

MEMORANDUM

TREPANIER



& ASSOCIATES INC
LAND USE PLANNING
DEVELOPMENT CONSULTANTS

Date: February 10, 2022
To: Mr. Kelly Crowe, P.E., City Engineer
From: Thomas Francis-Siburg
CC: Mr. Marius Venter, Property Owner
Mr. Owen Trepanier, Trepanier & Associates, Inc.
Re: **601 Truman-919 Simonton**
Final Engineering DRC Comment Re. Truman Avenue Parking Lot

Thank you for meeting with me on 12/22/21 (summarized in Exhibit A) to discuss resolutions to your DRC comments for the pending major development plan with conditional use application at 601 Truman Avenue & 919 Simonton Street. Following the meeting there was one final DRC comment from you which remained unresolved:

Comment – A parking space directly along the Truman Avenue sidewalk ROW creates a hazardous condition between cars pulling out of the parking lot and the ability to see oncoming pedestrians/ bicyclists in the sidewalk ROW. An unobstructed buffer space for visibility is needed. Requesting:

- A buffer be added between the sidewalk ROW and the adjacent parking space for visibility.
- A meeting, if needed, be scheduled between you and the project's engineer(s) to discuss determination of a buffer distance.

Applicant Response – The proposed plans created three parking spaces accessible from Truman Avenue. Our traffic engineers determined, using AutoTurn Vehicular Maneuverability analysis (Exhibit B) that the design as proposed would function safely and effectively. However, following the receipt of the above comment, we asked our engineer to design a buffer to address the DRC Comment. The unfortunate effect is that in order to incorporate the direction in the DRC comment, one parking space will be lost.

The attached plans depict our engineers' analysis and revisions to eliminate one parking space and provide a buffer as described above (Exhibit C). The inclusion of the buffer impacts the associated variance request by the loss of one parking space.

Thomas Francis-Siburg

From: Thomas Francis-Siburg
Sent: Tuesday, January 4, 2022 9:38 AM
To: Kelly M. Crowe
Cc: Owen Trepanier; Seth Neal - sethneal@tsnarchitects.com (sethneal@tsnarchitects.com); Brandon O'Flynn; Karl@traftech.biz; Keith Oropeza
Subject: 601 Truman - Summary of Parking Space Concern

Good morning, Kelly,

First, thank you for all the input, flexibility, and time you have provided in meeting with us and reviewing plans to make the proposed project at 601 Truman Ave (the former "Moped Hospital") successful.

This is a quick summary of our discussions about 601 Truman Ave from the week prior to the holidays. Please correct me if I misstate any of what you have asked of us or of your perspectives.

The remaining concern you have of the drawn plans is regarding visibility, specifically the visibility of a car leaving the parking lot of Truman Ave and not being able to see a bicyclist riding on the sidewalk due to another car parked in a parking spot right along the lot line. Although we believe the parked car along the lot line will be safe, you believe some sort of a visibility buffer is needed for safety. Adding a visibility buffer will require us to lose a parking space and need more variance(s) to parking as required by code.

You have asked us to go through an exercise of analyzing how much of a buffer is needed to allow for visibility of a car pulling out of the parking lot to be able to see a bicyclist riding down the sidewalk at roughly 10-15 mph. You assume that approx. a 4-ft buffer may be needed between the lot line and a parking space, but are asking us to confirm this.

Please let me know if anything you shared is misstated.

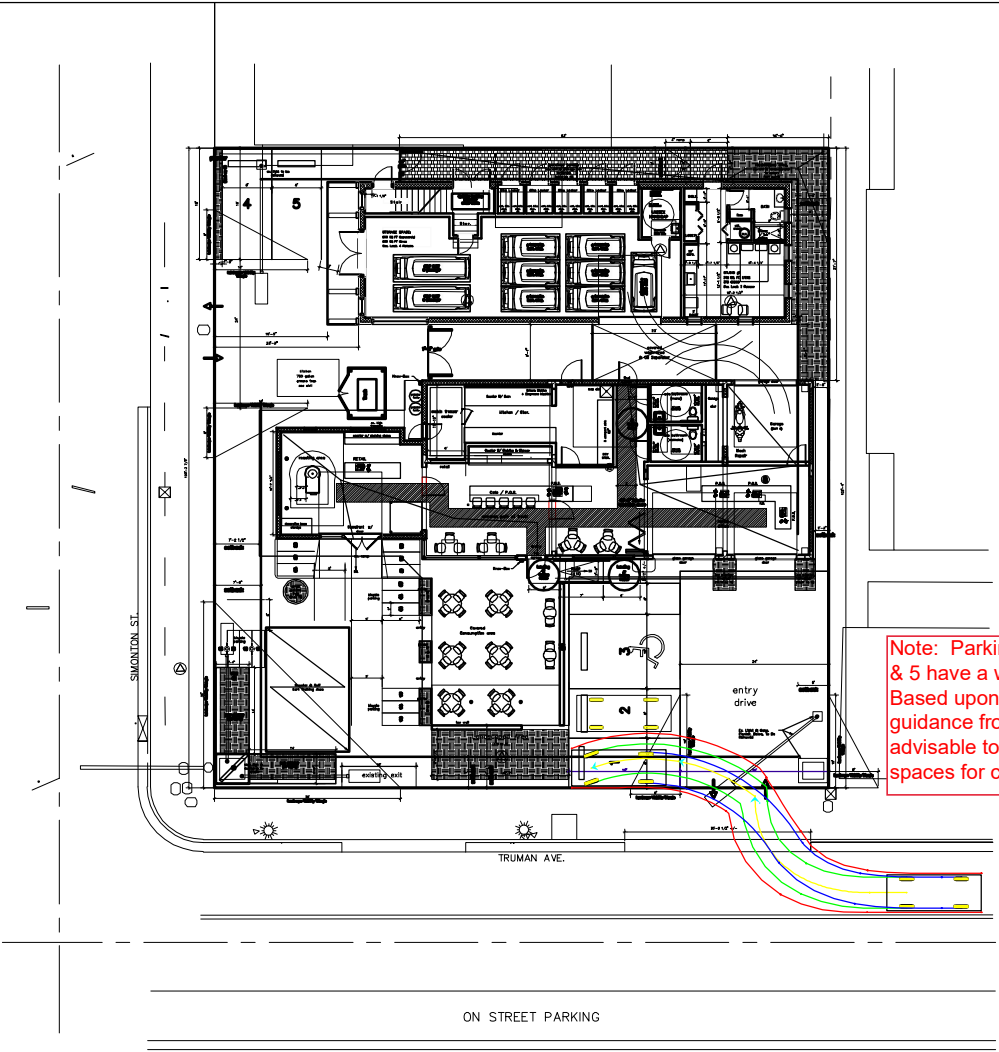
I greatly appreciate your support.

