

48 HOURS BEFORE DIGGING
CALL
1-800-432-4770
SUNSHINE STATE ONE CALL
OF FLORIDA, INC.
Customer is responsible for obtaining
location of existing utilities prior to
commencement of construction activities.



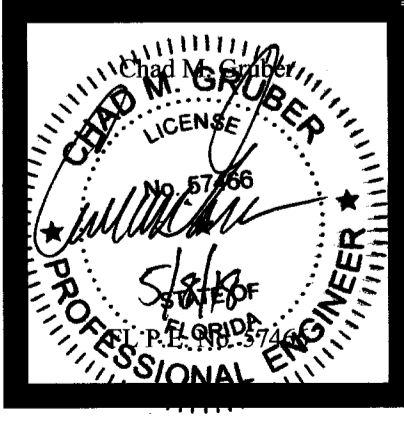
**Gruber Consulting
Engineers, Inc.**
Certificate of Accreditation No. 28180
2875 MERIDIAN SUITE 300
WEST PALM BEACH, FLORIDA 33411
PHONE: 561.312.2441
FAX: 561.312.2229
off: gce@grubereng.com

Project Information	2016-01-15	2016-01-15	1" = 10'	CC
Project No.	2016-01-15	Issue Date	Scale	Drawn By
Issue Date	05/20/2017	1" = 10'	CC	Checked By
Scale	1" = 10'	CC	CC	CC
Drawn By	CC	CC	CC	CC
Checked By	CC	CC	CC	CC

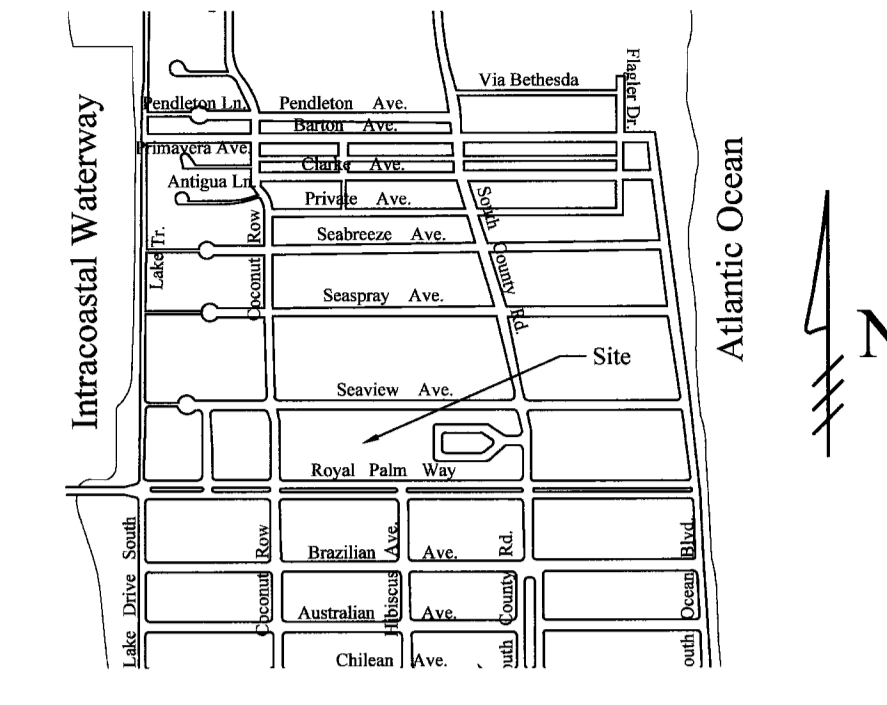
Palm Beach, Florida

Building Area Grading & Drainage Plan Enlargement For:
Morton & Barbara Mandel Recreation Center
340 Starview Avenue

Revisions	
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4	03/12/2018
5	04/23/2018
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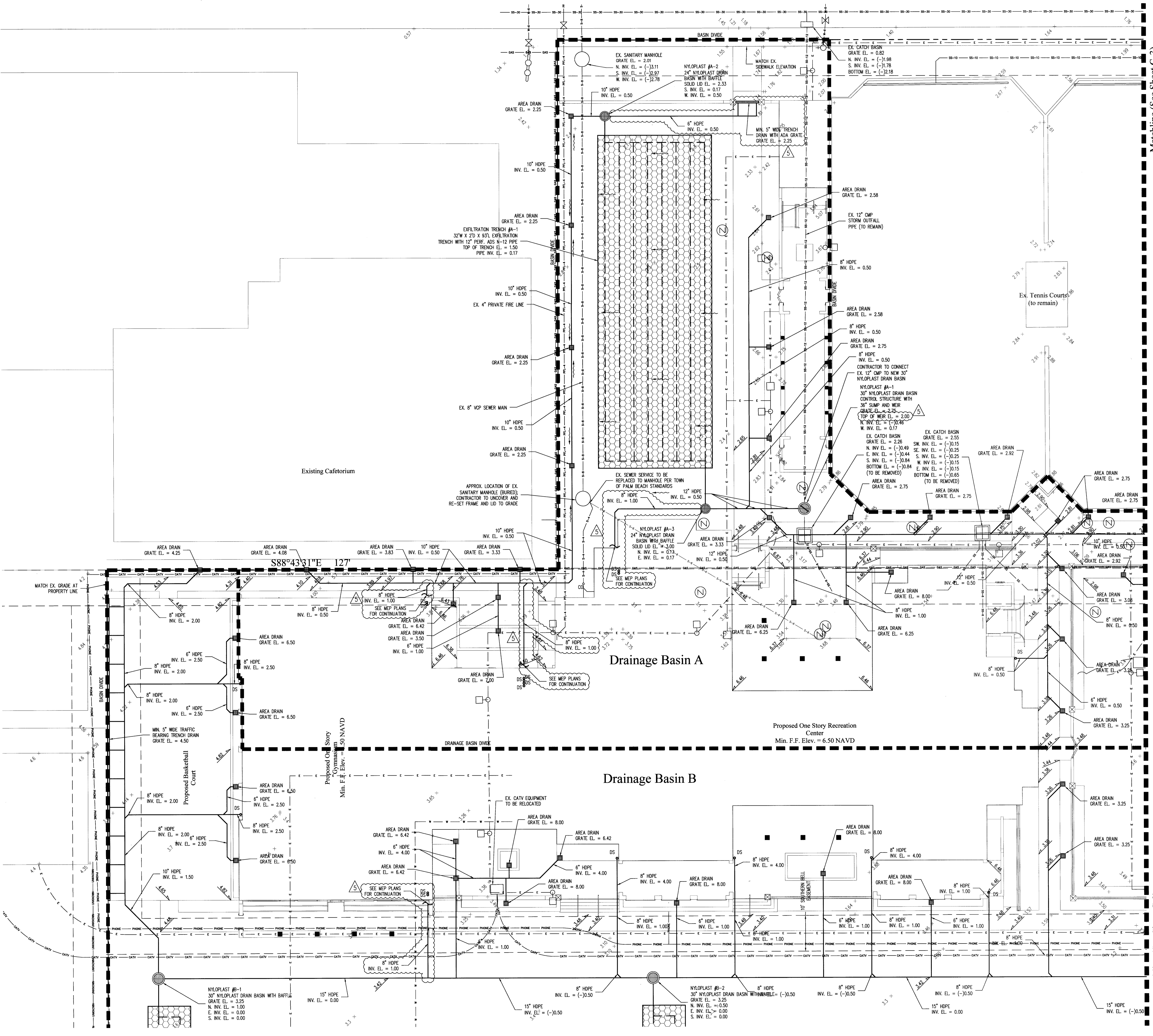
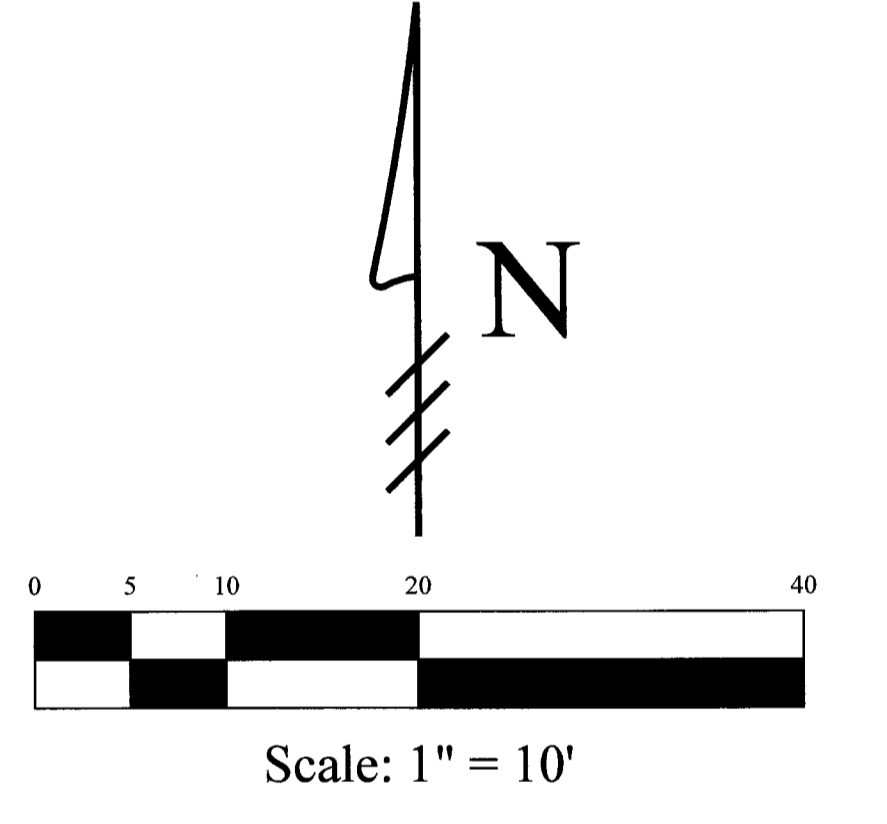
Sheet No.
C-2



Location Map
N.T.S.

