Not available with WIR or WIRSC
8. Not available with SCO, SCL or SCP
9. Specify mounting height, 8 = 8' or less, 40 = 9' to 40'
10. Specify group and zone. See SiteSync product page www.hubbelllighting.com/controls/SiteSync for more details
11. Not available in 90L-700mA or 1050mA versions
12. Not available with AD decorative arm

Page 2/8 Rev. 09/11/19
CIMARRON LED-SPEC

SITE LIGHT DETAIL

LNC2 SERIES

Cat.# | Job | Type | Approvals

HUBBELL Outdoor Lighting

SPECIFICATIONS
The small sized LNC2 is designed for perimeter illumination for safety, security and identification. No uplight and prismatic lenses offer neighbor friendly lighting at typical mounting heights of 8-15'. Units have protective polyester finish for long lasting appearance. Ideal for schools, factories, hospitals, warehouses and retail applications. Energy efficient LEDs provide up to 85% energy savings when compared to traditional light sources with little to no maintenance.

Construction:
Rugged die-cast aluminum housing protects components and provides an architectural appearance. Casting thermally conducts LED heat to optimize performance and long life. Powder paint finish provides durability in outdoor environments.

Electrical:
- 120V-277V universal voltage 50/60Hz 0-10V dimming drivers
- 347V and 480V dimmable driver option in 12L-070 configuration
- Minimum operating temperature is -40°C/-40°F (excludes 12L-035 and P15 configurations)
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion
- Driver RoHS and IP66
- 10kA surge protector

LED(s) CCT:
- 3000K CCT nominal, 4000K CCT nominal, 5000K CCT nominal (70 CRI)
- 9, 12 and 18 LED configurations available see pages 2 and 3 for electrical and photometric details

Optical:
Zero uplight distributions using individual acrylic LED optics provide IES type II, III and IV distributions. Optional (CS) acrylic diffuser available for reduced glare. Prismatic refractor lens provides ~10% uplight for increased vertical FC and forward light projection ideal for security lighting.

Lumen Maintenance:
L96 at 60,000hrs (Projected per IESNA TM-21-11), see table on page 2 for all values

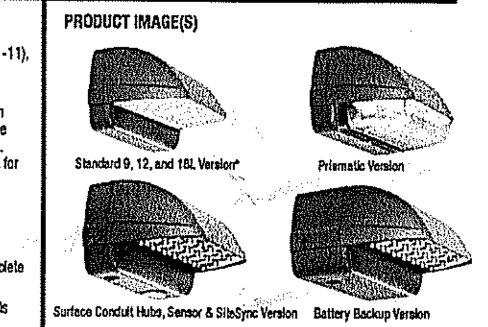
Installation:
Quick-mount adapter provides easy installation to wall or to recessed junction boxes (4" square junction box). Designed for direct J-box mount. Optional 1/2" conduit hubs available (standard for sensor, SiteSync and battery versions).

Options/Controls:
- Universal button photocontrol
- Occupancy sensor options available for complete on/off and dimming control
- SiteSync pre-commissioned wireless controls (with or without sensor)
- Integral Battery Backup provides emergency lighting for the required 90 minute path of egress
- Dual Driver and Dual Power Feed option for 18L-070 versions

Listings:
- Listed to UL1598 and CSAC22.2#250.0-24 for wet locations
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Made-to-order versions are IP-65 rated

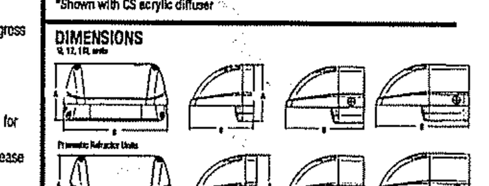
Warranty:
Five year limited warranty (for more information visit: https://www.hubbell.com/hubbelllighting/en/warranty)

PRODUCT IMAGE(S)



Standard 9, 12, and 18L Version* | Prismatic Version
Surface Conduit Hubs, Sensor & SiteSync Version | Battery Backup Version
*Shown with CS acrylic diffuser

DIMENSIONS



A	B	C	D	E
5.54"	10.16"	6.33"	7.64"	9.10"
140.8 mm	258 mm	160.7 mm	194 mm	231 mm

BASE MODEL 7.0 lbs / 3.2 kg
PC SENSOR 7.5 lbs / 3.4 kg • BBU MODELS 9.5 lbs / 4.3 kg

SHIPPING INFORMATION (Stock)

Catalog Number	G.W.(kg)/CTN	Length inch (cm)	Width inch (cm)	Height inch (cm)	Carton Qty. per Master Pack
LNC2-12LU	14.3 (6.5)	14.5 (37)	11.4 (29)	8.4 (21.5)	2
LNC2-18LU	14.8 (6.7)	14.9 (38)	11.4 (29)	8.4 (21.5)	2

CERTIFICATIONS/LISTINGS

ORDERING INFORMATION – ORDERING EXAMPLE: LNC2-12L-4K-070-3-1-DB-PCU-EH-CS

LNC2 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

SERIES	LED SELECTION	CCT/CRI	DRIVE CURRENT	VOLTAGE	MOUNTING	CONTROL OPTIONS	OPTIONS
LNC2 Small LitePak LNC2	9L 9 LEDs; 12L 12 LEDs; 18L 18 LEDs; P15 15w Prismatic Refractor; P25 25w Prismatic Refractor; P35 35w Prismatic Refractor	3K 3000K, 70 CRI; 4K 4000K, 70 CRI; 5K 5000K, 70 CRI; AM¹ Amber	070 700mA; 035 350mA (12L & 18L only); IES DISTRIBUTION: 2¹ IES Type II; 3¹ IES Type III; 4¹ IES Type IV; FT Forward Throw (Prismatic Refractor only)	U 120V-277V; 1 120V; 2 208V; 3 240V; 4 277V; 5³ 480V; F³ 347V	Leave Blank for down position; NV¹ Inverted; FINISH: DB Dark Bronze Textured; BL Black Textured; GYS Gray Smooth; PS Platinum Silver Smooth; WH White Textured; CC Custom Color	SCP⁴ Occupancy Sensor Programmable (Dim); PCU Universal Button Photocontrol; SWP⁶ SiteSync Pre-Commission; SWPM⁶,⁷ SiteSync Pre-Commission w/ OCC Sensor; SPECIFY SCP HEIGHT: 8F Up to 8ft mount height; 20F Up to 20ft mount height	EH⁵ Battery Backup Unit with Heater (-30C); E Battery Backup Unit (0C); F Fuse & Fuse-holder (not available with Battery Backup); CS Comfort Shield (N/A with Prismatic Refractor); 2DR Dual Driver (18L-700mA only); 2PF Dual Power Feed (18L-700mA only); CH Surface Conduit Hubs

WALL MOUNT LIGHT DETAIL

SSS-H SERIES POLES
SQUARE STRAIGHT STEEL

Cat.# | Job | Type | Approvals

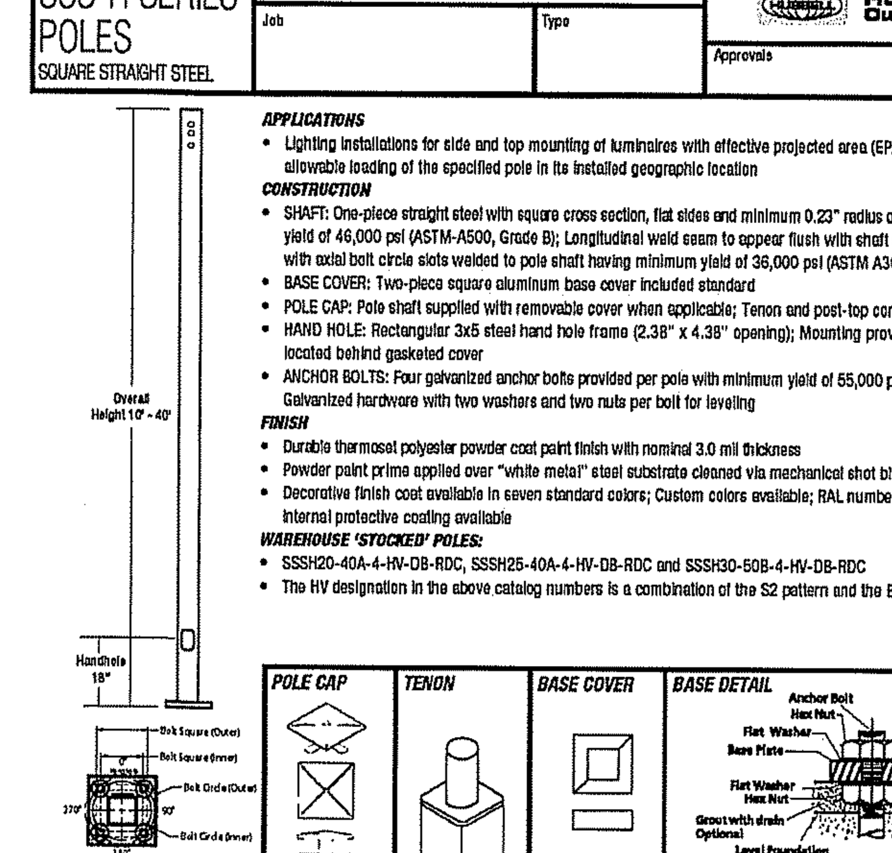
HUBBELL Outdoor Lighting

APPLICATIONS
- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

CONSTRUCTION
- SHAFT: One-piece straight steel with square cross section, flat sides and minimum 0.23" radius on all corners; Minimum yield of 46,000 psi (ASTM-A500, Grade B); Longitudinal weld seam to appear flush with shaft side wall; Steel base plate with axial bolt circle slots welded to pole shaft having minimum yield of 36,000 psi (ASTM A36)
- BASE COVER: Two-piece square aluminum base cover included standard
- POLE CAP: Pole shaft supplied with removable cover when applicable; Tenon and post-top configurations also available
- HAND HOLE: Rectangular 3x5 steel hand hole frame (2.38" x 4.38" opening); Mounting provisions for grounding lug located behind gasketed cover
- ANCHOR BOLTS: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling

FINISH
- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint prime applied over "white metal" steel substrate cleaned via mechanical shot blast method
- Decorative finish coat available in seven standard colors; Custom colors available; RAL number preferable; Internal protective coating available

WAREHOUSE 'STOCKED' POLES:
- SSSH20-40A-4-HV-DB-RDC, SSSH25-40A-4-HV-DB-RDC and SSSH30-50B-4-HV-DB-RDC
- The HV designation in the above catalog numbers is a combination of the S2 pattern and the B3 pattern



ORDERING INFORMATION Reference page 2 for available configurations

ORDERING EXAMPLE:
SSS-H - 25 - 40 - A/B/C - 2L - S2 - DB - UL

SERIES	HEIGHT	SHAFT	THICKNESS	MOUNTING	DRILL PATTERN	FINISH	OPTIONS
SSS-H Square Straight Steel Pole Hubbell Outdoor	Reference page 2 Ordering matrix	Reference page 2 Ordering matrix	Reference page 2 Ordering matrix	1 Single arm mount; 2 Two fixtures at 180°; 2L Two fixtures at 90°; 3T Three fixtures at 90°; 4 Four fixtures at 90°; TA Tenon (2.38" OD x 4" Tall); TB Tenon (2.88" OD x 4" Tall); TC Tenon (3.6" OD x 6" Tall); TR¹ Removable Tenon (2.38" x 4"); OT Open Top (includes pole cap)	S2 2 bolt, 3.5" pattern; B3 2 bolt, 2.5" spacing, Ratio	DB Dark Bronze Textured; BL Black Textured; WH White Textured; GR Gray Textured; PS Platinum Silver Smooth; CC Custom Color	GFI² 20 Amp GFCI Receptacle and Cover; EHH Extra Handhole; C05² .5" Coupling; C07² .75" Coupling; C20² 2" Coupling; MPB² Mid-pole Luminaire Bracket; VM2 2nd mode vibration damper; LAB Less Anchor Bolts; UL UL Certified

MOUNTING ORIENTATION — Denotes handhole location

2 | 2L | 3T | 4

ACCESSORIES– Order Separately

Catalog Number	Description
VM1³	1st mode vibration damper
VM2SXX	2nd mode vibration damper

1. Removable tenon used in conjunction with side arm mounting. First specify desired arm configuration followed by the "TR" notation. Example: SSS-H-25-40-A-1-S2-TR-DB
2. Specify option location using logic found on page 2 (Option Orientation)
3. VM1 recommended on poles 20' and taller with EPA of less than 1.

LIGHT POLE DETAIL

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

DATE	REVISION
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
SEPT. 26, 2022	RESOLUTION COMPLIANCE REVIEW

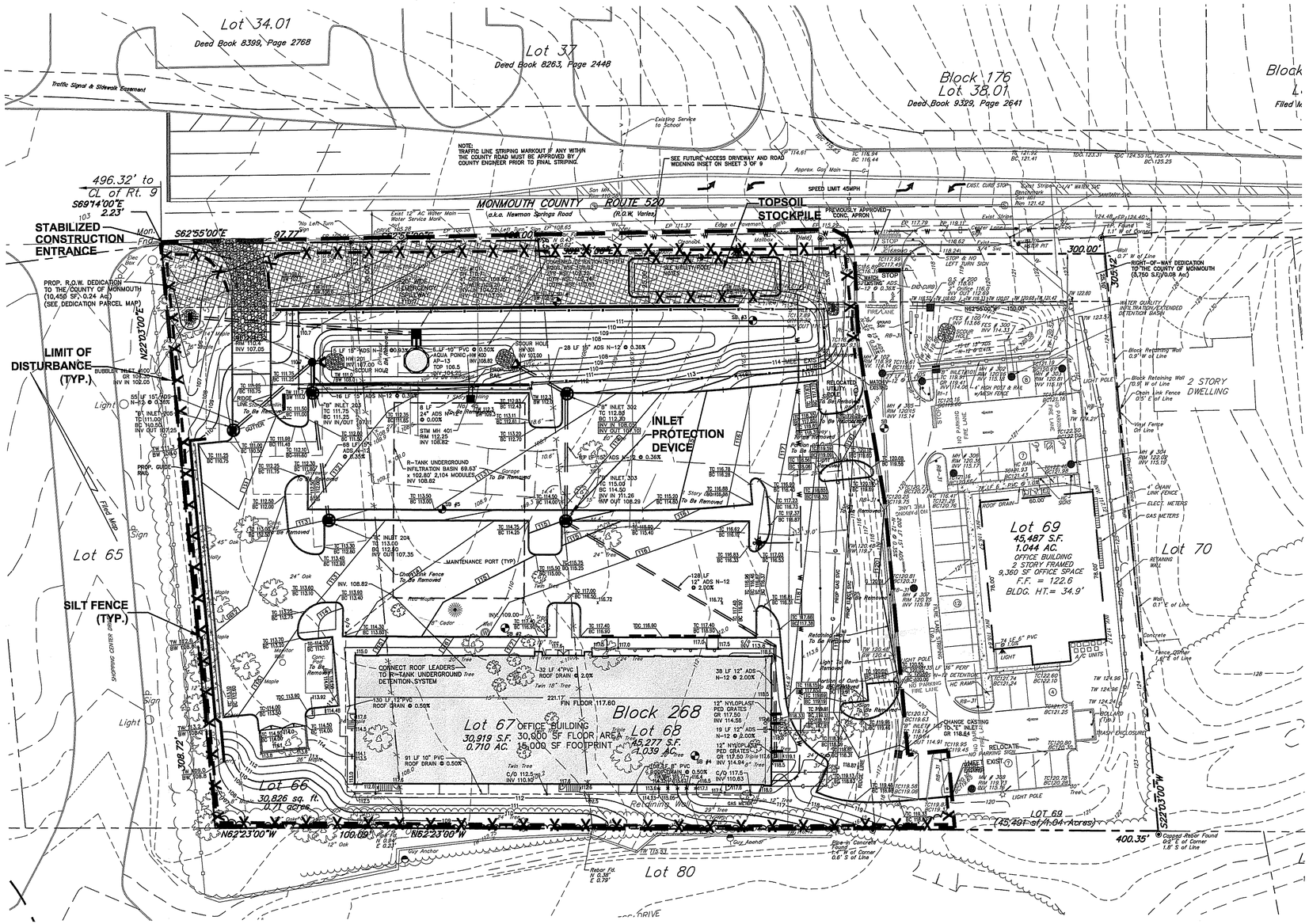
STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

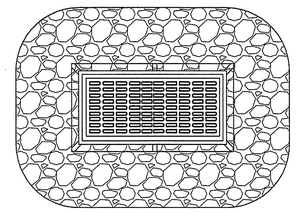
CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

LIGHTING PLAN

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
JULY 8, 2022	1"=30'	SGP	S.C.C.	19022		6 of 13





RIP RAP AROUND INLET 100 DETAIL
N.T.S.

ϕ_{50}= 3"
TH=6" W/FILTER FABRIC
CONTRACTOR TO PROVIDE 2' RIP RAP AROUND INLET 100 WHERE 2' IS NOT AVAILABLE COTRACTOR TO PROVIDE THE MAXIMUM DISTANCE AVAILABLE

Approved by the Marlboro Township Planning Board
on _____ Resolution # _____

Chairman Date

Secretary Date

Engineer Date

DATE	REVISION
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
JULY 8, 2022	RESOLUTION COMPLIANCE
FEB. 17, 2022	PER FREEHOLD SCD COMMENTS

STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489
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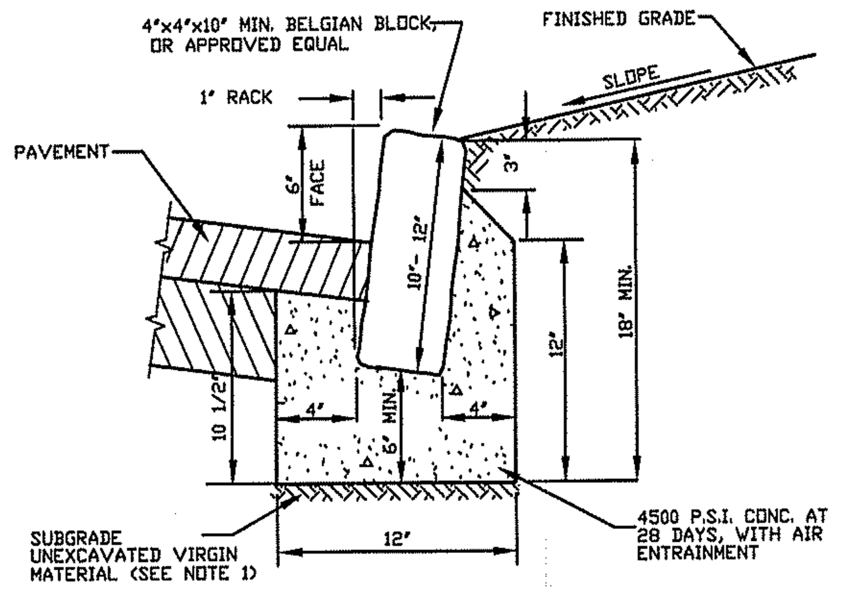
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

SOIL EROSION AND SEDIMENT CONTROL PLAN

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

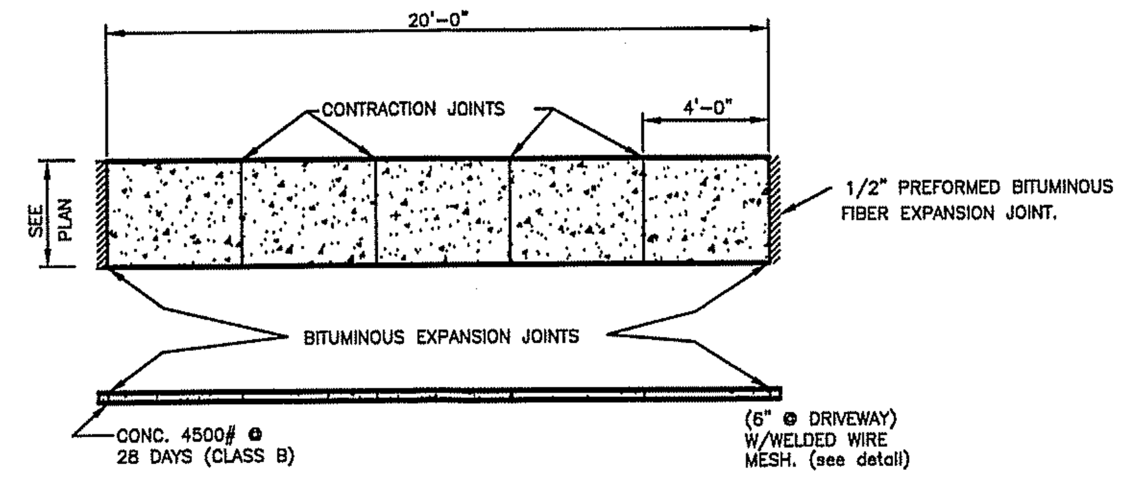
Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	1"=30'		S.C.C.	19022		7 of 13



BELGIAN BLOCK CURB DETAIL
N.T.S.

NOTES:

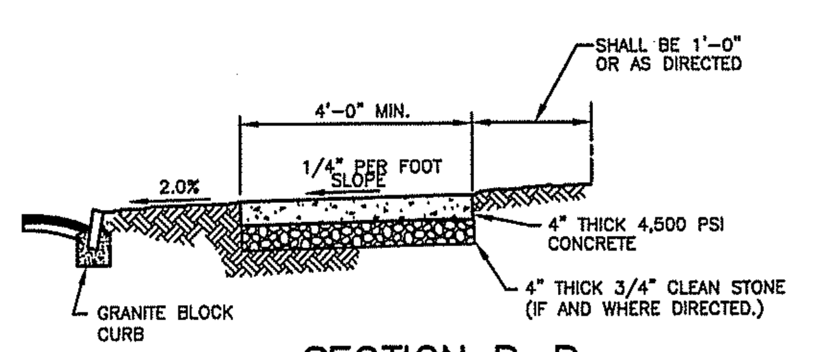
1. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR WET SOIL CONDITIONS SHALL BE BACKFILLED WITH 3/4" CLEAN CRUSHED STONE. ALL SUBGRADES SHALL BE APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO POURING.
2. JOINTS SHALL BE NOT MORE THAN 1/4" WIDE FOR DRESSED BLOCK AND 3/8" WIDE FOR QUARRY SPLIT BLOCK. THE JOINTS SHALL BE POINTED WITH 1:1 CEMENT-SAND MORTAR.
3. CURB SHALL BE TEMPORARILY BACKFILLED TO FINISHED GRADE WITH SOIL BEHIND AND STONE ON THE ROADSIDE AS SOON AS IT HAS ATTAINED SUFFICIENT SUPPORTING STRENGTH OR WITHIN 24 HOURS OF POURING (WHICHEVER IS LESS).
4. WHEN NEW CURB IS INSTALLED ALONG AN EXISTING PAVED AREA, THE EXISTING PAVEMENT SHALL BE CUT 2 FEET IN FRONT OF THE NEW CURB FACE IN A STRAIGHT LINE AT A 45 DEGREE ANGLE WITH A CUTTING WHEEL OR PNEUMATIC HAMMER. THE NEW PAVEMENT SHALL BE TACKED AND BUTTED TO THE EXISTING PAVEMENT IN ACCORDANCE WITH PAVEMENT WIDENING DETAIL.
5. THE GENERAL CONTRACTOR OR OWNER IS RESPONSIBLE FOR MAINTAINING ALL CURB UNTIL FORMALLY ACCEPTED BY THE TOWNSHIP. ALL CURB THAT IS BROKEN, CRACKED, OR OUT OF ALIGNMENT SHALL BE REPLACED PRIOR TO FINAL PAVING AND/OR ACCEPTANCE.



SECTION A-A

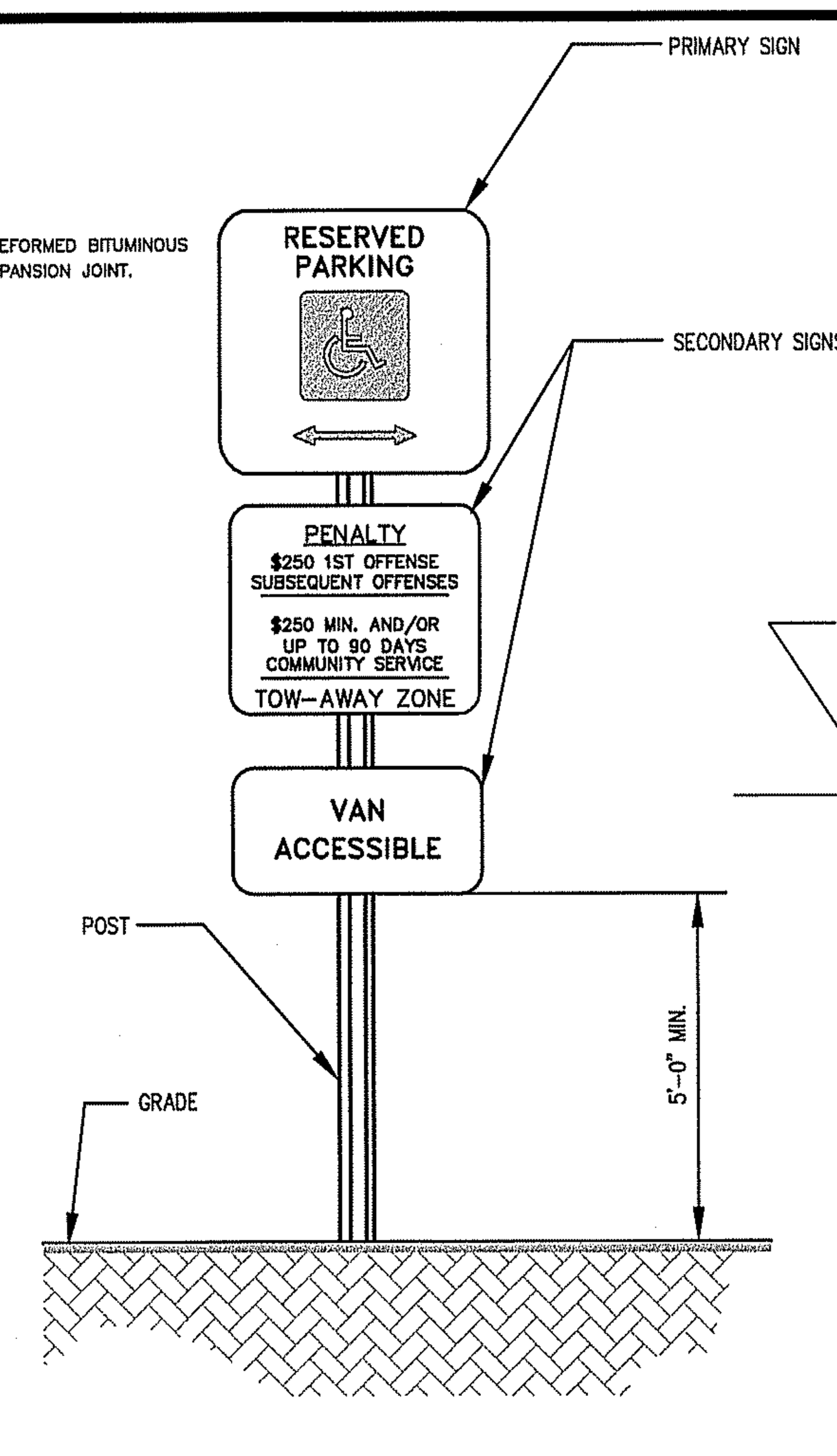
NOTES:

1) A PERFORMED, BITUMINOUS EXPANSION JOINT 1/2" THICK, 4" WIDE AND EXTENDING THE FULL WIDTH OF THE WALK, UNBROKEN, SHALL BE INSTALLED EVERY 20 FEET. CONTRACTION JOINTS SHALL BE INSTALLED EVERY 4 FEET, THE FULL WALK WIDTH.
2) THERE SHALL BE A BROOMED FINISH AND EDGES FINISHED WITH A SUITABLE TOOL.
3) SIDEWALKS ARE TO BE CONSTRUCTED 1 FOOT OFF PROPERTY LINE.