Best regards,
Thomas

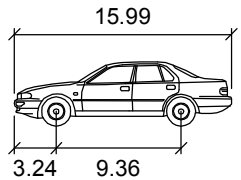
Thomas Francis-Siburg, MSW, MURP, AICP
Planner / Development Specialist

Trepanier & Associates, Inc.
Land Planners & Development Consultants
1421 First Street
Key West, FL 33040-3648
Ph. 305-293-8983 / Fx. 305-293-8748
www.owentrepanier.com

Exhibit B



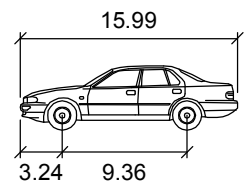
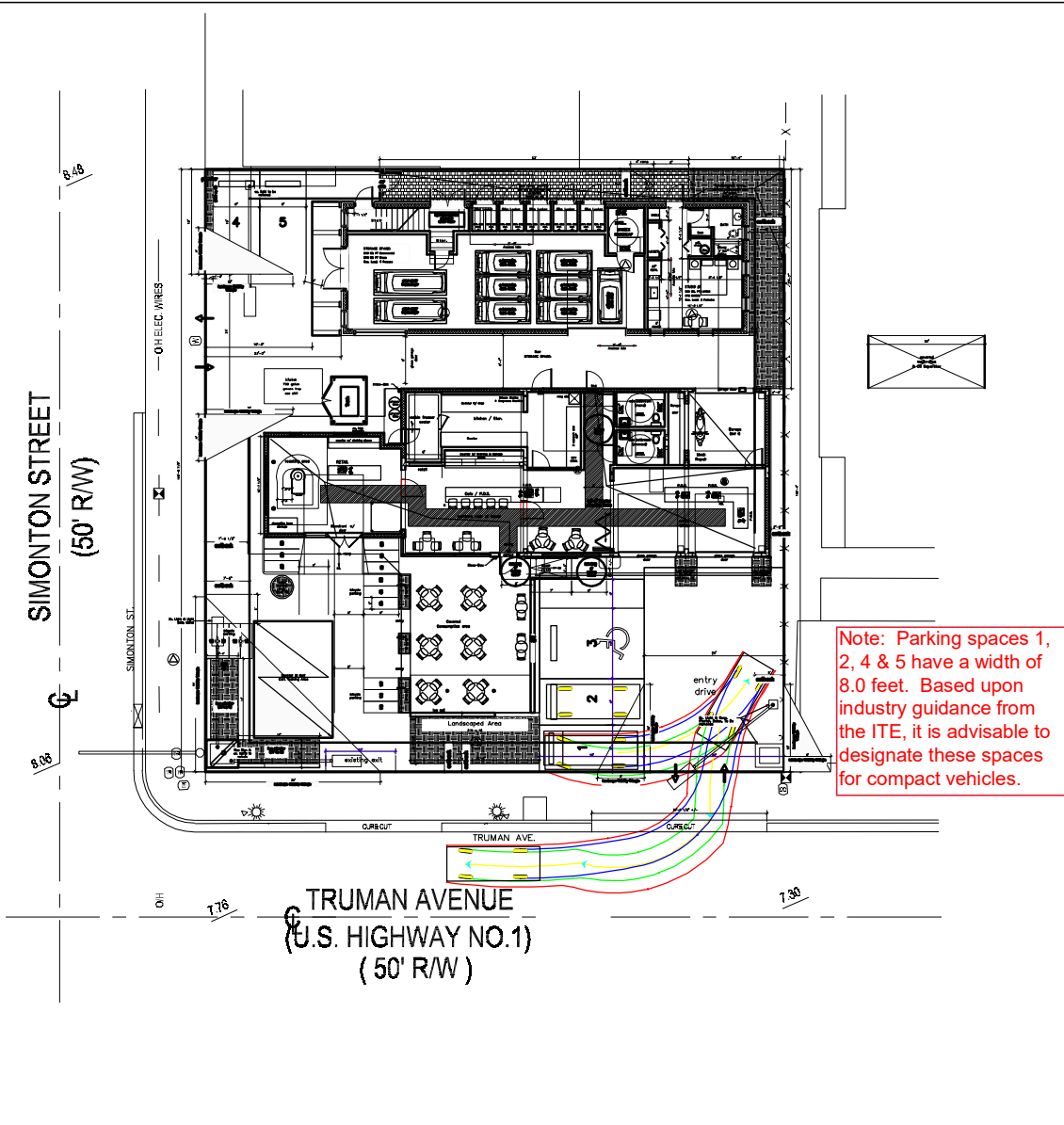
Note: Parking spaces 1, 2, 4 & 5 have a width of 8.0 feet. Based upon industry guidance from the ITE, it is advisable to designate these spaces for compact vehicles.



CHEVY MALIBU feet

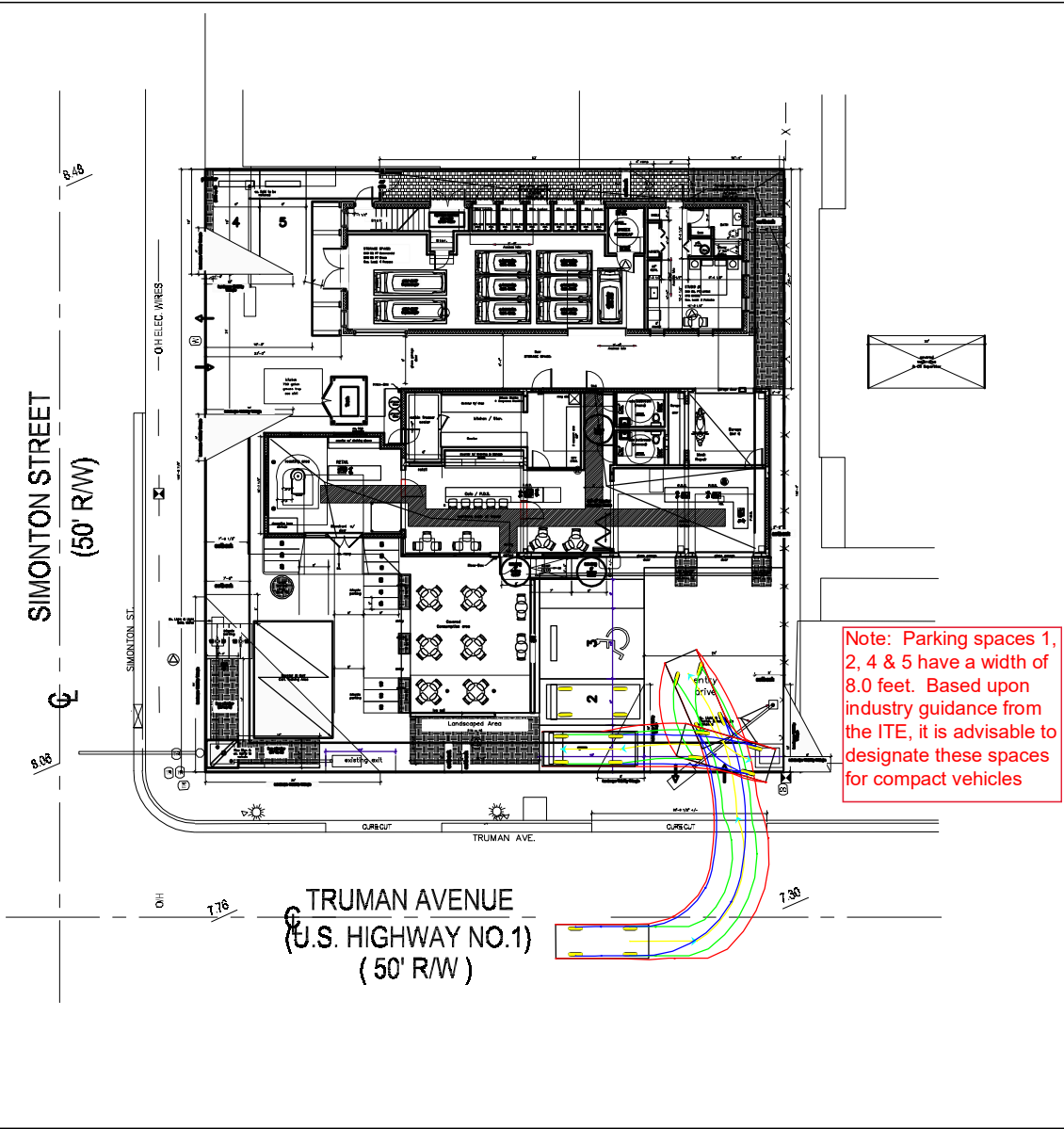
- Width : 5.86
- Track : 5.00
- Lock to Lock Time : 6.00
- Steering Angle : 32.20

