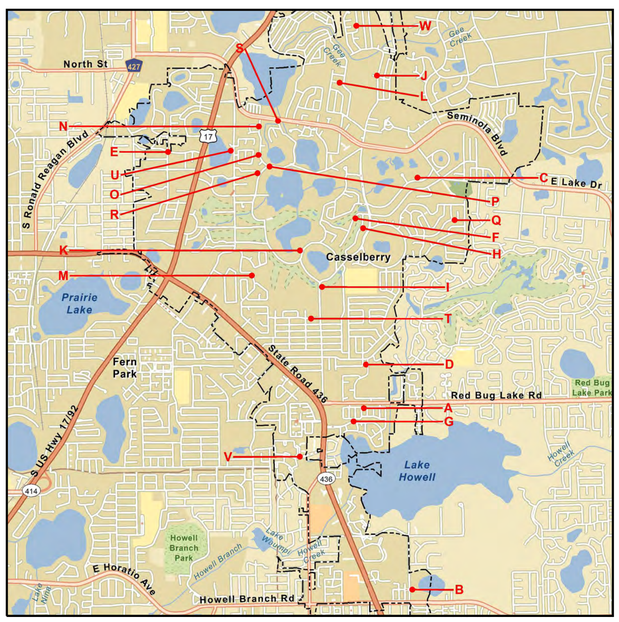
CITY OF CASSELBERRY
PUBLIC WORKS DEPARTMENT

STORM DRAIN
REHABILITATION PROJECT

PROJECT NO. PW 1501



PROJECT SITE LOCATION

MAYOR/COMMISSIONER
CHARLENE GLANCY

VICE MAYOR/COMMISSIONER
ANTHONY ARAMENDIA

COMMISSIONER
SANDRA SOLOMON

COMMISSIONER
ANDREW MEADOWS

COMMISSIONER
BILL HUFFORD

PREPARED FOR:
PUBLIC WORKS
PUBLIC WORKS DIRECTOR, MARK D. GISCLAR
DEPUTY PUBLIC WORKS DIRECTOR/CITY ENGINEER, KELLY HANS BROCK, PH.D., P.E., CFM

PREPARED BY:
SINGHOFEN & ASSOCITES, INC.
11723 Orpington Street, Suite 100
Orlando, Florida 32817
Phone: 407-679-3001 Fax: 407-679-2691

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SINGHOFEN & ASSOCIATES INCORPORATED

GENERAL NOTES:

1. All construction shall be in accordance with and conform to the most stringent requirement of the project specifications, the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2015), and supplements thereto.

2. The Contractor will have all required permits in-hand prior to beginning construction and shall perform all work in accordance with the requirements of the permits obtained by the City and those permits obtained by the Contractor.

3. The Contractor shall verify all dimensions, quantities, and details shown on the Plans, Specifications, Special Provisions, or other data received from the Engineer, and shall notify the Engineer of all errors, omissions, conflicts, or discrepancies found therein. Failure to discover or correct errors, conflicts, or discrepancies shall not relieve the Contractor of full responsibilities for unsatisfactory work, faulty construction, improper operation resulting therefrom, nor from rectifying such conditions at his own expense. He shall not take advantage of any errors or omissions.

4. At least three (3) calendar days prior to the Preconstruction Conference, the Contractor shall submit a tentative base Construction Schedule, Traffic Control Plan, Dewatering Plan, Preconstruction Survey, and Erosion Control Plan to the Engineer for approval. No work will begin prior to approval of the Construction Schedule, Traffic Control Plan, Dewatering Plan, Erosion Control Plan, and the Preconstruction Survey.

5. The Construction Progress Schedule shall utilize the critical path method (CPM) format to describe in detail how the construction is to be phased, establish start and finish dates for all significant construction activities, and identify all controlling items of work. The schedule is to be approved by the Engineer and will be updated on a monthly basis to reflect actual work progress. Payment for preparing, updating and submitting the schedule will be included in the pay item for “Mobilization”.

6. Temporary drainage shall be provided during construction to eliminate any flooding of private or public property. Any drainage problem existing before and during construction should be brought to the attention of the Engineer.

7. The Preconstruction Survey will verify the Control Points and Benchmark elevations provided by the Engineer and will also establish the location and description of all additional reference points and the locations, descriptions, and elevations of all additional benchmarks to be used in constructing the project. The survey will be signed and sealed by a Professional Surveyor and Mapper registered in the State of Florida. Significant inconsistencies between the field notes and the Control Points and Benchmark elevations provided by the Engineer will immediately be brought to the attention of the Engineer for resolution prior to beginning construction. Payment will be included in the pay item for “Mobilization”.

8. Unless noted on the plan sheets, Southeastern Surveying and Mapping, Corp. (407) 292-8580, provided the topography, benchmarks, rights-of-ways, and utility location information shown on the construction drawings. Elevations are based on North American Vertical Datum of 1988 (NAVD 1988).

9. The Contractor is responsible for preserving all property corners and monuments shown on the plans or found during construction. If a property corner or monument is destroyed or disturbed, the Contractor will have it replaced and certified by a Professional Surveyor and Mapper registered in the State of Florida. All costs for preserving, replacing and certifying property corners and monuments will be included in the pay item for “Mobilization”.

10. Any National Geodetic Survey Monument within the limits of construction must be protected. If in danger of damage, the Contractor will immediately notify the Engineer and:

    FLDEP, Bureau of Surveying and Mapping, MS 105
    3900 Commonwealth Blvd.
    Tallahassee, Florida 32399
    (850) 245-2606 (Office)
    (850) 245-2645 (Fax)

11. Unless as noted on the plan sheets, the information shown on these drawings concerning type and location of underground and other utilities is based on surveyed field information. The information may not reflect actual conditions or be all inclusive regarding all utilities in the area, either in service or abandoned, or that the utilities are in the horizontal or vertical locations shown. The Contractor will make his own determination as to the type and location of utilities as necessary to establish their locations and avoid damage. Damage to existing utilities as a result of Contractor’s work or his subcontractors shall be the sole responsibility of the Contractor to repair, pay all fines, pay all fees, and all other cost associated with restoring the utility.

12. The following utility representatives should be contracted for information concerning type and location of their facilities. The list may not include all utilities in the area.

Sunshine State One-Call of Florida	800-432-4770 (5 days notification prior to construction)
City of Casselberry	407-262-7725 ext. 1236
Brighthouse Networks	407-532-8509
Duke Energy	800-700-8744
Teco Peoples Gas	407-420-2678
Centurylink	407-830-3458

13. Prior to any scheduled interruption of utility service, the Contractor will coordinate such interruption with the utility provider and will provide a minimum 24-hour notice to the affected parties. In the case of a water main shut down, a minimum 24-hour notice will also be provided to the fire department. The Contractor will notify the electric utility a minimum of two weeks prior to construction in the vicinity of their facilities.

14. The Contractor is required to coordinate closely with the utility companies when connecting to or working around existing facilities. Protect any utilities encountered. If an existing utility must be relocated due to a conflict, notify utility company and Engineer. All coordination and scheduling of utility crossings and relocations shall be the responsibility of the Contractor.

15. The limits of construction are defined as roadway rights-of-way, drainage rights-of-way, permanent drainage easements, and temporary construction easements.

16. The Contractor shall be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, landscaping, trees, fences, utilities, structures of any kind and appurtenances during the progress of the Work.

17. All areas where sod has been removed or disturbed by Contractor’s operations shall be sodded of like kind. Payment included in unit price for Performance Turf (Sod).

18. All existing drainage structures and pipes, pavement, sidewalks, curbs, etc. within the limits of construction shall remain, unless otherwise noted on the drawings or directed by the Engineer. All drainage structures, pipes, pavement, sidewalks, curbs, etc,. that are damaged during construction are the responsibility of the Contractor and shall be repaired or replaced with the same type and material at no additional cost to the Owner or Engineer.

19. Existing pavement, driveways, and sidewalks shall be saw-cut as required for construction.

20. The disposal of excess earthwork materials shall be the responsibility of the Contractor. All excess material is the property of the Contractor.

21. No trenches shall be allowed to remain open overnight.

22. No burning shall be done except upon approval by the Jurisdictional Municipality.

23. Disturbed areas shall be compacted (as a minimum) equal to adjacent undisturbed ground except when otherwise specified for bedding, backfill, or roadway embankment. All disturbed areas are to be sodded except for areas that are landscaped or paved.

24. All joints of concrete pipe culverts and storm sewers shall have a filter fabric jacket as detailed in Standard Index 280.

25. All existing trees located within right-of-way shall be protected. If impacts to existing trees are unavoidable, Contractor shall relocate or replace existing trees as directed by City representative.

26. All existing fences that are removed are to be replaced or relocated. All fences damaged by construction activities are to be replaced of the same type and material.

27. All utilities are to be adjusted or relocated by others, unless noted otherwise on the drawings or directed by the Engineer.

28. Contractor shall verify all pipe diameters designated for CIPP prior to shop drawing submittals.

29. Locations that did not include surveyed information are based off aerials and GIS information. Actual field locations, dimensions, and pipe sizes and materials may not be accurately reflected in the drawings and it is the responsibility of the Contractor to verify field conditions prior to beginning any work.

GENERAL PAY ITEM NOTES:

1. No separate payment will be made for dewatering. The costs for dewatering are included in the unit prices for pipe and concrete.

2. No separate payment will be made for geotextile fabric or filter fabric. The costs for these items shall be included in the unit prices for pipe.

3. The Contractor’s bid shall be comprehensive and include all labor, materials and equipment including items not found in the summary of pay items but necessary to complete the project.

STORMWATER PAY ITEM NOTES:

101-1: MOBILIZATION
The lump sum price also shall include costs for preparation of an approved Construction Progress Schedule, Erosion Control Plan, Dewatering Plan, Preconstruction Survey, and As-Built drawings. Also includes costs for coordination with utility companies on conflict adjustments.

102-1: MAINTENANCE OF TRAFFIC
The lump sum price constitutes full compensation for all labor and materials required to implement the approved Traffic Control Plan to safely maintain traffic through and around the work zones for the duration of the project, including warning and regulatory signs, drums, barricades, warning lights, flaggers, and for the maintenance of existing driveways, temporary pavement, and removal and reinstallation of existing signs in conflict with construction as directed by the Engineer. No adjustments will be made to the contract price for increases in contract time.

104: PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION
The lump sum price shall include all costs for furnishing, installing, and maintaining synthetic baled hay, staked silt fence, barricade fences, soil tracking devices, sedimentation barriers, and street cleaning. Also, includes costs for removal and disposal of captured sediment, removal and disposal sediment off-site upon completion of construction (including any necessary permits and fees for disposal).

110-1-1: CLEARING AND GRUBBING
The lump sum price includes removal and disposal of drainage structures, pipes, curbs, fences, and other obstructions necessary to be removed and for which other items of the contract do not specify the removal thereof. Partial payments shall be based upon the estimated total value of clearing and grubbing work completed to the date of the estimate as determined by the Engineer. All partial estimates and payments shall be subject to correction in subsequent estimates and payment.

110-15-2: TREE PRESERVATION & REPLACEMENT
The lump sum price shall include all costs associated with protecting existing trees and landscaping. Also includes costs for relocating and/or replacing trees as required for construction operations or as directed by Engineer.

120-14: EXCAVATION, EMBANKMENT & GRADING
Payment shall constitute full compensation for grading of shoulders, slopes, compaction, final dressing, excavation, and all earthworks necessary to complete the project to the lines and grades shown on the plans.

121-70: FLOWABLE FILL
The unit price shall constitute full compensation for all labor and materials necessary for placement of flowable fill as shown in the plans.

160-4, 285-708, & 334-1-13: TYPE B STABILIZATION, OPTIONAL BASE GROUP, AND SUPERPAVE ASPHALTIC CONCRETE
The unit price shall constitute full compensation for labor and materials of furnishing, grading, stabilization of soils, and the installation of stabilized subgrade, limerock base, and superpave asphalt pavement.

400-2-1 & 400-4-2: CONCRETE
The unit price shall constitute full compensation for all work and materials necessary for placement of concrete to repair culverts and structures as shown in the plans. Payment includes concrete, forms, joints, cleaning, finishing, and curing.

425-1-541 THRU 425-5-1: INLETS AND MANHOLES
The unit price shall constitute full compensation for all work and materials necessary for the installation of the inlets and manholes. Payment includes all materials, foundation preparation, grates, covers, chains, locks, bolts, connecting existing pipes, and modification of existing inlets and manholes.

430-175-115 THRU 430-175-224: CONCRETE PIPE CULVERT
The unit price includes payment for furnishing and installing pipe, furnishing and placing select bedding and backfill, placing regular backfill, final grading, wrapping of pipe joints with filter fabric, shoring & bracing, concrete pipe collar and jacket, matching of existing inverts, and modification of existing inlets and manholes.

430-982-129 & 430-982-629: MITERED END SECTION
The unit price shall constitute full compensation for all work and materials necessary for the installation of mitered end sections. Payment includes all materials, foundation preparation, reinforcing steel, joint forming, placing, finishing, and curing.

430-94-1 & 430-94-3: DESILTING PIPE
The unit price includes payment for desilting pipe, furnishing all equipment, tools and labor, disposal of silt and debris, and all incidentals necessary to satisfactorily perform the work. Also includes breaking apart and removal of bricks and concrete debris piles.

431-1-1 THRU 431-1-4: PIPE LINER
The unit price shall constitute full compensation for all labor and materials, equipment, and incidentals required to install and test cured-in-place (CIPP) lining and appurtenances complete as shown in the plans. Also includes removal of roots and other intrusions prior to placement of CIPP.

432-3-1 THRU 433-1: CHEMICAL GROUT REPAIR
The unit price constitutes full compensation for all labor and materials necessary for the injection of non-shrink grout into all voids and joints to the limits shown in the plans. Also includes removal of roots and other intrusions prior to injection of grout.

440-1-10: UNDERDRAIN, TYPE I
The unit price shall constitute full compensation for furnishing and installing pipe, filter fabric, aggregate, sand, fittings, cleanouts, connecting to existing drainage structures, trench excavation, select bedding and backfill, and final grading. Unit price shall also include all costs to replace or repair pavement and curbs & gutters as shown in the plans and as required because of construction operations.

520-1-8: CONCRETE CURB & GUTTER, (MIAMI)
The unit price constitutes full compensation for all labor and materials necessary for placement of Miami Curb & Gutter to the locations shown on the plans. Also, includes saw-cutting existing curb & gutter, transitions to existing curb & gutter, joints, placing, finishing, and curing.

520-3: VALLEY GUTTER
The unit price constitutes full compensation for all labor and materials necessary for placement of valley gutter to the locations shown on the plans. Also, includes saw-cutting existing curb & gutter, transitions to existing curb & gutter, joints, placing, finishing, and curing.

522-1 & 522-2: CONCRETE SIDEWALK AND DRIVEWAYS
The unit price shall constitute full compensation for all labor and materials necessary for the installation of concrete sidewalk and driveways. Payment includes all materials, foundation preparation, reinforcing steel, transitions, joint forming (or sawing), placing, finishing, and curing. Also includes all cost for construction of curb ramps per FDOT Standard Index 304.

530-3-3 & 530-3-4: RUBBLE RIPRAP
The unit price constitutes full compensation for all labor and materials required to construct rubble riprap, including all materials, foundation preparation, hauling, excavation, bedding stone, geotextile fabric, and backfill to the lines and grades shown on the plans.

550-10-918: FENCING, SPECIAL, RESET EXISTING
The unit price constitutes full compensation for removing and resetting existing fencing including furnishing new fencing material of the same type that was removed or reusing undamaged fencing material that was removed.

570-1-2: PERFORMANCE TURF (SODDING) (MATCH EXISTING)
The unit price shall constitute full compensation for furnishing, delivering, protecting, and installing sod, including site preparation, removal of undesirable plant species, soil amendment, application of fertilizer, planting, and watering.

700-1: SIGNAGE & MARKING
The lump sum price shall include full compensation for replacement of all pavement striping, marking, signs, and reflective pavement markers that are in conflict with construction operations and/or as required by the City.

1050-11-224: UTILITY PIPE, PVC
The unit price includes payment for furnishing and installing pipe, furnishing and placing select bedding and backfill, placing regular backfill, final grading, wrapping of pipe joints with filter fabric, shoring & bracing, and matching of existing inverts.

