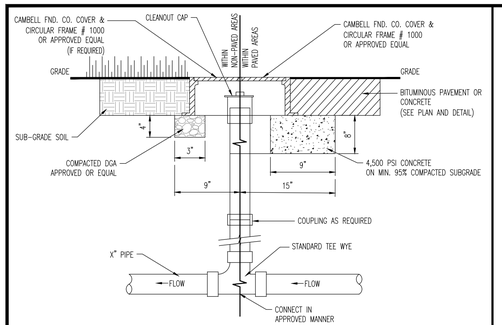
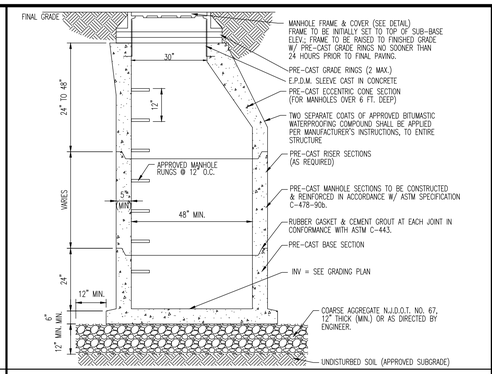
MUNICIPAL, COUNTY, STATE AND MUA DETAILS TO SUPERCEDE DYNAMIC ENGINEERING DETAILS WHERE APPLICABLE

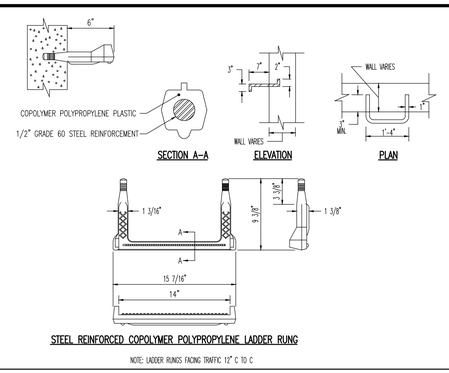


1. ALL SANITARY SEWER PIPE IS BE SDR-35 PVC UNLESS OTHERWISE NOTED.
2. ALL STORM SEWER PIPE IS TO BE SCH-40 PVC UNLESS OTHERWISE NOTED.
3. ALL CLEANOUT CAPS ARE TO BE BRASS FOR SANITARY AND PVC FOR STORM SEWER.
4. "X" - SEE PLAN FOR PIPE DIAMETER

CLEANOUT DETAIL
NOT TO SCALE



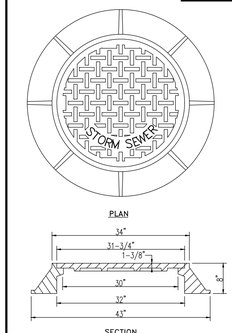
TYPICAL PRECAST STORM MANHOLE
NOT TO SCALE



STEEL REINFORCED COPOLYMER POLYPROPYLENE LADDER RUNG

NOTE: LADDER RUNGS FACING TRAFFIC 12" C TO C

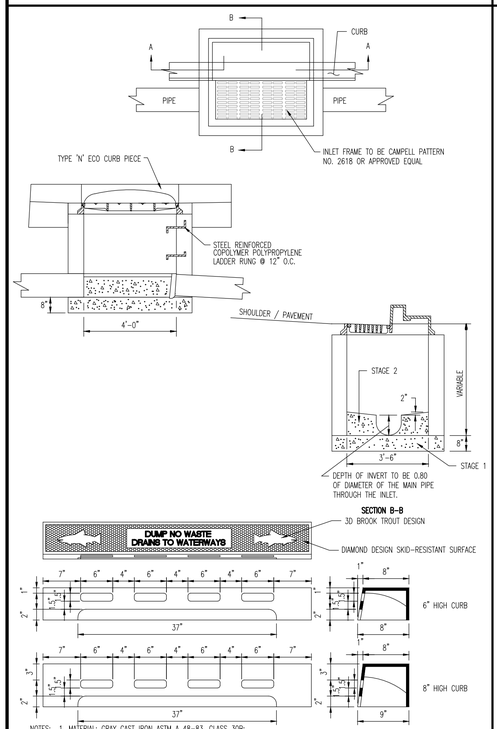
LADDER RUNG DETAIL
NOT TO SCALE



NOTES:

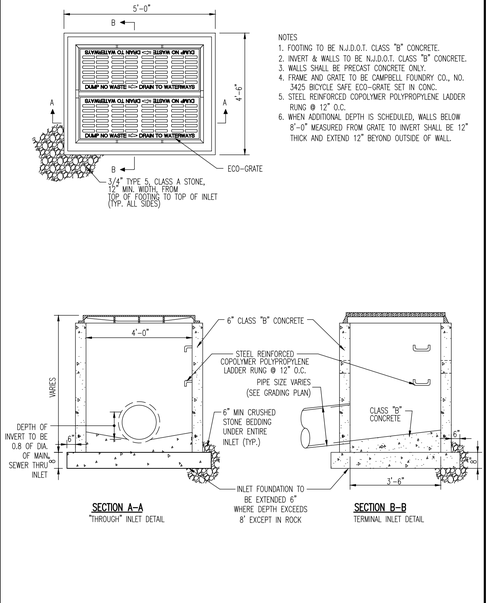
1. STANDARD MANHOLE FRAMES & COVERS SHALL BE USED ON ALL MANHOLES NOT LOCATED WITHIN EASEMENTS UNLESS DIRECTED OTHER-WISE BY THE ENGINEER OR TOWNSHIP REPRESENTATIVE.
2. STANDARD MANHOLE FRAME & COVER SHALL BE CAMPBELL FOUNDRY PATTERN # 1012B, OR APPROVED EQUAL, WITH NON-PENETRATING PICK HOLES.
3. WATERTIGHT MANHOLE COVERS SHALL BE USED ON MANHOLES LOCATED WITHIN EASEMENTS, IN UNPAVED AREAS, AND OUTSIDE OF THE CENTERLINE OF PAVED ROADS AS DIRECTED BY ENGINEER OR TOWNSHIP REPRESENTATIVE.

STORM MANHOLE FRAME DETAIL
NOT TO SCALE

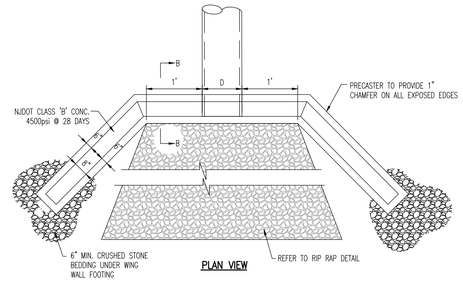


NOTES: 1. MATERIAL: GRAY CAST IRON ASTM A 48-83, CLASS 30B;
2. IN RETROFIT SITUATIONS, THIS CURB PIECE (HEAD) WILL FIT EXISTING CAMPBELL FOUNDRY CO. MANUFACTURED CURB INLETS FOR NJDOT TYPES B, B-1, B-2, D, D-1 AND D-2;
3. NAMEPLATE MESSAGE CAN BE MODIFIED TO YOUR SPECIFIC NEEDS WITHIN AREA SHOWN;
4. CASTING SUPPLIED WITHOUT SURFACE COATING

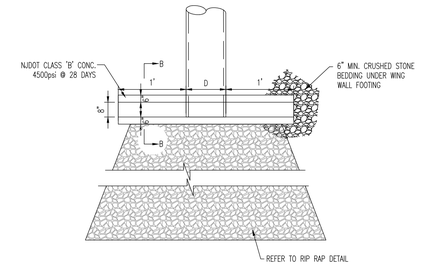
TYPE 'B' INLET w/ TYPE N ECO GRATE DETAIL
NOT TO SCALE



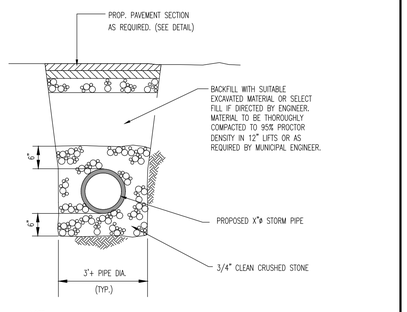
TYPE 'E' INLET
NOT TO SCALE



PRECAST CONCRETE HEADWALL DETAIL
NOT TO SCALE

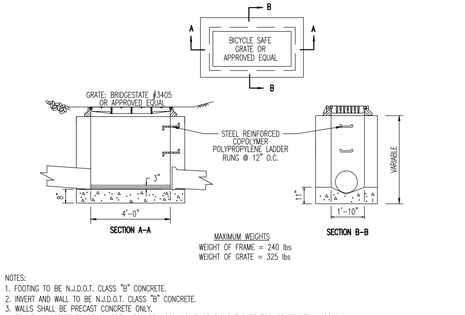


PRE CAST CONCRETE HEADWALL DETAIL
NOT TO SCALE



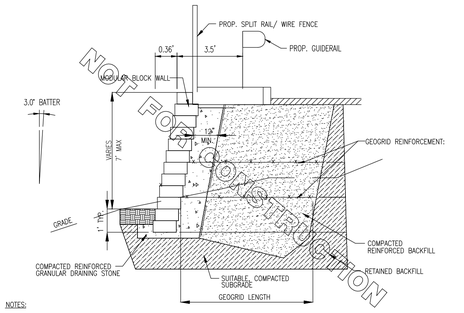
NOTE:
1. PAVEMENT SECTION TO MATCH, AT MINIMUM, ADJOINING PAVEMENT.
2. X" - SEE PLAN FOR PIPE DIAMETER.
3. BACKFILL IN ALL PAVED AREAS SHALL BE DGA OR RCA

STORM SEWER TRENCH DETAIL
NOT TO SCALE



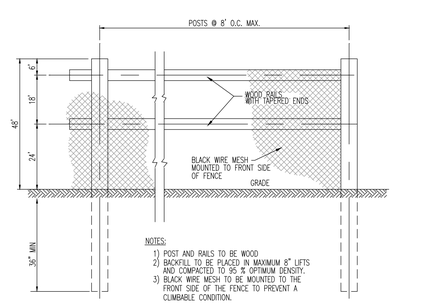
NOTES:
1. FOOTING TO BE N.J.D.O.T. CLASS "B" CONCRETE.
2. INVERT AND WALL TO BE N.J.D.O.T. CLASS "B" CONCRETE.
3. WALLS SHALL BE PRECAST CONCRETE ONLY.
4. FRAME AND GRATE TO BE CAMPBELL FOUNDRY CO., NO. 3425 BICYCLE SAFE ECO-GRATE SET IN CONC.
5. STEEL REINFORCED COPOLYMER POLYPROPYLENE LADDER RUN @ 12" O.C.
6. WHEN ADDITIONAL DEPTH IS SCHEDULED, WALLS BELOW 8'-0" MEASURED FORM GRATE TO INVERT SHALL BE 12" THICK AND EXTEND 12" BEYOND OUTSIDE OF WALL.