Exhibit B

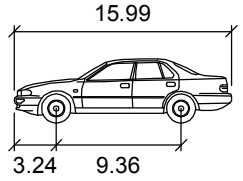


| CHEVY MALIBU feet | |
|-------------------|---------|
| Width | : 5.86 |
| Track | : 5.00 |
| Lock to Lock Time | : 6.00 |
| Steering Angle | : 32.20 |

Exhibit B

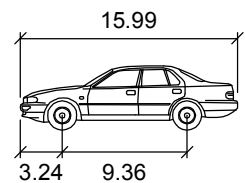
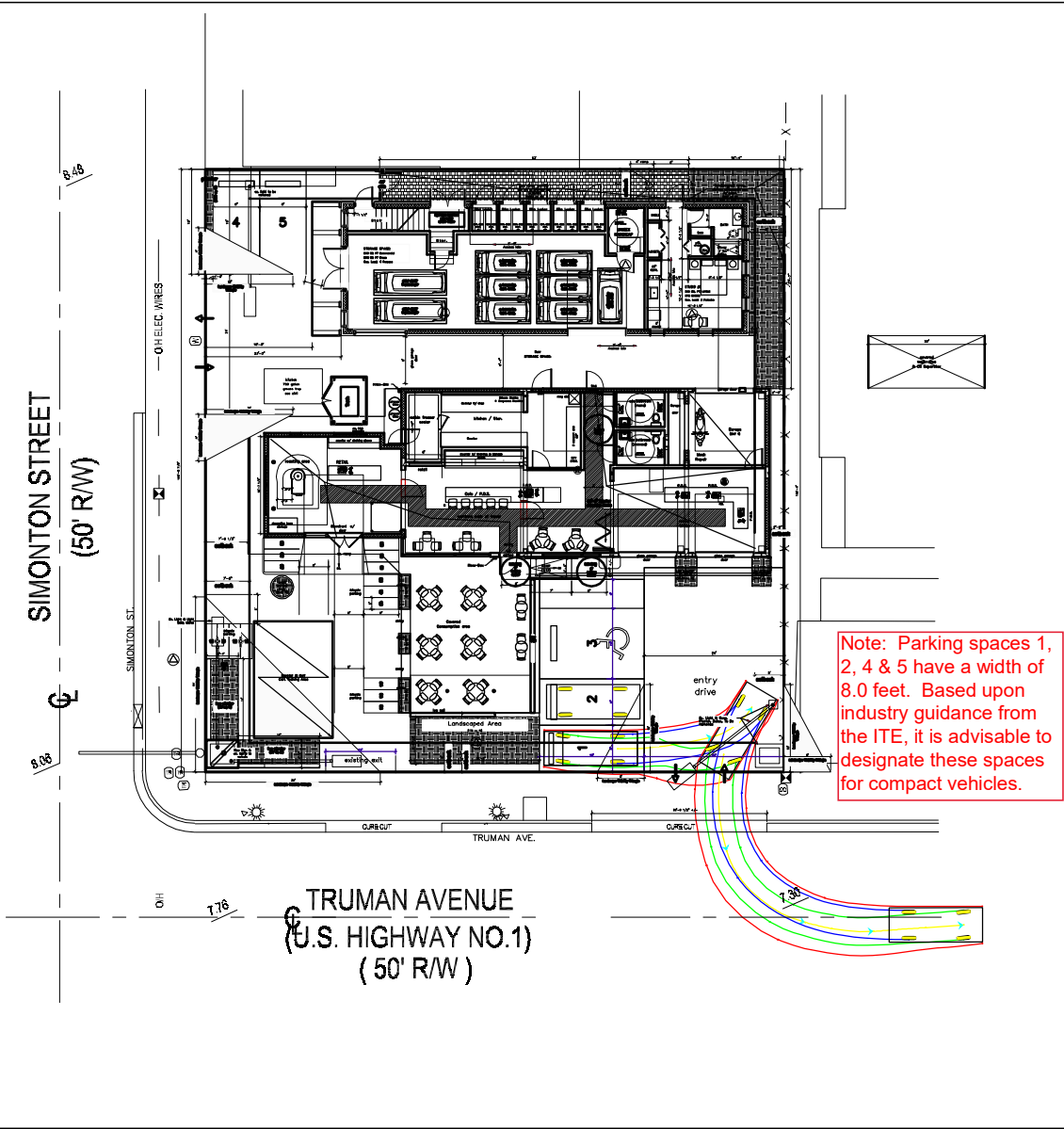


Note: Parking spaces 1, 2, 4 & 5 have a width of 8.0 feet. Based upon industry guidance from the ITE, it is advisable to designate these spaces for compact vehicles

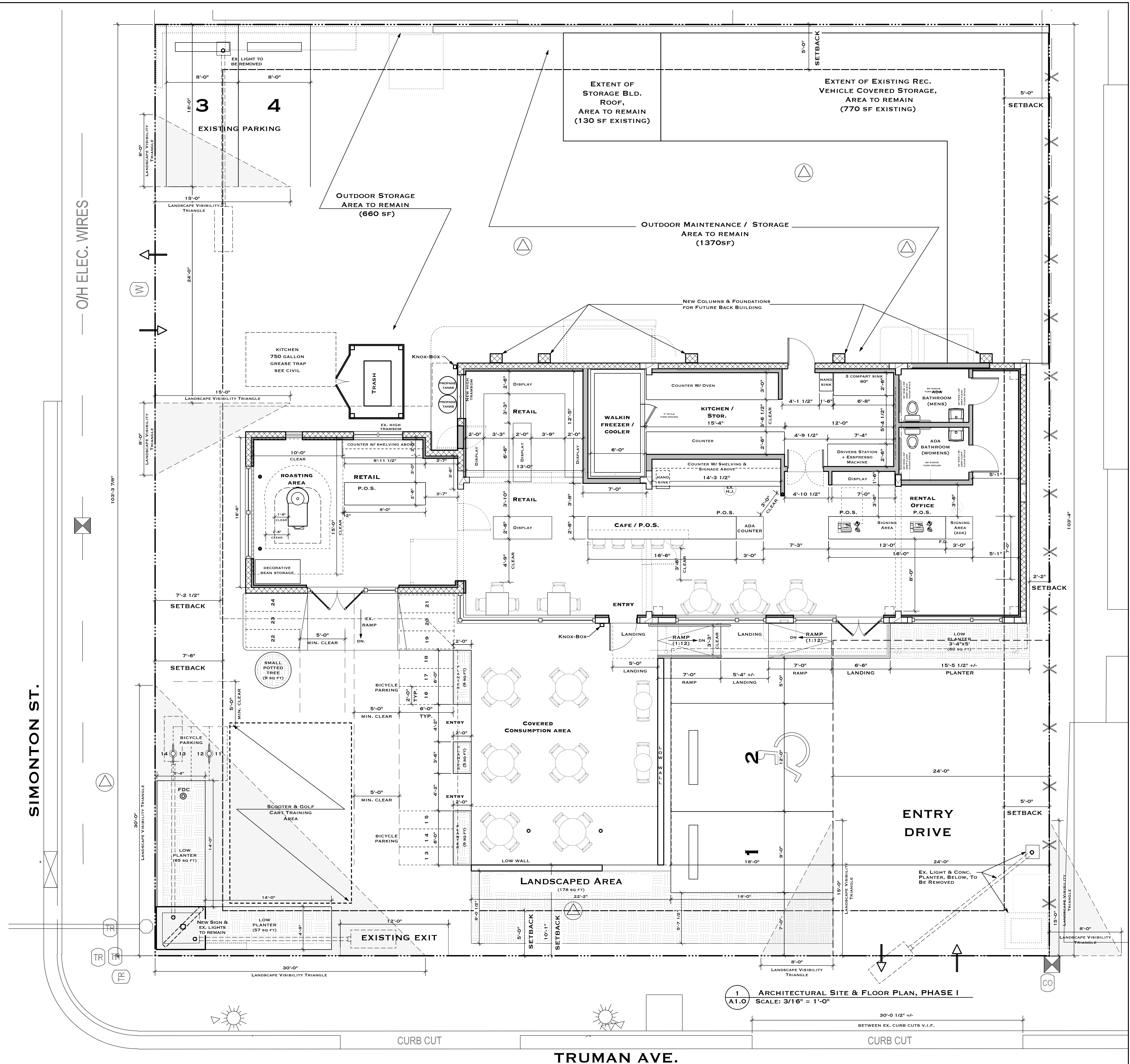


| CHEVY MALIBU feet | |
|-------------------|---------|
| Width | : 5.86 |
| Track | : 5.00 |
| Lock to Lock Time | : 6.00 |
| Steering Angle | : 32.20 |