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITIES	
			PLAN	FINAL
101-1	MOBILIZATION (5% OF BASE BID)	LS	1	
102-1	MAINTENANCE OF TRAFFIC	LS	1	
104	PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION	LS	1	
110-1-1	CLEARING & GRUBBING	LS	1	
110-15-2	TREE PRESERVATION & REPLACEMENT	LS	1	
120-14	EXCAVATION, EMBANKMENT, & GRADING	LS	1	
121-70	FLOWABLE FILL	CY	3	
160-4	TYPE B STABILIZATION	SY	1375	
285-708	OPTIONAL BASE,BASE GROUP 08	SY	1375	
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	TN	113	
400-2-1	CONC CLASS II, CULVERTS	CY	1	
400-4-2	CONC CLASS IV, ENDWALLS	CY	1	
425-1-541	INLETS, DT BOT, TYPE D, <10'	EA	2	
425-1-545	INLETS, DT BOT,TYPE D, PARTIAL	EA	1	
425-2-61	MANHOLES, P-8, <10'	EA	1	
425-5-1	MANHOLE, ADJUST, UTILITIES	EA	1	
430-175-115	PIPE CULV, OPT MATL, ROUND, 15"S/CD	LF	88	
430-175-118	PIPE CULV, OPT MATL, ROUND, 18"S/CD	LF	385	
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	LF	284	
430-175-224	PIPE CULV, OPT MATL, OTHER, 24"S/CD	LF	19	
430-982-129	MITERED END SECT, OPTIONAL RD, 24" CD	EA	2	
430-982-629	MITERED END SECT, OPT - OTHER, 24" CD	EA	1	
430-94-1	DESILTING PIPE, 0 - 24"	LF	200	
430-94-3	DESILTING PIPE, 37 - 48"	LF	417	
431-1-1	PIPE LINER, OPTIONAL MATERIAL, 0-24"	LF	1267	
431-1-2	PIPE LINER, OPTIONAL MATERIAL, 25-36"	LF	203	
431-1-3	PIPE LINER, OPTIONAL MATERIAL, 37-48"	LF	417	
431-1-4	PIPE LINER, OPTIONAL MATERIAL, 49-60"	LF	384	
432-3-1	CHEM GROUT REPAIR, PIPE,NON-TEST,15"	EA	8	
432-3-2	CHEM GROUT REPAIR, PIPE,NON-TEST,18"	EA	3	
432-3-4	CHEM GROUT REPAIR, PIPE,NON-TEST,24"	EA	18	
432-3-5	CHEM GROUT REPAIR, PIPE,NON-TEST,30"	EA	2	
432-3-6	CHEM GROUT REPAIR, PIPE,NON-TEST,36"	EA	7	
432-3-8	CHEM GROUT REPAIR, PIPE,NON-TEST,48"	EA	11	
433-1	CHEM GROUT REPAIR, MANHOLE / INLET	EA	4	
440-1-10	UNDERDRAIN, TYPE I	LF	7128	
520-1-8	CONCRETE CURB & GUTTER, MIAMI	LF	677	
520-3	VALLEY GUTTER- CONCRETE	LF	92	
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	SY	225	
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	SY	1309	
530-3-3	RIPRAP- RUBBLE, BANK AND SHORE	TN	437	
530-3-4	RIPRAP, RUBBLE, F&I, DITCH LINING	TN	46	
550-10-918	FENCING,SPECIAL TYP, 0.0-5.0', RESET EXI	LF	50	
570-1-2	PERFORMANCE TURF, SOD	SY	6268	
700-1	SIGNAGE & MARKINGS	LS	1	
1050-11-224	UTILITY PIPE, F&I,PVC,WATER/SEWER,8-19.9	LF	6	

N:\Casselberry\StormDrainRehab\DGN\SDR-General.dgn
11/2/2016

Revision	Date	Approved
PER CITY	4/29/16	BRW

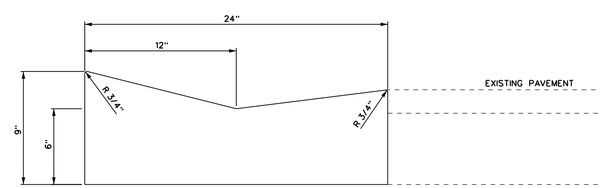
Designed by: BRW
Drawn by: BJG/ADB
Checked by: RBG
Approved by: BRW
Vertical Datum: NAVD 1988

SINGHOFEN & ASSOCIATES, INC.
STORMWATER MANAGEMENT AND CIVIL ENGINEERING
SAI
11723 Orpington Street, Suite 100
Orlando, Florida 32817
Ph: (407) 679-3001
Fax: (407) 679-2691
DBPR No. 5112

CITY OF CASSELBERRY
FLORIDA

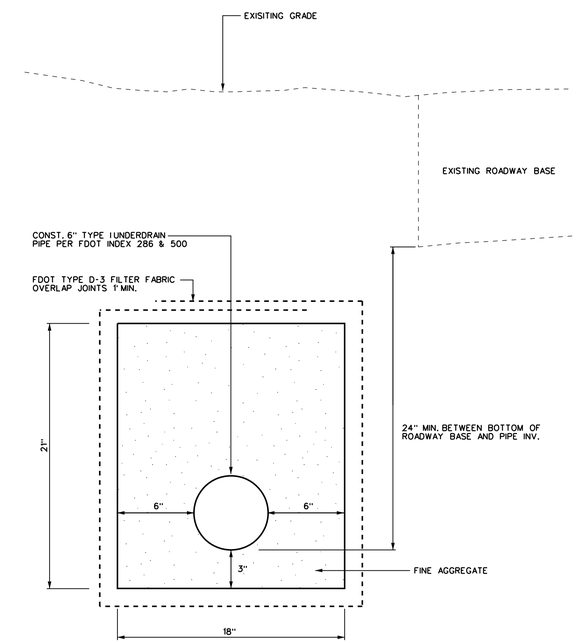
STORM DRAIN
REHABILITATION PROJECT

GENERAL NOTES & PAY ITEM NOTES



MIAMI CURB DETAIL

SCALE 1"=2'



UNDERDRAIN TYPICAL DETAIL

SCALE 1"=2'

Revision	Date	Approved
PER CITY	4/29/16	BRW

Designed by: BRW
Drawn by: BJG/ADB
Checked by: RBG
Approved by: BRW
Vertical Datum: NAVD 1988

SINGHOFEN & ASSOCIATES, INC.
STORMWATER MANAGEMENT AND CIVIL ENGINEERING
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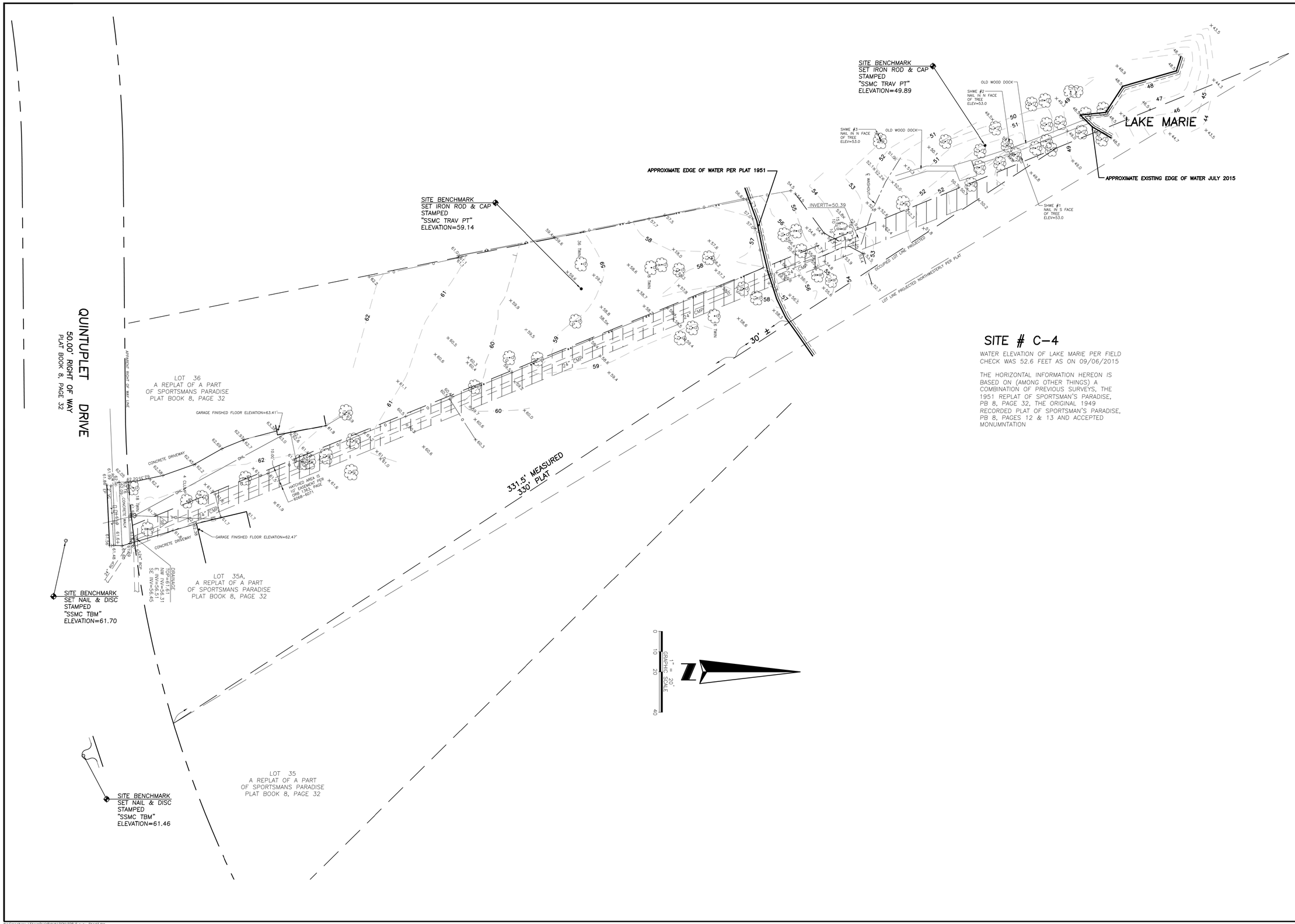
Fax: (407) 679-2691
DBPR No. 5112

CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

TYPICAL SECTIONS & DETAILS

SHEET
3
SAI Project No. 2015-006.10



SITE # C-4

WATER ELEVATION OF LAKE MARIE PER FIELD CHECK WAS 52.6 FEET AS ON 09/06/2015

THE HORIZONTAL INFORMATION HEREON IS BASED ON (AMONG OTHER THINGS) A COMBINATION OF PREVIOUS SURVEYS, THE 1951 REPLAT OF SPORTSMAN'S PARADISE, PB 8, PAGE 32, THE ORIGINAL 1949 RECORDED PLAT OF SPORTSMAN'S PARADISE, PB 8, PAGES 12 & 13 AND ACCEPTED MONUMNTATION

REVISION DATE	REVISION	BY

SHEET NUMBER 2 OF 11
NOT VALID WITHOUT SHEETS 1 & 3-11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Certificate of Authorization LB2108
e-mail info@southeasternsurveying.com

Topographic Survey

Project: City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

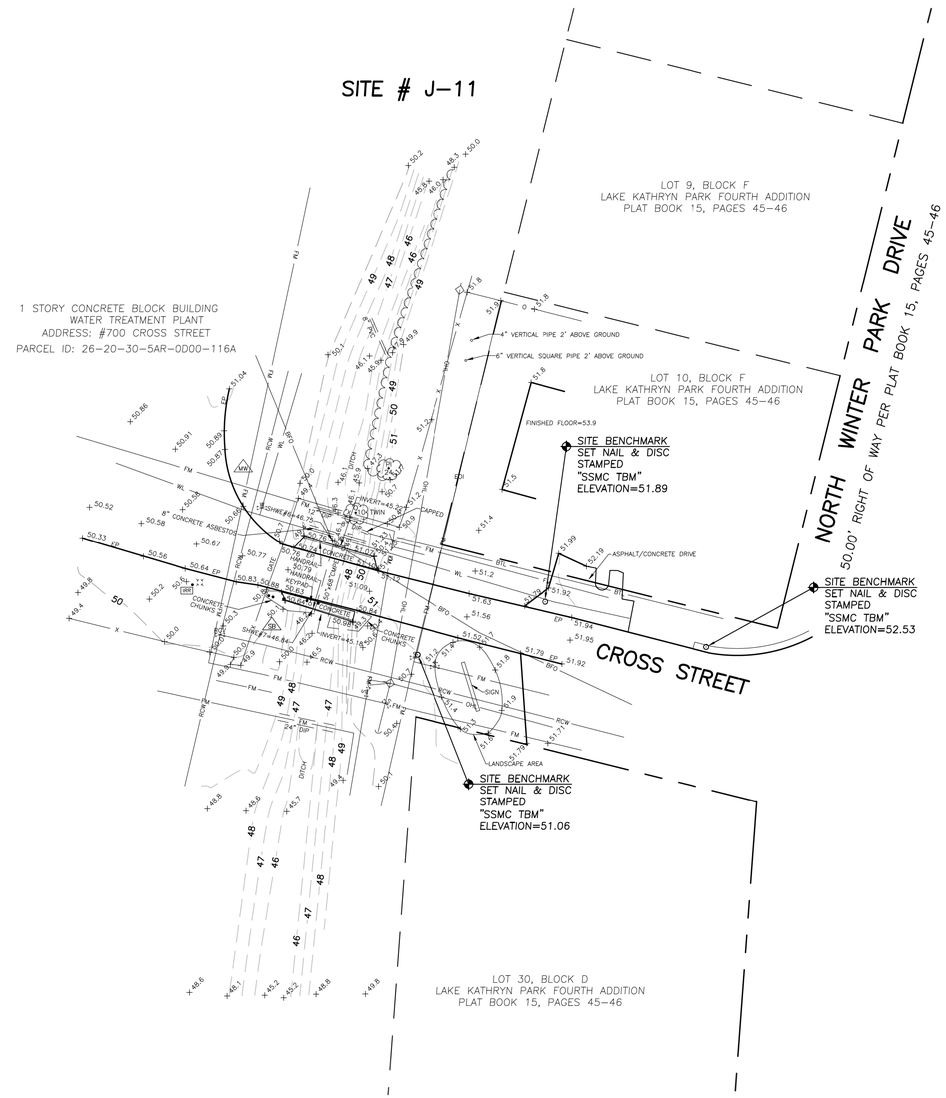
Field Date: 8/06/2015 | Drawn By: JLG | Scale: 1"=20'

SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
59295001

SHEET 4

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet1.dgn
10/27/2016



1" = 20'
GRAPHIC SCALE
0 10 20 40

REVISION DATE	REVISION	BY

SHEET NUMBER 3 OF 11
NOT VALID WITHOUT SHEETS 1-2 & 4-11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 295-8100 Certificate Number LB2108
e-mail info@southeasternsurveying.com

Topographic Survey

Project: City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

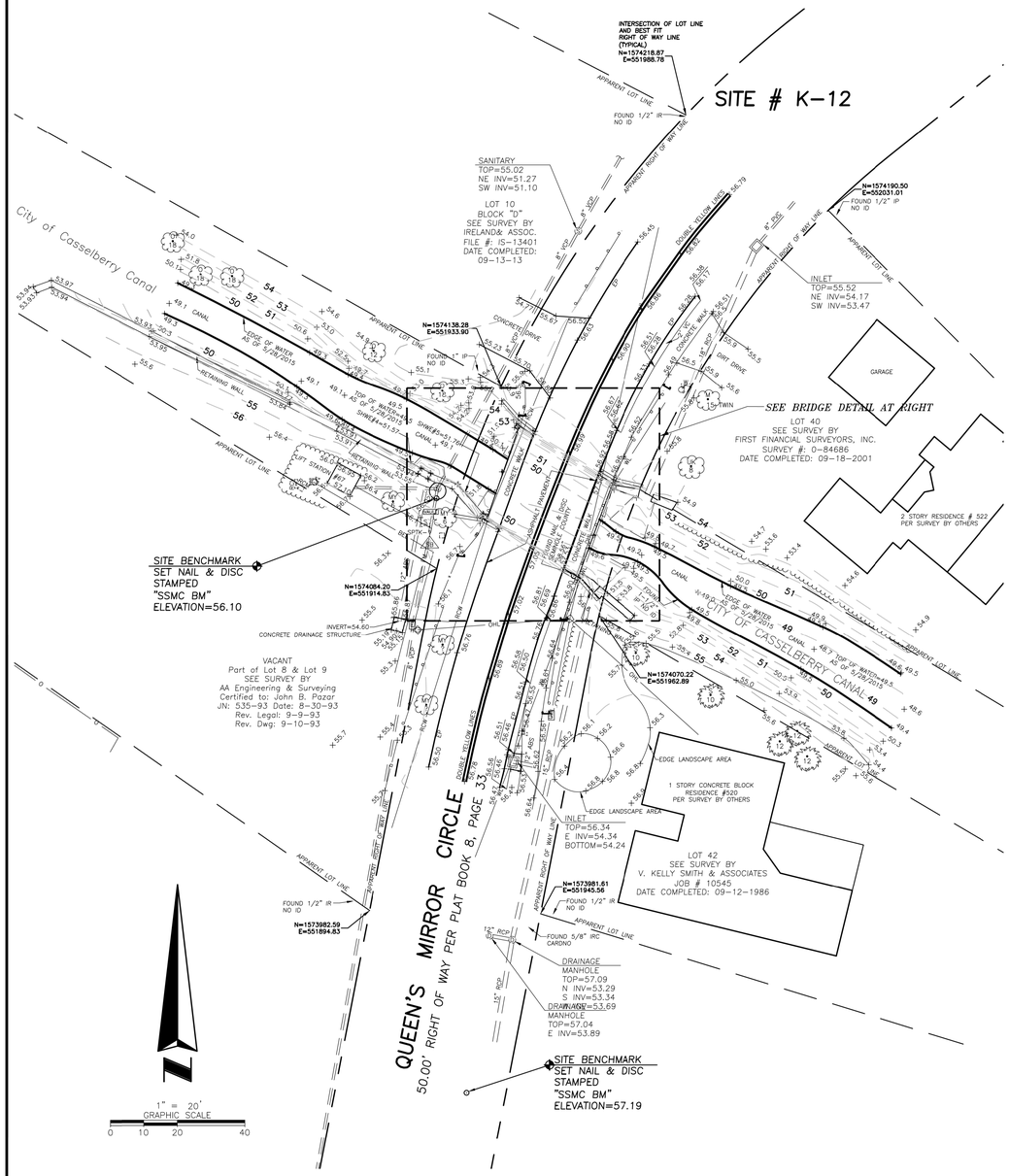
Field Date: 8/06/215 | Drawn By: JLG | Scale: 1"=20'

SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

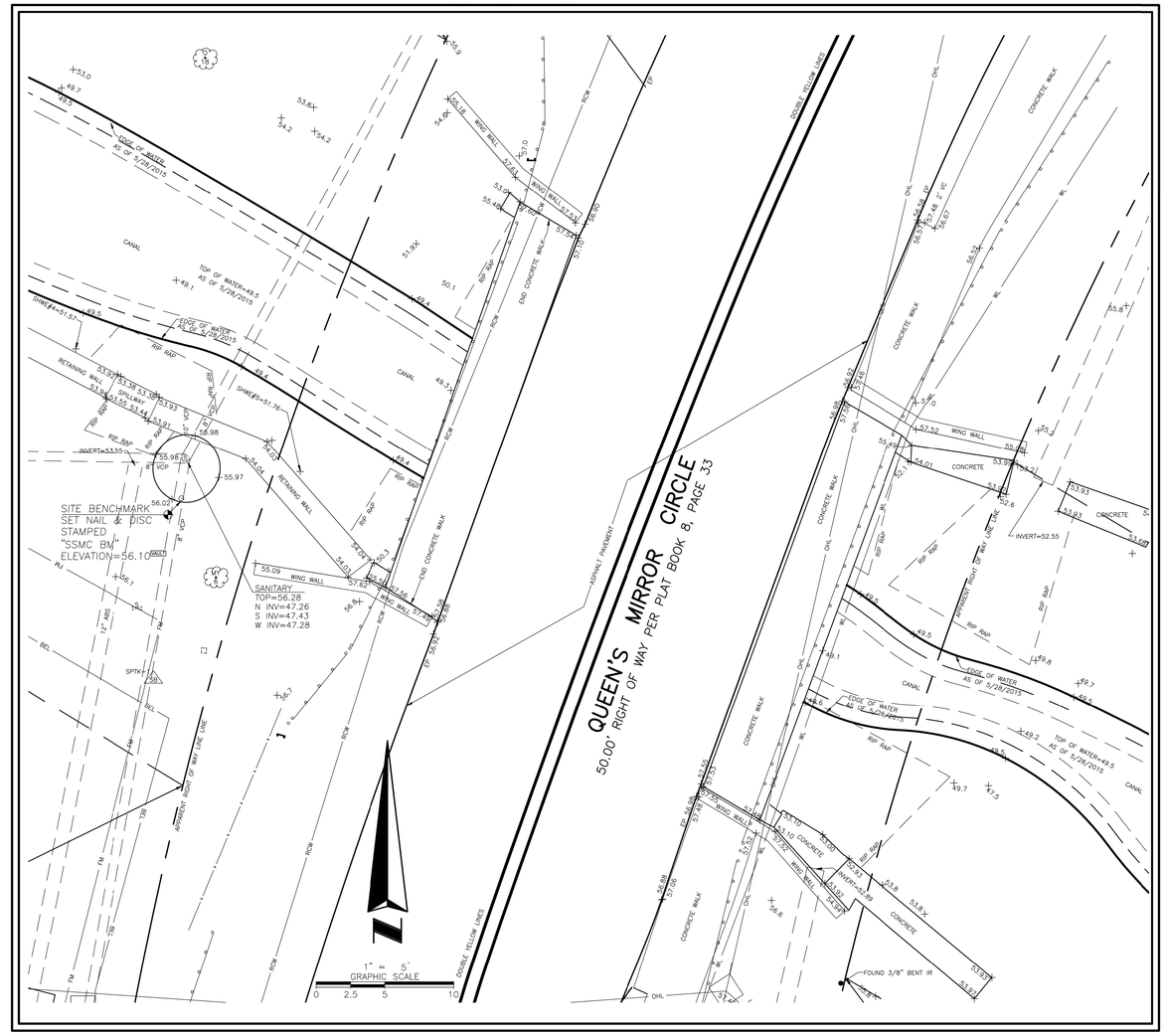
DRAWING NUMBER
59295001

SHEET 5

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet2.dgn
10/27/2016



DETAIL 1"=5'



Site K-12
Missing and ambiguous record plat data resulted over the years, in various interpretations of the lot lines and right of way lines. As a result of these inconsistencies the lot lines & right of way lines depicted hereon were derived from the individual residents' surveys performed by others and supplied to this surveyor by the residents and shown as a graphic possibility of their locations. In order to resolve any inconsistencies that could exist and in keeping in harmony with the neighboring residents, a "boundary survey" to determine the true lot line and right of way line locations would be strongly advised especially if any improvements were to be performed in the proximity of these lot lines.

REVISION DATE	REVISION	BY

SHEET NUMBER 4 OF 9
NOT VALID WITHOUT SHEETS 1-3 & 7-11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 295-1700 Certificate of Authorization LB2108
e-mail info@southeasternsurveying.com

Topographic Survey
Project: City of Casselberry
Storm Drain Rehabilitation Project (PW #501)
Field Date: 8/06/2015 | Drawn By: JLG | Scale: 1"=20'

SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
59295001

SHEET 6

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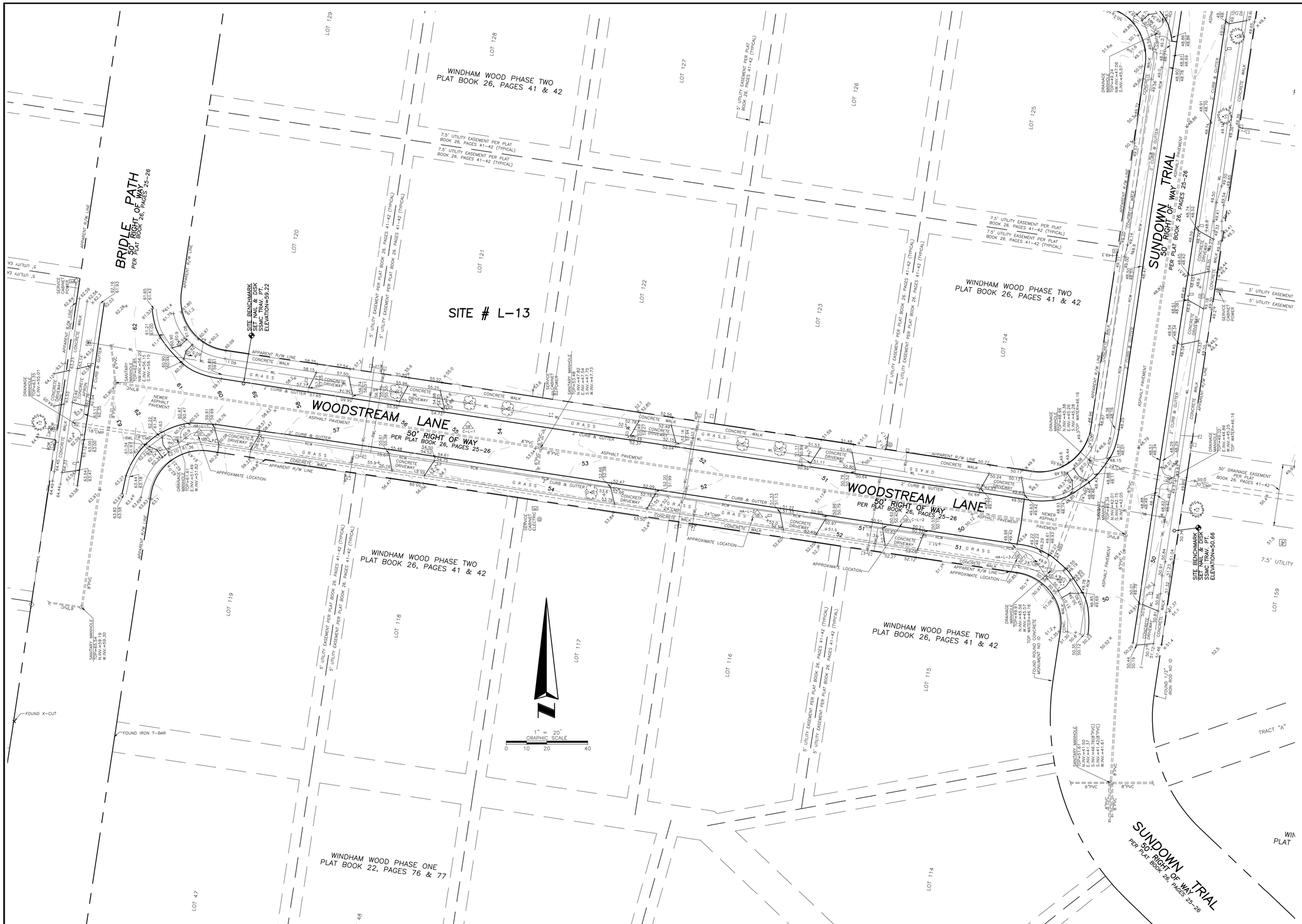
10/27/2016



REVISION DATE	REVISION	BY

SHEET NUMBER 10 OF 11

NOT VALID WITHOUT SHEETS 1-9 & 11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Fax: (407) 292-8583 Website: www.southeasternsurveying.com
e-mail info@southeasternsurveying.com

Topographuc Survey

Project: City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

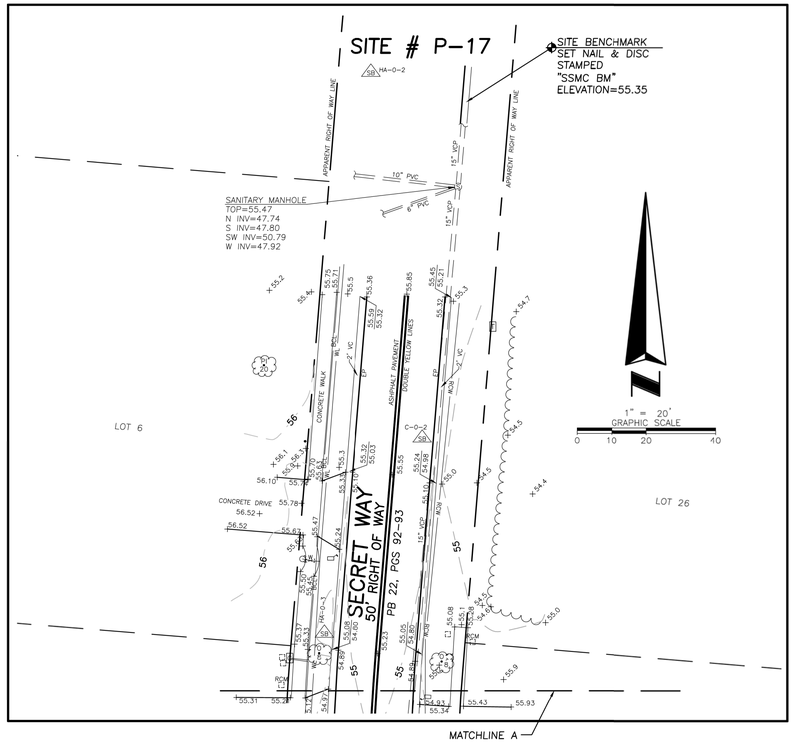
Field Date: 8/05/2015 | Drawn By: JLC | Scale: 1"=20'

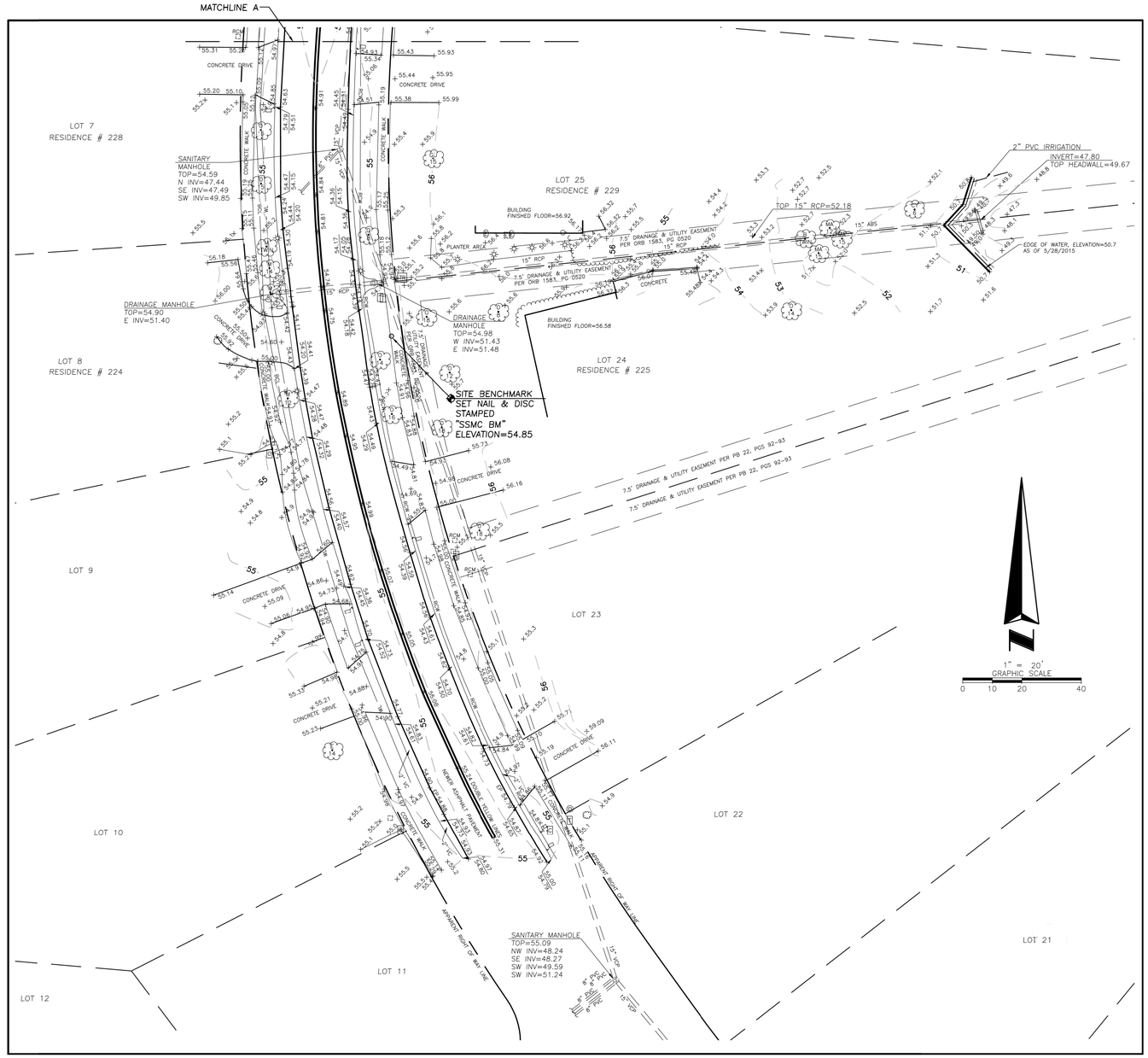
SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
59295001

SHEET 7

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet4.dgn
10/27/2016





REVISION DATE	REVISION	BY

SHEET NUMBER 6 OF 11

NOT VALID WITHOUT SHEETS 1-5 & 7-11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Certificate of Authorization LB2108
e-mail info@southeasternsurveying.com

Project:

Topographic Survey

City of Casselberry

Storm Drain Rehabilitation Project (PW 1501)

Field Date: 8/06/2015 | Drawn By: JLG | Scale: 1" = 20'