Legend

- 5.1 + EXISTING ELEVATION PER BROWN & PHILLIPS (NAVD-88)
- PROPOSED ELEVATION (NAVD-88)
- 7.00- PROPOSED ELEVATION CONTOUR (NAVD-88)
- FLOW DIRECTION
- EXFILTRATION TRENCH
- AREA DRAIN
- NYLOPLAST DRAIN BASIN WITH BAFFLE
- CONCRETE CATCH BASIN



Matchline (See Sheet C-3)

Matchline (See Sheet C-3)

OFFICE COPY
SUBJECT TO COMPLIANCE WITH
ALL CODES AND ORDINANCES
IN EFFECT IN THE TOWN OF
PALM BEACH, FLORIDA

REVIEWED
As submitted 11/28/17
TOWN OF PALM BEACH, Building Department
Craig A. Hauschild, P.E., Engineering Plans Review

- 03/12/18 PLAN REVISIONS PER TOWN OF PALM BEACH COMMENTS; SEE COMMENT RESPONSE MEMO
- 04/23/18 PLAN REVISIONS PER TOWN OF PALM BEACH COMMENTS; ADD ADDITIONAL DOWNSPOUT CONNECTIONS

Plan Background from Site Plan by
Stephen Borutt, AIA Received 8/3/17
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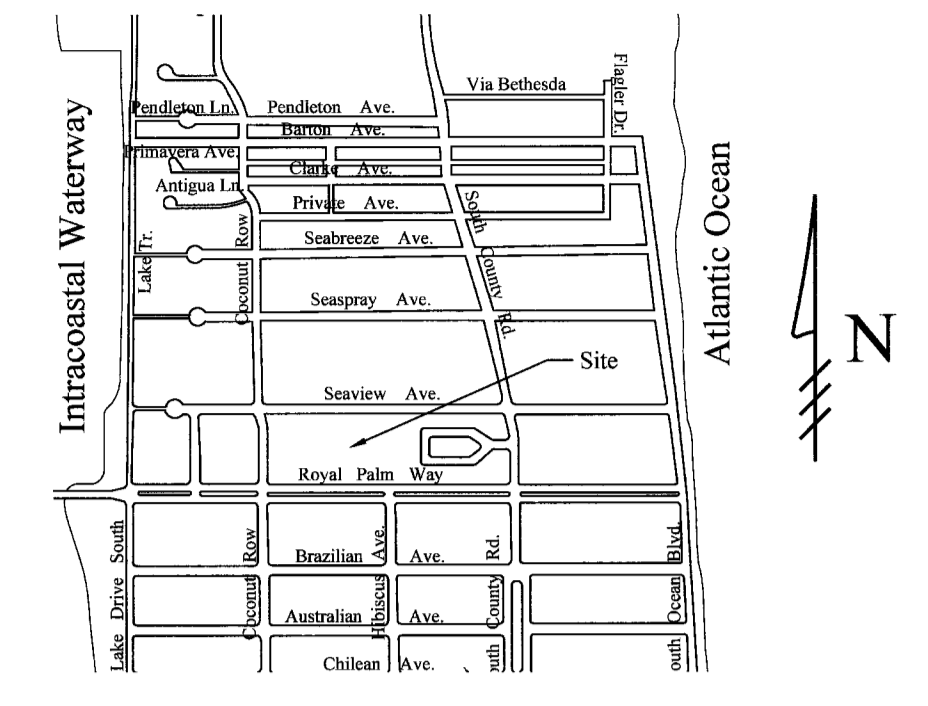
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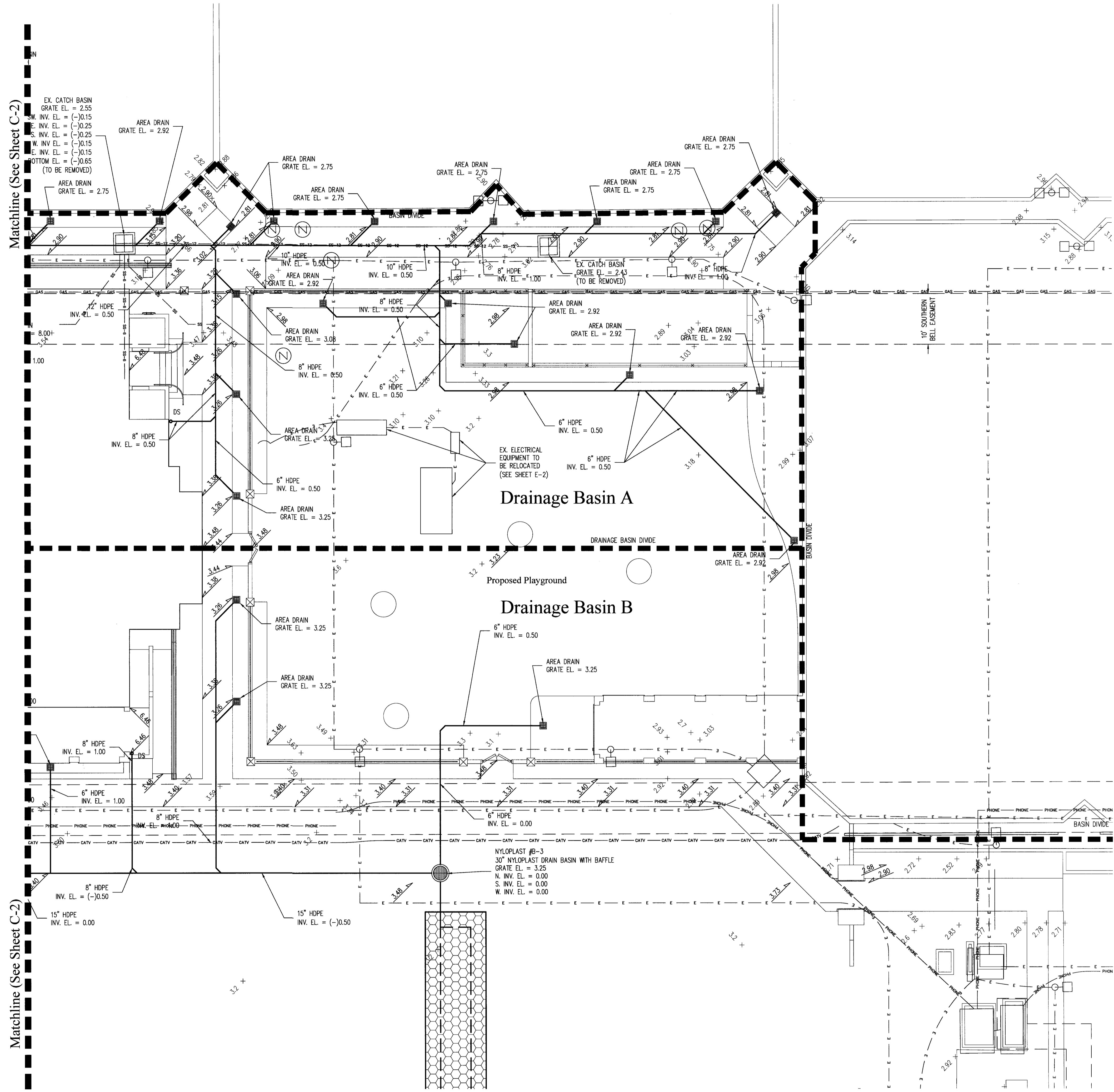
Gruber Consulting Engineers, Inc.
Certificate of Authorization No. 28190
Professional Seal
WEST PALM BEACH, FL 33411
PHONE: 561.732.2941
FAX: 561.732.2942
www.gruber-engineers.com

Project Information

Project No.	2016-0445
Issue Date	05/29/2017
Scale	1" = 10'
By	DB
Checked By	ECG



Location Map
N.T.S.

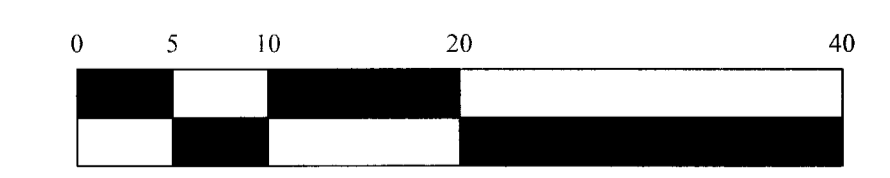
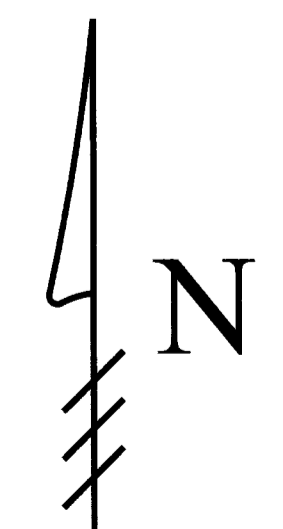


Matchline (See Sheet C-2)

Matchline (See Sheet C-2)

Legend

- 5.7' +
2.90' -
-7.00' -
EXISTING ELEVATION PER BROWN & PHILLIPS (NAVD-88)
- PROPOSED ELEVATION (NAVD-88)
- PROPOSED ELEVATION CONTOUR (NAVD-88)
- FLOW DIRECTION
- EXFILTRATION TRENCH
- AREA DRAIN
- NYLOPLAST DRAIN BASIN WITH BAFFLE
- CONCRETE CATCH BASIN



Scale: 1" = 10'

Building Area Grading & Drainage Plan Enhancement For:
Morton & Barbara Mandel Recreation Center
 Palm Beach, Florida
 340 Serenew Avenue

Revisions

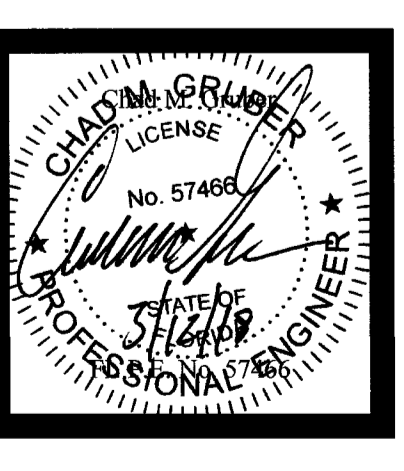
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SUBJECT TO COMPLIANCE WITH
ALL CODES AND ORDINANCES
IN EFFECT IN THE TOWN OF
PALM BEACH, FLORIDA

REVIEWED
As submitted by on 20
TOWN OF PALM BEACH Public Works Department
Craig A. Hutcheson, P.E., Engineering Plans Review

03/12/18 PLAN REVISIONS PER TOWN OF PALM BEACH COMMENTS; SEE COMMENT RESPONSE MEMO

Plan Background from Site Plan by
Stephen Bonuff, AIA Received 8/3/17
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Sheet No.
C-3