PRECAST TYPE A INLET DETAIL
NOT TO SCALE



NOTES:
1. DETAIL IS NOT FOR CONSTRUCTION OF MODULAR WALL.
2. CONTRACTOR SHALL PROVIDE SIGNED AND SEALED DRAWINGS AND CALCULATIONS OF RETAINING WALL DESIGN FOR REVIEW AND APPROVAL BY ENGINEER PRIOR TO CONSTRUCTION.
3. WALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.

MODULAR BLOCK WALL WITH SLOPE
NOT TO SCALE



NOTES:
1) POST AND RAILS TO BE WOOD.
2) BACKFILL TO BE PLACED IN MAXIMUM 8" LIFTS AND COMPACTED TO 95 % OPTIMUM DENSITY.
3) BLACK WIRE MESH TO BE MOUNTED TO THE FRONT SIDE OF THE FENCE TO PREVENT A CLIMBABLE CONDITION.

4' HIGH POST & WIRE MESH FENCE DETAIL
NOT TO SCALE

Plotted: 02/05/21 - 12:06 PM, By: danderson
File: \\wcpc.local\dec\Folders\Data\DECPC PROJECTS\0555 Elite Properties\99-010 Long Hill\Dwg\Site Plans\0555599010SD1.dwg, ----> 16 CONSTRUCTION DETAILS

COPYRIGHT © 2021 - DYNAMIC ENGINEERING CONSULTANTS, PC - ALL RIGHTS RESERVED

DYNAMIC ENGINEERING CONSULTANTS, PC
SURVEY • TRAFFIC

BY	REVISED PER TOWNSHIP ENGINEER COMMENTS	DATE	REV.
MJVN	COMMENTS	02/05/21	1

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY: AJW
DESIGNED BY: WB
CHECKED BY: JGJ
CHECKED BY: _

PROJECT: **ELITE PROPERTIES**
PROPOSED RESIDENTIAL DEVELOPMENT
BLOCK 10801, LOT 3
621 VALLEY ROAD (C.R. 512)
TOWNSHIP OF LONG HILL, MORRIS COUNTY, NEW JERSEY

811 Know what's below. Call before you dig.
PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

DYNAMIC ENGINEERING
LAND DEVELOPMENT CONSULTING • PERMITTING
GEOTECHNICAL • ENVIRONMENTAL
TRAFFIC • SURVEY • PLANNING & ZONING
245 Main Street, Suite 110
Chester, NJ 07930
T: 908.879.9229 | F: 908.879.0222
Offices conveniently located at:
Lake Como, New Jersey • T: 732.974.0198
Chester, New Jersey • T: 908.879.9229
Newark, New Jersey • T: 973.733.7200
Toms River, New Jersey • T: 732.974.0198
Newtown, Pennsylvania • T: 267.685.0276
Allen, Texas • T: 972.534.2100
Houston, Texas • T: 281.789.6400
Austin, Texas • T: 512.646.2646
Delray Beach, Florida • T: 561.921.8570
www.dynamicec.com

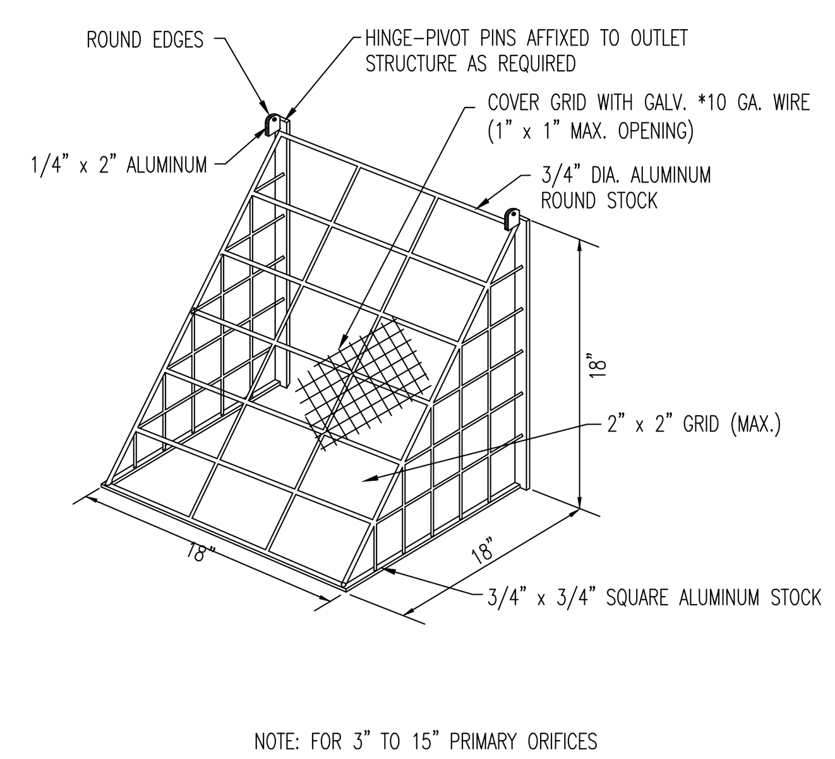
JOSEPH G. JAWORSKI
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 36618

BRETT W. SKAPINETZ
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41985

TITLE: **CONSTRUCTION DETAILS**

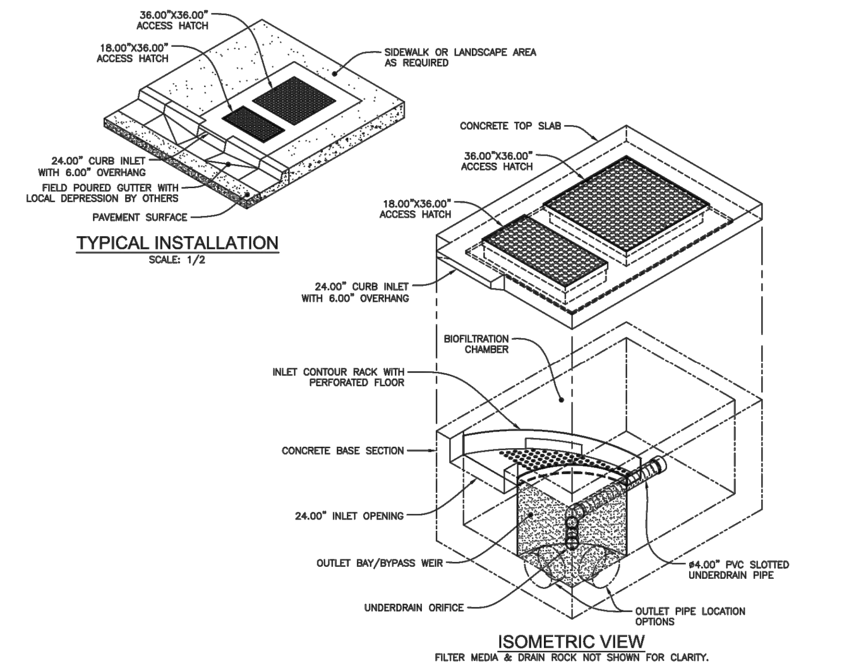
SCALE: (H) AS (V) SHOWN
DATE: 08/07/2020
PROJECT No: 0555-99-010

SHEET No: 16 OF 21
Rev. #: 1



TRASH RACK DETAIL

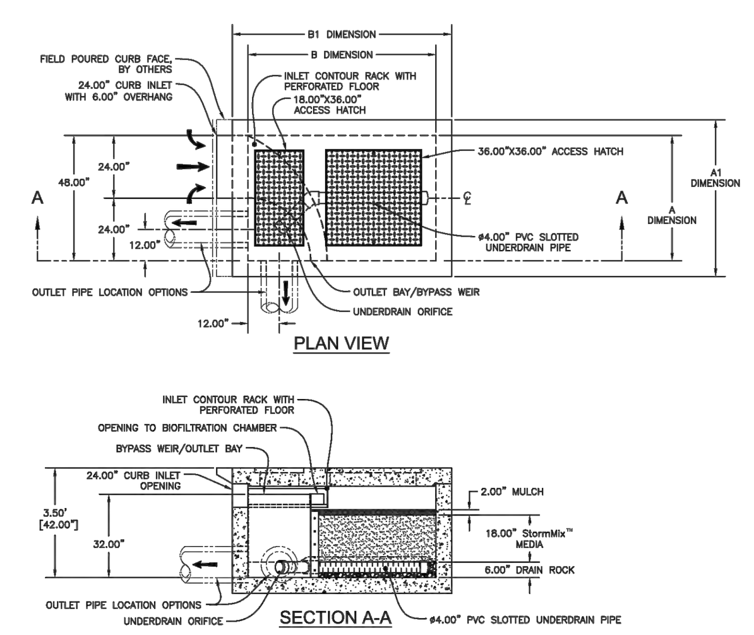
NOT TO SCALE



NOTES:

1. RIGHT CONFIGURATION SHOWN, MIRROR LEFT CONFIGURATION OF INLET RACK AND BYPASS WEIR IS AVAILABLE TO ACCOMMODATE OTHER OUTLET PIPE LOCATIONS.
2. STANDARD UNITS CAN ACCOMMODATE UP TO A 15 INCH DIAMETER RCP OUTLET PIPE.
3. SEPARATE BYPASS STRUCTURE IS REQUIRED IF PEAK FLOW RATE EXCEEDS 2.0 CFS INTERNAL BYPASS CAPACITY.
4. DIAMOND PLATE ACCESS HATCH STANDARD, SLIP RESISTANT OPTION AVAILABLE.
5. CONTACT OLDCASTLE INFRASTRUCTURE™ FOR ENGINEERING ASSISTANCE AND DETAIL DRAWINGS.
6. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C890 & C913.