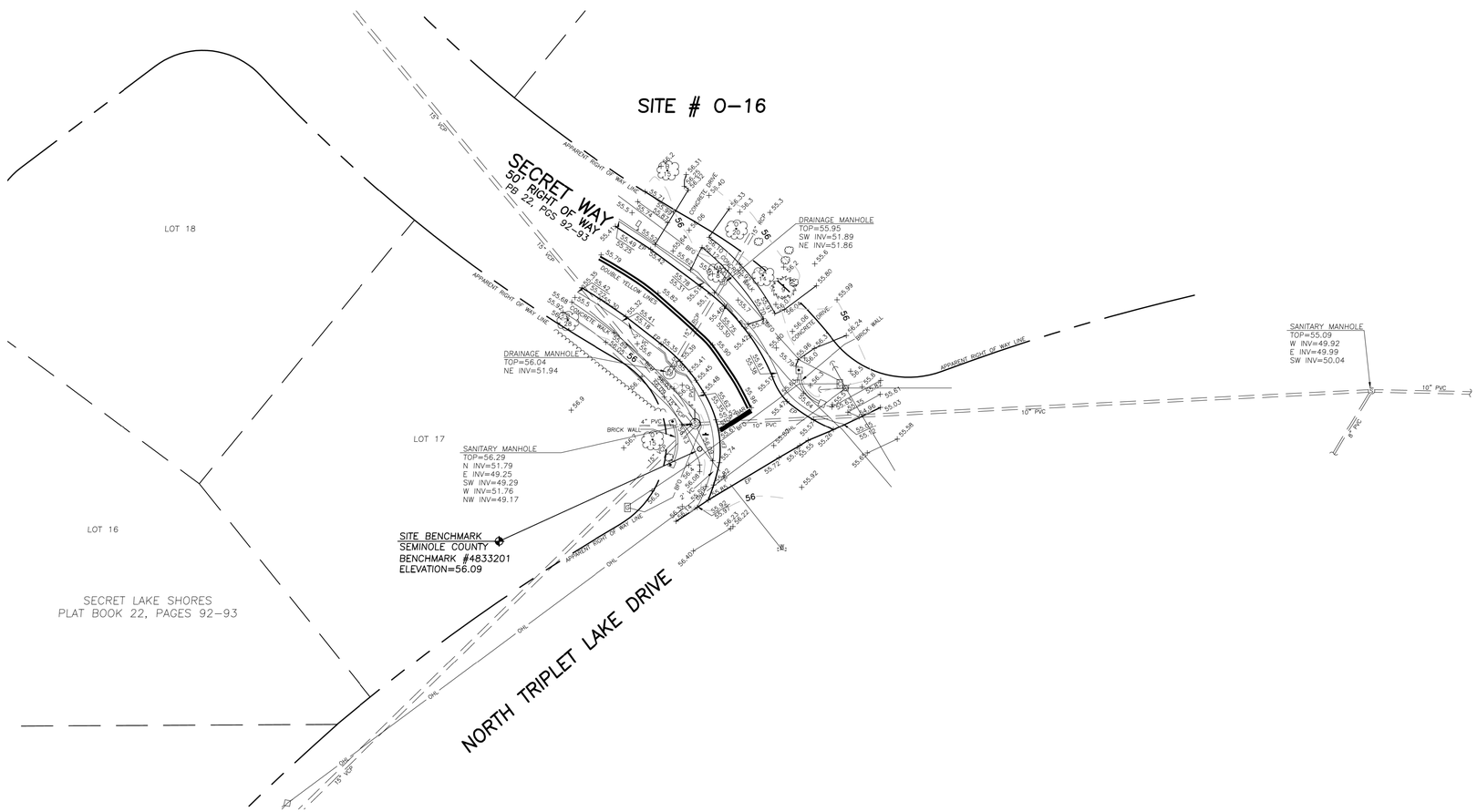
SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER

59295001

SHEET 8

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet5.dgn
10/27/2016



1" = 20'
GRAPHIC SCALE
0 10 20 40

REVISION DATE	REVISION	BY

SHEET NUMBER 5 OF 11
NOT VALID WITHOUT SHEETS 1-4 & 8-11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Certificate of Authorization LB2108
e-mail info@southeasternsurveying.com

Topographic Survey

Project: City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

Field Date: 8/05/2015 | Drawn By: JLG | Scale: 1"=20'

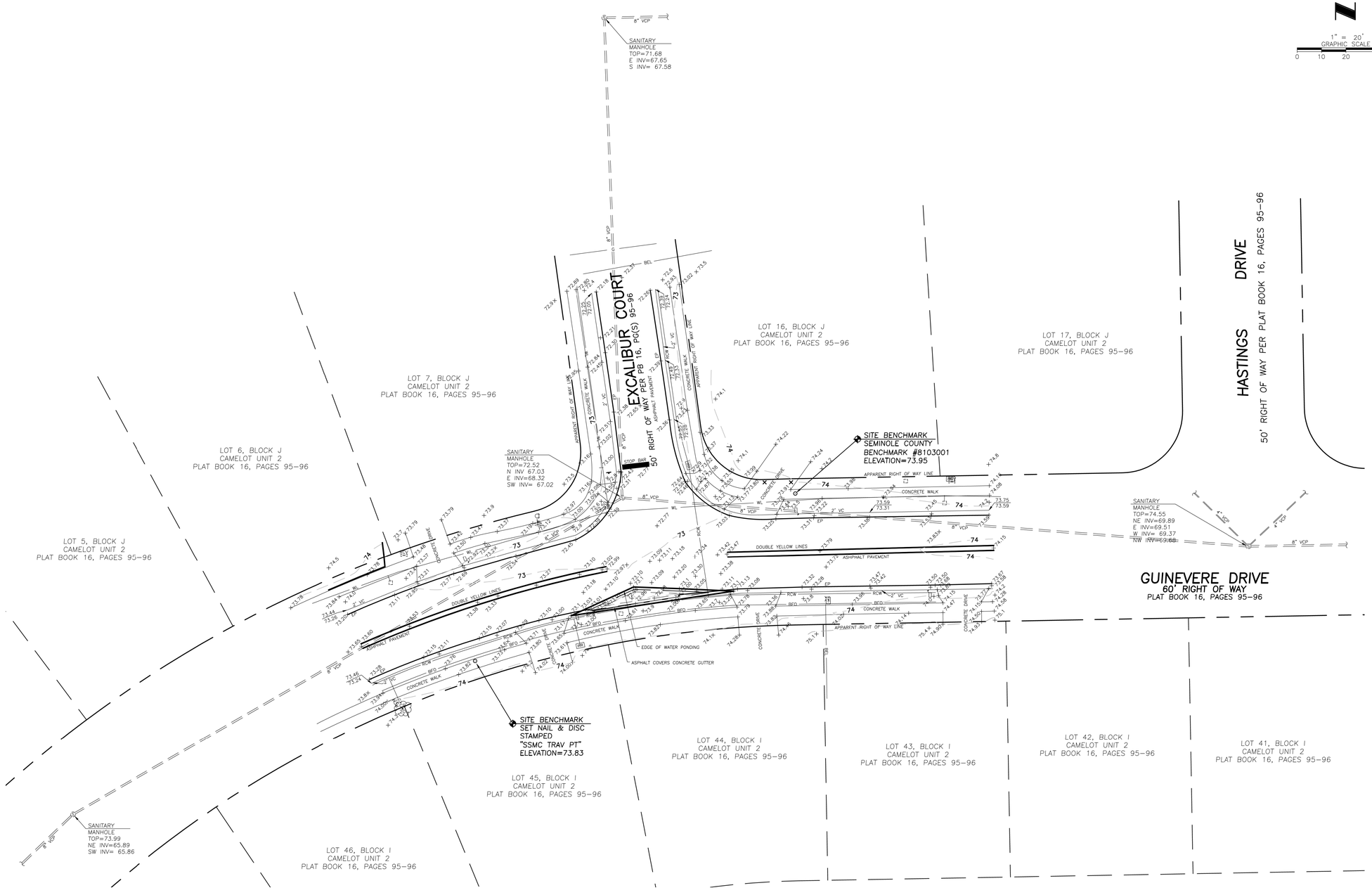
SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
59295001

SHEET 9

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet6.dgn
10/27/2016

SITE # Q-18



REVISION DATE	REVISION	BY

SHEET NUMBER 7 OF 11
NOT VALID WITHOUT SHEETS 1-6 & 8-11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580, Certificate of Authorization LB2108
e-mail info@southeasternsurveying.com

Project: Topographic Survey
City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

Field Date: 8/06/2015 | Drawn By: JLG | Scale: 1"=20'

SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
59295001

SHEET 10

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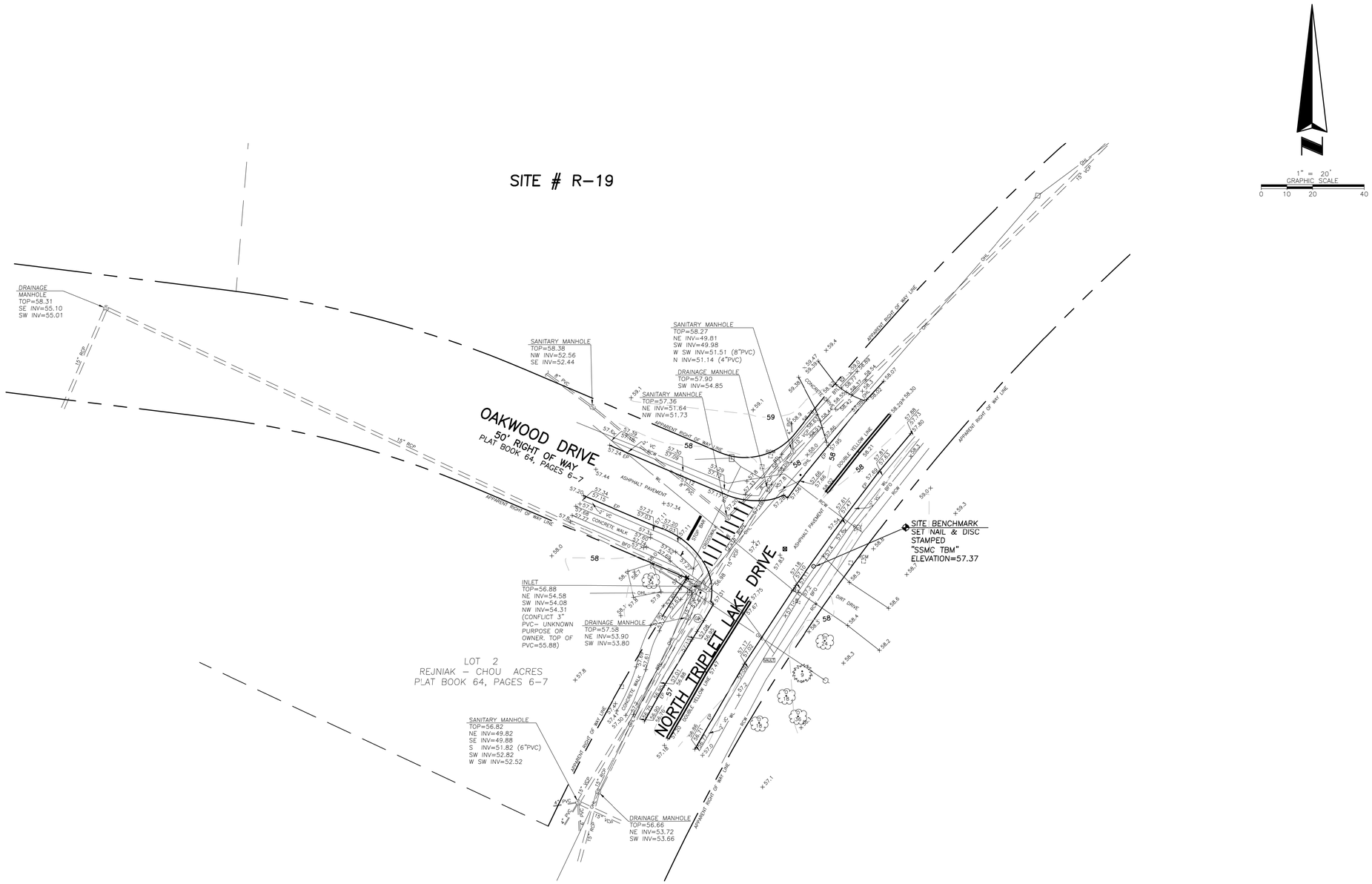
10/27/2016



REVISION DATE	REVISION	BY

SHEET NUMBER 8 OF 11
NOT VALID WITHOUT SHEETS 1-7 & 9-11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Certificate of Authorization LB2108
e-mail info@southeasternsurveying.com

Topographic Survey

Project: City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

Field Date: 8/06/2015 | Drawn By: JLG | Scale: 1"=20'

SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
59295001

SHEET 11

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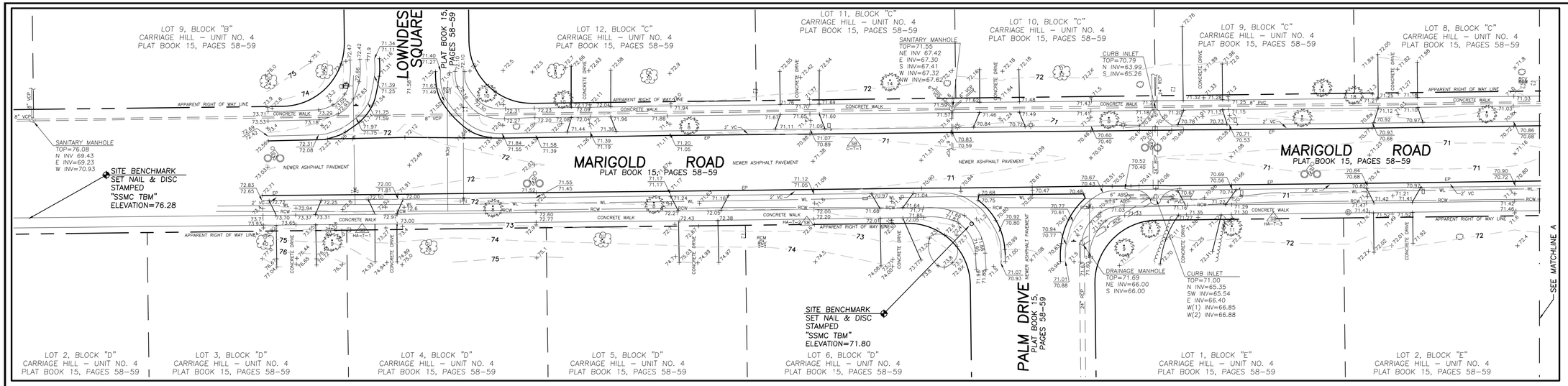
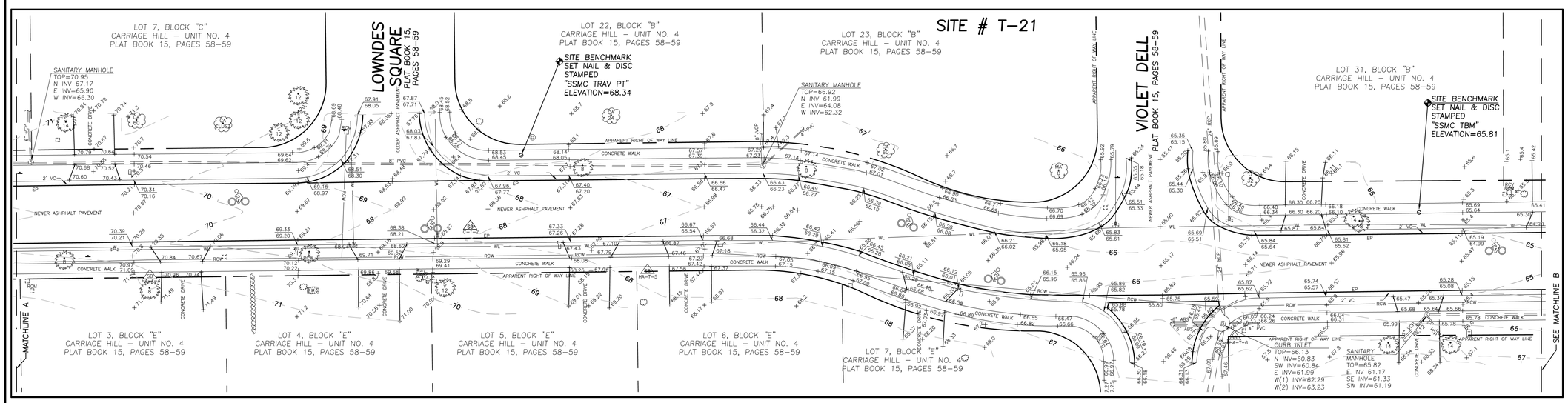
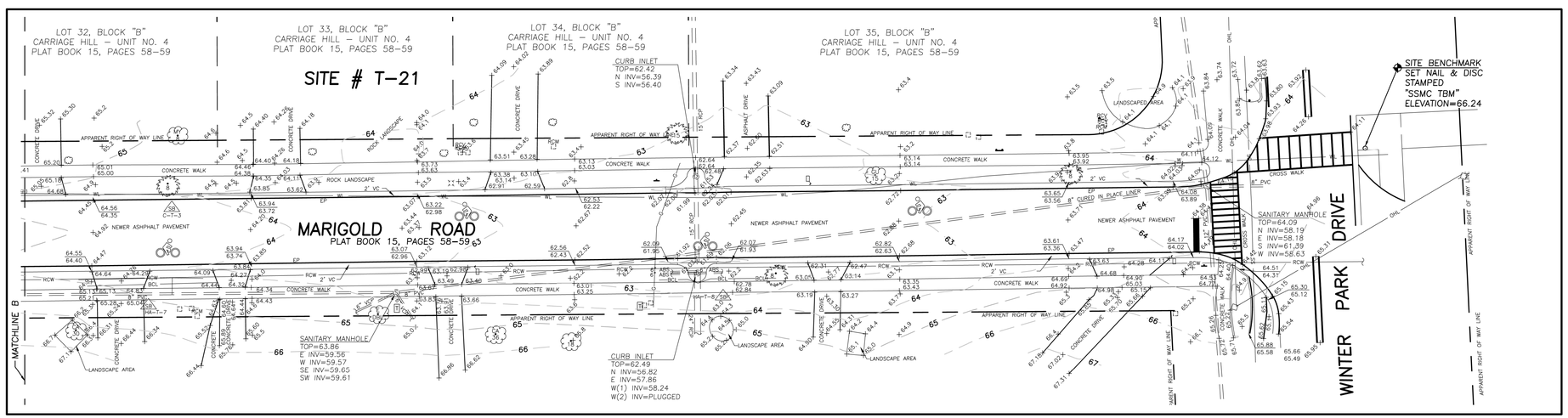
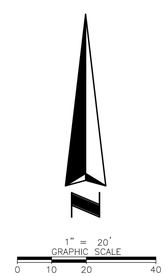
10/27/2016









SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

REVISION DATE	REVISION	BY

SHEET NUMBER 9 OF 11

NOT VALID WITHOUT SHEETS 1–8 & 10–11

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Fax (407) 292-8583 LB2108
e-mail info@southeasternsurveying.com

Topographic Survey

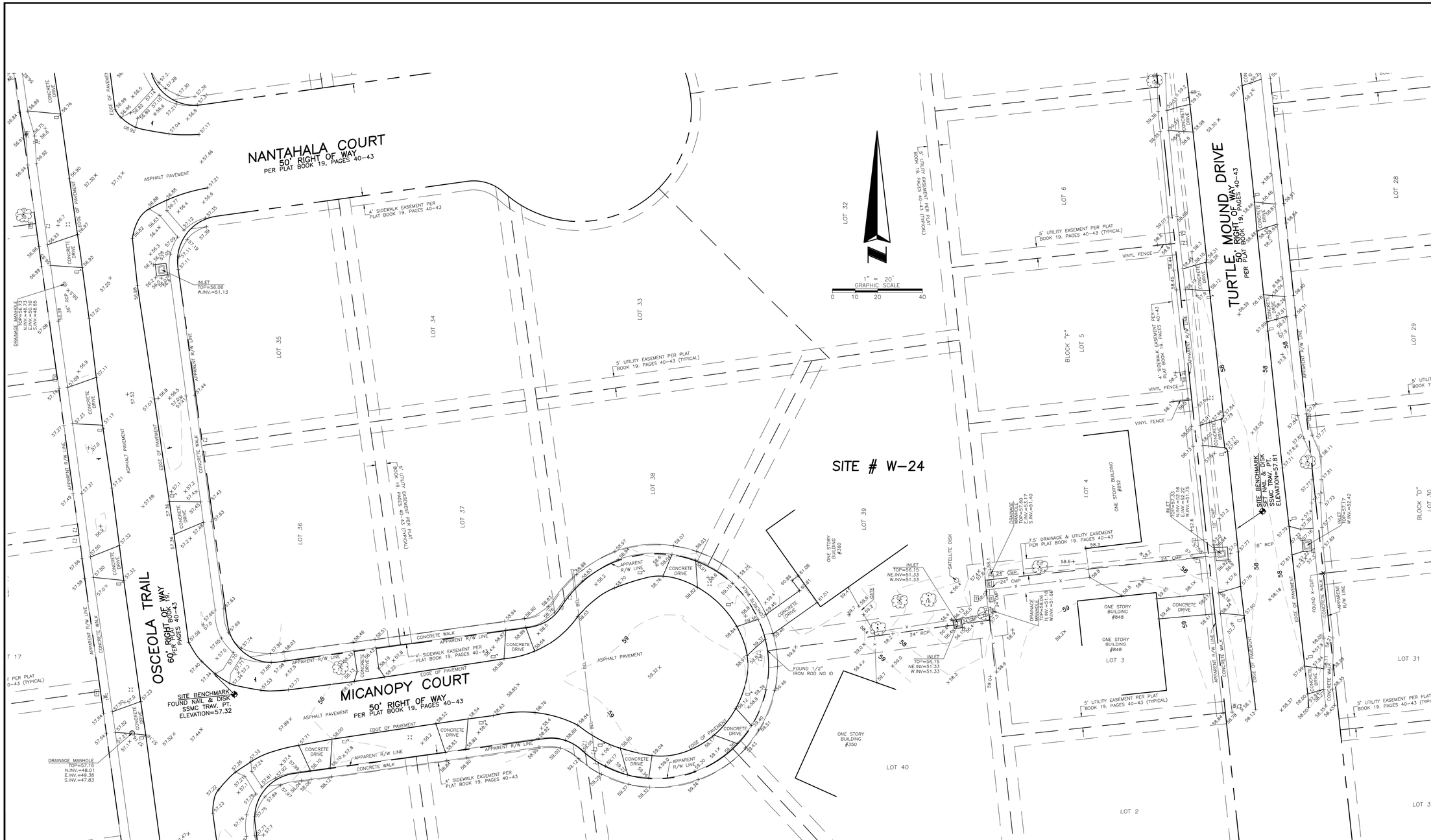
Project: City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

Field Date: 8/06/2015 | Drawn By: JLG | Scale: 1"=20'

DRAWING NUMBER
59295001

SHEET 12

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet9.dgn
10/27/2016



REVISION DATE	REVISION	BY

SHEET NUMBER 11 OF 11
NOT VALID WITHOUT SHEETS 1-10

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Certificate of Authorization No. LB2108
e-mail info@southeasternsurveying.com

Topographic Survey
City of Casselberry
Storm Drain Rehabilitation Project (PW 1501)

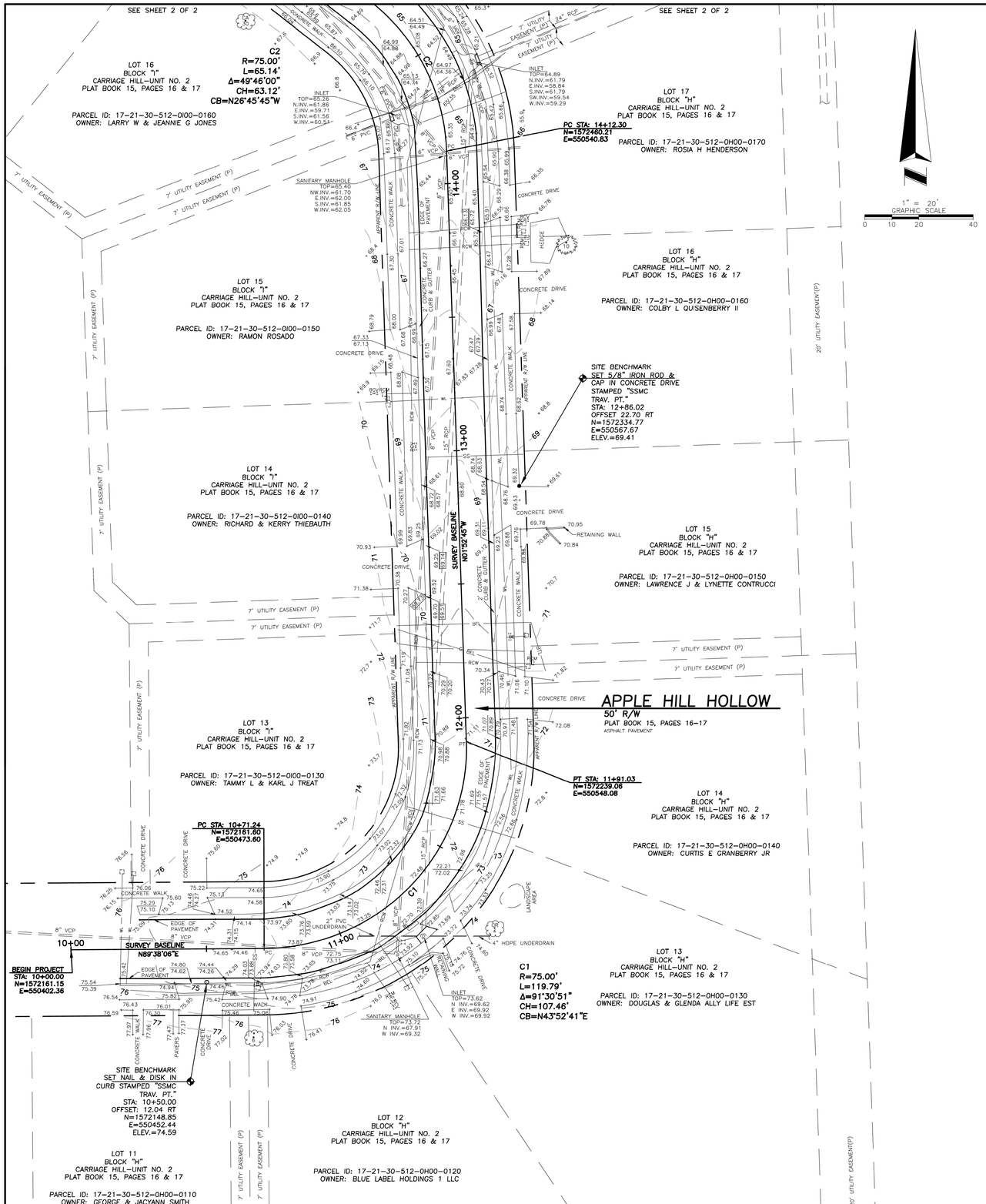
Project:
Field Date: 8/06/2015
Drawn By: JLG
Scale: 1"=20'

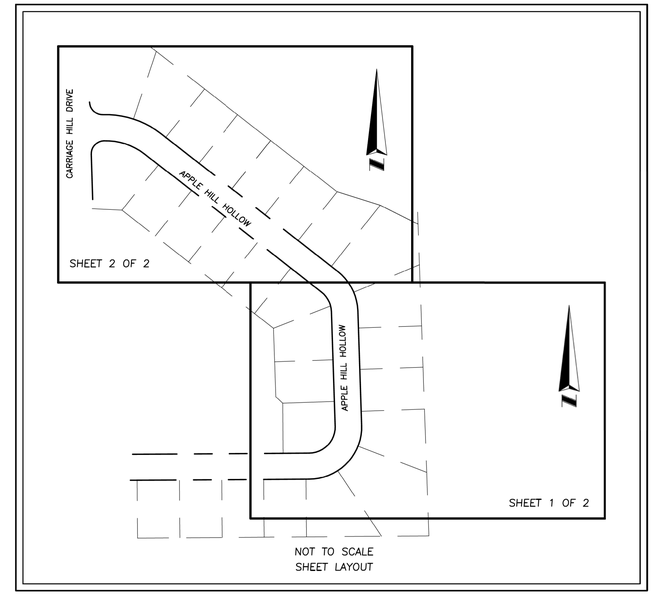
SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
59295001

SHEET 13

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet10.dgn
10/27/2016





LEGEND AND ABBREVIATIONS:

- = DRAINAGE MANHOLE
- = FIRE HYDRANT
- = WATER SPIGOT
- = IRON ROD
- = LIGHT POLE
- = NAIL W/DISC
- = RECLAIMED WATER METER
- = RECLAIMED WATER VALVE
- = SANITARY MANHOLE
- = TRAFFIC SIGN
- = WATER METER
- = WATER VALVE
- ELEV. = ELEVATION
- ID = IDENTIFICATION
- LB = LICENSED BUSINESS
- PVC = POLYVINYL CHLORIDE PIPE
- RCP = REINFORCED CONCRETE PIPE
- VCP = VITRIFIED CLAY PIPE
- HDPE = HIGH DENSITY POLYETHYLENE PIPE
- C1 = CURVE NUMBER
- R = RADIUS
- L = LENGTH
- Δ = CENTRAL ANGLE
- CH = CHORD
- CB = CHORD BEARING
- –BEL– = BURIED ELECTRIC LINE
- –BTL– = BURIED TELEPHONE LINE
- –G– = GAS LINE
- –RWL– = RECLAIMED WATER LINE
- –WL– = WATER LINE
- –SS– = SANITARY SEWER LINE
- TRAV.PT. = TRAVERSE POINT
- SSMC = SOUTHEASTERN SURVEYING & MAPPING CORPORATION
- PT = POINT OF TANGENCY
- PC = POINT OF CURVATURE
- STA: = STATION

SIZE SHOWN IS TRUNK DIAMETER IN INCHES MEASURED AT CHEST HEIGHT

- = PALM
- = TREE
- CA = CAMPHOR
- MA = MAGNOLIA
- S = SYCAMORE
- OR = ORANGE
- * = BOUGAINVILLEA

DESCRIPTION:

A portion of Apple Hill Hollow as shown on Carriage Hill – Unit No. 2, according to the plat thereof as recorded in Plat Book 15, Pages 16 and 17, Public Records of Seminole County, Florida.

SURVEYOR'S REPORT:

1. Utility locations if shown hereon are based on field location of markings by utility company representatives, surface features and construction plans furnished to the surveyor. Additional sub–surface utilities may exist that have not been field located.
2. Easements or rights of way that appear on recorded plans or that have been furnished to the surveyor by others have been incorporated into this drawing with appropriate notation. Other easements may be discovered by a search of the Public Records.
3. Minimum Horizontal Accuracy for this survey is in accordance with the STANDARDS OF PRACTICE set forth by the Board of Professional Surveyors and Mappers in Chapter 5J–17 requirements of Florida Administration Code. The map and measurement methods used for this survey meet or exceed this requirement. The dimensions shown hereon are in United States standard survey feet and decimals thereof.
4. This survey does not determine ownership of the lands shown hereon.
5. Underground foundations have not been located.
6. Survey map and report or the copies thereof are not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper.
7. Features shown by symbol as indicated in the legend are not to scale.
8. Additions or deletions to survey maps or reports by other than the signing party or parties is prohibited without written consent of the signing party or parties.
9. Vertical information shown hereon refers to Seminole County GPS point 0181/CORAL as being a 4" x 4" concrete monument with brass disk stamped GPS 0181/CORAL, Elevation=81.797 North American Vertical Datum 1988 (NAVD88).
10. Horizontal positions for all features shown on the map are relative to North American Datum of 1983 (NAD83), 1990 adjustment, State Plane Coordinate System, Florida East Zone. Control points used for this survey are Seminole County GPS point #0181/CORAL and point #497A/HEART; distances shown are GRID distances.
11. Bearings shown hereon are based on the Survey Baseline from Station 10+00 to PC Station 10+50.00 being N 89°38'06" E. Bearings shown hereon are measured unless otherwise noted.
12. This Survey was performed without benefit of an abstract, title search, title opinion or title commitment. A title search may reveal additional information affecting the parcel as shown.
13. Improvements & Topographic features shown hereon are limited to areas per specific instructions of the client.
14. Right of Way information shown hereon was determined by found monumentation, recorded plats, and information obtained on the Seminole County Property Appraisers web site.

NOTICE OF LIABILITY:

This survey is certified to those individuals shown on the face thereof. Any other use, benefit or reliance by any other party is strictly prohibited and restricted. Surveyor is responsible only to those certified and hereby disclaims any other liability and hereby restricts the rights of any other individual or firm to use this survey, without express written consent of the surveyor.