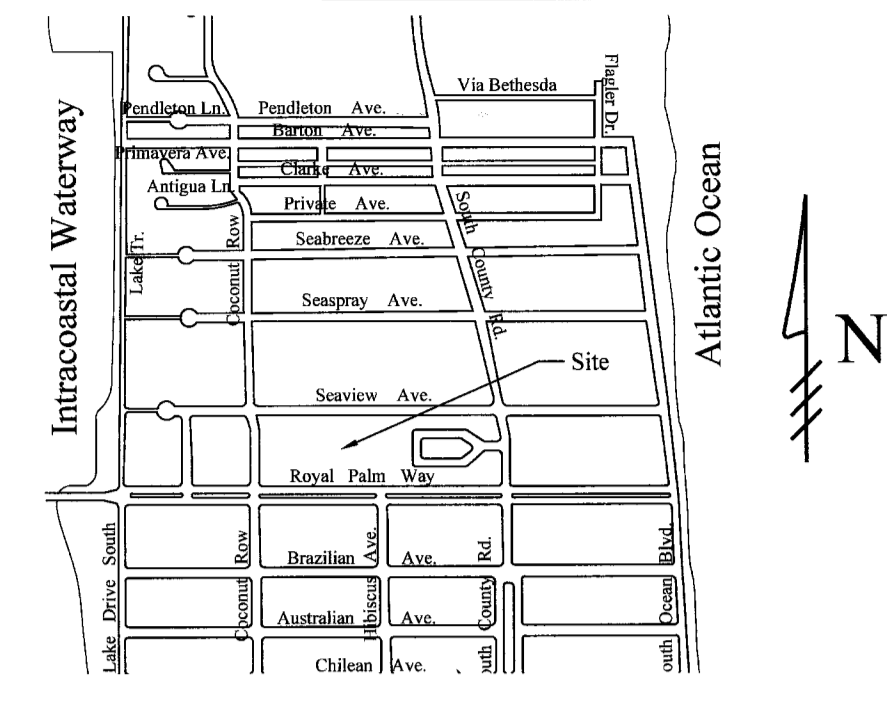
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OF FLORIDA, INC.
Contractor is responsible for obtaining
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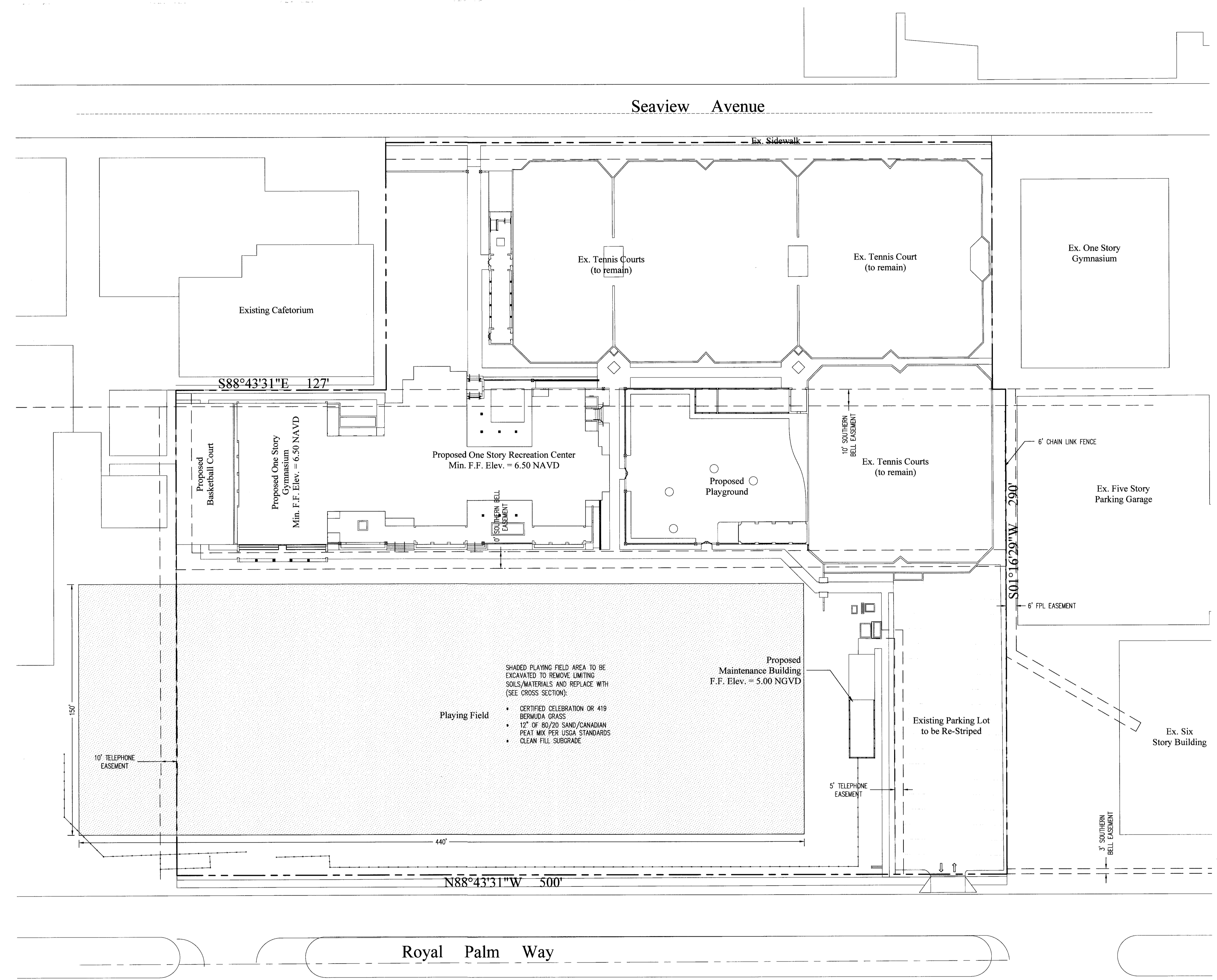
Gruber Consulting Engineers, Inc.
Certificate of Accreditation No. 201800
10000 W. PALM BEACH BLVD., SUITE 3000
PALM BEACH, FL 33411
P.O. BOX 177229
PALM BEACH, FL 33417-7229
info@gruberengineers.com

Project Information

Project No.	2016-0145
Issue Date	03/20/2017
Drawn By	AM
Checked By	CG

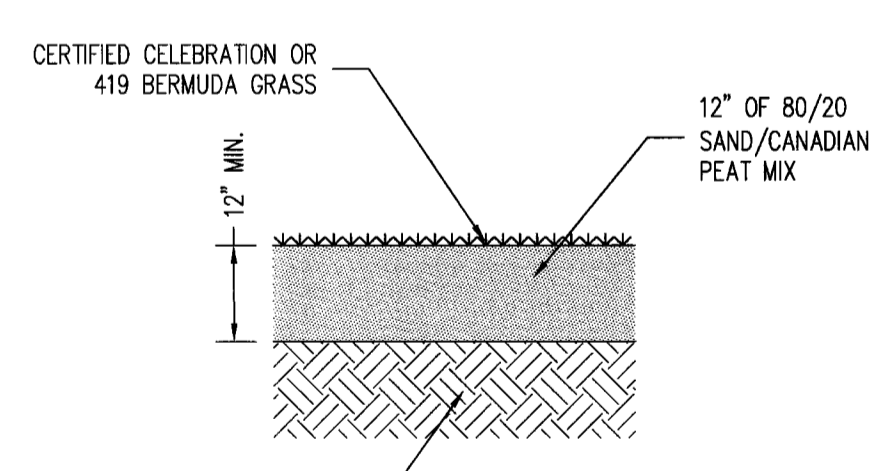
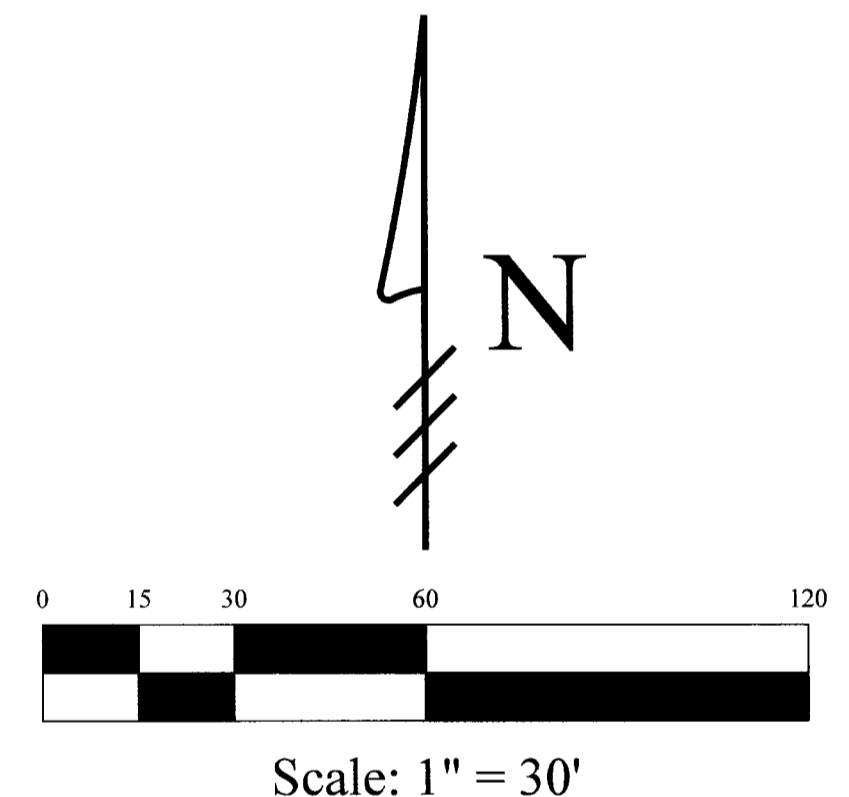


Location Map
N.T.S.