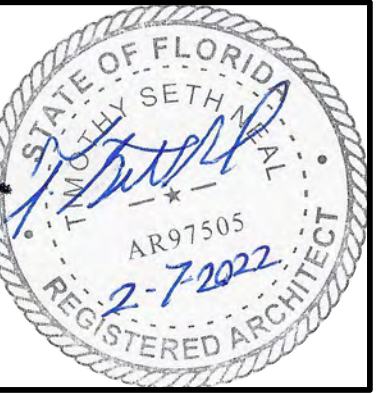
Exhibit B



| CHEVY MALIBU feet | |
|-------------------|---------|
| Width | : 5.86 |
| Track | : 5.00 |
| Lock to Lock Time | : 6.00 |
| Steering Angle | : 32.20 |



T.S. NEAL ARCHITECTS INC.
 22974 OVERSEAS HWY
 CUDJOE KEY, FL 33042
 305-340-8857
 251-422-9547



PRELIMINARY DESIGN ONLY NOT FOR CONSTRUCTION

A RENOVATION FOR 601 TRUMAN AVE. KEY WEST, FL 33040

DRAWING TITLE:
 ARCHITECTURAL SITE PLAN & FLOOR PLAN, PHASE I

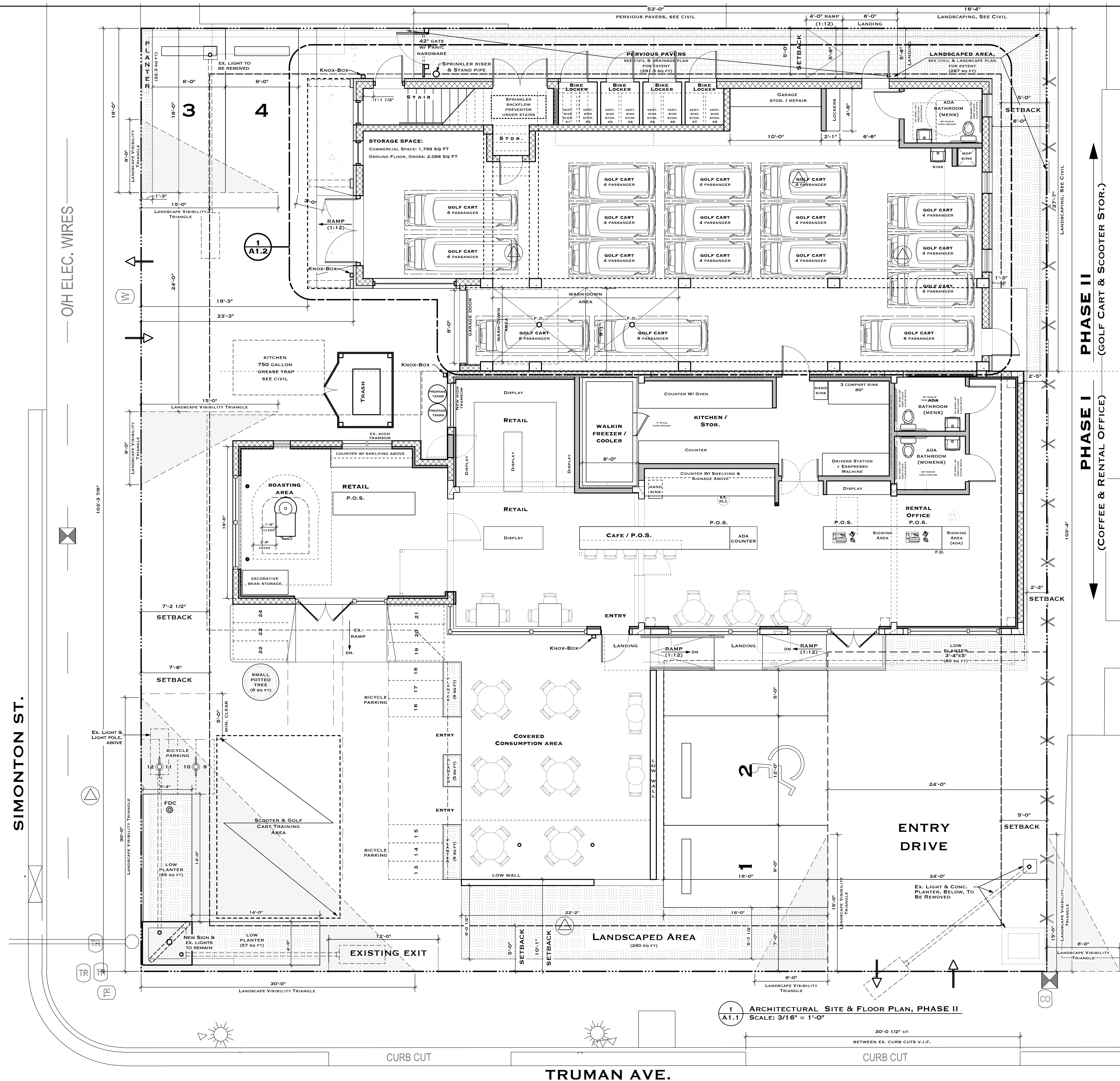
DRAWN: EDSA-TSN
CHECKED: -
DATE: 11-05-2021

| REVISION # | DATE |
|-------------|------|
| A1.0 | |

SHEET #

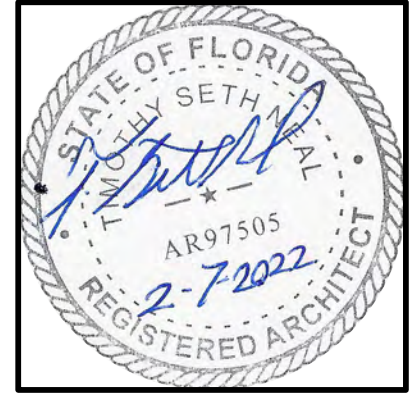
T.S.N.
 T. S. NEAL ARCHITECTS, INC.