US Patents Pending



MODEL	VAULT SIZE [1] (ID)		VAULT FOOTPRINT [1] (OD)		TREATMENT FLOW CAPACITY (GPM/CFS)	
	A DIM	B DIM	A1 DIM	B1 DIM	1.6 GPM/SF (WA GULD[2])	1.8 GPM/SF (NJCAT[3])
BPS-46IB-EI	4'	6'	5'	7'	33.4 / 0.074	37.5 / 0.084
BPS-48IB-EI	4'	8'	5'	9'	46.2 / 0.103	51.9 / 0.116
BPS-412IB-EI	4'	12'	5'	13'	71.8 / 0.160	80.7 / 0.180
BPS-66IB-EI	6'	6'	7'	7'	52.6 / 0.117	59.1 / 0.132
BPS-68IB-EI	6'	8'	7'	9'	71.8 / 0.160	80.7 / 0.180
BPS-612IB-EI	6'	12'	7'	13'	110.2 / 0.245	123.9 / 0.276
BPS-812IB-EI	8'	12'	9'	13'	148.5 / 0.331	167.0 / 0.372
BPS-816IB-EI	8'	16'	9'	17'	199.8 / 0.445	224.7 / 0.501

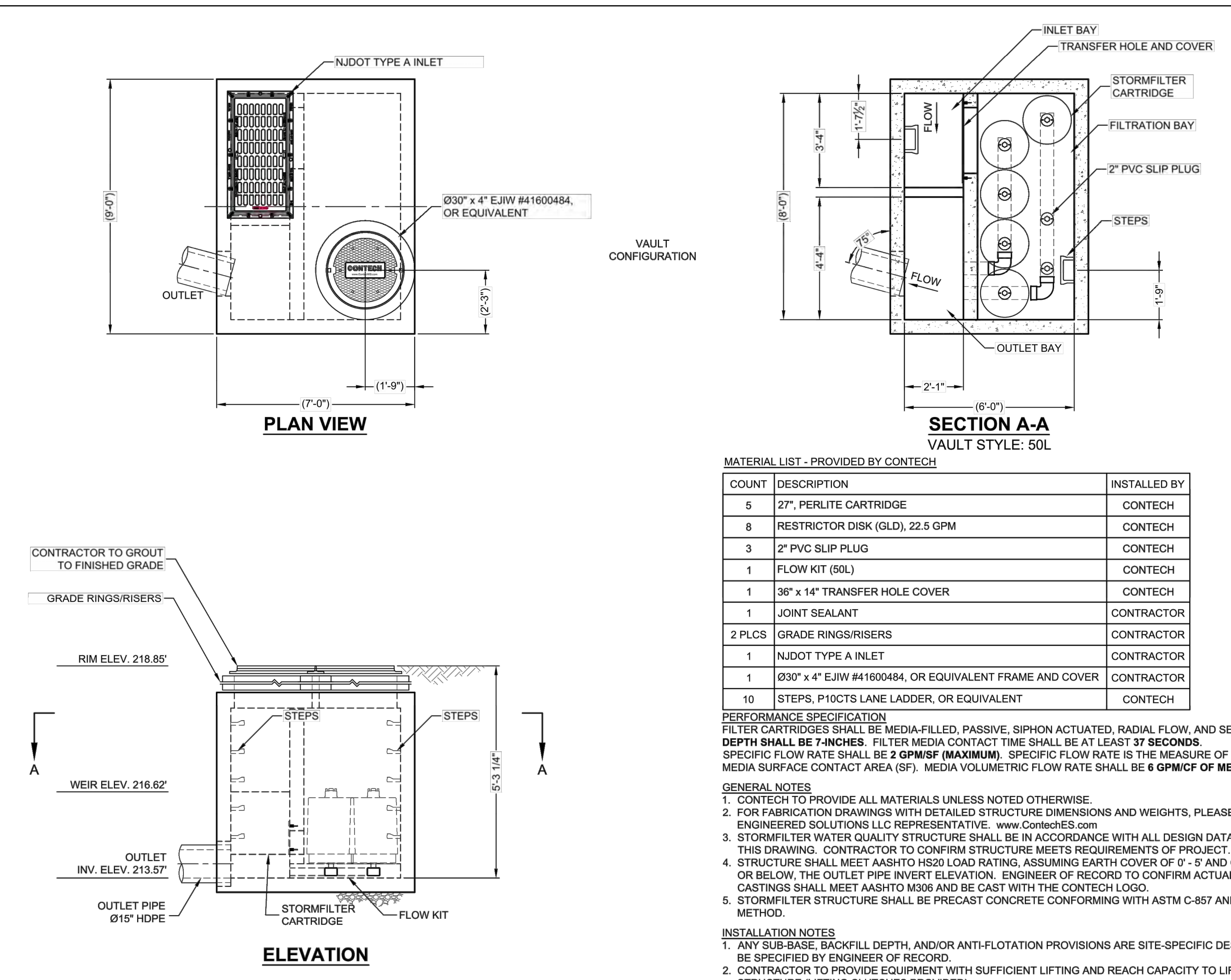
[1] All Dimensions are nominal, ID=Inside Dimension, OD=Outside Dimension.
[2] Treatment flow capacity at 1.6 gpm/sf media surface area based on an WA Ecology GULD Approval for Basic, Enhanced & Phosphorus.
[3] Treatment flow capacity at 1.8 gpm/sf media surface area based on an NJCAT Verification & NJ DEP Certification.

SITE SPECIFIC DATA				
Structure ID				
Model Size				
Orientation (Left or Right)				
Treatment Flow Rate (cfs)				
Peak Flow Rate (2 cfs max.)				
Rim Elevation				
Pipe Data	Pipe Location (Front or Side)	Pipe Size (15" max.)	Pipe Type	Invert Elevation*
Outlet				
* Invert Elevation is 3.5' below Rim Elevation.				
Notes:				

US Patents Pending

WATER QUALITY BIOPOD STRUCTURES 212 & 222 DETAIL

NOT TO SCALE



MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
5	27", PERLITE CARTRIDGE	CONTECH
8	RESTRICTOR DISK (GLD), 22.5 GPM	CONTECH
3	2" PVC SLIP PLUG	CONTECH
1	FLOW KIT (50L)	CONTECH
1	36" x 14" TRANSFER HOLE COVER	CONTECH
1	JOINT SEALANT	CONTRACTOR
2 PLCS	GRADE RINGS/RISERS	CONTRACTOR
1	NJDOT TYPE A INLET	CONTRACTOR
1	Ø30" x 4" EJIW #41600484, OR EQUIVALENT FRAME AND COVER	CONTRACTOR
10	STEPS, P10CTS LANE LADDER, OR EQUIVALENT	CONTECH

PERFORMANCE SPECIFICATION
FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES**. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **37 SECONDS**.
SPECIFIC FLOW RATE SHALL BE **2 GPM/SF (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM).**

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. STORMFILTER STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING WITH ASTM C-857 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
6. CONTRACTOR TO REMOVE THE TRANSFER HOLE COVER WHEN THE SYSTEM IS BROUGHT ONLINE.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 25,000 LBS.

CONTECH **PROPOSAL** DRAWING

LS/RE

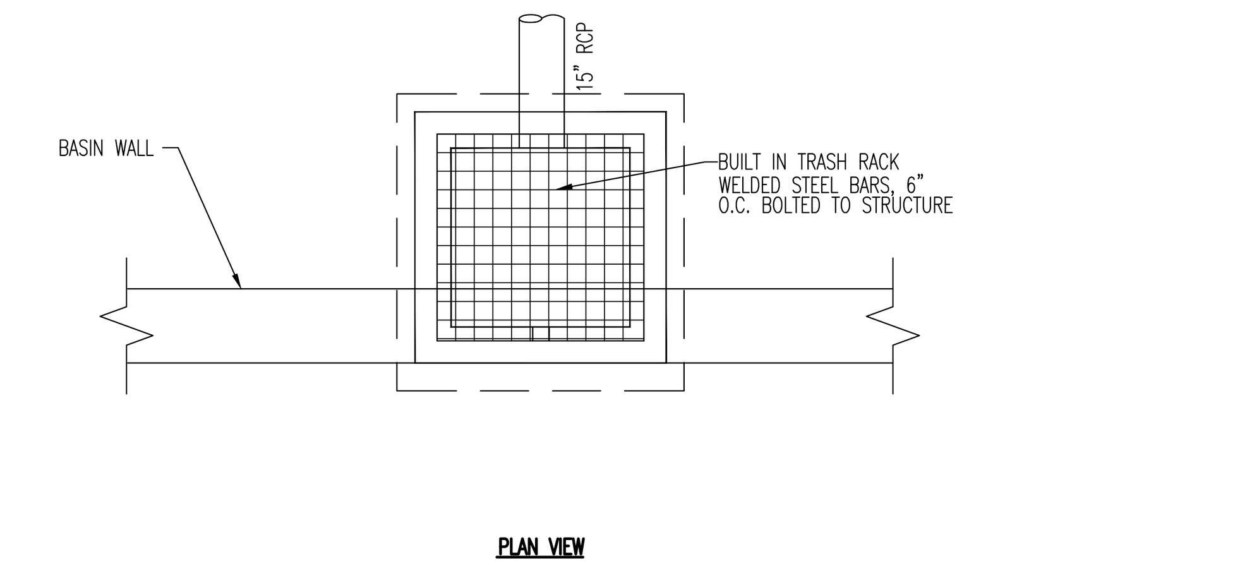
PEAK DIVERSION STORMFILTER
SFPD0806 - 653703-10
ELITE PROPERTIES
LONG HILL, NJ
for SYSTEM: WQ INLET #113