Legend

- EXISTING ELEVATION PER BROWN & PHILLIPS (NGVD-29)
- PROPOSED ELEVATION (NGVD-29)
- PROPOSED ELEVATION CONTOUR (NGVD-29)
- FLOW DIRECTION



Proposed Playing Field Cross Section
Scale: 1/4" = 1'-0"

Palm Beach, Florida
 Morton & Barbara Mandel Recreation Center
 340 Seaview Avenue

Revisions

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SUBJECT TO COMPLIANCE WITH
ALL CODES AND ORDINANCES
IN EFFECT IN THE TOWN OF
PALM BEACH, FLORIDA

REVIEWED
As submitted by Steph JONES on 20/18
TOWN OF PALM BEACH, Public Works Department
Craig A. Hauschild, P.E., Engineering Plans Review



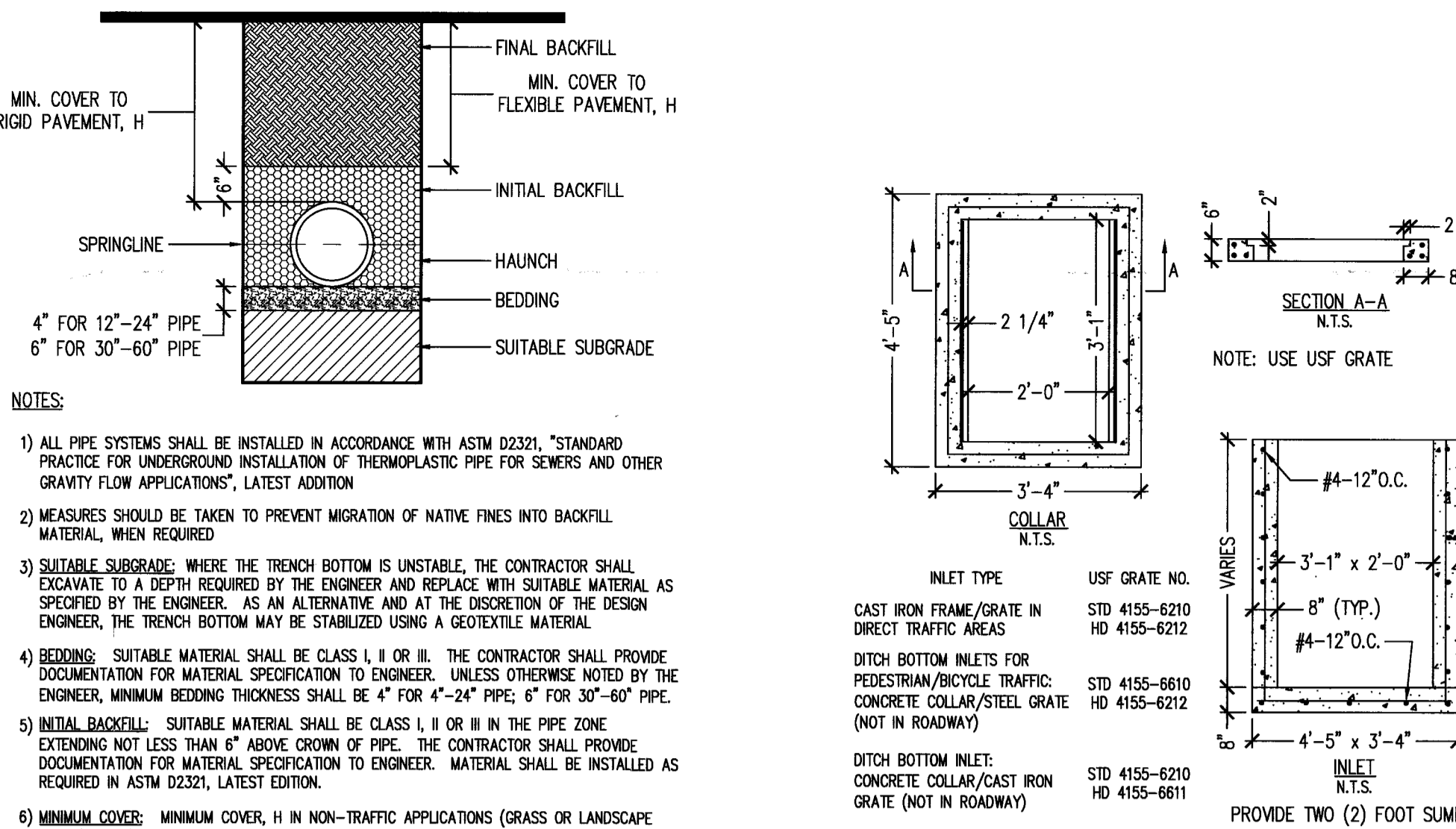
4 03/12/18 PLAN REVISIONS PER TOWN OF PALM BEACH COMMENTS; SEE COMMENT RESPONSE MEMO

Plan Background from Site Plan by
Stephen Boruff, AIA Received 8/3/17
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Sheet No.
C-4

General Notes & Specifications:

- The contractor shall check all drawings furnished immediately upon their receipt and shall promptly notify the engineer in writing of any discrepancies. Anything shown on the drawings and not mentioned in the specifications or mentioned in the specifications and not shown on the drawings, shall be of like effect as if shown or mentioned in both.
- Figure marked on drawings shall, in general, be followed in preference to scale measurements. Large scale drawings shall in general, govern small scale drawings. The contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby. When dimensions on the drawings are affected by the type of equipment selected, the contractor shall adjust such dimensions as conditions may require.
- If the contractor, in the course of the work, finds any discrepancy between the drawings and the physical conditions of the locality, or any error or omission in the drawings or in the layout as given by points and instructions, or discovers unforeseen underground or above ground conditions or any other unexpected conditions requiring additional work by the contractor, it shall be his duty to immediately inform the engineer, in writing, and the engineer shall promptly check the accuracy of the information. Any work done after such discovery, until any necessary changes are authorized, will be done at the contractor's risk.
- If any part of the contractor's work depends, for proper execution or results, upon the work of any other contractor, the contractor shall inspect and measure work already in place and shall at once report to the engineer any discrepancies between the executed work and the drawings.
- The engineer or his authorized representative shall have free access to the work of the contractor at all times for the purpose of inspection. The contractor shall furnish the facilities to determine, as best as can reasonably be done, the nature and quality of the work performed. Such assistance of the contractor shall, if necessary, include the uncovering, testing or removal of portions of the finished work.
- All debris shall be removed from the area and legally disposed. Debris may be burned upon obtaining proper burning permit but any unburned remains to be disposed of as directed by the owner or his representatives.
- The contractor shall be responsible for protecting all buildings, structures, and utilities that are underground, above ground, or on the surface against construction operations that may be hazardous to said facilities and shall hold and save the owner harmless against all claims of damage. The contractor shall, by repair or replacement, return to equal or better condition all pavement, sidewalk, lawns, utilities and other items damaged by this construction activity.
- The contractor shall be responsible for obtaining all required tests and shall submit reports by an independent testing laboratory approved by the engineer. Should any test fail to meet specification as shown herein, the contractor shall, at his expense, correct all deficient work and submit laboratory test results showing compliance with the specification.
- All work shall be performed in a workman like manner and shall conform with all applicable City, County, State and Federal regulations and/or Codes. The contractor shall obtain all permits and licenses required to begin work.
- The contractor shall visually examine the construction site to determine the existing facilities and shall be responsible for replacing, removed and/or relocated which may be required in order to complete the work.
- The contractor shall give the engineer 48 hours notice prior to requesting required inspections and shall supply all equipment necessary to properly test and inspect the completed work.
- The contractor shall guarantee all work and materials for a period of one year from the date of project acceptance, during which all faulty construction and/or materials shall be corrected at the contractor's expense.
- All work shall be accomplished in a safe and workmanlike manner. The contractor shall comply with all applicable laws and regulations of any public and/or private body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss and shall erect and maintain all necessary safeguards for such safety and protection. The responsibility for project safety rests solely and specifically with the contractor. Local agencies and their employees and agents are specifically indemnified and held harmless from any actions of the contractor relating to the safety procedures implemented during construction and from any claims brought by any persons regarding safety, personal injury or property damage.
- Minimum Construction Inspection Checkpoints: 1) Prior to any major deviation from the approved plans 2) Prior to backfilling of any trenches containing hydraulic conduits so that jointing may be mutually approved 3) Upon completion of subgrade compacting 4) At the time of delivery of base material 5) Upon completion of the base and prior to priming 6) Immediately prior to and upon the first and second applications of the plant mixed wearing course 7) Upon completion of construction, a final inspection will be made with project representative
- All unsuitable material such as muck, marl and debris shall be removed from the limits of construction and legally disposed. At the engineer's direction, muck may be stockpiled on the site at designated locations for use in landscaping.
- All material and equipment to be furnished and/or installed by the contractor for this project shall be guaranteed for a period of one year from the date of final acceptance thereof, against defective materials, design and workmanship. Upon receipt of notice from the owner of failure of any part of the guaranteed equipment or materials during the guarantee period, the affected part, parts or materials shall be replaced promptly with new parts or materials by the contractor at no expense to the owner. In the event the contractor fails to make the necessary replacement or repairs within seven (7) days after notification by the owner, the owner may accomplish the work at the expense of the contractor.
- Subsequent to completion of contract work, but prior to submission of the request for final payment, the contractor shall prepare, in duplicate, record drawings of completed site construction showing final location by roadway centerline stationing and/or other acceptable measurement, all lines, fittings, valves, sanitary or drainage structures, etc., all revisions to the original plans, required depths and invert elevations, and all information necessary to locate and/or operate the improvements constructed under this contract.
- Existing utilities and facilities shown on the drawings were located from the utility owner's records of underground facilities. No guarantee is made that all existing facilities are shown nor that those facilities shown are entirely accurate. The contractor shall be responsible for the coordination of relocating or locating existing utilities and such relocations or location shall be accomplished at no additional costs. The landowner and the engineers will assume no liability for damages sustained or cost incurred caused by the contractor's operations in the vicinity of existing utilities or structures.

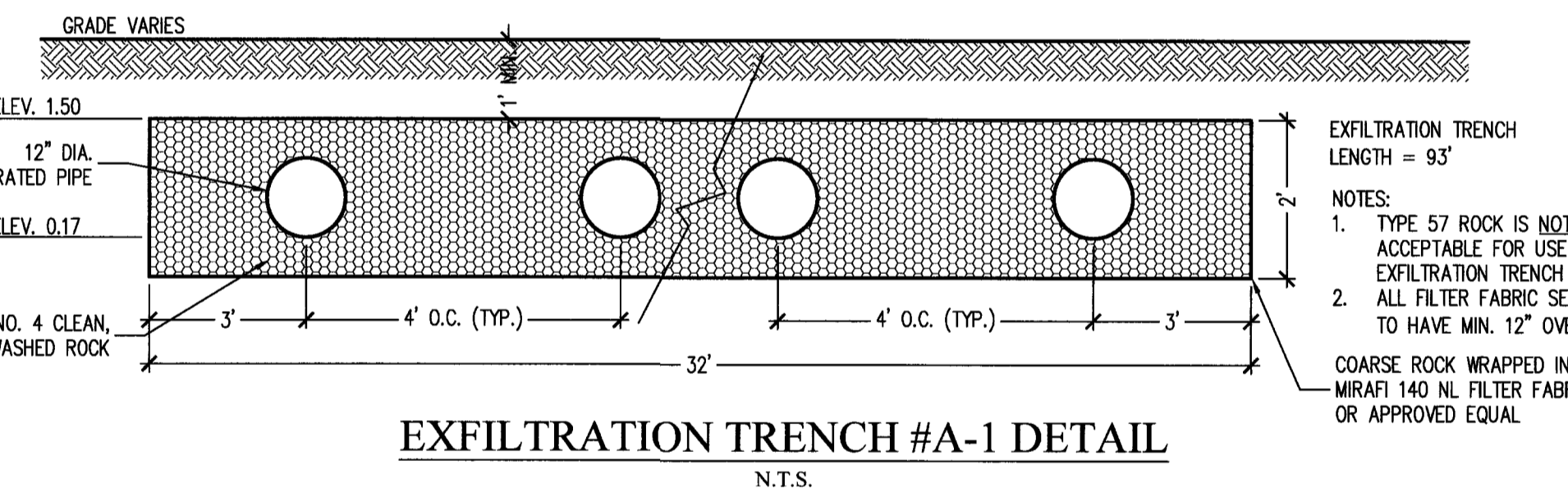


TRENCH AND BACKFILL DETAIL
N.T.S.

