# EBENEZER LANDING Patio Homes & Attached Villas 4592 Seneca Street Town of West Seneca, New York 14224

**AGENCIES** 

BUILDING DEPT.

COMPANY/DEPT:

NAME/TITLE:

ADDRESS:

JEFFREY SCHIEBER, CODE ENFORCEMENT OFFICER TOWN OF WEST SENECA BUILDING DEPT.

1250 UNION ROAD WEST SENECA, NEW YORK 14224

716-558-3237 TELEPHONE

ENGINEERING DEPT.

NAME/TITLE: RICK B. HENRY III P.E., TOWN ENGINEER TOWN OF WEST SENECA ENGINEERING DEPT. COMPANY/DEPT: 1250 UNION ROAD

WEST SENECA, NEW YORK 14224

716-558-3220 TELEPHONE

PLANNING DEPT.

NAME/TITLE: ROBERT NIEDERPRUEM, CHAIRMAN COMPANY/DEPT: TOWN OF WEST SENECA PLANNING BOARD 1250 UNION ROAD ADDRESS:

WEST SENECA, NEW YORK 14224

716-674-2869 TELEPHONE

LAND SURVEYOR: COMPANY:

CREEKSIDE BOUNDARY ADDRESS: 1746 HIGGINS ROAD WARSAW, NEW YORK 14569

TELEPHONE 585-786-5640

ERIE COUNTY SEWER: NAME/TITLE:

MATT SALAH, PE COMPANY/DEPT: ERIE COUNTY DEPT. OF ENV. & PLANNING ADDRESS: 95 FRANKLIN STREET

BUFFALO, NEW YORK 14202

TELEPHONE 716-858-6990 UTILITIES

NATURAL GAS NAME/TITLE: COMPANY/DEPT:.

GERALD SCOTT NATIONAL FUEL GAS 10 LAFAYETTE SQUARE, ROOM 600

BUFFALO, NEW YORK 14203

716-857-7000

**TELEPHONE** 

TELEPHONE COMPANY NAME/TITLE: COMPANY/DEPT: ADDRESS:

ROBERT MCCARTHY 65 FRANKLIN STREET, ROOM 601 BUFFALO, NEW YORK 14202

716-840-8669 **TELEPHONE** 

**ELECTRIC** NAME/TITLE: COMPANY/DEPT:.

ERIC WRIGHT NATIONAL GRID 716-857-4031 TELEPHONE

WATER

NAME/TITLE: DANIEL WALKOWIAK ERIE COUNTY WATER DEPARTMENT COMPANY/DEPT: 3030 UNION RD ADDRESS: CHEEKTOWAGA, NEW YORK 14227

716-684-1510 **TELEPHONE** 

ELECTRIC & GAS NAME/TITLE:

COMPANY/DEPT:.

SAM CEPPAGLIA N.Y.S. ELECTRIC & GAS 716-651-5256

CABLE

TELEPHONE

NAME/TITLE: COMPANY/DEPT:

THOMAS TRIGILIO TIME WARNER CABLE

716-558-8615 **TELEPHONE** 

UNDERGROUND FACILITIES PROTECTION ORGANIZATION TELEPHONE 1-800-962-7962

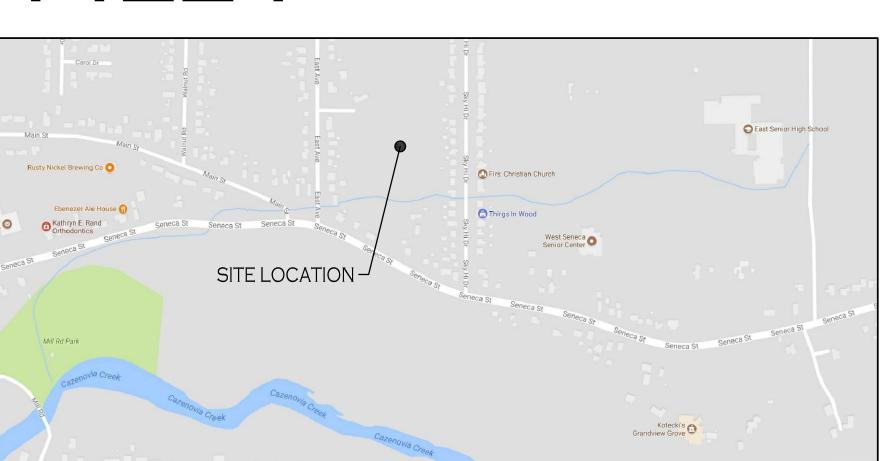
OWNER/DEVELOPER

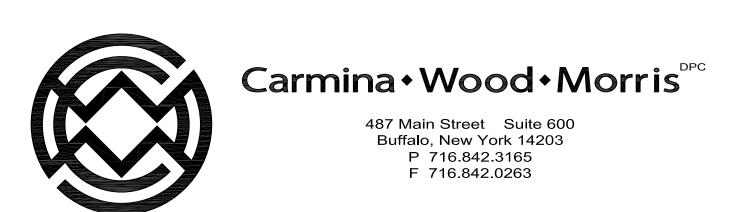
NAME: EBENEZER LANDING COMMUNITY, LLC **ADDRESS** PO BOX 945

HAMBURG, NEW YORK 14075

CONTACT: DAVID STAPLETON

TELEPHONE 716-691-6900





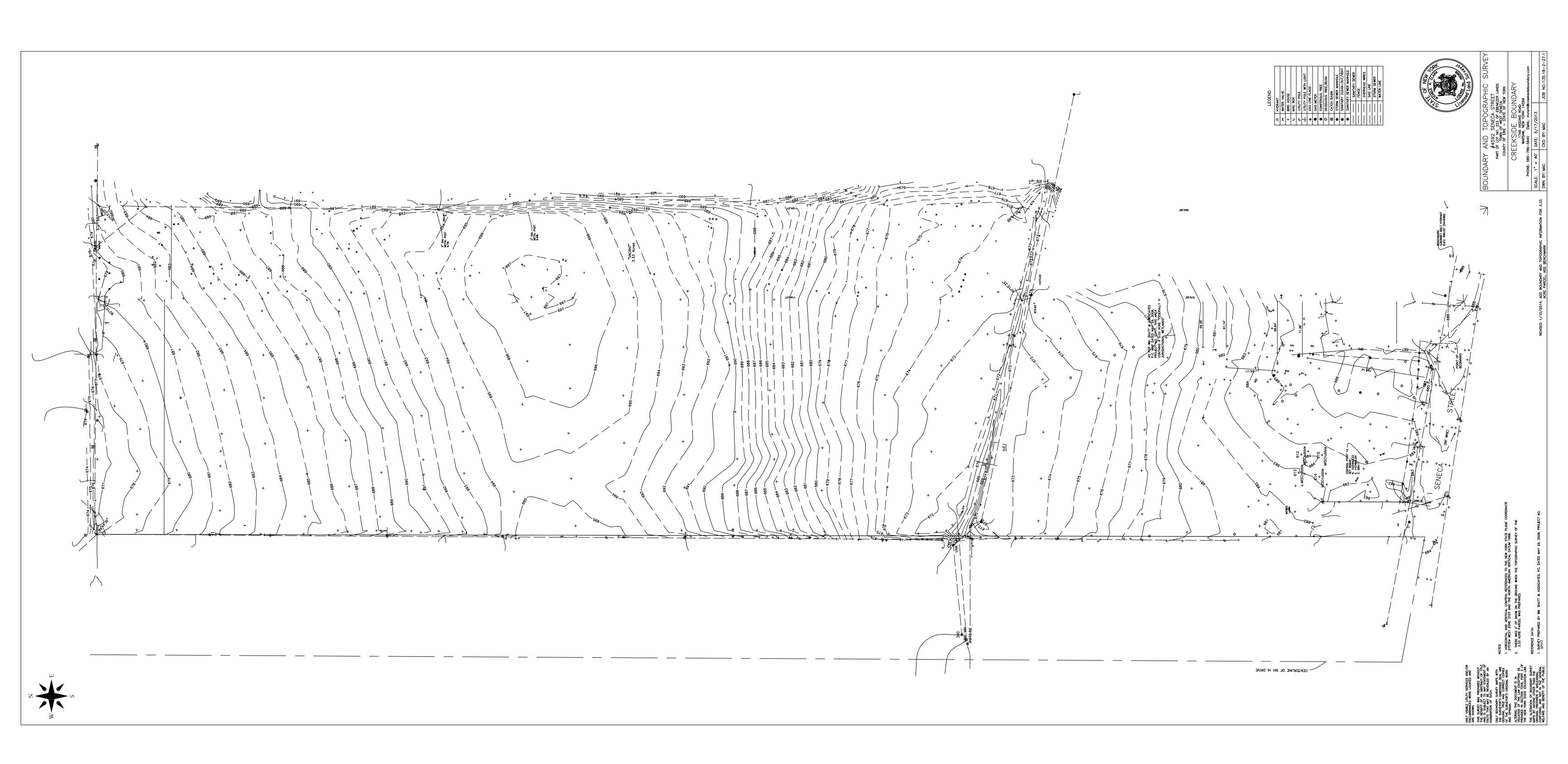


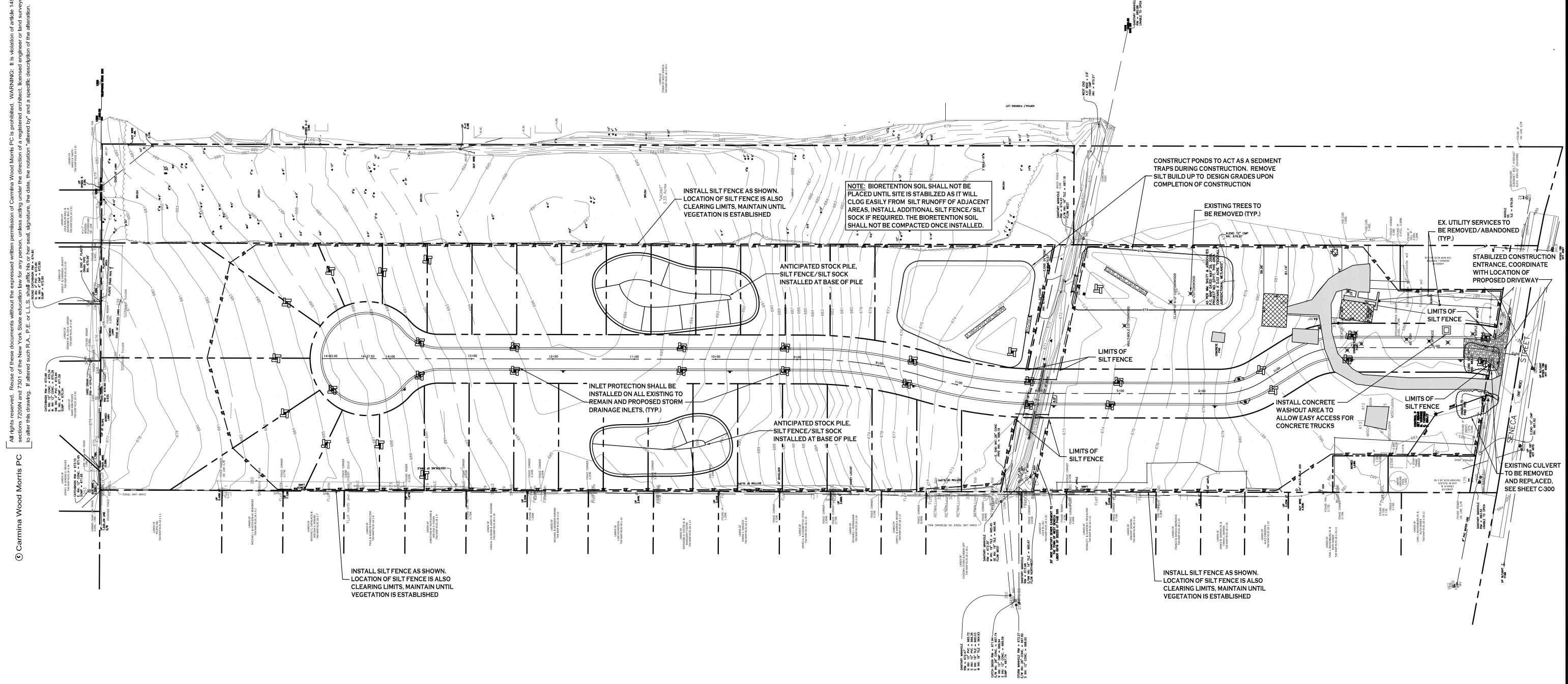
DWG NO.	DRAWING TITLE
- C-001 C-002 C-100 C-101 C-200 C-201 C-202 C-203 C-300 C-301 C-302 C-303 C-304 C-305 C-306 C-400 C-401 C-402 C-403 C-404 C-405 C-406 C-407 C-408 C-409 C-410 L-100	COVER SHEET  BOUNDARY & TOPOGRAPHIC MAP (BY CREEKSIDE BOUNDARY)  DEMOLITION & EROSION CONTROL PLAN  DEMOLITION & EROSION CONTROL DETAILS  SITE PLAN  SITE DETAILS  OVERALL GRADING PLAN  GRADING PLAN — NORTH  GRADING PLAN — SOUTH  ROADWAY PROFILE  OVERALL STORM DRAINAGE PLAN  STORM DRAINAGE PLAN — NORTH  STORM DRAINAGE PLAN — SOUTH  STORM DRAINAGE DETAILS  STORM DRAINAGE DETAILS  STORM DRAINAGE PROFILES  ROADWAY CULVERT PLAN & CROSS SECTIONS  OVERALL UTILITY PLAN  UTILITY PLAN — NORTH  UTILITY DETAILS—WATER  UTILITY DETAILS—WATER  UTILITY DETAILS—SANITARY  UTILITY PROFILES — SANITARY  UTILITY PROFILES — SANITARY  UTILITY PROFILES — SANITARY

August 2017

Description Date Rev. per CPL & PB Comments 10/29/17 Rev. Group Dwelling Parcels 01/30/19 Rev. Per NYSEG Easement 8/29/19 David Homes 2021 Revisions 12/10/21

EBENEZER LANDING Patio Homes & Attached Villas 4592 Seneca Street Town of West Seneca, New York 14224







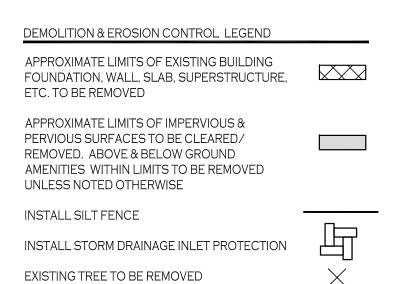
# EROSION CONTROL PLAN

THE FOLLOWING EROSION CONTROL PROCEDURE SHALL BE ADHERED TO BY THE CONTRACTOR:

- 1. INSTALL TEMPORARY SILT FENCE BARRIERS AS DIRECTED BY THE OWNER AND AT ALL EXISTING STORMWATER CATCH BASINS WITHIN THE WORK AREA TO PREVENT SEDIMENT MIGRATION. ALL SILT FENCE BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.
- 2. THE TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR RE-USE AS DIRECTED BY THE OWNER. ALL LOCAL ORDINANCES REGARDING THE SALE OF TOPSOIL MUST BE FOLLOWED. TOPSOIL MAY NOT BE REMOVED WITHOUT A PERMIT.
- 3. ALL SILT FENCE BARRIERS SHALL BE REPLACED WHEREVER THEY BECOME CLOGGED OR INOPERABLE.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS.
- 5. THE CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER-SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR, AND WATER SPREAD AS NECESSARY AND AS DIRECTED BY THE OWNER IN ORDER TO CONTROL DUST.
- 6. DIRT OR DEBRIS LEFT ON LOCAL PUBLIC ROADS AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE REMOVED AND ROAD SURFACES CLEANED BY THE CONTRACTOR ON A DAILY BASIS.
- 7. ALL DISTURBED AREAS (EXCEPT AREAS TO BE PAVED OR BUILT UPON) SHALL BE TOPSOILED TO A MINIMUM 4" DEPTH AND SEEDED IMMEDIATELY AFTER FINE GRADING TAKES PLACE AND AS SOON AS PHYSICALLY POSSIBLE.
- 8. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF DOWNSTREAM STORM SEWERS, DITCHES, AND CULVERTS. SILT BUILDUP FOUND TO BE A RESULT OF THIS SITE CONSTRUCTION WORK SHALL BE REMOVED FROM DOWNSTREAM CULVERTS BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER OR THE CITY.
- 9. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE IN PLACE PRIOR TO BEGINNING EARTHWORK OPERATIONS AND SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION, AS DIRECTED BY THE
- 10. INSTALL TEMPORARY SILT FENCE AROUND THE BASE OF STOCKPILES.

# NOTES:

- 1. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THOSE ITEMS TO REMAIN, SUCH AS TREES, PROPERTY CORNER PINS, UTILITY POLES, VALVES, HYDRANTS, CURBS, MANHOLES AND CATCH BASINS.
- 2. TEMPORARY SILT FENCE AND STRAW BALES TO BE INSTALLED AS DIRECTED BY THE OWNERS FIELD REPRESENTATIVE. MAINTAIN UNTIL VEGATATION IS ESTABLISHED AND PAVEMENT IS INSTALLED.
- 3. FOR THOSE STRUCTURES TO BE DEMOLISHED, ALL EXISTING UTILITY SERVICES SHALL BE ABANDONED IN ACCORDANCE WITH LOCAL REGULATIONS, ALL METERS SHALL BE RETURNED TO PROPER OWNERS.
- 4. THE CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCES WHERE ACCESSING THE SITE FROM PAVED ROADWAYS.
- 5. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH NYS M.U.T.C.D. STANDARDS PRIOR TO STARTING WORK.



NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

60 0 60 120Ft.

Carmina
Wood
Morris

487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165

F 716.842.0263

EVISIONS:
Description

Rev. per CPL & PB Comments

Rev. Group Dwelling Parcels

David Homes 2021 Revisions

12/10/21

Home & Attached Villas Construction

Issued for Construction: XX.XX.XX Municipality Submission: 4/26/16

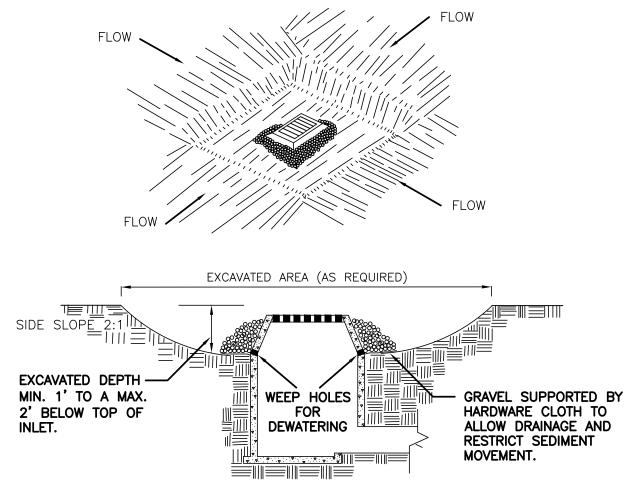
Drawn by: C. Wood Scale: As Noted

Demolition &

Erosion Control
Plan

DRAWING NO.

C-00′

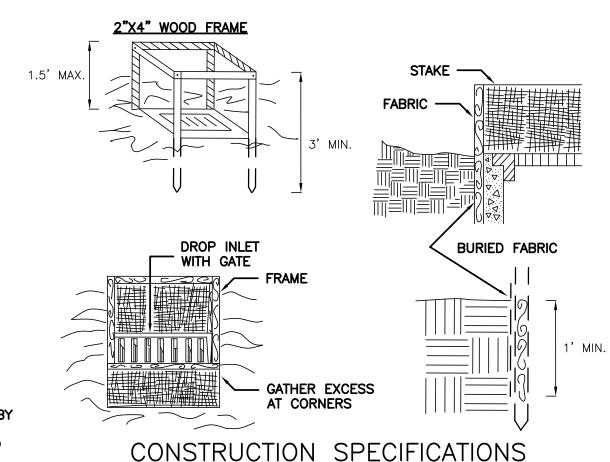


# **CONSTRUCTION SPECIFICATIONS**

- 1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION 2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
- 3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
- 4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING. MAXIMUM DRAINAGE AREA 1 ACRE

# **INLET PROTECTION DETAIL 1**

NOT TO SCALE



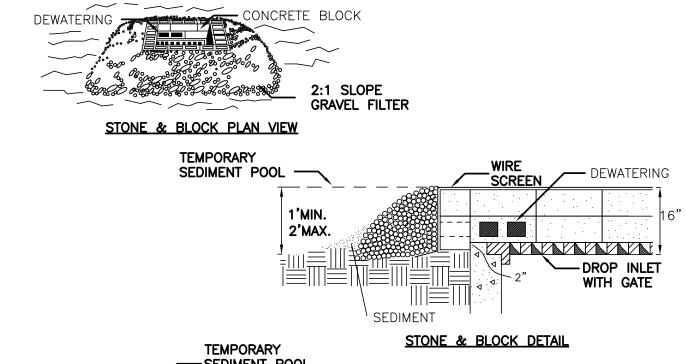
# CONSTRUCTION SPECIFICATIONS

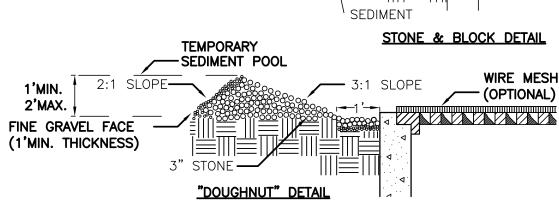
- 1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
- 2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
- 3. STAKE MATERIALS WILL BE STANDARD 2"  $\times$  4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
- 4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUI
- SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND LLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
- 6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

# **INLET PROTECTION DETAIL 2**

NOT TO SCALE

MAXIMUN DRAINAGE AREA 1 ACRE





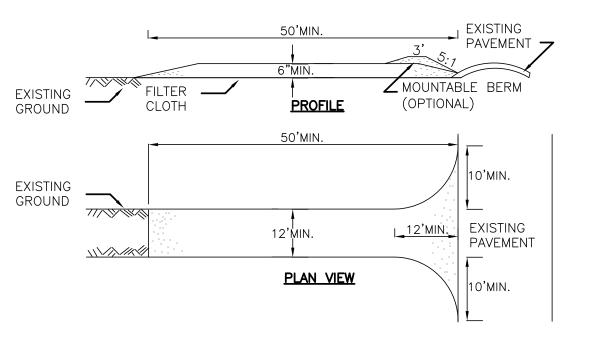
# **CONSTRUCTION SPECIFICATIONS**

- 1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
- 2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
- 3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
- 4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS. MAXIMUM DRAINAGE AREA 1 ACRE

# **INLET PROTECTION DETAIL 3**

NOT TO SCALE

NOTE: INSTALL ONE OF THE INLET PROTECTION OPTIONS SHOWN FOLLOWING INSTALLATION OF THE PROPOSED CB'S



# **CONSTRUCTION SPECIFICATIONS**

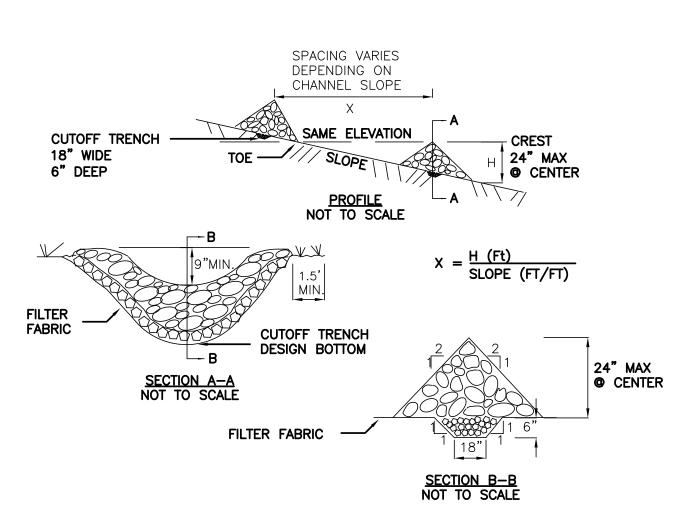
- 1. STONE SIZE USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT. 2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE
- A 30 FOOT MINIMUM LENGTH WOULD APPLY). 3. THICKNESS - NOT LESS THAN SIX (6) INCHES.

OF STONE.

- 4. WIDTH TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE
- 5. FILTER CLOTH WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING
- 6. SURFACE WATER ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CON-STRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- 7. MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- 8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- 9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH

# STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



— 2"x2" WOODEN STAKE

AREA TO BE

PROTECTED

- SILT SOCK

SECTION VIEW

WOODEN STAKES ON

O' LINEAL SPACING

WORK AREA

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED 1/2 OF THE

SILT SOCK DETAIL

N.T.S.

EXPOSED HEIGHT OF THE SILT SOCK, ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER

MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF

AREA TO BE

PROTECTED

SILT SOCK

WATER FLOW

NOTES:

**WORK AREA** 

PLAN VIEW

THE EXISTING SEDIMENT LADEN SILT SOCK.

# **CONSTRUCTION SPECIFICATIONS**

- 1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
- 2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
- 3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
- 4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR
- AND EROSION WITH STONE OR LINER AS APPROPRIATE. 5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE

MAXIMUM DRAINAGE AREA 2 ACRES.

NOT TO SCALE

# STONE CHECK DAM DETAIL



elopme

C. Wood

6/1/21

As Noted

Drawn by: Scale:

DRAWING NAME Demolition &

**Erosion Control** Details

DRAWING NO.

Project no.: 21.246

SILT SACK DETAIL NOT TO SCALE

EXPANSION RESTRAINT-

(1/4" NYLON ROPE,

2" FLAT WASHERS)

INSTALLATION DETAIL

STRAP

1" REBAR FOR

BAG REMOVAL

FROM INLET

-DUMP STRAPS

(2 EACH)

BAG DETAIL

" REBAR FOR

STRAP

(MANUFACTURED

INSPECT AFTER EVERY

RAINFALL OR 3 WEEKS

BY ACF, OR

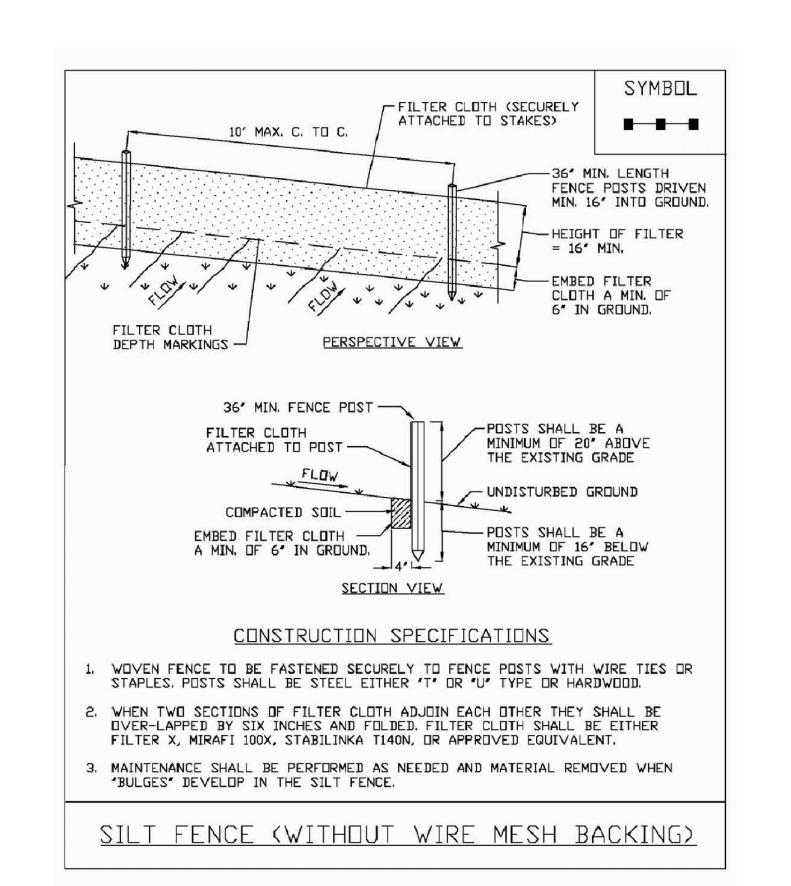
AND EMPTY.