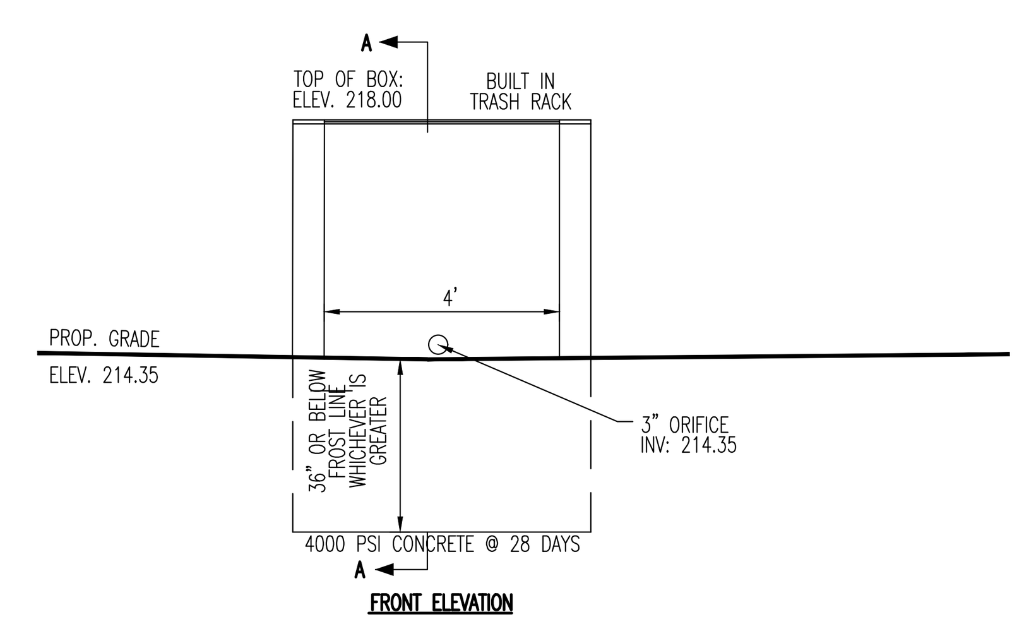
CONTECH ENGINEERED SOLUTIONS LLC

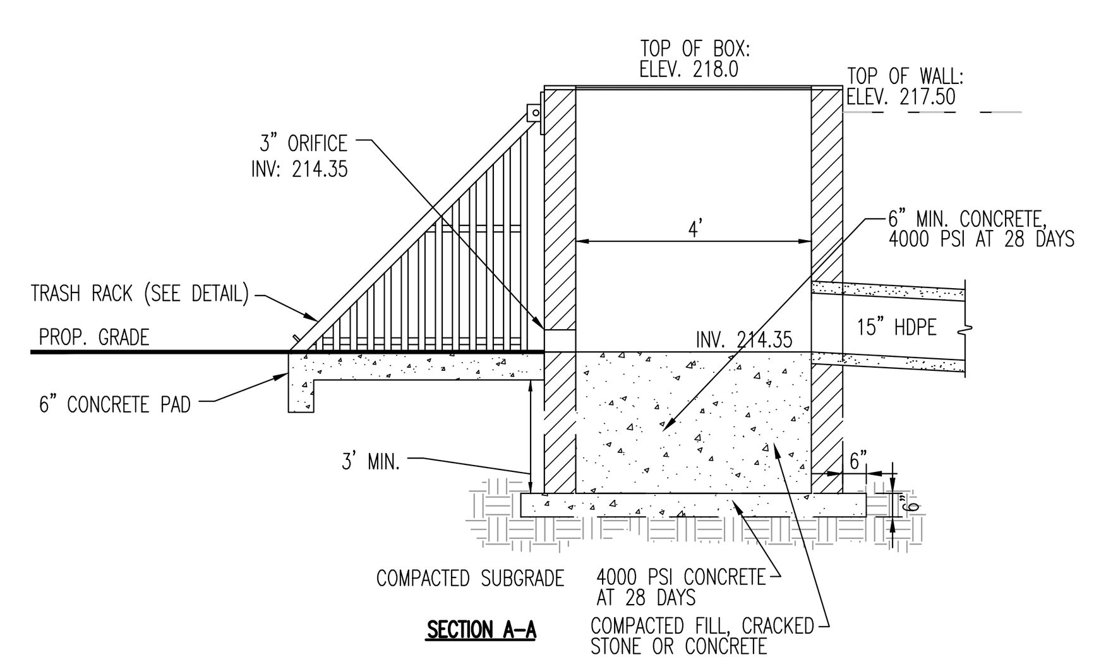
DATE: 7/17/20	
DESIGNED: VJS	DRAWN: VJS
CHECKED:	APPROVED:
PROJECT NUMBER: 653703	
SHEET: 1 OF 1	

STORM STRUCTURE #113 DETAIL

NOT TO SCALE

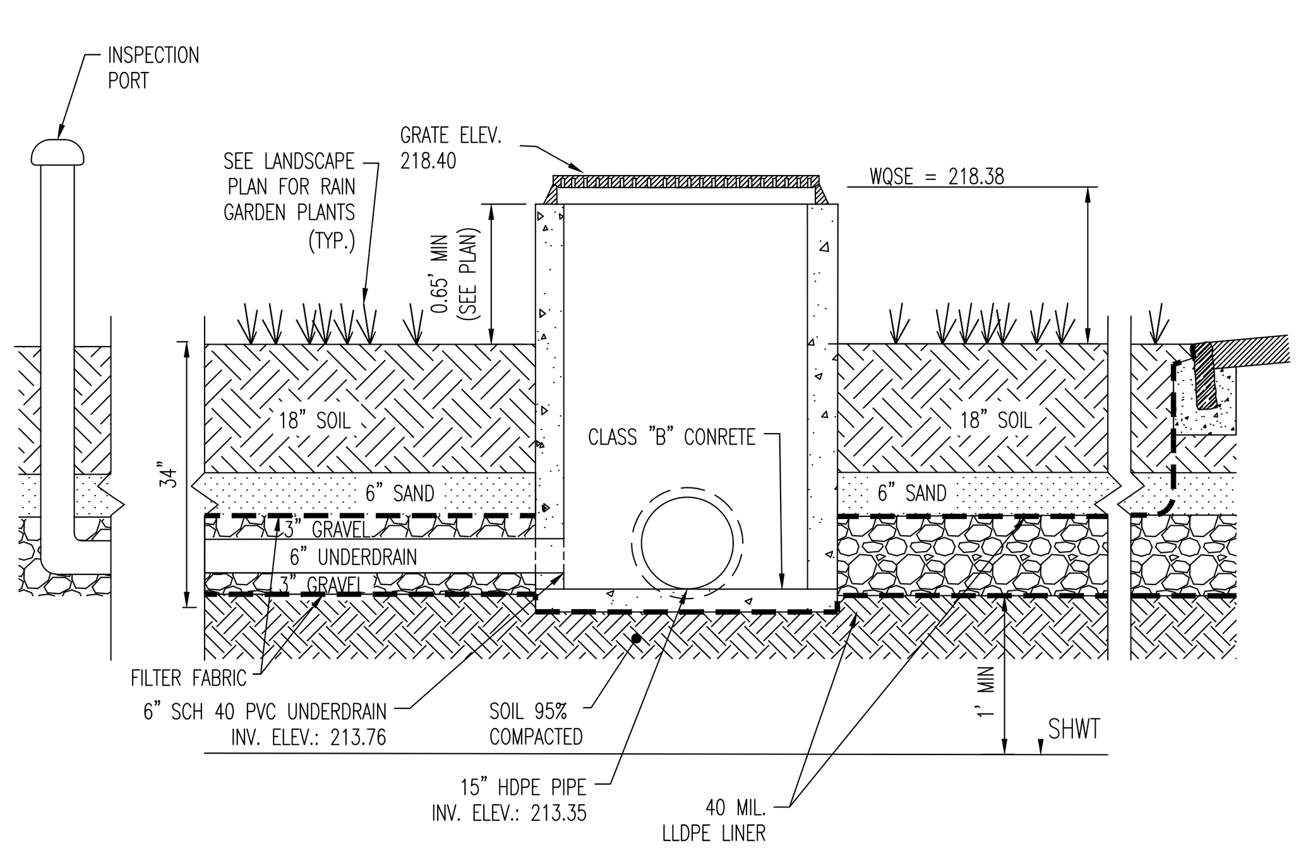






PRE-CAST CONCRETE OUTLET CONTROL STRUCTURE DETAIL - BASIN B

NOT TO SCALE



RAIN GARDEN GENERAL NOTES:

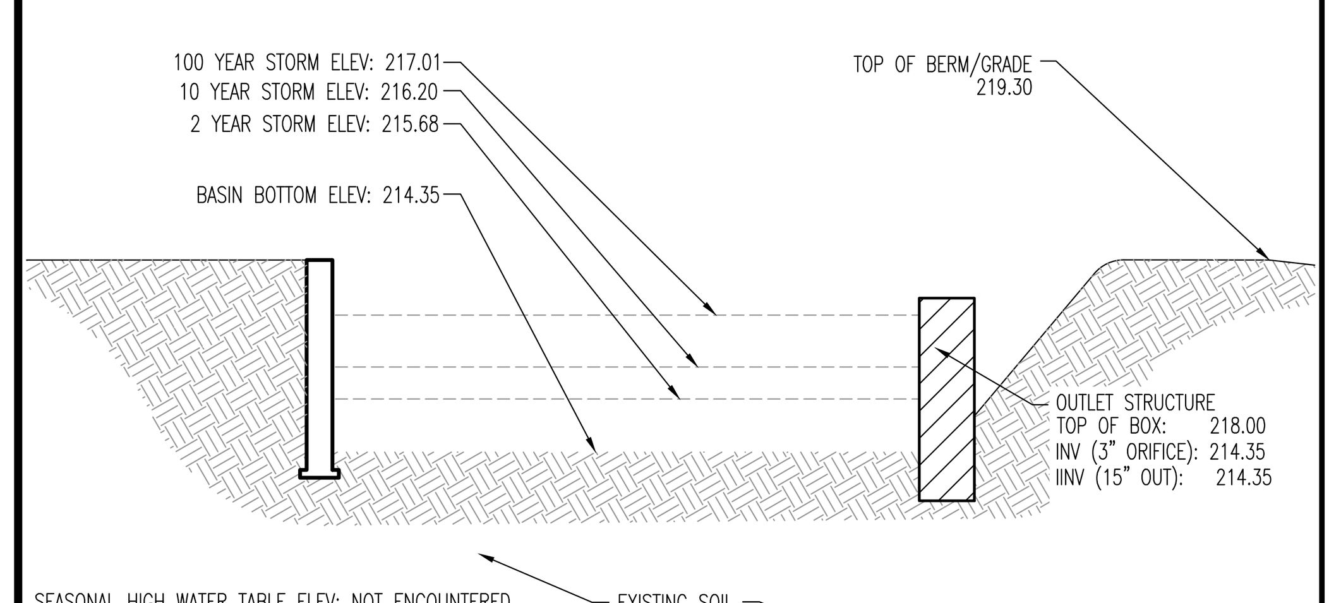
1. SOIL BED MUST BE A MINIMUM OF 18 INCHES IN DEPTH AND CONSISTS OF THE FOLLOWING MIX, BY WEIGHT:
   -85 TO 95% SAND, WITH NO MORE THAN 25% OF SAND AS FINE OR VERY FINE SANDS.
   -NO MORE THAN 15% SILT AND CLAY WITH 2% TO 5% CLAY CONTENT.
   -ENTIRE MIX MUST THEN BE AMENDED WITH 3 TO 7% ORGANICS BY WEIGHT.
   -MINIMUM PERMEABILITY OF SOIL BED 8 INCHES/HR (4 IN/HR DESIGN).
2. PRE-MIXED SOIL MUST BE CERTIFIED BY VENDOR OR PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY TO MEET THE REQUIREMENTS ON NOTE 1 ABOVE.
3. THE PH OF THE SOIL BED MATERIAL MUST RANGE FROM 5.5 TO 6.5.
4. MATERIAL MUST BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES. ADDITIONAL MATERIAL MAY BE REQUIRED TO ACCOUNT FOR SETTLING OVER TIME.
5. FILTER FABRIC IS REQUIRED ALONG THE SIDES AND THE BOTTOM. ADDITIONAL LOCATIONS MAY BE REQUIRED BASED ON DETAIL.
6. SAND LAYER MUST BE 6 INCHES IN DEPTH AND MUST CONSIST OF CLEAN MEDIUM – AGGREGATE CONCRETE SAND (AASHTO M-6/ASTM C-33). MINIMUM PERMEABILITY RATE SHOULD BE TWICE THE DESIGN PERMEABILITY RATE OF SOIL BED.
7. GRAVEL LAYER MUST CONSIST OF 0.5 TO 1.5 INCHES CLEAN, BROKEN STONE OR PEA GRAVEL (AASHTO M-43) PERMEABILITY RATE SHOULD BE TWICE THE DESIGN PERMEABILITY RATE OF SAND LAYER.
   INSPECTION PORTS MUST BE LOCATED AT UPSTREAM ENDS OF THE PERFORATED UNDERDRAIN.