1 ARCHITECTURAL SITE & FLOOR PLAN, PHASE I
 SCALE: 3/16" = 1'-0"



1 ARCHITECTURAL SITE & FLOOR PLAN, PHASE II
 A1.1 SCALE: 3/16" = 1'-0"

T.S. NEAL ARCHITECTS INC.
 22974 OVERSEAS HWY
 CUDJOE KEY, FL
 33042
 305-340-8857
 251-422-9547



PRELIMINARY
 DESIGN ONLY
 NOT FOR
 CONSTRUCTION

A RENOVATION FOR
 601 TRUMAN AVE.
 KEY WEST, FL 33040

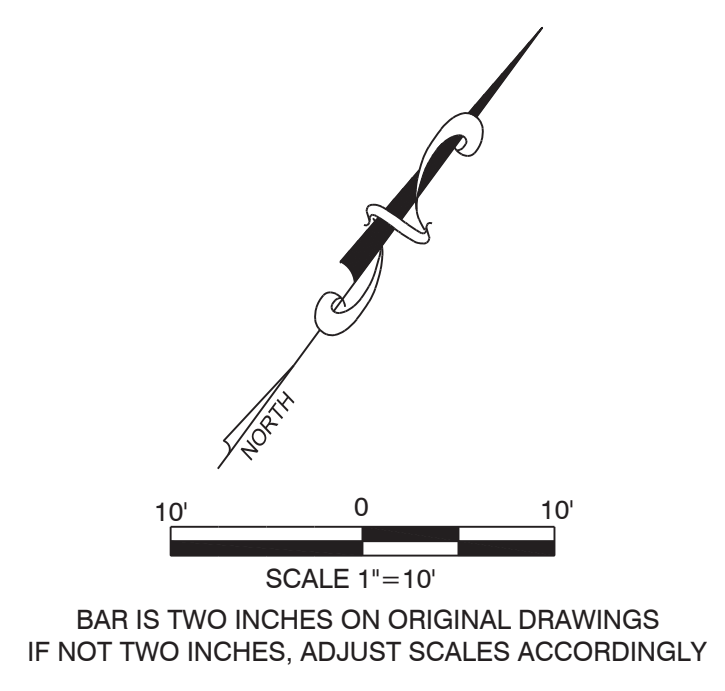
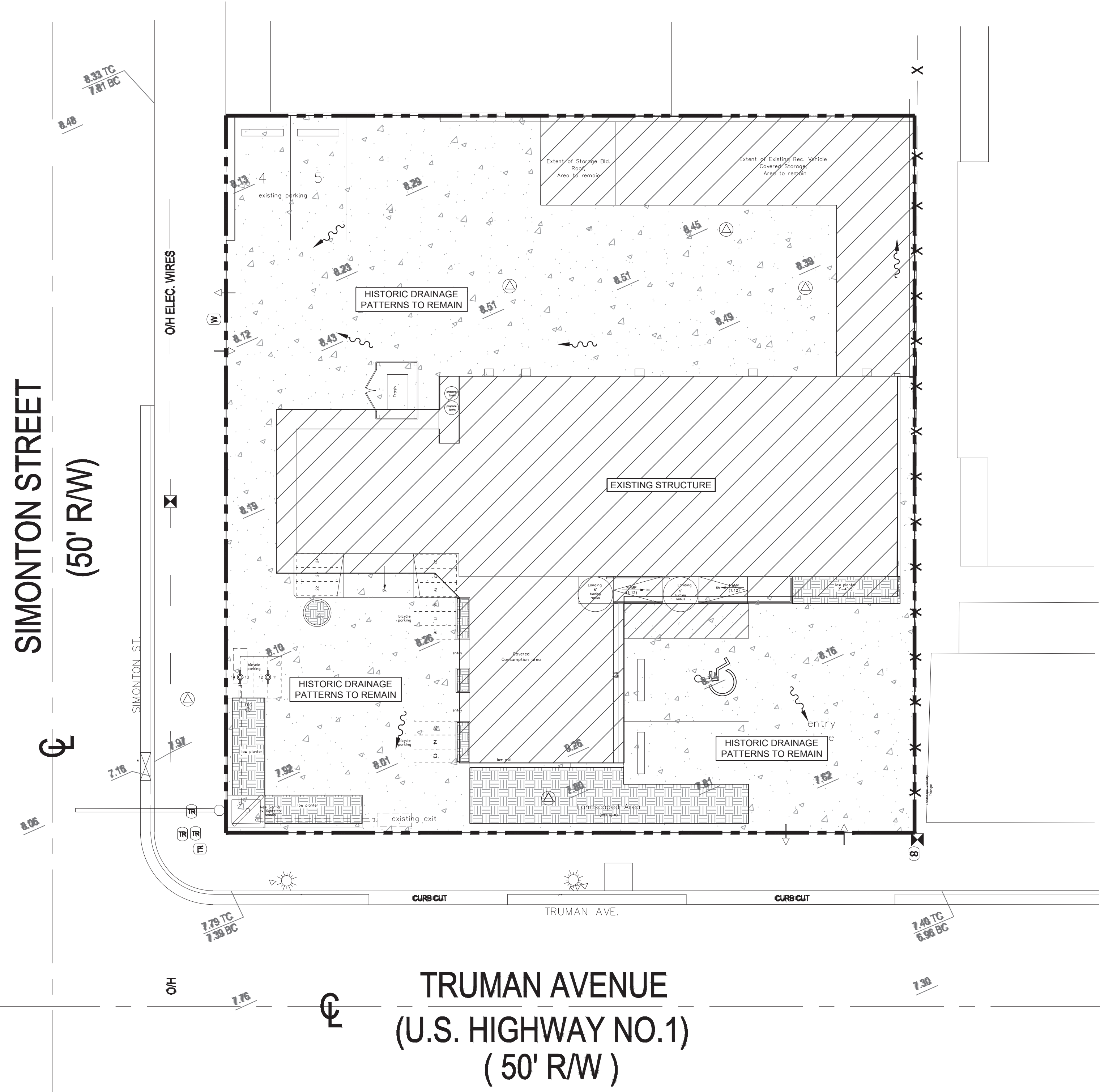
DRAWING TITLE:
 ARCHITECTURAL SITE PLAN
 & FLOOR PLAN, PHASE II

DRAWN: EDSA-TSN
 CHECKED: -
 DATE: 11-05-2021

| REVISION # | DATE |
|-------------|------|
| A1.1 | |

SHEET #

T S N
 T. S. NEAL ARCHITECTS, INC.



LEGEND

- PROJECT LIMITS
- ROOF AREA
- CONCRETE
- DRY DETENTION AREA
- EXISTING GRADE
- PROPOSED GRADE
- STORMWATER PIPE
- STORMWATER BASIN (NYLOPLAST)
- STORMWATER INLET
- STORMWATER FLOW

NOTE: SYMBOLS IN LEGEND ARE NOT TO SCALE

| Stormwater Quantity Calculations | | | |
|--|------------------------|--------------|-----------------------|
| Pre Development | | | |
| Project Area | 0.235 ac | 10,241.0 sf | |
| Pervious Area | 0.000 ac | - | |
| Impervious Area | 0.235 ac | 10,241.0 sf | |
| Percent Impervious Area | 100.0% | | |
| Information below per SFWMD ERP Vol II | | | |
| Rainfall: 25 Year / 24 Hour Event | P ₂₄ | 9.0 in | |
| Rainfall: 25 Year / 72 Hour Event | P ₇₂ | 12.0 in | |
| Depth to Water Table | | | |
| Predeveloped Available Storage | S | 4 ft | |
| Soil Storage | | 8.18 in | |
| | | 0.00 in | |
| $Q_{pre} = \frac{(P - 0.25)^2}{(P + 0.85)}$ | | | |
| | Q _{pre} | 9.00 in | 25YR/24HR |
| | Q _{pre} | 12.00 in | 25YR/72HR |
| Runoff Volume (25 year/24 hour design event) | | | |
| | V _{25yr/24hr} | 2.116 ac-in | |
| Runoff Volume (25 year/72 hour design event) | | | |
| | V _{25yr/72hr} | 2.821 ac-in | |
| Post Development | | | |
| Project Area | 0.235 ac | 10,241.0 sf | |
| Pervious Area | 0.011 ac | 458.0 sf | |
| Impervious Area | 0.225 ac | 9,783.0 sf | |
| Percent Impervious Area | 95.5% | | |
| Information below per SFWMD ERP Vol II | | | |
| Rainfall: 25 Year / 24 Hour Event | P ₂₄ | 9.0 in | |
| Rainfall: 25 Year / 72 Hour Event | P ₇₂ | 12.0 in | |
| Depth to Water Table | | | |
| Developed Available Storage | S | 4 ft | |
| Soil Storage | | 8.18 in | |
| | | 0.37 in | |
| $Q_{pre} = \frac{(P - 0.25)^2}{(P + 0.85)}$ | | | |
| | Q _{pre} | 8.58 in | 25YR/24HR |
| | Q _{pre} | 11.57 in | 25YR/72HR |
| Runoff Volume (25 year/24 hour design event) | | | |
| | V _{25yr/24hr} | 2.016 ac-in | |
| Runoff Volume (25 year/72 hour design event) | | | |
| | V _{25yr/72hr} | 2.721 ac-in | |
| Volume Difference (25 year/24 hour design event) | | | |
| Q _{post-pre} = Q _{post} - Q _{pre} | Q _{post-pre} | -0.42 in | |
| | V _{post-pre} | -0.100 ac-in | (362) ft ³ |
| Volume Difference (25 year/72 hour design event) | | | |
| Q _{post-pre} = Q _{post} - Q _{pre} | Q _{post-pre} | -0.43 in | |
| | V _{post-pre} | -0.101 ac-in | (365) ft ³ |

- NOTES:
- REDUCTION IN IMPERVIOUS AREA.
 - HISTORICAL DRAINAGE PATTERNS TO REMAIN THE SAME.