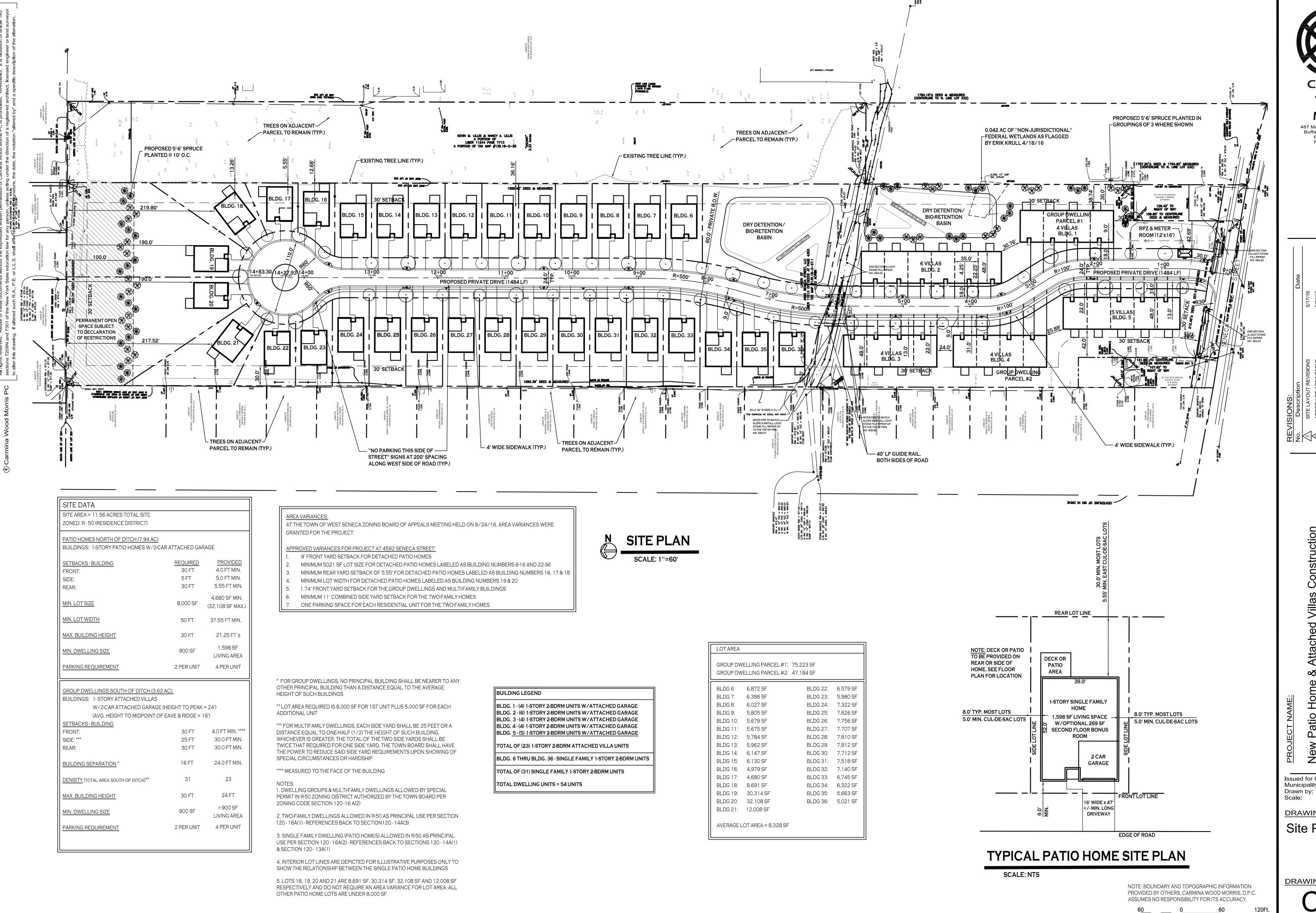
**BAG REMOVAL** 

FROM INLET

-SILTSACK

EQUAL)





Wood

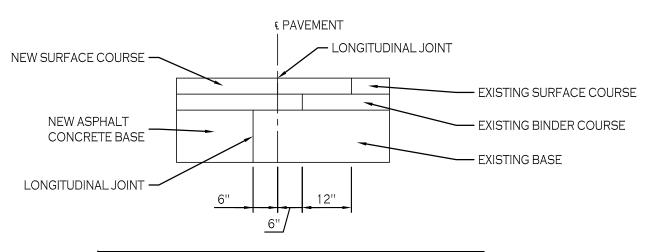
Morris 487 Main Street Suite 600 Buffalo, New York 14203 P 716.842.3165 F 716.842.0263

Patio

Issued for Construction: xx.xx.xx Municipality Submission: 5/7/16 C. Wood

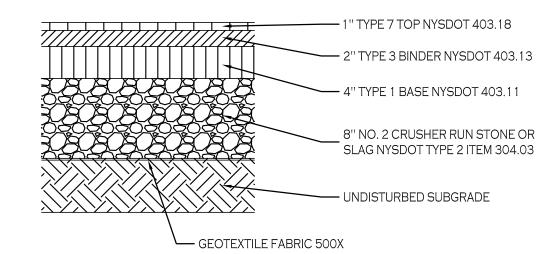
As Noted

**DRAWING NAME:** Site Plan

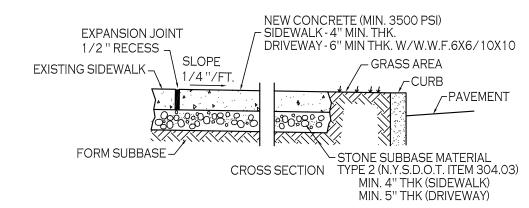


THE WIDTH OF SPREAD SHOULD BE PLANNED TO PROVIDE FOR THE OFFSETTING OF LONGITUDINAL JOINTS IN THE SEVERAL COURSES

### PAVEMENT OVERLAPPING DETAIL NOT TO SCALE



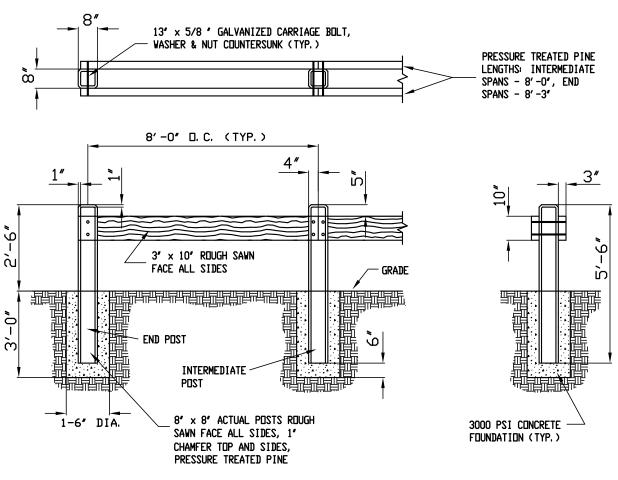
## PAVEMENT SECTION - PRIVATE ROAD NOT TO SCALE

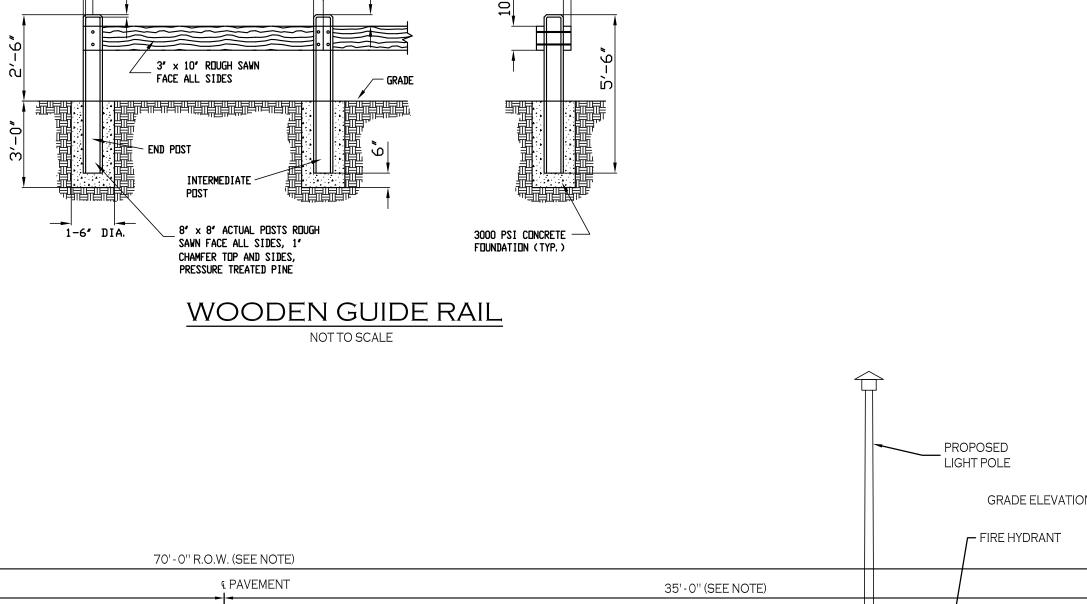


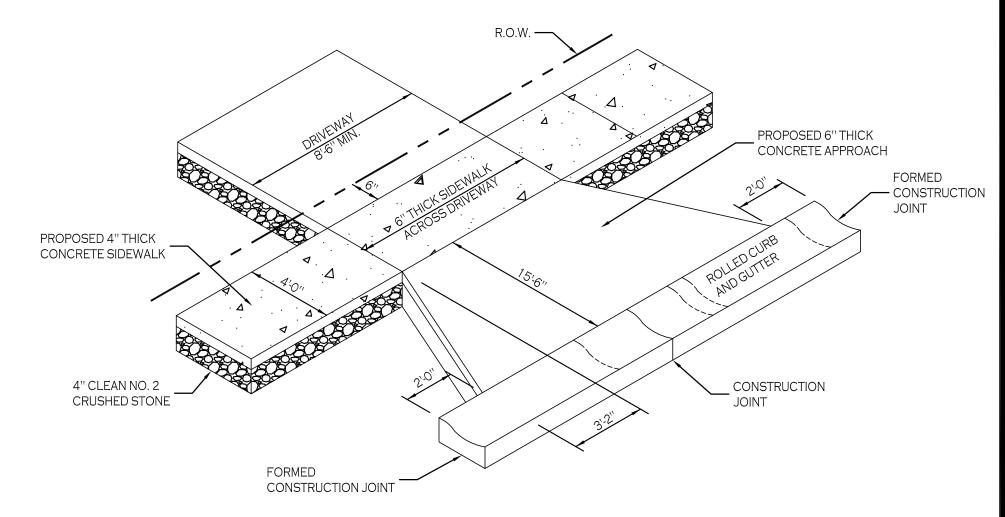
- 1. CONTROL JOINTS TO BE AT 5'-0" O.C., BOTHWAYS WHERE APPLICABLE SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
- 2. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM
- TO NYSDOT STANDARD SPECIFICATION 608-3.
- 3. SUBBASE GRADE SHALL FOLLOW THE PROPOSED GRADE OF THE SIDEWALK AND SLOPE AWAY FROM BUILDING WHERE APPLICABLE, PROVIDE CONTINUOUS STONE PATH TO CURB UNDERDRAIN WHERE PROVIDED.
- 4. FULL DEPTH EXPANSION JOINTS SHALL BE INSTALLED EVERY 20' O.C., BOTHWAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
- 5. SEE CURB DETAIL FOR DOWLING REQUIREMENTS WHERE ABUTTING CURB 6. INSTALL 6" LONG #3 DOWELS @ 12" O.C. WHERE SIDEWALK ABUTS A BUILDING WALL AT AN
- ENTRANCE, THICKEN SIDEWALK TO 6" AT BUILDING WALL AND INSTALL DOWEL CENTERED IN THE 6" DEPTH. DOWELS AND THICKENING OF SIDEWALK SHALL EXTEND 18" EITHER SIDE OF ENTRANCE. 7. INSTALL ½" PREMOLDED EXPANSION JOINT WITH BACKER ROD & SEALANT WHERE SIDEWALK ABUTS BUILDING OR OTHER STRUCTURE

# CONCRETE SIDEWALK

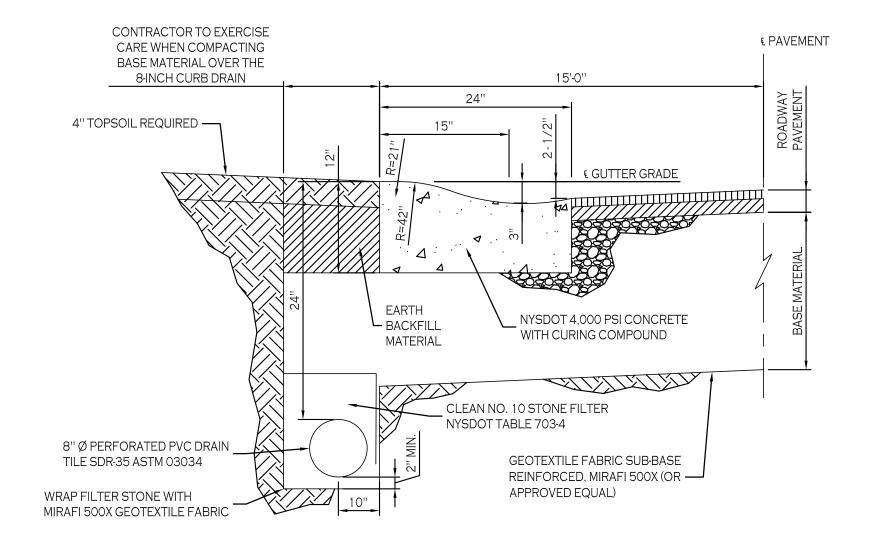
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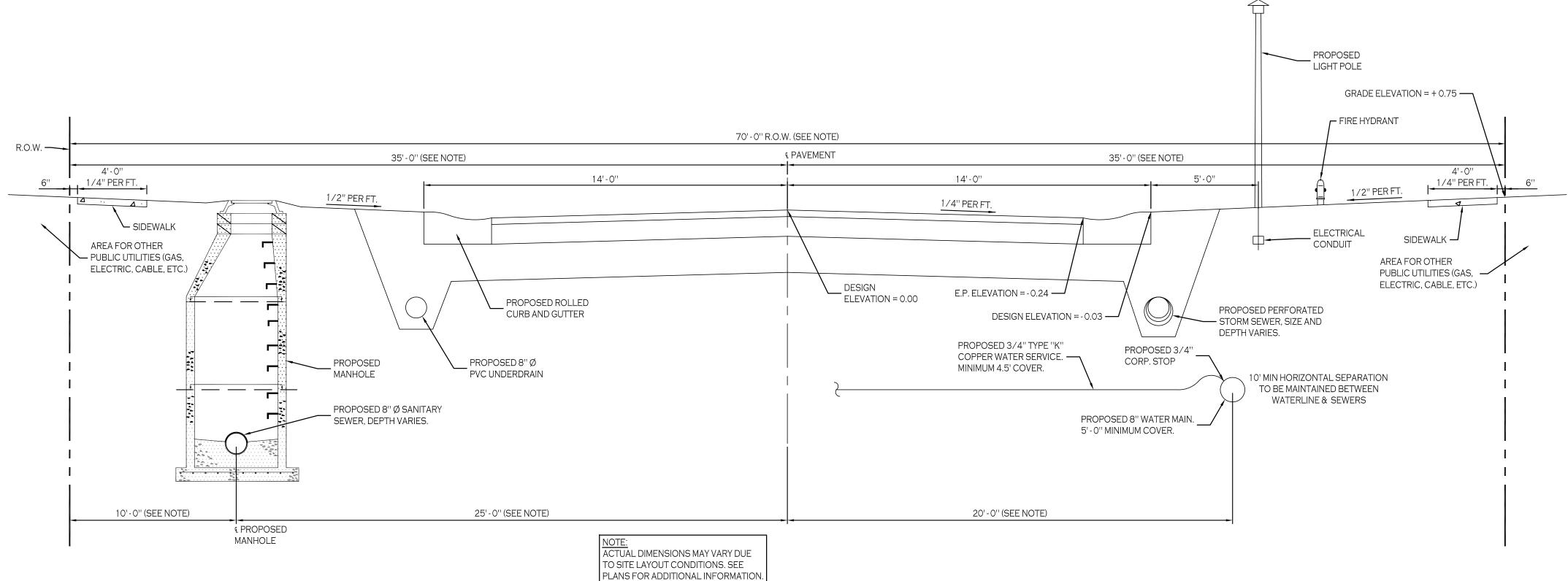




## TYPICAL DRIVEWAY APRON & SIDEWALK NOT TO SCALE



ROLLED CURB DETAIL



TYPICAL ROADWAY AND SERVICES LOCATION NOT TO SCALE

Wood

**Morris**<sup>®</sup>

487 Main Street Suite 600

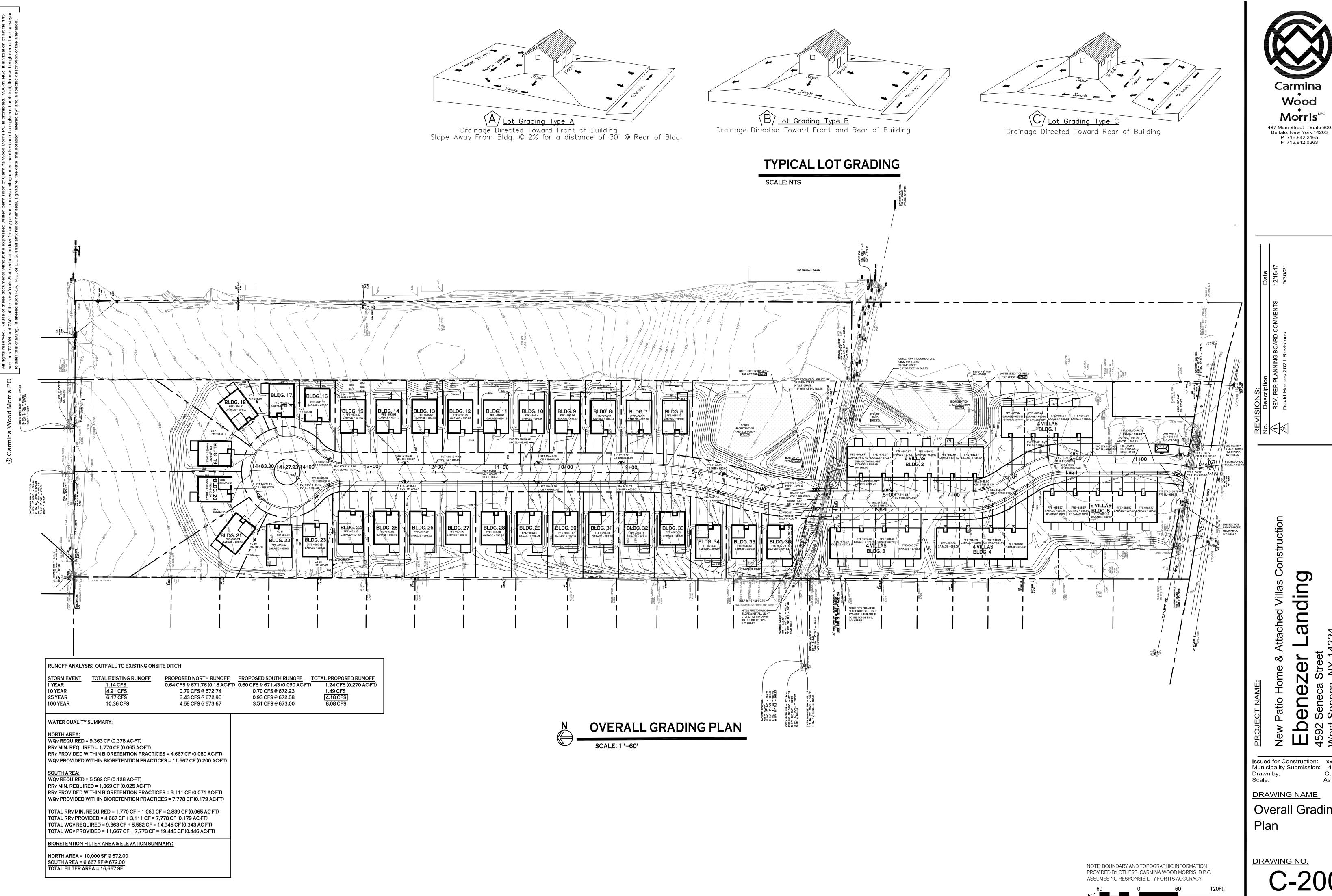
Buffalo, New York 14203

P 716.842.3165

F 716.842.0263

Issued for Construction: xx.xx.xx Municipality Submission: 5/7/16 Drawn by: C. Wood Scale: As Noted

DRAWING NAME: Site Details



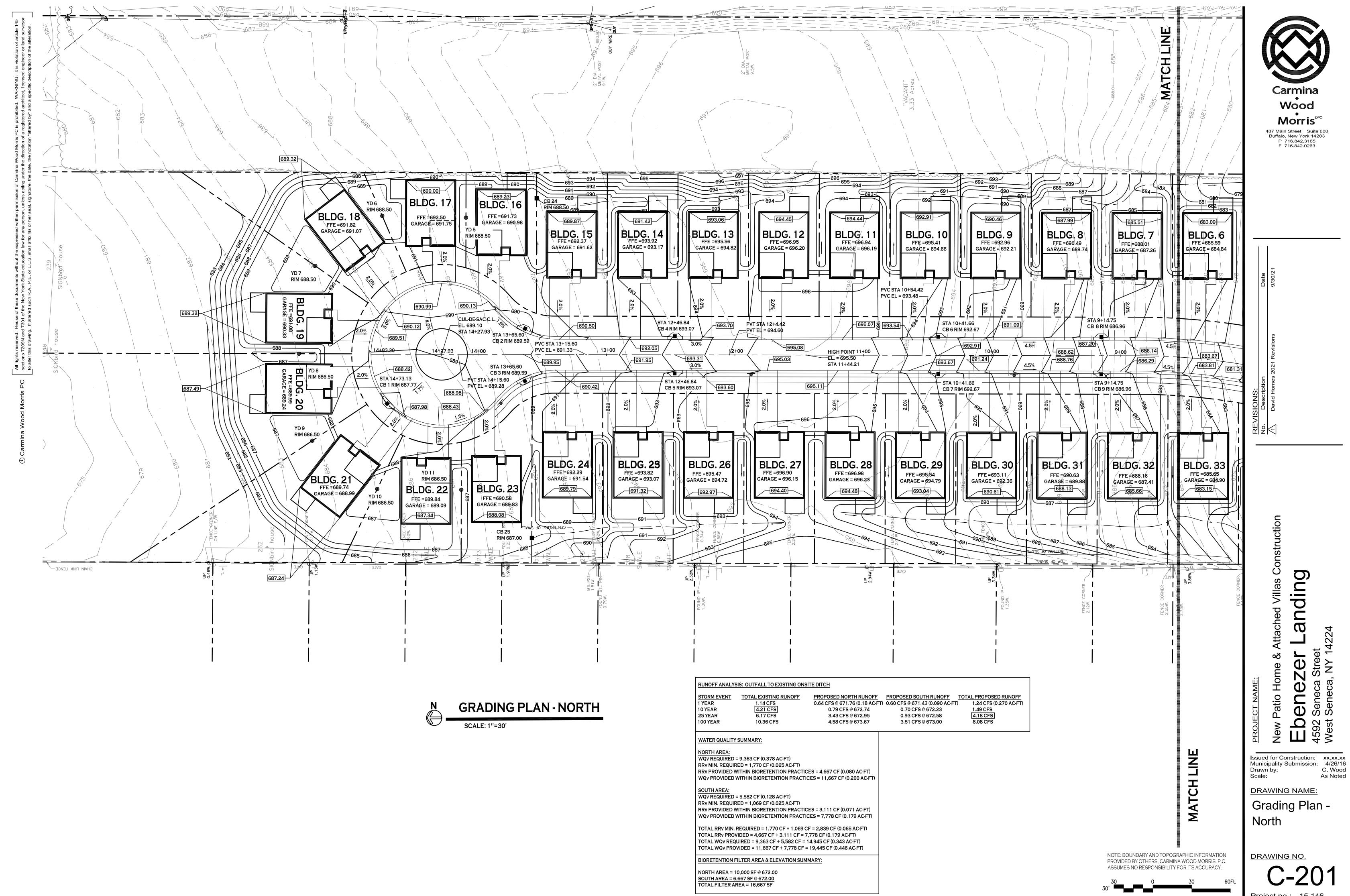
Wood Morris

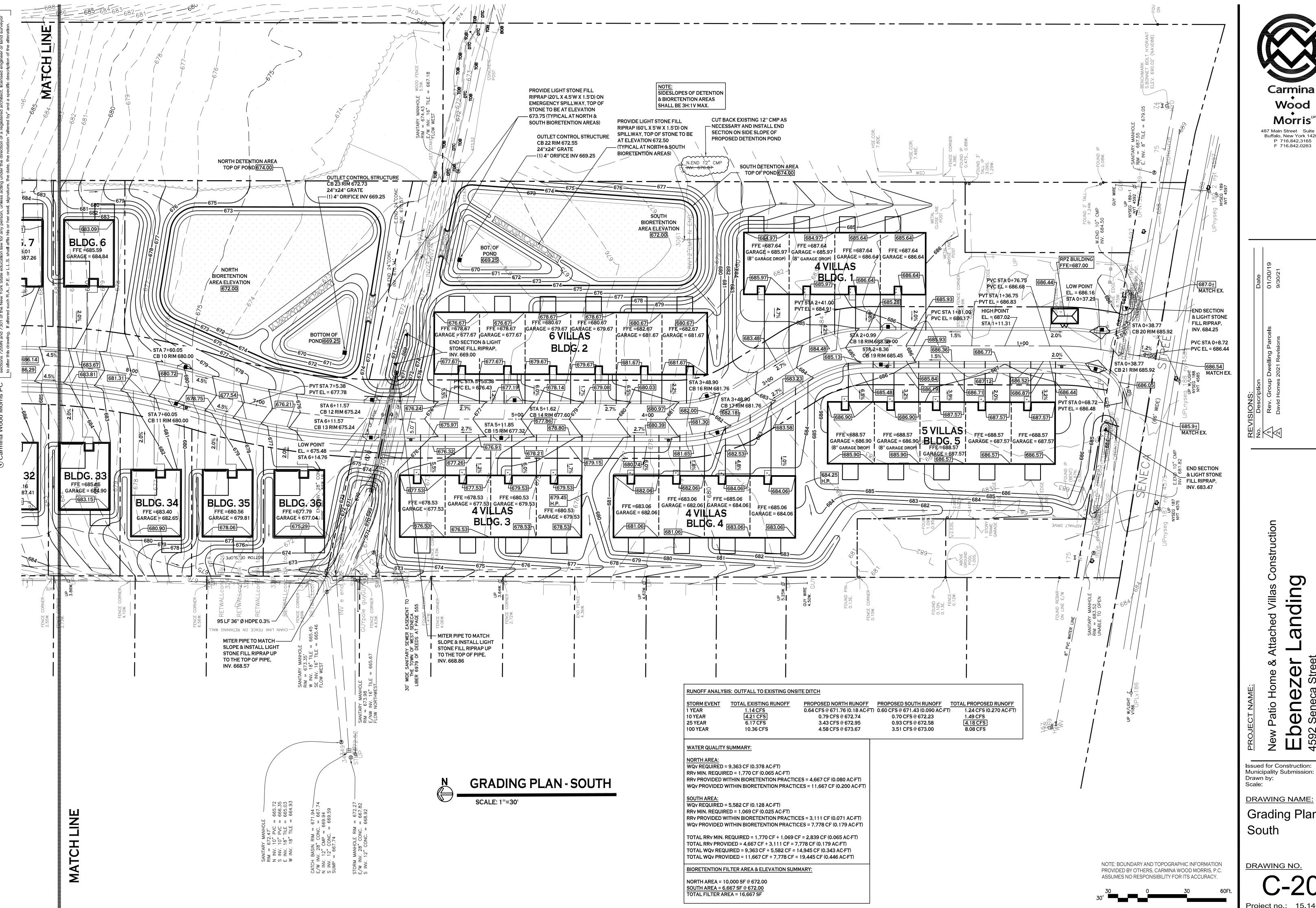
Issued for Construction: xx.xx.xx

Municipality Submission: 4/26/16 C. Wood As Noted

**DRAWING NAME:** 

Overall Grading

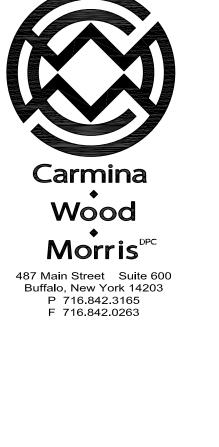


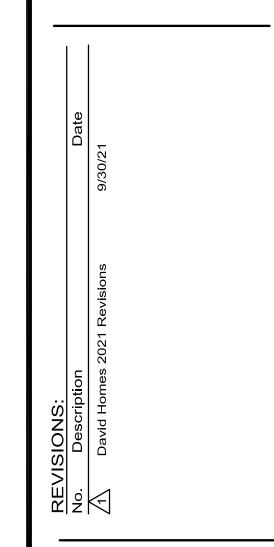




Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 C. Wood As Noted

Grading Plan -





Attached Villas Construction Landing

benezer Land

New Patio Home
Ebeneze
4592 Seneca St

Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 Drawn by: C. Wood Scale: As Noted