LLDPE RAIN GARDEN LINER GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE RAIN GARDEN LINER, FOR ENGINEER'S APPROVAL, SHOWING THE PROPOSED PANEL LAYOUT IDENTIFYING SEAMS AND DETAILS. SEAMS SHOULD GENERALLY FOLLOW THE DIRECTION OF THE SLOPE. BUTT SEAMS OR ROLL-END SEAMS SHOULD NOT OCCUR ON A SLOPE UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE. BUTT SEAMS ON A SLOPE, IF ALLOWED, SHOULD BE STAGGERED.
2. THE GEOMEMBRANE SHALL BE INSTALLED TO THE LIMITS SHOWN ON THE PROJECT DRAWINGS AND AS SHOWN ON APPROVED PANEL LAYOUT DRAWINGS. TEXTURED LINER SHALL BE INSTALLED ON ALL SLOPES EXCEEDING 6 HORIZONTAL TO 1 VERTICAL. SMOOTH LINER SHALL BE INSTALLED IN ALL OTHER AREAS.
3. GEOMEMBRANE SHALL BE INSTALLED ON AN APPROVED SUBGRADE CONSISTING OF SMOOTH COMPACT SOILS FREE FROM FOREIGN DEBRIS AND SHARP ROCK. A MINIMUM 9-INCH THICK SOIL CUSHION LAYER SHALL BE PROVED BETWEEN ALL DECOMPOSED ROCK AND ROCK.
4. NO VEHICULAR TRAFFIC SHALL TRAVEL ON THE GEOMEMBRANE OTHER THAN AN APPROVED LOW GROUND PRESSURE VEHICLE OR EQUIVALENT.
5. SAND BAGS OR EQUIVALENT BALLAST SHALL BE USED AS NECESSARY TO TEMPORARILY HOLD THE GEOMEMBRANE MATERIAL IN POSITION UNDER THE FORESEEABLE AND REASONABLY – EXPECTED WIND CONDITIONS. SAND BAG MATERIAL SHALL BE SUFFICIENTLY CLOSE-KNIT TO PREVENT SOIL FINES FROM WORKING THROUGH THE BAGS AND DISCHARGING ON THE GEOMEMBRANE.
6. GEOMEMBRANE PLACEMENT SHALL NOT BE DONE IF MOISTURE PREVENTS PROPER SUBGRADE PREPARATION, PANEL PLACEMENT, OR PANEL SEAMING. MOISTURE LIMITATIONS SHOULD BE DEFINED IN THE PRECONSTRUCTION MEETING.
7. DAMAGED PANELS OR PORTIONS OF THE DAMAGED PANELS WHICH HAVE BEEN REJECTED SHALL BE MARKED AND THEIR REMOVAL FROM THE WORK AREA RECORDED.
8. THE GEOMEMBRANE SHALL NOT BE ALLOWED TO "BRIDGE OVER" VOIDS OR LOW AREAS IN THE SUBGRADE. THE GEOMEMBRANE SHALL REST IN INTIMATE CONTACT WITH THE SUBGRADE.
9. NO GEOMEMBRANE MATERIAL SHALL BE SEAMED WHEN LINER TEMPERATURES ARE LESS THAN 32 DEGREES F.
10. NO GEOMEMBRANE MATERIAL SHALL BE SEAMED WHEN THE SHEET TEMPERATURE IS ABOVE 170 DEGREES F, AS MEASURED BY AN INFRARED THERMOMETER OR SURFACE THERMOCOUPLE.
11. SEAMING SHALL PRIMARILY BE PERFORMED USING AUTOMATIC FUSION WELDING EQUIPMENT AND TECHNIQUES, EXTRUSION WELDING SHALL BE USED WHERE FUSION WELDING IS NOT POSSIBLE SUCH AS AT PIPE PENETRATIONS, PATCHES, REPAIRS AND SHORT (LESS THAN A ROLL WIDTH) RUNS OF SEAMS.
12. SEAL ALL PENETRATIONS THROUGH LINER. PENETRATIONS SHALL BE CONSTRUCTED FROM THE BASE GEOMEMBRANE MATERIAL, FLAT STOCK OR PREFABRICATED BOOTS. THE PREFABRICATED OR FIELD ASSEMBLY SHALL BE FIELD WELDED TO THE PRIMARY GEOMEMBRANE AS TO PREVENT LEAKAGE.
13. THE GEOMEMBRANE SHALL CONSIST OF NEW, FIRST QUALITY PRODUCTS DESIGNED AND MANUFACTURED SPECIFICALLY FOR THE PURPOSE OF THIS WORK WHICH SHALL HAVE BEEN SATISFACTORILY DEMONSTRATED BY PRIOR TESTING SUITABLE AND DURABLE FOR SUCH PURPOSES. THE GEOMEMBRANE ROLLS SHALL BE SEAMLESS, 40-MIL, LINEAR LOW-DENSITY POLYETHYLENE (LLDPE – FORMULATED SHEET DENSITY ≤ 0.939 G/CC) CONTAINING NO PLASTICIZERS, FILLERS OR EXTENDERS AND SHALL BE FREE OF HOLES, BLISTERS OR CONTAMINANTS, AND LEAK FREE VERIFIED BY 100% IN LINE SPARK OR EQUIVALENT TESTING. THE GEOMEMBRANE SHALL BE SUPPLIED AS A CONTINUOUS SHEET WITH NO FACTORY SEAMS IN ROLLS. THE GEOMEMBRANE WILL MEET THE PROPERTY REQUIREMENTS AS SHOWN IN GRI GM17, TABLES 1(A) AND 2(A).
14. ALL TEXTURED LINERS SHALL HAVE A MINIMUM INTERFACE FRICTION ANGLE OF 27 DEGREES WITH THE SUBGRADE AND FILL SOILS.

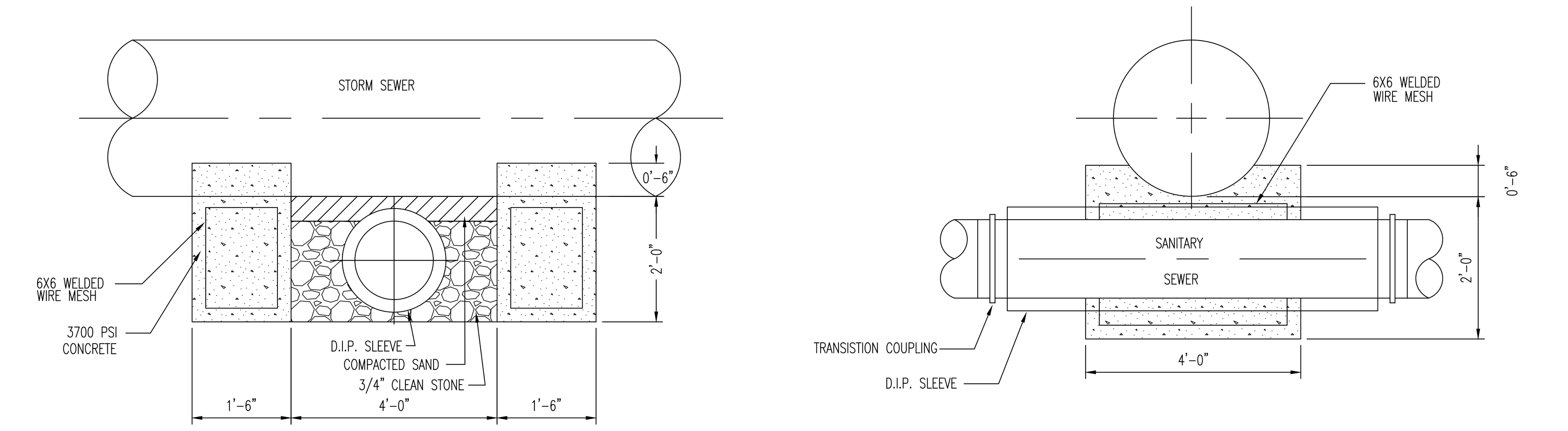
RAIN GARDEN SECTION DETAIL

NOT TO SCALE



DETENTION BASIN 'B' DETAIL

NOT TO SCALE



NOTES: 1. A FULL SECTION OF STORM DRAINAGE PIPE SHALL BE PLACED ACROSS THE ENTIRE CONCRETE CRADLE.
2. FOR PROTECTION OF SANITARY SEWER, INSTALL D.I.P. SLEEVE (2" DIA. LARGER THAN SANITARY SEWER) AS A CARRIER PIPE 5' BEYOND STORM SEWER IN EACH DIRECTION. REPLACE EXISTING SANITARY SEWER WITH PVC AND TRANSITION COUPLINGS.

CONCRETE CRADLE DETAIL

NOT TO SCALE

DYNAMIC
ENGINEERING • EARTH • SURVEY • TRAFFIC

REV.	DATE	COMMENTS	DRAWN	BY
1	02/05/21	REVISED PER TOWNSHIP ENGINEER COMMENTS		

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY:	DESIGNED BY:	CHECKED BY:	CHECKED BY:
AJW	WB	JGJ	–

PROJECT: **ELITE PROPERTIES**
PROPOSED RESIDENTIAL DEVELOPMENT
BLOCK 10801, LOT 3
621 VALLEY ROAD (C.R. 512)
TOWNSHIP OF LONG HILL, MORRIS COUNTY, NEW JERSEY

811 Know what's below. Call before you dig.
PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

DYNAMIC ENGINEERING
LAND DEVELOPMENT CONSULTING • PERMITTING
GEOTECHNICAL • ENVIRONMENTAL
TRAFFIC • SURVEY • PLANNING & ZONING
245 Main Street, Suite 110
Chester, NJ 07930
T: 908.879.9229 | F: 908.879.0222
Offices conveniently located at:
Lake Como, New Jersey • T: 732.974.0198
Chester, New Jersey • T: 908.879.9229
Newark, New Jersey • T: 973.755.7200
Toms River, New Jersey • T: 732.974.0198
Newtown, Pennsylvania • T: 267.685.0276
Allen, Texas • T: 972.534.2100
Houston, Texas • T: 281.789.6400
Austin, Texas • T: 512.646.2646
Delray Beach, Florida • T: 561.921.8570
www.dynamicec.com