Jason Peterson
Professional Surveyor and Mapper
Registered 4791

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810–4350
(407) 292–8580 Fax (407) 292–0141
e–mail: info@southeasternsurveying.com
Certification Number LB2108

REVISION	BY

REVISION DATE

SHEET NUMBER 1 OF 2
NOT VALID WITHOUT SHEET 2 OF 2

Topographic Survey

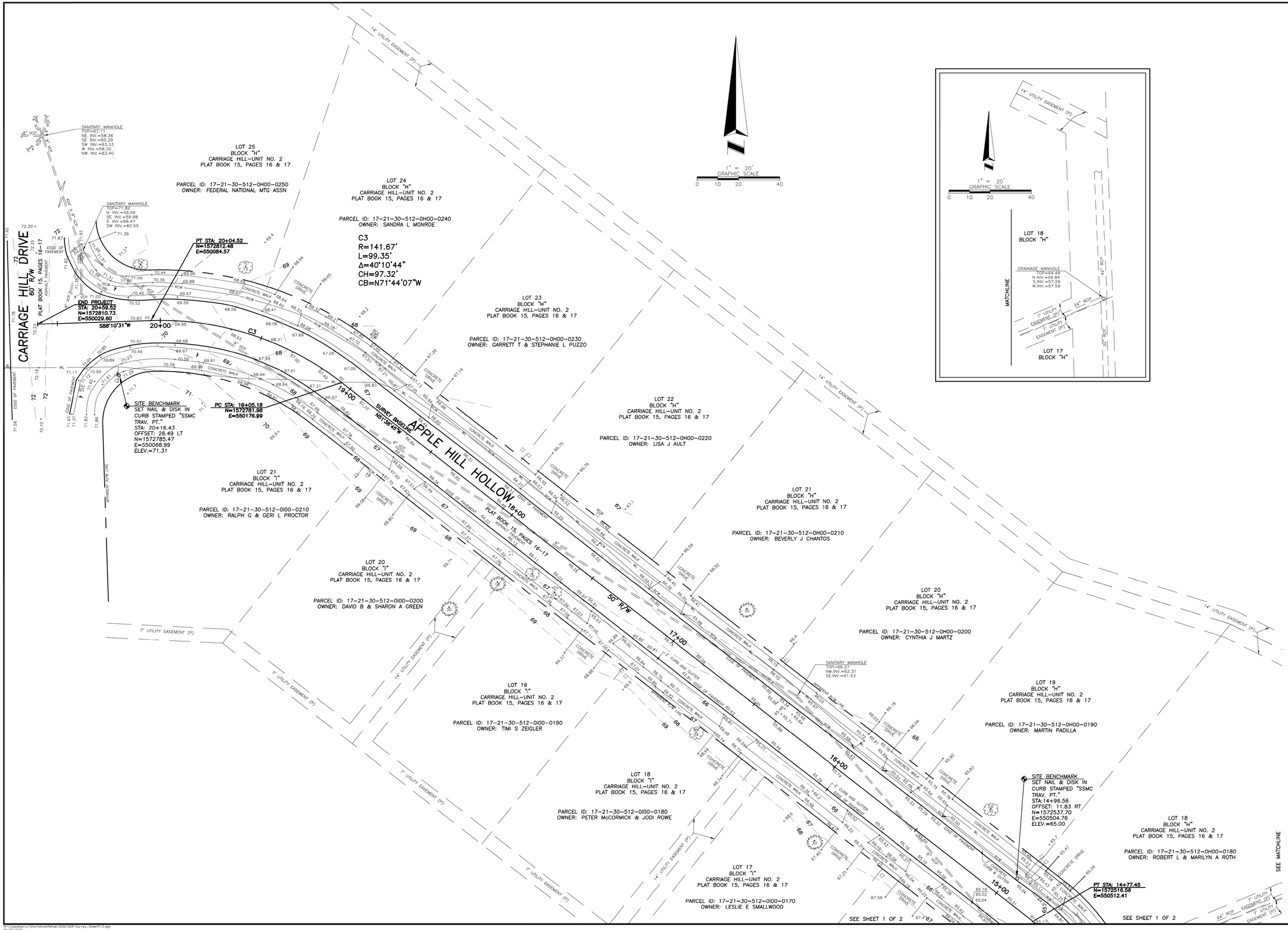
Project: **Apple Hill Hollow Storm Drain Rehabilitation**

Field Date: 3/17/2016 | Drawn By: DM | Scale: 1"=20'

Certified to: Singhofen & Associates, Inc.

DRAWING NUMBER
55323003
SHEET NUMBER
SHEET 14

R:\Casseberry\StormDrainRehab\DGN\SDR-Survey_Sheet11.dgn
10/27/2016



SHEET NUMBER 2 OF 2
NOT VALID WITHOUT SHEET 1 OF 2

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Boulevard
Orlando, Florida 32810-4350
(407) 292-8580 Fax (407) 292-0141
e-mail: info@southeasternsurveying.com
Certification Number LB2108

REVISION	DATE	BY

Project:

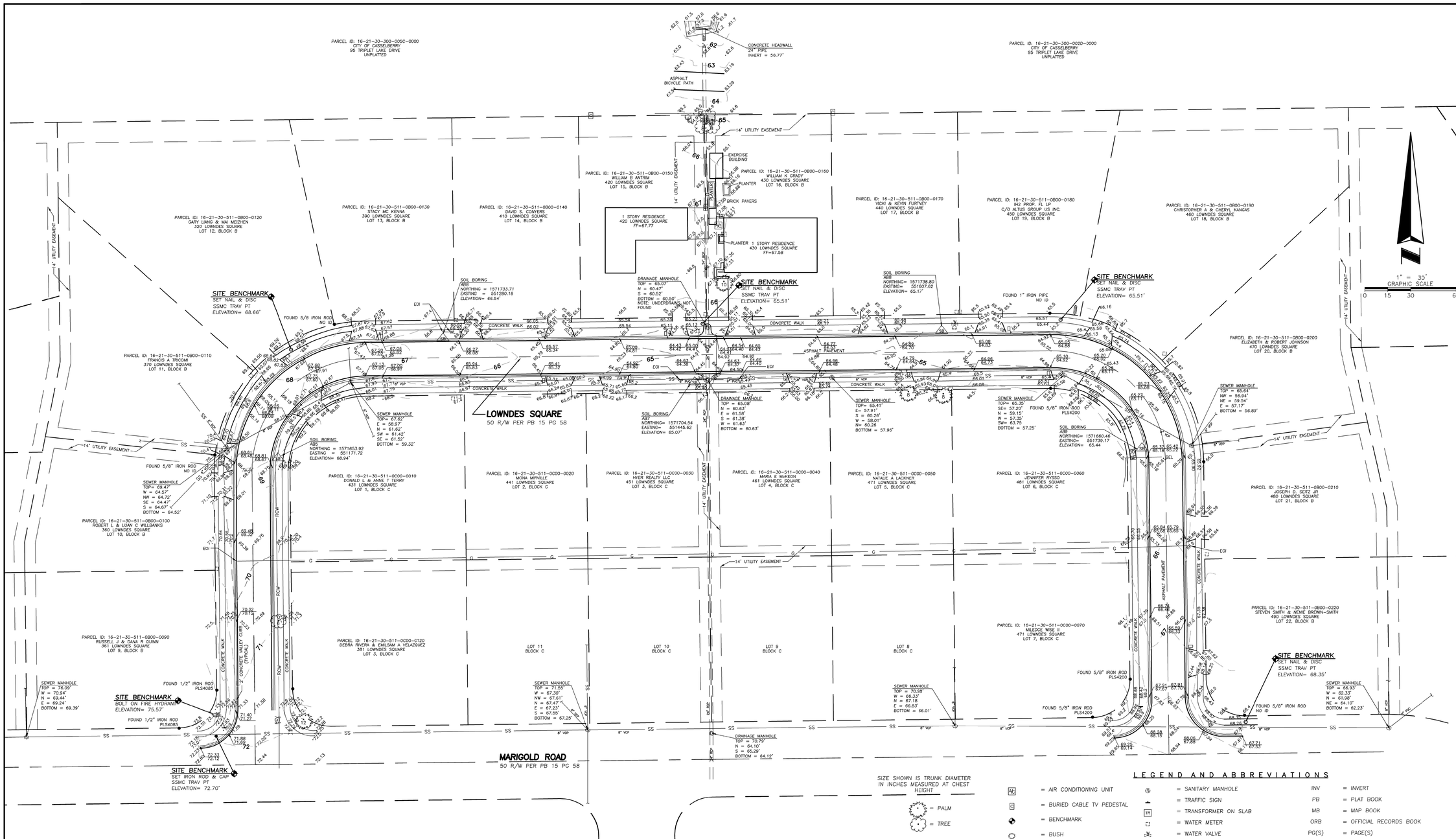
Topographic Survey
Apple Hill Hollow
Storm Drain Rehabilitation

Field Date: 3/17/2016
Drawn By: DM
Scale: 1"=20'

SEE SHEET 1 FOR NOTES, LEGEND AND DESCRIPTION.

DRAWING NUMBER
55323003
SHEET NUMBER
SHEET 15

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet11-2.dgn
10/27/2016



SIZE SHOWN IS TRUNK DIAMETER IN INCHES MEASURED AT CHEST HEIGHT

= PALM

= TREE

LEGEND AND ABBREVIATIONS

AC	= AIR CONDITIONING UNIT	SM	= SANITARY MANHOLE	INV	= INVERT
	= BURIED CABLE TV PEDESTAL		= TRAFFIC SIGN	PB	= PLAT BOOK
	= BENCHMARK	TR	= TRANSFORMER ON SLAB	MB	= MAP BOOK
	= BUSH		= WATER METER	ORB	= OFFICIAL RECORDS BOOK
T	= BURIED TELEPHONE PEDESTAL		= WATER VALVE	PG(S)	= PAGE(S)
DM	= DRAINAGE MANHOLE	-X-	= CHAINLINK FENCE	LB	= LICENSED BUSINESS
E	= ELECTRIC FIXTURE	-O-	= WOOD FENCE	LS	= LICENSED SURVEYOR
	= ELECTRIC SERVICE METER	-BEL-	= BURIED ELECTRIC LINE	RLS	= REGISTERED LAND SURVEYOR
	= FIRE HYDRANT	-BTL-	= BURIED TELEPHONE LINE	PSM	= PROFESSIONAL SURVEYOR AND MAPPER
	= IRON ROD	-G-	= GAS LINE	PCP	= PERMANENT CONTROL POINT
	= LIGHT POLE	-OHL-	= OVERHEAD UTILITY LINE	PRM	= PERMANENT REFERENCE MONUMENT
	= MAILBOX	-WL-	= WATER LINE	ID	= IDENTIFICATION
	= NAIL W/DISC	-RWL-	= RECLAIM WATER LINE	R/W	= RIGHT OF WAY
P	= PUMP	-SS-	= SANITARY SEWER	FF	= FINISH FLOOR ELEVATION
RCV	= RECLAIMED WATER VALVE		= TREE/HEDGE LINE	EOI	= END OF INFORMATION
SB	= SOIL BORING	-FM-	= FORCE MAIN	NAD	= NORTH AMERICAN DATUM
		-OTC-	= OVERHEAD TRAFFIC LINE	NAVD	= NORTH AMERICAN VERTICAL DATUM
		ABS	= ACRYLONITRILE BUTADIENE STYRENE PIPE	TRAV.PT.	= TRAVERSE POINT
		PVC	= POLYVINYL CHLORIDE PIPE	SSMC	= SOUTHEASTERN SURVEYING & MAPPING CORPORATION
		RCP	= REINFORCED CONCRETE PIPE		
		VCP	= VITRIFIED CLAY PIPE		

DESCRIPTION:
A portion of Carriage Hill-Unit #4, Plat Book 15, Pages 58-59 per records of Seminole County, Florida.

SURVEYOR'S REPORT:

1. Utility locations if shown hereon are based on field location of markings by Utility Company representatives, surface features and construction plans furnished to the surveyor. Additional sub-surface utilities may exist that have not been field located. sunshine 811 has ceased responding to design tickets and mark buried utilities only for actual construction.
2. Easements or rights of way that appear on recorded plans or that have been furnished to the surveyor by others have been incorporated into this drawing with appropriate notation. Other easements may be discovered by a search of the Public Records.
3. Measurement methods used for this survey meet STANDARDS OF PRACTICE FOR LAND SURVEYING Chapter 5J-17.050-.052 requirements.
4. Underground foundations have not been located.
5. Bearings and distances shown hereon are measured unless otherwise noted.
6. The survey map and report or the copies thereof are not valid without the signature and the original raised seal of a Florida Licensed Surveyor and Mapper.
7. Features shown by symbol as indicated in the legend are not to scale.
8. Bearings shown hereon are based on PLAT of Carriage Hill-Unit #4, as recorded in Plat Book 15, pages 58-59, Seminole Florida .
9. Vertical information shown hereon refers to Seminole County GPS point 0181/CORAL as being a 4"x4" concrete monument with brass disk stamped GPS 0181/CORAL, Elevation=81.797 North American Vertical Datum 1988; NAVD88.
10. Based on the Federal Emergency Management Agency Flood Insurance Rate Map (FIRM)number 12117C0165F, dated 09/28/2007, the above described property is within Zone "X"
11. The horizontal positions for all features shown on the map are relative to North American Datum, NAD 1983, 2007 adjustment, State Plane Coordinate System, Florida East Zone. Control points used for this survey are Seminole County GPS point 0321/JADE, Designation Number 515120321 and Seminole County GPS point 0497/GIS-497, Designation Number 409750497; distances shown are GRID distances.
12. This Survey was performed without benefit of an abstract, title search, title opinion or title commitment. A title search may reveal additional information affecting the parcel as shown.
13. Unless shown, only those visible features found within the boundaries of this survey or in the immediate vicinity of the above described parcel boundary have been located.
14. Dimensions are shown in United States standard survey feet and decimals thereof.
15. Positional accuracy meets National Geodetic Survey, NGS Third Order, Class One, specifically 1:10,000, verified by redundant measurements.
16. Additions or deletions to survey maps or reports by other than the signing party or parties is prohibited without written consent of the signing party or parties.
17. Right of Way information shown hereon was determined by found monumentation, recorded plats, and information obtained on the Seminole County Property Appraisers web site. No Right of Way documentation was provided by client.
18. Improvements & Topographic features shown hereon are limited to areas per specific instructions of the client.

NOTICE OF LIABILITY:
This survey is certified to those individuals shown on the face thereof. Any other use, benefit or reliance by any other party is strictly prohibited and restricted. Surveyor is responsible only to those certified and hereby disclaims any other liability and hereby restricts the rights of any other individual or firm to use this survey, without express written consent of the surveyor.

N:\Casselberry\StormDrainRehab\DGN\SDR-Survey_Sheet12.dgn
10/27/2016

REVISION DATE	REVISION	BY

SHEET NUMBER 1 OF 1

JAMES L. PETERSEN
Professional Surveyor & Mapper
Number 4791

Southeastern Surveying

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
6500 All American Blvd.
Orlando, Florida 32810-5350
(407) 292-8580 Certification Number LB2108
e-mail: info@southeasternsurveying.com

Topographic Survey

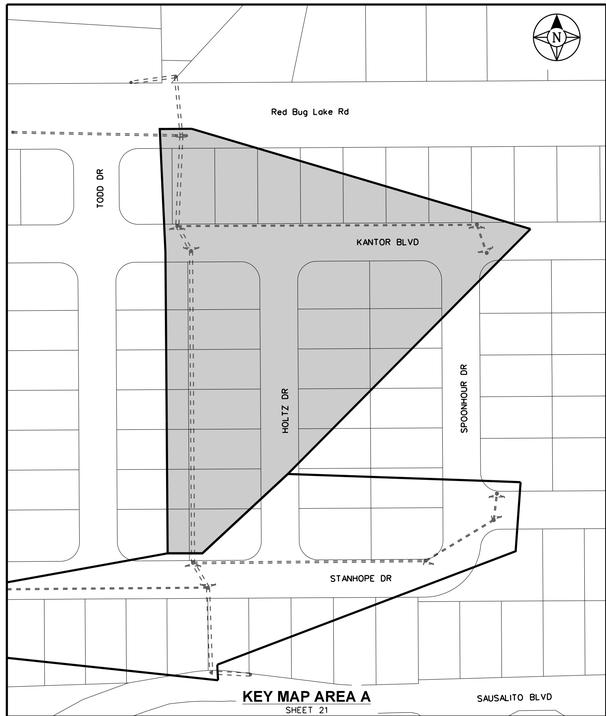
Project: City of Casselberry
Lowndes Square Drainage Improvements

Scale: 1" = 30'
Drawn By: JWG
Field Date: 9-4-2014

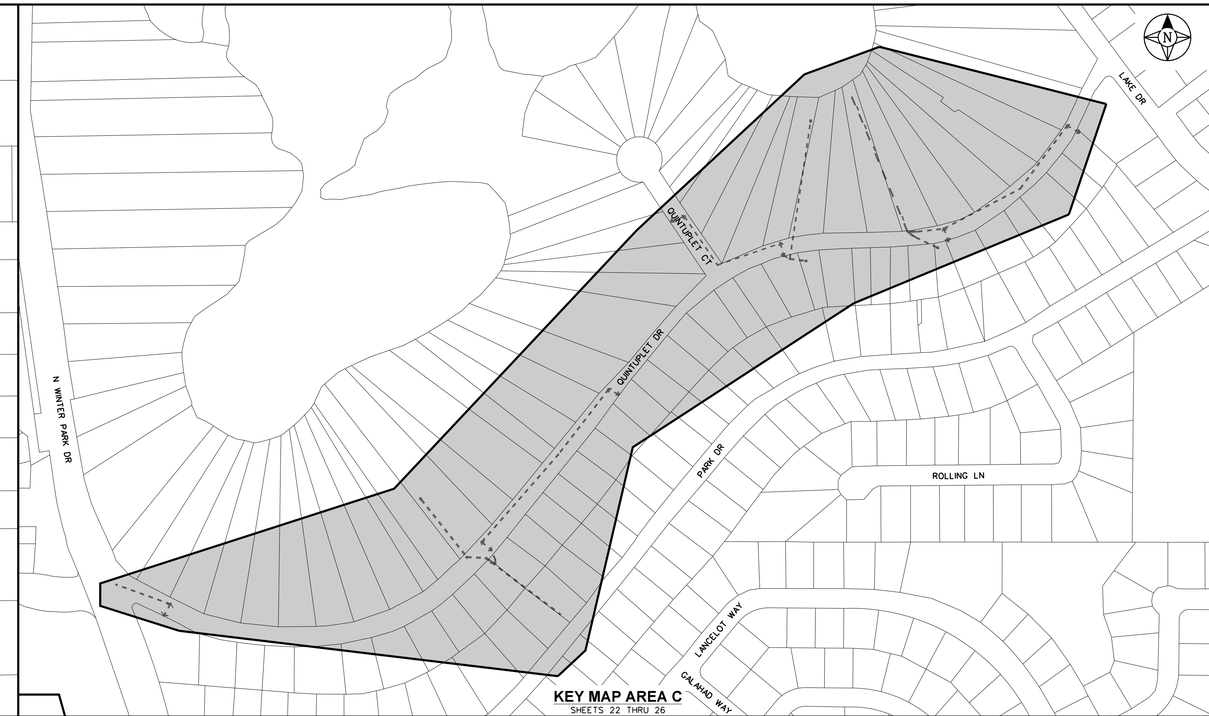
Certified to: City of Casselberry
Singhofen & Associates, Inc