DRAWING NAME:

Profile

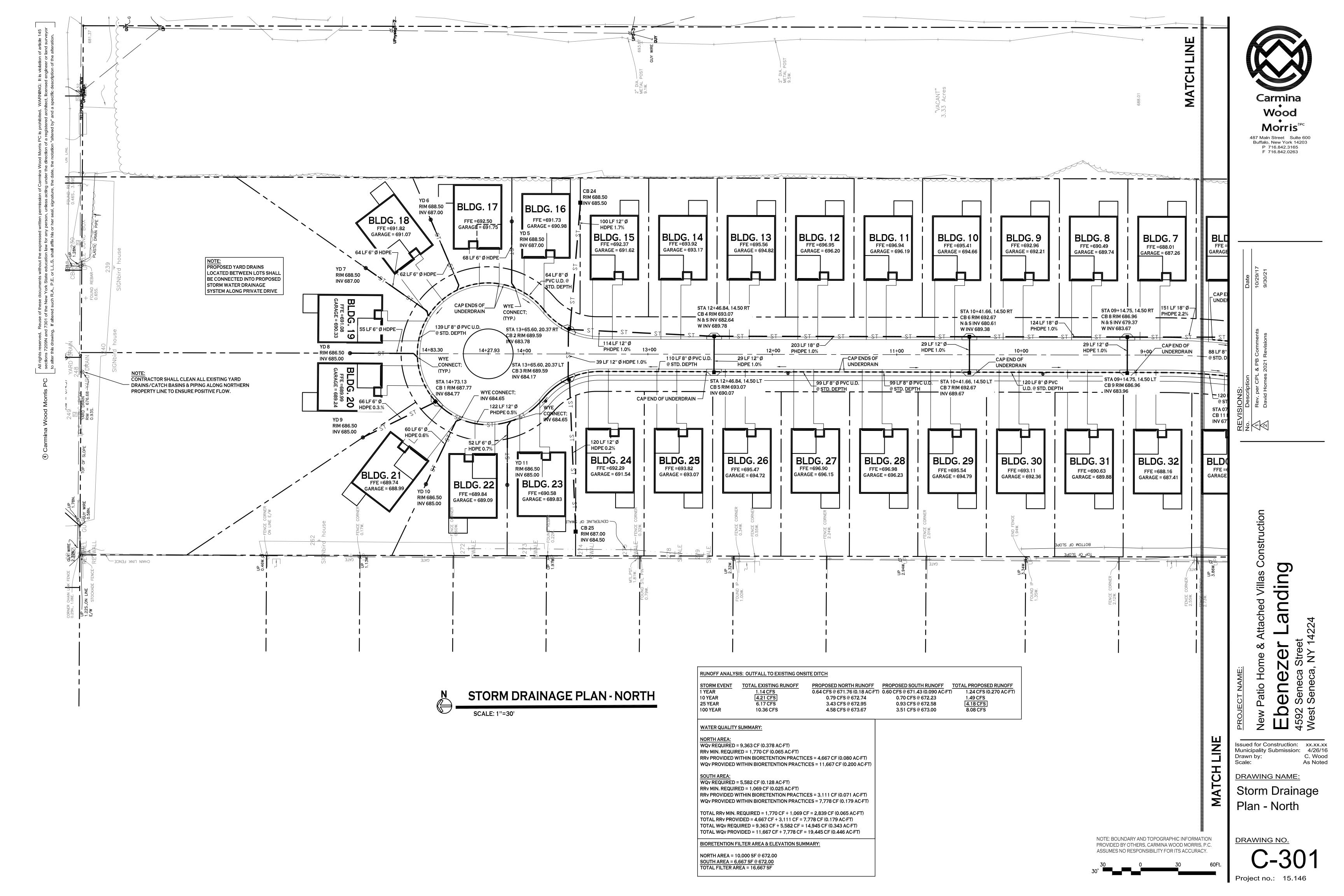
NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

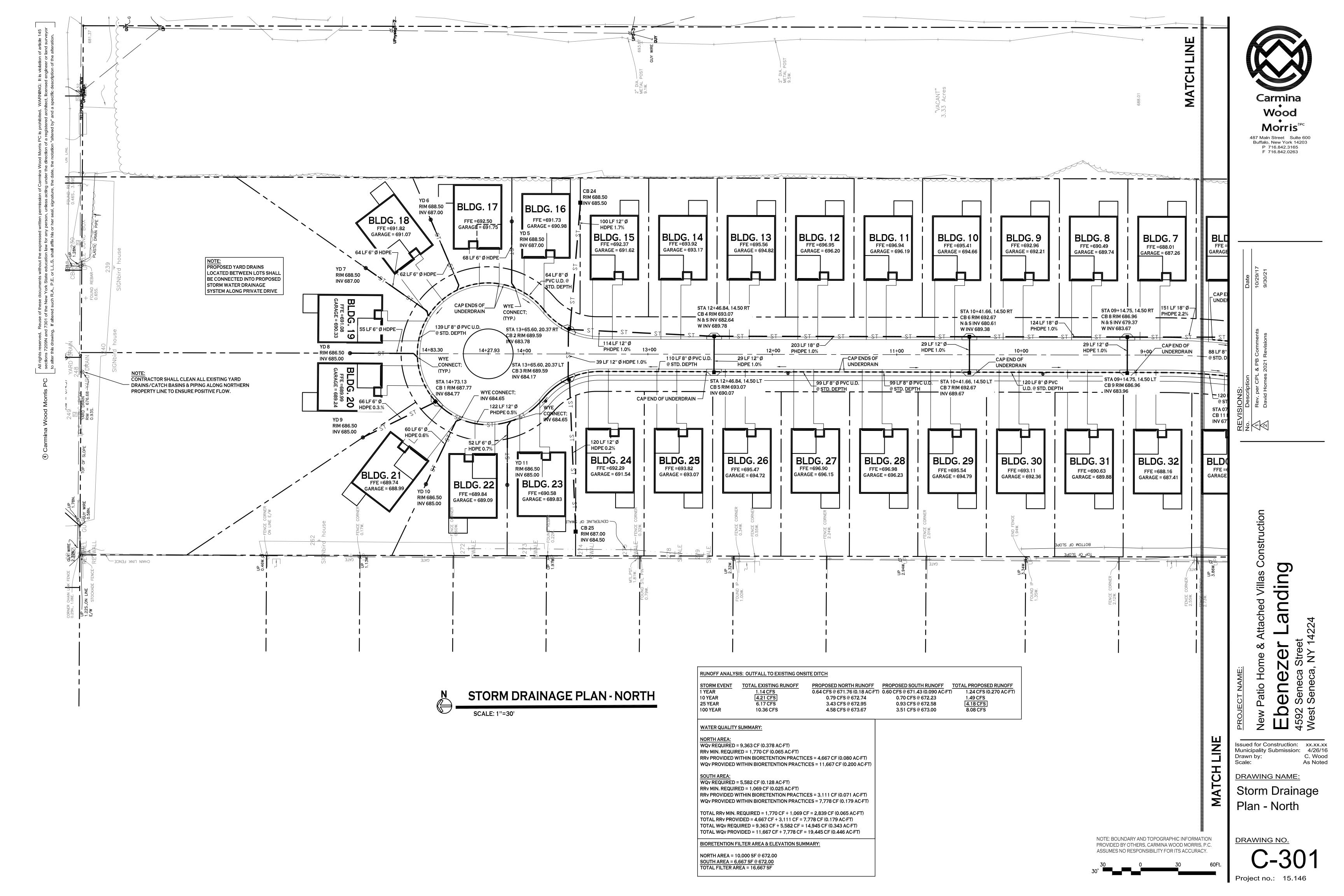
Roadway

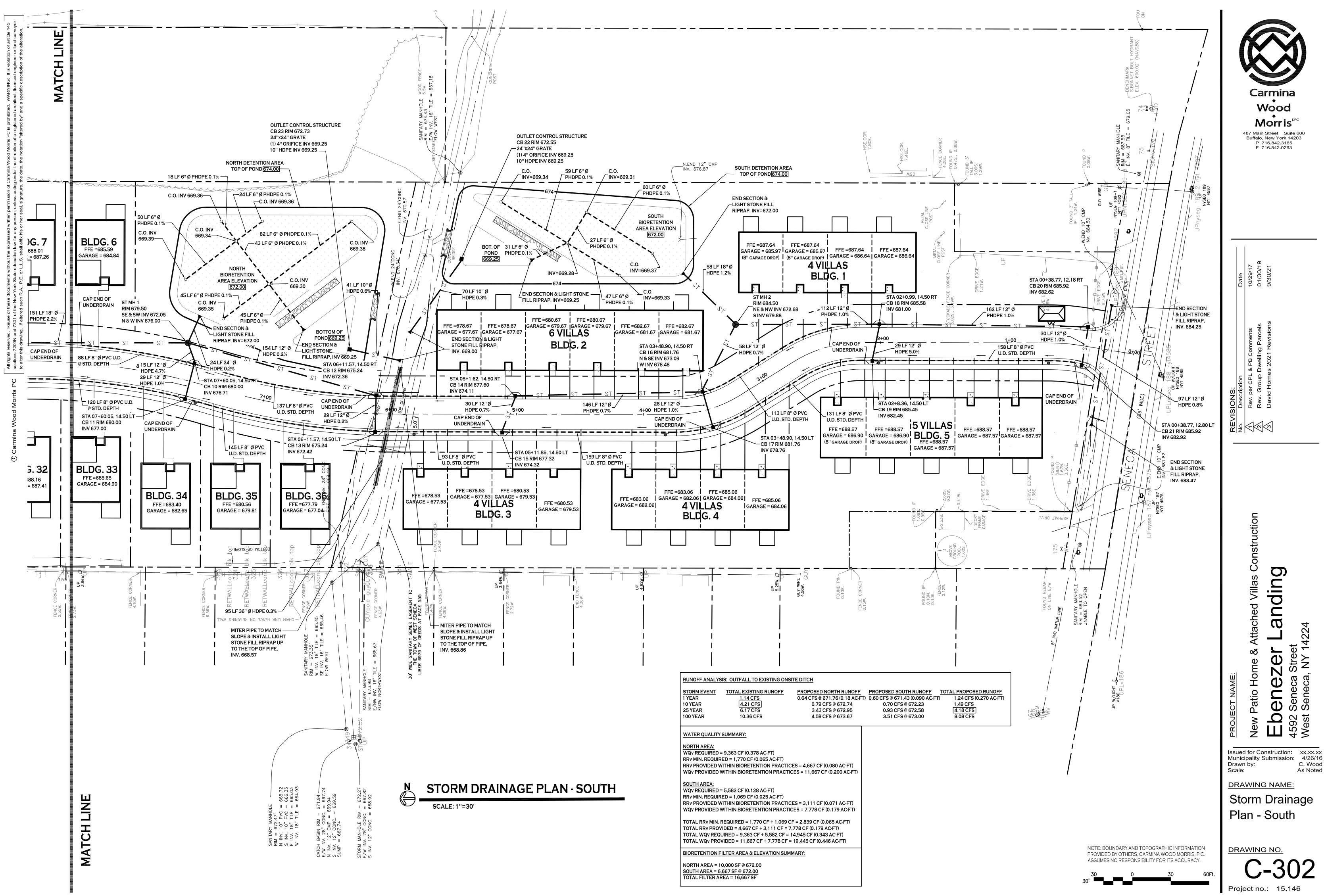
DRAWING NO.

**U-2U**5

Project no.: 15.146







C. Wood As Noted 1/3 I.D. (12"MAX.)

RECOMMENDATIONS.

ACCEPTABLE TO THE PIPE MANUFACTURER.

PLACEMENT AND MAXIMUM PAY LIMITS.

BE USED IN ALL UNSHEETED TRENCH AREAS.

Wood

Morris 487 Main Street Suite 600

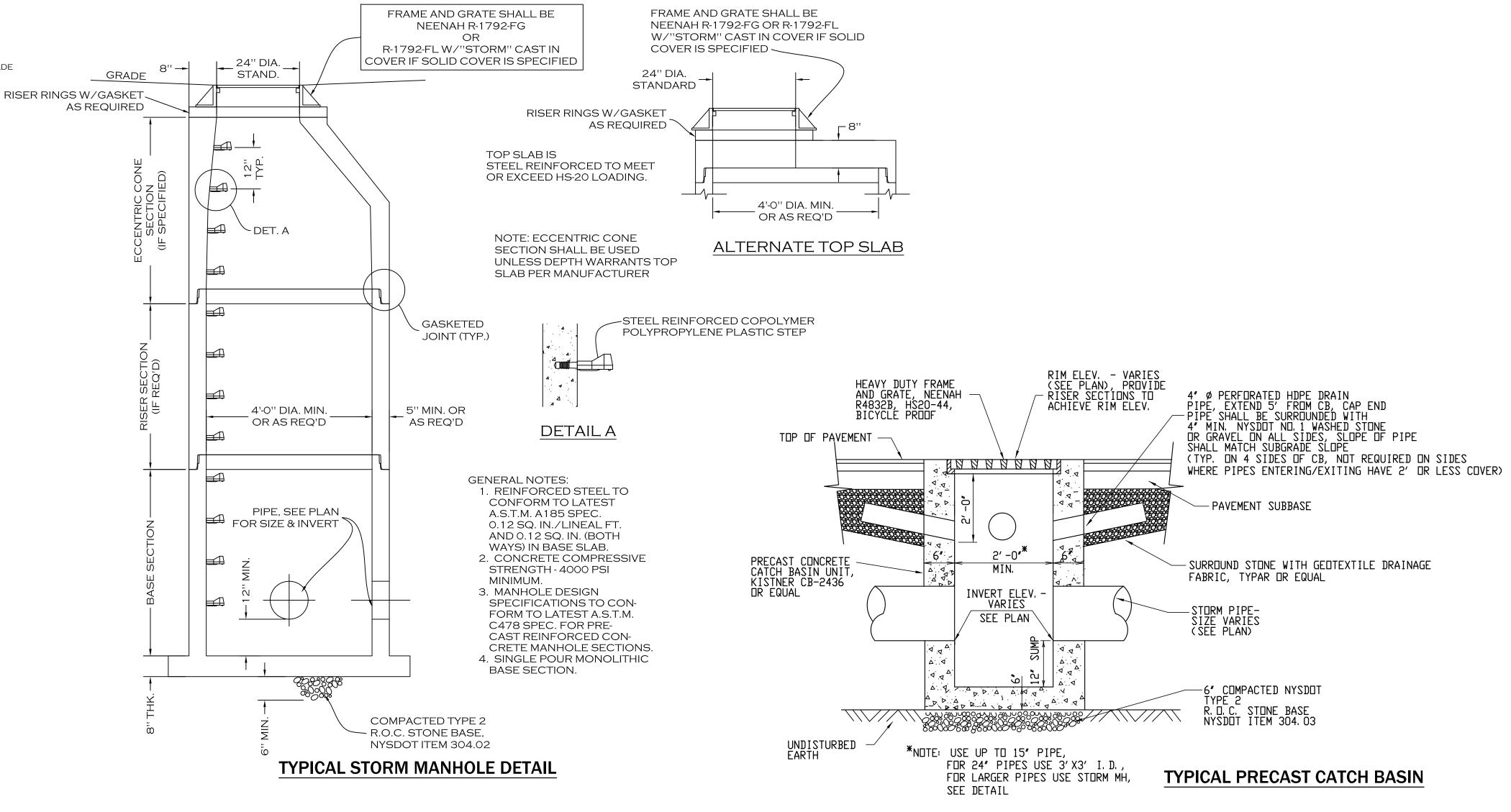
Buffalo, New York 14203 P 716.842.3165

F 716.842.0263

DRAWING NAME: Storm Drainage

Details

DRAWING NO.



# STORM SEWER TRENCH SECTION **IN PAVED AREAS**

TRENCH WIDTH

(I.D. + 24'')

12" | (I.D.) | 12"

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE

TYPE 2 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERAIL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL

<u>MATERIALS</u>

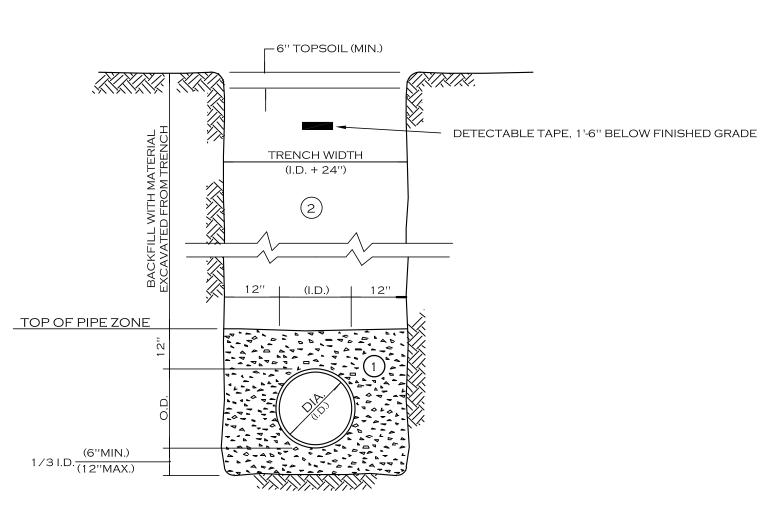
INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE

SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)



— DETECTABLE TAPE, 1'-6" BELOW FINISHED GRADE

- A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS
- B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.
- C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.
- D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

# **MATERIALS**

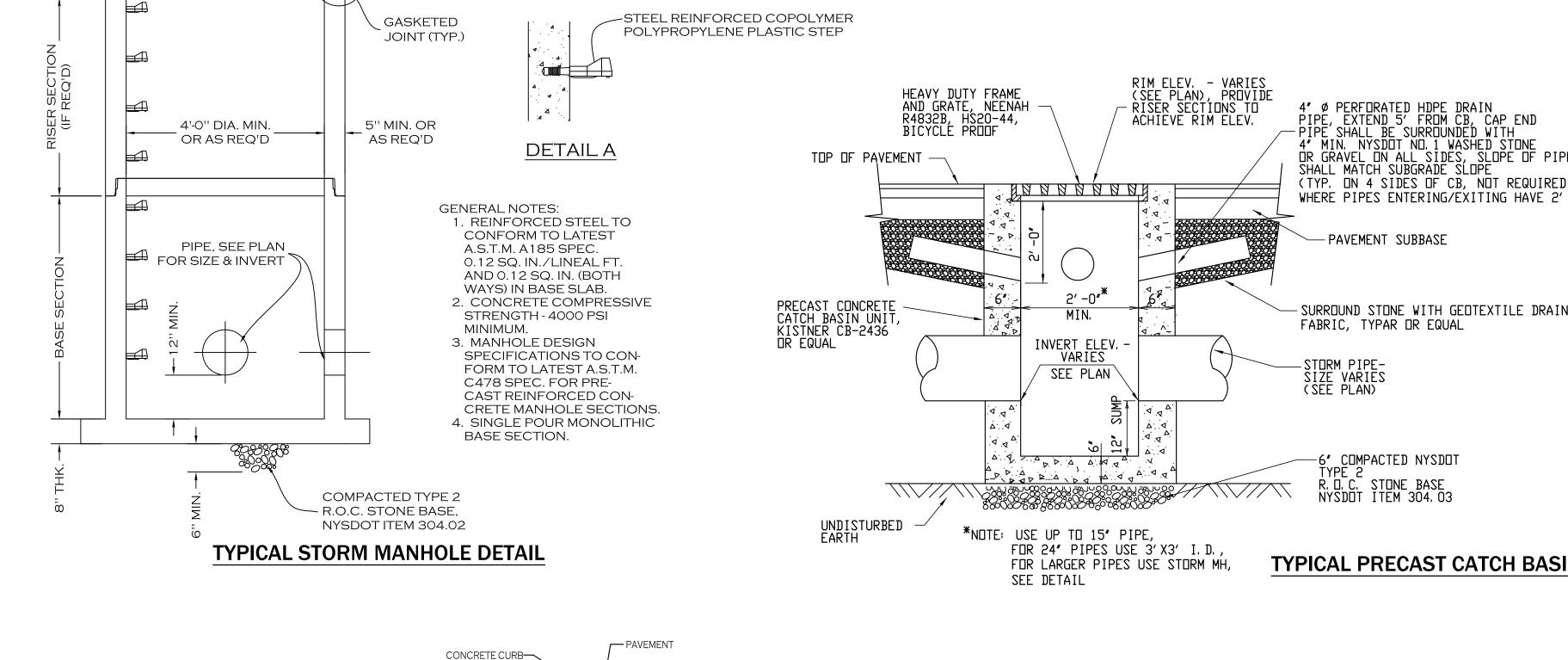
# PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

> STORM SEWER TRENCH SECTION IN UNPAVED AREAS



PARKING LOT SHEET FLOW

TO CURB OPENINGS

MONTHS MIN.

NOTES:

1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C',

3. DRAINAGE GRAVEL TO MEET AASHTO M-43.

4. CONTRACTOR TO PROVIDE PLANTING SOIL

APPROVAL PRIOR TO CONSTRUCTION.

SUBMITTAL SPECIFICATION FOR REVIEW AND

NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF

B5 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL

WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 1.0 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER

WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL

SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

BIORETENTION AREA - TYPICAL SECTION

NO.67, SIZE 0.25" TO 0.75"

CHARACTERISTICS SHALL BE: PH RANGE: 5.2 - 7.00

ORGANIC MATTER: 1.5 - 4.0%

SOLUBLE SALTS: 500 PPM

CLAY: 10 TO 25%

SILT: 30 TO 55%

SAND: 35 TO 60%

MAGNESIUM: 35 LBS PER ACRE MIN.

PHOSPHORUS: 75 LBS PER ACRE MIN. POTASSIUM: 85 LBS PER ACRE MIN.

MIRAFI 180-N OR APPROVED EQUIVALENT 2. MULCH TO BE SHREDDED HARDWOOD, AGED 12

-HYDROSEED

- - - -

17.0

11.0

4.5

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

SUBGRADE

OR EX. SOIL

(6" MAX. PONDING HEIGHT)

PLANTING SOIL

(18" MIN.)

DEPTH VARIES —

PERFORATED HDPE-

AGROSTIS STOLONIFERA

LOLIUM MULTIFLORUM

PANICUM CLANDESTINUM

ALOPECURUS ARUNDINACEUS

UNDERDRAIN

Poa Trivialis

3" AVG. PONDING HEIGHT—

2" MIN. DRAINAGE GRAVEL FOR 6" UNDERDRAIN

6" MIN. DRAINAGE GRAVEL FOR >6" UNDERDRAIN

PERFORATED HDPE

UNDERDRAIN IN -

DRAINAGE GRAVEL

SEED MIXTURE CREEPING BENTGRASS

ROUGH BLUEGRASS

ANNUAL RYEGRASS

MEADOW FOXTAIL

DEERTONGUE

JACKET, SIZE VARIES

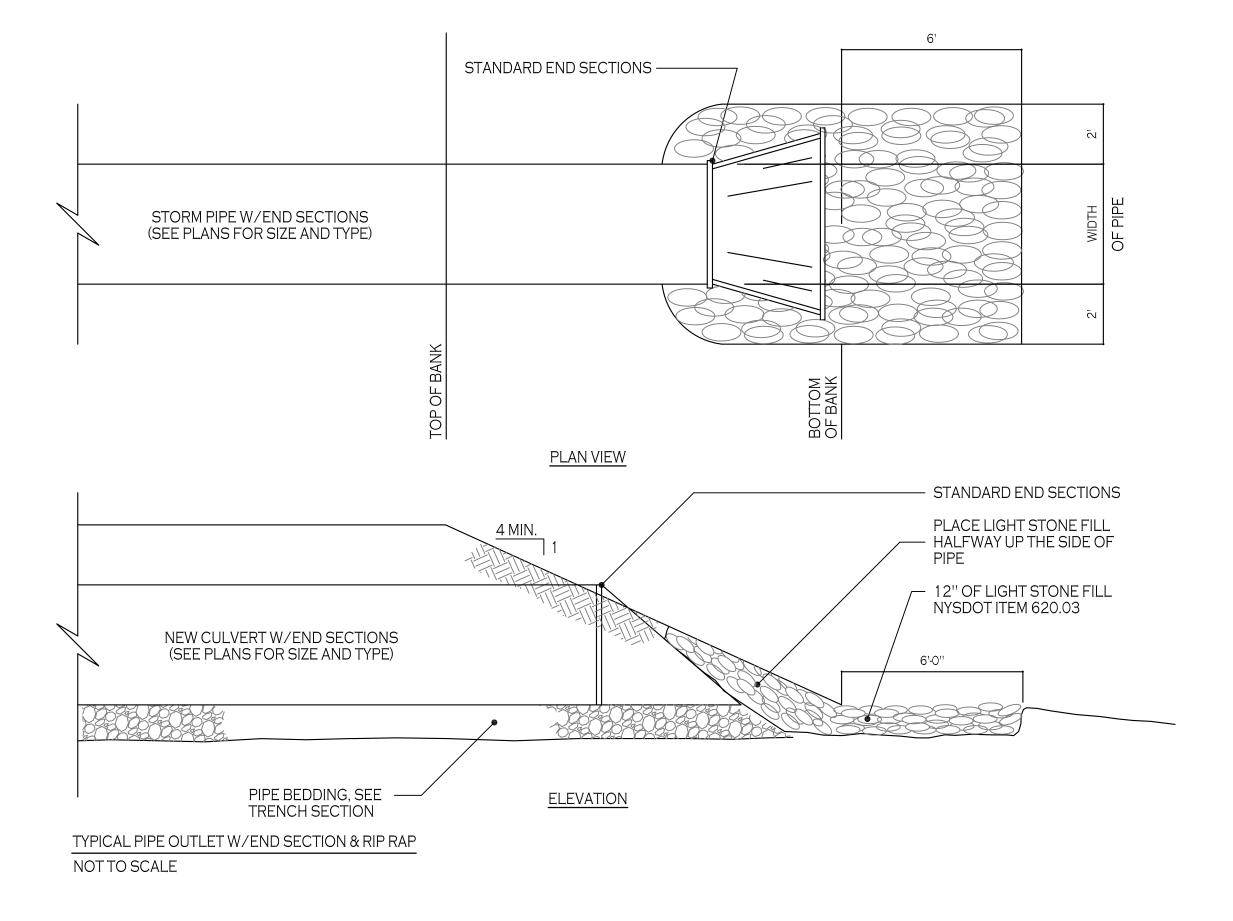
MAX. PONDING/

PLANTING SOIL BED

— FILTER FABRIC

— DRAINAGE GRAVEL

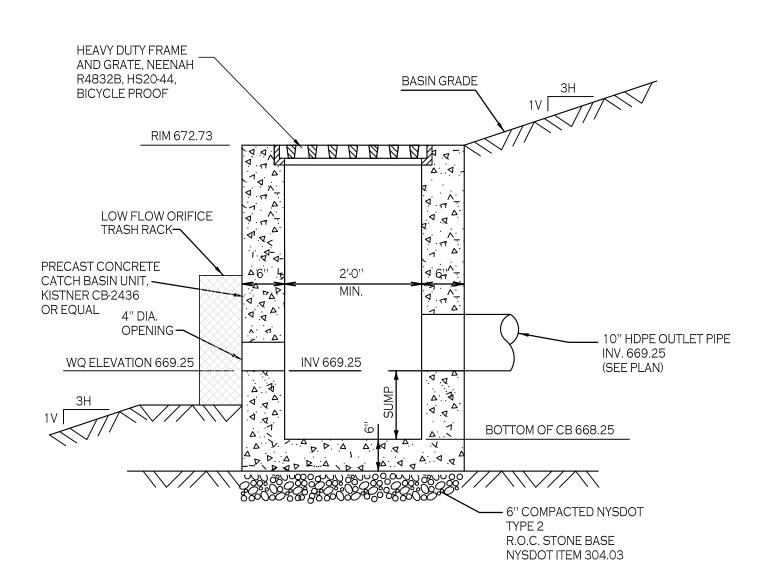
OVERFLOW ELEV



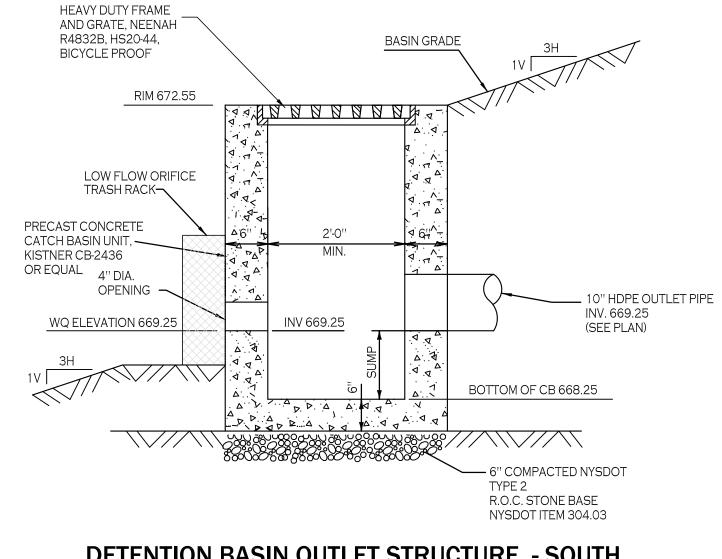
# NYSDOT STANDARD SPECIFICATIONS

FIGURE 620-1 STONE FILLING GRADATION REQUIREMENTS				
Stone Filling Item	See Notes	Stone Size <sup>1</sup>	Percent of Total by Weight	
		Smaller than 8 inch	90 - 100	
Fine	2, 3, 4	Larger than 3 inch	50 - 100	
		Smaller than No. 10 Sieve	0 - 1.0	
	2, 3, 4	Lighter than 100 pounds	90 - 100	
Light		Larger than 6 inch	50 - 100	
		Smaller than 1/2 inch	0 - 10	
Madium	2, 4	Heavier than 100 pounds	50 - 100	
Medium		Smaller than 6 inch	0 - 10	
Hoover	2.4.5	Heavier than 600 pounds	50 - 100	
Heavy	2, 4, 5	Smaller than 6 inch	0 - 10	