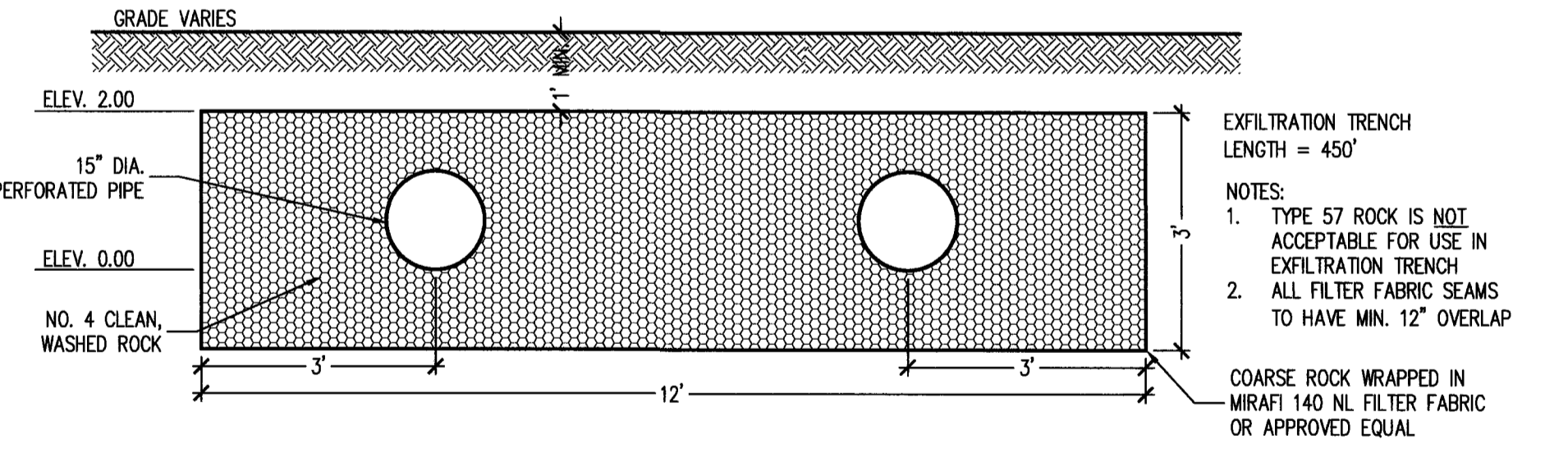
TYPE "C" INLET
N.T.S.

STORMWATER RETENTION CALCULATIONS (Basin A)

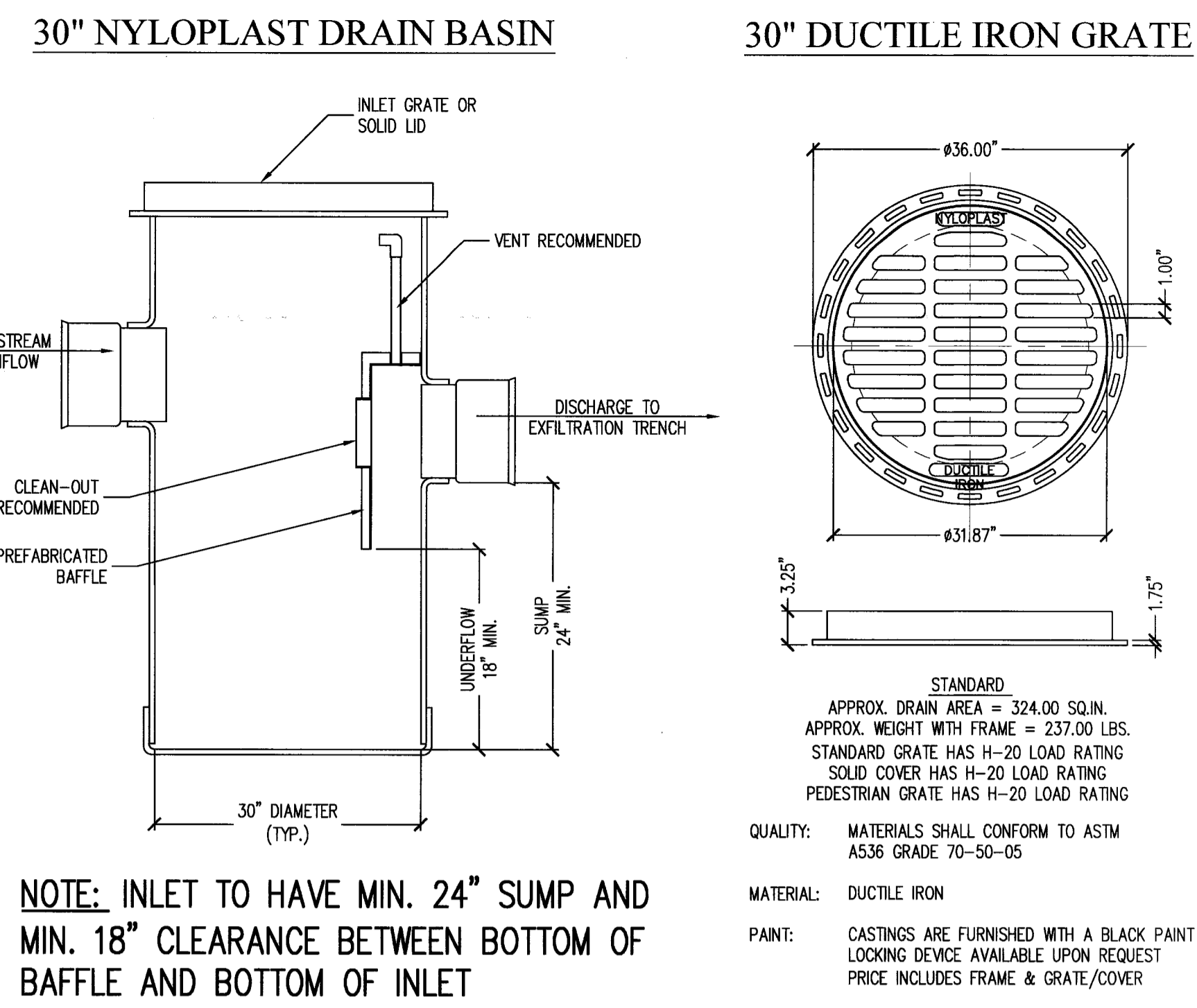
A. SITE INFORMATION	
Total Property Area =	198,957 sq. ft.
Proposed Drainage Area =	30,338 sq. ft.
Drainage Area Impervious Surface (proposed building, walkways, playground) =	17,086 sq. ft.
Drainage Area Pervious Surface =	13,252 sq. ft.
B. ESTIMATED STORMWATER RETENTION VOLUME	
The retention volume is estimated using the Rational Method (Q-CIA)	
C = 1.0 (impervious surface)	
C = 0.2 (pervious surface)	
i = 2 in/hr	
In pervious Surface Runoff Volume:	1.0 x 2 in/hr x 13,252 sq. ft. x 1 ft./12 in. = 2,848 cu. ft.
Pervious Runoff Volume:	0.2 x 2 in/hr x 17,086 sq. ft. x 1 ft./12 in. = 442 cu. ft.
Total Volume to be Retained =	3,290 cu. ft.
C. PROPOSED EXFILTRATION TRENCH SIZING	
L = Total Length of Trench Provided =	93 ft
W = Trench Width =	32 ft
K = Hydraulic Conductivity =	0.0001 cfs/sq. ft. of head
H2 = Depth to Water Table =	1.50 ft
DSU = Un-Saturated Trench Depth =	1.00 ft
DS = Saturated Trench Depth =	1.00 ft
V = Volume Treated =	3,291 cu. ft.