DRAWING NUMBER
55323002C

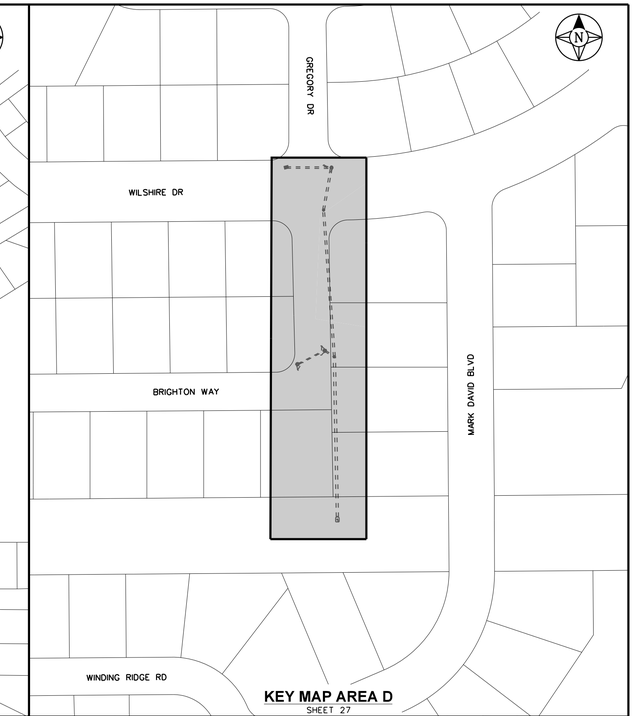
SHEET NUMBER
SHEET 16



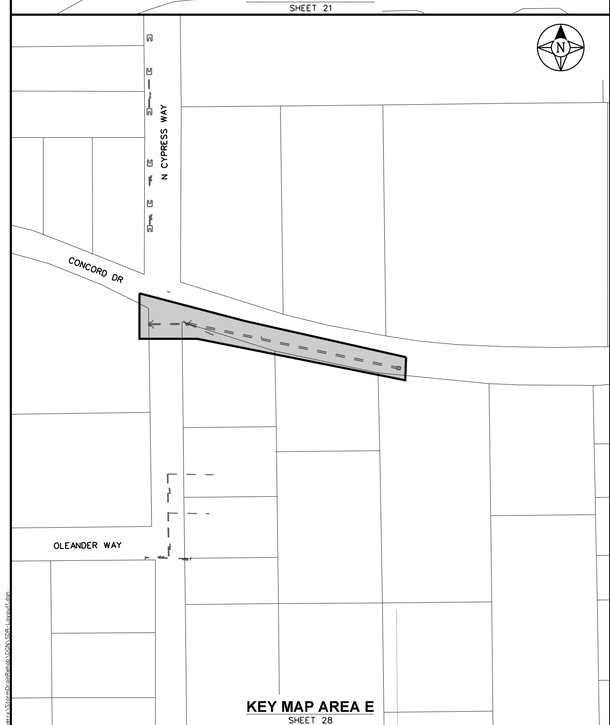
KEY MAP AREA A
SHEET 21



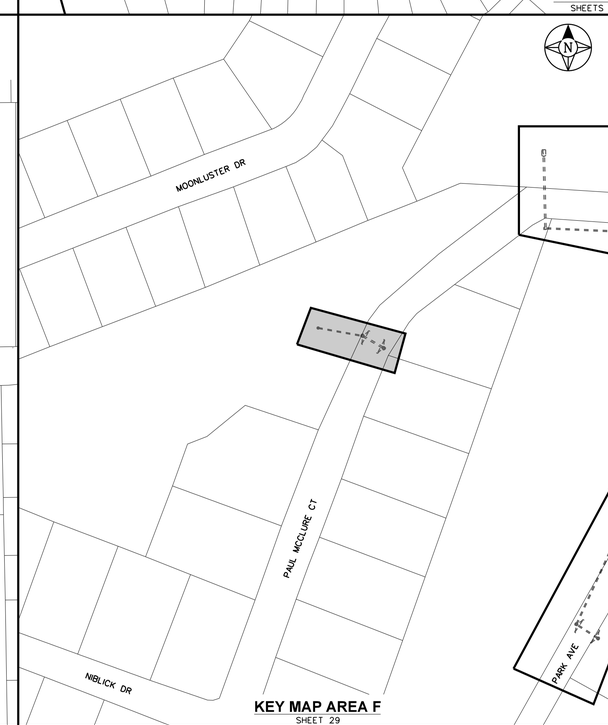
KEY MAP AREA C
SHEETS 22 THRU 26



KEY MAP AREA D
SHEET 27

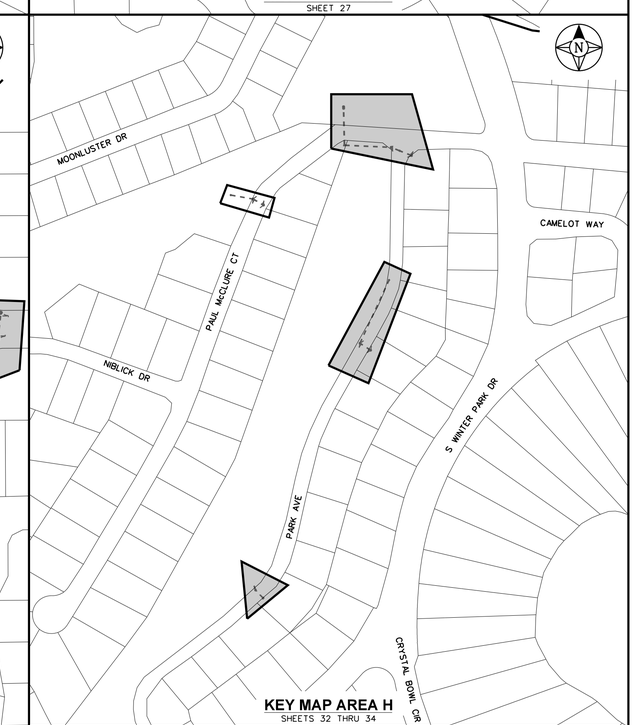


KEY MAP AREA E
SHEET 28



KEY MAP AREA F
SHEET 29

KEY MAP AREA G
SHEETS 30 & 31



KEY MAP AREA H
SHEETS 32 THRU 34

Revision	Date	Approved
PER CITY	4/29/16	BRW

Designed by: BRW
Drawn by: BJG/ADB
Checked by: RBC
Approved by: BRW
Vertical Datum: NAVD 1988

SINGHOFEN & ASSOCIATES, INC.
STORMWATER MANAGEMENT AND CIVIL ENGINEERING
11723 Orpington Street, Suite 100
Orlando, Florida 32817
Ph: (407) 679-3001
Fax: (407) 679-2691
DBPR No. 5112

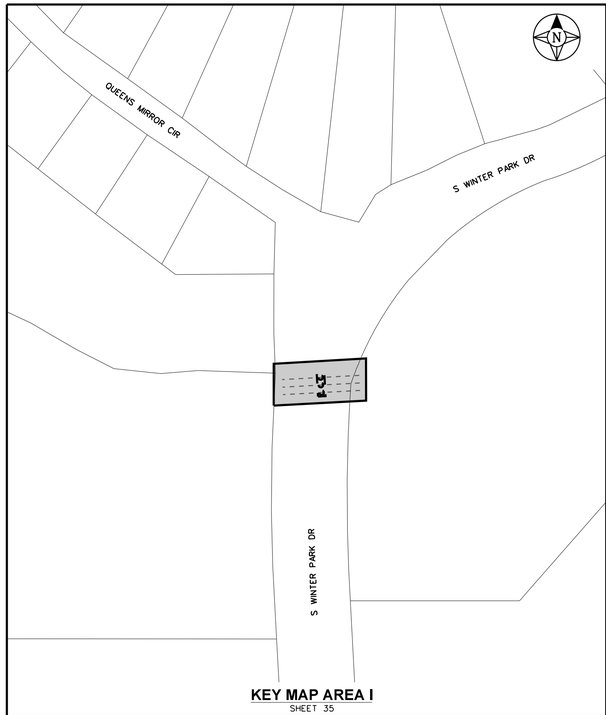
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

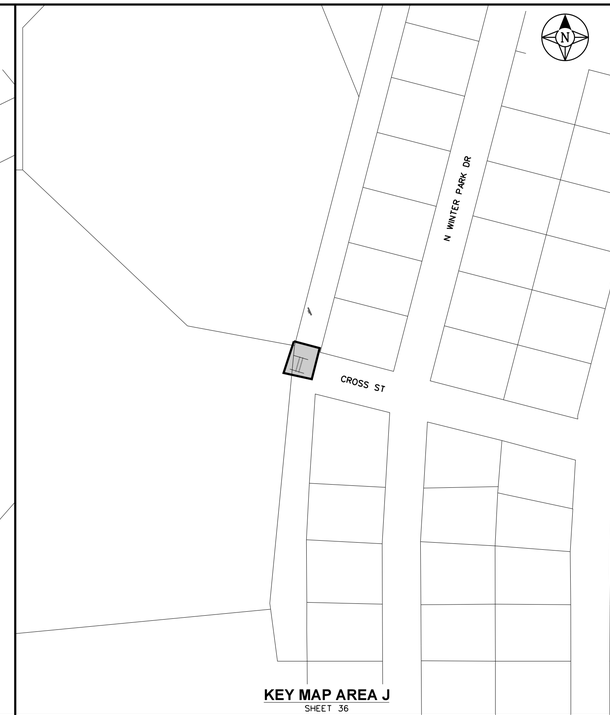
AREA LOCATION MAP

SHEET
17

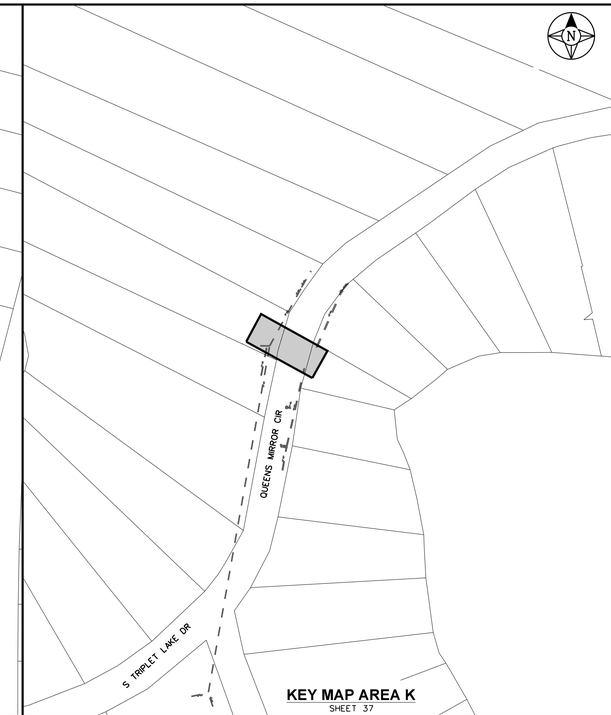
SAI
Project No.
2015-006.10



KEY MAP AREA I
SHEET 35



KEY MAP AREA J
SHEET 36



KEY MAP AREA K
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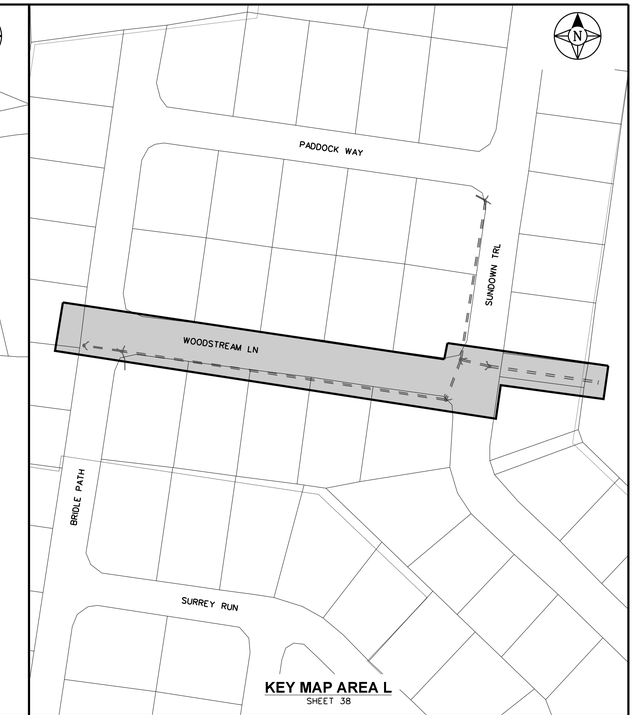

KEY MAP AREA L
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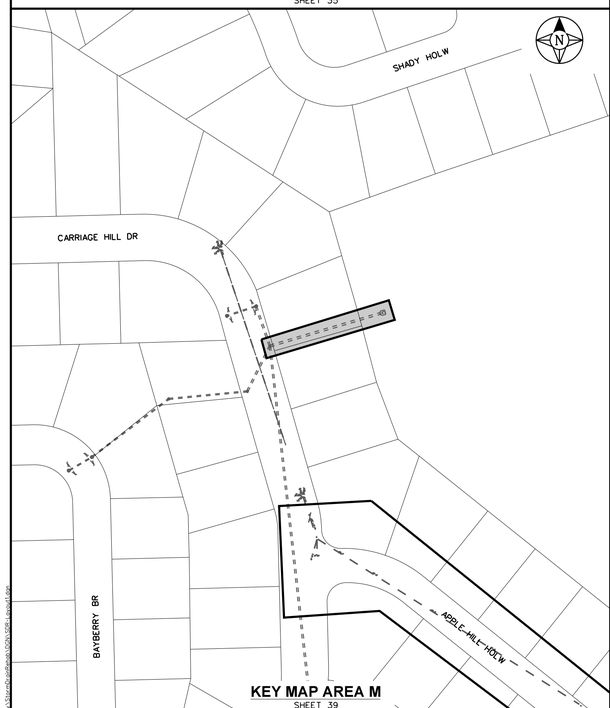

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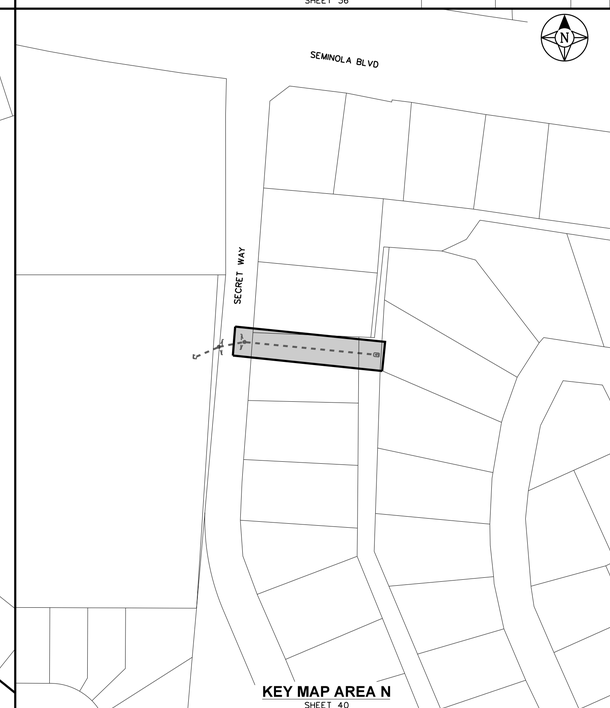
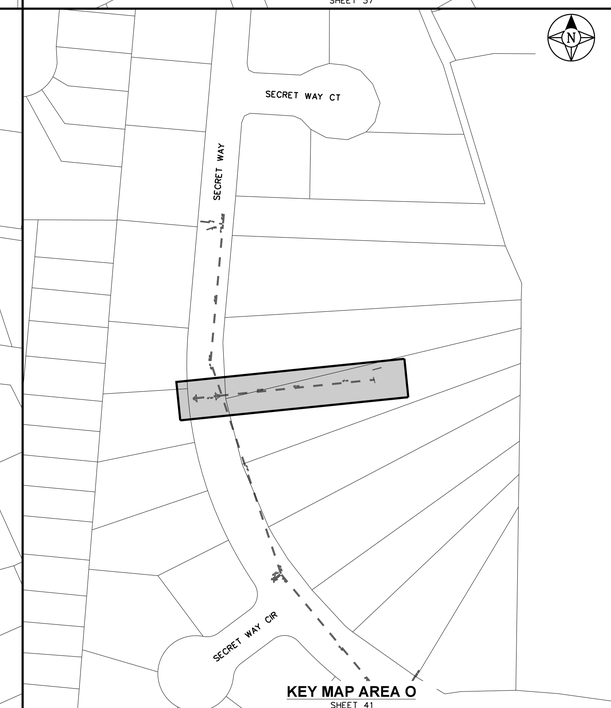
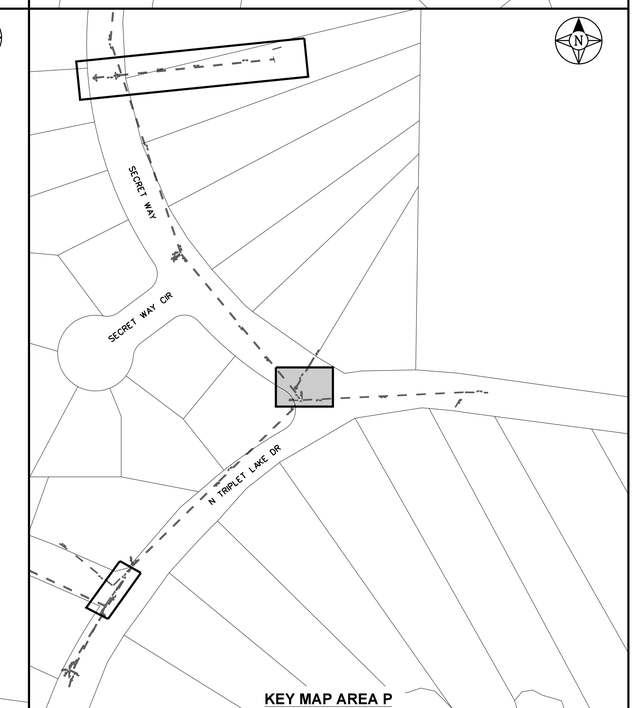
SHEET 39