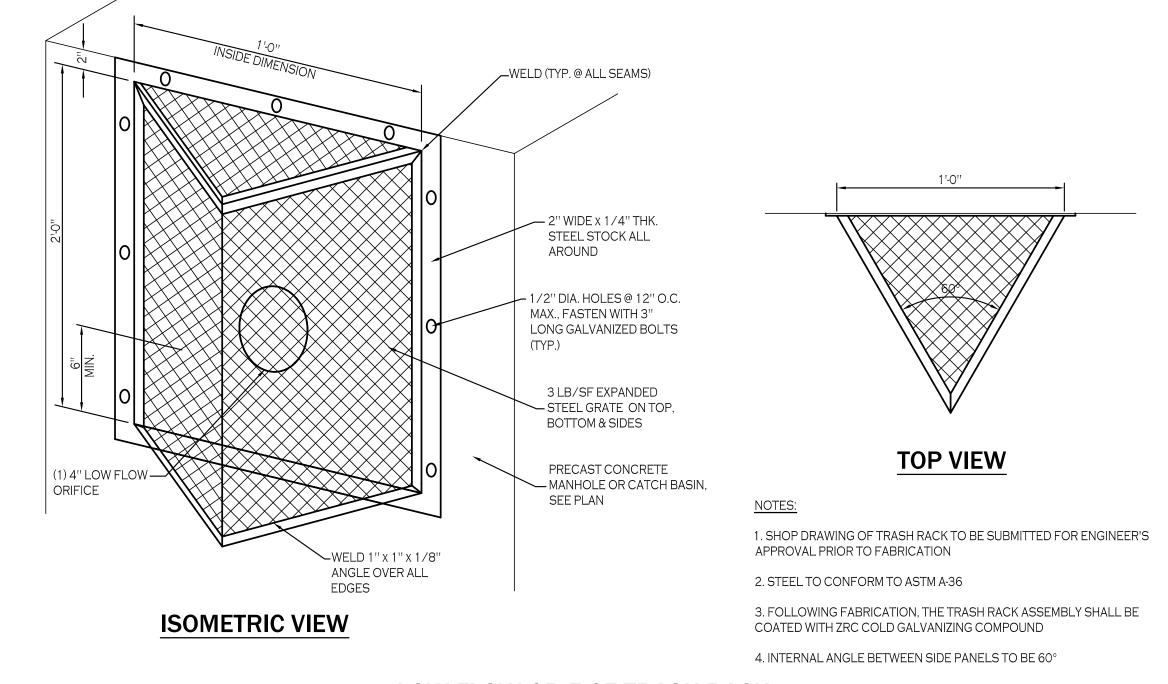
	APPROXIMATE SHAPE				
Specified Weights and Sizes	F-1-1 Y	I de	I I	p d =	Han wax
600 pounds	d = 18 inches	d = 23 inches	d = 15 inches	d = 23 inches	d = 27 inches
300 pounds	d = 15 inches	d = 18 inches	d = 12 inches	d = 18 inches	d = 21 inches
150 pounds	d = 12 inches	d = 15 inches	d = 9 inches	d = 15 inches	d = 17 inches
100 pounds	d = 10 inches	d = 13 inches	d = 8 inches	d = 13 inches	d = 15 inches
d = 8 inches	50 lbs.	25 lbs.	100 lbs.	25 lbs.	16 lbs.
d = 6 inches	20 lbs.	10 lbs.	40 lbs.	10 lbs.	7 lbs.



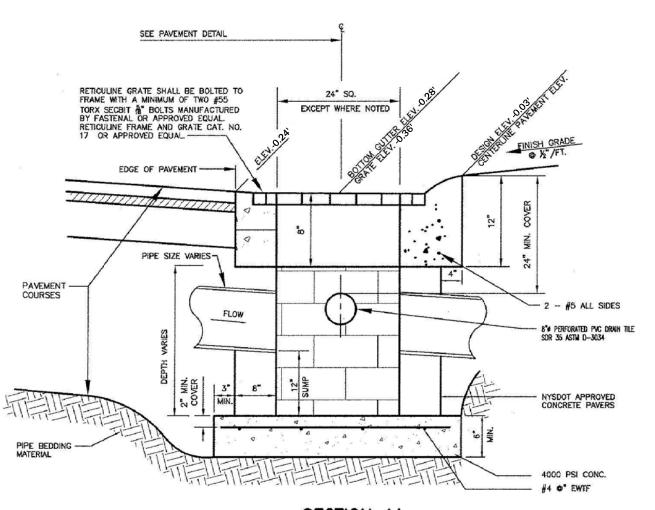
# **DETENTION BASIN OUTLET STRUCTURE - NORTH**N.T.S



DETENTION BASIN OUTLET STRUCTURE - SOUTH



# LOW FLOW ORIFICE TRASH RACK



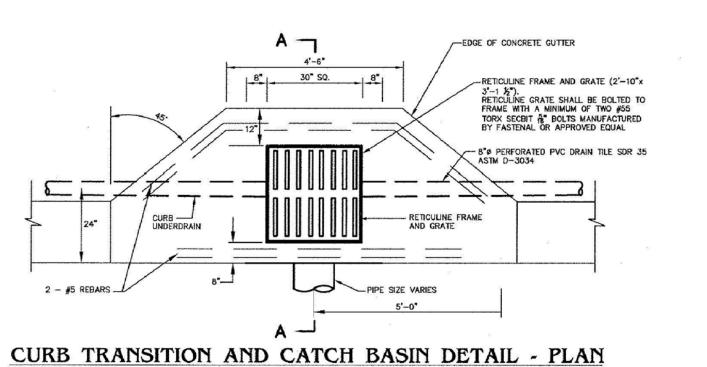
SECTION AA

30" OR 48" SQUARE FLAT TOP PRECAST CATCH BASIN KISTNER'S No.3036 OR EQUAL IS AN ACCEPTABLE ALTERNATIVE. ROAD DROP INLETS LARGER THAN 30" REQUIRE H-80 FLAT TOP.

# CURB TRANSITION AND CATCH BASIN DETAIL

CATCH BASINS LOCATED ALONG PRIVATE ROADWAY:

NOTE: ALL "RIM" ELEVATIONS NOTED ON GRADING & STORM DRAINAGE PLANS REFER TO "EDGE OF PAVEMENT" ELEVATION. "GRATE ELEVATION" SHALL BE 0.12' LOWER THAN "EDGE OF PAVEMENT" ELEVATION AS DEPICTED ON "CURB TRANSITION & CATCH BASIN DETAIL"



atio Home & Attached Villas Cor

Wood

Morris

487 Main Street Suite 600 Buffalo, New York 14203 P 716.842.3165 F 716.842.0263

New Patio Home & A

Ebeneza Street

Issued for Construction: xx.xx.xx
Municipality Submission: 4/26/16
Drawn by: C. Wood
Scale: As Noted

Storm Drainage
Details

DRAWING NO.

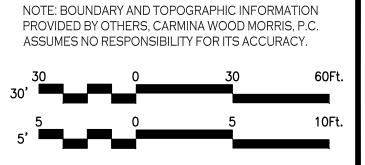
CAP END OF UNDERDRAIN **PROPOSED** EXISTING GRADE— GRADE-CAP END OF 113 LF 8" Ø 139 LF 8" Ø PVC UNDERDRAIN — PVC U.D. @ U.D. @ STD. DEPTH STD. DEPTH 64 LF 8'' Ø **EXISTING** PVC U.D. @ — GRADE— CAP END OF STD. DEPTH UNDERDRAIN \_ PROPOSED 118 LF 8" Ø PVC GRADE — U.D. @ STD. DEPTH 29 LF 12" Ø HDPE 1.0% ------\_\_29 LF 12" Ø HDPE 1.0% \_ 99 LF 8" Ø PVC U.D. @ STD. DEPTH ☐ **\** 39 LF 12" Ø | CAP END OF HDPE 1.0% UNDERDRAIN 114 LF 12" Ø PHDPE 1.0% \_ 203 LF 18'' Ø 122 LF 12" Ø PHDPE 1.0% \_124 LF 18'' Ø PHDPE 0.5% 151 LF 18"Ø PHDPE 1.0% PHDPE 2.2% PROPOSED YARD DRAINS FOR LOTS TO WYE CONNECT INTO 12" PHDPE AS SHOWN. PROP. 690.2 EX. 691.25± 8+00 9+00 9+50 10+50 11+00 11+50 12+00 13+00 13+50 14+00 14+50 15+00 8+30 8+50 10+00 12+50

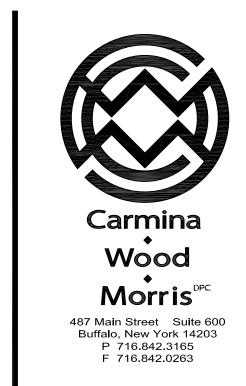
PROPOSED STORM SEWER PROFILE

STATION

HORIZ. SCALE: 1"=30' VERT. SCALE: 1"=5'

NOTE:
FILL SHALL BE PLACED AND SATISFACTORILY COMPACTED PRIOR TO INSTALLATION OF UTILITIES, AND MUST BE APPROVED BY THE SUPERVISING PROJECT ENGINEER.





- 690

675

8+30 8+50

118 LF 8" Ø PVC U.D. @ —

STD. DEPTH

151 LF 18" Ø

PHDPE 2.2%

24 LF 24" Ø

HDPE 0.2%/

8+00

NOTE:
FILL SHALL BE PLACED AND SATISFACTORILY

COMPACTED PRIOR TO INSTALLATION OF UTILITIES, AND MUST BE APPROVED BY THE SUPERVISING

LIGHT STONE

FILL RIPRAP,

INV 672.00

PROJECT ENGINEER.

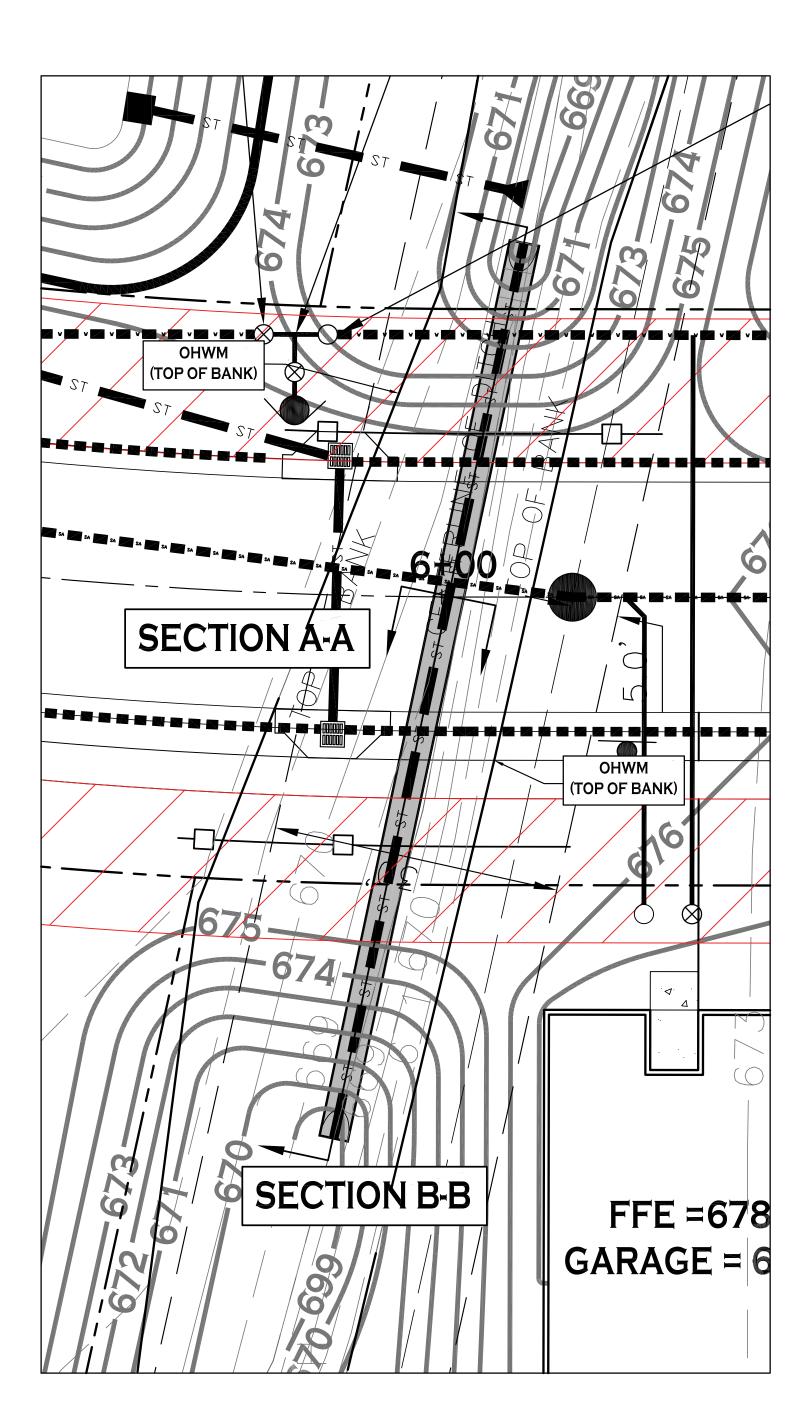
ding Villas Patio Home

Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16
Drawn by: C. Wood
Scale: As Noted C. Wood As Noted

DRAWING NAME:

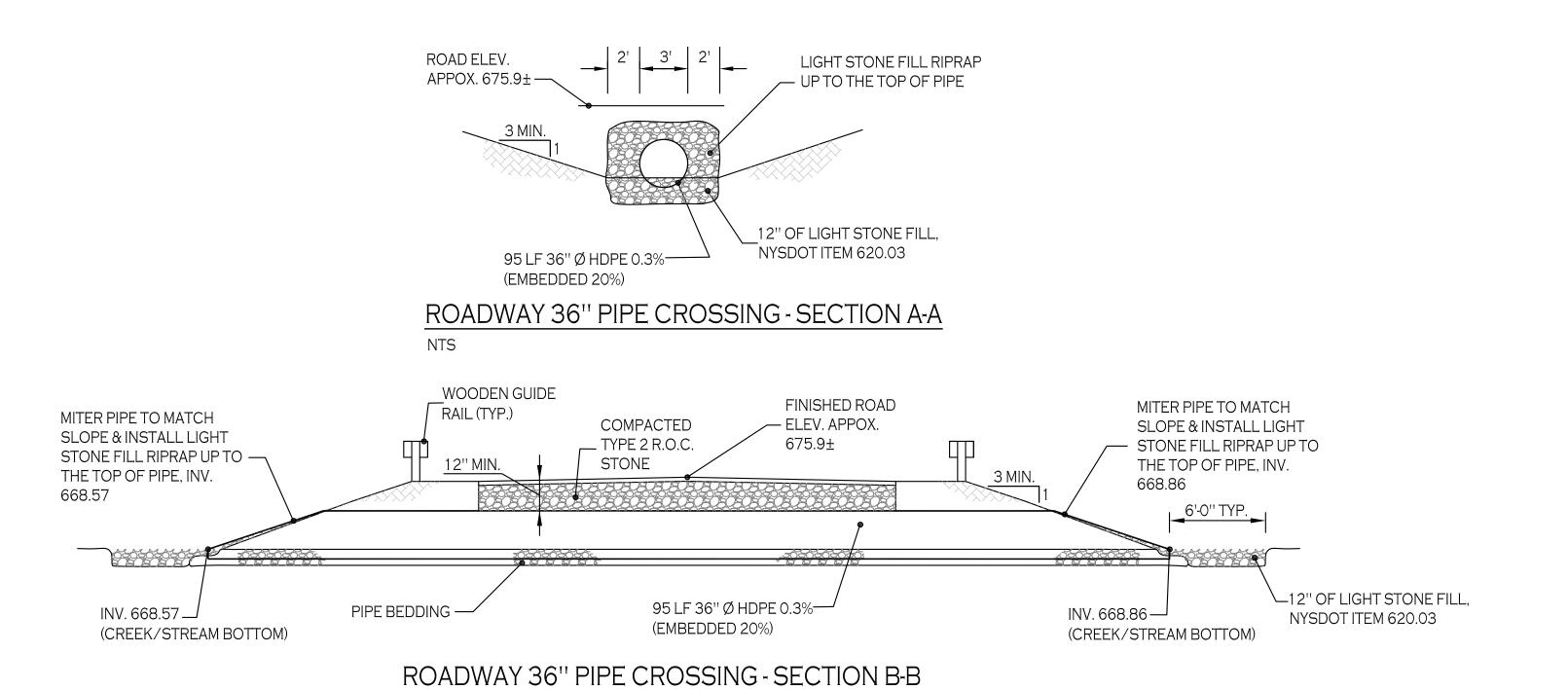
Storm Sewer

Profile



**ROADWAY 36" PIPE CROSSING PLAN** 

SCALE: 1"=20"



NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.



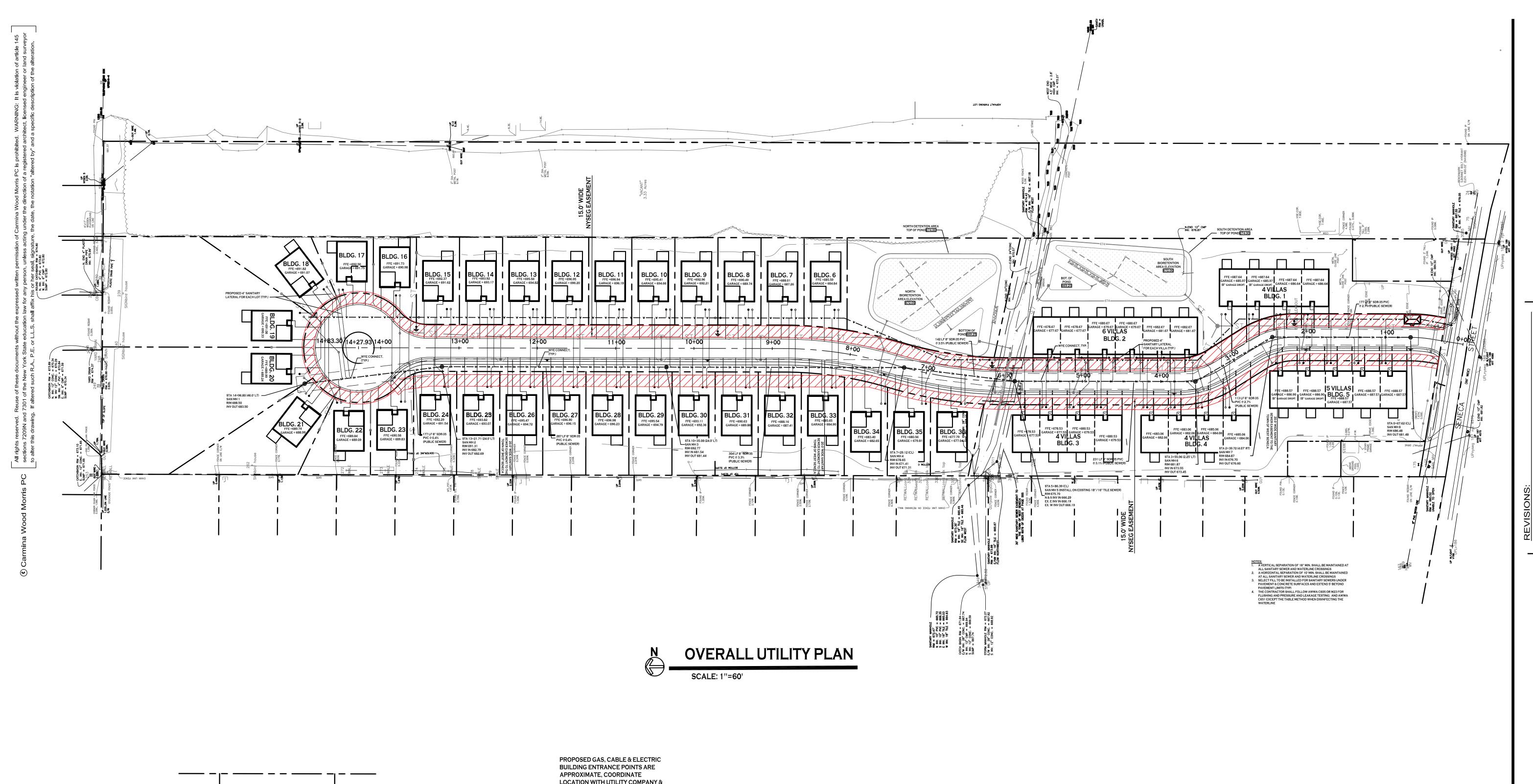
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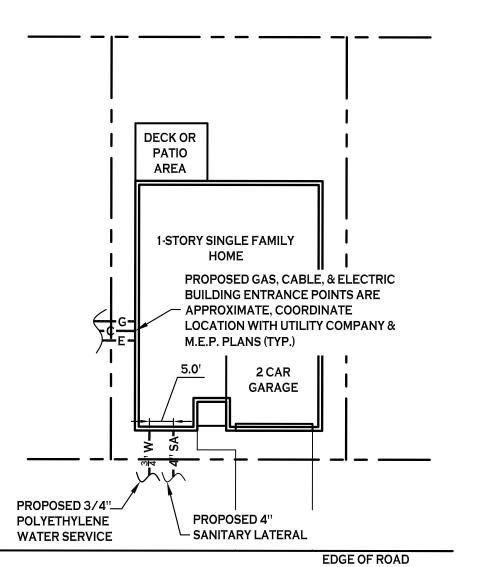
Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 Drawn by: C. Wood Scale: As Noted

DRAWING NAME:

Roadway Culvert Plan & Cross Sections

DRAWING NO.



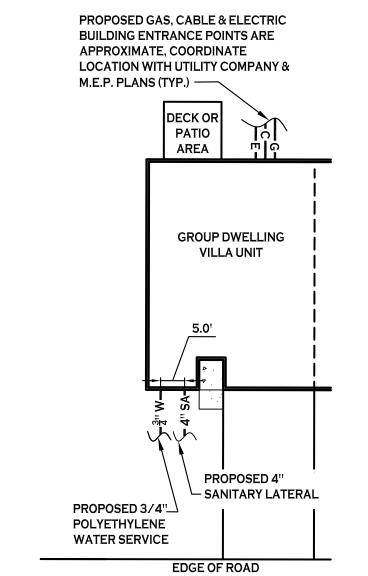




SCALE: NTS



SCALE: NTS



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60 0 60 120Ft.
60'

Carmina
Wood
Morris

487 Main Street Suite 600
Buffalo, New York 14203
P 716.842.3165
F 716.842.0263

Patio Home & Attached Villas Construction

PROJECT NAME:

New Patio Home

Ebeneza Str

4592 Seneca Str

West Seneca, N

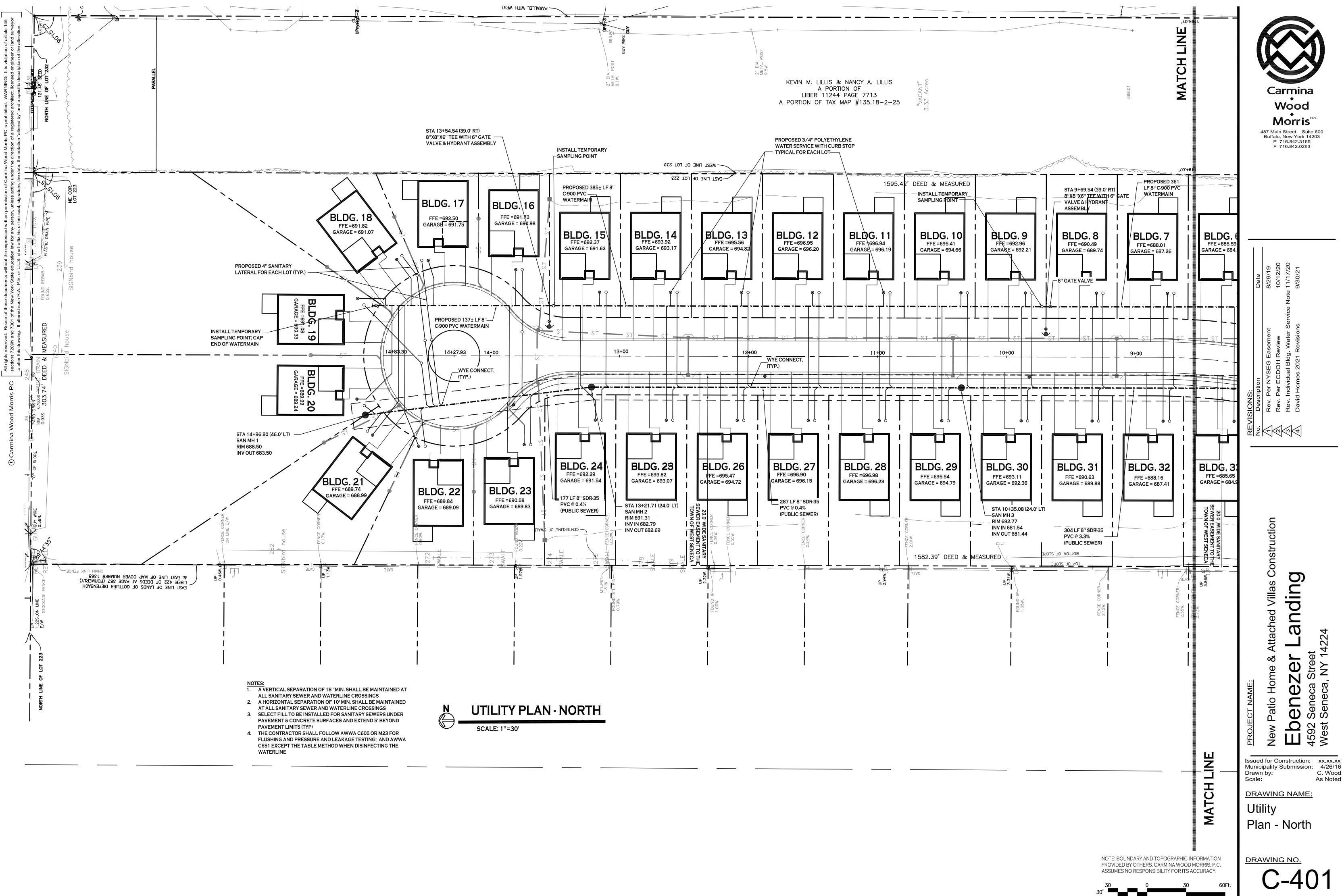
Municipality Submission: 4/26/16
Drawn by: C. Wood
Scale: As Noted