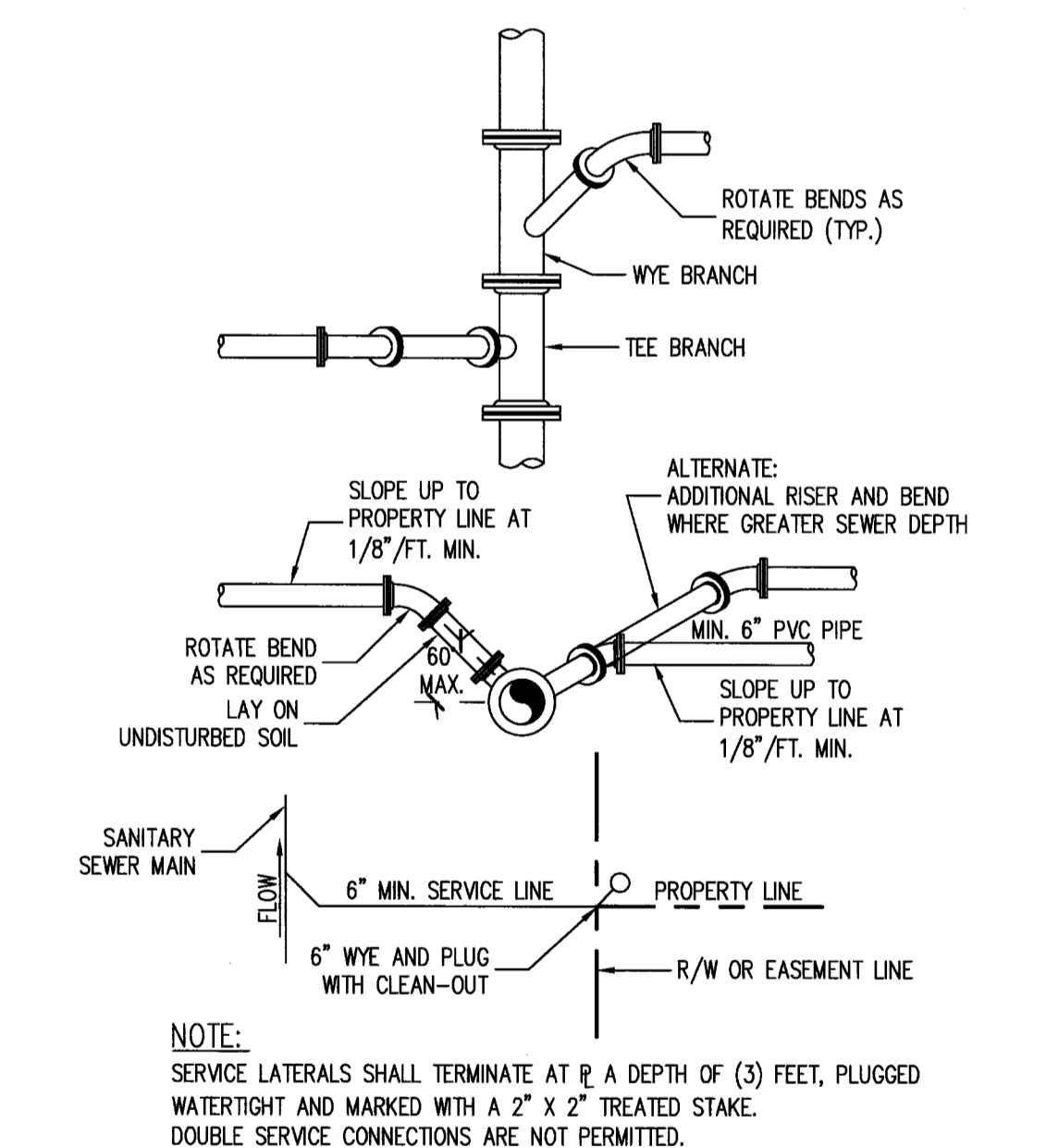
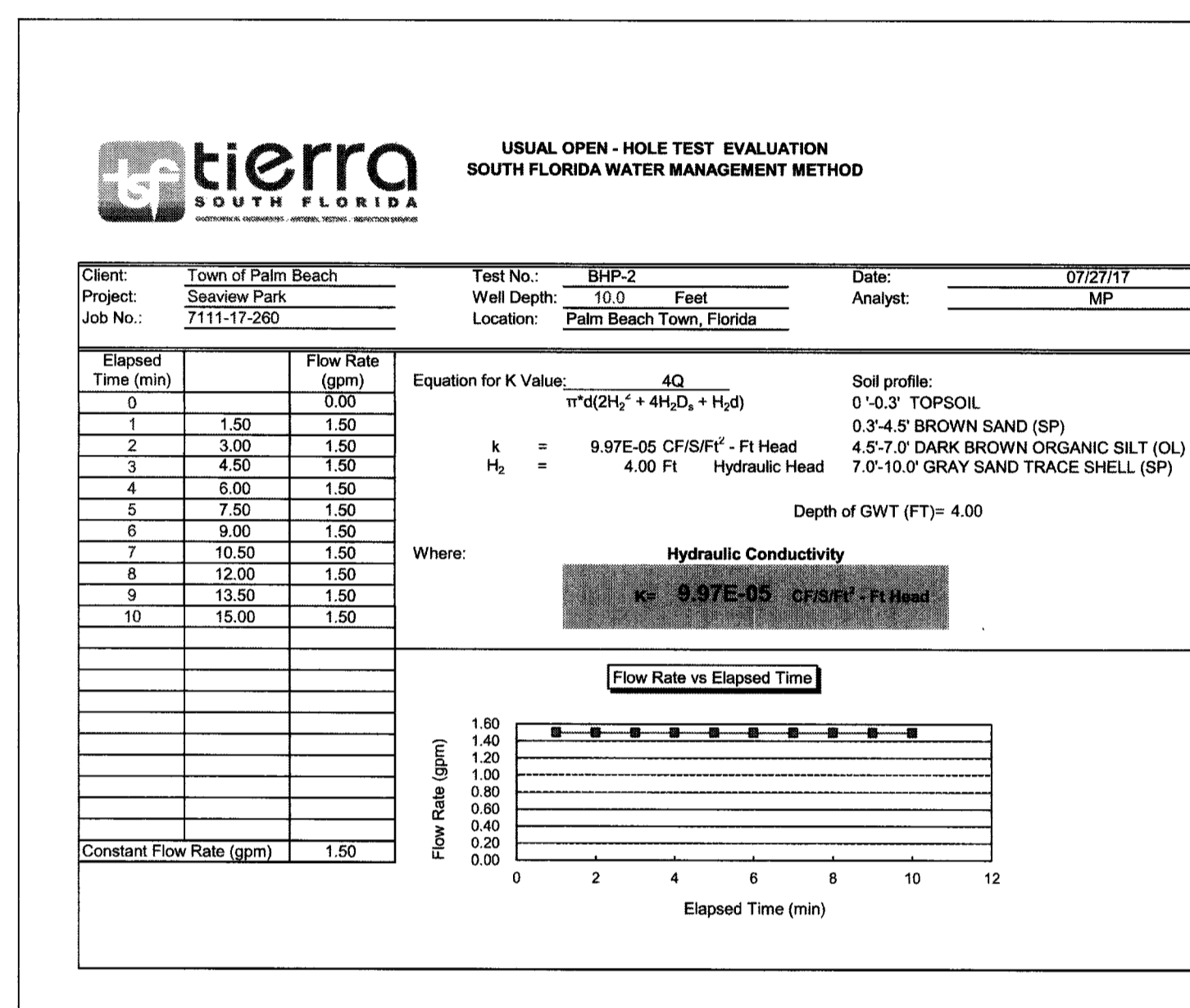
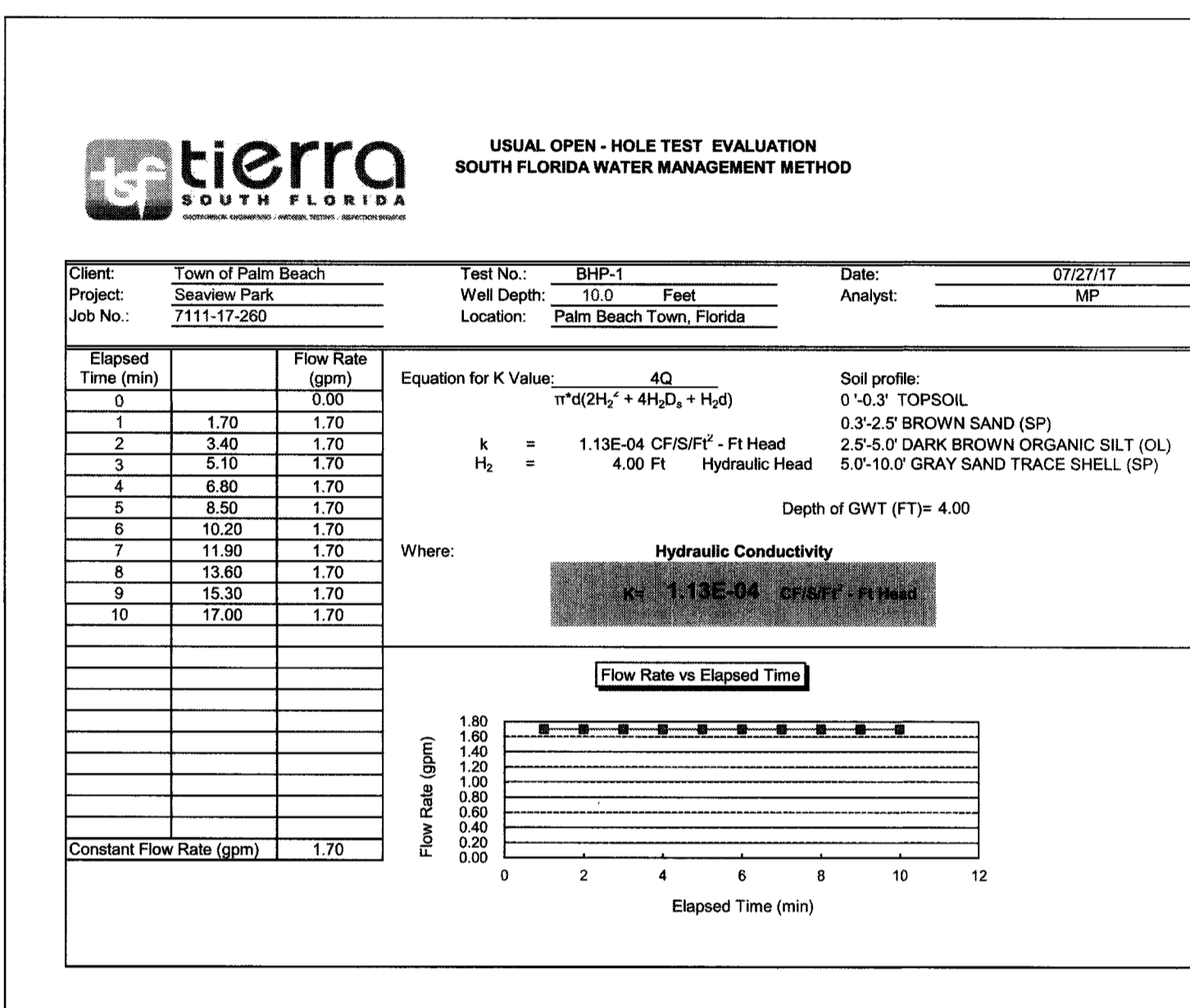
EXFILTRATION TRENCH #A-1 DETAIL
N.T.S.



EXFILTRATION TRENCH #B-1 DETAIL
N.T.S.



NOTE: INLET TO HAVE MIN. 24\"/>



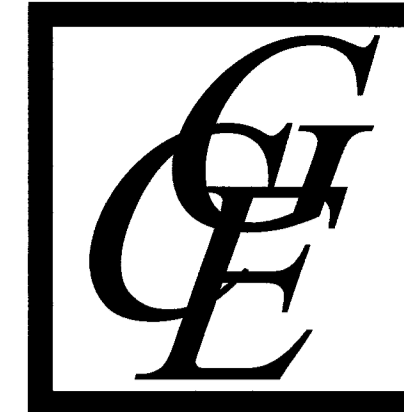
TYPICAL SEWER SERVICE CONNECTIONS
N.T.S.