JOSEPH G. JAWORSKI
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 36618

BRETT W. SKAPINETZ
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41985

TITLE: CONSTRUCTION DETAILS

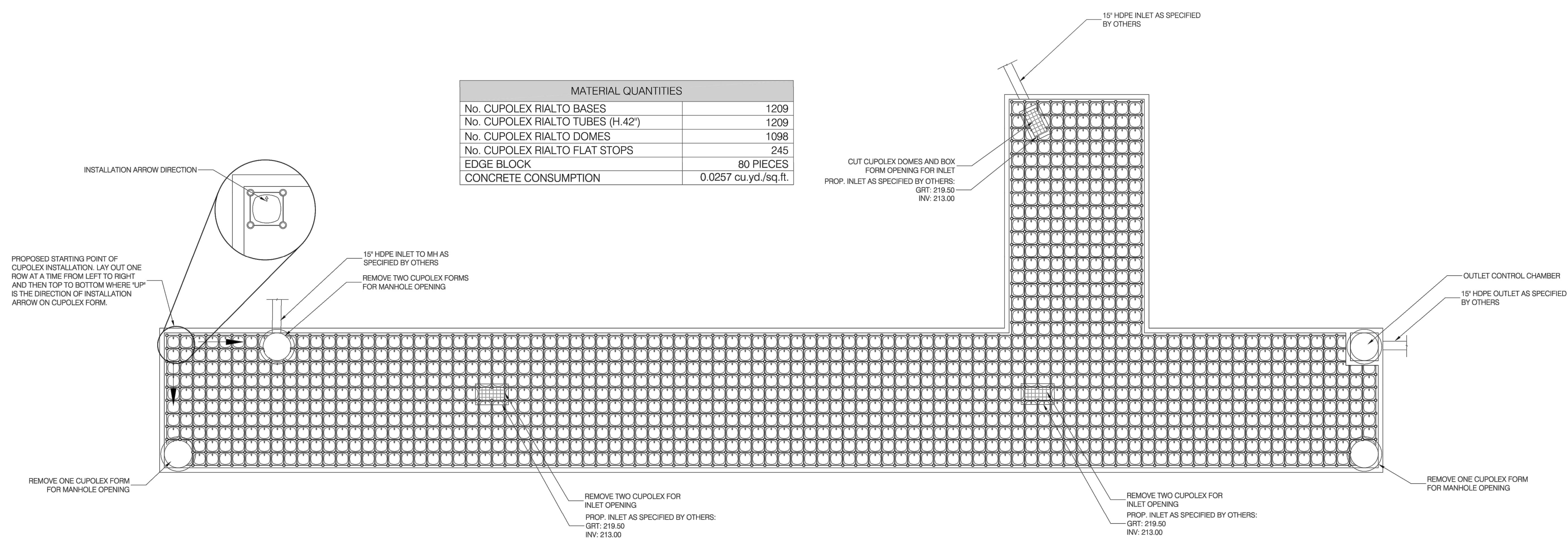
SCALE: (H) AS (V) SHOWN	DATE: 08/07/2020
PROJECT No: 0555-99-010	

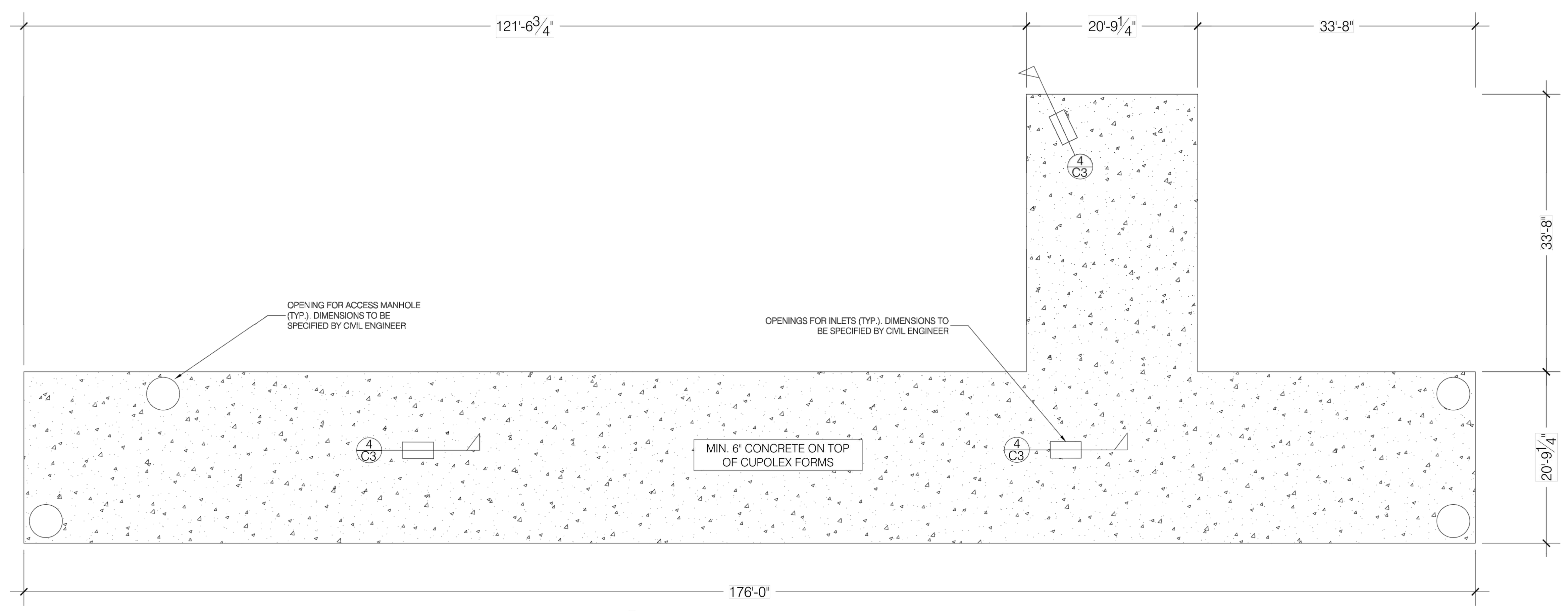
Plotted: 02/05/21 – 12:06 PM, By: dsonderson
File: \\decpc.local\decfolders\Data\DECPC PROJECTS\0555 Elite Properties\99-010 Long Hill\Dwg\Site Plans\05559901OSD1.dwg, ---> 17 CONSTRUCTION DETAILS

COPYRIGHT © 2021 - DYNAMIC ENGINEERING CONSULTANTS, PC - ALL RIGHTS RESERVED

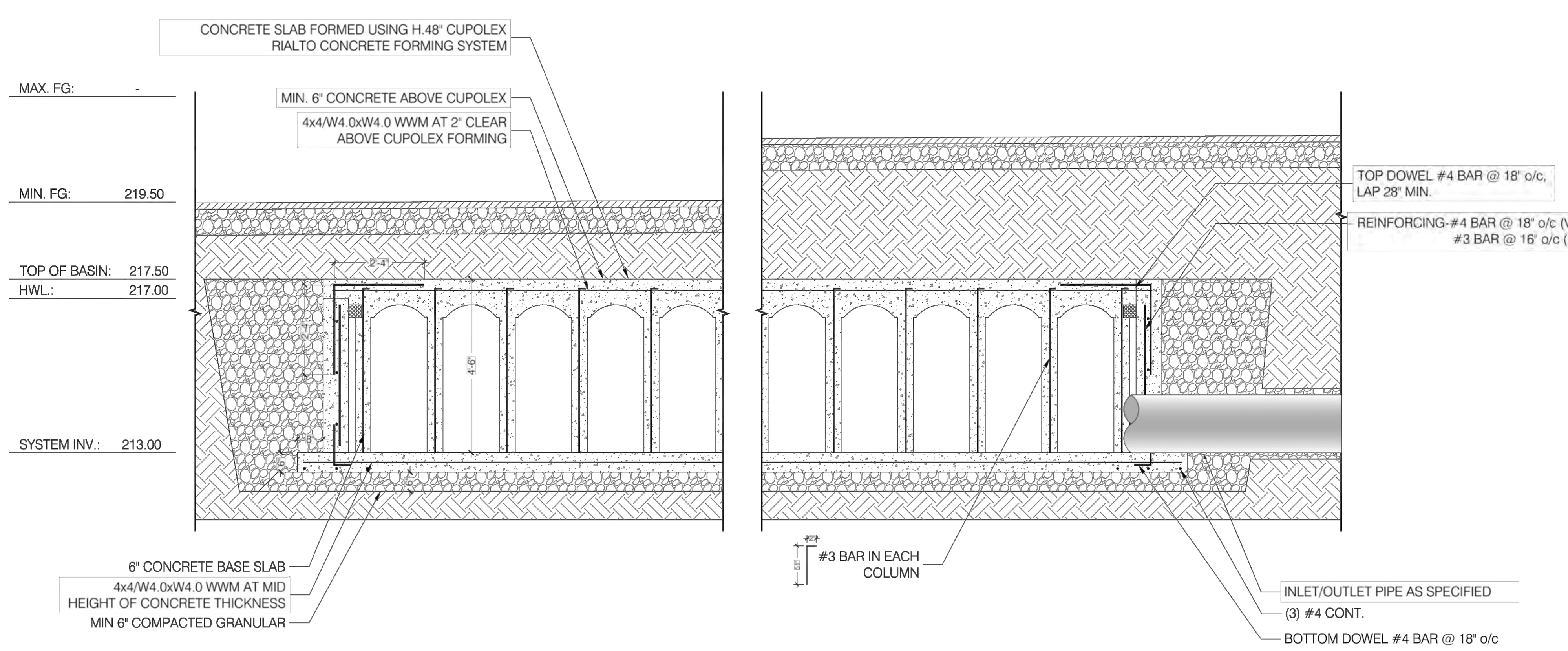
MUNICIPAL, COUNTY, STATE AND MUA DETAILS TO SUPERCEDE DYNAMIC ENGINEERING DETAILS WHERE APPLICABLE

MATERIAL QUANTITIES	
No. CUPOLEX RIALTO BASES	1209
No. CUPOLEX RIALTO TUBES (H.42")	1209
No. CUPOLEX RIALTO DOMES	1098
No. CUPOLEX RIALTO FLAT STOPS	245
EDGE BLOCK	80 PIECES
CONCRETE CONSUMPTION	0.0257 cu.yd./sq.ft.