DRAWING NAME:

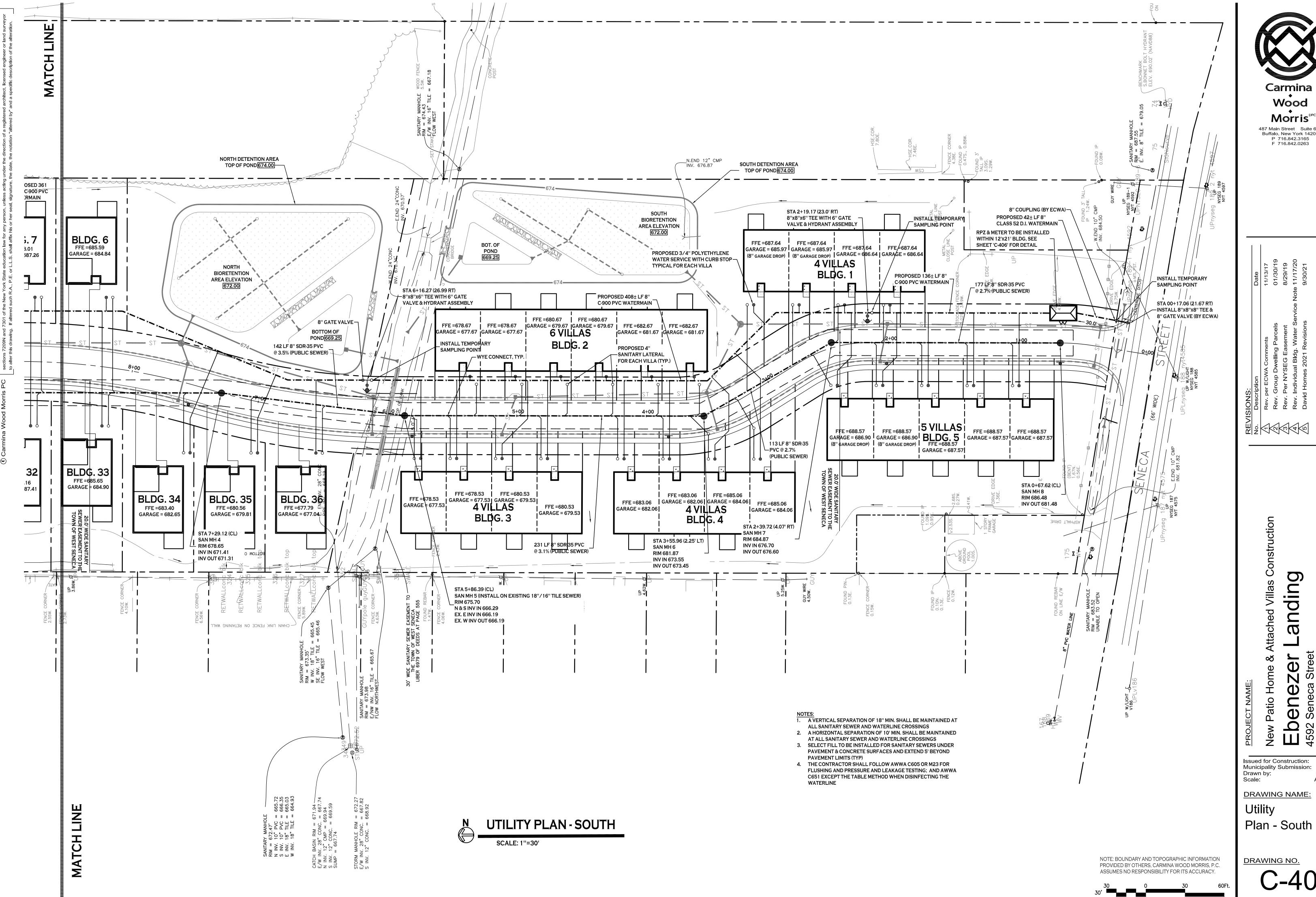
Overall Utility

Plan

C-40



C. Wood As Noted

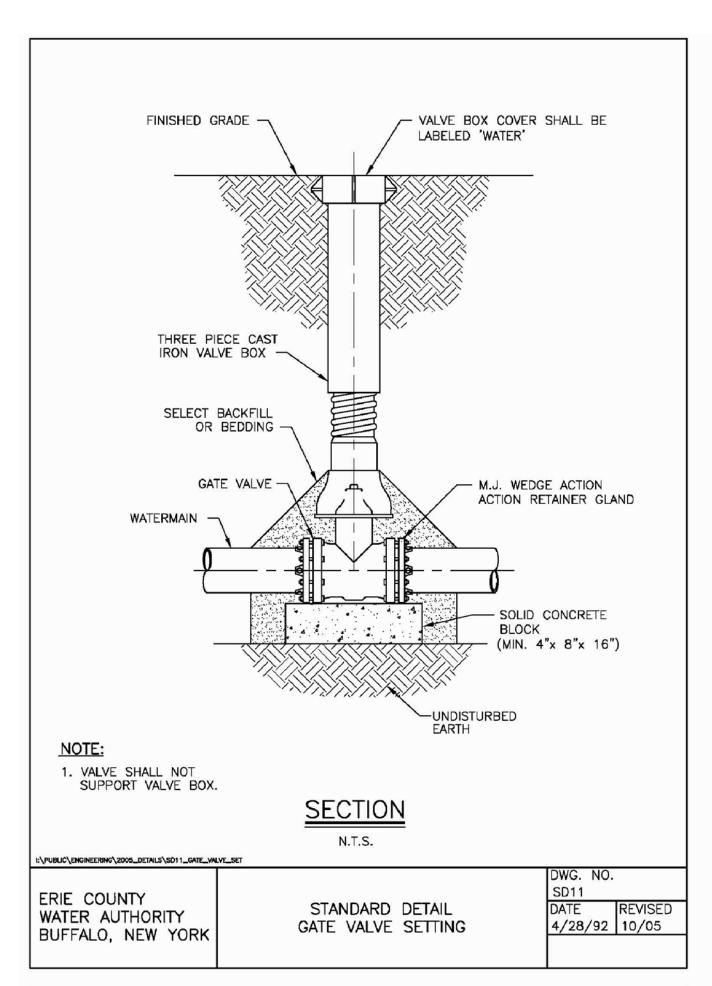


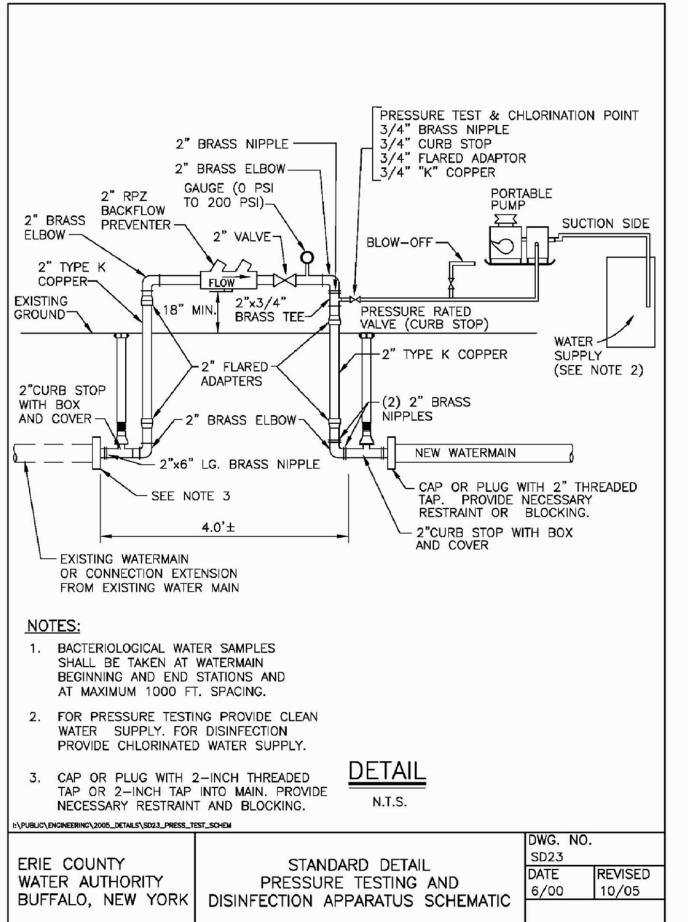


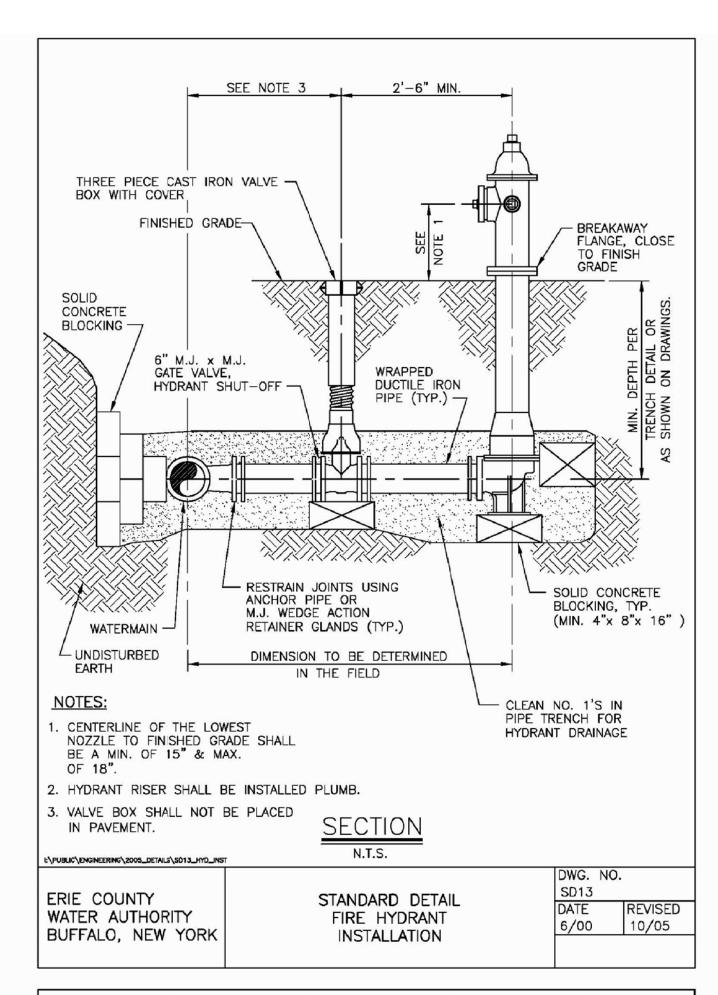
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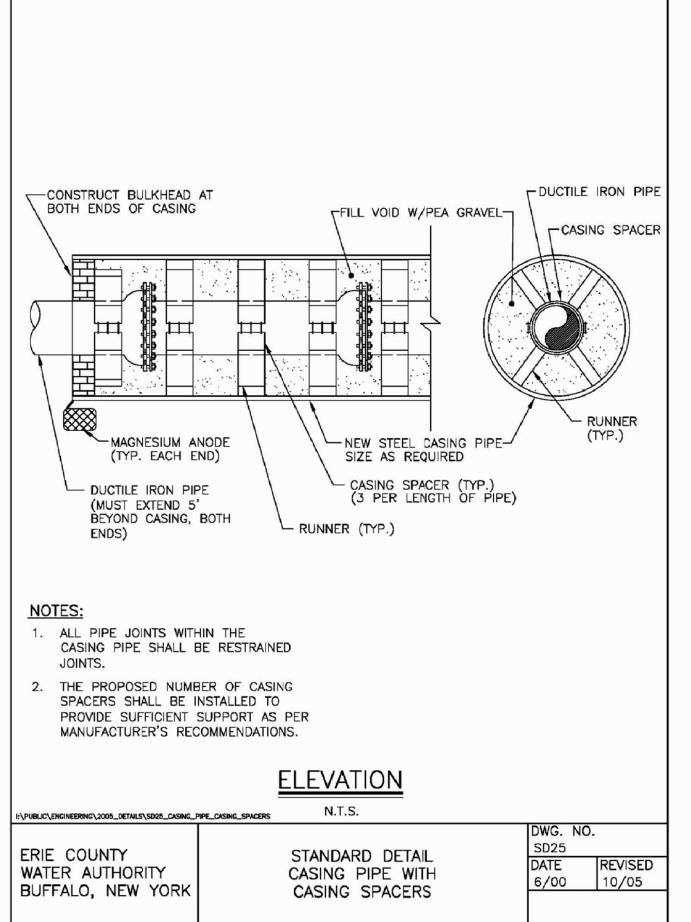
Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 C. Wood As Noted

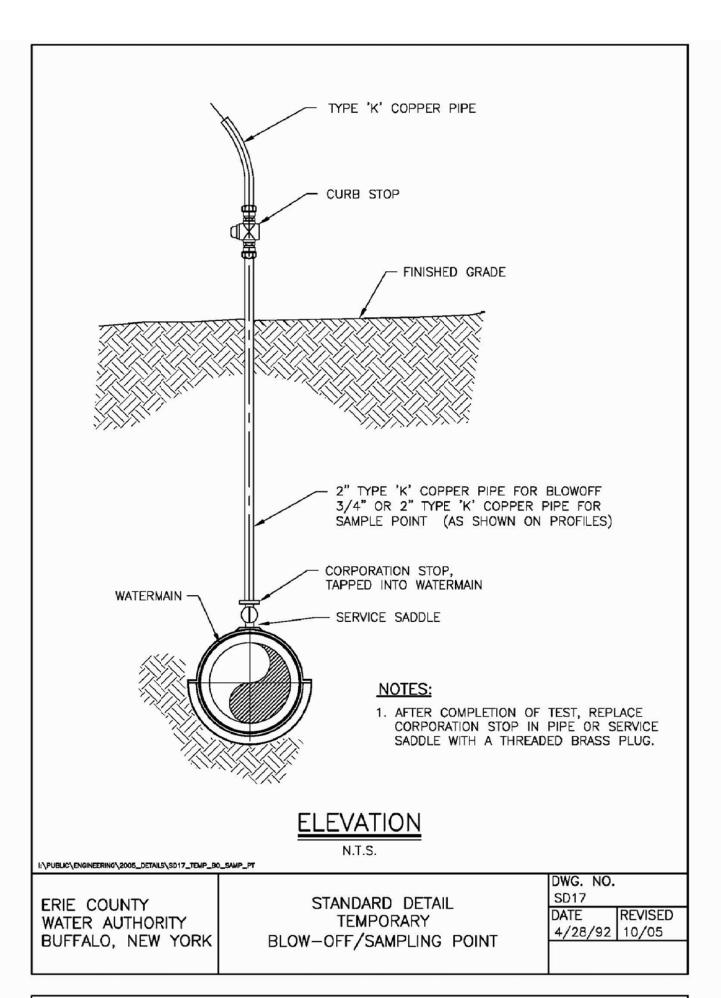
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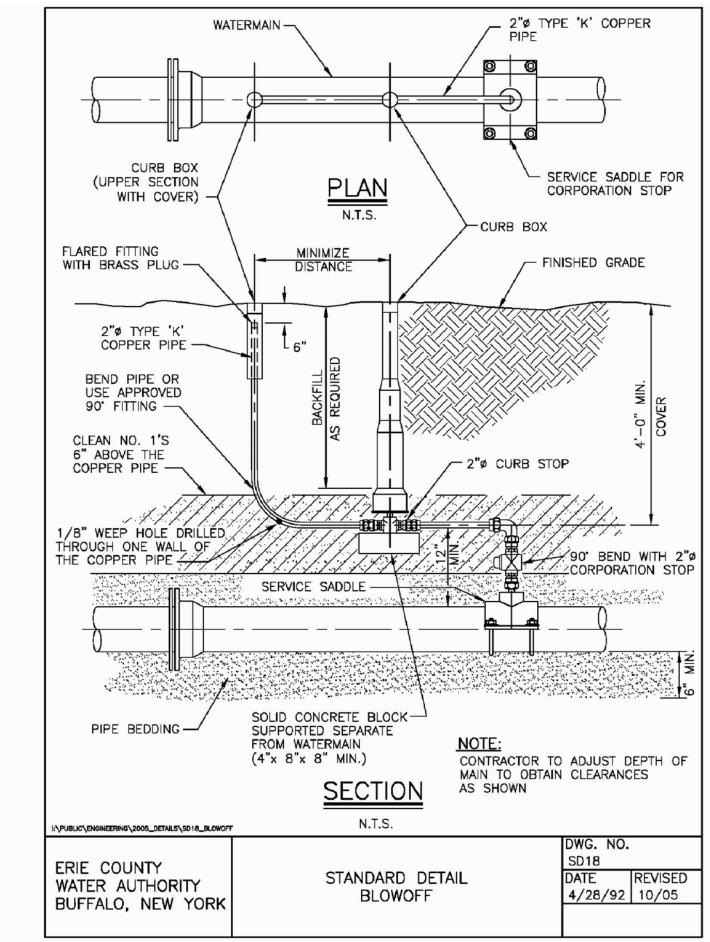






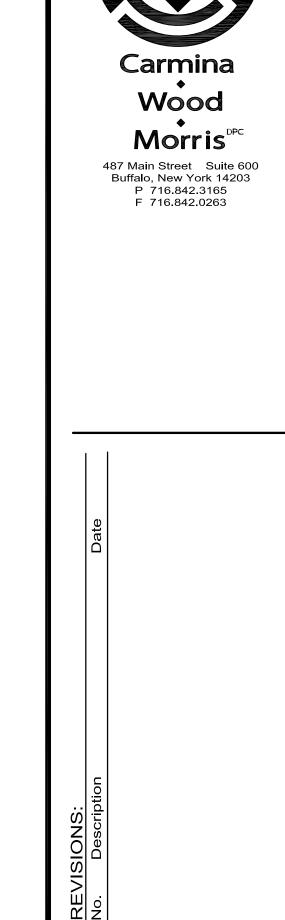
- 1. All elevations refer to USGS NAVD83 datum.
- 2. The CONTRACTOR shall obtain all necessary permits and furnish copies to the ENGINEER prior to commencing work.
- 3. The CONTRACTORS work area shall be confined to the limits of the right-of-ways and easements. The CONTRACTOR shall obtain any additional easements or work releases should the CONTRACTOR require additional area to accommodate his operations.
- 4. The CONTRACTOR shall provide maintenance and protection of traffic in accordance with the Erie County Highway Department standards and the NYSDOT Manual of Uniform Traffic Control Devices.
- 5. The locations and depths of existing underground utilities as shown on the plans and profiles are approximate. Other underground utilities not shown may be encountered. The CONTRACTOR shall perform test pits to verify the location and elevation of utilities at interconnections and crossings as shown, directed or required. The CONTRACTOR shall excavate in advance of the pipe laying operation and expose all existing underground utilities to prevent damage during construction and to determine required changes in grade necessary to install the watermain to avoid conflicts.
- 6. The CONTRACTOR shall install those measures required to limit erosion of areas disturbed by the work. Clearing shall be performed on an as needed basis, phased to reduce erosion potential and visual impact.
- 7. Blasting will not be permitted.
- 8. No more than one connection may be made to any existing watermain prior to testing, disinfection, and approval of the Waterline Installation Completed Works Approval Report(s) by the Erie County Water Authority and the Erie County Health Department.
- 9. The Erie County Water Authority only shall operate existing valves and fire hydrants, including newly installed valves and fire hydrants that have been placed into service. The CONTRACTOR is advised that watertight conditions may not exist when existing valves are closed.
- 10. The CONTRACTOR shall have all equipment, manpower, and materials required on site and ready for use prior to commencing any shut-down or removing any existing facilities from service. The CONTRACTOR shall notify all affected customers of any shutdown at least 48 hours in advance. The CONTRACTOR shall notify the appropriate fire stations 48 hours in advance prior to taking any fire hydrants out of service. Any fire hydrants not in service shall be bagged in burlap or plastic. Any shut-down shall be limited to 4 consecutive hours. It may be necessary to schedule shut-downs at night, weekends, or other off hours so as to not affect schools, businesses or other customers, as determined by the ENGINEER. Shut-down requests shall be submitted to the Erie County Water Authority a minimum of 3 business days in advance of the requested shut-down date.

(1 ODDO (CHOINCCIGNO (2000_DCINCD (3020_DCINCO)			
		DWG. NO	).
ERIE COUNTY		SD29	
WATER AUTHORITY	STANDARD DETAIL	DATE	REVISED
BUFFALO, NEW YORK	GENERAL NOTES	3/05	10/05



- 11. All watermain piping shall be installed with a minimum of 5'-0" of cover.
- 12. All watermain piping shall be installed with a minimum of 1'-6" of vertical clearance and 10'-0" of horizontal clearance from sanitary and storm piping, measured from the outside of the pipes at the point of crossing.
- 13. If the material at the design grade is unsuitable as determined by the ENGINEER, the CONTRACTOR, when ordered in writing, shall excavate additional material to the depth necessary and shall backfill to the proposed grade with select granular material.
- 14. The installation of 90 degree bends in the watermain is not allowed, unless approved by the Erie County Water Authority.
- 15. Thrust restraint for watermain piping through 12-inch diameter shall consist of thrust blocks and pipe joint restraint.
- 16. The CONTRACTOR shall notify the owner of any utility pole in advance of any excavation work that will take place within 5'-0" of the utility pole. The CONTRACTOR shall include the cost of temporary pole support in the appropriate bid item. Where utility poles are required to be supported during construction, the CONTRACTOR shall make all necessary arrangements with the utility company.
- 17. If materials are encountered during the construction that are suspected of being contaminated, the CONTRACTOR shall immediately notify the NYSDEC for direction regarding testing, separation, containment and disposal procedures.
- 18. Existing fire hydrants removed during construction and not reinstalled as part of the work shall be returned to the Erie County Water Authority Service Center, 3030 Union Road,
- 19. The CONTRACTOR shall cold patch all trench excavations in traveled areas including roads, driveways, sidewalks and parking areas.
- 20. The CONTRACTOR shall not restrict school bus access.
- 21. The use of existing fire hydrants for any reason is prohibited without prior approval of the Erie County Water Authority. This includes newly installed fire hydrants that have been placed into service.
- 22. The CONTRACTOR shall submit procedures for testing and disinfection of the watermain to the ENGINEER for approval.
- 23. The CONTRACTOR shall be present and assist in the Final Walk inspection. The CONTRACTOR shall provide sufficient personnel and equipment to demonstrate to the ENGINEER that all valves, fire hydrants and curb stops operate as required.

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ERIE COUNTY			Э.	
WATER AUTHORITY	STANDARD DETAI <b>L</b> GENERAL NOTES	DATE 3/05	REVISED 10/05	
BUFFALO, NEW YORK				



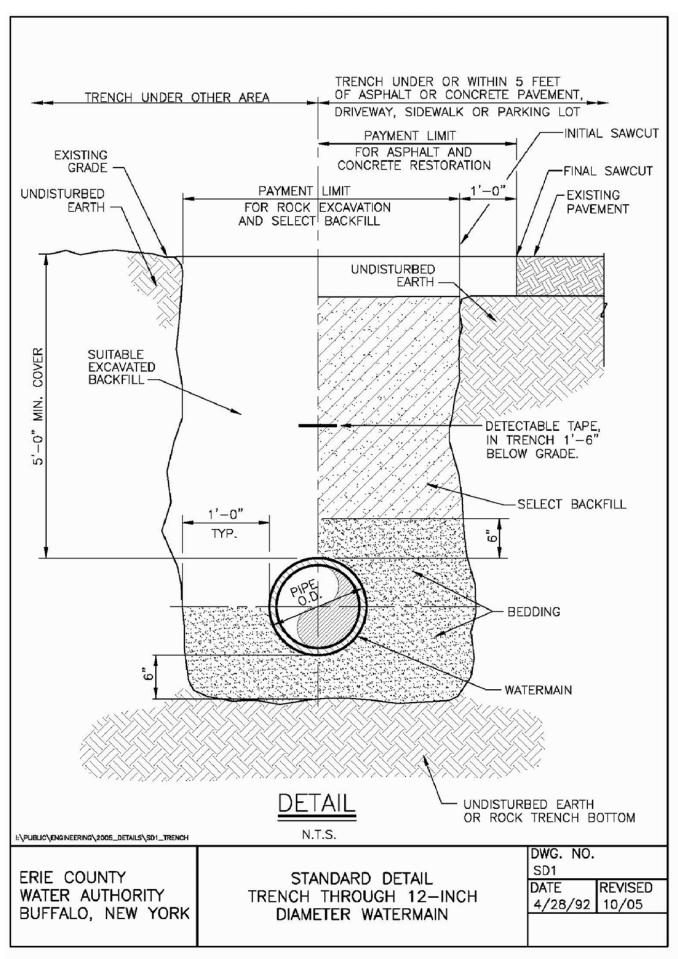
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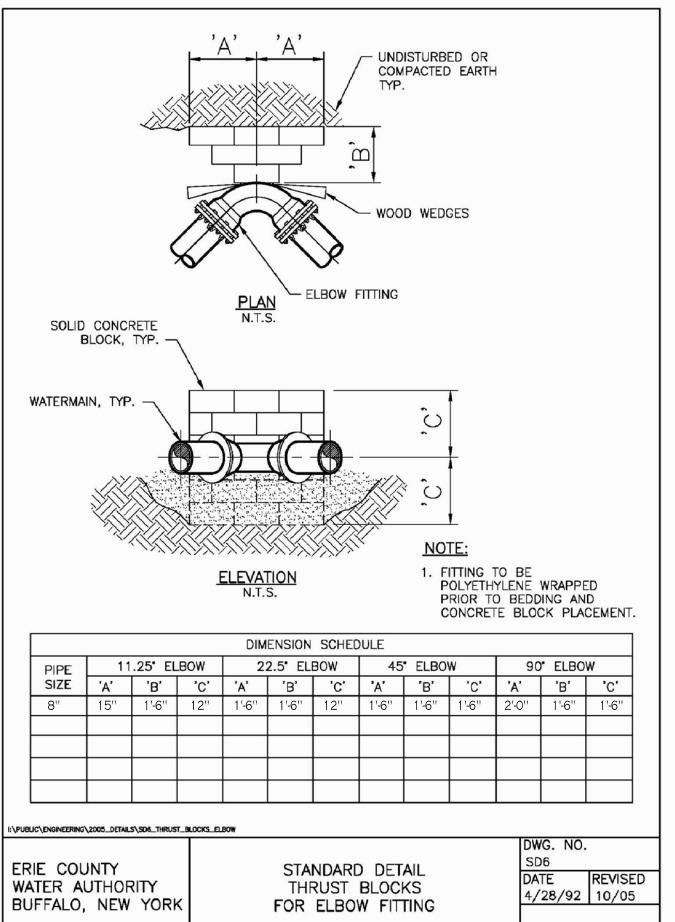
Patio Eb 4592 West

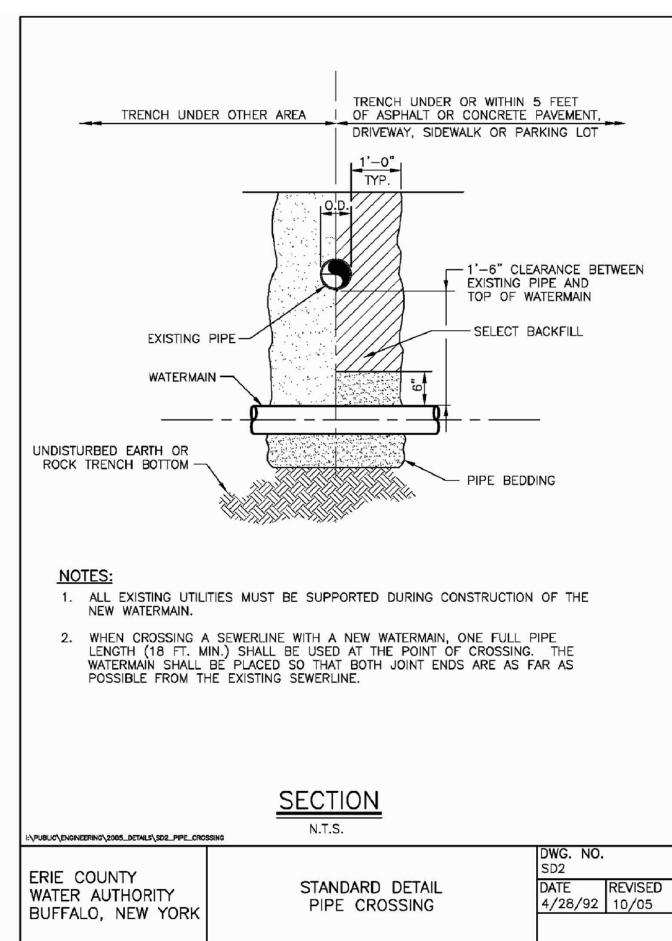
Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 Drawn by: C. Wood Scale: As Noted