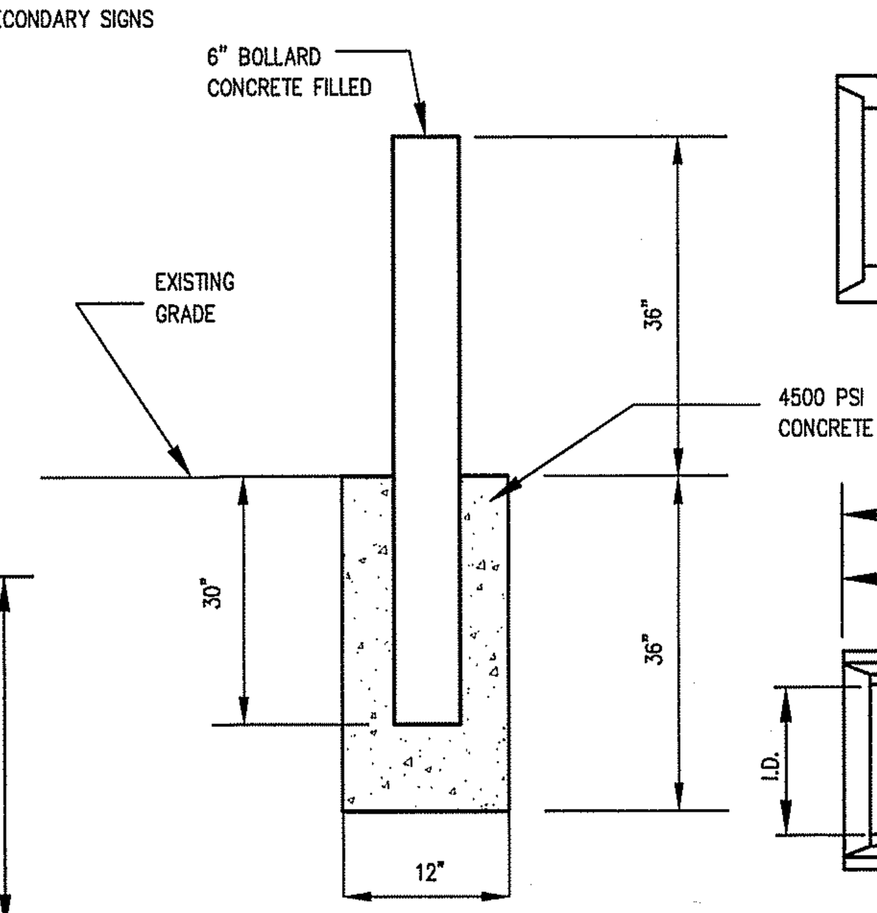


SECTION B-B

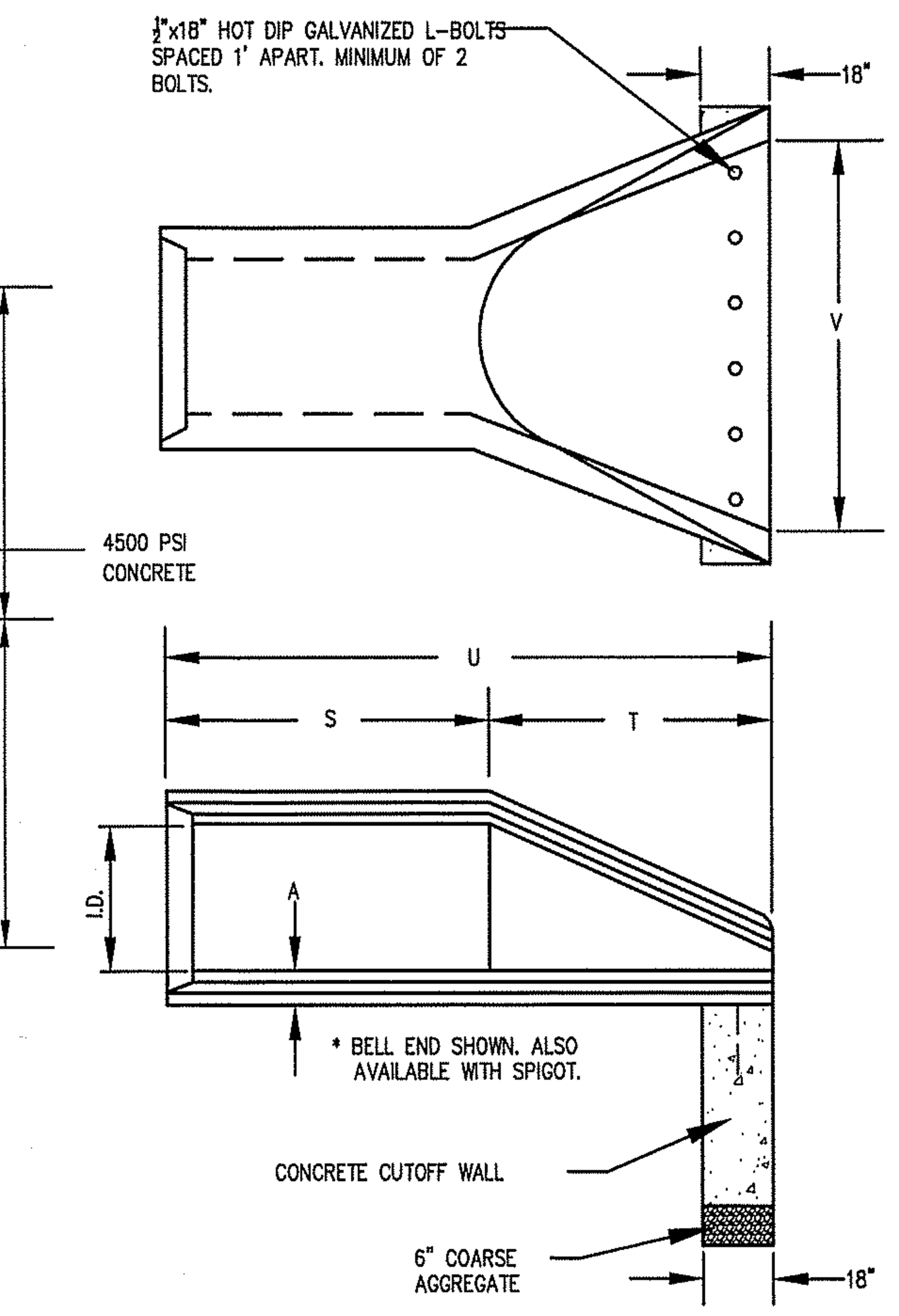
SIDEWALK DETAIL
N.T.S.



HANDICAP SIGN DETAIL
NTS

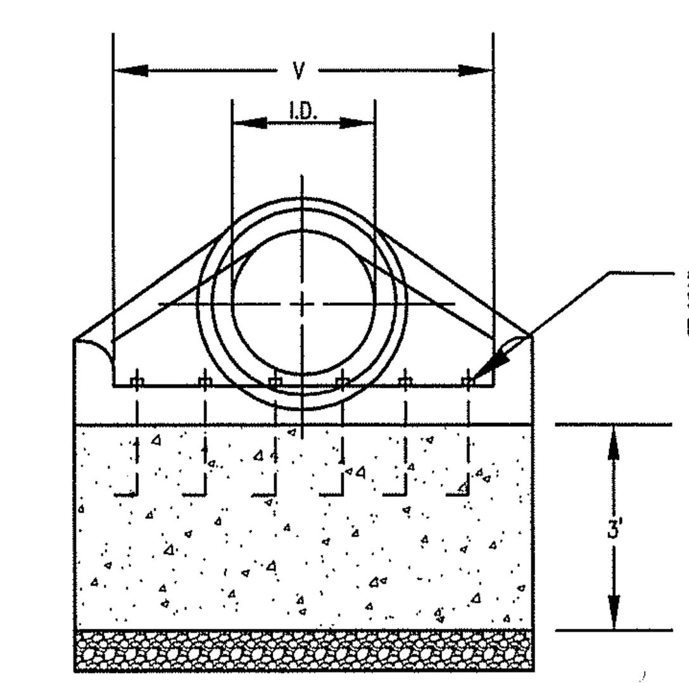


BOLLARD DETAIL
N.T.S.

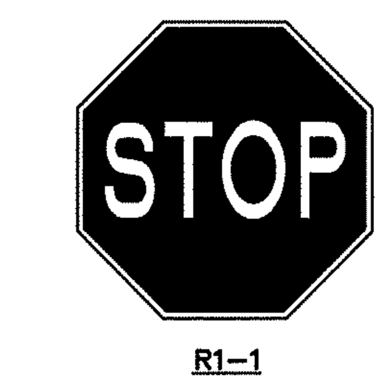


I.D.	12	15	18	24	30	36	42
A	2	2 1/4	2 1/2	3	3 1/2	4	4 1/2
R	4	6	9	9 1/2	12	15	21
S	48	46	46	30	19 3/4	34 3/4	35
T	24	27	27	43 1/2	54	63	63
U	6'-0"	6'-1"	6'-1"	6'-1 1/2"	6'-1 3/4"	8'-1 3/4"	8'-2"
V	24	30	36	48	60	72	78
WT. PC. POUNDS	530	740	990	1520	2190	4100	5380

NOTE: ALL NUMBERS REPRESENT INCHES UNLESS OTHERWISE SPECIFIED

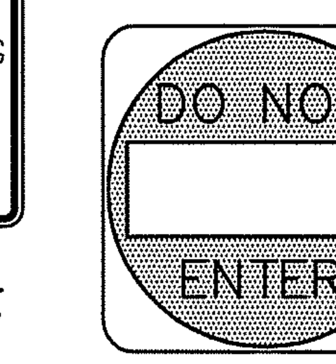


FLARED END SECTION
N.T.S.



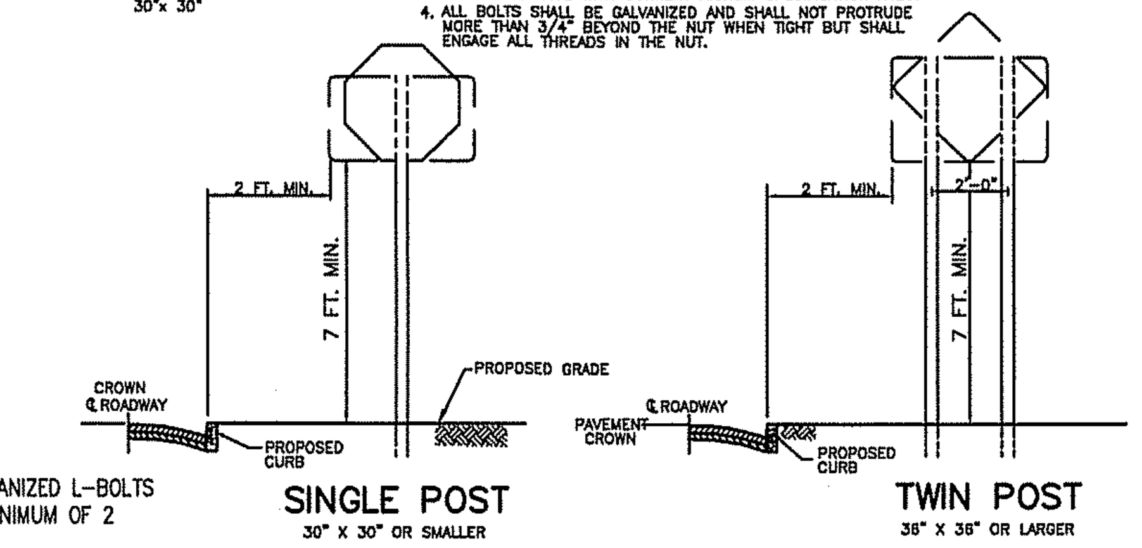
R1-1
30" x 30"

R8-31
12" x 18"



30"x30"
SIGN R5-1 DETAIL
N.T.S.

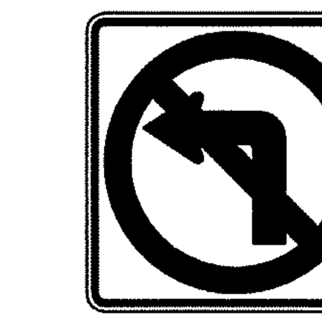
NOTES:
1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION, AS STATED IN THE CURRENT MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS.
2. ALL POSTS SHALL BE EMBEDDED 4'-2" MINIMUM. ONE PIECE ALUM. OR STEEL POST SHALL BE EMBEDDED 3'-6" MAX.
3. POSTS MAY BE STEEL, ALUMINUM OR 2 PIECE U-POSTS IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A123.
4. ALL BOLTS SHALL BE GALVANIZED AND SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT BUT SHALL ENGAGE ALL THREADS IN THE NUT.



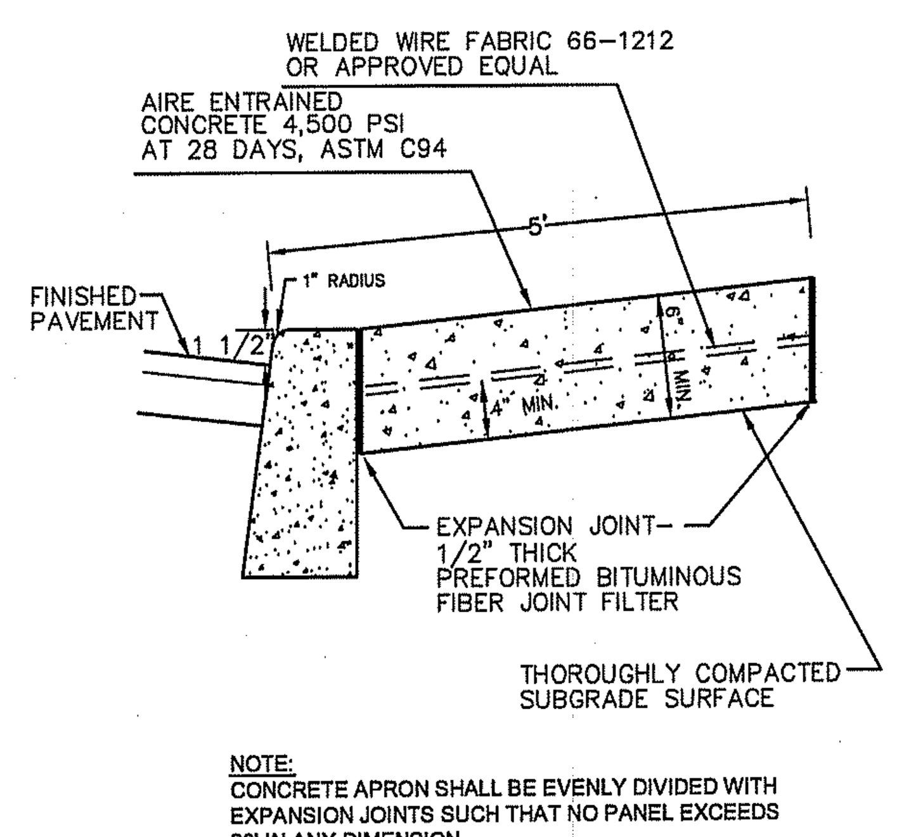
SINGLE POST
30" X 30" OR SMALLER

TWIN POST
36" X 36" OR LARGER

TYPICAL SIGN MOUNTING DETAIL
N.T.S.



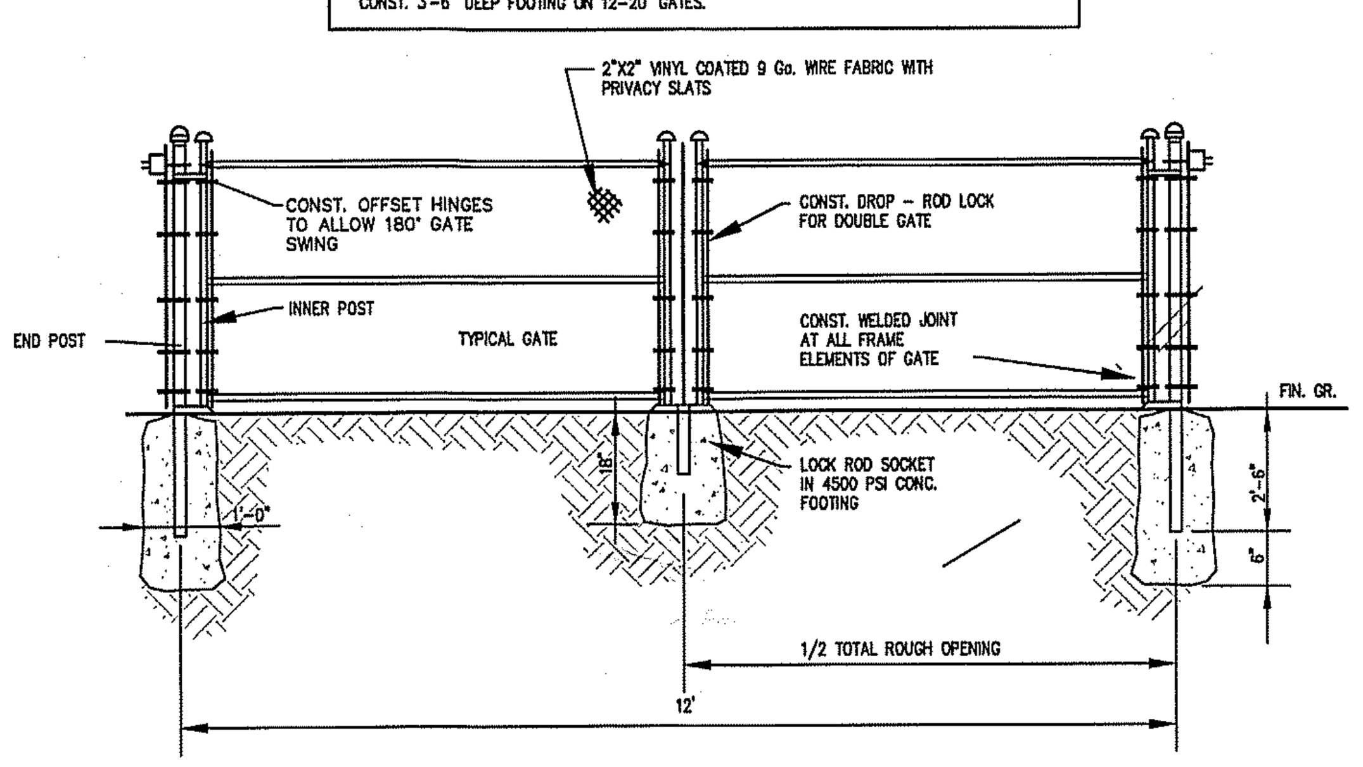
24"x 24"
SIGN R3-2 DETAIL
N.T.S.



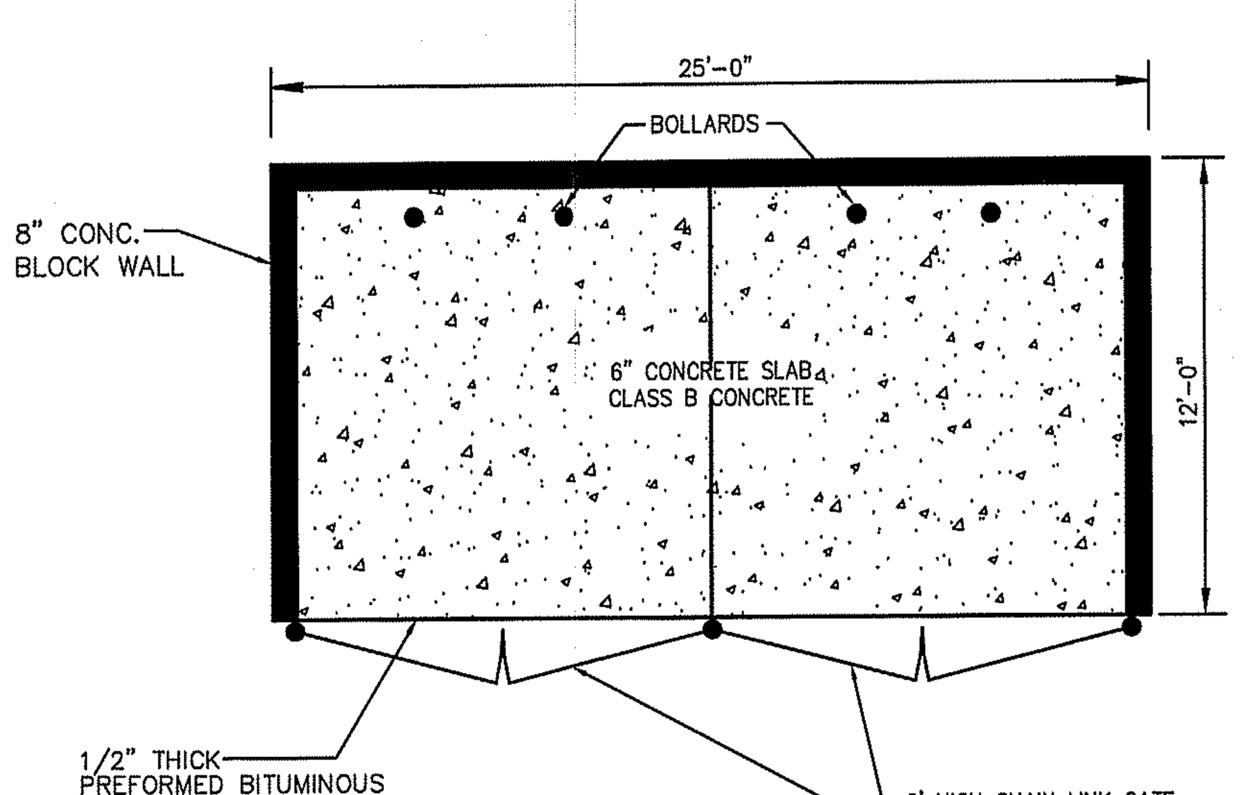
CONCRETE APRON DETAIL
N.T.S.

NOTE:
CONCRETE APRON SHALL BE EVENLY DIVIDED WITH EXPANSION JOINTS SUCH THAT NO PANEL EXCEEDS 20' IN ANY DIMENSION.

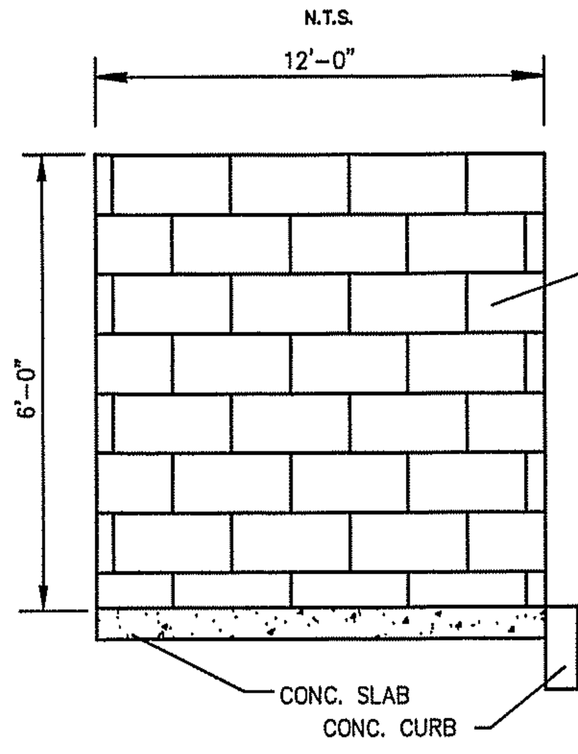
ON GATES 6-10' IN HEIGHT USE 3" O.D. END POSTS AND 2-1/2" O.D. INNER POSTS.
ON GATES 12-20', USE 4" O.D. END POSTS AND 3" O.D. INNER POSTS.
CONST. 3'-6" DEEP FOOTING ON 12-20' GATES.



DOUBLE CHAIN LINK GATE DETAIL
N.T.S.

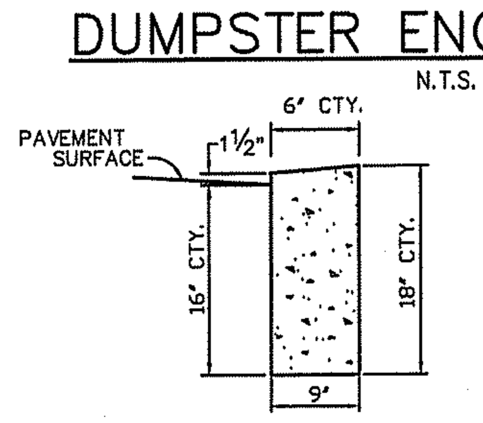


PLAN

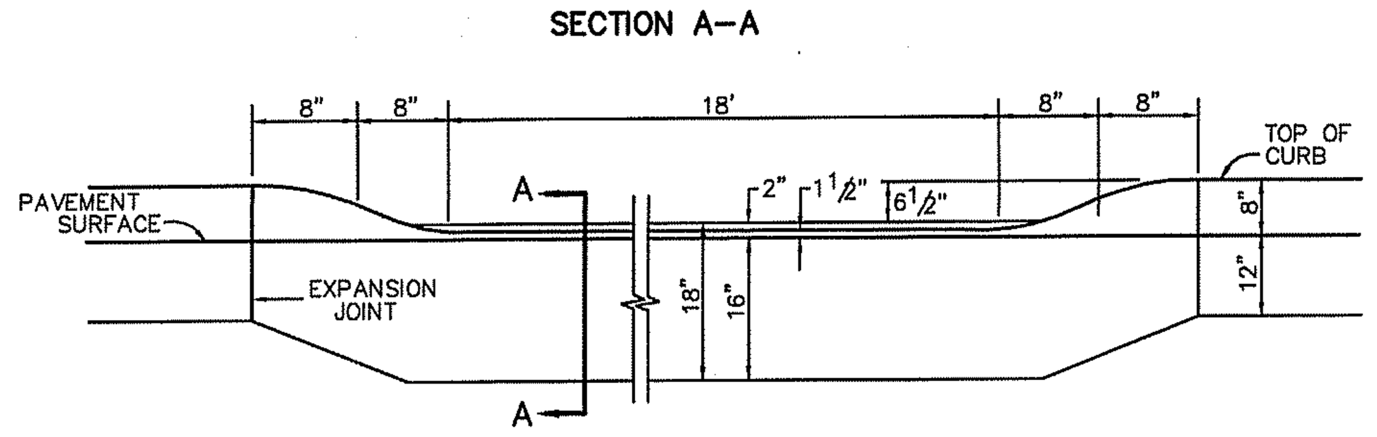


SECTION

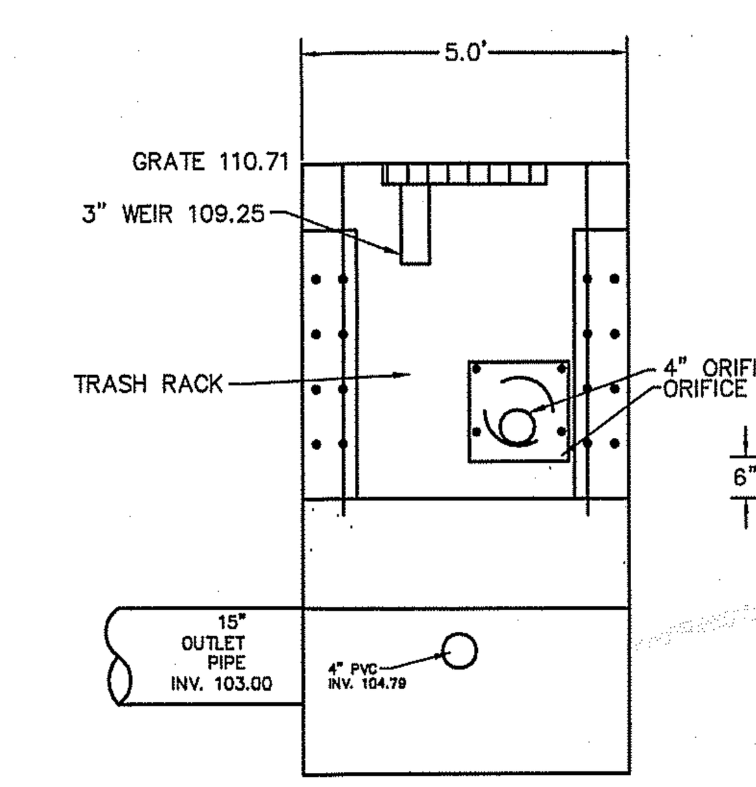
DUMPSTER ENCLOSURE DETAIL
N.T.S.

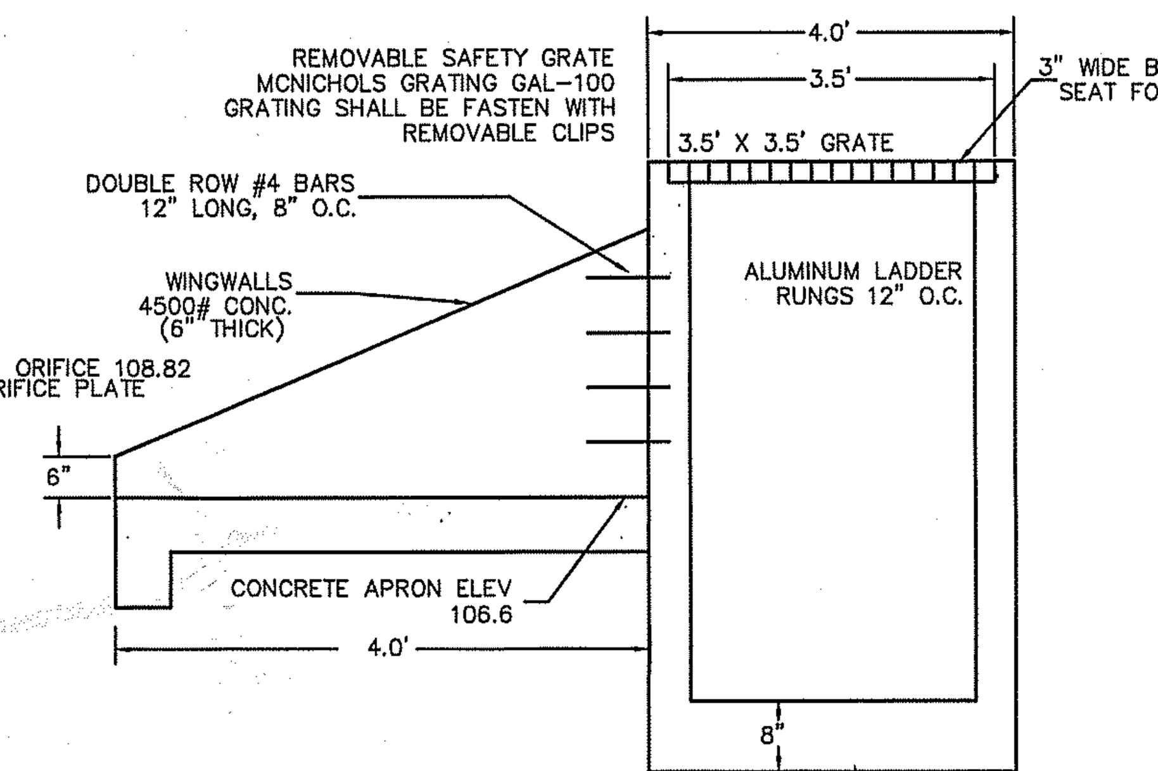


SECTION A-A

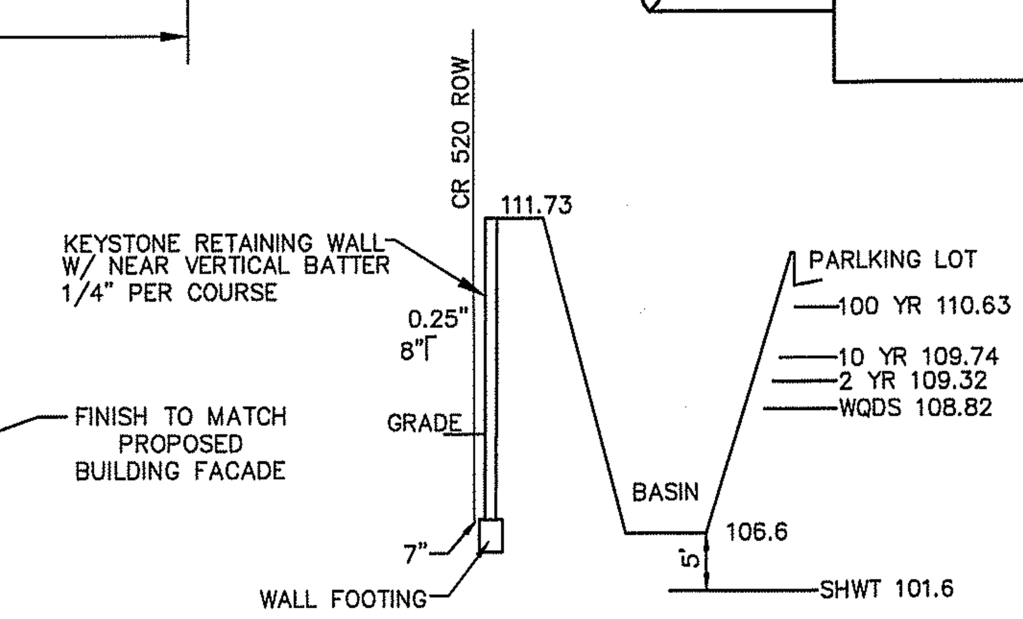


DEPRESSED CURB AT DRIVEWAY DETAIL
NTS





OUTLET STRUCTURE DETAIL
N.T.S.