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SUBJECT TO COMPLIANCE WITH ALL CODES AND ORDINANCES IN EFFECT IN THE TOWN OF PALM BEACH, FLORIDA

REVIEWED
As submitted by _____ on _____ 2028
TOWN OF PALM BEACH Planning Department
Craig A. Hauschild, P.E., Engineering Plans Review

- 03/12/18 PLAN REVISIONS PER TOWN OF PALM BEACH COMMENTS; SEE COMMENT RESPONSE MEMO
- 04/23/18 REVISE STORMWATER RETENTION CALCULATIONS

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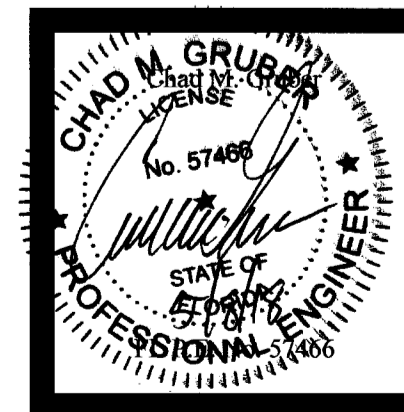


Gruber Consulting Engineers, Inc.
Certificate of Accreditation No. 24196
3075 MERRILL AVE., SUITE 305
WEST PALM BEACH, FL 33411
PHONE: 561.328.1801
FAX: 561.337.7229
info@grubereng.com

Project Information	
Project No.	20180415
Issue Date	05/30/2017
Scale	AS Shown
Drawn By	CU
Checked By	CU

Grading & Drainage Specifications and Details For:
Morton & Barbara Mandel Recreation Center
Palm Beach, Florida
340 Seaview Avenue

Revisions	
1	
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3	
4	03/12/2018
5	04/23/2018
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Sheet No.
C-5

48 HOURS BEFORE DIGGING CALL
1-800-432-4770
SUNSHINE STATE ONE CALL
OF FLORIDA, INC.
Customer is responsible for obtaining location of existing utilities prior to commencement of excavation activities.

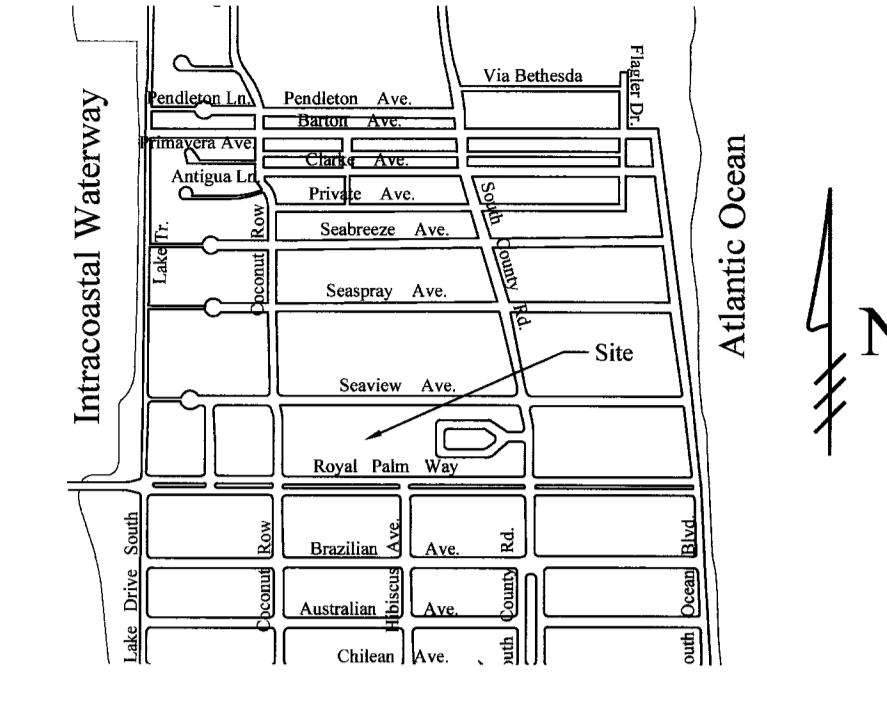


Gruber Consulting Engineers, Inc.
Certificate of Accreditation No. 23150
2475 MERLETTA AVE., SUITE 305
PALM BEACH, FLORIDA 33411
PHONE: 561.721.2241
FAX: 561.721.2229
off@gruber-engineers.com

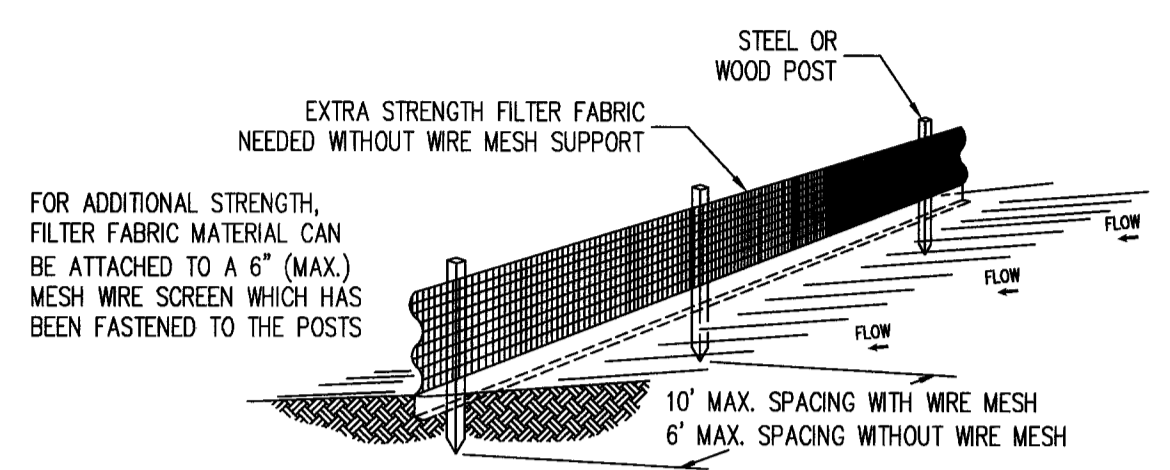
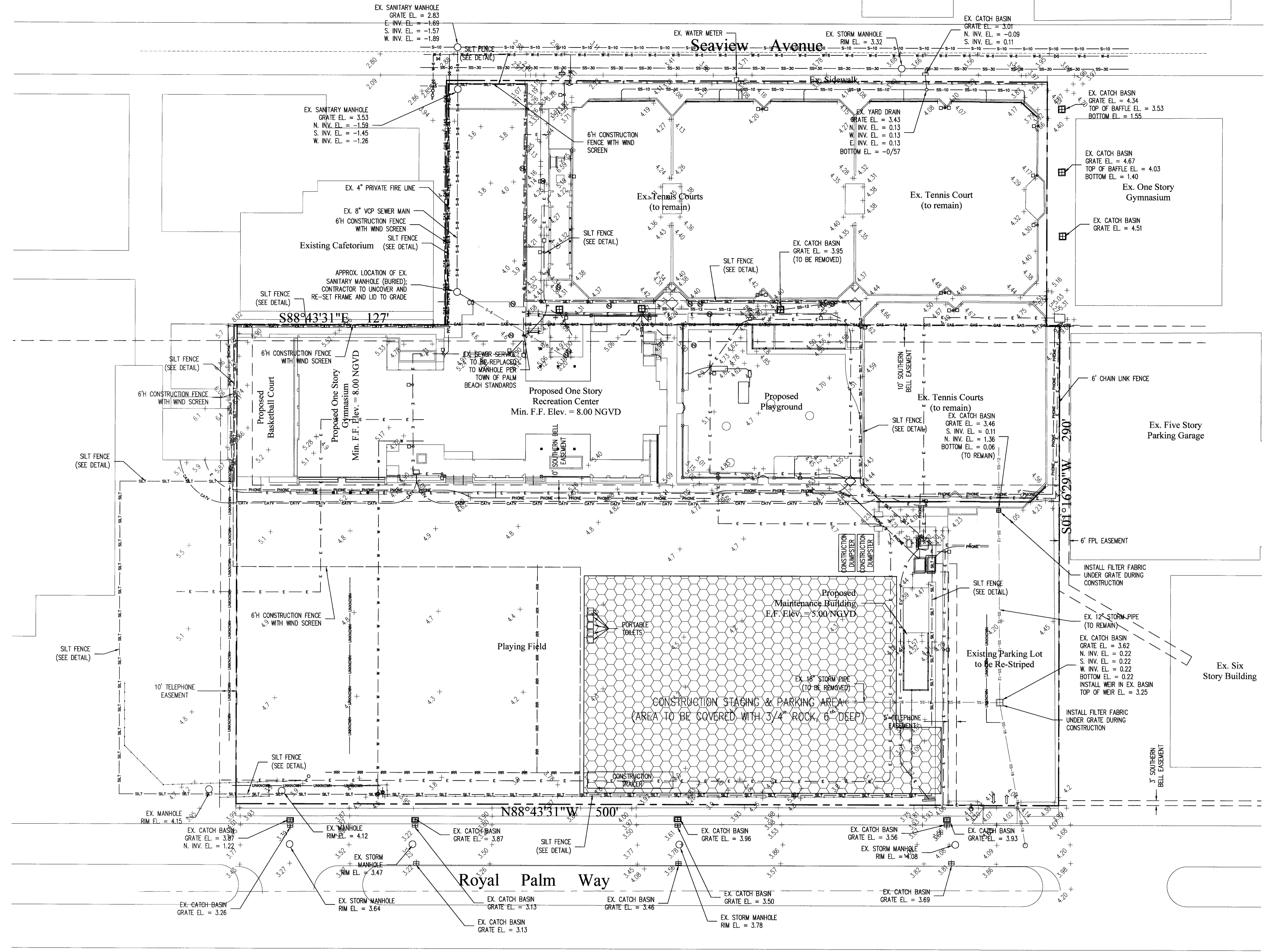
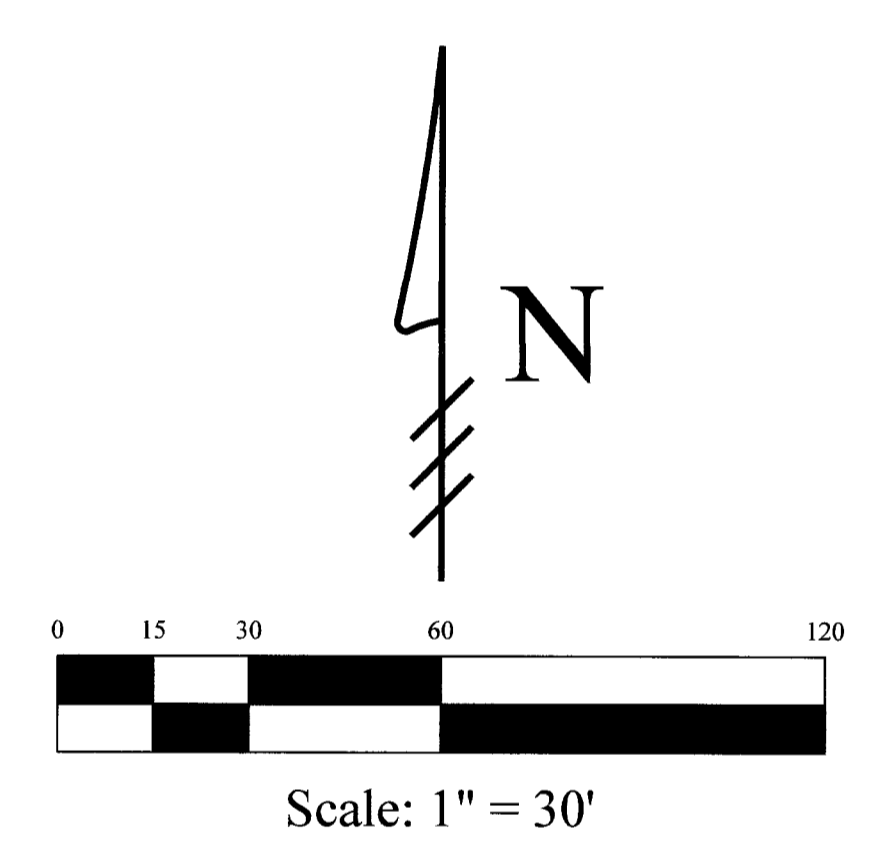
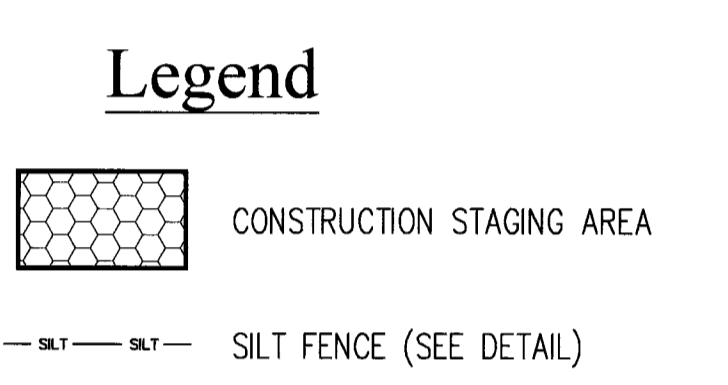
Project Information	
Project No.	2016-0145
Issue Date	07/31/2017
Scale	1" = 30'
Drawn By	KJM
Checked By	CC