Certificate of Authorization #32187
305.768.1212
1200 Fourth Street
#575
Key West, FL 33040
brandon@oflynneng.com

REVIEW SET
NOT FOR CONSTRUCTION

BRANDON G. O'FLYNN, P.E.
FL P.E. NO. 80650

601 TRUMAN AVENUE
KEY WEST, FL 33040

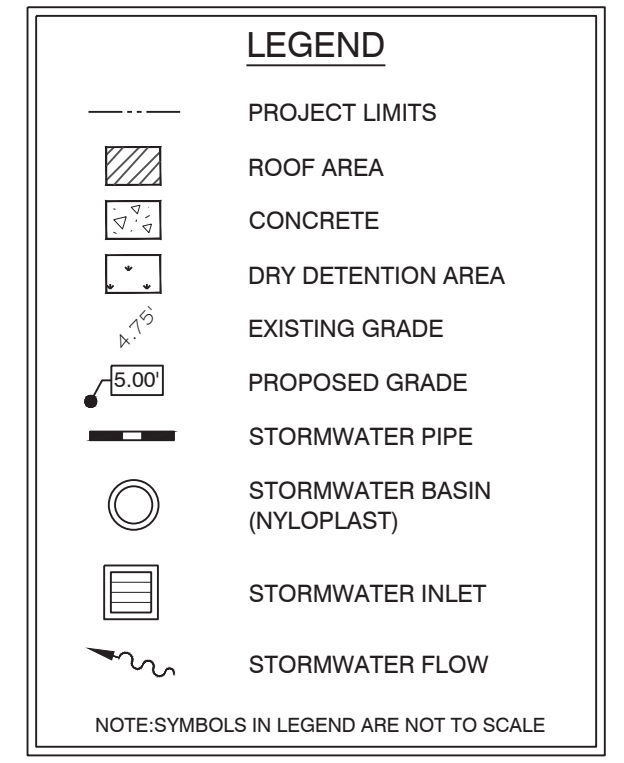
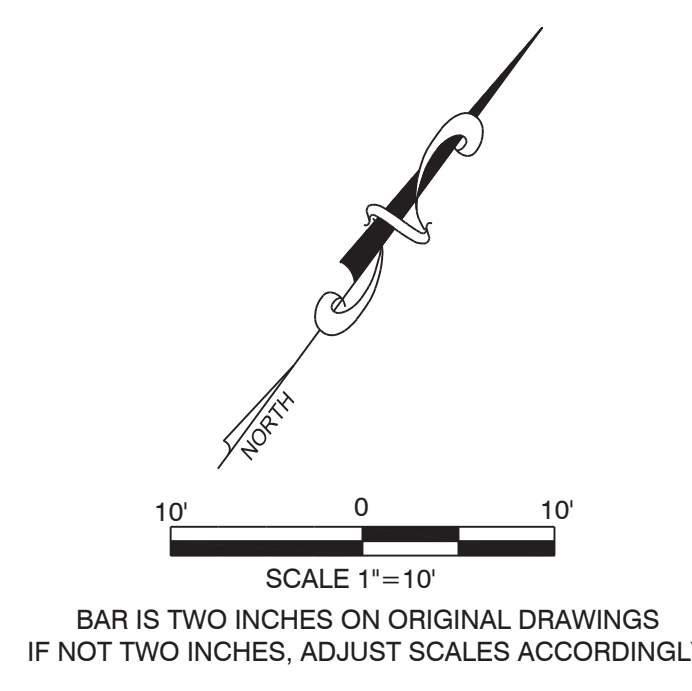
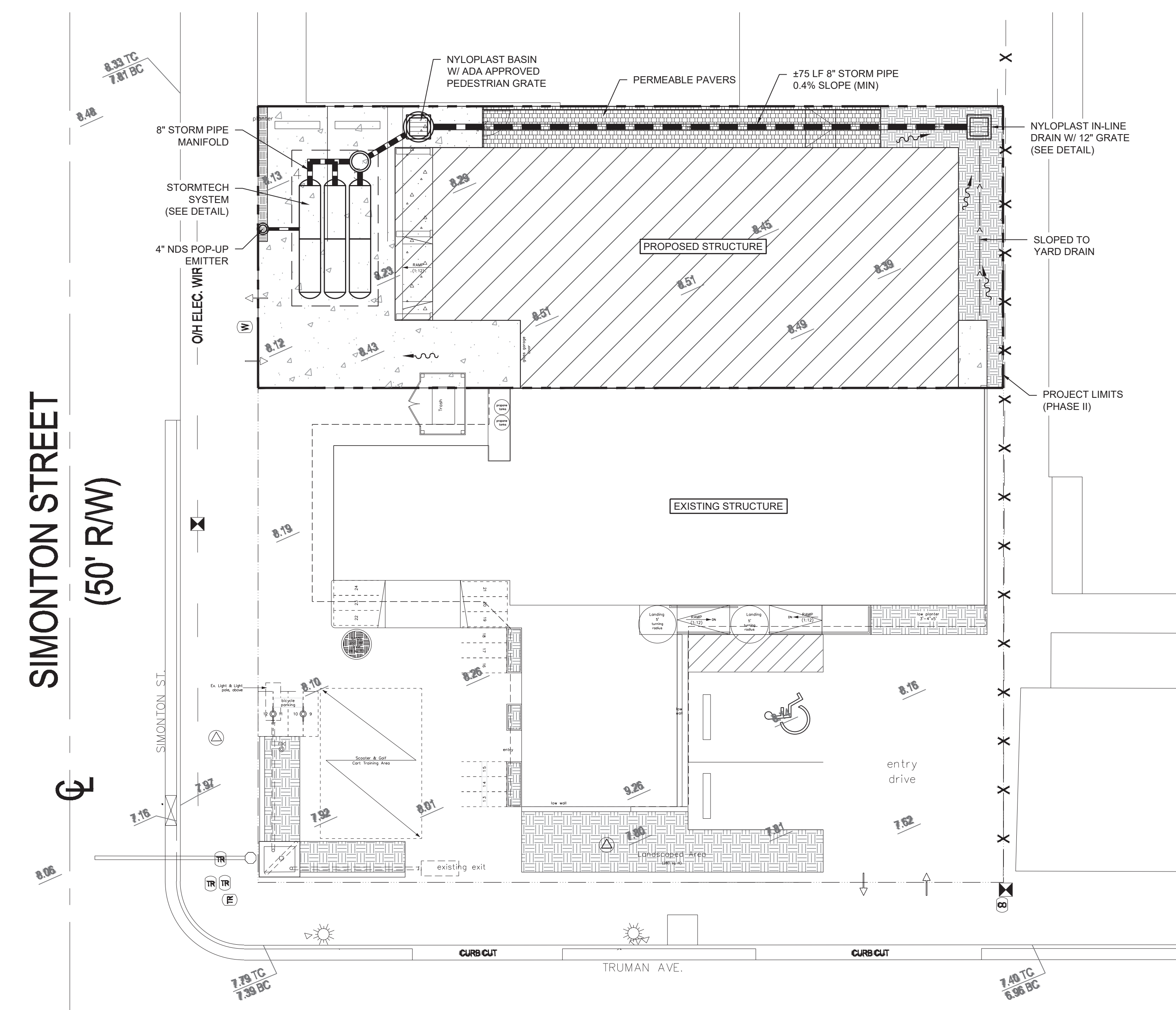
CONCEPTUAL PLAN - PHASE I

| | |
|-----------|-----|
| DRAWN: | BGO |
| DESIGNED: | BGO |
| CHECKED: | JCR |

| REVISION | DATE | DESCRIPTION |
|----------|------|-------------|
| | | |
| | | |
| | | |
| | | |

CONCEPTUAL DRAINAGE PLAN (PHASE I)