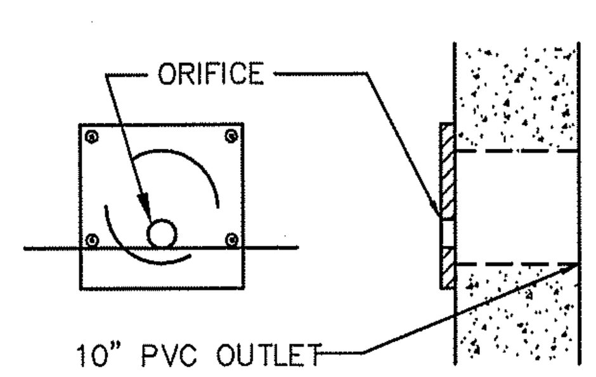


NOTES:

WALL FOOTING TO BE OUTSIDE OF THE CR 520 RIGHT-OF-WAY.

1. ALL ELEMENTS OF THE PROPOSED RETAINING WALL, INCLUDING THOSE LOCATED UNDERGROUND, GROUND LEVEL, AND ABOVE GROUND, SHALL BE LOCATED BEHIND THE NEWMAN SPRINGS ROAD RIGHT-OF-WAY. NO ELEMENT OF THE PROPOSED RETAINING WALL SHALL ENCRAOCH INTO THE COUNTY RIGHT-OF-WAY. IF INSPECTION REVEALS ENCROACHMENT INTO C.R. 520, NEWMAN SPRINGS ROAD RIGHT-OF-WAY, RELOCATION SHALL BE AT THE CONTRACTORS EXPENSE.

BASIN CROSS SECTION
N.T.S.



ORIFICE PLATE
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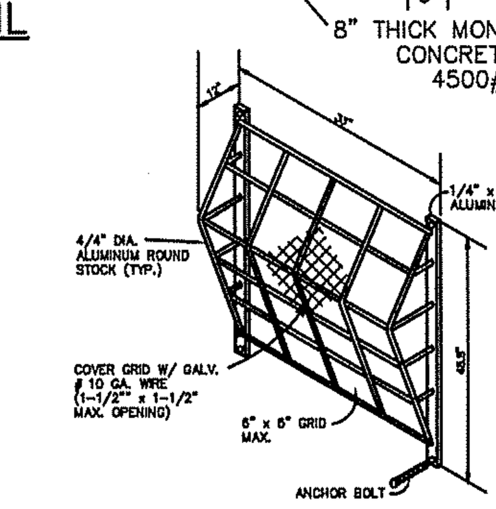

TRASH RACK DETAIL
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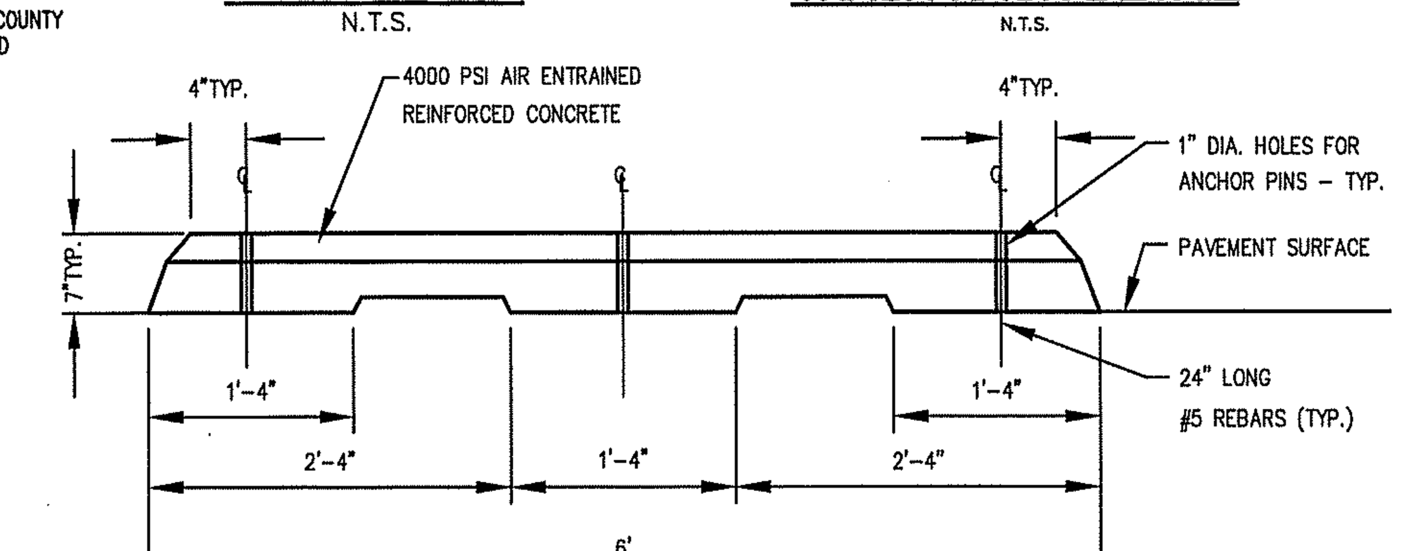

WHEEL STOP DETAIL
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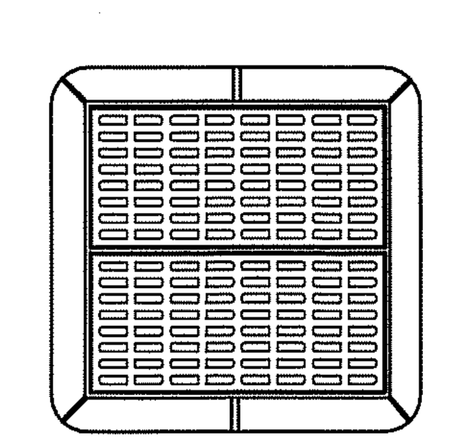
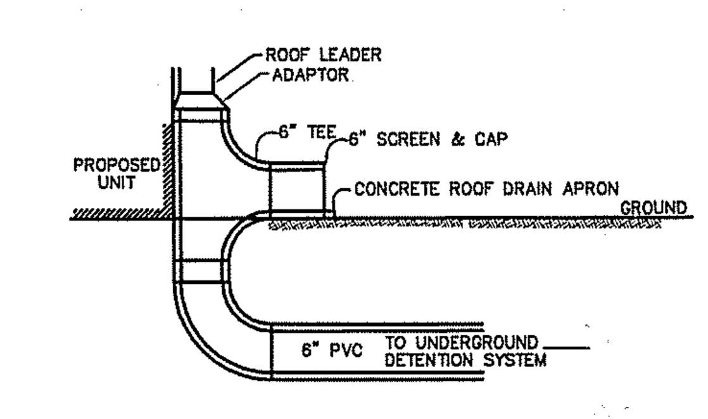
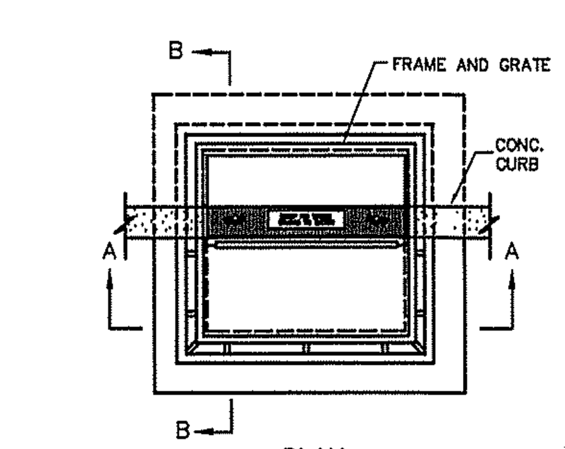


FRAME AND GRATE TO BE NO. 3425 AS MANUFACTURED BY CAMPBELL FOUNDRY CO. OR EQUAL.

"E" INLET CASTING DETAIL
N.T.S.



ROOF DRAIN DETAIL
N.T.S.



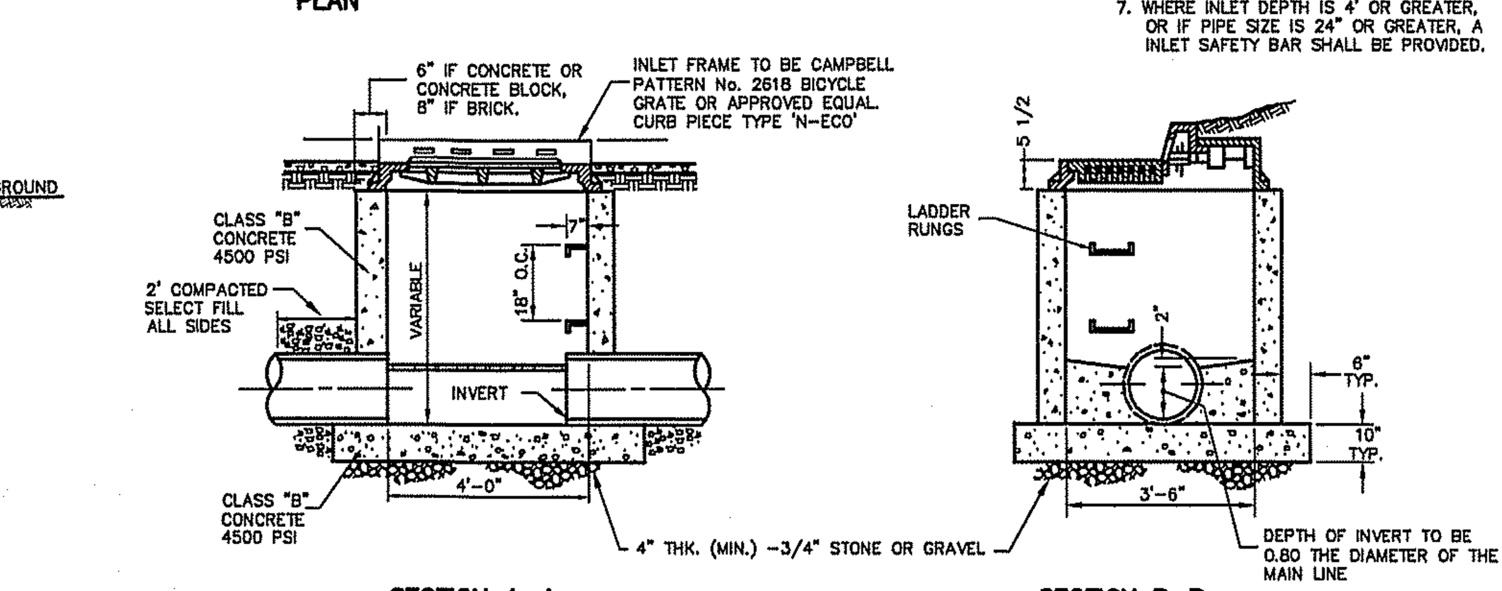
PLAN

DRIVEWAY BACK PLATE NOTE:

FOR ALL B-INLETS THAT ARE LOCATED WITHIN DRIVEWAYS, A DRIVEWAY BACK PLATE SHALL BE UTILIZED IN LIEU OF THE STANDARD BACK PLATE, SEE THE INSERT BELOW.
A DRIVEWAY ACCESS BACK PLATES ARE AVAILABLE FOR ANY OF THE FOLLOWING LISTED PATTERN NUMBERS: 2500, 2501, 2510, 2511, 2540, 2541, 2522, 2523, 2533, 2547, 2548, 2594, 2617, 2618, 2632, 2633, 2694, 2610, AND 2616. PLEASE VERIFY WITH MANU. FOR ANY AND ALL UPDATES.

GENERAL NOTES

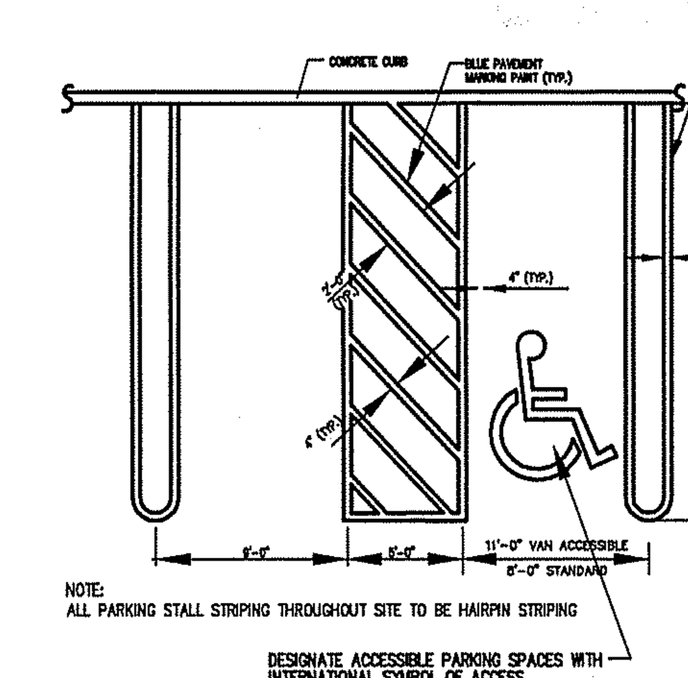
1. FOOTING TO BE N.J.D.O.T. CLASS "B" CONC. (4500 PSI MIN.)
2. IF WALL CONSTRUCTION IS OTHER THAN CONCRETE THE OUTSIDE WALL SHALL BE PLASTERED WITH 1/2" THICK CEMENT PLASTER
3. FRAME AND GRATE TO BE NO. 2618 AS MANUFACTURED BY CAMPBELL FOUNDRY Co., OR EQUAL. CURB PIECE TYPE N-ECO
4. PROVIDE 7/8" DIA. ALUMINUM LADDER RUNGS, 12" O.C.
5. ALL STORM SEWER PIPE SHALL HAVE A 6" STONE BEDDING TO 1/2 DIAMETER OF PIPE.
6. INLETS 0' TO 8' DEEP SHALL BE SINGLE WALL CONSTRUCTION (6"). INLETS 8' TO 12' DEEP SHALL BE DOUBLE WALL CONSTRUCTION (12").
7. WHERE INLET DEPTH IS 4' OR GREATER, OR IF PIPE SIZE IS 24" OR GREATER, A INLET SAFETY BAR SHALL BE PROVIDED.



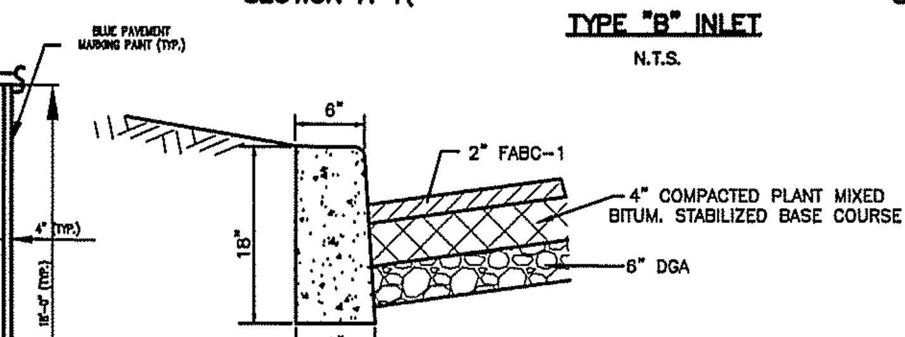
SECTION A-A

TYPE "B" INLET
N.T.S.

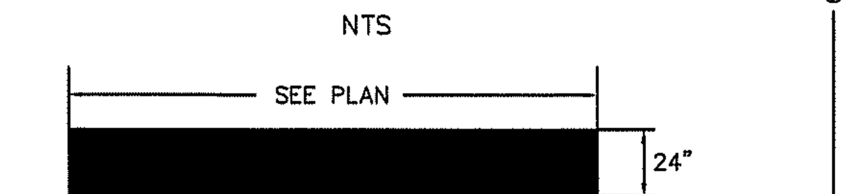
SECTION B-B



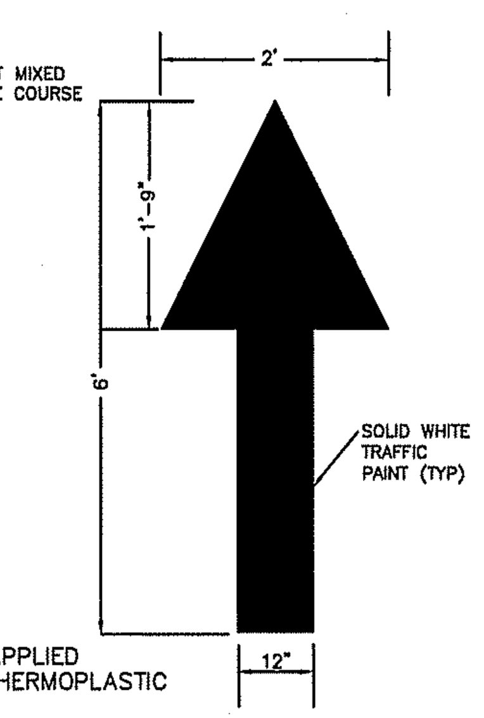
HANDICAPPED STALL STRIPING DETAIL
N.T.S.



PARKING LOT PAVING DETAIL
TO BE USED IN PARKING STALLS AND AISLES
NTS



STOP BAR DETAIL
N.T.S.



TRAFFIC FLOW ARROW DETAIL
N.T.S.

FIRE LANE PAVEMENT MARKING DETAIL
N.T.S.

Approved by the Marlboro Township Planning Board
on________ Resolution #________

Chairman ________ Date
Secretary ________ Date
Engineer ________ Date

DATE	REVISION
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
MAR. 9, 2022	PER COUNTY PLANNING BOARD COMMENTS
FEB. 17, 2022	PER FREEHOLD SCD COMMENTS
FEB. 8, 2022	PER COUNTY PLANNING BOARD COMMENTS
JAN. 25, 2022	HAIRPIN STRIPPING DETAIL

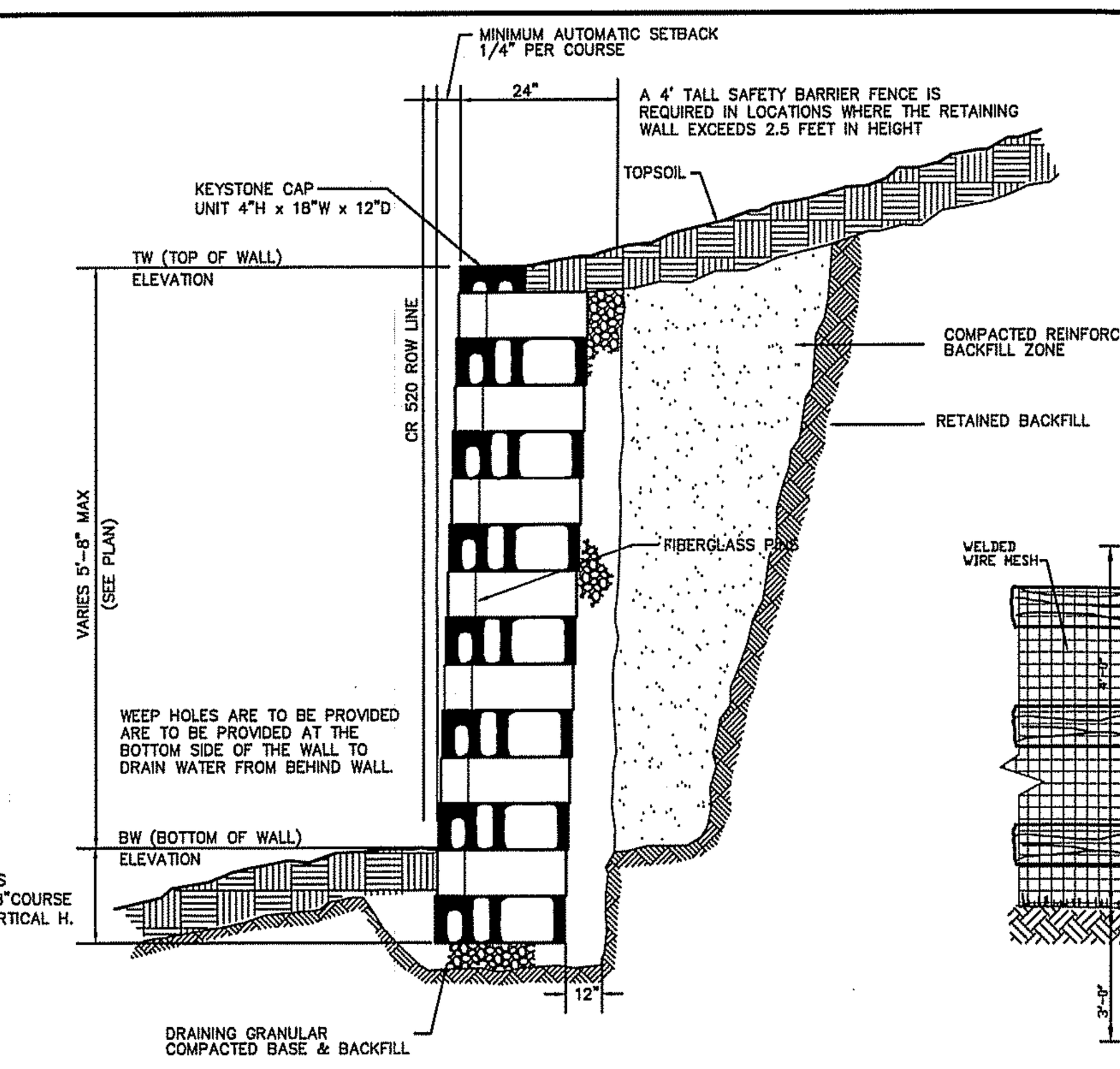
STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

DETAILS

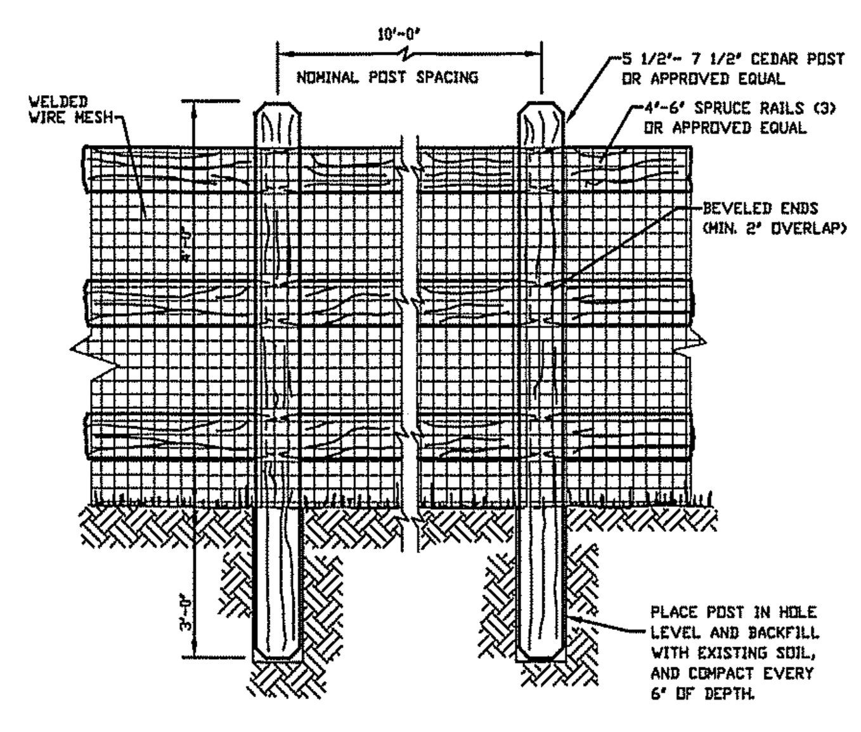
45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	NTS	UHDEN	S.C.C.	19022		8 of 13



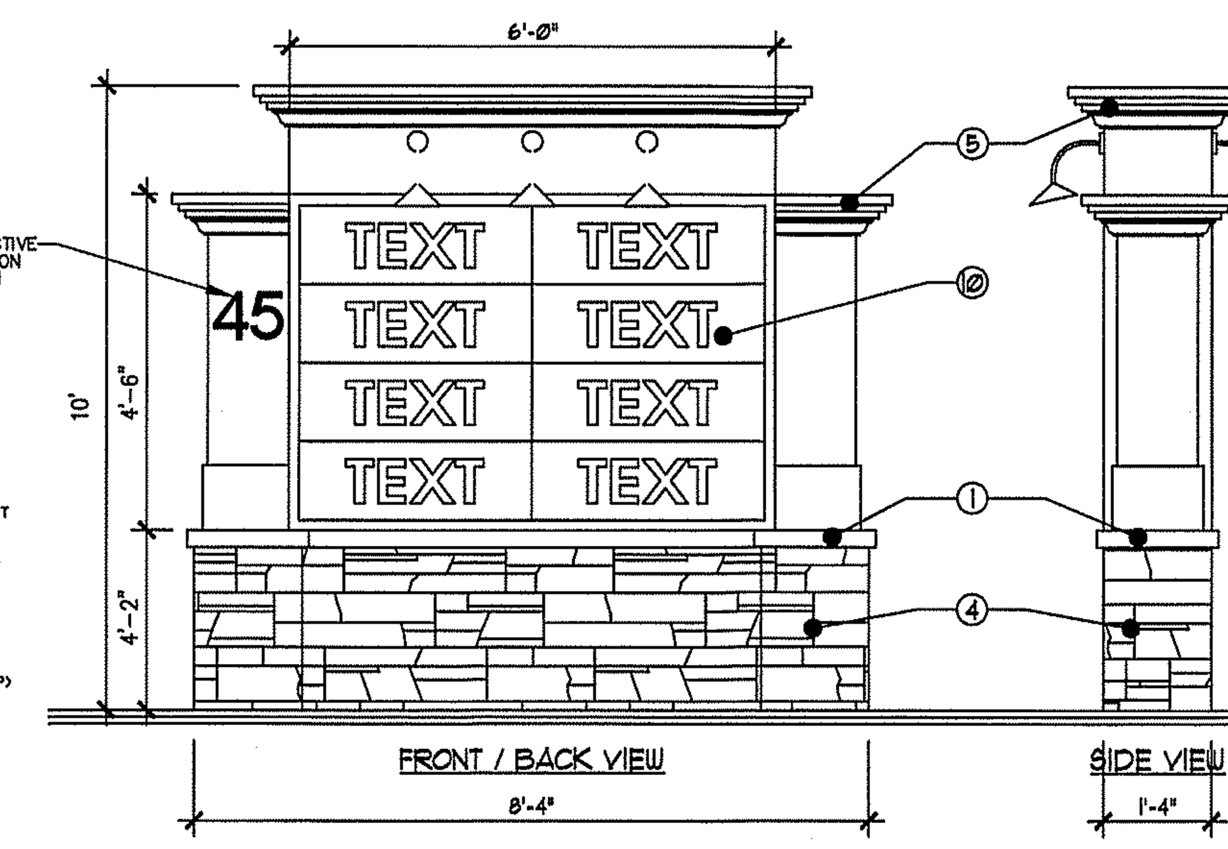
TYPICAL KEYSTONE WALL SECTION

SITE SPECIFIC DETAILS AND CALCUATIONS ARE TO BE PROVIDED TO THE TOWNSHIP ENGINEERING FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. N.T.S.



POST AND RAIL w/WELDED WIRE MESH FENCE

N.T.S.

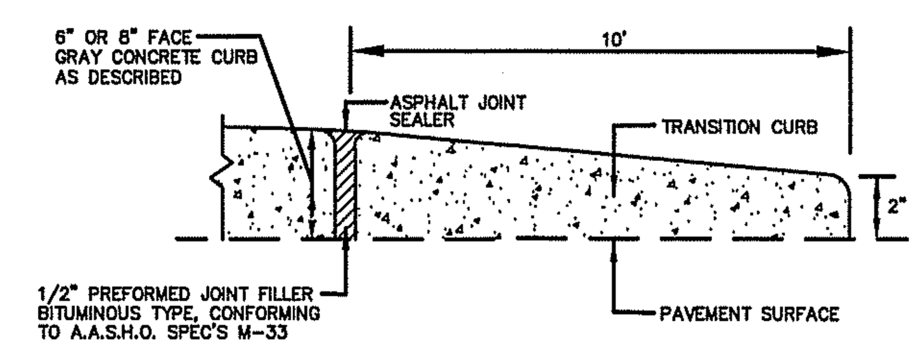


FREESTANDING SIGN

PROPOSED SIGN AREA 80.2 SF ON EACH SIDE INCLUDING ALL PARTS OF SIGN.