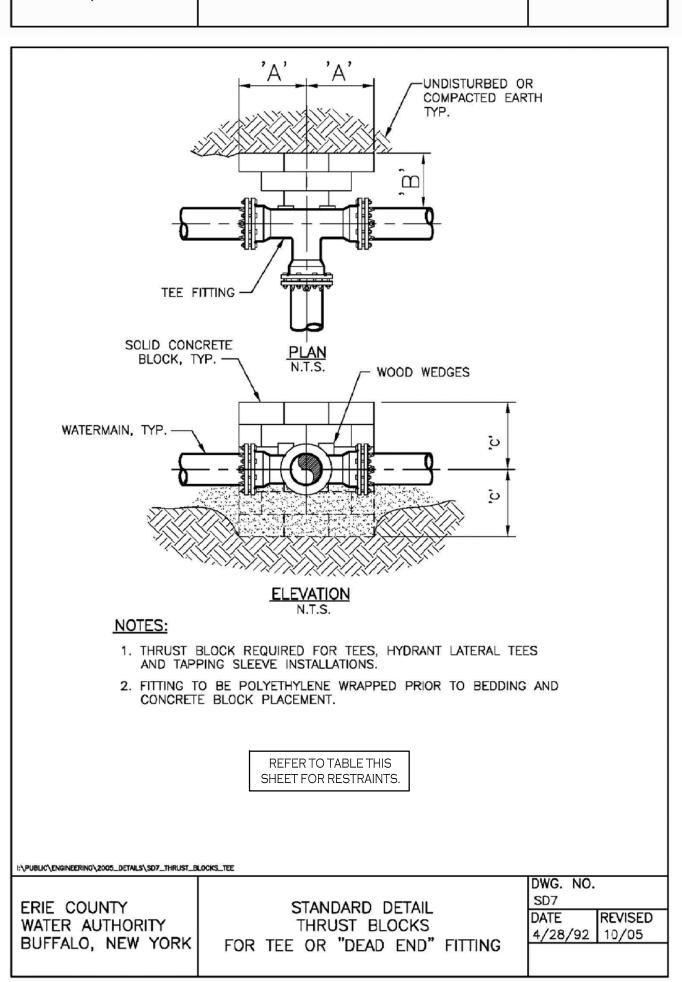
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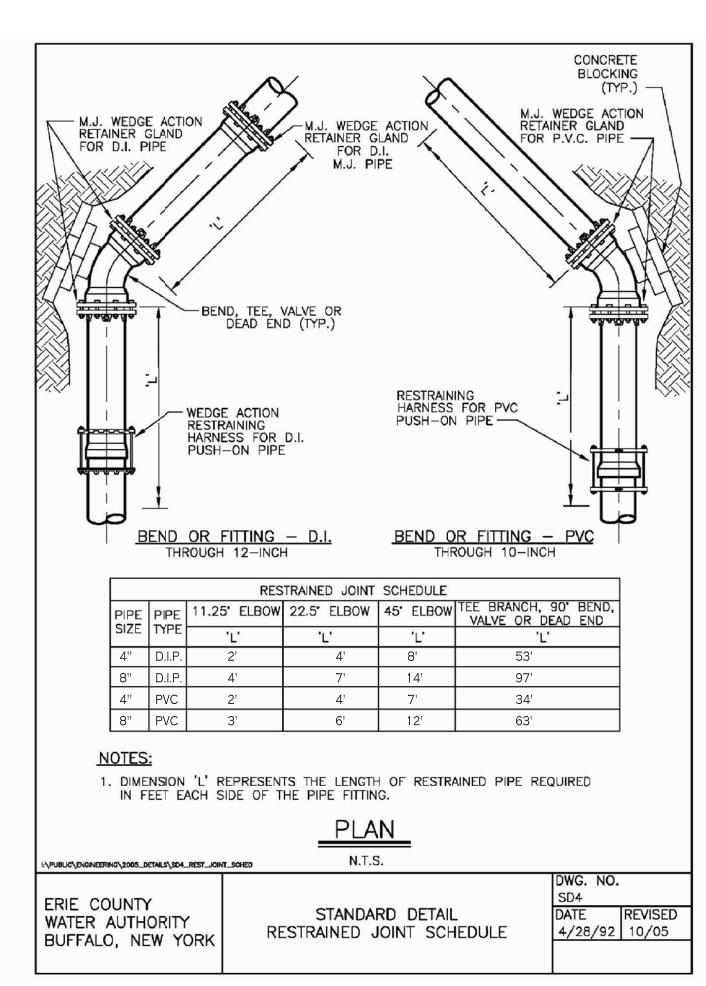
Details - Water

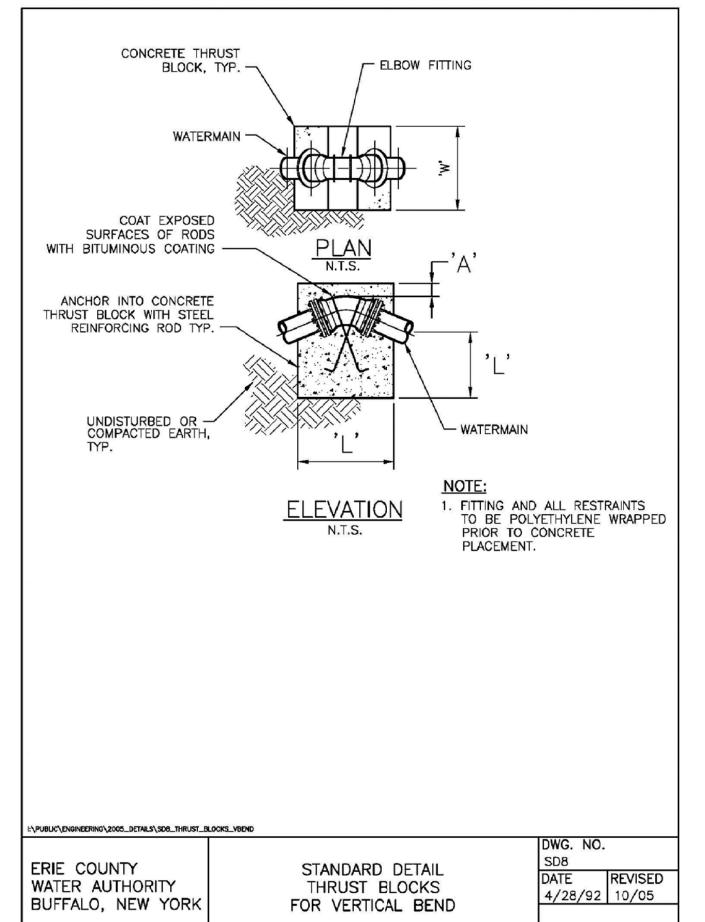


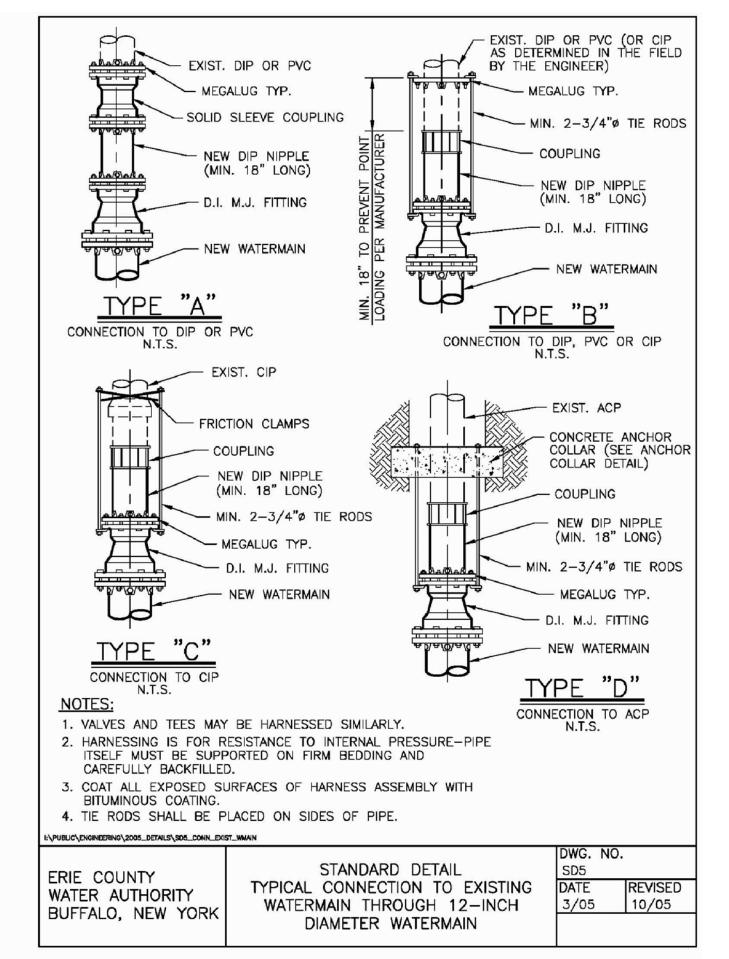


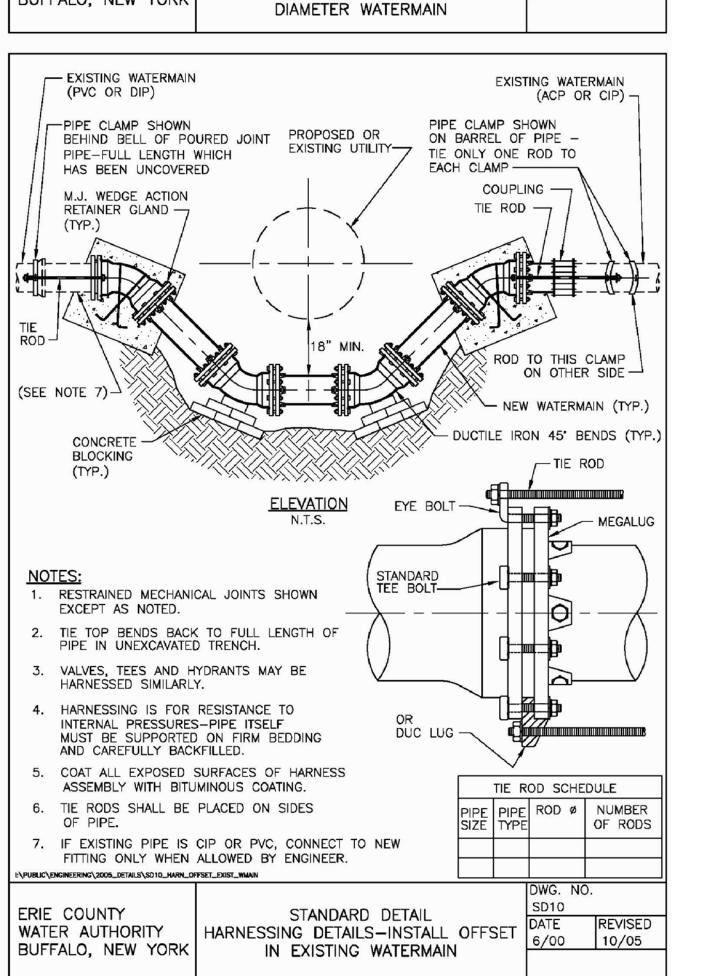


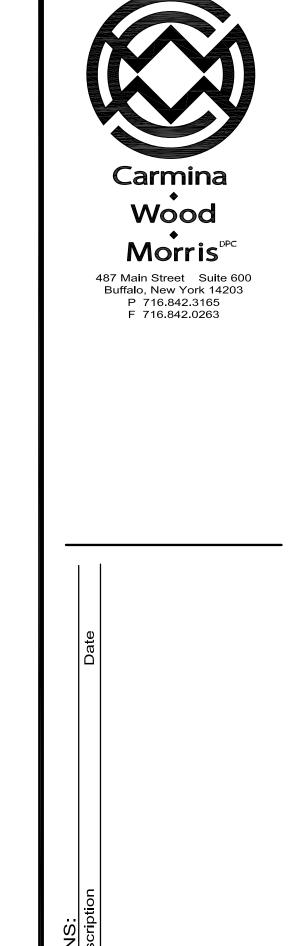












w Patio Home & Attached Villas Construbenezer Landing

Issued for Construction:
Municipality Submission:
Drawn by:
Scale:

As Noted

Scale:

DRAWING NAME:

DRAWING NAME

I Itility

Details - Water

DRAWING NO.

C-404

Project no.: 15.146

Wood

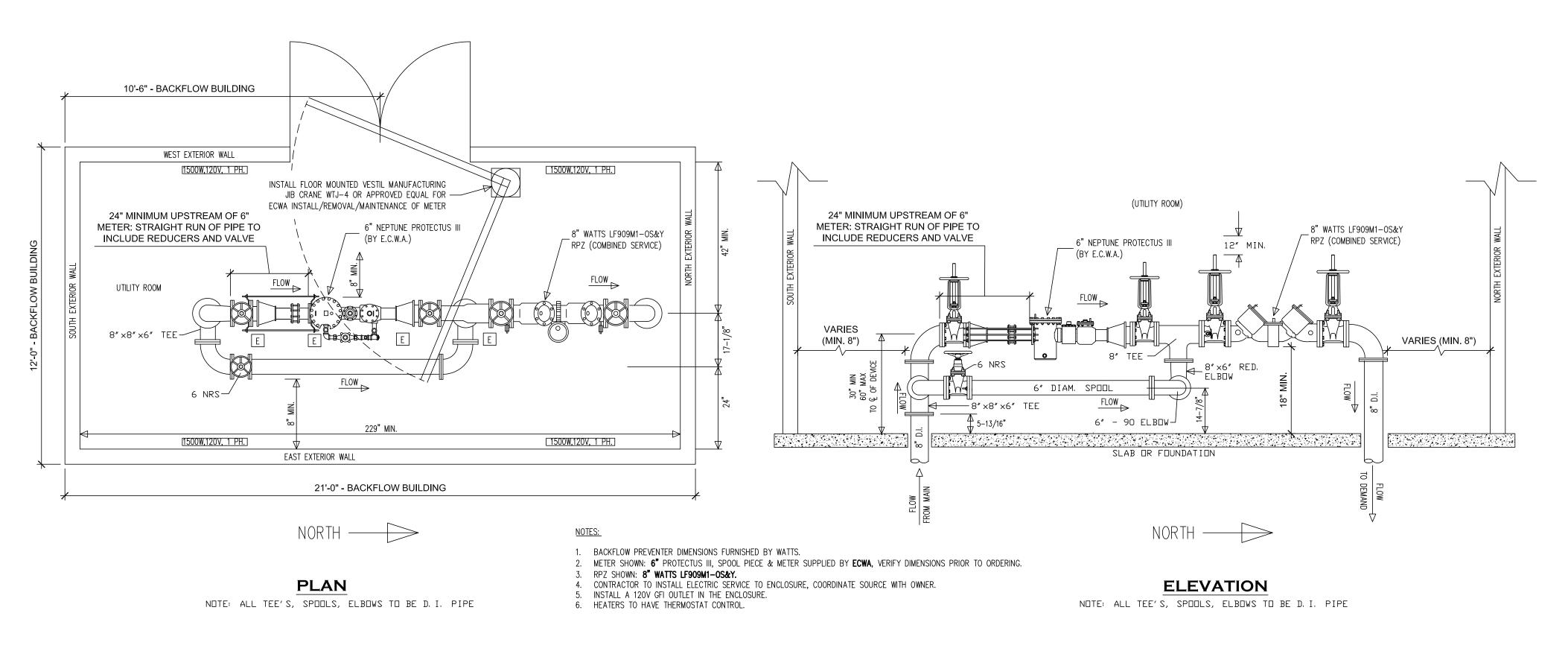
Morris

487 Main Street Suite 600 Buffalo, New York 14203 P 716.842.3165 F 716.842.0263

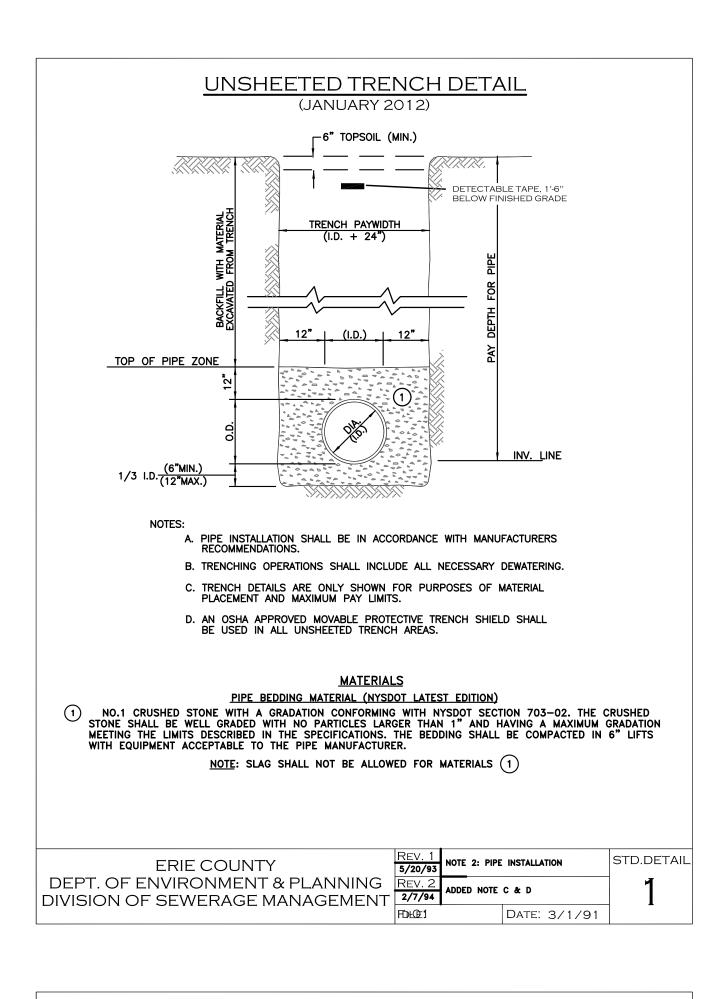
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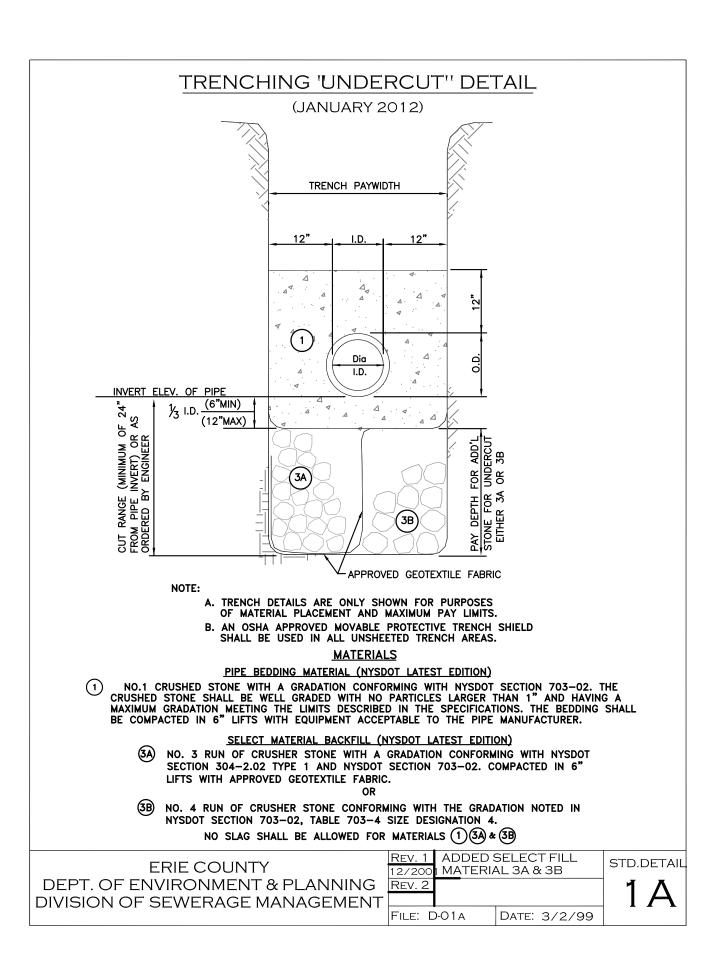
Utility Details - Water

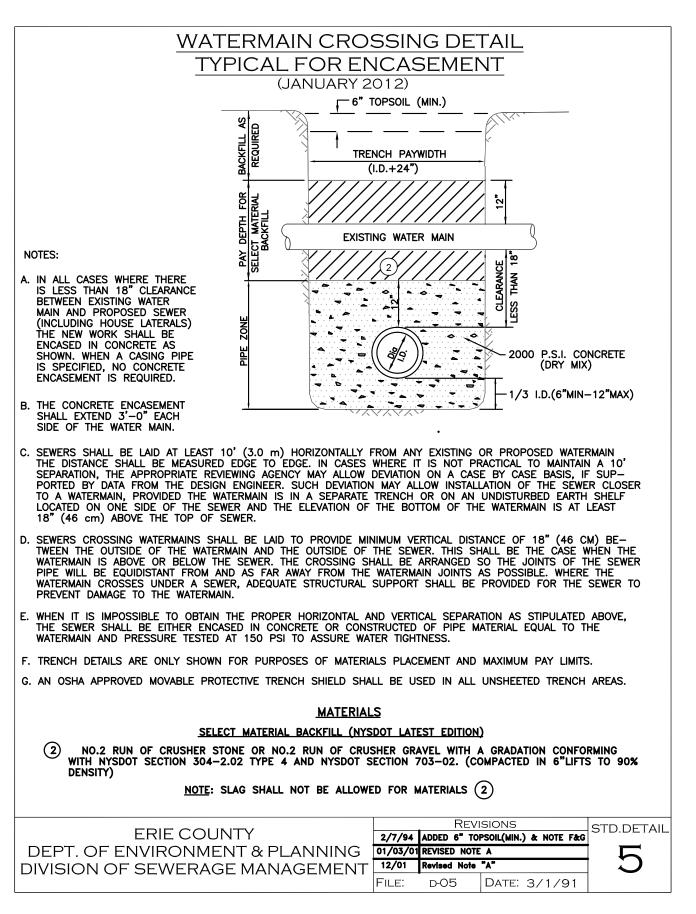
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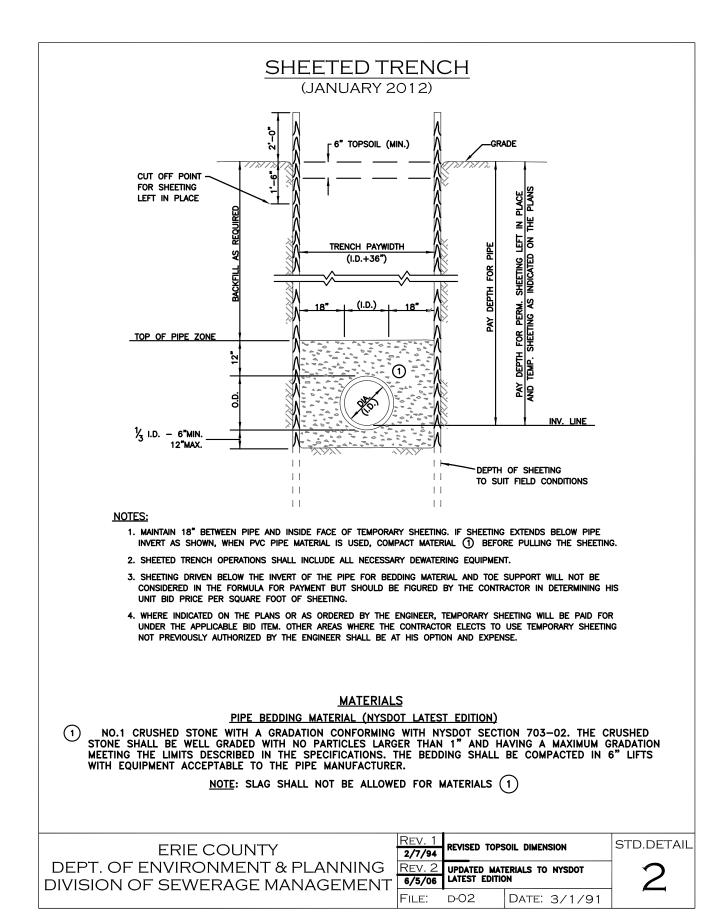


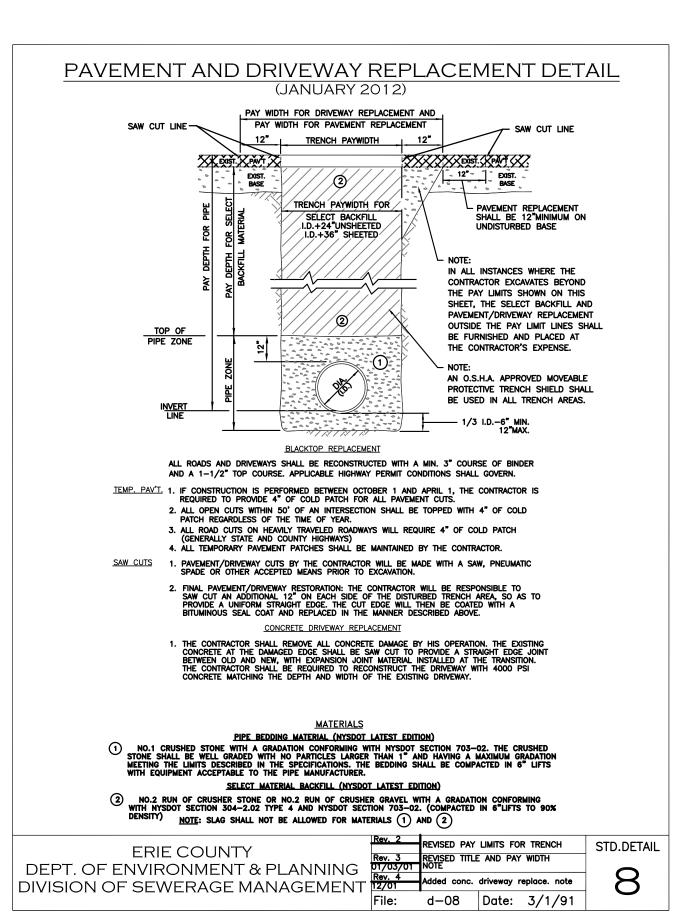
8" WATTS LF909M1-OS&Y WITH 6" NEPTUNE PROTECTUS III AND 6" VALVED BYPASS SCALE: N. T. S.