201027 1/21/2022



NOTES:
 1. DOWNSPOUTS DIRECTED INTO STORMWATER MANAGEMENT SYSTEM. PROVIDE AIR-GAP AT INTERFACE FOR EMERGENCY OVERFLOW.
 2. SEE SHEET C-3 FOR STORMTECH CHAMBER AND SYSTEM DETAILS.

| Stormwater Quantity Calculations | | | |
|--|------------------------|-------|--------------|
| Pre Development | | | |
| Project Area | 0.085 | ac | 3,719.0 |
| Pervious Area | 0.003 | ac | 136.0 |
| Impervious Area | 0.082 | ac | 3,583.0 |
| Percent Impervious Area | 96.3% | | |
| Information below per SFWMD ERP Vol II | | | |
| Rainfall: 25 Year / 24 Hour Event | P ₂₄ | 9.0 | in |
| Rainfall: 25 Year / 72 Hour Event | P ₇₂ | 12.0 | in |
| Depth to Water Table | | 4 | ft |
| Predeveloped Available Storage | | 8.18 | in |
| Soil Storage | S | 0.30 | in |
| Q _{pre} = $\frac{(P - 0.25)^2}{(P + 0.85)}$ | Q _{pre} | 8.65 | in 25YR/24HR |
| | Q _{pre} | 11.65 | in 25YR/72HR |
| Runoff Volume (25 year/24 hour design event) | V _{25yr/24hr} | 0.739 | ac-in |
| Runoff Volume (25 year/72 hour design event) | V _{25yr/72hr} | 0.994 | ac-in |

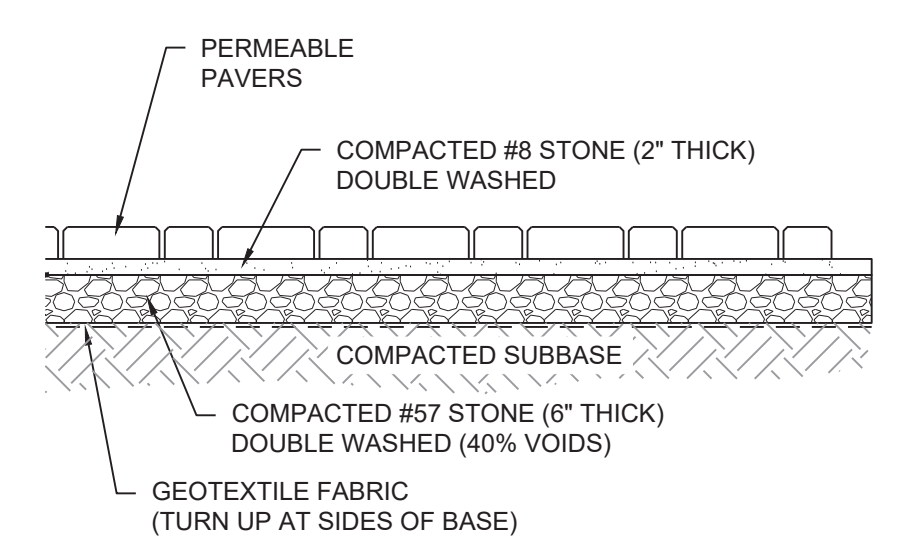
| | | | |
|--|------------------------|-------|--------------|
| Post Development | | | |
| Project Area | 0.085 | ac | 3,719.0 |
| Pervious Area | 0.013 | ac | 559.0 |
| Impervious Area | 0.073 | ac | 3,160.0 |
| Percent Impervious Area | 85.0% | | |
| Information below per SFWMD ERP Vol II | | | |
| Rainfall: 25 Year / 24 Hour Event | P ₂₄ | 9.0 | in |
| Rainfall: 25 Year / 72 Hour Event | P ₇₂ | 12.0 | in |
| Depth to Water Table | | 4 | ft |
| Developed Available Storage | | 8.18 | in |
| Soil Storage | S | 1.23 | in |
| Q _{pre} = $\frac{(P - 0.25)^2}{(P + 0.85)}$ | Q _{pre} | 7.68 | in 25YR/24HR |
| | Q _{pre} | 10.64 | in 25YR/72HR |
| Runoff Volume (25 year/24 hour design event) | V _{25yr/24hr} | 0.655 | ac-in |
| Runoff Volume (25 year/72 hour design event) | V _{25yr/72hr} | 0.908 | ac-in |

| Volume Difference (25 year/24 hour design event) | | | |
|--|-----------------------|--------|-----------------------------|
| Q _{post-pre} = Q _{post} - Q _{pre} | Q _{post-pre} | -0.97 | in |
| V _{post-pre} | V _{post-pre} | -0.083 | ac-in (302) ft ³ |

| Volume Difference (25 year/72 hour design event) | | | |
|--|-----------------------|--------|-----------------------------|
| Q _{post-pre} = Q _{post} - Q _{pre} | Q _{post-pre} | -1.01 | in |
| V _{post-pre} | V _{post-pre} | -0.086 | ac-in (312) ft ³ |

| Stormwater Quality Calculations | | | |
|---|-------|-------|-------|
| Project Area | 0.085 | ac | 3,719 |
| Surface Water | 0.000 | ac | - |
| Roof | 0.052 | ac | 2,250 |
| Other Impervious | 0.021 | ac | 910 |
| Pervious | 0.013 | ac | 559 |
| Impervious Area for Water Quality | 0.02 | ac | 910 |
| | 24% | | |
| A) One inch of Runoff over Project Area | 0.085 | ac-in | 310 |
| B) 2.5 inches x Impervious Area for Water Quality | 0.052 | ac-in | 190 |

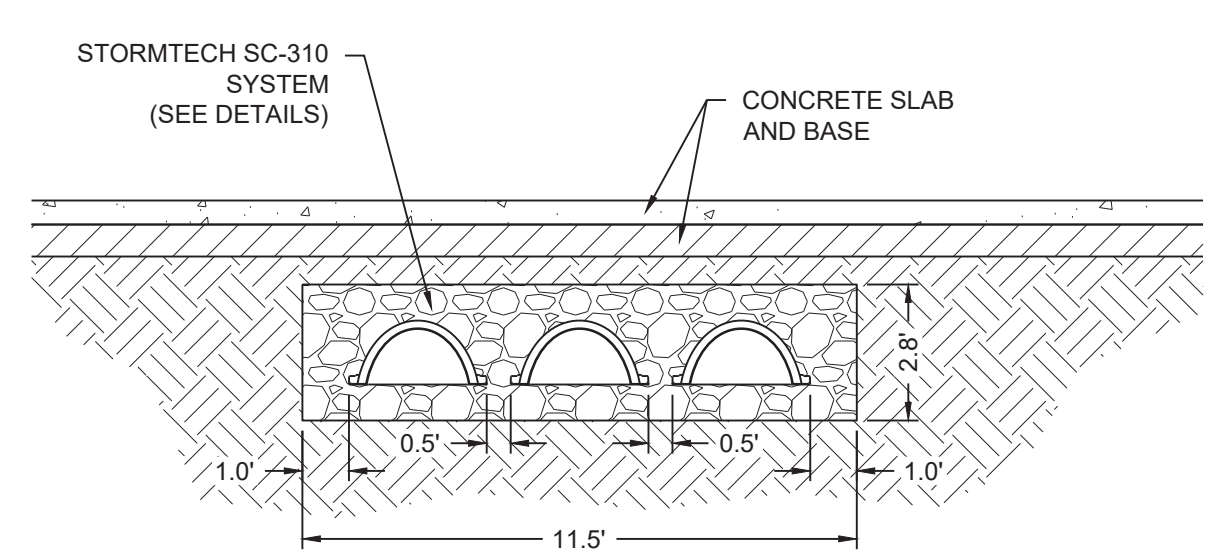
| Retention Details | | | |
|---|-------|-------|-----|
| Total Retention Required (Water Quality Controls) | 0.085 | ac-in | 310 |
| Volumes Provided | | | |
| StormTech Chamber System | 0.089 | ac-in | 323 |
| Retention Provided (Total) | 0.089 | ac-in | 323 |