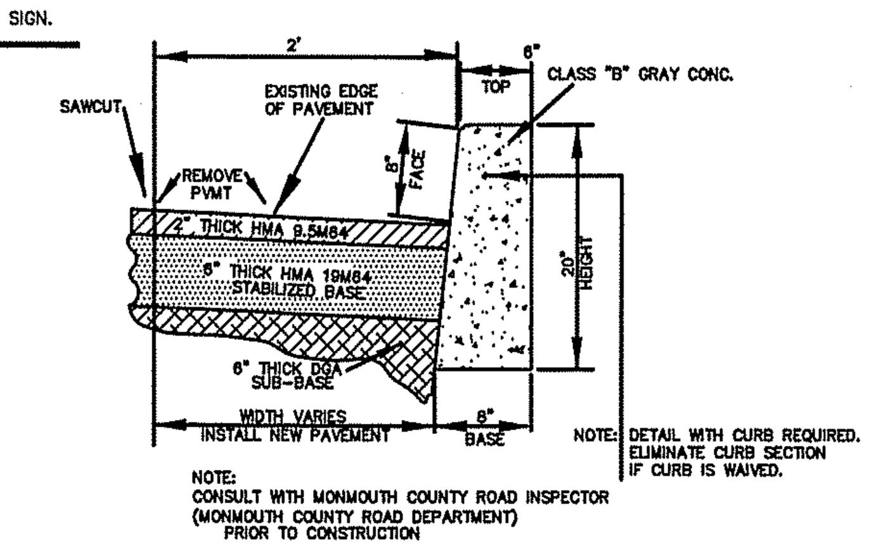
FINISH KEY LEGEND

1. HORIZONTAL SIDING
   COLOR & STYLE T.B.D.
2. PRECAST WATER TABLE
   COLOR COORDINATED WITH FAUX STONE
3. VINYL, WOOD OR ALUMINUM WINDOWS
   COLOR T.B.D.
4. FAUX STONE VENEER
   COLOR & STYLE T.B.D.
5. FASCIA / FRIEZE BOARD / MOULDINGS
   PVC COMPOSITE "WHITE"
6. ENTRANCE DOOR
   COLOR TO COMPLIMENT FACADE COLOR
7. BUILDING MOUNTED SIGNAGE
   NON-INTERNALLY ILLUMINATED SIGN - NOT TO EXCEED 10% OF FRONT ELEVATION AREA (1,392 S.F. x 10% = 139 S.F.)
8. DIMENSIONAL ASPHALT ROOF SHINGLES
   COLOR & STYLE T.B.D.
9. FAUX CEDAR SHAKES
   COLOR & STYLE T.B.D.
10. MONUMENT SIGNAGE
    NON-INTERNALLY ILLUMINATED SIGN W/ LED GOOSE NECK LIGHTING



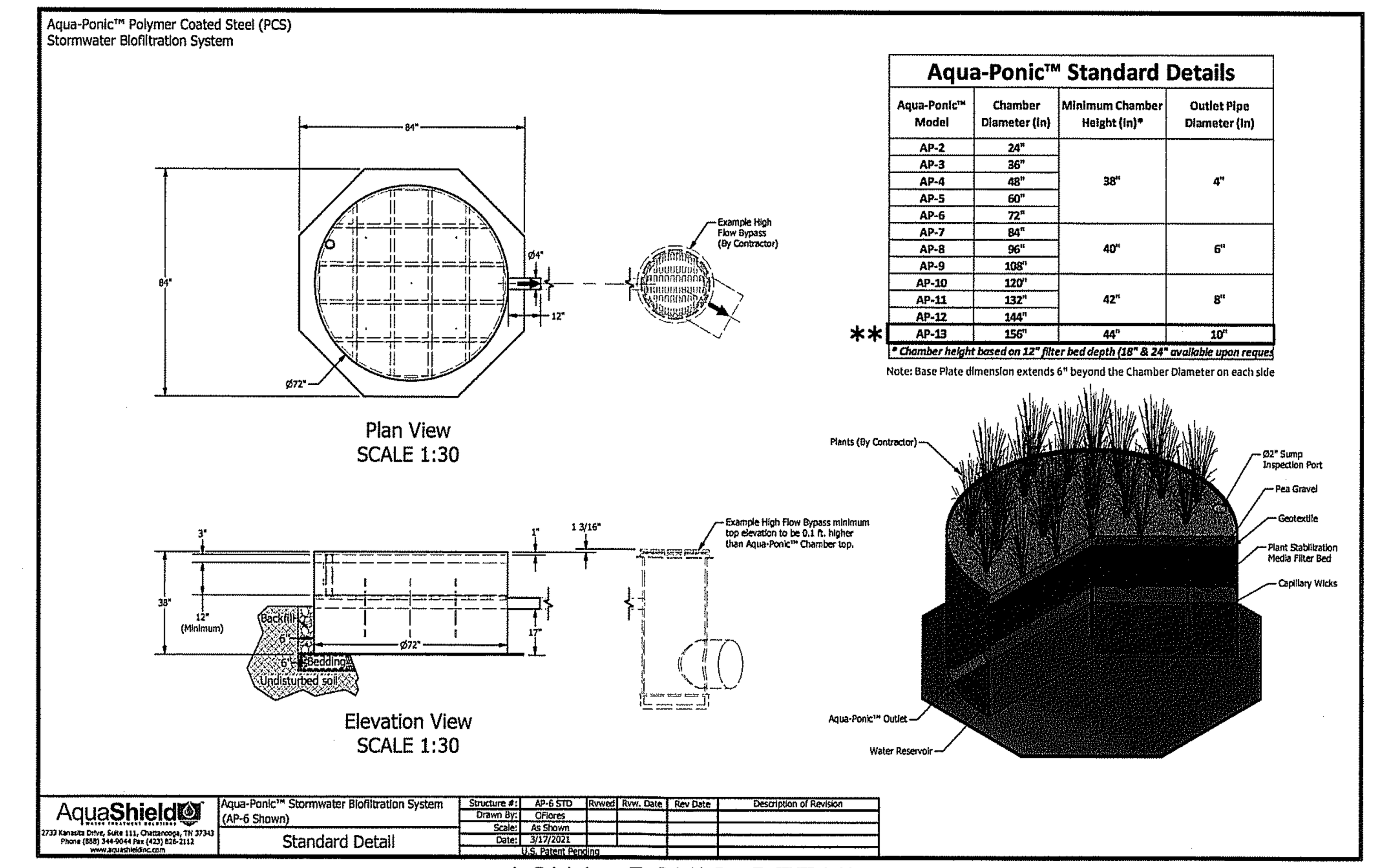
VERTICAL CURB TAPER

N.T.S.
TYPICAL COUNTY CURB
& PAVEMENT SECTION
(WITHOUT EXISTING CURB)



TYPICAL COUNTY CURB AND PAVEMENT SECTION DETAILS

N.T.S.



Aqua-Ponic™ Standard Details			
Aqua-Ponic™ Model	Chamber Diameter (in)	Minimum Chamber Height (in)*	Outlet Pipe Diameter (in)
AP-2	24"	38"	4"
AP-3	36"		
AP-4	48"		
AP-5	60"		
AP-6	72"		
AP-7	84"	40"	6"
AP-8	96"		
AP-9	108"		
AP-10	120"	42"	8"
AP-11	132"		
AP-12	144"		
** AP-13	156"	44"	10"

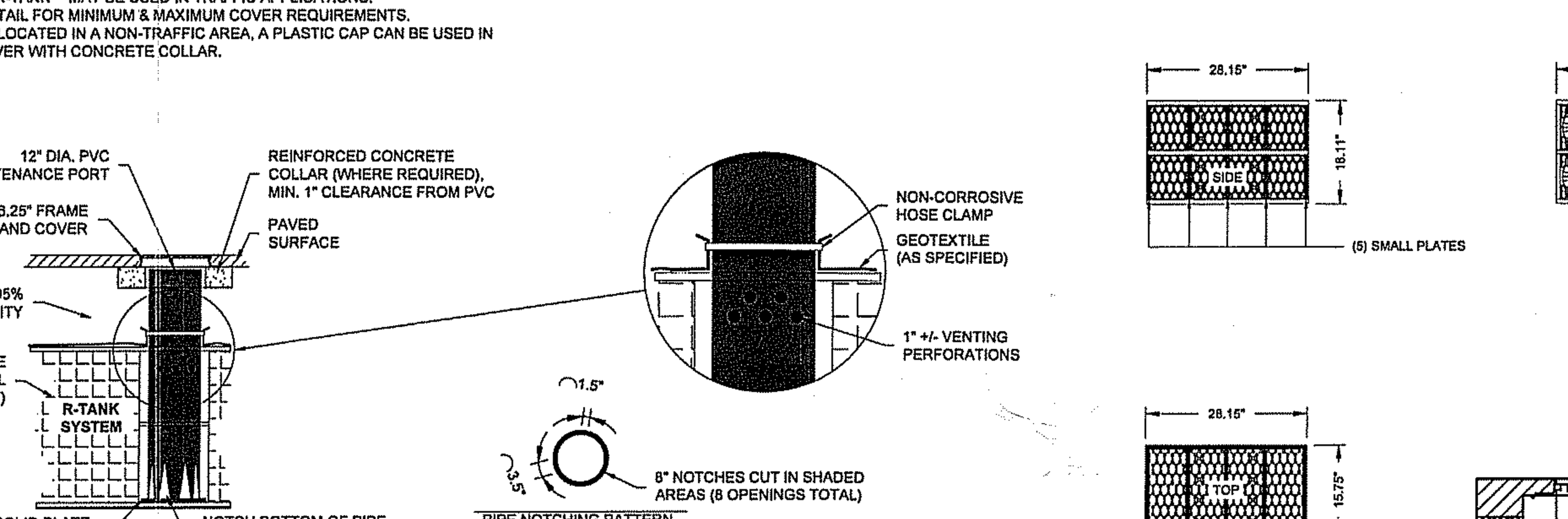
* Chamber height based on 12" filter bed depth (18" & 24" available upon request)

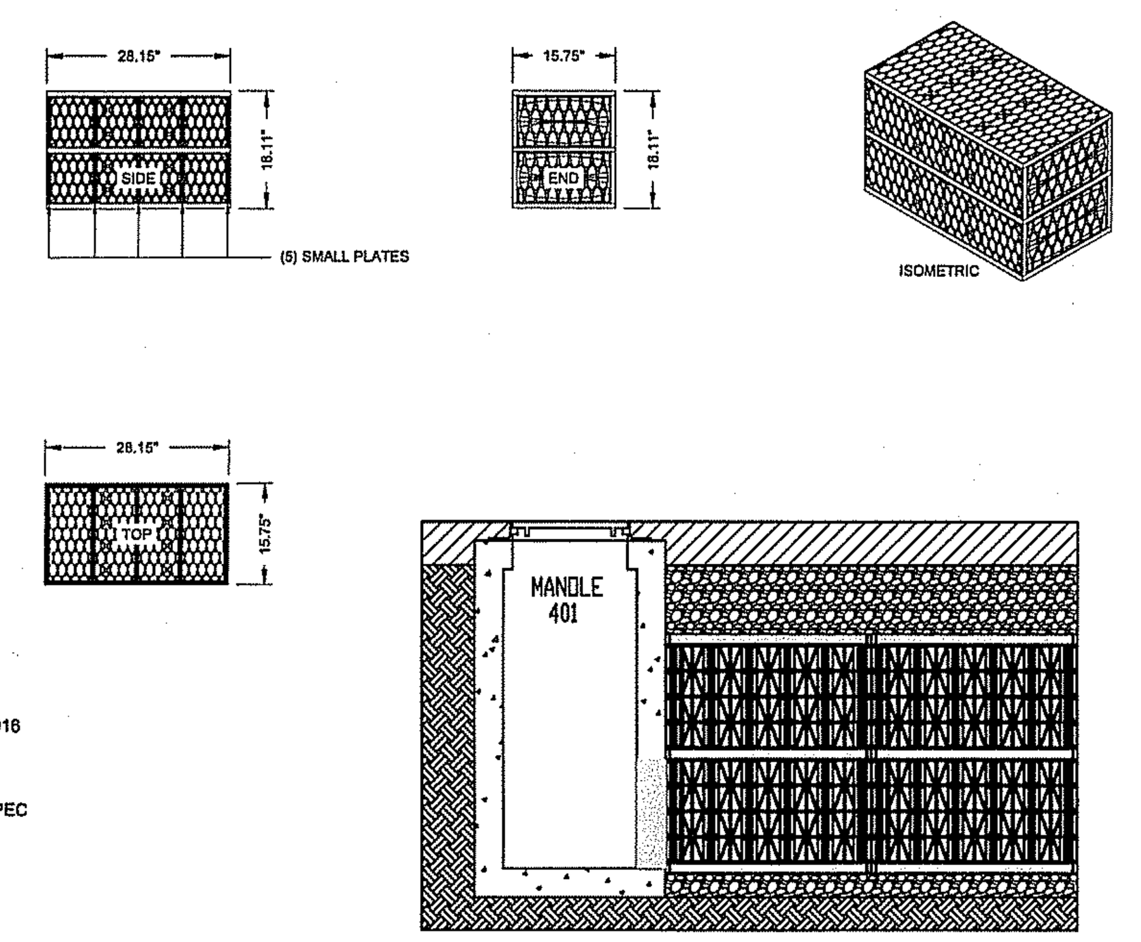
Note: Base Plate dimension extends 6" beyond the Chamber Diameter on each side

AQUA-PONIC DETAIL

N.T.S.

NOTES
1. THIS PORT IS USED TO PUMP WATER INTO THE SYSTEM AND RE-SUSPEND ACCUMULATED SEDIMENT SO THAT IT MAY BE PUMPED OUT.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANK^HD, R-TANK^SD, AND R-TANK^XD MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF MAINTENANCE PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.



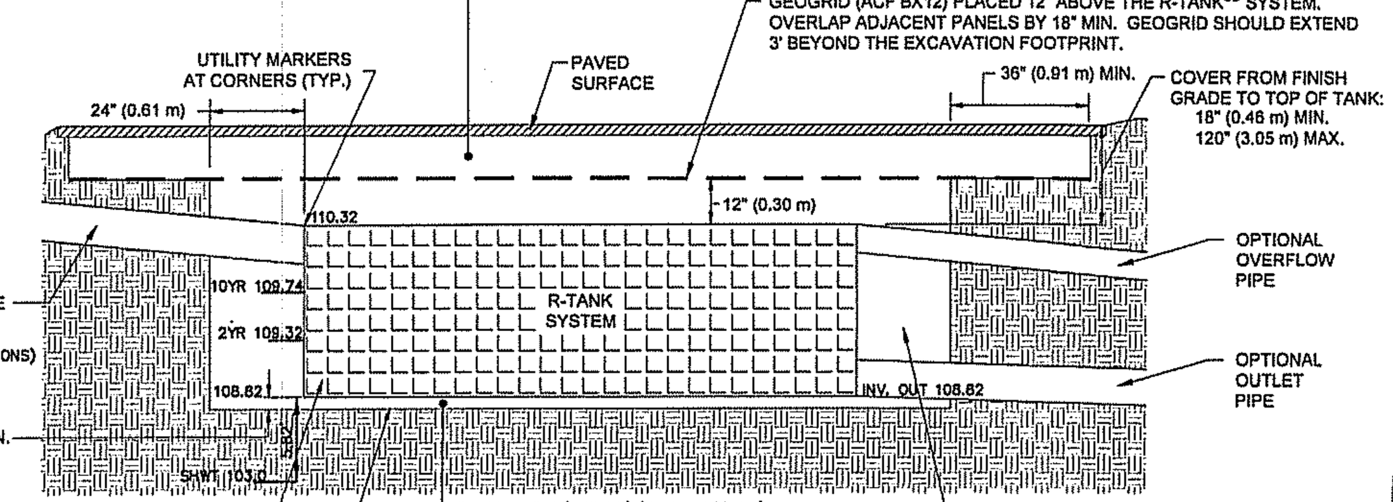


8 OZ. NON-WOVEN GEOTEXTILE BE REMOVED FROM AREA OF CONTACT BETWEEN CONCRETE MANHOLE AND R-TANK^SD MODULES. MECHANICALLY CONNECT FABRIC TO CONCRETE STRUCTURE USING METAL STRIPS, ANCHORS, AND NON-SHRINK GROUT/SEALANT FOR A SOIL TIGHT CONNECTION.

R-TANK SD STRUCTURE ABUTMENT DETAIL

TOTAL COVER: 18" MINIMUM AND 120" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT<10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 10'. CONTACT FERGUSON WATERWORKS IF MORE THAN 10' OR LESS THAN 18" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^SD MODULE SHEET.
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^SD FOOTPRINT.



R-TANK^SD UNITS WRAPPED WITH 8 OZ. NON-WOVEN GEOTEXTILE (OR EQUAL) LOAD RATING: 42.9 PSI (MODULE ONLY)

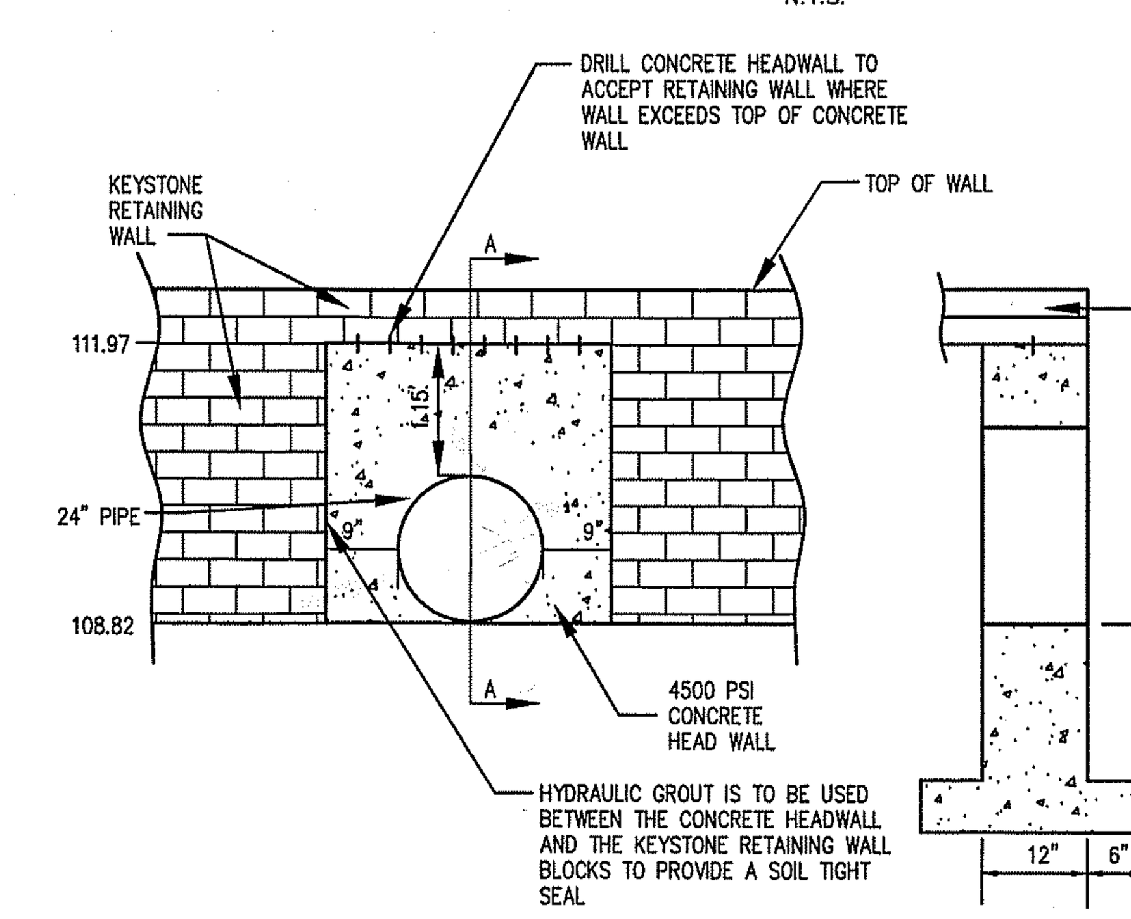
SUBGRADE / EXCAVATION LINE: COMPACT PER SPEC SECTION 3.02 D. A BEARING CAPACITY OF 2,000 PSF MUST BE ACHIEVED PRIOR TO INSTALLING R-TANK^SD (GEOTEXTILE OR IMPERMEABLE LINER OPTIONAL)

BASE: 3" MIN. FREE DRAINING BACKFILL (SPEC SECTION 2.03B) COMPACTED TO 95% STANDARD PROCTOR DENSITY IS REQUIRED TO PROVIDE A LEVEL BASE SURFACE. MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^SD FOOTPRINT. NATIVE SOILS MAY BE ACCEPTABLE IF DETERMINED TO BE STABLE BY OWNER'S ENGINEER.

SIDE BACKFILL: 24" MIN. OF FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). MUST BE FREE FROM LUMPS, DEBRIS AND OTHER SHARP OBJECTS. SPREAD EVENLY TO PREVENT R-TANK^SD MOVEMENT. COMPACT SIDE BACKFILL WITH POWERED MECHANICAL COMPACTOR IN 12" LIFTS (PER SPEC SECTION 3.05 A2).

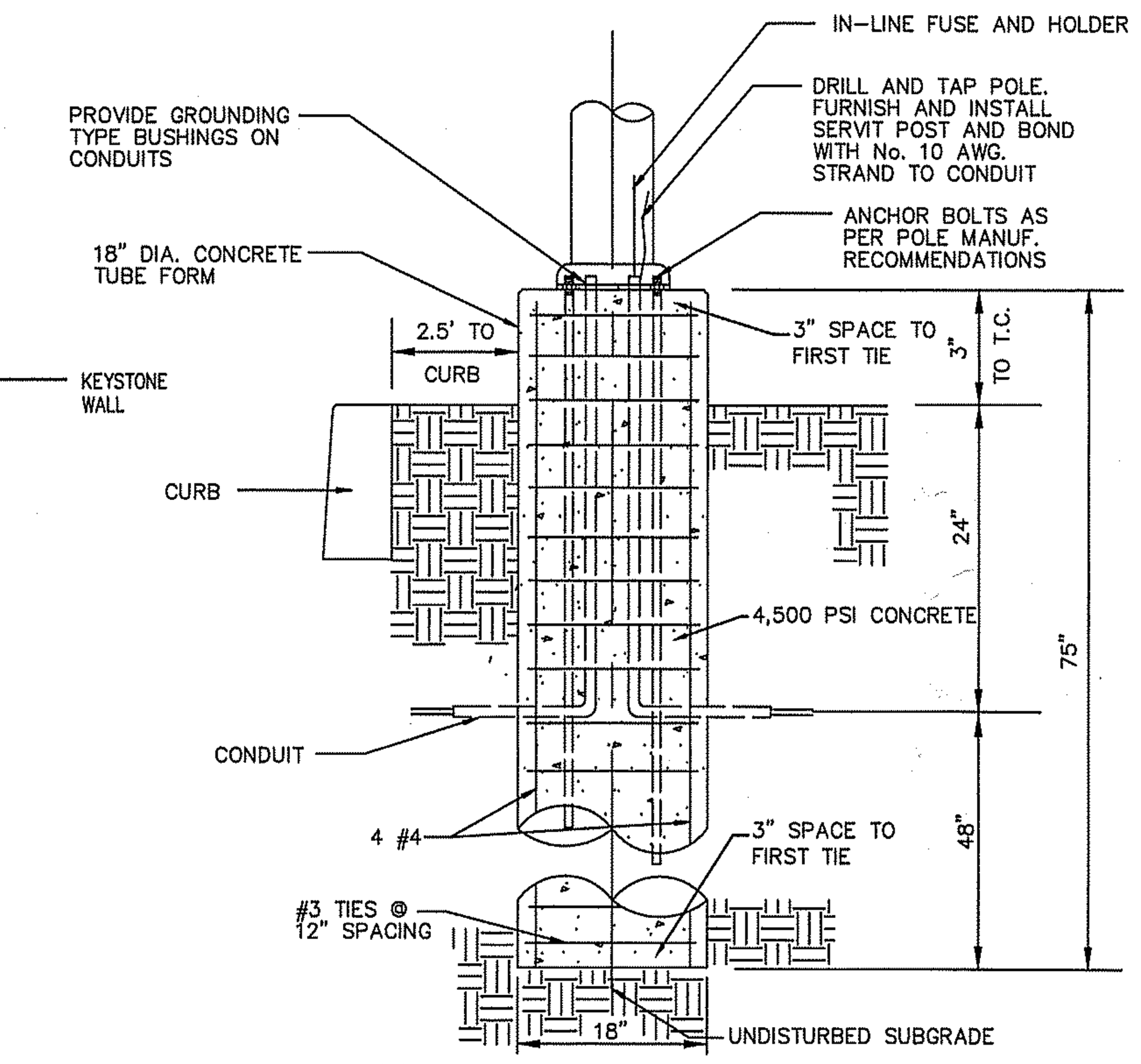
R-TANK SD UNDERGROUND DETENTION DETAIL

N.T.S.



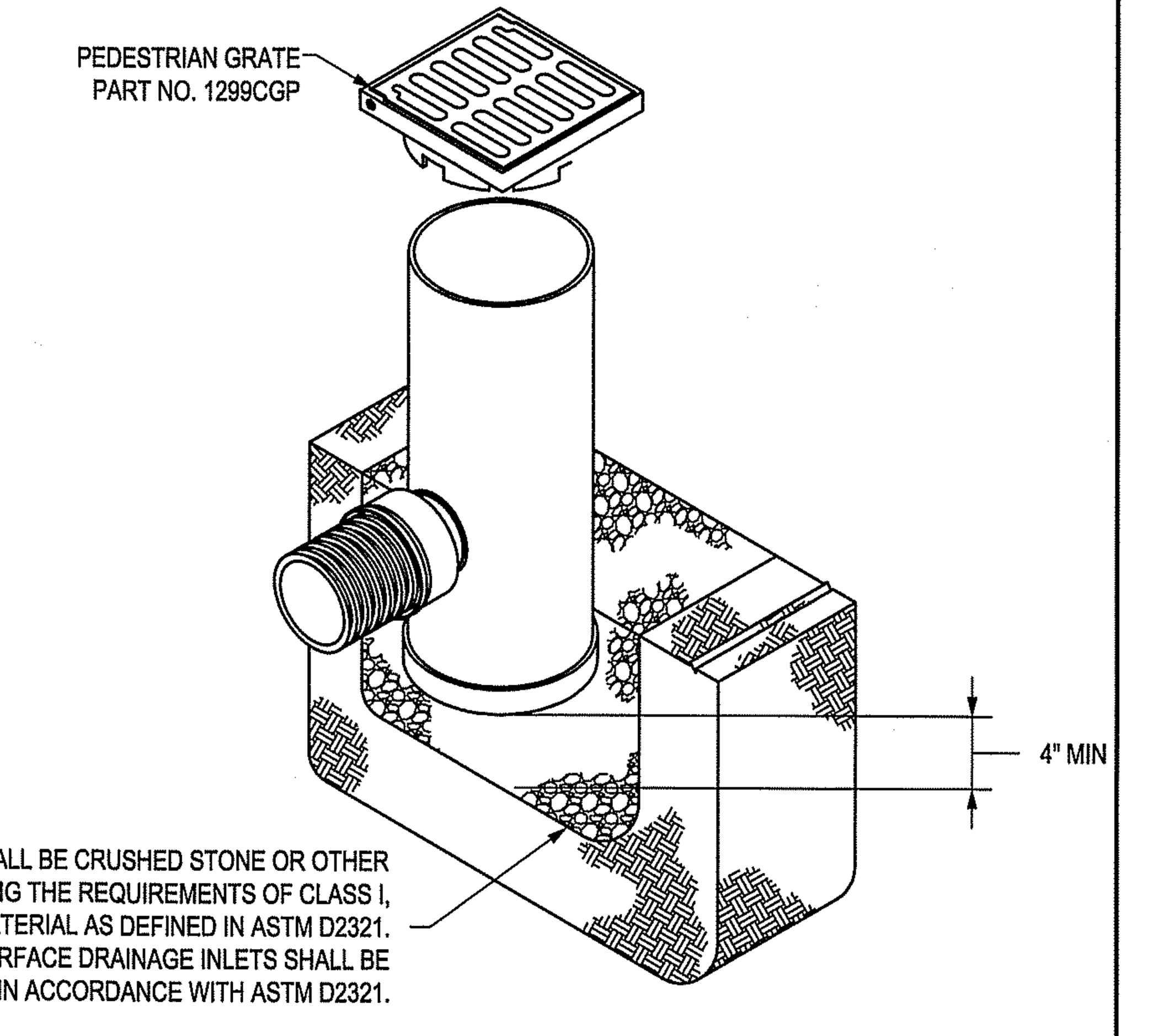
HEADWALL NO. 400 DETAIL

N.T.S.



TYPICAL PARKING LOT LIGHTING FIXTURE FOUNDATION

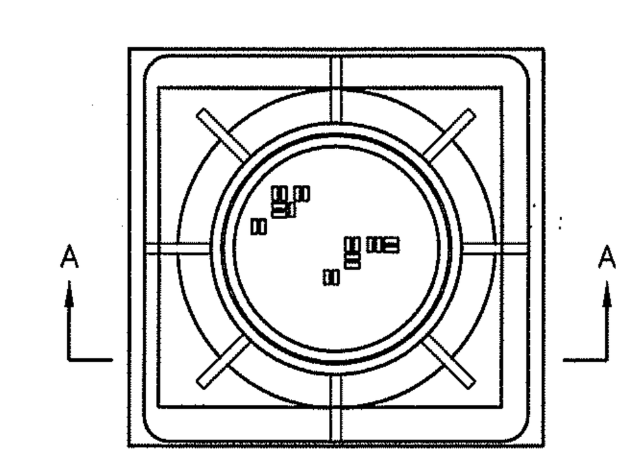
N.T.S.