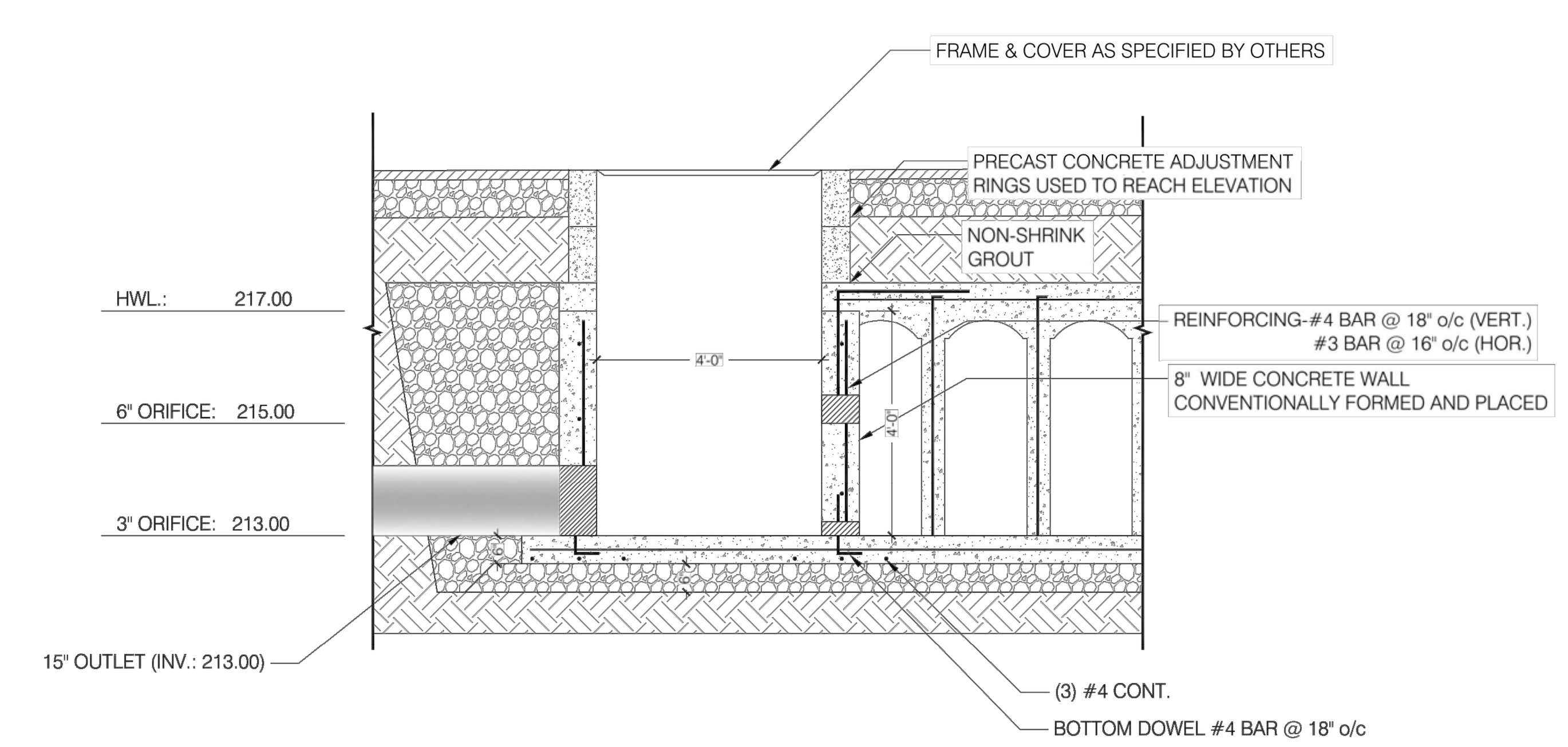




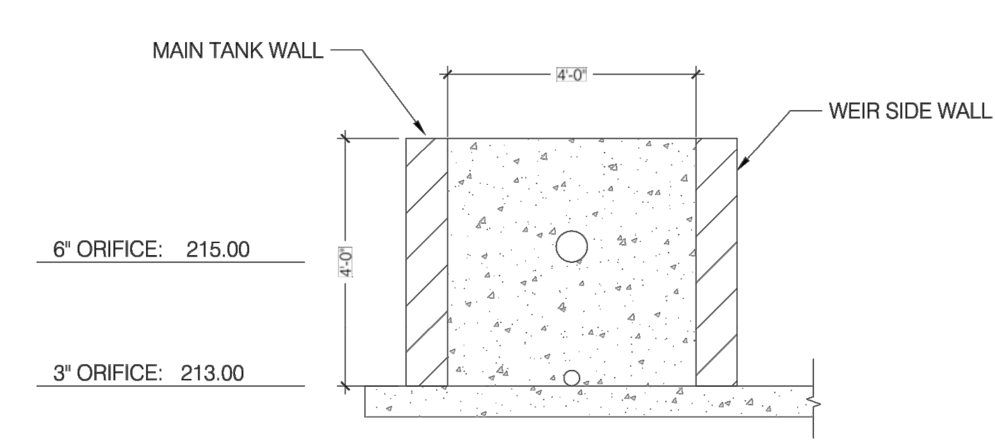
2
C2
CONCRETE TOPPING PLAN



1
C3
CONCRETE BASIN SECTION



2
C3
OUTLET CHAMBER SECTION



3
C3
OUTLET CONTROL DETAIL

CUPOLEX STORMWATER BASIN 'A' DETAILS

NOT TO SCALE

Plotted: 02/05/21 – 12:06 PM, By: dsanderson
File: \\decpc.local\decfolders\Data\DECPC PROJECTS\0555 Elite Properties\99-010 Long Hill\Dwg\Site Plans\D0555990105D1.dwg, ----> 18 CONSTRUCTION DETAILS

DYNAMIC
• ENGINEERING • EARTH
• SURVEY • TRAFFIC

REV.	DATE	COMMENTS	BY
1	02/05/21	REVISED PER TOWNSHIP ENGINEER COMMENTS	DSANDE

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY: AJW
DESIGNED BY: WB
CHECKED BY: JGJ
CHECKED BY: –

PROJECT:
ELITE PROPERTIES
PROPOSED RESIDENTIAL DEVELOPMENT
BLOCK 10801, LOT 3
621 VALLEY ROAD (C.R. 512)
TOWNSHIP OF LONG HILL, MORRIS COUNTY, NEW JERSEY

811 Know what's below. Call before you dig.
PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

DYNAMIC ENGINEERING
LAND DEVELOPMENT CONSULTING • PERMITTING
GEOTECHNICAL • ENVIRONMENTAL
TRAFFIC • SURVEY • PLANNING & ZONING
245 Main Street, Suite 110
Chester, NJ 07930
T: 908.879.9229 | F: 908.879.0222
Offices conveniently located at:
Lake Como, New Jersey • T: 732.974.0198
Chester, New Jersey • T: 908.879.9229
Newark, New Jersey • T: 973.755.7200
Toms River, New Jersey • T: 732.974.0198
Newtown, Pennsylvania • T: 267.685.0276
Allen, Texas • T: 972.534.2100
Houston, Texas • T: 281.789.6400
Austin, Texas • T: 512.646.2646
Delray Beach, Florida • T: 561.921.8570
www.dynamicec.com

JOSEPH G. JAWORSKI
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 36618

BRETT W. SKAPINETZ
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41985

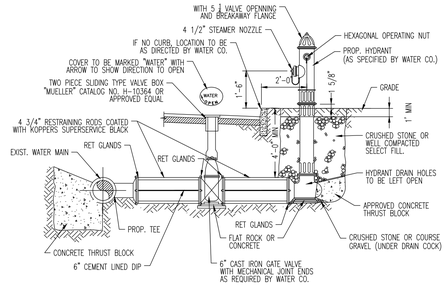
TITLE:
CONSTRUCTION DETAILS

SCALE: [X] AS [X] SHOWN
DATE: 08/07/2020
PROJECT No: 0555-99-010

SHEET No: 18 OF 21
Rev. #: 1

COPYRIGHT © 2021 – DYNAMIC ENGINEERING CONSULTANTS, PC – ALL RIGHTS RESERVED

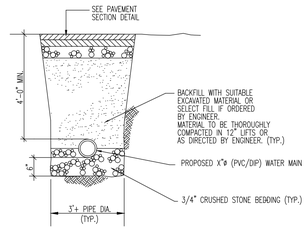
MUNICIPAL, COUNTY, STATE AND MUA DETAILS TO SUPERCEDE DYNAMIC ENGINEERING DETAILS WHERE APPLICABLE



NOTE: REFER TO WATER COMPANY SPECIFICATIONS FOR VALVE/HYDRANT SPECIFICATIONS.

TYPICAL HYDRANT & VALVE INSTALLATION

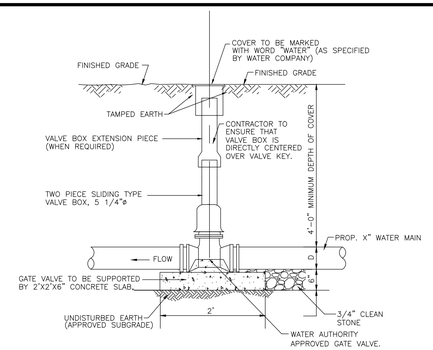
NOT TO SCALE



NOTE:
1. PAVEMENT SECTION TO MATCH, AT MINIMUM, ADJOINING PAVEMENT.
2. X" – SEE PLAN FOR PIPE DIAMETER.

WATER SERVICE TRENCH DETAIL

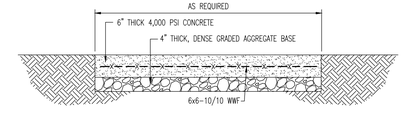
NOT TO SCALE



NOTE: REFER TO WATER COMPANY SPECIFICATION FOR VALVE MATERIAL TYPES.

GATE VALVE AND BOX DETAIL

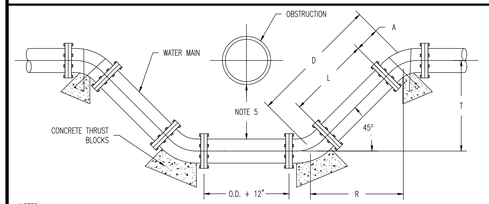
NOT TO SCALE



NOTES:
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS WITH A MINIMUM CEMENT CONTENT OF 600 POUNDS PER CUBIC YARD FOR ALL FOOTINGS.
2. ALL CONCRETE SHALL HAVE A SLUMP OF NO GREATER THAN 4" TO WITHIN A TOLERANCE OF 1".
3. ALL EXPOSED CONCRETE SHALL BE AIR-ENTRAINED, (6% WITHIN 1% TOLERANCE), CONFORMING TO ASTM C260.
4. REINFORCING STEEL BARS SHALL BE A MINIMUM ASTM A615, GRADE 60, AND SHALL BE FIELD WIRED IN PLACE.
5. ALL FRAMEWORK, AND PLACEMENT OF CONCRETE SHALL COMPLY WITH GOOD CONSTRUCTION PRACTICES AND BE IN ACCORDANCE WITH ALL LOCAL GOVERNING CODES AND REGULATIONS, AS WELL AS THE ACI AND UNIFORM BUILDING CODE.
6. EXPANSION JOINTS 1/2" WIDE OF PREMOULDED BITUMINOUS MATERIALS SHALL BE INSTALLED.

CONCRETE PAD DETAIL

NOT TO SCALE



NOTES:
1. WATER MAIN MAY BE LOOPED ABOVE OBSTRUCTION, IF 3.5' MINIMUM COVER IS MAINTAINED ABOVE WATER MAIN.
2. WATER MAIN SHALL BE DUCTILE IRON CEMENT LINED PIPE, ALL JOINTS SHALL BE MECHANICALLY JOINED OR PUSH-ON AND ALL FITTINGS BE MECHANICALLY JOINED CAST IRON.
3. OFFSETS MAY BE SUBSTITUTED FOR A TEE OF UP TO 24" IF APPROVED BY THE ENGINEER.
4. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS OR OTHER POINTS OF PIPE DIRECTION CHANGE.
5. MINIMUM VERTICAL CLEARANCE BETWEEN SANITARY SEWER AND WATER MAIN SHALL BE 18". CLEARANCE BETWEEN WATER MAIN AND OTHER OBSTRUCTIONS SHALL BE 6".
6. TIE RODS SHALL BE UTILIZED TO RESTRAIN PIPE JOINTS. DETAILS OF TIE ROD ASSEMBLY SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. TIE RODS SHALL BE SUFFICIENT TO RESTRAIN THE THRUST DEVELOPED AT 100 PSI WORKING PRESSURE. MEGALUG RESTRAINT ALSO ACCEPTABLE IN PLACE OF TIE RODS.