| Permeable Paver Storage Calculations | |
|--------------------------------------|-----------------|
| Paver Area | 264 Square Feet |
| Stone Layer Thickness | 6 Inches |
| Storage Provided | 52.8 Cubic Feet |

PERMEABLE PAVER DETAIL

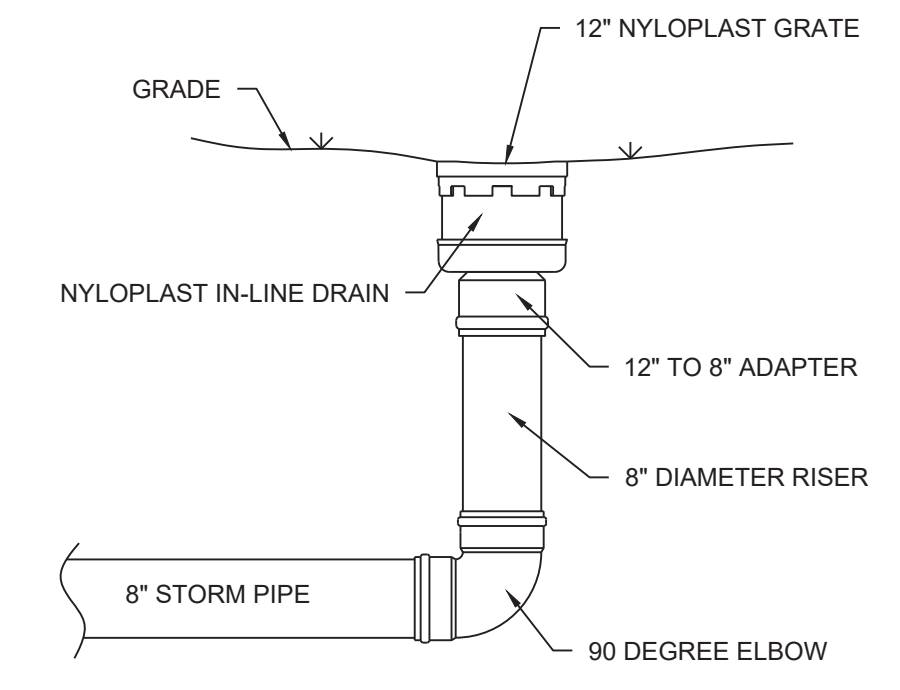
SCALE: N.T.S.



STORMTECH SYSTEM SECTION

SCALE: N.T.S.

NOTES:
 1. SEE SHEET C-3 FOR ADDITIONAL DETAILS.



IN-LINE DRAIN TYPICAL DETAIL

SCALE: N.T.S.

NOTES:
 1. PERMEABLE PAVER WATER STORAGE IS NOT INCLUDED IN STORMWATER CALCULATIONS AND IS SHOWN TO DEMONSTRATE ADDITIONAL ON-SITE STORAGE CAPACITY.



REVIEW SET
 NOT FOR CONSTRUCTION
 BRANDON G. O'FLYNN, P.E.
 FL P.E. NO. 80650

601 TRUMAN AVENUE
 KEY WEST, FL 33040

CONCEPTUAL PLAN - PHASE II

| | |
|-----------|-----|
| DRAWN: | BGO |
| DESIGNED: | BGO |
| CHECKED: | JCR |

| REVISION | DATE | DESCRIPTION |
|----------|------|-------------|
| | | |
| | | |
| | | |

CONCEPTUAL DRAINAGE PLAN (PHASE II)



STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740 OR SC-310.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418-16 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET, THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
 - STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

| System Volume and Bed Size | |
|------------------------------|-------------------|
| Installed Storage Volume: | 323.35 cubic ft. |
| Storage Volume Per Chamber: | 14.70 cubic ft. |
| Number of Chambers Required: | 6 |
| Number of End Caps Required: | 6 |
| Chamber Rows: | 3 |
| Maximum Length: | 20.75 ft. |
| Maximum Width: | 11.50 ft. |
| Approx. Bed Size Required: | 238.61 square ft. |

System Components

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4"-2" (20-50 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING. USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

NOMINAL CHAMBER SPECIFICATIONS

| SIZE (W X H X INSTALLED LENGTH) | CHAMBER STORAGE | MINIMUM INSTALLED STORAGE* | WEIGHT |
|---|--|--|---------------------|
| 34.0" X 16.0" X 85.4" (864 mm X 406 mm X 2169 mm) | 14.7 CUBIC FEET (0.42 m ³) | 31.0 CUBIC FEET (0.88 m ³) | 35.0 lbs. (16.8 kg) |

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS

| PART # | STUB | A | B | C |
|-----------------------------|--------------|----------------|---------------|--------------|
| SC310EPE06T / SC310EPE06TPC | 6" (150 mm) | 9.6" (244 mm) | 5.8" (147 mm) | --- |
| SC310EPE06B / SC310EPE06BPC | --- | --- | --- | 0.5" (13 mm) |
| SC310EPE08T / SC310EPE08TPC | 8" (200 mm) | 11.9" (302 mm) | 3.5" (89 mm) | --- |
| SC310EPE08B / SC310EPE08BPC | --- | --- | --- | 0.6" (15 mm) |
| SC310EPE10T / SC310EPE10TPC | 10" (250 mm) | 12.7" (323 mm) | 1.4" (36 mm) | --- |
| SC310EPE10B / SC310EPE10BPC | --- | --- | --- | 0.7" (18 mm) |
| SC310EPE12B | 12" (300 mm) | 13.5" (343 mm) | --- | 0.9" (23 mm) |

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL.

2

SC-310 TECHNICAL SPECIFICATIONS

1 SC-310 ISOLATOR ROW DETAIL

1

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

| MATERIAL LOCATION | DESCRIPTION | AASHTO MATERIAL CLASSIFICATIONS | COMPACTION / DENSITY REQUIREMENT |
|-------------------|---|---|--|
| D | FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER. | N/A | PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS. |
| C | INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER. | AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN). |
| B | EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE. | # 57 STONE | NO COMPACTION REQUIRED. |
| A | FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER. | AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57 | PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3} |

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

NOTES:

- SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

3

SC-310 CROSS SECTION DETAIL

REVIEW SET
NOT FOR CONSTRUCTION

BRANDON G. O'FLYNN, P.E.
FL P.E. NO. 80520

601 TRUMAN AVENUE
KEY WEST, FL 33040

DRAWN: BGO
DESIGNED: BGO
CHECKED: JCR

| REVISION | DATE | DESCRIPTION |
|----------|------|-------------|
| | | |
| | | |
| | | |
| | | |

DETAILS

201027 1/21/2022

CONCEPTUAL PLAN