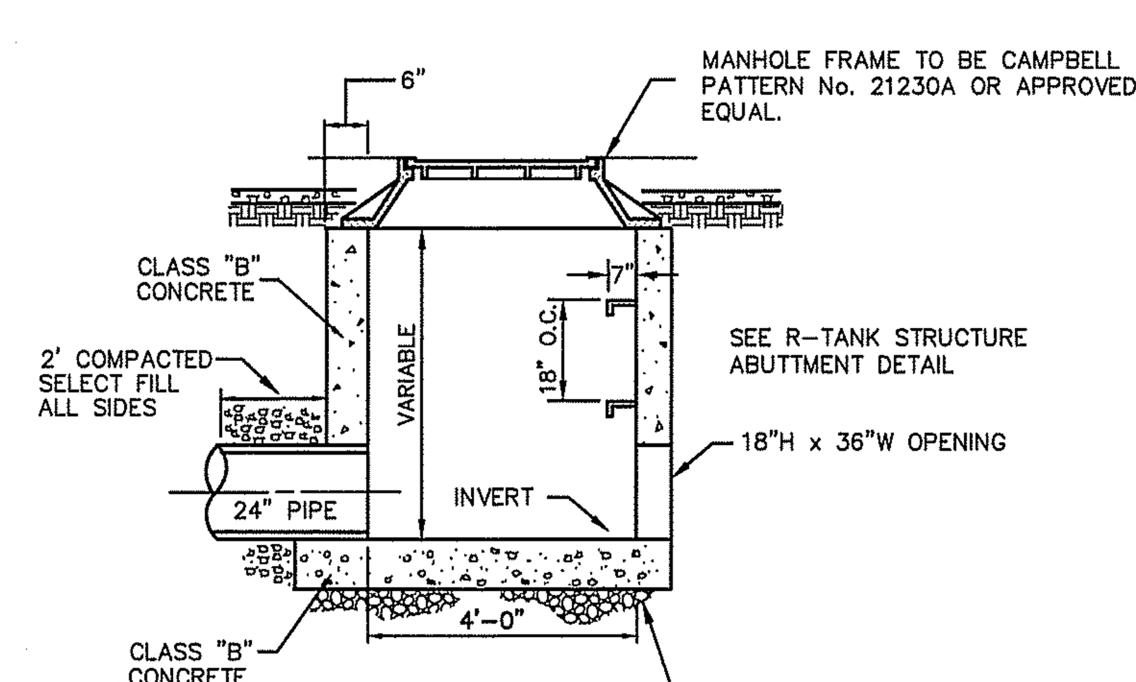
THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

NYLOPLAST 12" DRAIN BASIN DETAIL

N.T.S.



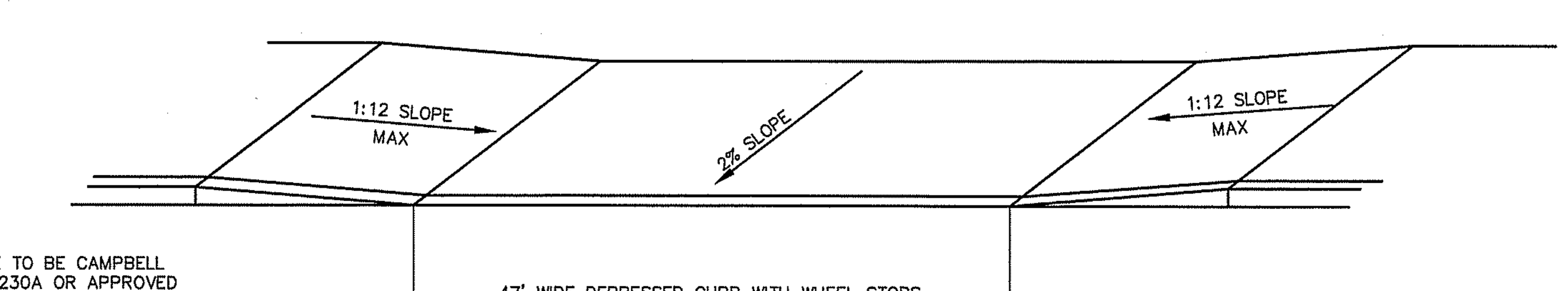
PLAN



SECTION A-A

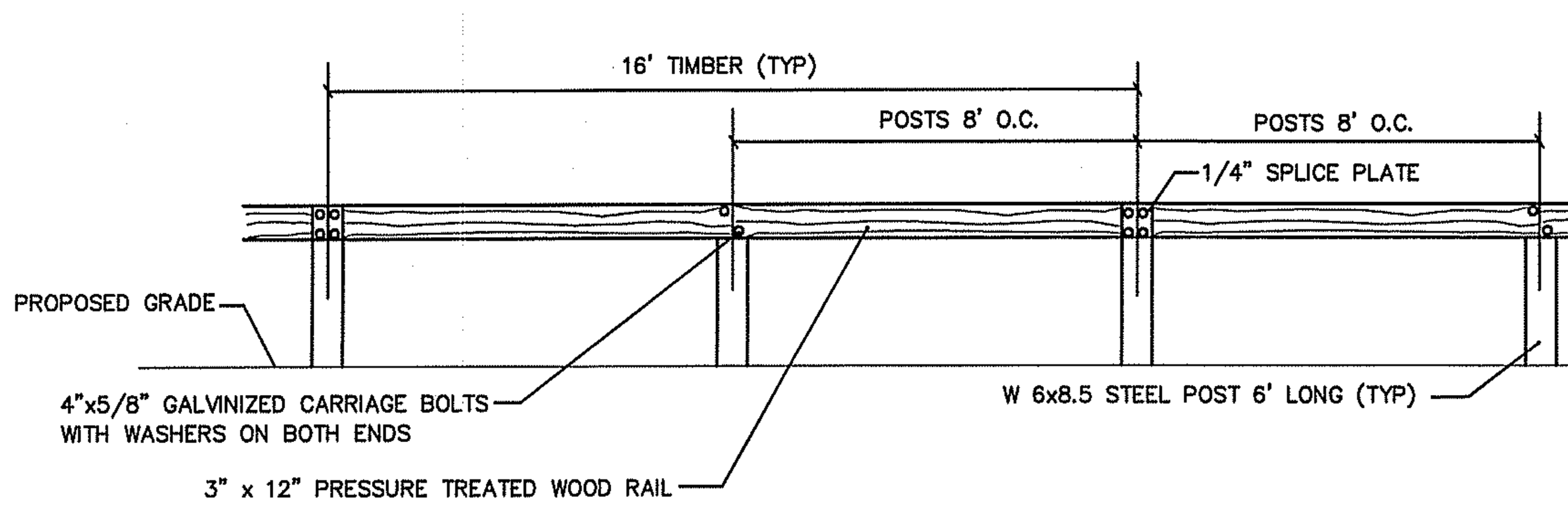
MANHOLE 401 DETAIL

N.T.S.



HANDICAPPED RAMP AT FRONT OF BUILDING DETAIL

N.T.S.



CONTRACTOR TO SUBMITT SHOP DRAWING TO THE TOWNSHIP FOR REVIEW AND APPROVAL OF THE TOWNSHIP ENGINEER.

TIMBER TIE GUIDE RAIL DETAIL

N.T.S.

Approved by the Marlboro Township Planning Board on________ Resolution # ________

Chairman Date

Secretary Date

Engineer Date

DATE	REVISION
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
OCT. 05, 2022	PER BOARD ENGINER'S COMMENTS
SEPT. 26, 2022	RESOLUTION COMPLIANCE REVIEW
JULY 8, 2022	RESOLUTION COMPLIANCE

STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

DETAILS

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	NTS	SGP	SC	19022		9 of 13

TEMPORARY VEGETATIVE COVER

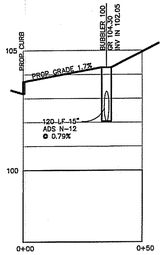
T PREPARATION
Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and mulch anchoring. All grading shall be done in accordance with Standards for Land Grading. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins and waterways. See Standards 11 through 42.
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.)
DBED PREPARATION
Apply ground limestone and fertilizer according to soil test recommendations such as offered by Rutgers Cooperative Extension. Soil sample mailers are available from the local Rutgers Cooperative Extension offices.
Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10–20–10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Apply limestone at the rate established by soil testing. Calcium carbonate is the equivalent and standard for measuring the ability of liming materials to neutralize soil acidity and supple calcium and magnesium to grasses and legumes.
Work lime and fertilizer into the soil 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 soil compacted, the area must be retilled in accordance with the above.
Soils high in sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils.
OING
Select seed from recommendation in Table 7–2.

Table 7–2

SEED SELECTIONS	SEEDING RATE (1) (pounds)		OPTIMUM SEEDING DATE (2) Based on Planting Hardiness Zone (3)			OPTIMUM SEED DEPTH (4) (inches)
	Per Acre	Per 1000 Sq. Ft.	ZONE 5b, 6a	ZONE 6b	ZONE 7a, b	
COOL SEASON GRASSES						
1. Perennial Ryegrass	100	1.0	03/15–06/01 08/01–09/15	03/01–05/15 08/15–10/01	02/15–05/01 08/15–10/15	0.5
2. Spring Oats	86	2.0	03/15–06/01 08/01–09/15	03/01–05/15 08/15–10/01	02/15–05/01 08/15–10/15	1.0
3. Winter Barley	96	2.2	08/01–09/15	08/15–10/01	08/15–10/15	1.0
4. Annual Ryegrass	100	1.0	03/15–06/01 08/01–09/15	03/15–06/01 08/01–09/15	02/15–05/01 08/15–10/15	0.5
5. Winter Cereal Rye	112	2.8	08/01–11/01	08/01–11/15	08/01–12/15	1.0
WARM SEASON GRASSES						
6. Pearl millet	20	0.5	06/01–08/01	05/15–08/15	05/01–09/01	1.0
7. Millet (German or Hungarian)	30	0.7	06/01–08/01	05/15–08/15	05/01–09/01	1.0

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

Conventional Seeding. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil to a depth of ¼ to ½ inch, by raking or dragging. Depth of seed placement may be ¼ 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 fibered mulch may be applied with a hydroseeder following seeding. (Also see Section IV, Mulching). Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be use for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.
After seeding, firming the soil with a corrugated roller will assure food 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.
Cosing
ichling is required on all seeding. Mulch will insure against erosion before grass is established and will promote ster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed mpliance with this mulching requirement.
Straw or Hay. Unrotted small grain straw, hay free from seeds, applied at a rate of 1½ to 2 tons per acre (70 to 90 pounds per 1,000 square feet), except that where a crimper is used instead of a liquid mulch–binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper–blowers must NOT grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.
Application. Spread mulch uniformly by hand or mechanically so that approximately 95% of the soil surface will be covered. For uniform distribution of hand–spread mulch, divide the area into approximately 1,000 square feet sections and distribute 79 to 90 pounds within each section.
Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes and costs.
1. Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all direction. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss–cross and a square pattern. Secure twine around each peg with two or more turns.
2. Mulch Nettings. Staple paper, jute, cotton or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
3. Crimper (mulch anchoring tool). A tractor–drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long fiber mulch to 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 slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.
4. Liquid Mulch–Binders May be used to anchor hay or straw mulch.
   a. Applications should be heavier at edges where wind may catch the mulch, in valleys and at crests of banks. The remainder of the area should be uniform in appearance.
   b. Use of one of the following:
      (1) Organic and Vegetable Based Binders–Naturally occurring, powder based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.
      (2) Synthetic Binders–High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates recommended by the manufacturer and remain tacky until germination of grass.
      Note: All name given above are registered trade names. This does not constitute a commendation of these products to the exclusion of other products
Wood–Fiber or paper–fiber mulch. Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the tank with the seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.
Pelletized Mulch Compressed and extruded paper and/or wood fiber product, which may contain co–polymers, tackifiers, fertilizer and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturers recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60–75 lbs/1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed–seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable.
Applying the full 0–2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.



BUBBLER SWALE PROFILE
HORZ. SCALE 1"=30'
VERT. SCALE 1"=3'

PERMANENT VEGETATIVE COVER

1. Site Preparation
   A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and mulch anchoring. All grading should be done in accordance with Standard for Land Grading.
   B. Immediately prior to seeding and topsoil application, the subsoil shall be evaluated for compaction in accordance with the Standard for Land Grading.
   C. Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 5 inches (unsettled) is required on all sites. Topsoil shall be amended with organic matter, as needed, in accordance with Standard for Topsoiling.
   D. Install needed soil erosion control practices or facilities such as diversions, grade–stabilization structures, channel stabilization measures, sediment basins and waterways.
2. Seedbed Preparation
   A. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, according to soil test recommendations such as offered by Rutgers Cooperative Extension. Soil sample mailers are available from the local Rutgers Cooperative Extension offices (http://njaes.rutgers.edu/county/). Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10–10–10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches. If fertilizer is not incorporated, apply one–half the rate described above during the seedbed preparation and repeat another one–half rate application of the same fertilizer within 3 to 5 weeks after seeding.
   B. Work lime and fertilizer into the topsoil as nearly as practical to a depth of 4 inches 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.
   C. High acid producing soil. Soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seedbed preparation. See Standard for Management of High Acid–Producing Soils for specific requirements.
3. Seeding
   A. Select a mixture from Table 4–3 or use a mixture recommended by Rutgers Cooperative Extension or Natural Resources Conservation Service which is approved by the Soil Conservation District. Seed germination shall have been tested within 12 months of the planting date. No seed shall be accepted with a germination test date more than 12 months old unless retestated.
      1. Seeding rates specified are required when a report of compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in rates may be used when permanent vegetation is established prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage with specified seed mixture for the seeded area and mowed once.
      2. Warm–season mixtures are grasses and legumes which maximize growth at high temperatures, generally 85° F and above. See Table 4–3 mixtures 1 to 7. Planting rates for warm–season grasses shall be the amount of Pure Live Seed (PLS) as determined by germination testing results.
      3. Cool–season mixtures are grasses and legumes which maximize growth at temperatures below 85°F. Many grasses become active at 65° F. See Table 4–3 mixtures 8–20. Adjustment of planting rates to compensate for the amount of PLS is not required for cool season grasses.

Table 4–3

Area	Seed Mixture	Planting Rate		Planting Date A–Acceptable Planting Period O–Optimal Planting Period Zone 6b			Maintenance Level	Remarks
		Lbs/acre	Lbs./1000 sq. ft	3/1–4/30	5/1–8/14	8/15–11/15		
Cool Season Mixtures	Hard Fescue	120	2.7					
	Creeping Fescue	30	0.7	O	A	O	c–d	Low maintenance fine fescue lawn mix
Residential	Perennial Ryegrass	40	.25					
Basin	Deer Tongue	50	1.1					
	Kentucky Bluegrass	150	3.4	O	A	O	c–d	Filter strip use for nutrient uptake.
	Turf–type Tall fescue							

Footnotes:
1. See Appendix B for descriptions of turf grass mixtures and cultivars. The actual amount of warm season grass mixture used in Table 3 (seed mix 1–7) shall be adjusted to reflect the amount of Pure Live Seed (PLS) as determined by germination testing results. No adjustment is required for cool season grasses (seed mixtures 8–20).
2. Seeding mixtures and/or rates not listed above may be used if recommended by the local Soil Conservation District, Natural Resources Conservation Service. Recommendations of Rutgers Cooperative Extension may be used if approved by the Soil Conservation District. Legumes (fatpea, crownvetch, trefoil, lespedeza) should be mixed with proper innoculant prior to planting.
3. Seeding rates specified are required when a report of compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in rates may be used when permanent vegetation is established prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage of the seeded area and mowed once. Grass seed mixture checked by the State Seed Analyst, New Jersey Department of Agriculture, Trenton, New Jersey, will assure purchaser that the purchaser that the mixture obtained is the mixture ordered, pursuant to N.J. State Seed Law, N.J.S.A. 4:8–17.13 et. seq.

   O = Optimal Planting Period A = Acceptable Planting Period

4. Maintenance Level:
   a. Intensive Mowing (2–4 days), fertilization, lime, pest control and irrigation. (Examples – High maintenance Lawns, Commercial and Recreation Areas, Public Facilities).
   b. Frequent Mowing (4–7 days), Occasional Fertilization, lime and weed control. (Examples – Home Lawns, Commercial Sites, School Sites).
   c. Periodic Mowing (7–14 days), Occasional fertilization and lime. (Examples – Home Lawns, Parks).
   d. Infrequent or No Mowing, fertilization and lime the first year of establishment. (Examples – Roadsides, Recreation Areas, Public Open Space).

B. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth of ¼ to ½ inch, by raking or dragging. Depth of seed placement may be ¼ inch deeper on coarse–textured soil.
C. After seeding, firming the soil with a corrugated roller will assure good seed–to–soil contact, restore capillarity and improve seedling emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.
D. Hydroseeding is a broadcast seeding method usually involving a truck or trailer–mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. Short–fibered mulch may be applied with a hydroseeder following seeding. (Also see Section 4–Mulching below). Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. When poor seed to soil contact occurs, there is a reduced seed germination and growth.

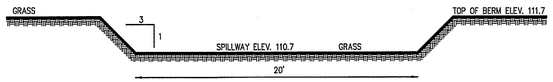
4. Mulching
   Mulching is required on all seeding. Mulch will protect against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.
   A. Straw or Hay. Unrotted small grain straw, hay free of seeds, to be applied at the rate of 1½ to 2 tons per acre (70 to 90 pounds per 1,000 square feet) except that where a crimper is used instead of a liquid mulch–binder (tackifying or adhesive agent), the rate of application is 3 tons per acre/ Mulch chopper–blowers must NOT grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.
      Application – Spread mulch uniformly by hand or mechanically so that at least 85% of the soil surface is covered. For uniform distribution of hand–spread mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section.
      Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the areas, steepness of slopes and costs.
      1. Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss–cross and a square pattern. Secure twine around each peg with two or more turns.
      2. Mulch Nettings – Staple paper, jute, cotton or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
      3. Crimper (mulch anchoring coulter tool) – A tractor–drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.
      4. Liquid Mulch–Binders – May be used to anchor salt hay, hay or straw mulch.
         a. Applications should be heavier at edges where wind may catch the mulch in valleys and at crests of banks. The remainder of the area should be uniform in appearance.
         b. Use one of the following:
            (1) Organic and Vegetable Based Binders – Naturally occurring, powder–based, hydrophilic materials when mixed with water, formulates a gel and when applied to mulch binder under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turf grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.
            (2) Synthetic Binders – High polymer synthetic emulsion, miscible with water when diluted and, following application of mulch, drying and curing, shall no longer be soluble or dispersible in water. Binder shall be applied at rates recommended by manufacturer and remain tacky until germination of grass.
            Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.
   B. Wood–Fiber or paper–fiber mulch – Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeded. MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.
   C. Pelletized Mulch – Compressed and extruded paper and/or wood fiber product, which may contain co–polymers, tackifyers fertilizers and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturers recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60–75 lbs/1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed–seed free mulch is desires. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seedbed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.
5. Irrigation (where feasible)
   If soil moisture is deficient, supple new seeding with adequate water (a minimum of ¼ 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.
6. Topdressing
   Since soil organic matter content and slow release nitrogen fertilizer (water insoluble) are prescribed in Section 2A–Seedbed Preparation in this Standard, no follow–up of topdressing is mandatory. An exception may be made where gross nitrogen deficiency exists in the soil to the extent that turf failure may develope. In that instance, topdress with 10–10–10 or equivalent at 300 pounds per acre or 7 pounds per 1,000 square feet every 3 to 5 weeks until the gross nitrogen deficiency in the turf is ameliorated.
7. Establishing Permanent Vegetative Stabilization
   The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Table 4–3 are required when a REPORT OF COMPLIANCE is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in application rates may be used when permanent vegetation is established prior to requesting a REPORT OF COMPLIANCE from the district. These rates apply to all methods of seeding. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE.. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. The Freehold Soil Conservation District shall be notified forty–eight (48) hours in advance of any soil disturbing activity.
2. All Soil Erosion and Sediment Control practices are to be installed prior to soil disturbance, or in their proper sequence, and maintained until permanent protection is established.
3. Any changes to the Certified Soil Erosion and Sediment Control Plans will require the submission of revised Soil Erosion and Sediment Control Plans to the District for re–certification. The revised plans must meet all current State Soil Erosion and Sediment Control Standards.
4. N.J.S.A 4:24–39 et. Seq. requires that no Certificates of Occupancy be issued before the District determines that a project or portion thereof is in full compliance with the Certified Plan and Standards for Soil Erosion and Sediment Control in New Jersey and a Report of Compliance has been issued. Upon written request from the applicant, the District may issue a Report of Compliance with conditions on a lot–by–lot or section–by–section basis, provided that the project or portion thereof is in satisfactory compliance with the sequence of development and temporary measures for soil erosion and sediment control have been implemented, including provisions for stabilization and site work.
5. Any disturbed areas that will be left exposed more than sixty (60) days, and not subject to construction traffic, will immediately receive a temporary seeding. If the season prevents the establishment of temporary cover, the disturbed areas will be mulched with straw, or equivalent material, at a rate of 2 to 2 ½ tons per acre, according to the Standard for Stabilization with Mulch Only.
6. Immediately following initial disturbance or rough grading, all critical areas subject to erosion (i.e. soil stockpiles, steep slopes and roadway embankments) will receive temporary seeding in combination with straw mulch or a suitable equivalent, and a mulch anchor, in accordance with State Standards.
7. A sub–base course will be applied immediately following rough grading and installation of improvements to stabilize streets, roads, driveways, and parking areas. In areas where no utilities are present, the sub–base shall be installed within fifteen (15) days of the preliminary grading.
8. The Standard for Stabilized Construction Access requires the installation of a pad of clean crushed stone at points where traffic will be accessing the construction site. After interior roadways are paved, individual lots require a stabilized construction access consisting of one inch to two inch (1" – 2") stone for a minimum length of ten feet (10') equal to the lot entrance width. All other access points shall be blocked off.
9. All soil washed, dropped, spilled, or tracked outside the limit of disturbance or onto public right–of–ways will beremoved immediately.
10. Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10) days after final grading.
11. At the time that 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 it will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, non–vegetative means of permanent ground stabilization will have to be employed.
12. In accordance with the Standard for Management of High Acid Producing Soils, any soil having a pH of 4 or less or containing iron sulfides shall be ultimately placed or buried with limestone applied at the rate of 10 tons/acre, (or 450 lbs/1,000 sq ft of surface area) and covered with a minimum of 12" of settled soil with a pH of 5 or more, or 24" where trees or shrubs are to be planted.
13. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational.
14. Unfiltered dewatering is not permitted. Necessary precautions must be taken during all dewatering operations to minimize sediment transfer. Any dewatering methods used must be in accordance with the Standard for Dewatering.
15. Should the control of dust at the site be necessary, the site will be sprinkled until the surface is wet, temporary vegetative cover shall be established or mulch shall be applied as required by the Standard for Dust Control.
16. Stockpile and staging locations established in the field shall be placed within the limit of disturbance according to the certified plan. Staging and stockpiles not located within the limit of disturbance will require certification of a revised Soil Erosion and Sediment Control Plan. Certification of a new Soil Erosion and Sediment Control Plan may be required for these activities if an area greater than 5,000 square feet is disturbed.
17. All soil stockpiles are to be temporarily stabilized in accordance with Soil Erosion and Sediment Control note #6.
18. The property owner shall be responsible for any erosion or sedimentation that may occur below stormwater outfalls or offsite as a result of construction of the project.

CONSTRUCTION SCHEDULE

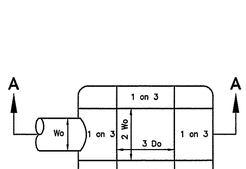
1. INSTALLATION OF SILT FENCE. (2 DAYS)
2. INSTALL STABLE CONSTRUCTION ENTRANCE. (1 DAY)
3. DEMOLISH EXISTING STRUCTURES (1 WEEK)
4. INSTALL TREE PROTECTION FENCE (1 DAY)
5. CLEAR SITE AND ROUGH GRADE. (2 WEEKS)
6. CONSTRUCT STORMWATER DETENTION SYSTEM (2 WEEKS)
7. CONSTRUCT STORM SEWER PIPE NETWORK (1 WEEK)
8. INSTALLATION OF SOIL EROSION AND SEDIMENT CONTROL DEVICES. (1 DAY)
9. INSTALLATION OF WATER, SANITARY SEWER SERVICES AND TEMPORARY STABILIZATION OF DISTURBED AREAS. (3 DAYS)
10. INSTALLATION OF SUBBASE AND TEMPORARY STABILIZATION OF DISTURBED AREAS. (1 WEEK)
11. CONSTRUCTION OF PROPOSED BUILDIING. ON GOING
12. PERMANENT STABILIZATION OF SITE AND INSTALLATION OF FINAL BITUMINOUS PAVEMENT. (1 WEEK)
13. CLEANING OF SEDIMENT FROM BASIN. (1 DAY)
14. REMOVAL OF SOIL EROSION AND SEDIMENT CONTROL DEVICES AND TREE PROTECTION FENCEING. (1 DAY)



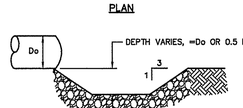
SPILLWAY DETAIL
N.T.S.

ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL NOTES FOR PROJECTS WITH BASINS

1. Basin must be properly constructed and permanently stabilized, and conduit outlet protection installed, prior to the drainage systems becoming operational.
2. The Standards for Soil Erosion and Sediment Control have specific requirements for topsoiling, the installation of sod, temporary and/or permanent vegetative cover and land grading. The text found on pages 6–2 (sec. 2D), 7–1 (sec. 1C), 8–2 (sec. 3D) and 19–2 (last paragraph) serve to help minimize soil compaction and reduce maintenance.
3. Ownership and responsibility for the operation and maintenance of the detention structure must be determined during design and shown on the plans and on the completed "Hydraulic and Hydrologic Data Base Summary Form". To be effective over a long period of time, the structure must be properly maintained.



PLAN



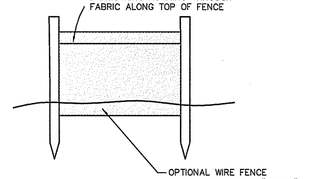
SECTION A–A

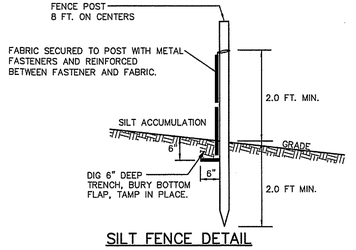
PREFORMED SCOUR HOLE

NOT TO SCALE

STRUCTURE No.	Wo	Do	DEPTH	LENGTH	WIDTH	OVERALL LENGTH	OVERALL WIDTH	D_{50}	t *
201	15"	15"	1.0'	3.75'	2.5'	9.75'	8.5'	3"	6"
301	15"	15"	1.0'	3.75'	2.5'	9.75'	8.5'	3"	6"

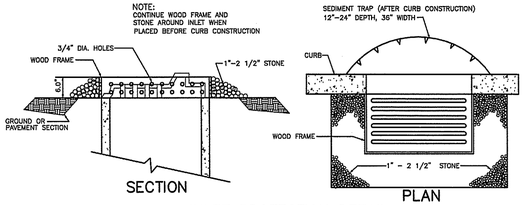
* WITH FILTER FABRIC



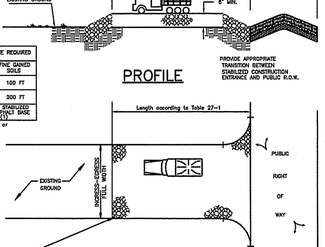


SILT FENCE DETAIL
N.T.S.

STOCKPILE AREA DETAIL
N.T.S.



INLET PROTECTION DETAIL
N.T.S.



STABILIZED CONSTRUCTION ACCESS
N.T.S.

Maintenance
The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto roadways. This may require periods top dressing with additional stone or additional length as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto roadways (public or private) or other impervious surfaces must be removed immediately.

Approved by the Marlboro Township Planning Board
on_____ Resolution # _____

Chairman Date

Secretary Date

Engineer Date

DATE	REVISION
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS
OCT. 25, 2022	PER MARLBORO TWP WATER COMMENTS
SEPT. 26, 2022	RESOLUTION COMPLIANCE REVIEW
JULY 8, 2022	RESOLUTION COMPLIANCE
FEB. 17, 2022	PER FREEHOLD SCD COMMENTS

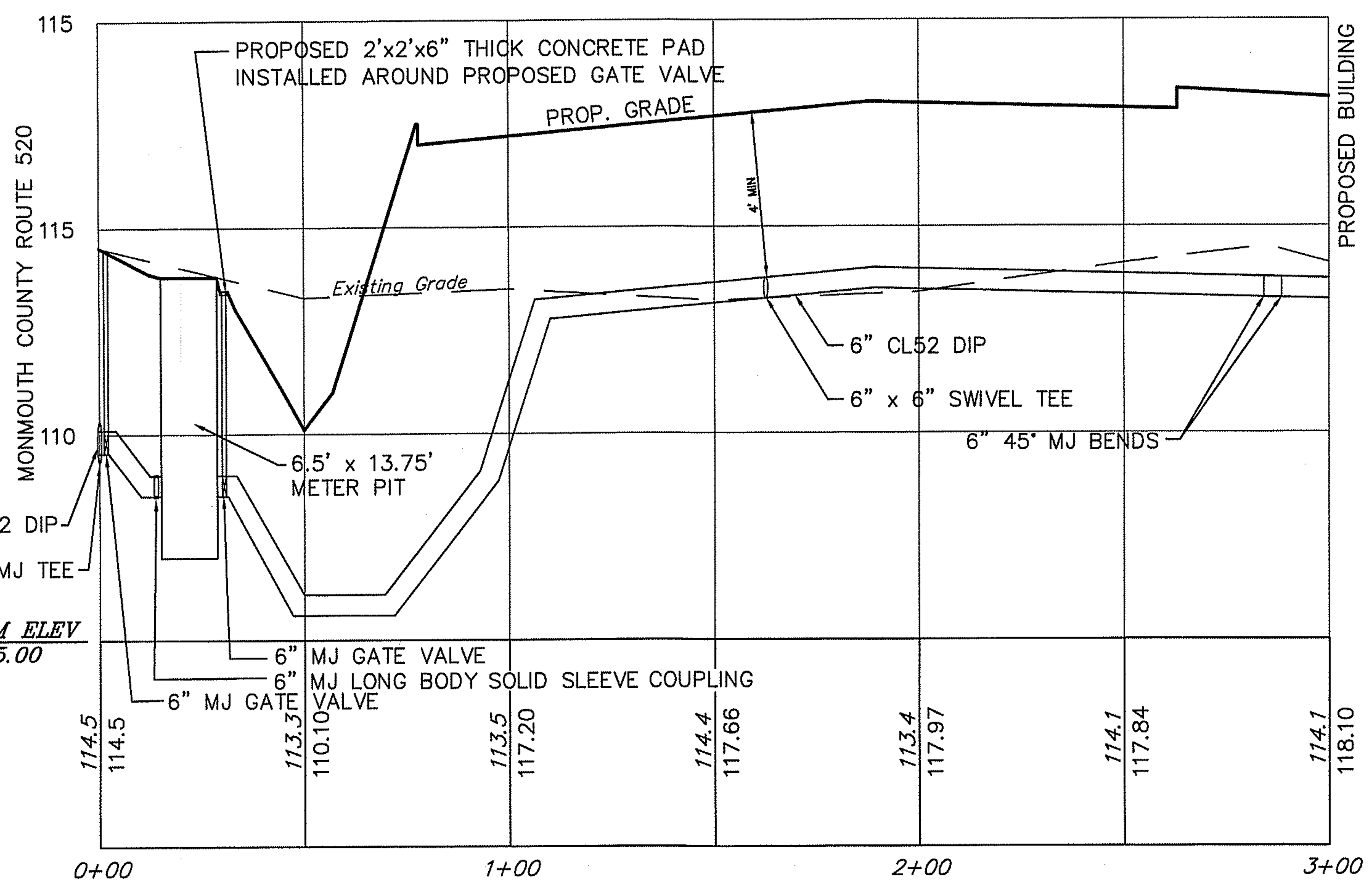
STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34397
PROFESSIONAL PLANNER N.J. LIC. NO. 4489
CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732–818–9980 Fax: 732–818–9981

SOIL EROSION DETAILS

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 7, 2021	NTS	SGP	SC	19022		10 of 13

Contractor shall conduct a test pit at the proposed 12" x 6" tee connection to confirm the existing water main depth which is required for ordering of the meter vault.