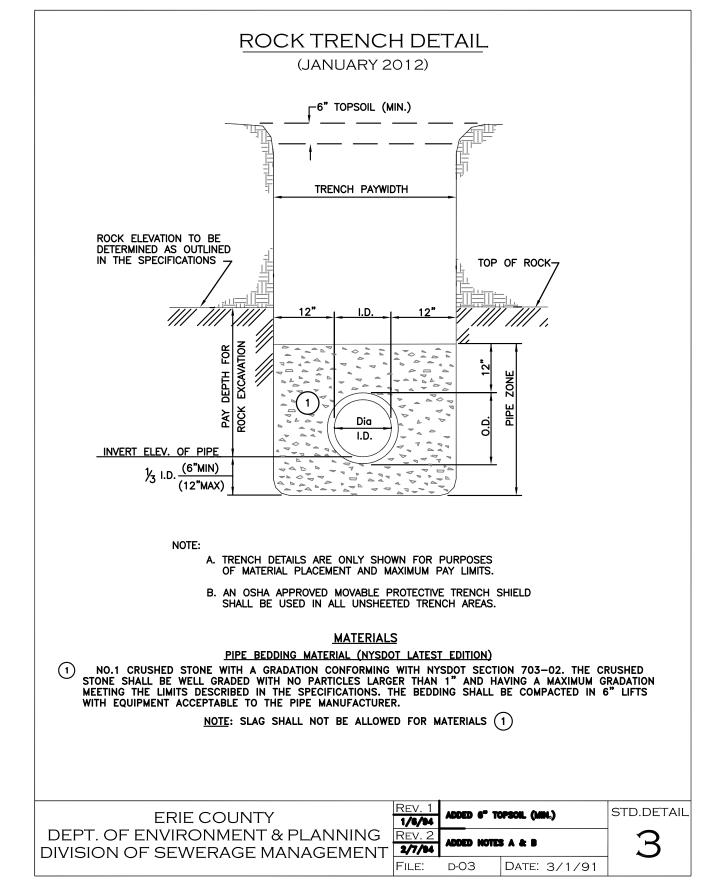


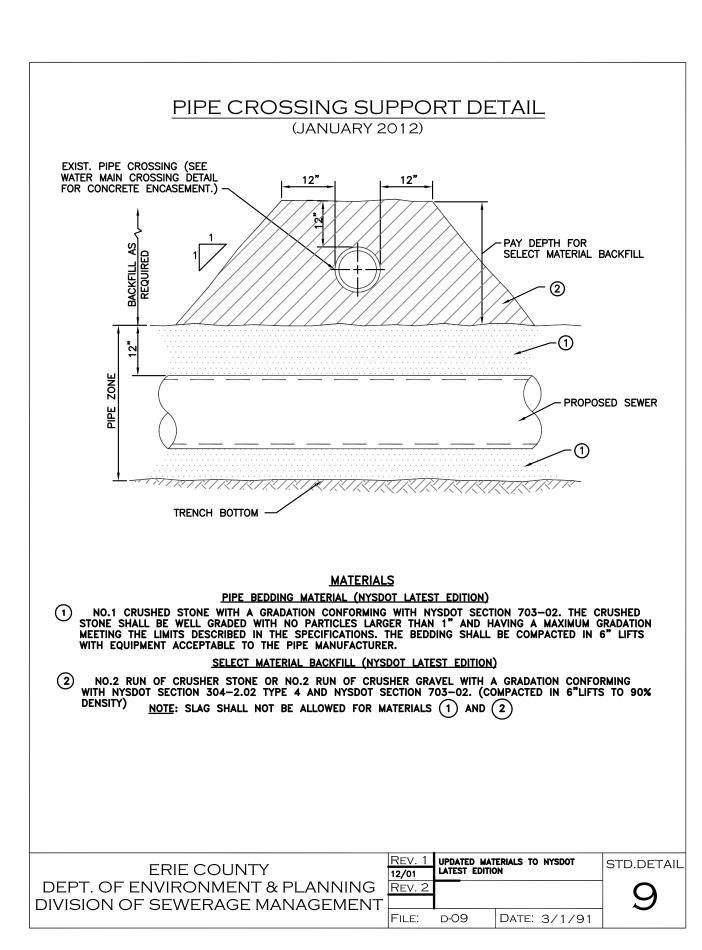


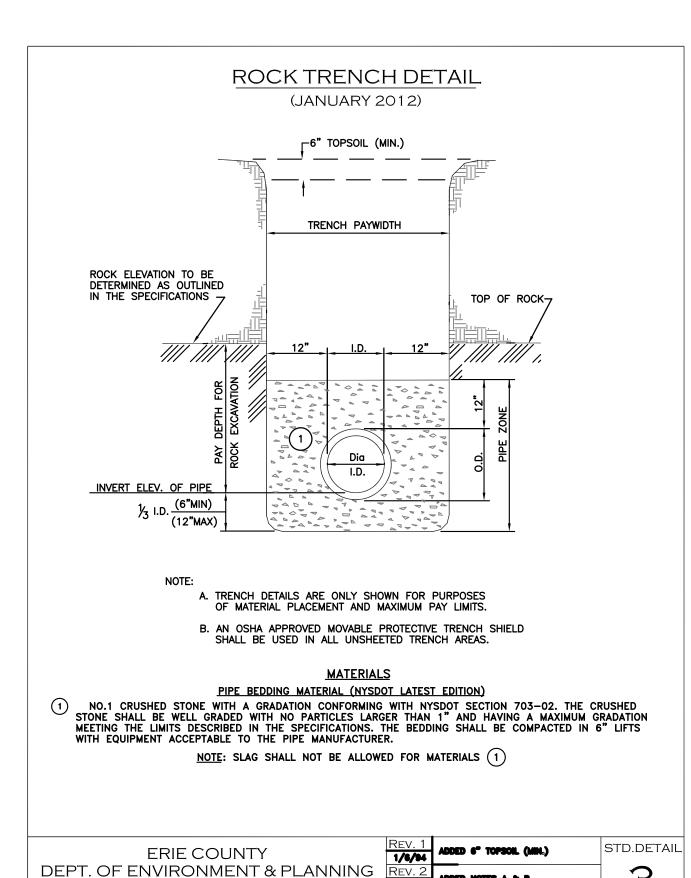














Wood

Morris

487 Main Street Suite 600

Buffalo, New York 14203 P 716.842.3165

F 716.842.0263

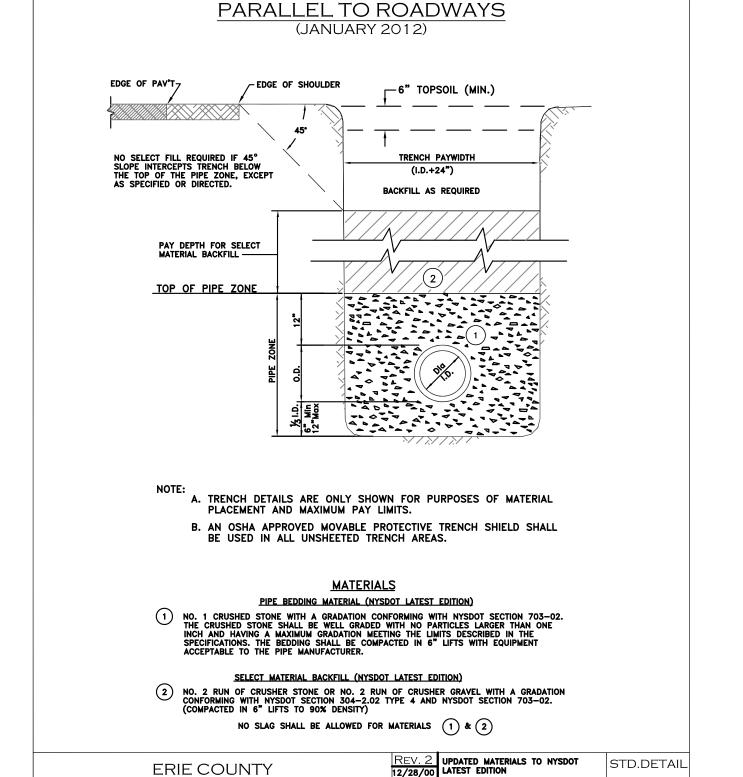
Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 Drawn by: C. Wood Scale: As Noted

DRAWING NAME:

Details - Sanitary

DRAWING NO.

Project no: 15.146



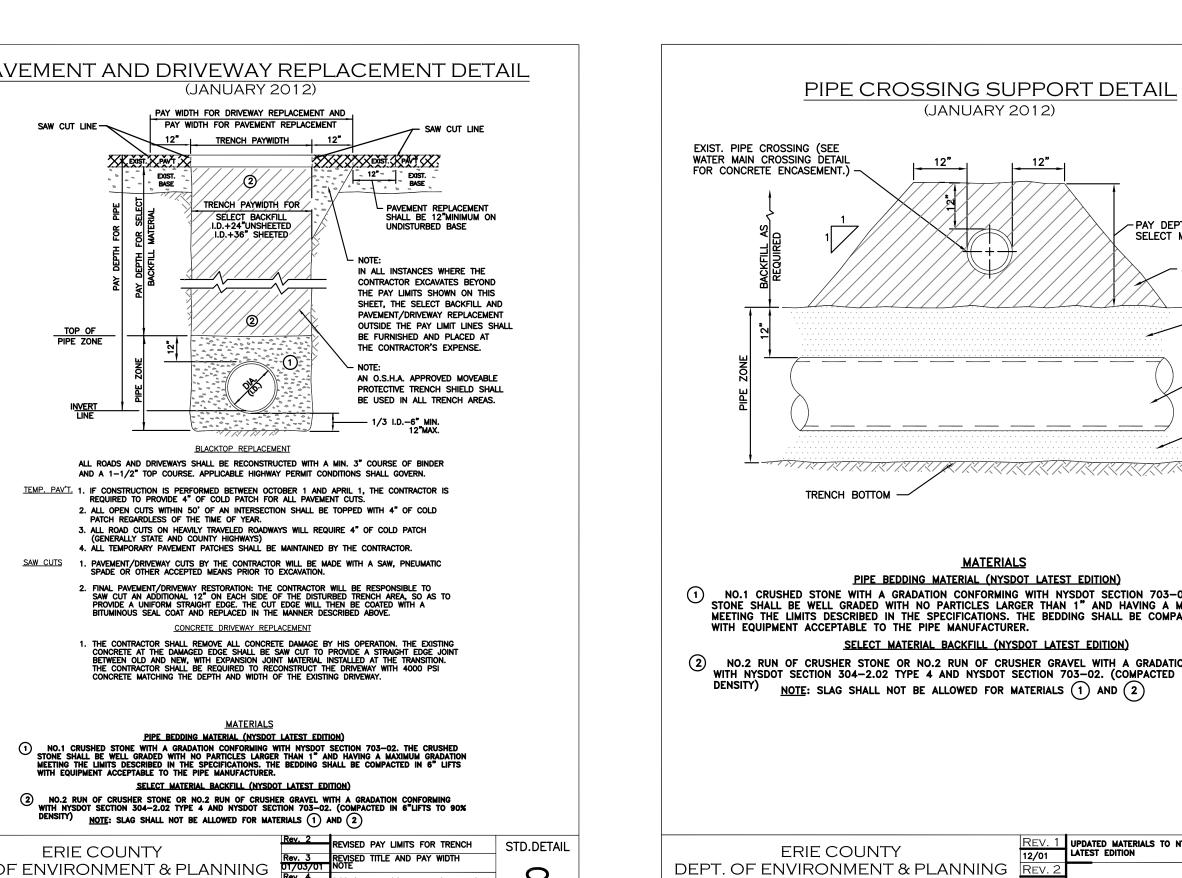
**ERIE COUNTY** 

DEPT. OF ENVIRONMENT & PLANNING
DIVISION OF SEWERAGE MANAGEMENT

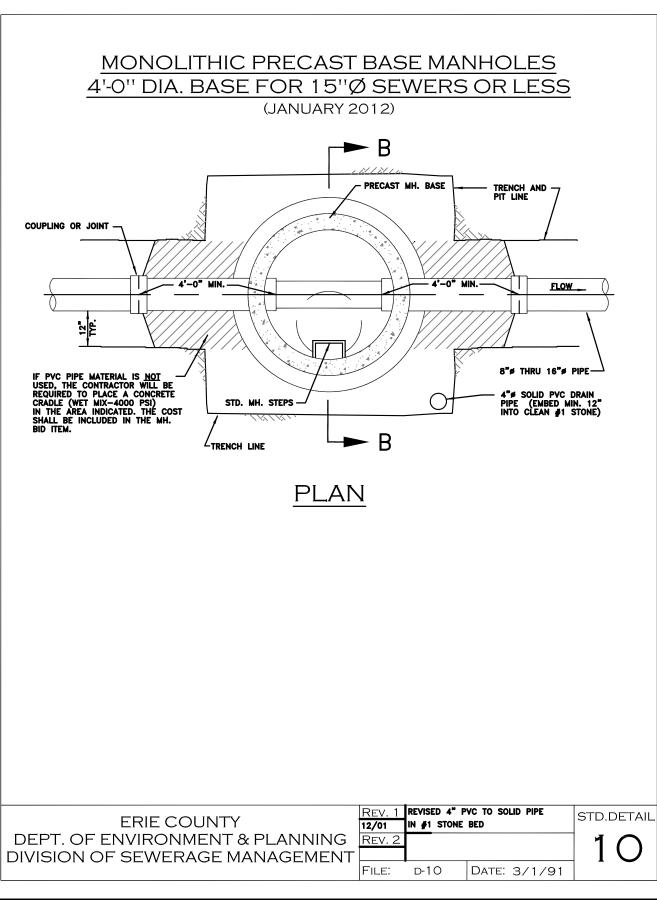
| DEPT. OF ENVIRONMENT & PLANNING | REV. 3 | Updated NYS DOT Editions | 12/01 | Updated NYS

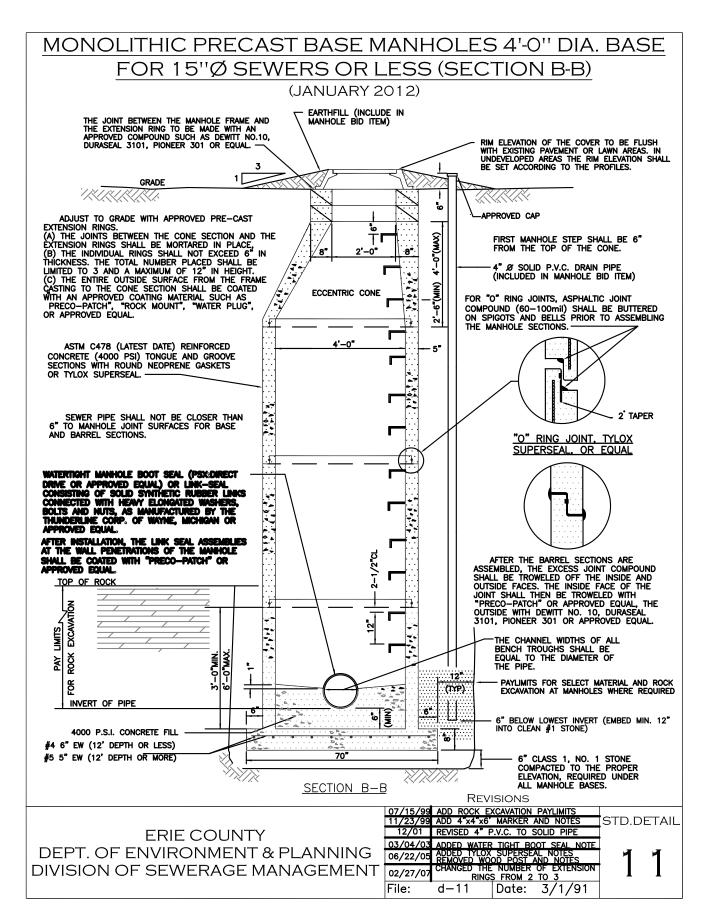
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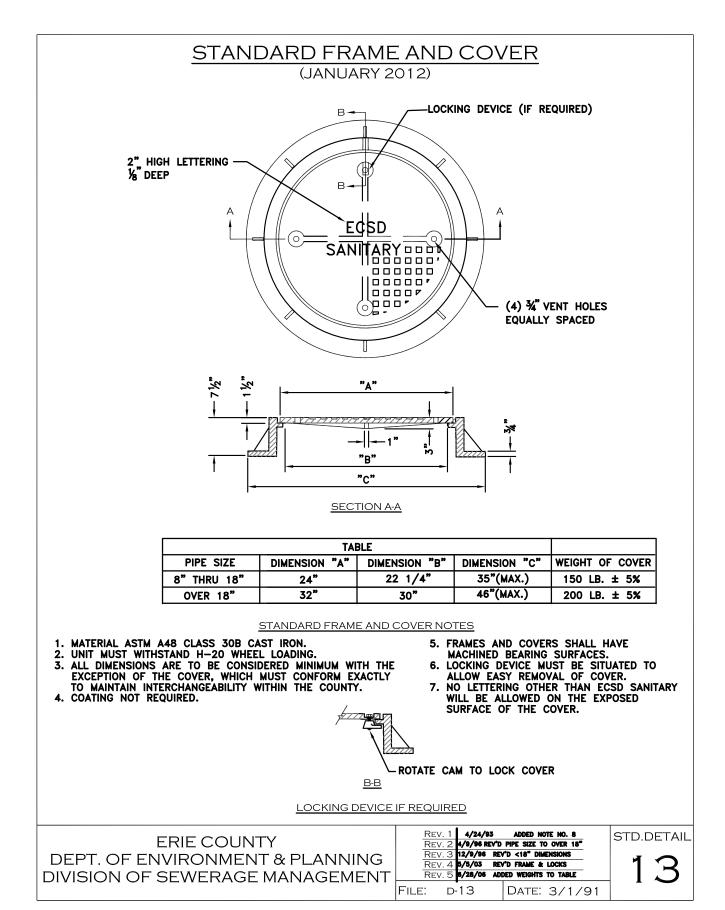
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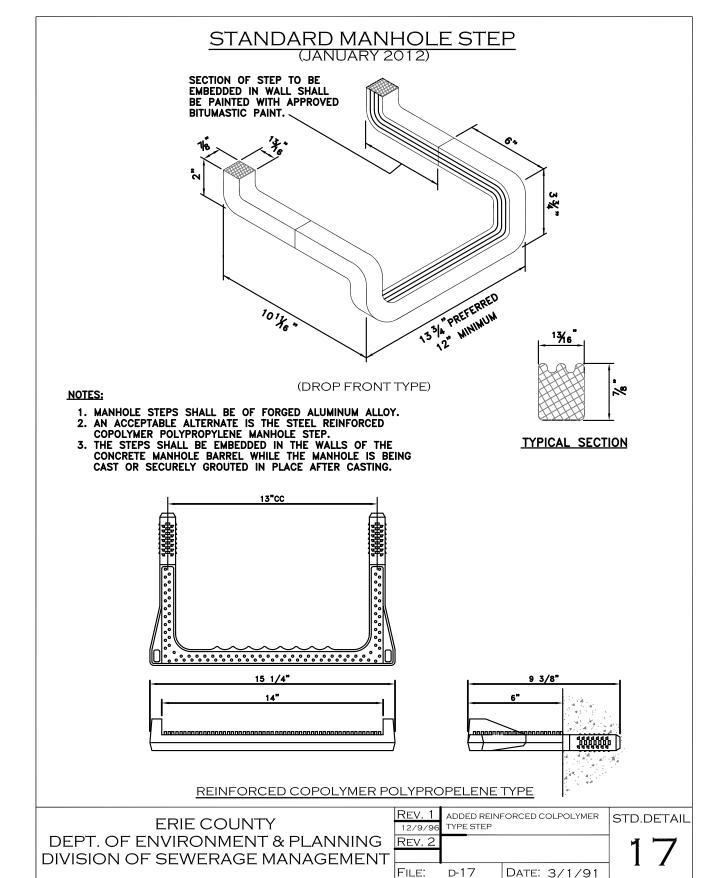


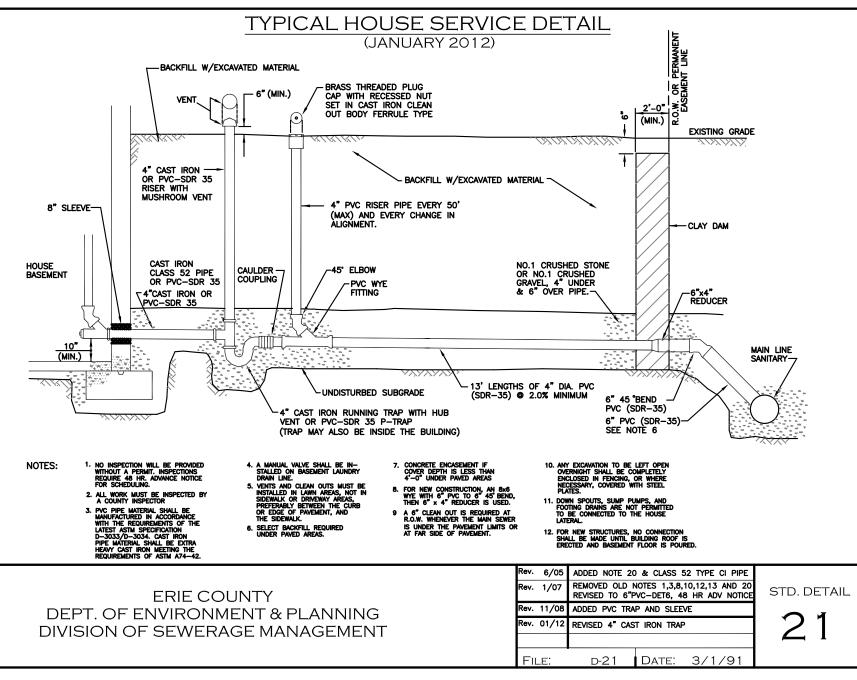


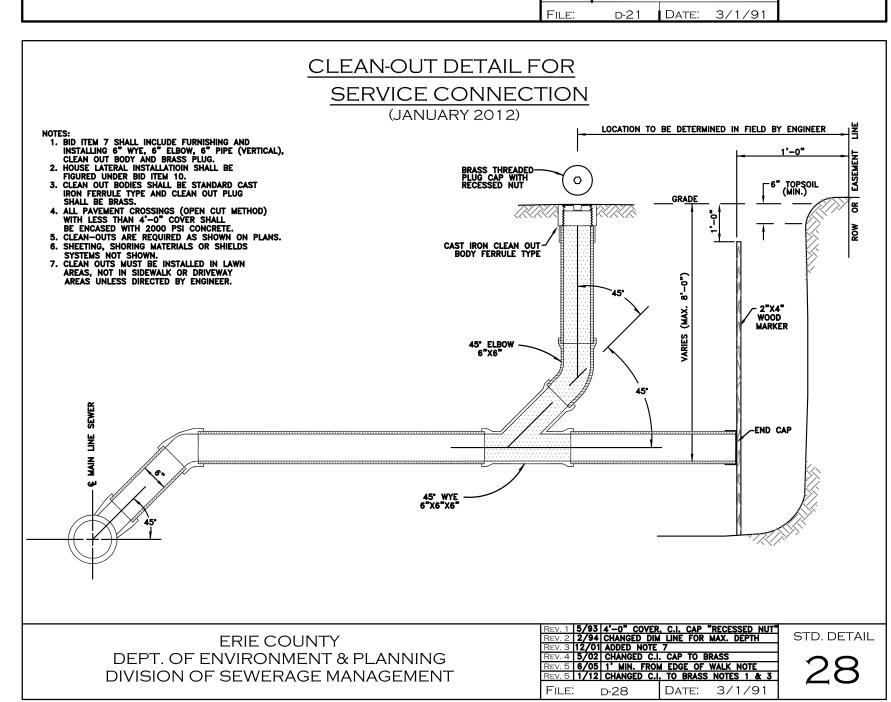


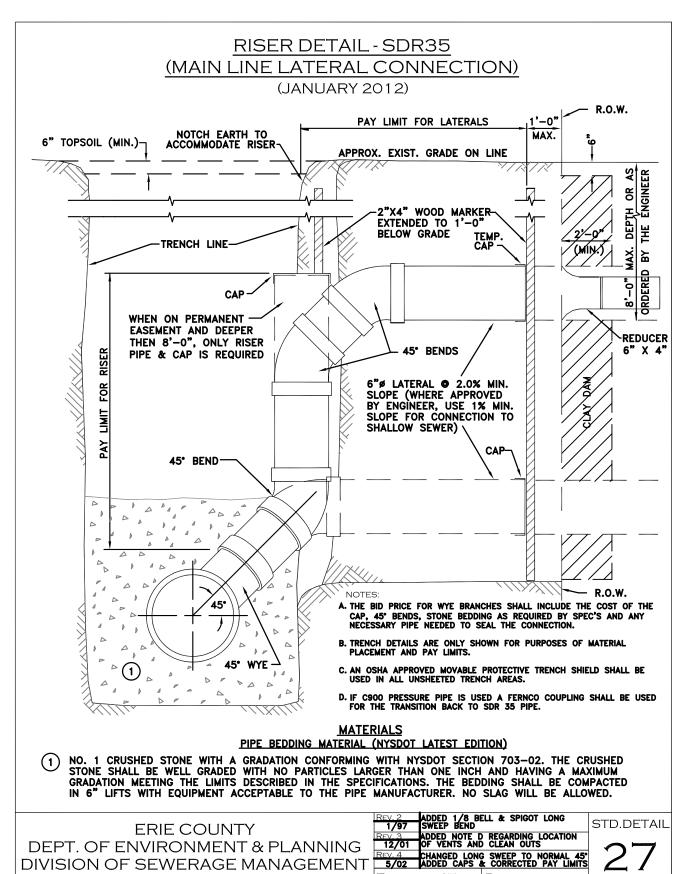




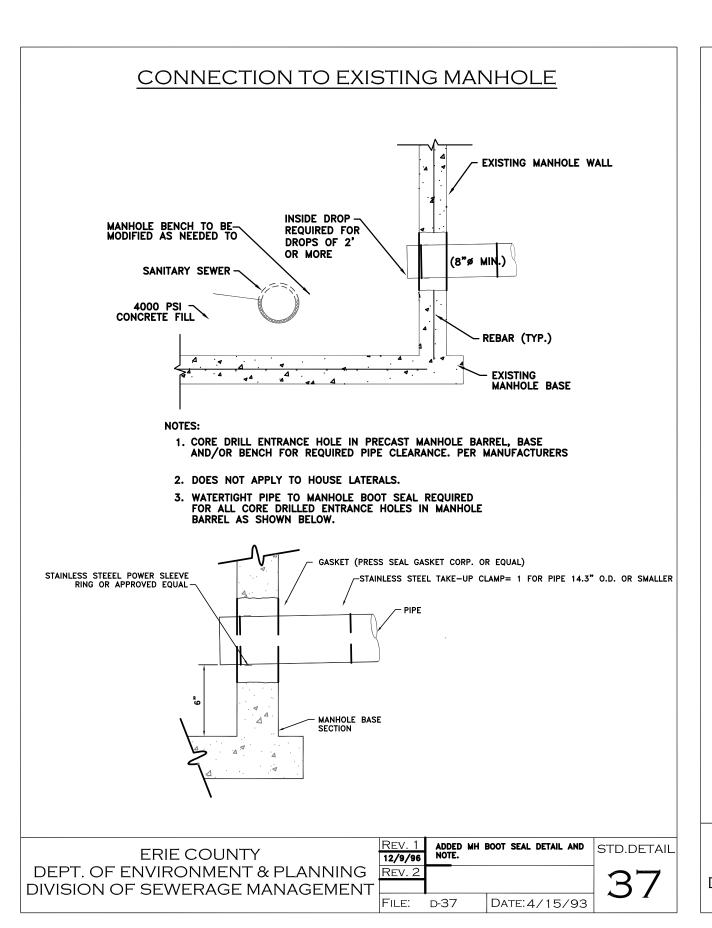


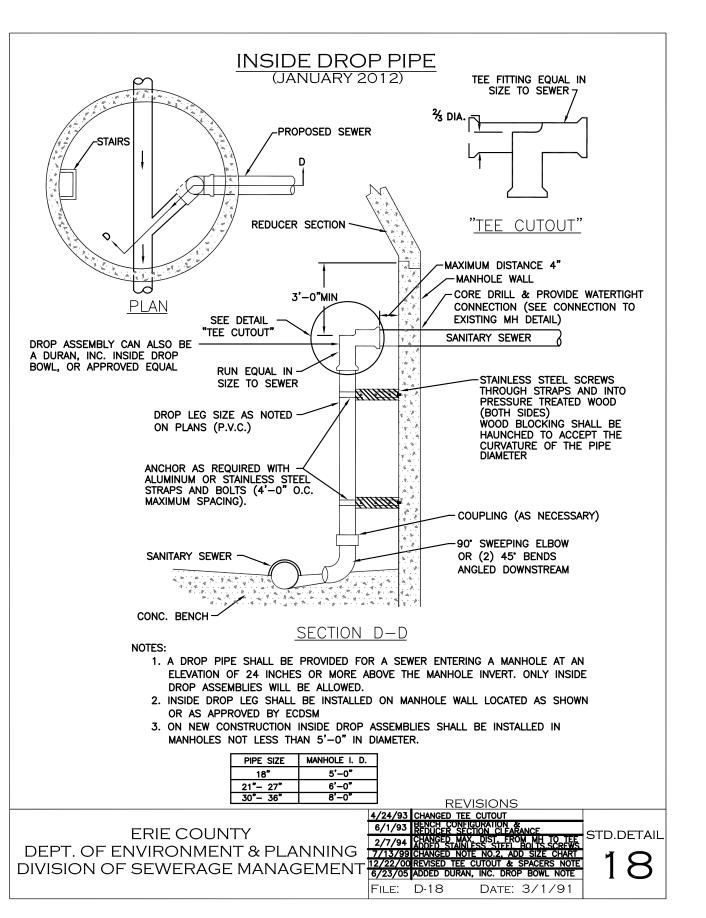


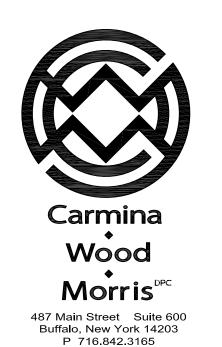




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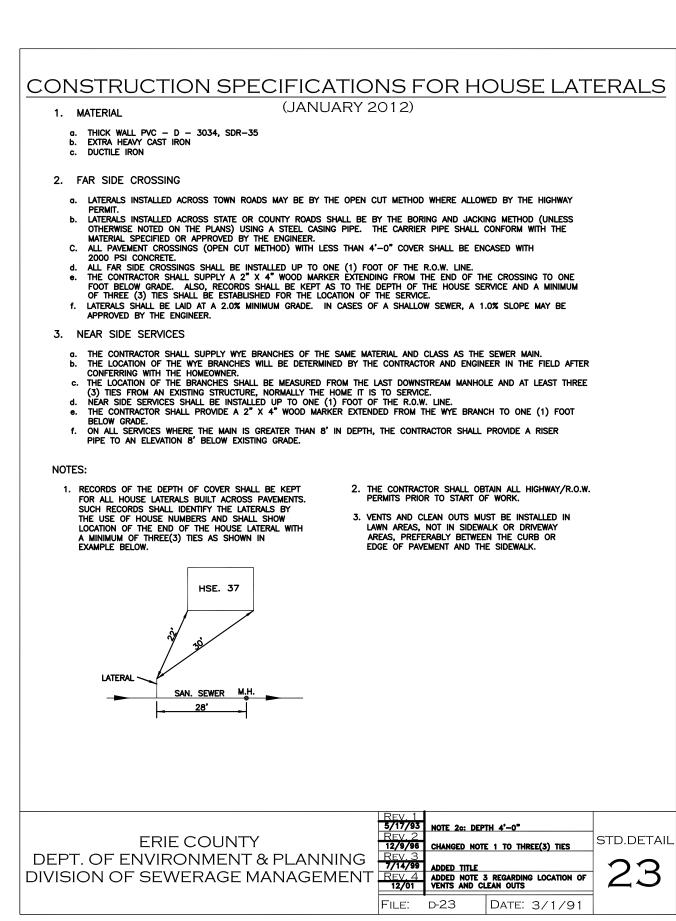
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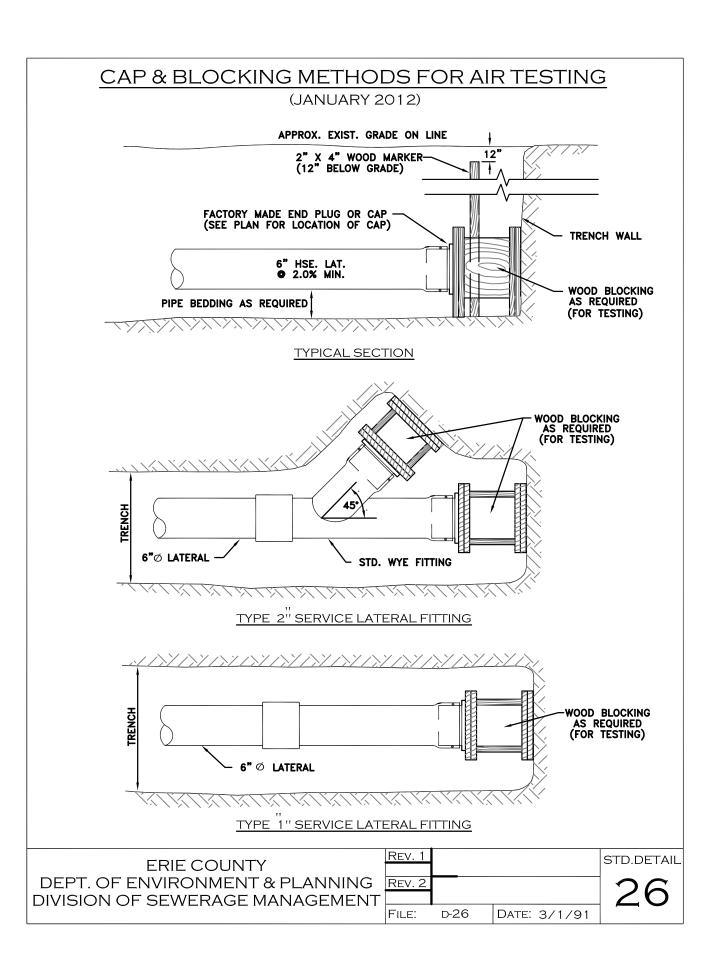
Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 Drawn by: C. Wood Scale: As Noted