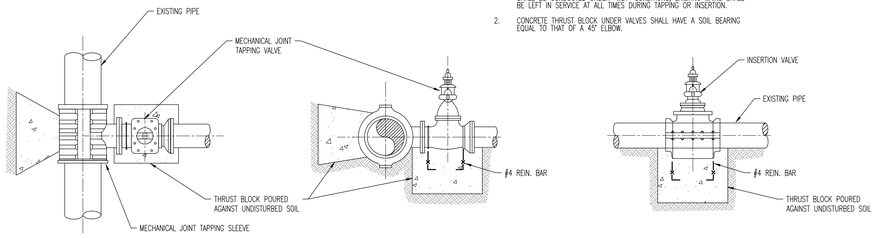
MECHANICAL JOINTS

ANGLE	D =	R =	L =
45°	T x 1.414	T x 1.000	D-2A
22.5°	T x 2.613	T x 2.414	D-2A
11.25°	T x 5.126	T x 5.027	D-2A

WATER MAIN - UTILITY CROSSING DETAIL

NOT TO SCALE

TAPPING NOTES:
1. INSTALLATION OF TAPPING SLEEVE AND VALVE AND INSERTION VALVE SHALL BE CONDUCTED UNDER "WET" CONDITIONS, EXISTING MAINS SHALL BE LEFT IN SERVICE AT ALL TIMES DURING TAPPING OR INSERTION.
2. CONCRETE THRUST BLOCK UNDER VALVES SHALL HAVE A SOIL BEARING EQUAL TO THAT OF A 45° ELBOW.

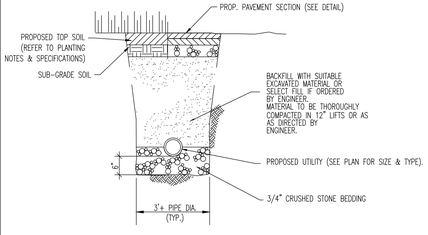


TAPPING SLEEVE AND VALVE

VALVE SUPPORT BLOCK & INSERTION VALVE

WET TAP DETAIL

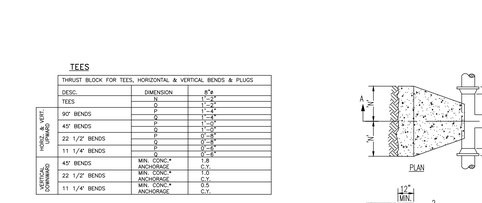
NOT TO SCALE



NOTES:
1) PAVEMENT SECTION SHALL BE PER ASPHALT PAVING DETAIL, OR TO MATCH ADJOINING EXISTING PAVEMENT SECTION.
2) BACKFILL IN ALL PAVED AREAS SHALL BE DGA OR RCA

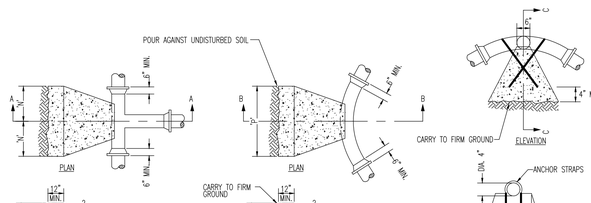
UTILITY SERVICE TRENCH DETAIL

NOT TO SCALE



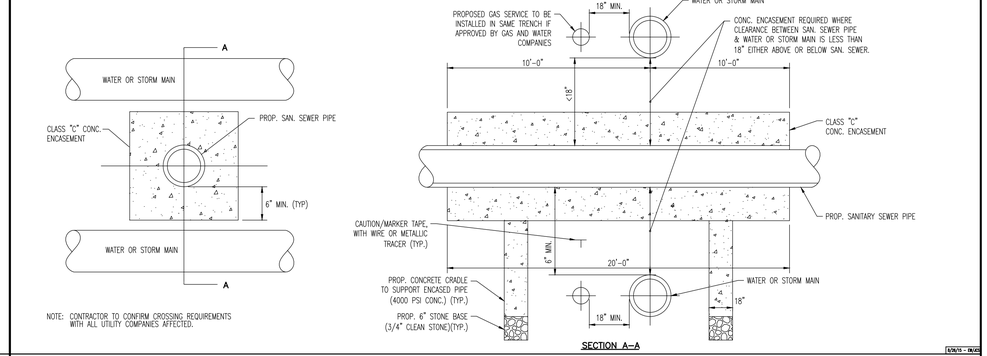
THRUST BLOCK FOR TEES, HORIZONTAL & VERTICAL BENDS & PLUGS		
DESC.	DIMENSION	8"ø
TEES	N	1'-3"
	O	1'-2"
	P	1'-4"
90° BENDS	Q	1'-3"
	R	1'-3"
45° BENDS	S	1'-0"
22 1/2° BENDS	T	1'-0"
	U	1'-0"
11 1/4° BENDS	V	1'-0"
45° BENDS	MIN. CONC.* ANCHORAGE	1.8 C.Y.
22 1/2° BENDS	MIN. CONC.* ANCHORAGE	1.0 C.Y.
11 1/4° BENDS	MIN. CONC.* ANCHORAGE	0.5 C.Y.

ANCHOR SCHEDULE FOR VERT. DOWNWARD BENDS	
SIZE	STRAP SIZE
8"	#5 BAR



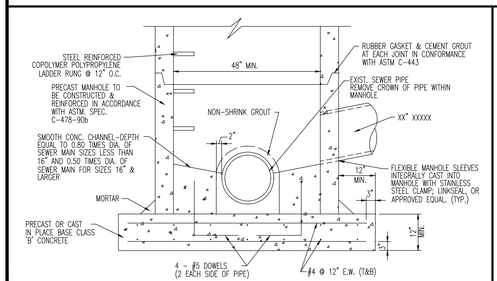
THRUST BLOCK DETAILS

NOT TO SCALE



UTILITY CROSSING DETAIL

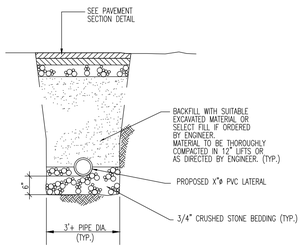
NOT TO SCALE



NOTES:
1. TWO SEPARATE COATS OF APPROVED BITUMASTIC WATERPROOFING COMPOUND SHALL BE APPLIED PER MANUFACTURERS INSTRUCTIONS TO THE ENTIRE EXTERIOR OF STRUCTURE.
2. TWO SEPARATE COATS OF APPROVED TWO-PART EPOXY COATING SHALL BE APPLIED PER MANUFACTURERS INSTRUCTIONS TO THE ENTIRE INTERIOR OF STRUCTURE.

SANITARY SEWER DOGHOUSE MANHOLE DETAIL

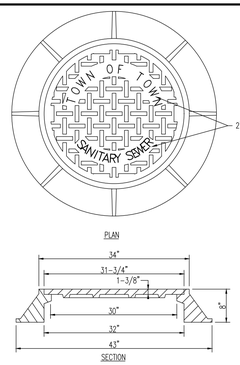
NOT TO SCALE



NOTE:
1. PAVEMENT SECTION TO MATCH, AT MINIMUM, ADJOINING PAVEMENT.
2. X" – SEE PLAN FOR PIPE DIAMETER.
3. BACKFILL IN ALL PAVED AREAS SHALL BE DGA OR RCA

SANITARY SEWER TRENCH DETAIL

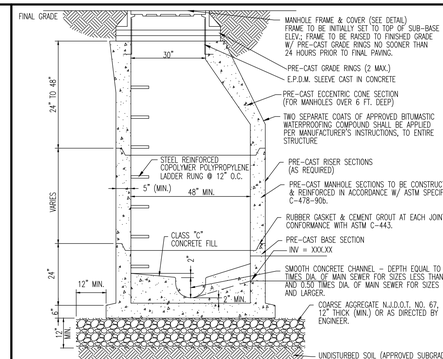
NOT TO SCALE



NOTES:
1. STANDARD MANHOLE FRAMES & COVERS SHALL BE USED ON ALL MANHOLES NOT LOCATED WITHIN EASEMENTS UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR TOWNSHIP REPRESENTATIVE.
2. STANDARD MANHOLE FRAME & COVER SHALL BE CAMPBELL FOUNDRY PATTERN # 10128, OR APPROVED EQUAL, WITH NON-PENETRATING PICK HOLES.
3. WATERTIGHT MANHOLE COVERS SHALL BE USED ON MANHOLES LOCATED WITHIN EASEMENTS, IN UNPAVED AREAS, AND OUTSIDE OF THE CENTERLINE OF PAVED ROADS AS DIRECTED BY ENGINEER OR TOWNSHIP REPRESENTATIVE.

SANITARY MANHOLE FRAME DETAIL

NOT TO SCALE



PRECAST SANITARY MANHOLE

NOT TO SCALE

COPYRIGHT © 2021 – DYNAMIC ENGINEERING CONSULTANTS, PC – ALL RIGHTS RESERVED

Plotted: 02/05/21 – 12:06 PM, By: dsanderson
File: \\Deepc.local\dfs\Folders\Data\DEEPC PROJECTS\0555 Elite Properties\99-010 Long Hill\Dwg\Site Plans\D0555990100SD1.dwg, ----> 19 CONSTRUCTION DETAILS

DYNAMIC ENGINEERING
CONSULTING • SURVEY • TRAFFIC

REV.	DATE	COMMENTS	BY
1	02/05/21	REVISED PER TOWNSHIP ENGINEER COMMENTS	MJAN

THIS PLAN SET IS FOR PERMITTING PURPOSES ONLY AND MAY NOT BE USED FOR CONSTRUCTION

DRAWN BY: AJW | DESIGNED BY: WB | CHECKED BY: JGJ | CHECKED BY: –

PROJECT: **ELITE PROPERTIES**
PROPOSED RESIDENTIAL DEVELOPMENT
BLOCK 10801, LOT 3
621 VALLEY ROAD (C.R. 512)
TOWNSHIP OF LONG HILL, MORRIS COUNTY, NEW JERSEY

811 Know what's below Call before you dig.
PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

DYNAMIC ENGINEERING
LAND DEVELOPMENT CONSULTING • PERMITTING
GEOTECHNICAL • ENVIRONMENTAL
TRAFFIC • SURVEY • PLANNING & ZONING
245 Main Street, Suite 110
Chester, NJ 07930
T: 908.879.9229 | F: 908.879.0222
Offices conveniently located at:
Lake Como, New Jersey • T: 732.974.0198
Chester, New Jersey • T: 908.879.9229
Newark, New Jersey • T: 973.755.7200
Toms River, New Jersey • T: 732.974.0198
Newtown, Pennsylvania • T: 267.685.0276
Allen, Texas • T: 972.534.2100
Houston, Texas • T: 281.789.6400
Austin, Texas • T: 512.646.2445
Delray Beach, Florida • T: 561.921.8570
www.dynamicec.com

JOSEPH G. JAWORSKI
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 36618

BRETT W. SKAPINETZ
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41985

TITLE: **CONSTRUCTION DETAILS**

SCALE: (H) AS (V) SHOWN | DATE: 08/07/2020
PROJECT No. 0555-99-010

SHEET No: 19 OF 21 | Rev. #: 1