WATER SERVICE PROFILE

GRAPHIC SCALE

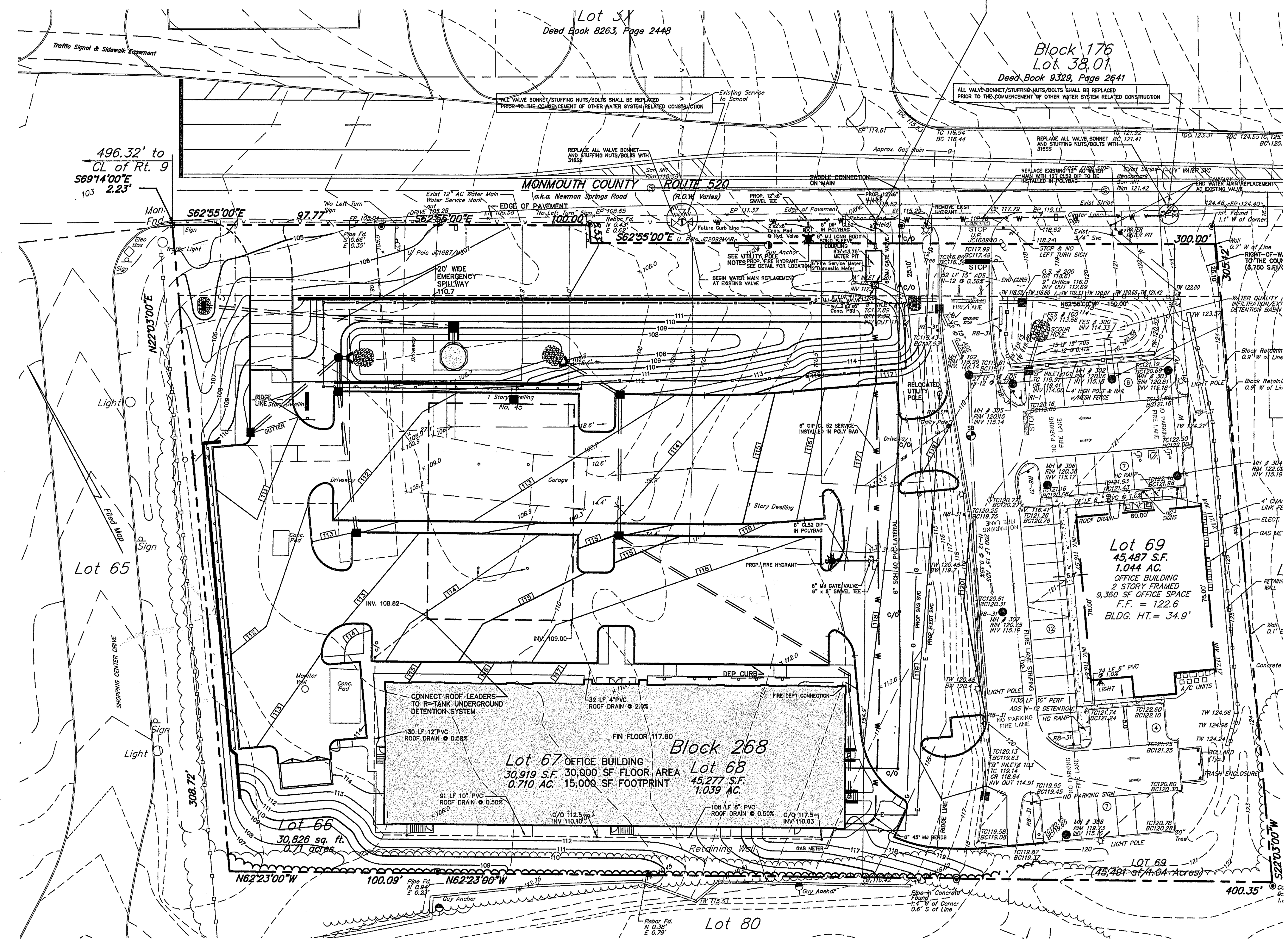
30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.
(HORIZONTAL)

GRAPHIC SCALE

3 0 1.5 3 6 12

(IN FEET)
1 inch = 3 ft.
(VERTICAL)



NOTES:

1. CONTRACTOR TO DISCONNECT EXISTING WATER SERVICES FOR LOTS 66, 67, & 68 IN ACCORDANCE WITH THE MARLBORO TOWNSHIP PROCEDURES FOR PERMANENT SERVICE LINE DISCONNECTION.

2. ALL FIRE AND DOMESTIC SERVICE LINES SHALL HAVE A RPZ BACKFLOW PREVENTER INSTALLED INSIDE THE BUILDING.

3. ALL WATER MAINS SHALL BE INSTALLED WITH A "POLY-BAG"

4. ALL EXISTING VALVES SHALL HAVE THEIR BONNET AND STUFFING BOLTS/NUTS REPLACED WITH 316SS BOLTS/NUTS. VALVES SHALL THEN BE COVERED IN POLYBAG AND BAKFILLED WITH CLEAN SAND TO TOP OF VALVE AND 3/4" CLEAN STONE AFTER.

5. CONTRACTOR SHALL SUPPLY SUBMITTALS TO THE MTWUD FOR REVIEW AND APPROVAL PRIOR TO ORDERING ANY MATERIALS.

6. CONTRACTOR SHALL PROVIDE THE MTWUD WITH 48 HOUR NOTICE FOR INSPECTION TO SCHEDULE A PARTS INSPECTION OF ALL MATERIAL PRIOR TO STARTING ANY CONSTRUCTION.

7. CONTRACTOR SHALL PROVIDE THE MTWUD WITH 48 HOUR NOTICE FOR INSPECTION PRIOR TO STARTING ANY CONSTRUCTION WORK, THE MTWUD IS REQUIRED TO BE ONSITE AT ALL TIMES DURING CONSTRUCTION.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.
(HORIZONTAL)

DATE	REVISION
FEB 17, 2023	PER MARLBORO TWP WATER COMMENTS
FEB 9, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 27, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS

STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489

CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

Date:	Scale:	Drawn By:	Checked By:
OCT. 25, 2022	HORZ. 1"=30' VERT. 1"=3'	SGP	S.C.C.

WATER UTILITY PLAN

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

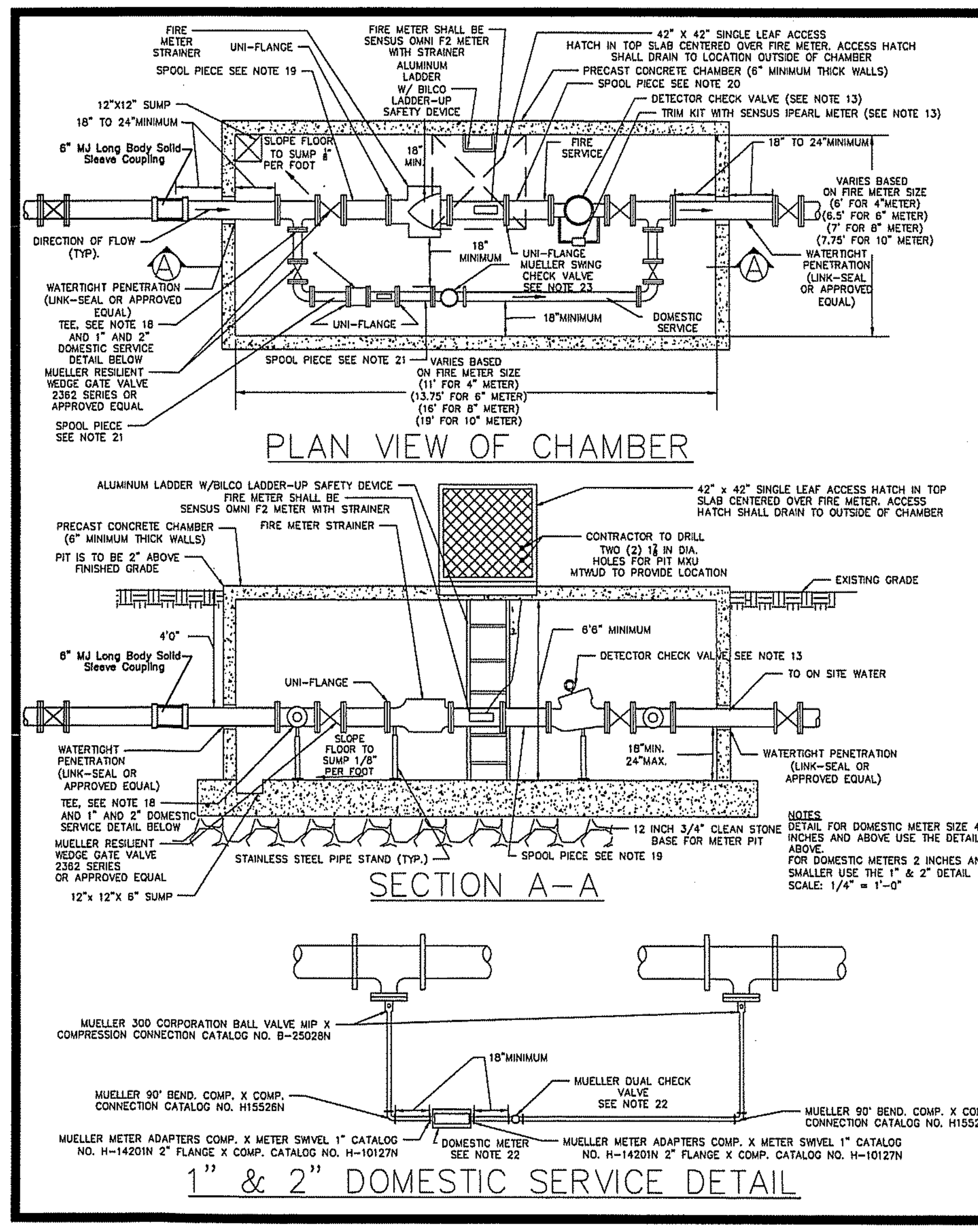
File No.:	Field Book:	Sheet No.:
19022		11 of 13

MARLBORO TOWNSHIP DEPARTMENT OF PUBLIC WORKS
WATER UTILITY DIVISION
SUPPLY OF WATER DISTRIBUTION PRODUCTS FOR IN-HOUSE REPAIRS AND REPLACEMENT WORK

STANDARD WATER DISTRIBUTION PRODUCTS

NO.	ITEM	DESCRIPTION	MUELLER MODEL NO.
1.	DI Pipe & Fittings	Class 52 ductile iron cement lined (double thickness) U.S. Pipe tyton joint with FIELDLOK Gasket (U.S. Pipe or approved equal) fittings shall be Mechanical joint with retainer glands C153 Compact Body, (Tyler Union or approved equal). (EBAA Iron series 1100 mega lugs) All fittings to have 316SS Hardware	N/A
2.	PVC Pipe & Fittings	C900 DR-18, Fittings shall be mechanical joint with retainer glands C153 Compact Body. (Tyler Union or approved equal). EBAA Iron Mega-Lug 2000PV, EBAA Iron Bell Restraint Harness 1500. All fittings to have 316SS Hardware	N/A
3.	HDPE Pipe	DR9, DIPS. Black pipe with three (3) evenly spaced blue stripes	N/A
4.	Fire Hydrants	AWWA C-502 Mueller Super, Centurion A-423 Size 5¼" main valve opening, three way (1) 4½" dia. pumper nozzle 2) 2½" dia. Outlets. 410 SS Upper & Lower Stem, 316 SS Hydrant Shoe nuts/Bolts	423-544155 Body painted yellow, bonnet color must match m size (6" red, 8" orange, 10" orange, 12" or greater green
5.	Fire Hydrant - Upper/Lower Stem(s)	Mueller Hydrant Extension Kits 410 SS	Upper Stem-148755 4' Lower Stem-287103 4'-6" Lower Stem-287182 5' Lower Stem-287183 5'-6" Lower Stem-287184
6.	Copper Service Pipe	Type "K" soft copper ASTM B-88	N/A
7.	Service Fittings	Couplings, bends, reducers, insulators, adapters, etc... Compression x Compression CTS x CTS, IPS x CTS, MIP x CTS, etc..	Mueller Service Fittings - S Specific Details
8.	Gate Valves (12" dia. & less NRS AWWA C-509)	Mueller Resilient Wedge	A-2362-23 (MJ) A-2362 (F) less accessories provide SS 316 in lieu
9.	Butterfly Valves (16" dia & greater)	Mueller Lineseal III AWWA C-504	B-3211-23
10.	Valve Boxes	5 ¼" shaft, 2-Piece Sliding Type. Adjustable Valve Box, Lid to be marked "Water"	Tyler or Bingham & Taylor Figure. 4908.
11.	Corporation Stops (ball design min. 300 psi)	Suitable for "K" copper service pipe & 300 psi	Mueller 300 Ball Corporation B-25008N (compression)
12.	Curb Stops (ball Design, min. 300 psi)	Inverted key stop round way suitable for "K" copper service pipe	Mueller 300 Ball Curb Valve B-25209N for CTS OD Tubing (compression)
13.	Curb boxes	With stationary rod and one piece lid	Mueller H-10314
14.	Inside Meter Yokes	Vertical inlet & outlet straight line	Mueller H-1412, H-14168 or H-1413
15.	Outside Meter Pits	1" - See meter pit & installation detail.	20"x36" Bingham & Taylor Meter Pit, Part MMP2036, Ring and Lid Bingham & Taylor, Part 18020AWEHTR (w/Locking bolt & Touch Read Hole)
16.	Yoke – Outside Meter Pit	1" - See meter pit & installation detail.	Mueller Meter Yoke w/dual Angle check valve, CTS Compression ends, Part No. B-2474N-2AN
17.	Tapping Sleeve & Tapping Valve	Stainless steel type	a. H-304 (sleeve) b. T-2362 (valve)
18.	Flushing Hydrants (for dead ends)	For blow-off	A-423
19.	Cut-in sleeve	D.I.P. type	H-840
20.	Cut-in valve	D.I.P. type, AWWA C-509	H-862
21.	Inserting Valve	D.I.P. type	H-800
22.	Repair Sleeve & Bell Joint Clamps	For repairs	Rockwell 441 type Mueller H-785 or H-786 Dresser styles 60 or 160
23.	Detector Check Valve (DCV)	Fire Service: Mueller Spring Loaded DCV.	Mueller Model EDCIV
24.	2" Domestic Water Pit	See Meter Pit Detail and Specifications 36" Diameter x 42" Depth	Mueller 2" EZ-Vault
29.	Repair Clamp	Stainless Steel Repair Clamp	Powerseal – 3121-AS, W/1"CC
30.	Service Saddle for DIP or ACP	Brass Body, Double Strap	Mueller BR2B series
31.	Service Saddle for PVC	Brass Body, Double Strap w/Stainless Steel Straps	Mueller BR2W series
32.	Link Seal	For use in sealing pipe Penetrations through walls	Link Seal w/316 SS Hardware
33.	Sampling Station	Install at 4'-0" bury depth and Provide 6" thick concrete base/pad	Kupferle Eclipse Model No. 88SS
34.	Flanged Coupling Adapters (fully Restrained)	For interior use to connect plain end D.I.P. to flanged equipment	EBAA Iron 1000 EZ Flange or approved equal
35.	Double Leaf Access (full registration vault)	See specific detail	Bilco JD-H20
36.	Single Leaf Access (full registration vault)	See Fire & Domestic Meter Pit Detail	Bilco J-5ALH20 42" x 42"
37.	Precast Meter Pit	See Fire & Domestic Meter Pit Detail	N/A
38.	Aluminum Ladder	See Fire & Domestic Meter Pit Detail	PA Insert Corp., or Halliday Products
39.	Ladder-Up Safety Device	Bilco Ladder-Up Safety Post	Bilco Ladder Up Safety Post Type LU-4
40.	"T"- Head Bolts, Anti-Rotation Bolts and "T"- Bolts	Nominal Length 4.5" and must have 2 to 3 threads past nut. All hardware Shall be 316 Stainless Steel	NPHC, Bamal Fastner or approved equal
41.	Threaded Rod	¾" and 1" -316 Stainless Steel	NPHC, Bamal Fastner or approved equal
42.	Tracer Wire	Size – 12 Gauge AWG Solid Core Color – Blue	ProLine Safety or approved equal
43.	PVC Utility Post Marker	Color – Blue for Water Utility, must specify post spacing	Rhino Tri-View or approved or approved
44.	Hydrant Polybag for Not-in-Service "NIS"	Color-Safety Orange, must have locking feature so as to prevent theft Or unauthorized removal	Assured Flow or approved equal
45.	Detectable Underground Caution Tape	Aluminum/poly tape; Color – Blue/Silver Install 18" below grade "Buried Water"	Approved Equal
46.	Reflective Hydrant Banner	29" Serialized Yellow Reflective Banner, with 1" Black Lettering Up to 15 characters	BriteSide from Lordon Inc. BSH-1.7529DG-Y Serialized

CONTRACTOR SHALL PROVIDE A 2'x2'x6" THICK CONCRETE PAD INSTALLED

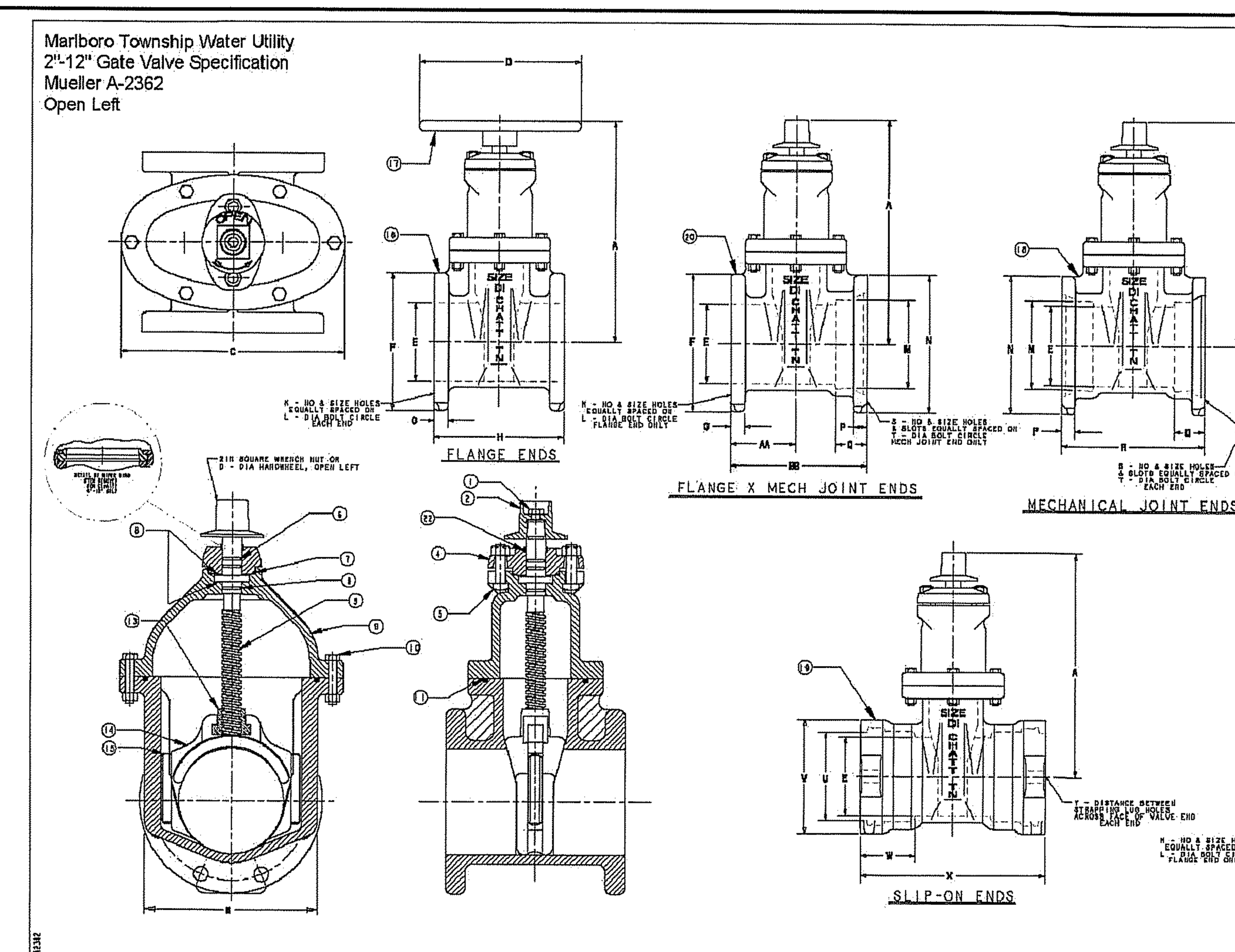


GENERAL NOTES
1. PROVIDE METER PIT SUBMITTAL FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. SUBMITTAL SHALL INCLUDE FULLY DIMENSIONED DRAWING AND PROVIDE DESIGN CALCULATIONS SIGNED AND SEALED BY A LICENSED NJ PROFESSIONAL ENGINEER.
2. ALL PIPE AND METER SIZES SHALL BE DETERMINED BY THE APPLICANT'S DESIGN ENGINEER.
3. THE DESIGN CRITERIA FOR THIS CHAMBER SHALL CONFORM TO AASHTO H-20 TRAFFIC LOADS FOR A CHAMBER.
4. INTERIOR HEIGHT OF METER PIT SHALL BE A MINIMUM OF 6'6". TOP OF METER PIT A MAXIMUM OF 2" ABOVE FINISHED GRADE.
5. INTERIOR SURFACES SHALL BE EPOXY COATED WHITE. EXTERIOR SURFACES SHALL BE COATED WITH BITUMASTIC WATERPROOFING.
6. ACCESS HATCH SHALL BE BILCO DOOR MODEL J-5ALH20. DOOR SHALL BE CENTERED OVER FIRE SERVICE METER. HATCH SHALL DRAIN TO OUTSIDE OF PIT.
7. FLOOR OF WATER METER PIT SHALL BE SLOPED TOWARDS THE LOCATION OF THE 12"X12" SUMP.
8. METER PIT SHALL BE SET ON A MINIMUM 12" THICK ¾" STONE BEDDING.
9. ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF 48".
10. ALL METERS, PIPING, EQUIPMENT AND VALVES TO BE SUPPLIED BY CONTRACTOR.
11. STAINLESS STEEL ADJUSTABLE PIPE SUPPORTS SHALL BE PROVIDED FOR METERS, VALVES AND TEES. REMAINING PIPING SHALL BE SUPPORTED AS NEEDED.
12. ALL GATE VALVES SHALL BE MUELLER RESILIENT WEDGE A-2362 SERIES FLANGED, OPEN LEFT, NON-RISING STEM. ALL VAULT INTERIOR VALVES SHALL BE EQUIPPED WITH A HAND WHEEL. BURIED VALVE SHALL HAVE MECHANICAL JOINTS AND 2 INCH SQUARE OPERATING NUT AND A VALVE BOX.
13. DETECTOR CHECK VALVE (D.C.V.) SHALL BE A MUELLER EDCIV WITH ¾" TRIM KIT FOR ⅝" x ¾" SENSUS IPEARL METER, EQUIPPED WITH SHUT-OFF VALVE AND SWING CHECK.
14. ALL HARDWARE SHALL BE HEAVY HEX HEAD TYPE 304 STAINLESS STEEL WITH A MINIMUM TENSILE STRENGTH OF 85,000 PSI AND SHALL CONFORM TO ASTM F593
15. ALL FERROUS METAL PIPE AND FITTINGS SHALL HAVE A COAT OF SHERWIN WILLIAMS MACROPOXY 646 APPLIED BASED ON MANUFACTURER'S RECOMMENDATIONS.
16. ALL DOMESTIC SERVICE PIPING 4" AND LARGER SHALL BE CLASS 52 DUCTILE IRON.
17. 2"DOMESTIC SERVICE PIPE AND SMALLER SHALL BE TYPE "K"HARD COPPER.
18. FOR 1" AND 2" DOMESTIC SERVICES, A TAPPED BLIND FLANGE SHALL BE INSTALLED ON THE BRANCH LINE OF THE TEE, TAPPED "FIP" FOR THE APPLICABLE SIZE DOMESTIC SERVICE LINE.
19. UPSTREAM FIRE SERVICE SPOOL PIECES SHALL BE A MINIMUM LENGTH OF 2.5 TIMES THE DIAMETER OF THE PIPE AND INSTALLED DIRECTLY ADJACENT TO THE METER AND SHALL HAVE A PLAIN END WITH UNI-FLANGE AND A FLANGED END.
20. DOWNSTREAM FIRE SERVICE SPOOL PIECES SHALL BE A MINIMUM LENGTH OF 4 TIMES THE DIAMETER OF THE PIPE AND INSTALLED DIRECTLY ADJACENT TO THE METER AND SHALL HAVE A PLAIN END WITH UNI-FLANGE AND A FLANGED END.
21. 4" AND ABOVE DOMESTIC SERVICE UPSTREAM AND DOWNSTREAM SPOOL PIECES SHALL BE A MINIMUM LENGTH OF 4 TIMES THE DIAMETER OF THE PIPE AND INSTALLED DIRECTLY ADJACENT TO THE METER AND SHALL HAVE A PLAIN END WITH UNI-FLANGE AND A FLANGED END.
22. FOR 1"DOMESTIC SERVICES A SENSUS IPERL WATER METER SHALL BE USED. FOR 2"DOMESTIC SERVICES AND LARGER A SENSUS OMNI C2 COMPOUND METER SHALL BE USED.
23. 1" AND 2" DOMESTIC SERVICE LINES SHALL BE EQUIPPED WITH A MUELLER STRAIGHT DUAL CHECK VALVE CATALOG NO. H-14243N OR APPROVED EQUAL. CONNECTION TO BE MADE WITH MUELLER COMPRESSION X MIP. CATALOG NO. H-15428N.
24. 4"DOMESTIC SERVICES AND LARGER SHALL BE EQUIPPED WITH A MUELLER MODEL 2600-06BB SWING CHECK VALVE.
25. FLANGE ADAPTERS SHALL BE EBAA IRON SERIES 1000 EZ FLANGE WITH STAINLESS STEEL HARDWARE OR APPROVED EQUAL.
26. ALL LINK SEALS SHALL HAVE STAINLESS STEEL HARDWARE.
27. THE METER VAULT SHALL BE AS MANUFACTURED BY A.C. MILLER CONCRETE PRODUCTS, INC. OR AN APPROVED EQUIVALENT NPCA CERTIFIED PLANT AS DETERMINED BY MTWUD ENGINEER.
28. METER VAULT SHALL BE FURNISHED/SUPPLIED WITH ALL COMPONENTS FULLY ASSEMBLED PRIOR TO DELIVERY TO SITE AND HAVE INLET/OUTLET STUBS OF A MINIMUM OF 18-24" IN LENGTH OUTSIDE OF VAULT.