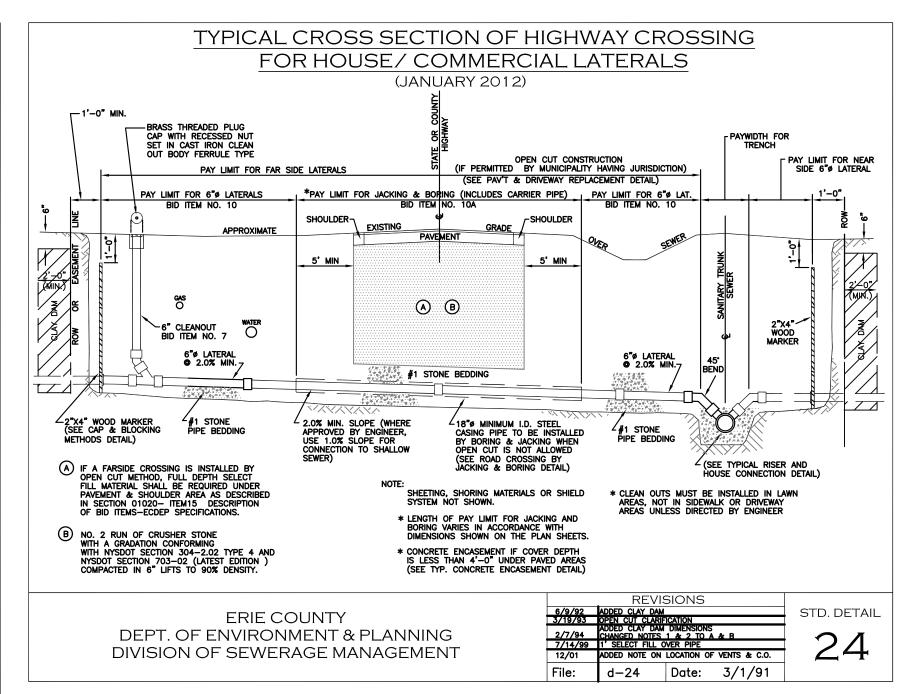
DRAWING NAME:

Details - Sanitary

DRAWING NO.







# AIR TESTS, INFILTRATION OR EXPILTRATION AND DEFLECTION REQUIREMENTS

#### A. <u>Requirements</u>

acceptance of the project, the Contractor will be required to perform the following three tests on all sewers built under this project:

a) Air Tests

b) Infiltration or Exfiltration c) Deflection Test (15" dia. and smaller).

2. No more than 1,000 linear feet of installed sewer shall be allowed to remain untested.

3. In view of the fact that house laterals and riser pipes often contribute considerable infiltration, such aterals and risers are to be installed and capped, tied and locked as the work progresses, prior to the air testing of the

completed in accordance with OSHA Standards for confined space entry. The Contractor will be required to provide and operate all equipment necessary for full compliance for his operation. Equipment such as gas detectors, safety harnesses, ventilating

2 - 9

1. After backfilling and prior to the final

4. The Contractor's testing procedures shall be blowers, respirators etc. shall be provided by the Contractor.

#### RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES. 2014 EDITION

#### 38.3 Relation to Water Mains

ensure watertiahtness.

following table:

38.31 Horizontal and Vertical Separation

Sewers shall be laid at least 10 feet (3 m) horizontally from any existing or proposed water main. The distance shall be measured edge to edge. For gravity sewers where it is not practical to maintain a 10 foot (3 m) separation, the appropriate reviewing agency may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviation may allow installation of the gravity sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on one side of the gravity sewer and at an elevation so the bottom of the water main is at least 18 inches (460 mm) above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for gravity sewers, both the water main and gravity sewer shall be constructed of slip-on or mechanical joint pipe complying with Section 8.1 and Section 8.7 of the "Recommended Standards for Water Works - 2012 Edition" and

shall be pressure rated to at least 150 psi (1034 kPa) and pressure tested to

38.32 Crossings

Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches (460 mm) between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and arade. When it is impossible to obtain proper horizontal and vertical separation as stipulated above, one of the following methods shall be specified:

a. The sewer shall be designed and constructed equal to water pipe, as described in Paragraph 38.31.

b. Either the water main or the sewer line may be encased in a watertight carrier pipe that extends 10 feet (3 m) on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be made of materials approved by the regulatory agency for use in water main construction.

# Subdivisions and Sanitary Sewer Extension

#### SECTION 02595 - 3.02

Air Tests (Required for All Diameters up to and including 36") 10 State Standards Section, 33.94

1) This test shall be performed no earlier than 14 calendar days after the trenches are backfilled.

2) The procedure for air testing shall be as specified herein. The minimum allowable time for the test pressure to decrease from 3.5 psi to 3.0 psi shall be not less than as called for in the

Minimum Acceptance Times\* For Length Shown (min:sec)

Pipe				
Diameter	Up to 100'	100 - 200°	200 - 300'	300 - 400'
6"	2:50	2:50	2:50	2:51
8"	3:47	3:47	3:48	5:04
12"	5:40	5:42	8:33	11:24
15"	7:05	8:54	13:21	17:48
18"	8:30	12:49	19:14	25:38
21"	9:55	17:27	26:11	34:54
24"	11:24	22:48	34:11	45:35
27"	14:25	28:51	43:16	57:42
30"	17:48	35:37	53:25	71:13
33"	21:33	43:56	64:38	86:10
36"	25:39	51:17	76:55	1 <b>02:3</b> 4

\* Erie County Sewer District Inspector will extend time to the next full minute during the test.

3. Pipe lines in sizes up to 36 inches in diameter can be air tested from manhole to manhole for distances not to

4. In wet trenches where pumping to lower the water table is impractical, approved 4" diameter, solid PVC drain pipe (with approved cap) shall be placed at each manhole to extend from a point 6 inches below the lowest invert to the top of the ground. Embed the pipe a minimum of 12" into clean #1 stone. Ground water elevations will be measured at each manhole in order to calculate the groundwater pressure acting on the pipe exterior. The initial air test pressure shall be increased as necessary to overcome the calculated groundwater pressure.

2 - 10

# Subdivisions and Sanitary Sewer Extensions

#### SECTION 02595 - 3.02

5. The testing procedures outlined shall be strictly adhered to.

6. All testing equipment shall be supplied by the Contractor and be in good working condition. Some of the major equipment required for air tests is:

- a) Stop watch graduated in tenths of a second. b) Compressor of 50 to 100 psi capacity.
- c) Bulkheads for pipe. d) Approximately 100 feet of 3/8" diameter air
- e) Pressure gauge 0 to 5 psi graduated in 1/16th of a pound increments.
- f) Three 3/8 inch diameter check valves.

## C. Infiltration Tests (Applicable Only if Ground Water s Two Feet Above the Top of the

1. This test shall be performed no earlier than 14 calendar days after the trenches are backfilled.

Infiltration tests for all sewers constructed under this project shall not exceed 100 gallons per inch diameter per mile of sewer, per 24 hours. Each individual run of sewer (from one manhole to the next manhole if greater than 100 feet) shall comply with the allowable rate of infiltration. All equipment for the tests shall be furnished by the Contractor and be in good working condition.

3. The allowable rate of infiltration given in gallons per mile is not to be construed as a commitment on the part of the District to accept an entire line, where overall infiltration is less than the allowable, while one or more runs contribute excessive infiltration.

4. The infiltration test is intended to measure the water tightness of a sewer as related to the infiltration of ground water and is only applicable if the water table level is 2 feet or higher above the top of the pipe for the entire length of the test section.

2 - 11

SECTION 02595 - 3.02

Specifications for

a) Approved 4" diameter solid PVC drain pipe (with an approved cap) shall be placed at each manhole to extend from a point 6 inches below the lowest invert to the top of the ground. Embed the pipe a minimum of 12" into clean #1 stone. Ground water elevations will be measured at each manhole so that the ground water level can be correlated with the infiltration measurements.

b) Before conducting the tests, the water table should be allowed to stabilize at its normal level and verified that it is 2 feet above the top of the pipe during the test period. The test is usually conducted between adjacent manholes with the upstream end of the sewer bulkheaded in a suitable manner to isolate the test section. All service laterals, stubs and fittings should be properly plugged or capped at the connections to the test pipe section to prevent the entrance of ground water at these locations.

c) A V-notch weir or other suitable measuring device should be installed in the inlet pipe of the downstream manhole. Infiltrating water is then allowed to build up and level off behind the weir until a steady, uniform flow occurs over the weir. Leakage is determined by direct reading from graduations on the weir consecutively for five (5) days and converting the flow quantity to gallons per unit length of pipe per unit of time.

d) An important factor in applying the test criteria is to properly correlate the variable water head over the length of the sewer being tested to the high ground water level. A minimum of 2 feet of water over the pipe is required at the upper manhole before the infiltration test will be allowed.

5. When a sewer run between two consecutive manholes or chambers is found to contribute infiltration at a rate above the allowable, inspection by television or other cameras may be made by the Contractor so that the defective section of sewer can be located and repaired. Each individual run of sewer (from one manhole to the next manhole if greater than 100 feet) shall comply with the allowable rate of infiltration of 100 gallons per inch diameter per mile of sewer per 24 hours.

SECTION 02595 - 3.02

# Exfiltration Tests

1. This test shall be performed no earlier than 14 calendar days after the trenches are backfilled.

2. The exfiltration test for all diameter sewers shall be as described below. Although actual infiltration will normally be less than that indicated by the water exfiltration test, the test does provide a positive means of subjecting the completed sewer system to an actual pressure test. Since sanitary sewers are not designed or expected to operate as a pressure system, care must be exercised in conducting the test and correlating the results with the allowable exfiltration limits.

a) The test is usually conducted between adjacent manholes. Prior to the test, all service laterals, stubs and fittings within the test section should be plugged or capped and adequately braced or blocked to withstand the water pressure resulting from the test.

b) If manholes are to be included in the test, the inlet pipe to each manhole should be bulkheaded and the test section filled with water through the upstream manhole. To allow air to escape from the sewer, the flow should be at a steady rate until the water level in the upstream manhole provides an average pressure of 5 psi (11.6' head) at the center point of the test section or the upstream manhole is filled. If necessary, provisions should be made to bleed off entrapped air during the filling of the test section.

c) Once the test section is filled, the water should be allowed to stand for an adequate period of time (one day minimum) to allow for water absorption by the pipe and manhole. After water absorption has stabilized, the water level in the upstream manhole is brought up to the proper test level and this level established by measuring down from the manhole rim or other convenient datum point. After 24 hours, the water elevation should be measured from the same reference point and the loss of water during the test period calculated, or the water can be restored to the level existing at the beginning of the test, and the amount added used to determine the leakage.

# Subdivisions and Sanitary Sewer Extensions

SECTION 02595 - 3.02

d) To exclude both manholes from the test, it is necessary to bulkhead the outlet pipe of the upstream manhole. Provision must be made in the bulkhead for filling the pipe and expelling trapped air.

e) The water level at the upstream manhole shall be computed and varies above the top of the pipe. Since the sewer is installed on a grade, the test section downstream will most likely be subjected to a greater pressure. Therefore, the test pressure head at the upstream manhole should be adjusted such that the maximum pressure on the pipe being tested is no greater than 10 psi, (23 feet of head).

3. When a sewer run between two consecutive manholes or chambers is found to exfiltrate at a rate above the allowable, inspection by television or other cameras may be made by the Contractor during wet weather, so that the defective section of sewer can be located and repaired. Each individual run of sewer (from one manhole to the next manhole) shall comply with the allowable rate of infiltration of 100 gallons per inch diameter per mile of sewer per 24 hours.

# E. <u>Deflection Test</u>

1. This test shall be performed no earlier than 30 calendar days after the trenches are backfilled.

2. All flexible (PVC) sewers 8" diameter or larger constructed under this project shall be internally checked with a five percent (5%) deflection "go-no-go pig" or Mandrel to determine if the pipes are deflecting excessively. Any section of pipe unable to pass the deflection test "pig test" shall be removed and replaced at the Contractor's expense,

3. Deflection testing mandrels or pig shall be pulled thru the pipe by hand or hand operated winch. Power winches or drives are not permitted.



487 Main Street Suite 600 Buffalo, New York 14203 P 716.842.3165 F 716.842.0263

0 Attached Home

a **b** 22 32 st

Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 Drawn by: C. Wood As Noted

Scale:

Patio

DRAWING NAME:

Details - Sanitary

#### GENERAL NOTES FOR SANITARY SEWER CONSTRUCTION WITHIN ERIE COUNTY SEWER DISTRICTS

- 1. The Erie County Division of Sewerage Management (DSM), who operates and maintains the existing sewer lines and appurtenances within Erie County Sewer Districts (ECSD), is to be notified at least 48 hours in advance of the start of construction.
- Construction shall be in accordance with the Rules and Regulations for Erie County Sewer Districts.
- 3. All permits required by the Federal, State, County, City and/or Town governments to perform work must be obtained prior to the start of work, and paid for by the Contractor.
- 4. If easement and/or Out of District Agreements are required, they must be complete and ready to be filed before the project will be approved for construction.
- 5. The contractor shall comply in all respects to the Industrial Code Part (Rule No.) 53 relating to construction, excavation, and demolition operations at or near underground facilities, as issued by the State of New York Department of Labor, Board of Standard and Appeals.
- 6. The construction of the sanitary sewer facilities shall be under the supervision of a person or firm qualified to practice professional engineering in New York State under the Education Law of the State, whenever engineering services are required by such law for such purposes.
- 7. Where such sanitary sewer facilities are under the supervision of a professional engineer, he shall certify to the DSM and to the applicant that the constructed facilities have been under his supervision and that the work has been fully completed in accordance with the approved engineering reports, plans, specifications, and approvals.
- 8. The Contractor is solely responsible for all site safety. The Contractor's equipment and methods of operation shall be in full compliance with OSHA Standards and satisfy all Federal, State and Local Health and Safety Regulations.
- The Contractor is advised a trench shield and/or shoring designed in accordance with OSHA Standards shall be used in all open trench excavations.
- 10. Any contractor and/or plumber performing work in a confined space (i.e. manholes, wetwells, and chambers) owned by an Eric County Sewer District, must certify to the County that they have their own Confined Space Entry Program that meets or exceeds OSHA's regulations. Certification must be notarized by a notary republic.
- 11. The contractor shall expose existing utilities ahead of the pipe laying operation, so if minor adjustments must be made in the pipe elevation and/or alignment due to interference from these utilities, said changes can be made in advance of the work.

1 of 4

- 28. For all public and private 8" or larger sanitary sewer installations, the developer/contractor must provide one (1) set of record drawings on "D" size paper (24" x 36") and in an electronic file format (CD) compatible with AutoCAD, Release 2007.
- 29. All public sewer extension projects that consist of more than 750 LF of 8" pipe or larger, shall furnish a 2 year maintenance bond to the DSM.
- 30. Final Certification will be issued upon the full completeness and compliance of the project including any requirement(s) of I/I remedial work.

branches which interfere with the construction operation, or to repair trees having suffered damage by construction activities. The cost involved is to be included in the various items of the contract.

12. The contractor shall retain the services of a qualified tree expert to remove, where necessary,

- 13. The sanitary sewer pipe shall be polyvinyl chloride (PVC) sewer pipe conforming to the latest revisions of American Society for Testing and Materials (ASTM) designation D-3034, SDR-35, installed in accordance with the ASTM designation D-2321-83a or the latest revision thereof, or approved equal.
- 14. Sewers shall be laid with straight alignment between manholes and shall be checked by using a laser beam or lamping.
- 15. Should a fluid condition be encountered at the trench bottom, the contractor is to undercut the trench and provide suitable fill material (stone & fabric) to stabilize the trench bottom.
- Sanitary sewer bedding material shall be No. 1 crushed stone with a gradation conforming to the DSM Specifications for Subdivisions, Sanitary Sewer Extensions and Non-Residential Projects.
- 17. Backfill shall be of a suitable material removed from the excavation except where other material is specified. Debris, frozen material, large clods or stones, organic matter, or other unstable materials shall not be used for backfill within two (2') feet of the top of the pipe.
- 18. All pipes crossing under paved areas are to be backfilled to sub-grade with compacted select material (No. 2 crushed stone) to five (5') feet outside the pavement edges or as required by the highway permit. If any proposed sewer runs under paved areas and has less than four (4) feet of cover, then concrete encasement is required as shown on the DSM Typical Concrete Encasement Detail.
- 19. Sewers parallel to watermains Ten State Standards, Latest Edition, Chapter 30, Section 38.31, and Page 30-11: Sewers shall be laid at least ten (10') feet (three (3) meters) horizontally from any existing or proposed water main. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten (10') foot separation, the appropriate reviewing agency may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on one side of the sewer and at an elevation so the bottom of the water main is at least 18-inches (460 mm) above the top of the sewer.

If it is impossible to obtain proper horizontal and vertical separation as described above, both the water main and sewer must be constructed of slip-on or mechanical joint pipe complying with public water supply design standards of the regulatory agency and be pressure tested to 150 pounds per square inch (psi) (1034 kPa) to assure water tightness prior to backfilling.

20. Sewers crossing watermains - Ten State Standards, Latest Edition, Chapter 30, Section 38.32, Page 30-11 to 30-12: Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18-inches (460 mm) between the outside of the water main

2 of 4

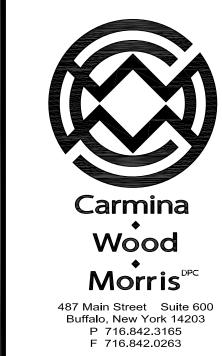
and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade.

- 21. When it is impossible to obtain proper horizontal and vertical separation as stipulated above, one of the following methods must be specified:
  - a. The sewer shall be designed and constructed equal to water pipe, and shall be
  - pressure tested at 150 psi (1034 kPa) to assure water tightness prior to backfilling.
    b. Either the water main or the sewer line may be encased in a watertight carrier pipe which extends ten (10') feet (three (3) meters) on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the regulatory agency for use in water main construction.
  - c. The sewer shall be encased in concrete per the DSM Watermain Crossing Detail Typical For Encasement
- 22. The manhole covers are to bear the inscription "ECSD SANITARY" and comply with the DSM Standard Frame and Cover detail. For private projects the covers shall bear the inscription "SANITARY SEWER" and comply with the DSM Standard Frame and Cover (Private Sewer) detail.
- 23. Building sanitary sewer vents must be installed six (6) inches above finished grade in a grassy area with a mushroom cap. If the vent is in a sidewalk or paved area, then protect with 6" diameter bollards (2 minimum).
- 24. Cleanouts (c.o.) are required on 4" and 6" building sewers every fifty feet and one hundred feet respectively, and at every change of alignment.
- 25. Abandoned building sewer connections from the site, if any, require proof of a District Permit for Disconnection prior to the new connection being made.
- 26. The following pertains only for direct replacement of in service sanitary sewers:

  a. Each new pipe joint shall be ultrasonic tested after it is laid, but before the next pipe is laid. All tests shall be in accordance with the testing equipment manufacture recommendations.
  - b. The ultrasonic test shall be performed in lieu of the hydrostatic and air tests.
  - c. A video inspection of the entire sewer shall be performed. Forward the video
  - inspection tape and related paperwork to DSM for review and approval.

    d. A deflection test is required in all cases.
- 27. For all sanitary sewer installations, a written certificate of construction completeness and compliance, including the results of the hydrostatic leakage test, lamp test, deflection test, air test, etc. shall be submitted to the Erie County Health Department and DSM within thirty (30) days after completion of construction.

3 of 4



REVISIONS:

ne & Attached Villas Constructio

Issued for Construction: xx.xx.xx
Municipality Submission: 4/26/16
Drawn by: C. Wood

As Noted

DRAWING NAME:
Utility

Scale:

Details - Sanitary

DRAWING NO.

C-409

oject no.: 15.146

4 of 4

PROPOSED WATER-SEWER PROFILE

HORIZ. SCALE: 1"=30" VERT. SCALE: 1"=5"

Wood Morris

487 Main Street Suite 600 Buffalo, New York 14203 P 716.842.3165 F 716.842.0263

| REV | REV

<u>=</u> D

Patio

Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 Drawn by: C. Wood Scale: As Noted

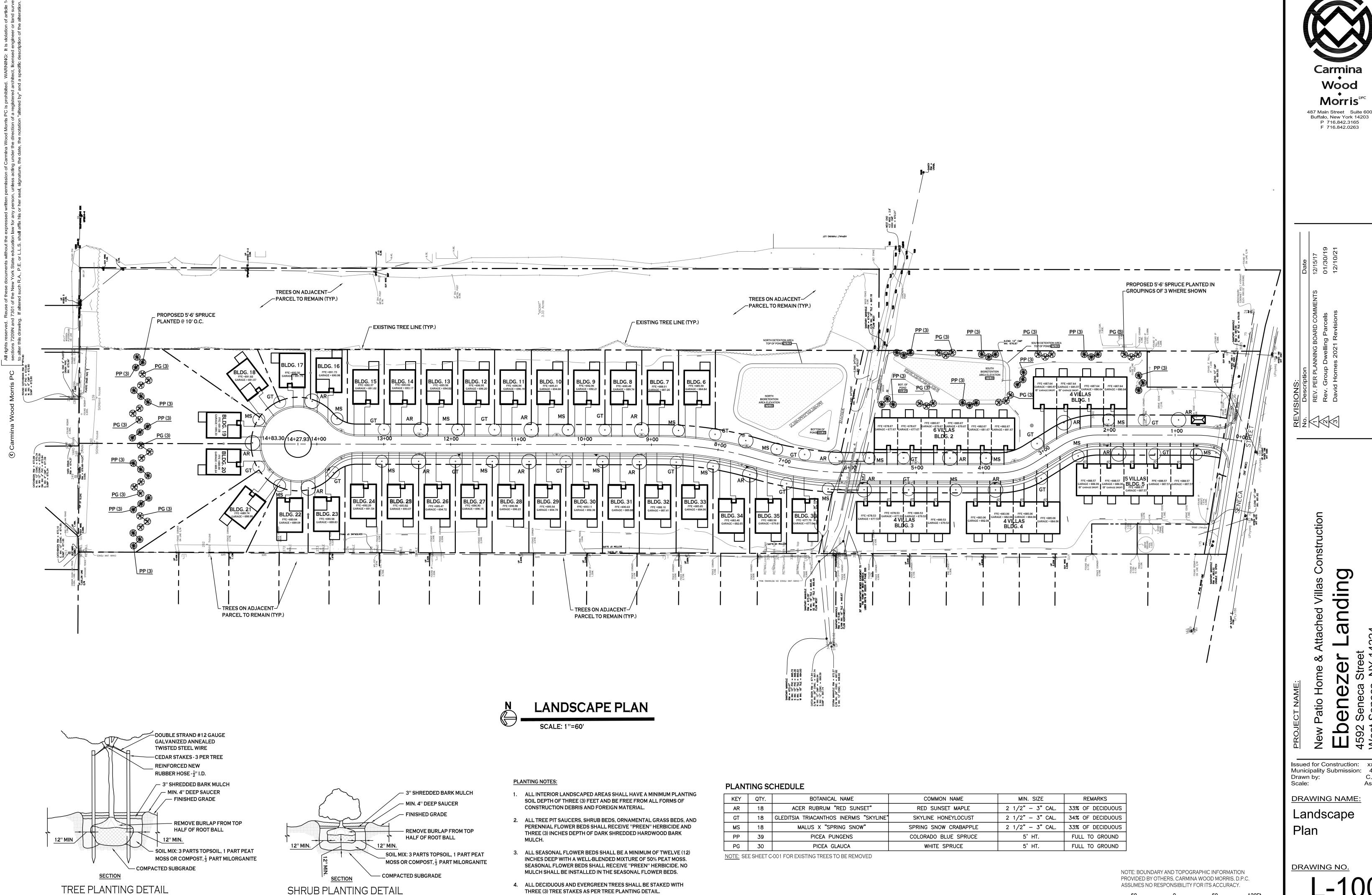
DRAWING NAME:

Sanitary Sewer Profile

DRAWING NO.

COMPACTED PRIOR TO INSTALLATION OF UTILITIES, AND MUST BE APPROVED BY THE SUPERVISING

PROJECT ENGINEER.



THREE (3) TREE STAKES AS PER TREE PLANTING DETAIL.

SHRUB PLANTING DETAIL

Wood **Morris**<sup>®</sup>

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Issued for Construction: xx.xx.xx Municipality Submission: 4/26/16 C. Wood As Noted

DRAWING NAME:

Landscape

DRAWING NO.