Palm Beach, Florida

Construction Staging & Parking and Erosion Control Plan For
Morton & Barbara Mandel Recreation Center
340 Seaview Avenue

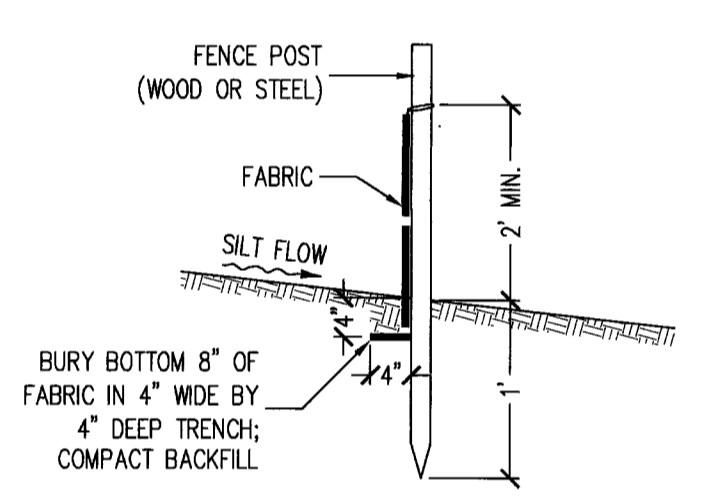


Location Map
N.T.S.

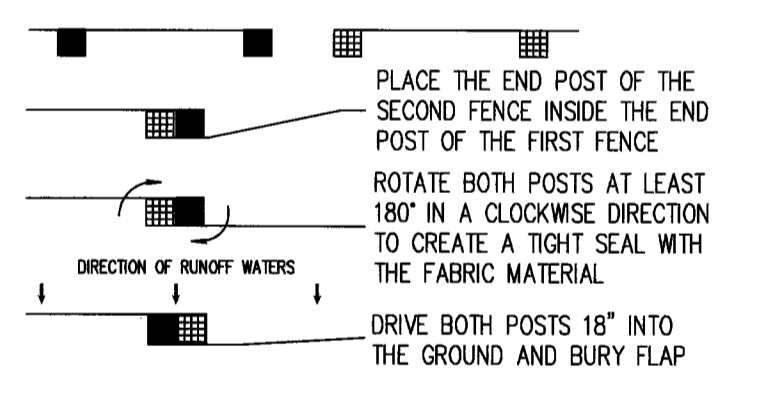


- Notes:**
- The height of a silt fence shall not exceed 36".
 - Filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints.
 - Posts shall be spaced a maximum of 10' apart at the barrier location and driven securely into the ground a minimum of 12". When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6'.
 - A trench shall be excavated approximately 4" wide and 4" deep along the line of posts and upslope from the barrier.
 - When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1" long, six wires, or hog rings. The wire shall extend into the trench a minimum of 2" and shall not extend more than 36" above the original ground surface.
 - The standard strength filter fabric shall be stapled or wired to the fence, and 8" of the fabric shall be extended into the trench. The fabric shall not extend more than 36" above the original ground surface.
 - The trench shall be backfilled and the soil compacted over the filter fabric.

SILT FENCE DETAIL
N.T.S.



SILT FENCE SECTION
N.T.S.



ATTACHING TWO SILT FENCES
N.T.S.

Erosion and Sediment Controls:

- Sequence of Timing of Erosion and Sediment Control Measures
- Excavation of water management facilities should occur immediately after clearing and grubbing to serve as a sediment trap or catchment for stormwater runoff from exposed soils.
 - Construction of perimeter berm or site grading to prevent off-site discharge of stormwater runoff.
 - Placement of silt fences and or hay bales, properly anchored, to contain erosion in areas prone to stormwater runoff erosive velocities.
 - Permanent stabilization will be provided for each inlet either by silt fence/filter fabric staked in place or hay bales.
 - Inlet protection will be provided for each inlet either by silt fence/filter fabric staked in place or hay bales.
 - Outlet protection will be provided by turbidity screens within the receiving body.

Maintenance/Inspection Procedures:

- Erosion and Sediment Control and Maintenance Practices
- All control measures will be inspected at least once each week and following any storm event of 0.5 inches or greater. Rainfall amount should be based on an onsite rain gauge.
 - All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of onsite inspection report.
 - Build up sediment will be removed from silt fence when it has reached one-third the height of the fence.
 - Silt fence will be inspected for depth of sediment and tears to see if the fabric is securely attached to the fence posts and to see that the fence posts are firmly in the ground.
 - A maintenance inspection report will be made after each inspection.
 - The site superintendent will designate a qualified employee who will be responsible for inspections, maintenance and repair activities and completing inspection and maintenance reports.

Other Controls
Material Management Practices

Waste Materials: All waste materials will be collected and stored in a securely covered metal dumpster provided by a licensed solid waste management company in Broward County. The dumpster will meet all Broward County and State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as needed so there is no overflow. Trash will be hauled to an authorized/permited landfill facility. All personnel will be instructed regarding the correct procedure of waste disposal.

Hazardous Waste: All hazardous waste material will be disposed of in a manner specified by local or State regulations. Site personnel will be instructed in these practices.

Sanitary Waste: All sanitary waste will be collected from the portable units a minimum of twice per week by the licensed Sanitary Company, as required by local regulations.

Petroleum Products: All on-site vehicles and tanks will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used on-site will be applied accordingly to the manufacturer's recommendations. All above ground tanks for fueling will be secondarily contained.

Pesticides and Herbicides: Any pesticide and herbicide usage will be by State licensed applicators.

Fertilizers: Fertilizers used will be applied only in the minimum amount recommended by the manufacturer. If stored on-site, covered storage will be provided. The contents of any partially used bags of fertilizers will be transferred to a sealable container to avoid spills.

Paints: All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturers' instructions or State or local regulations.

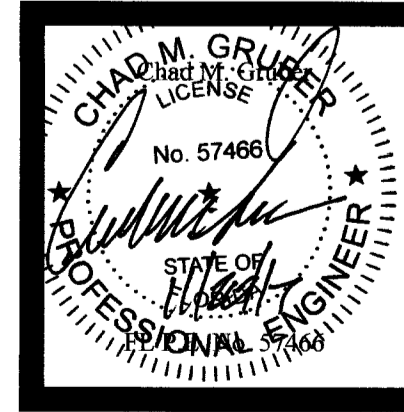
Offsite Vehicle Tracking: A stabilized construction entrance will be provided to reduce vehicle tracking of sediments. Dump trucks hauling material from the construction site will be covered with a tarpaulin, as required by State law.

REVIEWED
As submitted, 11/04/2017
TOWN OF PALM BEACH, Public Works Department
Craig A. Huachler, P.E., Engineering Plans Review

OFFICE COPY
SUBJECT TO COMPLIANCE WITH
ALL CODES AND ORDINANCES
IN EFFECT IN THE TOWN OF
PALM BEACH, FLORIDA

- EROSION CONTROL MEASURES AS REQUIRED PER THE ATTACHED APPROVED DEMOLITION PLAN SHALL BE IMPLEMENTED PRIOR TO THE COMMENCEMENT OF DEMOLITION ACTIVITIES.
- EROSION CONTROL MEASURES SHALL BE INSPECTED AND APPROVED BY THE TOWN PRIOR TO THE COMMENCEMENT OF DEMOLITION ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING OF THE EROSION CONTROL INSPECTION.

Revisions	
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Sheet No.
EC-1