TOWNSHIP OF MARLBORO
1979 TOWNSHIP DRIVE
MARLBORO, NEW JERSEY 07746
(732) 536-0200 Phone
(732) 972-5301 Fax

FIRE AND DOMESTIC SITE METER PIT DETAIL
(SINGLE DISCHARGE)
DATE: 5/5/2020
REVISED: 2/18/2022

Marlboro Township Water Utility
2"-12" Gate Valve Specification
Mueller A-2362
Open Left



PART LIST					
ITEM	DESCRIPTION	REQ'D	MATERIAL	ASTM	
1	CAP SCREW	1	316 STAINLESS STEEL	F593	GROUP 2-CW
2	WRENCH NUT	1	DUCTILE IRON	A536	
3	STEM	1	MANGANESE BRONZE	B138	
4	STUFFING BOX	1	DUCTILE IRON	A536	
5	STUFFING BOX BOLTS STUFFING BOX NUTS	2	316 STAINLESS STEEL 316 STAINLESS STEEL	F593 F594	GROUP 2-CW GROUP 2-CW
6	O-RING	3	RUBBER	D2000	
7	O-RING	1	RUBBER	D2000	
8	ANTI-FRICTION WASHER	2	ACETAL		
9	BONNET	1	DUCTILE IRON	A536	
10	BONNET BOLTS BONNET NUTS	"Z"	316 STAINLESS STEEL 316 STAINLESS STEEL	F593 F594	GROUP 2-CW GROUP 2-CW
11	BONNET GASKET (O-RING)	1	RUBBER	D2000	
13	DISC NUT	1	BRONZE	B584	
14	DISC	1	SEE NOTE 1 & 2		
15	GUIDE CAP	2	ACETAL		
16	BODY - FLANGE ENDS	1	DUCTILE IRON	A536	
17	HANDWHEEL	1	CAST IRON (SEE NOTE 2)	A126	CLASS B
18	BODY - MJ ENDS	1	DUCTILE IRON	A536	
19	BODY - SLIP-ON ENDS	1	DUCTILE IRON	A536	
20	BODY - FLANGE x MJ END	1	DUCTILE IRON	A536	
21	BODY - FLANGE x SLIP-ON END	1	DUCTILE IRON	A536	
22	WIPER RING	1	RUBBER		

NOTES:
1. RUBBER ENCAPSULATED DUCTILE IRON DISC
DUCTILE IRON - ASTM A536
RUBBER - SBR- ASTM D2000
2. MANUFACTURER'S OPTION TO UPGRADE MAT'L TO DI - A536 OR 65-45-12 OR 70-50-05

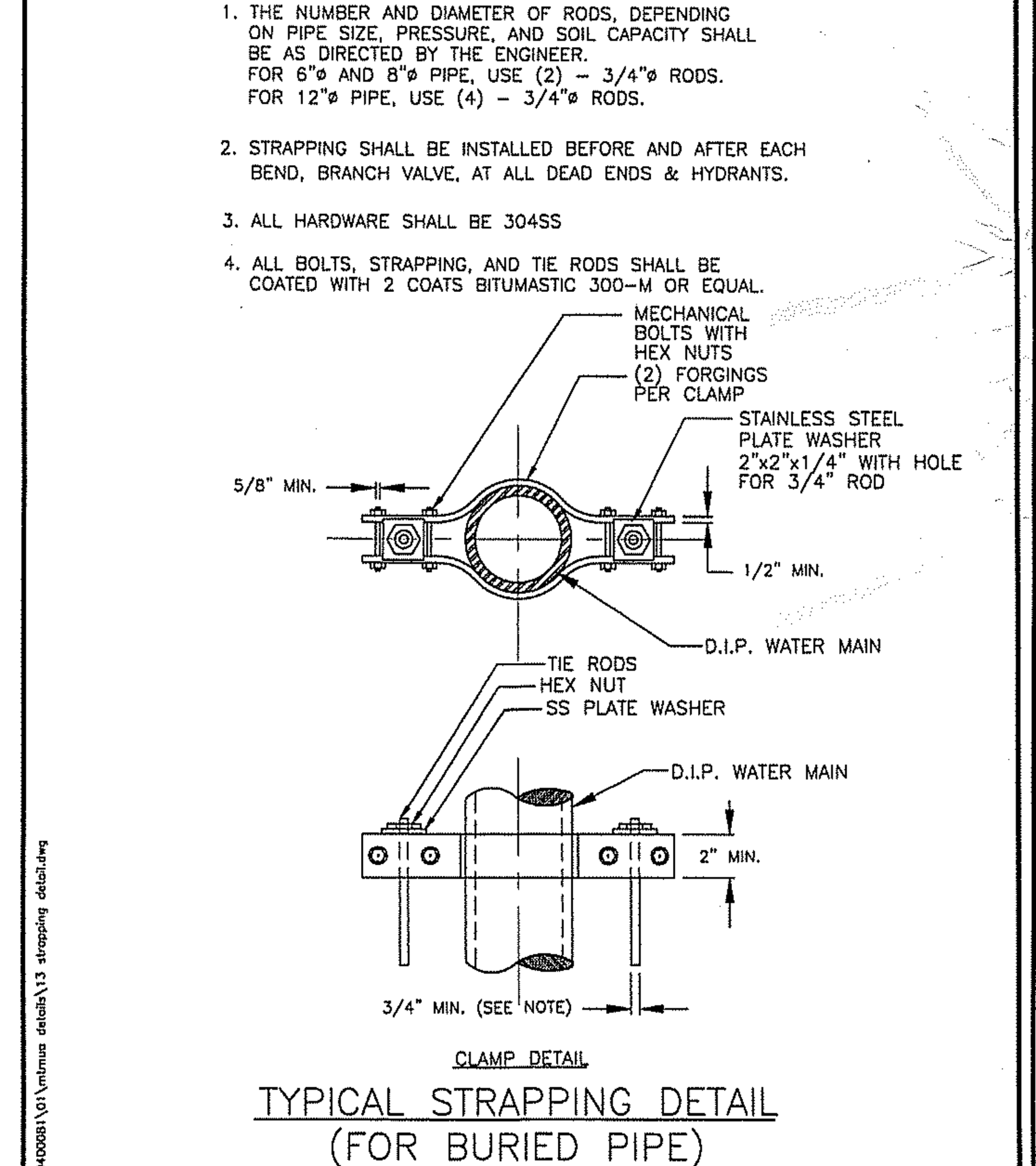
DIMENSIONS FOR RESILIENT WEDGE VALVE - INCHES (this drawing only)

VALVE SIZE	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	TURN TO OPEN
4	14.19	8.25	10.79	11.00	4.30	9.00	1.00	9.00	8 - 0.75	7.50	4.90	9.12	1.00	2.50	10.00	4 - 0.88	7.50	4.96	6.88	4.12	12.82	8.62	4	4.50	8.50	10.91	14
6	18.00	10.49	13.50	13.00	6.30	11.00	1.06	10.50	8 - 0.88	9.50	7.00	11.12	1.09	2.50	11.62	6 - 0.88	9.50	7.02	9.12	4.38	14.96	10.82	6	5.25	11.06	12.73	20.5
8	21.50	13.21	16.36	14.00	8.30	13.50	1.18	11.50	8 - 0.88	11.75	9.15	13.37	1.18	2.50	12.68	6 - 0.88	11.75	9.30	11.38	5.62	17.94	13.12	6	5.75	12.09	14.72	26.5
10	25.50	16.48	19.99	16.00	10.30	16.00	1.25	13.00	12 - 1.00	14.25	11.29	15.62	1.25	2.50	14.88	8 - 0.88	14.00	11.23	13.50	5.62	18.50	16.38	8	6.50	13.94	15.75	33
12	28.62	16.83	21.00	16.00	12.30	19.00	1.31	14.00	12 - 1.00	17.00	13.30	17.88	1.31	2.50	15.00	8 - 0.88	16.25	13.33	15.75	5.62	18.70	18.12	8	7.00	14.50	16.35	38.5

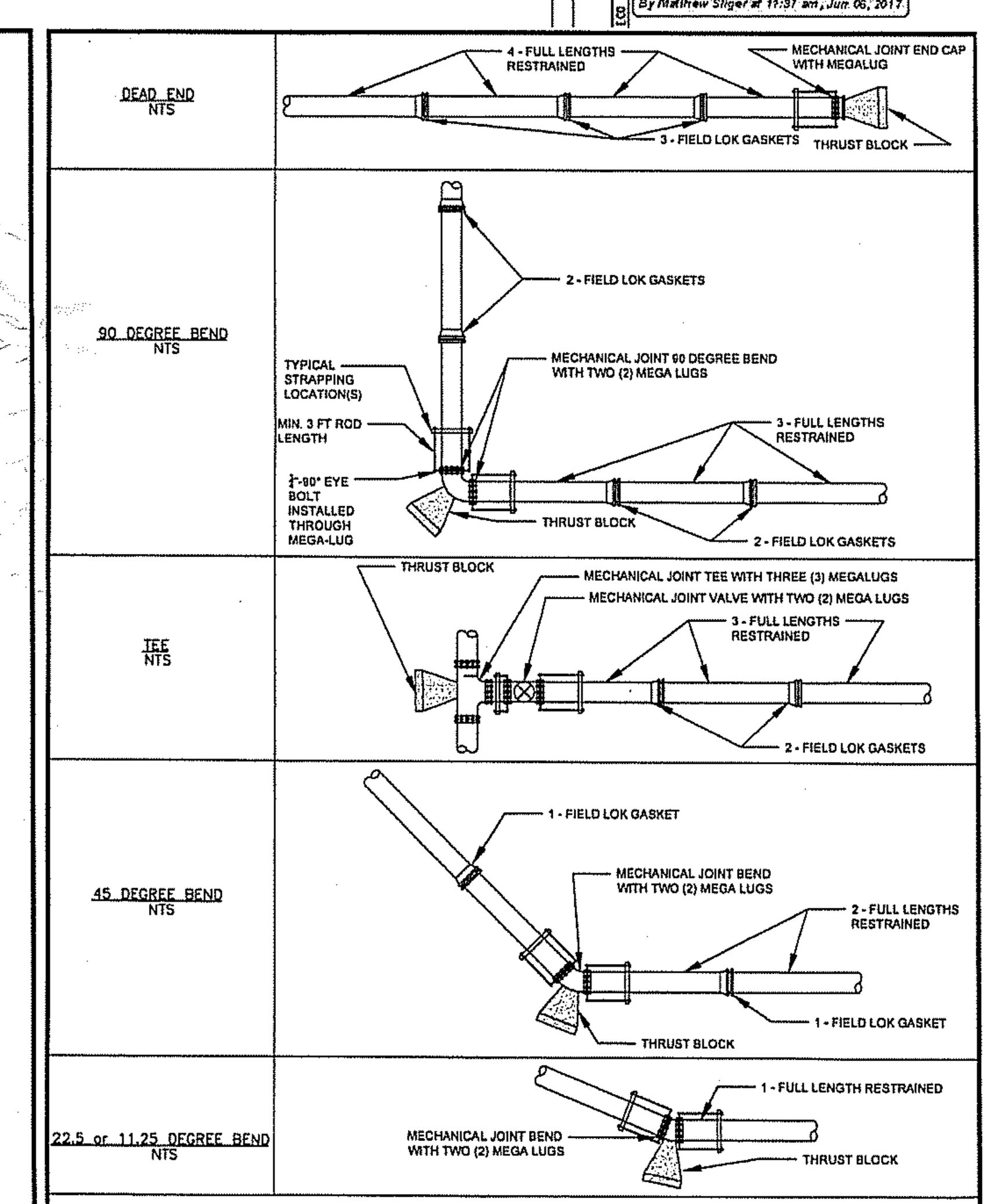
APPROVED
By Matthew Sliger at 11:37 am, Jun 06, 2017

Mueller Co. 4IN - 12IN RWGV A2362 — 7420

NOTES:
1. THE NUMBER AND DIAMETER OF RODS, DEPENDING ON PIPE SIZE, PRESSURE, AND SOIL CAPACITY SHALL BE AS DIRECTED BY THE ENGINEER. FOR 6"ø AND 8"ø PIPE, USE (2) – 3/4"ø RODS. FOR 12"ø PIPE, USE (4) – 3/4"ø RODS.
2. STRAPPING SHALL BE INSTALLED BEFORE AND AFTER EACH BEND, BRANCH VALVE, AT ALL DEAD ENDS & HYDRANTS.
3. ALL HARDWARE SHALL BE 304SS
4. ALL BOLTS, STRAPPING, AND TIE RODS SHALL BE COATED WITH 2 COATS BITUMASTIC 300-M OR EQUAL.



TOWNSHIP OF MARLBORO — TYPICAL STRAPPING DETAIL — M.T.W.U.D. — MARLBORO TOWNSHIP, MONMOUTH COUNTY, NEW JERSEY — DATE 2/4/05, Revised: 1/20/23 — DRAWING NUMBER 13



TOWNSHIP OF MARLBORO — TYPICAL STRAPPING LOCATIONS — M.T.W.U.D. — MARLBORO TOWNSHIP, MONMOUTH COUNTY, NEW JERSEY — DATE 1/20/23 — DRAWING NUMBER 41

Marlboro Township 2"-12" Gate Valve Specifications

1. The resilient wedge gate valves shall fully comply with the latest revision of AWWA C509 and shall also be UL listed and FM approved. The valves shall be tested and certified to ANSI/NSF 61. AWWA C515 reduced wall valves are not acceptable.

2. The valve shall have a 350 psig working pressure. Each valve shall be factory seat tested to 350psig and shell tested to 700psig.

3. The valve type shall be NRS (non-rising stem), and have one of the following end connections depending on the application and as specified by the utility:
   a) **Flanged ends** with dimensions and drilling complying with ANSI B16.1, class 125.
   b) **Mechanical joint ends** complying with ANSI/AWWA C111
   c) **Mechanical joint by Flanged tapping valves** with an inlet flange complying with ANSI B16.1, class 125 drilling and with MSS SP-60. MJ end shall comply with ANSI/AWWA C111

4. The valve shall open **Left** and have an arrow cast on the operating nut or hand wheel indicating the opening direction. The bolt that attaches the operating nut to the stem shall be recessed into the operating nut so as not to interfere with valve wrench operation. The operating nut shall be painted **black**. The number of turns to open 2" through 12" valves shall be as follows: 2" = 8, 3" = 11, 4" = 14, 6" = 20.5, 8" = 26.5, 10" = 33, and 12" = 38.5

5. The valves shall have bolts and nuts for the operating nut, stuffing box and bonnet consisting of type 316 stainless steel.

6. The valve stems shall be made of bronze ASTM B138 alloy C67600 H04 hard bar stock material. The bronze stem collar is to be hot forge upset; collars not integral with the stem are not acceptable. The stem material shall provide a minimum 73,000psi tensile strength, yield strength of 48,000psi and 8% minimum elongation. The stem shall have at least one "anti-friction" thrust washer above and below the stem collar to reduce operating torque. Valves with non-integral and/or multi-piece stem collars are unacceptable.

7. The NRS valves shall have a stuffing box that is o-ring sealed. The stuffing box bolts shall be positioned parallel with the inlet and outlet of the valve. This shall provide a visual indication of the direction of the main from above ground. The stuffing box shall have two integrally cast lifting lugs. The lifting lugs shall also provide alignment for the valve box. Two O-rings shall be placed above and one o-ring below the stem thrust collar. There shall be a fourth seal at the top of the stuffing box to serve as a dirt seal. The thrust collar shall be factory lubricated. The thrust collar and its lubrication shall be isolated by the o-rings from the waterway and from outside contamination providing permanent lubrication for long term ease of operation. Valves without a stuffing box are unacceptable. Valves without at least three stem o-rings, plus a fourth dirt seal, are also unacceptable.

8. The valve body, bonnet, stuffing box, and disc shall be composed of ASTM A536 ductile iron. Shell thickness of the valve body and bonnet shall meet the standards set forth in AWWA C509 Sec. 4.3.1. Reduced-Wall valves are not acceptable.

9. The valve disc and guide lugs must be fully (100%) encapsulated in SBR ASTM D2000 rubber material. The peel strength shall not be less than 75 pounds per inch. Guide caps of an Acetal bearing material shall be placed over solid guide lugs to prevent abrasion and to reduce the operating torque. Guide caps placed over bare metal are not acceptable. Discs without guide caps are unacceptable.

10. The valves shall have all internal and external ferrous surfaces coated with a fusion bonded thermosetting powder epoxy coating of 10 mils nominal thickness. The coating shall conform to AWWA C550.

11. Tapping valves shall have an inlet flange conforming to ANSI B16.1 Class 125 for attachment to a tapping sleeve or cross. In addition, the valve inlet flange shall have a machined projection or raised alignment lip complying with MSS SP-60 for accurate alignment to the mating recess in the tapping sleeve flange. The seat opening of the tapping valves shall be at least .30" or larger than the nominal pipe size to permit full size shell cutters.

12. The valves shall be warranted by the manufacturer against defects in materials or workmanship for a period of ten (10) years from the date of manufacture. The manufacturing facility for the valves must have current ISO certification, and UL 262, FM 1120/1130. The valves shall be manufactured in the U.S.A. with bonnet and body castings that are made in the U.S.A.

The gate valves shall be Mueller **A-2362** or pre-approved equal. Tapping valves shall be MUELLER® **T2362** or pre-approved equal.

Certification shall be provided confirming compliance to these specifications. Certification shall come from a licensed professional engineer and/or an officer of the valve manufacturing company. The certification shall reference the Marlboro Township Water Utility, the project and/or bid the valves are designated for, and the valve warranty.

Failure to comply with any of these above requirements is sufficient cause for rejection of proposed valves. Marlboro Township reserves the right to accept only those materials which are in full compliance with these specifications and deemed most advantageous to its interests.

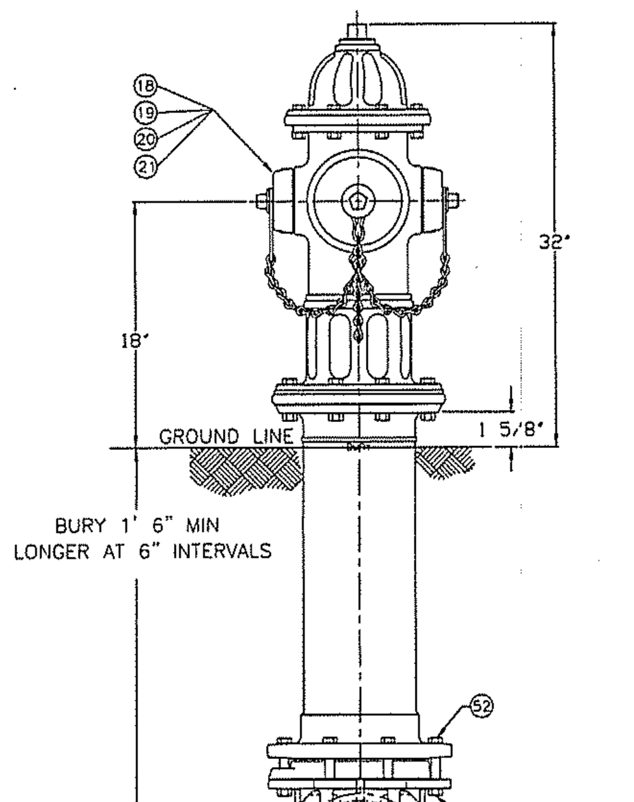
DATE	REVISION
FEB. 17, 2023	PER MARLBORO TWP WATER COMMENTS
FEB. 9, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 27, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 04, 2023	PER MARLBORO TWP WATER COMMENTS

STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489
CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

WATER UTILITY DETAILS

45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
OCT. 25, 2022	AS NOTED	SGP	S.C.C.	19022		12 of 13

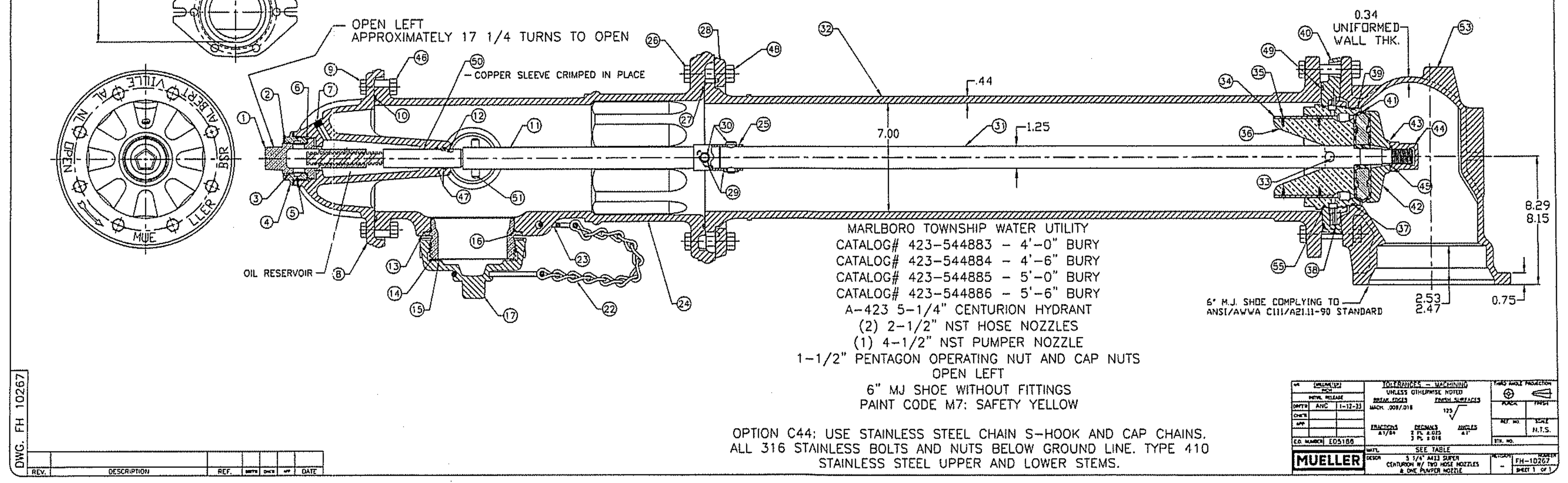


PARTS LIST						
ITEM	DESCRIPTION	REQ'D	MATERIAL	A.S.T.M.	CURRENT MATERIAL DESCRIPTION	ALTERNATE STANDARD
1	OPERATING NUT	1	BRONZE	B-62	ALLOY C83600	B584 C87850 OR C87600
2	WIPER RING	1	RUBBER	D-2000	EPDM	
3	HOLD DOWN NUT O-RING	1	RUBBER	D-2000	BUNA N	
4	HOLD DOWN NUT	1	BRONZE	B-62	ALLOY C83600	B584 C87850 OR C87600
5	BONNET O-RING	1	RUBBER	D-2000	BUNA N	
6	ANTI-FRICTION WASHER	1	CELCON		GRADE M90-04	
7	OIL FILLER PLUG	1	BRASS	B-16	ALLOY 360	
8	BONNET	1	CAST IRON	A-126	CLASS B	
9	BONNET HEX CAP SCREW	8	STEEL	SAE J429	GR 5 GALVANIZED	
10	TOP UPPER BARREL O-RING	1	RUBBER	D-2000	BUNA N	
11	UPPER STEM	1	STAINLESS STEEL	A-276	TYPE 410	
12	STEM O-RING	1	RUBBER	D-2000	BUNA N	
13	NOZZLE LOCK	3	STAINLESS STEEL	A-276	305 OR 410	
14	PUMPER NOZZLE	1	BRASS	B-584	ALLOY C89833	B584 C87850 OR C87600
15	PUMPER NOZZLE CAP GASKET	1	RUBBER	D-2000	NEOPRENE	
16	PUMPER NOZZLE O-RING	1	RUBBER	D-2000	BUNA N	
17	PUMPER NOZZLE CAP	1	CAST IRON	A-126	CLASS B	
18	HOSE NOZZLE	2	BRASS	B-584	ALLOY C89833	B584 C87850 OR C87600
19	HOSE NOZZLE CAP GASKET	2	RUBBER	D-2000	NEOPRENE	
20	HOSE NOZZLE O-RING	2	RUBBER	D-2000	BUNA N	
21	HOSE NOZZLE CAP	2	CAST IRON	A-126	CLASS B	
22	CAP CHAIN	3	STAINLESS STEEL		304	
23	CHAIN HOOK	1	STAINLESS STEEL		18-8	
24	UPPER BARREL	1	CAST IRON	A-126	CLASS B	
25	TRAFFIC STEM COUPLING	1	STAINLESS STEEL	A-890	1.5% SILICON MAX.	
26	TRAFFIC FLANGE HEX CAP SCREW	8	STEEL	SAE J429	GR 5 GALVANIZED	
27	BOTTOM UPPER BARREL O-RING	1	RUBBER	D-2000	BUNA N	
28	TRAFFIC FLANGE	1	CAST IRON	A-126	CLASS B	
29	REUSABLE COTTER PIN	2	STAINLESS STEEL		18-8	
30	CLEVIS PIN	2	STAINLESS STEEL	A-276	300 SERIES	

SEE CAT. RECORD FOR RESPECTIVE PARTS OR SUB. ASS'YS

ITEM	DESCRIPTION	REQ'D	MATERIAL	A.S.T.M.	CURRENT MATERIAL DESCRIPTION	ALTERNATE STANDARD
31	LOWER STEM	1	STAINLESS STEEL	A-276	TYPE 410	
32	LOWER BARREL	1	CAST IRON	A-126	CLASS B	
33	STEM PIN	1	STAINLESS STEEL	A-276	300 SERIES	
34	DRAIN VALVE FACING	2	H.D. POLYETHYLENE		LS 5660-00	
35	DRAIN VALVE FACING SCREW	4	STAINLESS STEEL	A-276	300 SERIES	
36	UPPER VALVE PLATE	1	BRASS	B-584	ALLOY C89833	B584 C87850 OR C87600
37	BOTTOM SEAT O-RING	1	RUBBER	D-2000	BUNA N	
38	DRAIN RING	1	BRONZE	B-62	ALLOY C83600	B584 C87850 OR C87600
39	SEAT RING	1	BRASS	B-584	ALLOY C89833	B584 C87850 OR C87600
40	DRAIN RING HOUSING	1	CAST IRON	A-126	CLASS B	
41	ENCAPSULATED MAIN VALVE	1	RUBBER	D-2000	NATURAL	
42	LOWER VALVE PLATE	1	CAST IRON	A-126	CLASS B	
43	LOCK WASHER	1	STAINLESS STEEL	A-276	304	
44	VALVE NUT	1	CAST IRON	A-126	CLASS B	
45	VALVE NUT SEAL	1	RUBBER		NATURAL	
46	BONNET HEX NUT	8	STEEL	SAE J995	GR 8 GALVANIZED	
47	STEM O-RING	2	RUBBER	D-2000	BUNA N	
48	TRAFFIC FLANGE HEX NUT	8	STEEL	SAE J995	GR 5 GALVANIZED	
49	DRAIN RING HOUSING O-RING	1	RUBBER	D-2000	BUNA N	
50	SLEEVE	1	COPPER	B-75	ALLOY 122	
51	UPPER STEM PIN	1	STAINLESS STEEL	A-276	303	
52	SHOE HEX CAP SCREW	6	STAINLESS STEEL	F-593	316	
53	SHOE	1	DUCTILE IRON	A536	GR 65-45-12	GR 70-50-05
* 54	BURY TAG	1	STAINLESS STEEL	A-240	304	
55	TOP SEAT O-RING	1	RUBBER	D-2000	BUNA N	
56	SHOE HEX NUT	6	STAINLESS STEEL	F-594	316	

* NOT SHOWN



MARLBORO TOWNSHIP WATER UTILITY
CATALOG# 423-544883 – 4'-0" BURY
CATALOG# 423-544884 – 4'-6" BURY
CATALOG# 423-544885 – 5'-0" BURY
CATALOG# 423-544886 – 5'-6" BURY
A-423 5-1/4" CENTURION HYDRANT
(2) 2-1/2" NST HOSE NOZZLES
(1) 4-1/2" NST PUMPER NOZZLE
1-1/2" PENTAGON OPERATING NUT AND CAP NUTS
OPEN LEFT
6" MJ SHOE WITHOUT FITTINGS
PAINT CODE M7: SAFETY YELLOW

OPTION C44: USE STAINLESS STEEL CHAIN S-HOOK AND CAP CHAINS.
ALL 316 STAINLESS BOLTS AND NUTS BELOW GROUND LINE. TYPE 410 STAINLESS STEEL UPPER AND LOWER STEMS.

MUELLER — DWG. FH 10267 — N.T.S. — FH-10267 SHEET 1 OF 1

REV. | DESCRIPTION | REF. | DATE

Marlboro Township Water Utility Fire Hydrant Specification

Fire hydrants purchased or installed shall meet or exceed all applicable requirements and tests of the latest revisions of ANSI/AWWA Standard C502. Fire hydrants shall meet all test requirements and be listed by Underwriters Laboratories Inc. Fire hydrants shall meet all test requirements and have full approval of Factory Mutual. In addition, fire hydrants shall meet the following requirements.

1. Fire hydrants shall be rated for a working pressure of 350 Psig. (2400 kPa/24 barg).

2. Fire hydrants shall be of the compression type, opening against the pressure and closing with the pressure. **They shall have a 5-1/4" main valve opening** and a minimum inside lower/upper barrel diameter (I.D.) of 7" to assure maximum flow performance. Pressure loss at 1,000 GPM shall not exceed 2.50psi through a 4.5" pumper nozzle.

3. **Fire hydrants shall be painted safety yellow. Hydrants shall be three-way in design, having one 4 ½" NST pumper nozzle and two 2 1/2" NST hose nozzles.** The nozzles shall thread counterclockwise into hydrant barrel utilizing O-ring seals. A stainless-steel nozzle lock shall be in place to prevent inadvertent nozzle removal. **The nozzle caps shall have 1 ½" pentagon shaped nuts, and shall include 304 stainless steel chains.**

4. The bonnet assembly shall provide an oil reservoir and lubrication system that automatically circulates lubricant to all stem threads and bearing surfaces each time the hydrant is operated. This lubrication system shall be sealed from the waterway and any external contaminants by use of o-ring seals. An anti-friction washer shall be in place above the thrust collar to further minimize operating torque. The oil reservoir shall be factory filled with an FDA approved, non-toxic oil lubricant which will remain fluid through a temperature range of -60^0 F. to $+150^0$ F.

5. The operating nut shall be a one-piece design, manufactured of ASTM B-584 bronze. It shall have a **1 ½" pentagon shaped nut.** The hold down nut shall be threaded into the bonnet in such a manner as to prevent accidental disengagement during the opening cycle of the hydrant. The use of set screws as a means of retention is unacceptable.

6. **The opening direction shall be left.** An arrow shall be cast on the bonnet flange to indicate the specified opening direction. The hydrant bonnet shall be attached to the upper barrel by not less than eight bolts and nuts and sealed by an o-ring.

7. Hydrants shall be a "traffic-model" having upper and lower barrels joined at the ground line by a separate and breakable "swivel" flange providing 360^0 rotation of upper barrel for proper nozzle facing. This flange shall employ not less than eight bolts and shall have no less than 2 grooves to ensure proper breakage. The safety flange segments shall be located under the upper barrel flange to prevent the segments from falling into the lower barrel when the hydrant is struck. The pressure seal between the barrels shall be an "o" ring. The proper ground line shall be cast clearly on the lower barrel and shall provide not less than 18" of clearance from the centerline of the lowest nozzle to the ground.

8. The operating stem shall consist of two pieces, not less than 1 1/4" diameter (excluding threaded or machined areas) and shall be connected by a stainless-steel safety coupling. The safety coupling shall have an integral internal stop to prevent the coupling from sliding down into the lower barrel when the hydrant is struck. Screws, pins, bolts, or fasteners used in conjunction with the stem couplings shall also be stainless steel. The top of the lower stem shall be recessed 2" below the face of the safety flange to prevent water hammer in the event of a "drive over" where a vehicle tire might accidentally depress the main valve. **The upper and lower stems shall be made from ASTM A-276, 410 stainless steel for strength and corrosion resistance.**

9. The lower barrel shall be an integrally cast unit. The use of threaded on or mechanically attached flanges is deemed unacceptable. The hydrant bury depth shall be clearly marked on the hydrant lower barrel.

10. Composition of the main valve shall be a molded rubber having a durometer hardness of 95 +/- 5 and shall be reversible in design so either side can be used. This will provide a spare in place. Plastic (polyurethane) main valves are unacceptable. The main valve shall have a cross section not less than 1".

11. The upper valve plate, seat ring and drain ring must be bronze and work in conjunction to form an all-bronze drain way. A minimum of two (2) internal and two (2) external drain openings are required. These drain openings shall work with (2) two drain valves which drain the barrel when the hydrant is closed, and seal shut when the hydrant is opened. These drain valves shall be an integral part of the one-piece bronze upper valve plate. They shall operate without the use of springs, toggles, tubes, levers, or other intricate synchronizing mechanisms. Seat rings shall be O-ring pressure sealed, and shall have two (2) lugs, on top, which are sufficient for seat wrench engagement.

12. All brass components in contact with potable water must be made from either CDA/UNS Brass Alloys C89520 or C89833 with a maximum lead content of .25% by weight.

13. **The hydrant shall have a 6", ductile iron, mechanical joint shoe.** A minimum of six bolts and nuts are required to fasten the shoe to the lower barrel. **The shoe bolts and nuts shall be made from 316 stainless steel.**

14. The interior of the shoe including the lower valve plate and stem cap nut shall have a protective coating that meets the requirements of AWWA C-550. A stem cap nut shall be utilized and must be locked in place by a stainless-steel lock washer or similar non-corrosive device that will prevent the cap nut from backing-off during normal use.

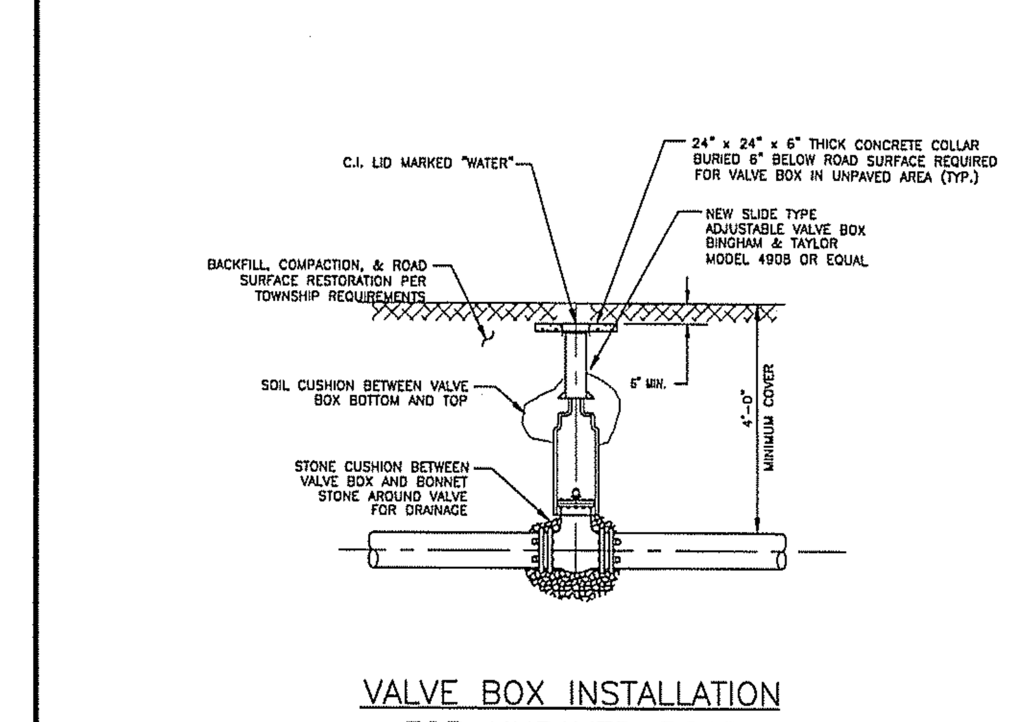
15. Hydrants shall be warranted by the manufacturer against defects in materials or workmanship for a period of ten years (10) from the date of manufacture. The manufacturing facility for the hydrant must have current ISO certification and shall have been manufacturing and selling this model hydrant for at least five years.

16. Hydrants shall be made in the U.S.A. Furthermore, the hydrant's castings including the bonnet, upper barrel, lower barrel, and shoe must be made in the U.S.A.

17. **Hydrants shall be the Mueller A-423 Super Centurion 350 option C44 - 304 stainless steel cap chains, 316 stainless steel and bolts and nuts below ground, and 410 stainless steel upper and lower stems,** or pre-approved equal.

Certification shall be provided confirming compliance to these specifications, including the use of low lead brass and domestic castings as referenced above. Certification shall come from a licensed professional engineer and/or an officer of the hydrant manufacturing company. The certification shall reference the Marlboro Township Water Utility, the project and/or bid the hydrants are designated for, and the hydrant warranty.

Failure to comply with any of these above requirements is sufficient cause for rejection of proposed hydrants. Marlboro Township reserves the right to accept only those materials which are in full compliance with these specifications and deemed most advantageous to its interests.



VALVE BOX INSTALLATION
FOR UNPAVED ROAD
N.T.S.

TOWNSHIP OF MARLBORO 1979 TOWNSHIP DRIVE MARLBORO, NEW JERSEY 07746 (732) 536-0200 Phone (732) 972-5301 Fax	VALVE BOX – BURIED M.T.W.U.D. MARLBORO TOWNSHIP, MONMOUTH COUNTY, NEW JERSEY	DATE 1/12/12 DRAWING NUMBER 36

Marlboro Township Water Utility Division
Procedure for Permanent Service Line Disconnect

Final Version 9.14.18.01

1. All work shall be scheduled with the MTWUD.
2. All work shall be performed while witnessed by the MTWUD.
3. All service line permanent disconnects shall be performed at the corporation valve attached to water main.
4. The service line shall be removed from the corporation a minimum distance of 18 inches.
5. Then either a Mueller Solid Copper Disc, Catalog No. H-15535 shall be installed in the flare nut and the flare nut than reinstalled onto the flare spud. Or upon removal of the flare nut a Mueller Brass Cap, Catalog No. H-15540N shall be installed on the flare spud.

Solid copper disc
Used with regular copper flare nut to shut off line.

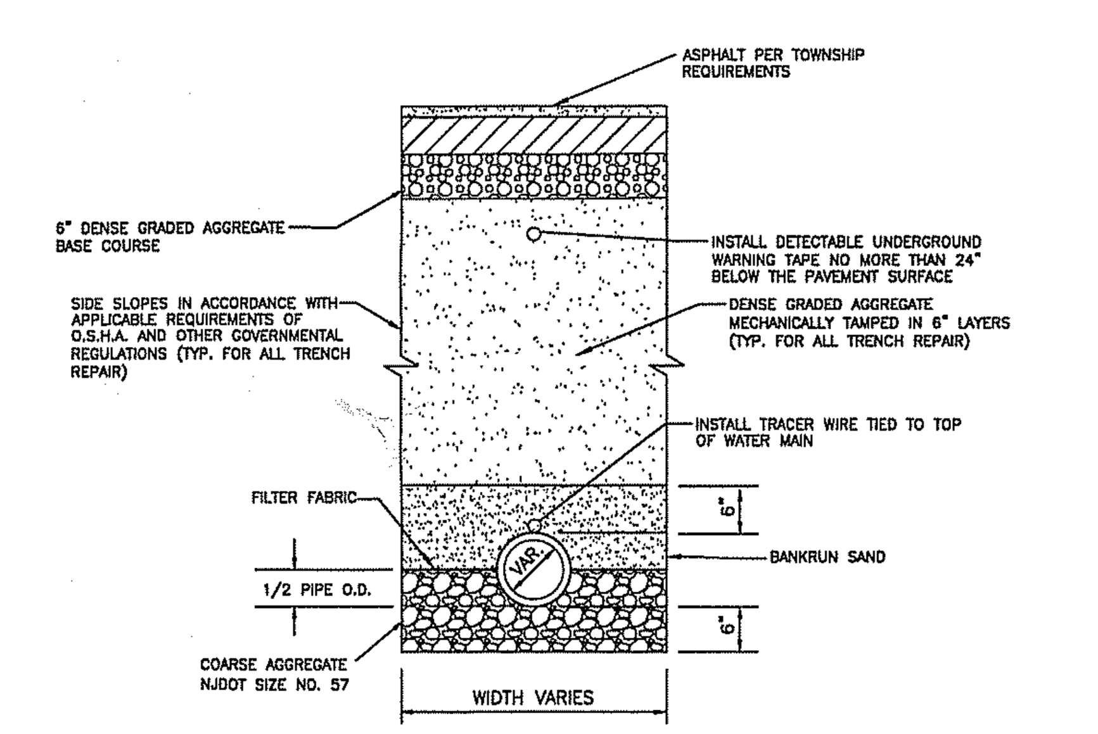
CATALOG NUMBER: H-15535

1/2"	3/4"	1"	1-1/4"	1-1/2"	2"

Brass cap
Used with regular copper flare nut to shut off line. Fits on copper flare spud to cap off line.

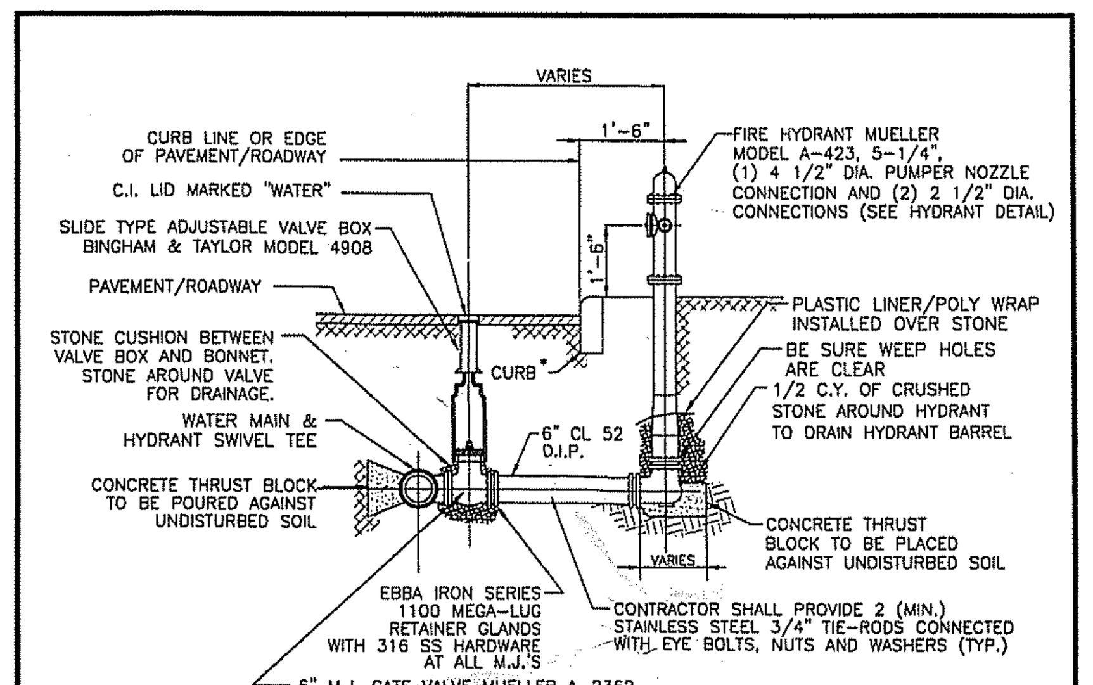
CATALOG NUMBER: H-15540N

3/4"	1"	1-1/2"	2"



TYPICAL PIPE BEDDING/BACKFILL DETAIL
N.T.S.

NOTES:
1. SHOULD UNSUITABLE BEDDING SOILS BE ENCOUNTERED, ADDITIONAL SUBGRADE PREPARATION CONSISTING OF OVER EXCAVATION AND REPLACEMENT WITH CRUSHED STONE WILL BE REQUIRED. THE DEPTH OF OVER EXCAVATION SHALL BE AS DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL EXCAVATIONS SHALL BE PAVED WITH TEMPORARY BITUMINOUS PAVEMENT FROM THE DATE OF ORIGINAL EXCAVATION UNTIL SUCH TIME AS PERMANENT PAVEMENT IS INSTALLED. (AS REQUIRED)
3. IF CONTAMINATED SOILS ARE ENCOUNTERED, INSTALL FILTER FABRIC AROUND THE LIMIT OF THE ENTIRE TRENCH.
4. ALL TRENCHES SHALL BE STABILIZED AT THE END OF EACH DAY UTILIZING TEMPORARY TRENCH REPAIR AS DIRECTED BY THE ENGINEER / OWNER. BASE COURSE PAVING SHALL BE PERFORMED WEEKLY. MILLING AND SURFACE COURSE PAVING SHALL BE COMPLETED A MINIMUM OF 30 DAYS AFTER COMPLETION OF BASE COURSE INSTALLATION.

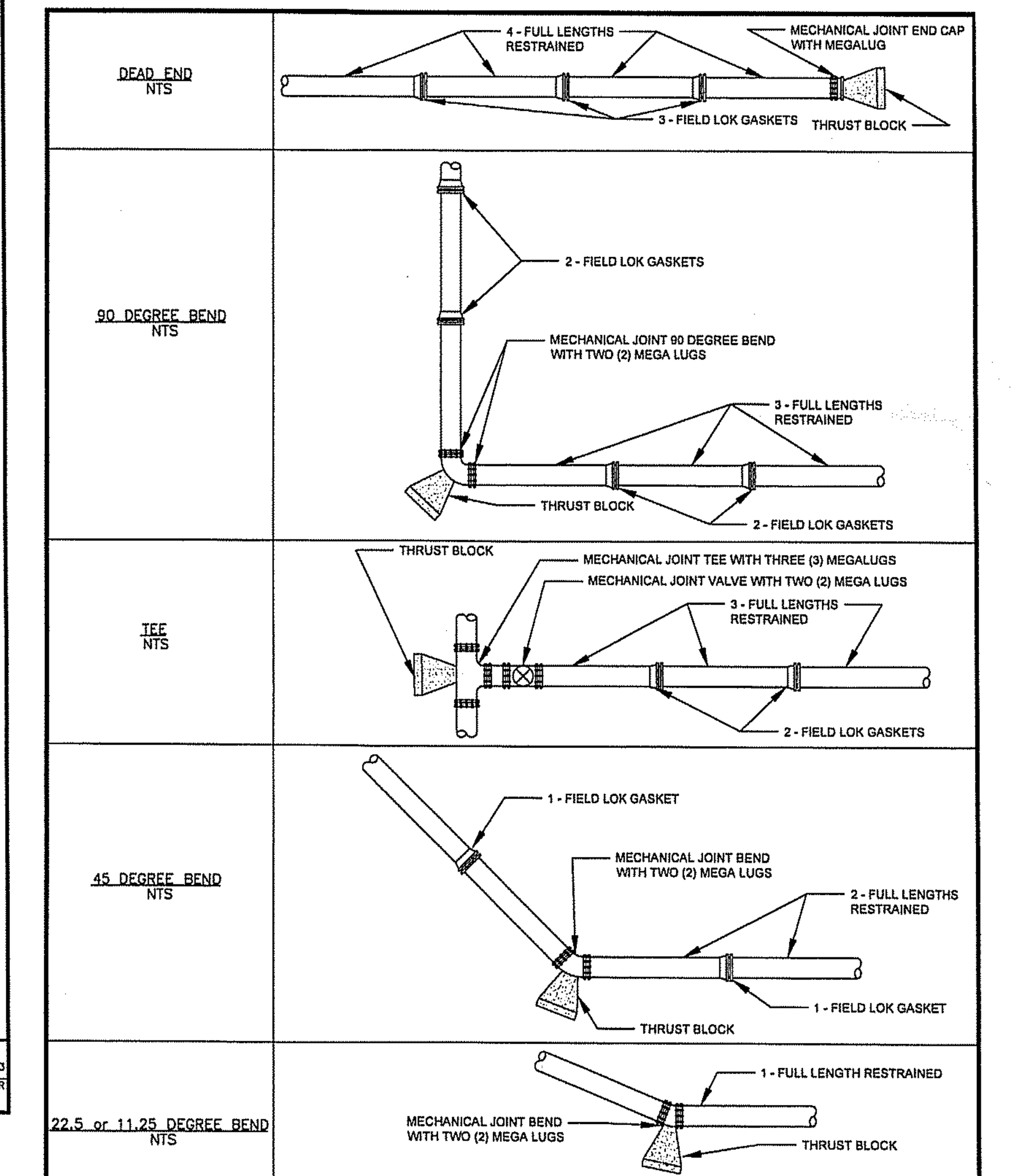


NOTES:
1. HYDRANTS SHALL BE MUELLER A-423 SUPER CENTURION 350 OPTION C44, 316 STAINLESS STEEL BOLTS AND NUTS BELOW GROUND, 410 STAINLESS STEEL UPPER AND LOWER STEM AND STAINLESS STEEL CAPS/NOZZLE CHAINS. PART# 423-544884 (4'-6" BURY).
2. HYDRANT BODY SHALL BE ORDERED SAFETY YELLOW, PAINT CODE M7, BONNET COLOR SHALL BE AS FOLLOWS: RED FOR 6" WATER MAIN, ORANGE FOR 8" & 10" WATER MAIN AND GREEN FOR 12" AND ABOVE WATER MAIN.
3. CENTER LINE OF FIRE HYDRANT SHALL BE PLACED 1'-6" FROM CURB FACE STEAMER (4 1/2") NOZZLE TO BE 1'-6" FROM CENTER TO TOP OF CURB.
4. SWIVEL TEE TO BE USED FOR WATER MAIN CONNECTION.
5. IF DISTANCE BETWEEN VALVE AND HYDRANT REQUIRE MORE THAN ONE PIPE LENGTH, FIELD LOK TYPE GASKET TO BE USED AT JOINT.
6. CONCRETE FOR THRUST BLOCKS TO BE N.J.D.O.T. CLASS "B".
7. SIZE AND BEARING AREA FOR THRUST BLOCKS SHALL CONFORM TO CURRENT A.W.W.A STANDARDS OR SHALL BE DESIGNATED ON THE PLANS.
8. WHEREVER POSSIBLE, HYDRANTS SHOULD BE LOCATED AT THE LOT LINE SEPARATING THE PROPERTIES, OR AS DIRECTED BY THE ENGINEER.
9. DRAIN PORTS MUST BE FREE OF CONCRETE OR OTHER PERMANENT OBSTRUCTIONS.
10. 4 1/2" PUMPER NOZZLE CONNECTION ON HYDRANT TO FACE STREET.
11. MINIMUM COVER FOR WATER MAINS TO BE 4'-0".

FIRE HYDRANT DETAIL WITH
SWIVEL-TEE CONNECTION
N.T.S.

TOWNSHIP OF MARLBORO 1979 TOWNSHIP DRIVE MARLBORO, NEW JERSEY 07746 (732) 536-0200 Phone (732) 972-5301 Fax	FIRE HYDRANT WITH SWIVEL TEE CONNECTION M.T.W.U.D. MARLBORO TOWNSHIP, MONMOUTH COUNTY, NEW JERSEY	DATE 2/1/05 REVISED 1/16/23 DRAWING NUMBER 6 OF 39

CONTRACTOR SHALL PROVIDE A 2'x2'x6" THICK CONCRETE PAD INSTALLED AROUND THE PROPOSED HYDRANT VALVE ON ROUTE 520



GENERAL NOTES:
1. FIELD LOCK RESTRAINT LOCATIONS FOR DUCTILE IRON OR BELL CLAMP RESTRAINT LOCATIONS FOR PVC

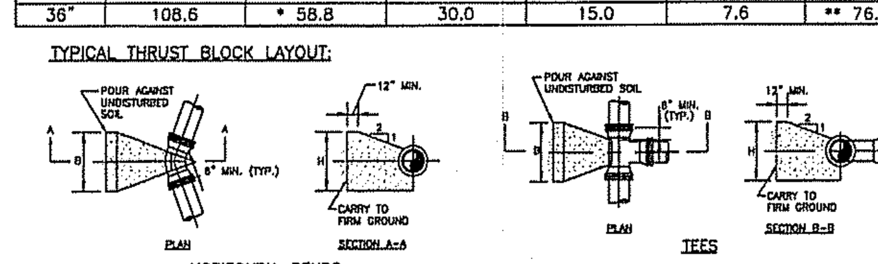
TOWNSHIP OF MARLBORO 1979 TOWNSHIP DRIVE MARLBORO, NEW JERSEY 07746 (732) 536-0200 Phone (732) 972-5301 Fax	PIPE RESTRAINT LOCATIONS M.T.W.U.D. MARLBORO TOWNSHIP, MONMOUTH COUNTY, NEW JERSEY	DATE 8/15/22 DRAWING NUMBER 41

THRUST BLOCKS
BEARING AREA FOR 200 P.S.I.

"A" = CONTACT BEARING AREA OF BLOCK WITH EARTH SQUARE FEET (A=BH)

NOMINAL DIAMETER OF D.I. PIPE (d)	90° ELBOW	45° ELBOW	22 1/2° ELBOW	11 1/4° ELBOW	5 1/8° ELBOW	DEAD END
	"A"	"A"	"A"	"A"	"A"	"A"
6"	3.6	2.0	1.0	0.5	.24	2.4
8"	6.0	3.2	1.6	.82	.42	4.2
10"	9.1	4.9	2.5	1.2	.58	6.5
12"	13.0	7.0	3.6	1.8	1.0	9.2
16"	22.4	12.2	6.2	3.2	1.6	15.8
18"	28.0	15.2	7.8	4.0	2.0	20.0
20"	34.6	18.6	9.6	4.8	2.4	24.4
24"	49.2	26.6	13.6	6.8	3.4	34.8
30"	75.8	41.0	21.0	10.6	5.2	53.6
36"	108.6	* 58.8	30.0	15.0	7.6	** 76.8

TYPICAL THRUST BLOCK LAYOUT:



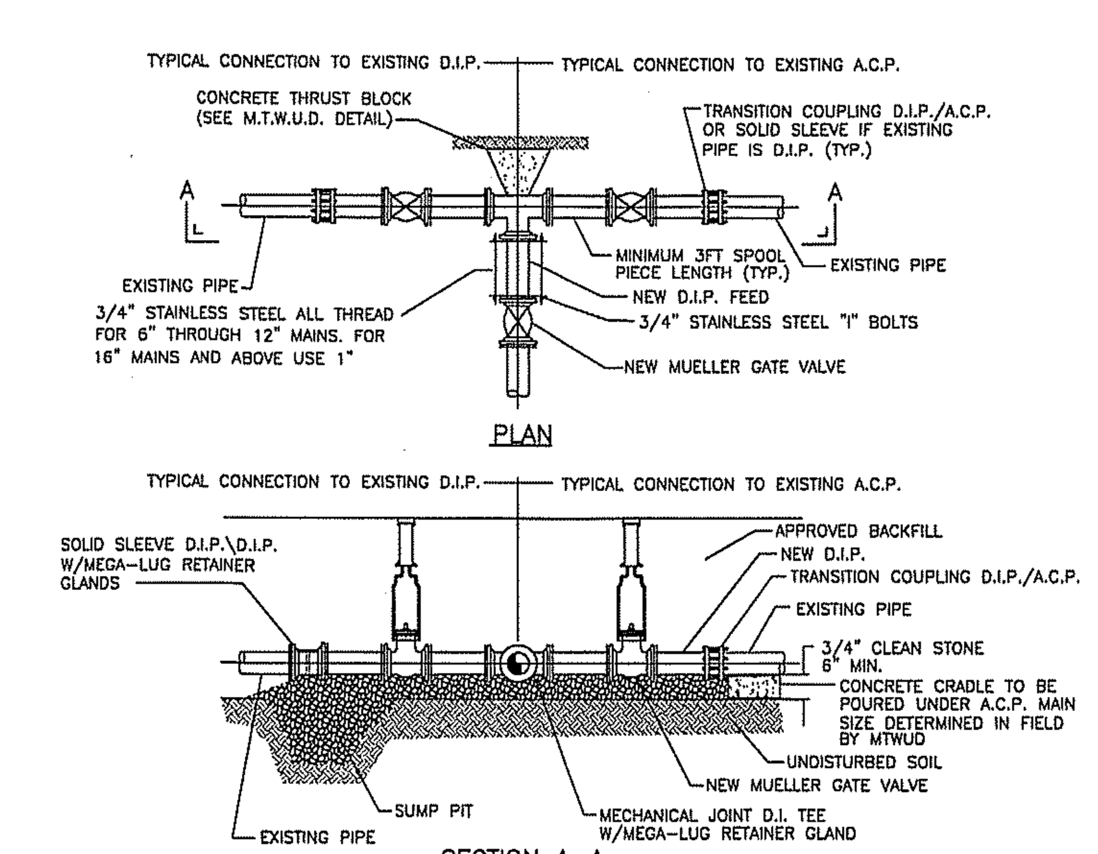
EX: A=BH Where A is Area, B is Base and H is height
If A=7 Sq.Ft. and B=3.5 Ft. then H=2 Ft.

NOTES:
1. BEARING AREAS ARE BASED ON UNDISTURBED SOIL WITH A BEARING CAPACITY OF 3,000 LBS. PER SQ. FT. FOR A LESSER SOIL BEARING CAPACITY, THESE AREAS SHALL BE INCREASED ACCORDINGLY.
2. ALL CONCRETE THRUST BLOCKS SHALL BE CLASS B CONCRETE.
3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED EARTH.
4. NO JOINT SHALL BE COVERED WITH CONCRETE.
5. MEGA-LUG RETAINER GLANDS SHALL BE USED ON ALL MECHANICAL JOINT CONNECTIONS.
6. BEARING AREA CALCULATED: P=Pressure in Lbs/Sq.In.
A=Area of the pipe ($A=\pi r^2$)

$$\text{* Bearing Area in Sq.Ft.} = \frac{2\ PA\ \text{Sin (Angle of Bend/2)}}{\text{Soil Bearing Capacity}} = \frac{(2)\ (200)\ (1152.09)\ (0.3827)}{3{,}000\ \text{Lbs/Sq. Ft.}} = 58.8\ \text{Sq. Ft.}$$

$$\text{** Bearing Area in Sq.Ft.} = \frac{PA}{\text{Soil Bearing Capacity}} = \frac{(200)\ (1152.09)}{3{,}000\ \text{Lbs/Sq. Ft.}} = 76.8\ \text{Sq. Ft.}$$

TOWNSHIP OF MARLBORO 1979 TOWNSHIP DRIVE MARLBORO, NEW JERSEY 07746 (732) 536-0200 Phone (732) 972-5301 Fax	THRUST BLOCK TABLE M.T.W.U.D. MARLBORO TOWNSHIP, MONMOUTH COUNTY, NEW JERSEY	DATE 1/31/05 DRAWING NUMBER 10



NOTES:
* 1. CONTRACTOR TO DIG TEST PITS TO DETERMINE THE SIZE AND TYPE OF THE EXISTING PIPE.
2. PRIOR TO CUTTING OF ANY MAIN, A SUMP PIT SHALL BE DUG AND STONED WITH PUMPS SET. AT NO TIME SHALL WATER BE ALLOWED TO BUILD UP IN THE EXCAVATION AND BACK FLOW INTO THE WATER MAIN.
3. MEGA-LUG RETAINER GLANDS SHALL BE USED ON ALL MECHANICAL JOINT CONNECTIONS.
4. THE ROAD AT THE CUT-IN LOCATION SHALL BE RESTORED TO MATCH EXISTING.
5. NO TRENCH SHALL REMAIN OPEN OVERNIGHT. ALL EXCAVATIONS SHALL BE BACKFILLED PRIOR TO THE CLOSE OF THE DAY.
6. NEW PIPING SHALL BE KEPT FREE AND CLEAR FROM DIRT AT INSTALLATION. RINSE PIPE/FITTINGS/VALVES WITH A CHLORINE SOLUTION PRIOR TO INSTALLATION.
7. ALL COMPONENTS SHALL BE BAGGED AND WRAPPED IN POLYETHYLENE BAG.
8. NO VALVES SHALL BE OPENNED OR CLOSED EXCEPT BY M.T.W.U.D.
9. CONTRACTOR SHALL EXCAVATE/EXPOSE A MINIMUM 6FT. LENGTH PAST THE PROPOSED CONNECTION POINT OF ANY ACP MAIN AND IF A COLLAR/JOINT OR ANY OTHER APPURTENANCE EXISTS, THE MAIN SHALL BE REMOVED UP TO THAT POINT AND REPLACED WITH DIP AS DIRECTED BY THE MTWUD.

ASBESTOS CEMENT PIPE

NOM. SIZE	MACH. END CLASS		ROUGH BARREL CLASS		
INCHES	100	150/200	100	150	200
3	3.74	3.84	3.95	4.13	4.17
4	4.64	4.81	4.95	5.10	5.35
6	6.91		7.20		7.35
8	9.11		9.40		9.50
10	11.24	11.66	11.5	11.95	
12	13.44	13.92	13.75	14.20	
14	15.07	16.22	15.55	16.50	16.60
16	17.15	18.46	17.65	18.75	18.90

DUCTILE IRON PIPE

NOM. SIZE	ALL CLASSES
INCHES	O.D. INCHES
3	3.80
4	4.80
6	6.90
8	9.05
10	11.10
12	13.20
14	15.30
16	17.40
18	19.50
20	21.60
24	25.80
30	32.00
36	38.30

PIPE SIZE CHARTS ARE FOR REFERENCE ONLY

CUT-IN CONNECTION INTO EXISTING WATER MAIN DETAIL

DATE	REVISION
FEB 9, 2023	PER MARLBORO TWP WATER COMMENTS
JAN. 27, 2023	PER MARLBORO TWP WATER COMMENTS

STUART CHALLONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. NO. 34337
PROFESSIONAL PLANNER N.J. LIC. NO. 4489
CHALLONER & ASSOCIATES L.L.C. Certificate of Auth. No. 24GA28057700
CONSULTING ENGINEERS AND DESIGN PROFESSIONALS
201 Main Street 2nd Floor
Toms River, New Jersey 08753
Phone: 732-818-9980 Fax: 732-818-9981

Date:	Scale:	Drawn By:	Checked By:	File No.:	Field Book:	Sheet No.:
JAN. 04, 2023	AS NOTED	SGP	S.C.C.	19022		13 of 13

WATER UTILITY DETAILS
45 ROUTE 520
LOTS 66, 67, 68 & 69
BLOCK 268
SITUATED IN
TOWNSHIP OF MARLBORO
MONMOUTH COUNTY, NEW JERSEY