KEY MAP AREA N
SHEET 40



KEY MAP AREA O
SHEET 41



KEY MAP AREA P
SHEET 42

Revision	Date	Approved
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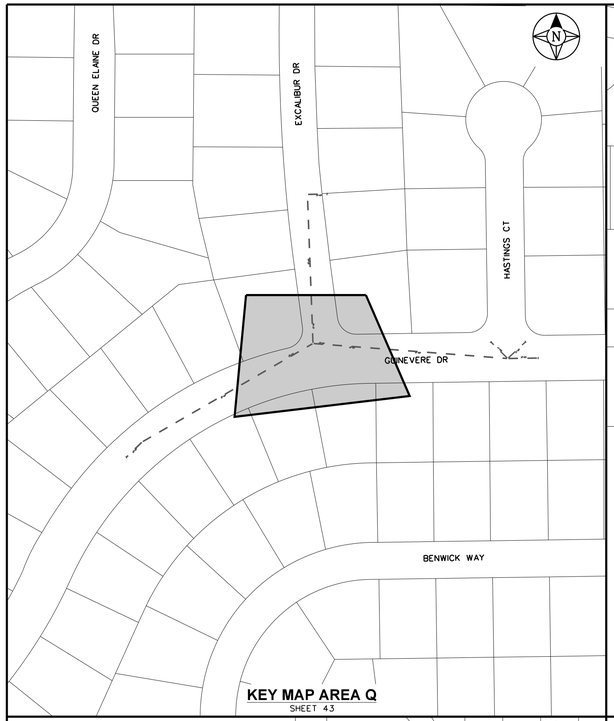
CITY OF CASSELBERRY
FLORIDA

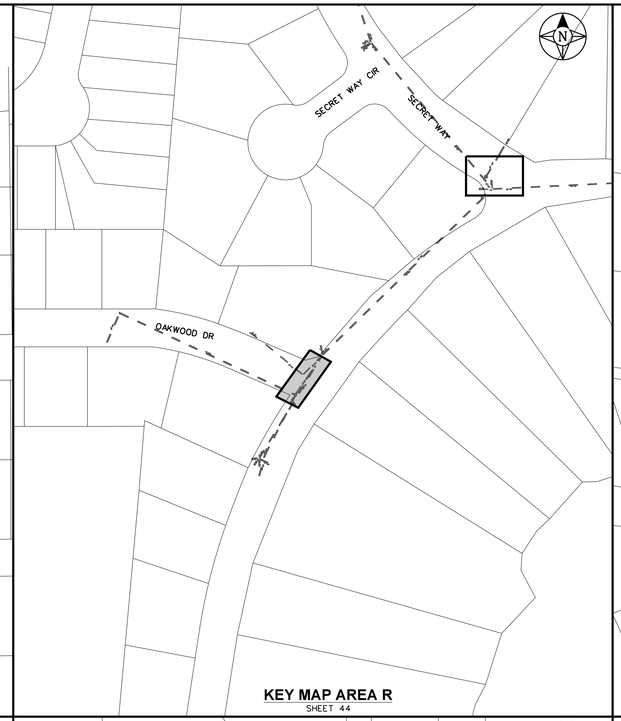
STORM DRAIN
REHABILITATION PROJECT

AREA LOCATION MAP

SHEET
18
SAI
Project No.
2015-006.10



KEY MAP AREA Q
SHEET 43



KEY MAP AREA R
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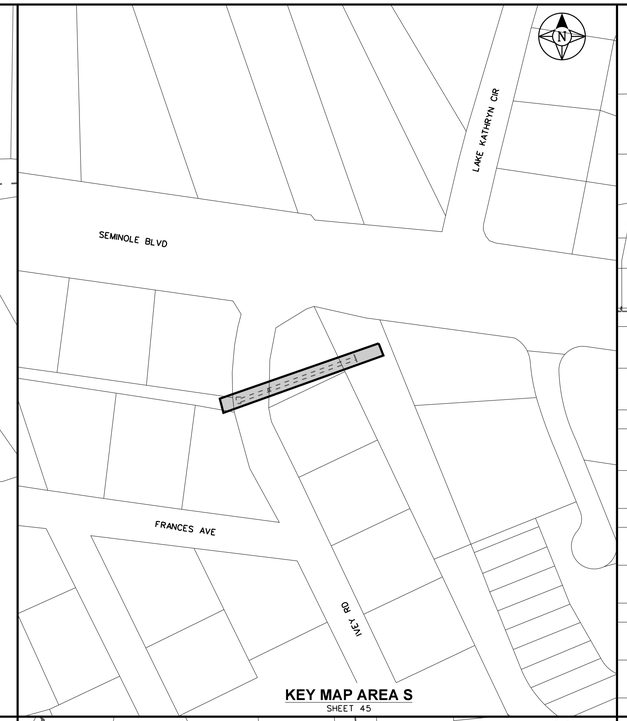
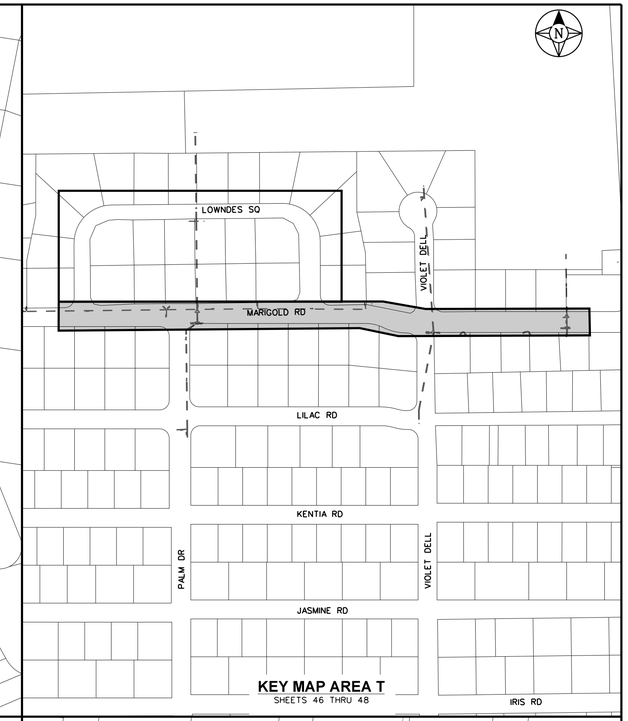
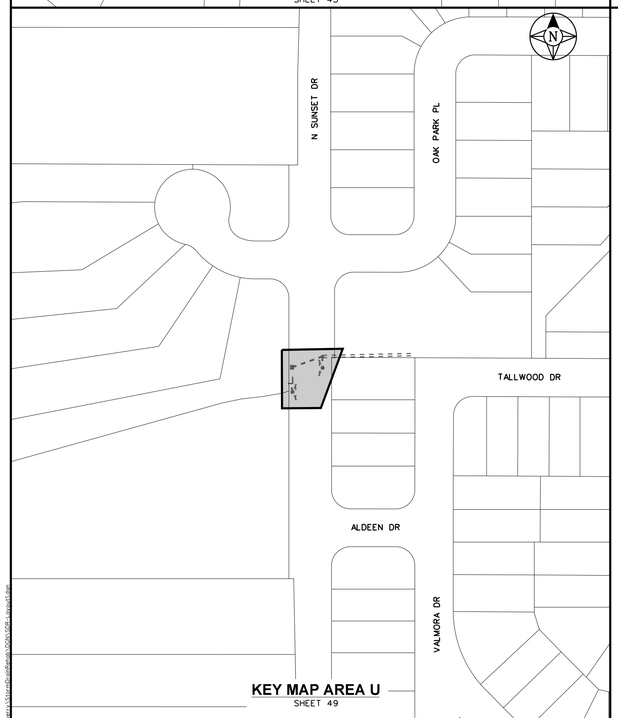


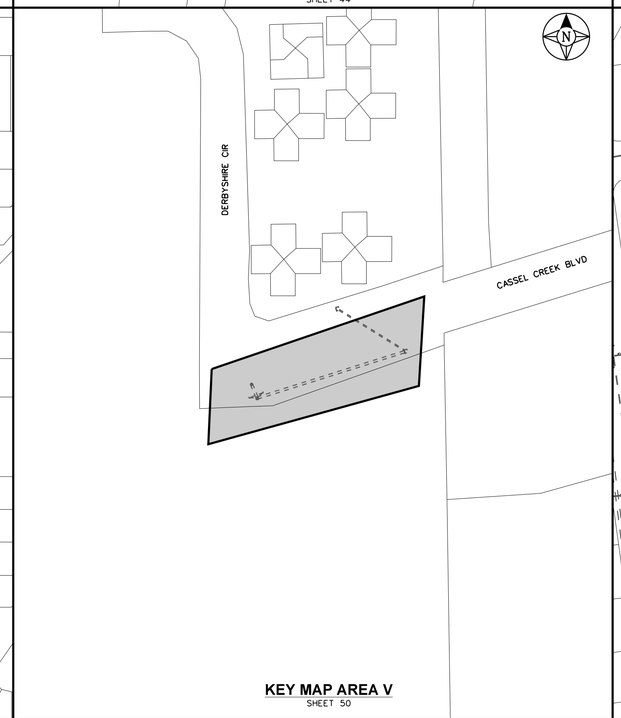
KEY MAP AREA S
SHEET 45



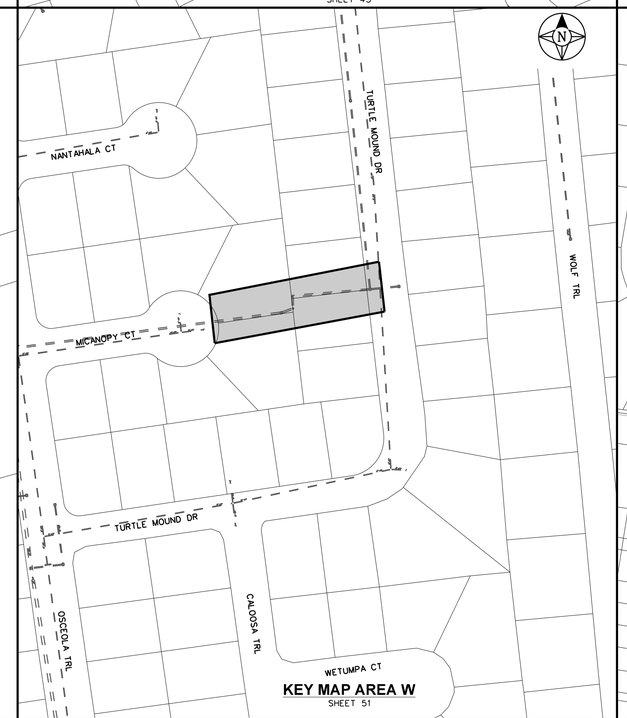
KEY MAP AREA T
SHEETS 46 THRU 48



KEY MAP AREA U
SHEET 49



KEY MAP AREA V
SHEET 50



KEY MAP AREA W
SHEET 51

KEY MAP AREA X
SHEET 52

Revision	Date	Approved
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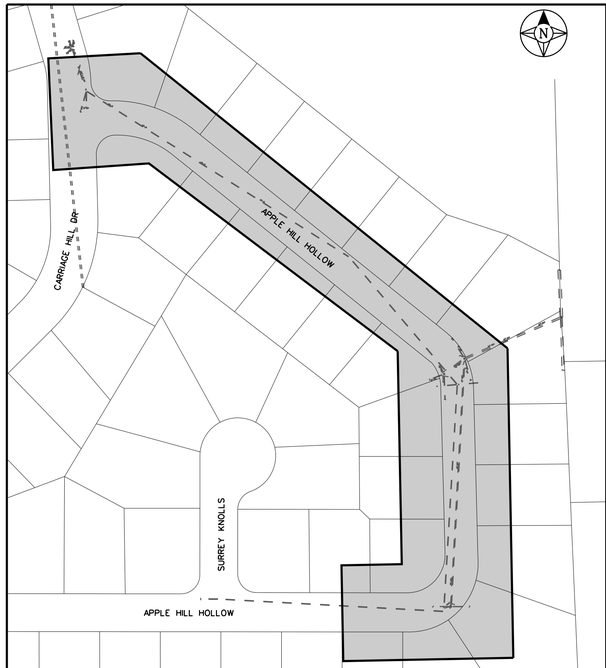
CITY OF CASSELBERRY
FLORIDA

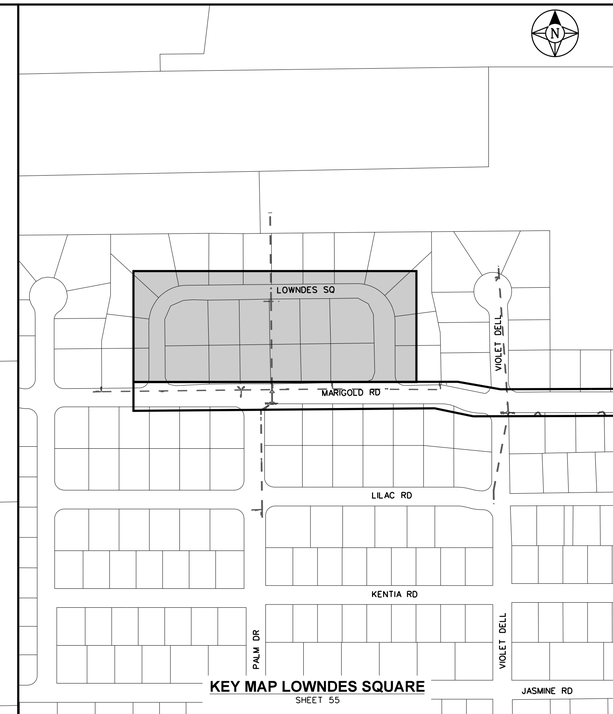
STORM DRAIN
REHABILITATION PROJECT

AREA LOCATION MAP

SHEET
19
SAI
Project No.
2015-006.10



KEY MAP APPLE HILL HOLLOW
SHEET 53 & 54



KEY MAP LOWNDES SQUARE
SHEET 55

Revision	Date	Approved
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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

AREA LOCATION MAP

SHEET
20
SAI
Project No.
2015-006.10

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10/27/2016

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area A

From Structure: 317
To Structure: 317N

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #317		
11.1'	Mineral Stains at Joint	12 - 12	Chemical Grout
68.7'	Mineral Deposits at Joint	6 - 9	Chemical Grout
117.5'	Catch Basin - #317N		

From Structure: 317
To Structure: 329

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #317		
47.3'	Root	3 - 8	CIPP
51.9'	Root	9 - 3	CIPP
58.5'	Root	5	CIPP
112.0'	Rod Intruding	1 - 6	Chemical Grout
113.1'	Transporter Can Not Pass		

From Structure: 329
To Structure: 317

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #329		
8.0'	Roots	3 - 8	CIPP
10.1'	Roots	4	CIPP
12.0'	Roots	12	CIPP
16.4'	Roots	3	CIPP
21.9'	Roots	9	CIPP
43.3'	Roots	10	CIPP
50.3'	Roots	1	CIPP
188.2'	Roots	1 - 6	CIPP
216.3'	Roots	11	CIPP
269.4'	Rod Protruding	12	
269.4	Transporter Can Not Pass		

From Structure: 115
To Structure: 315

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #115		
5.0'	Infiltration	5	CIPP
22.3'	Infiltration	6	CIPP
74.5'	Heavy Cement in Pipe		Remove Cement
75.1'	Cement in Pipe		Remove Cement
94.4'	Cement in Pipe	5	Remove Cement
103.5'	Infiltration	5	CIPP
162.3'	Infiltration	7	CIPP
207.8'	Buried Manhole	12	
235.8'	Infiltration	3	CIPP
292.6'	Infiltration	6	CIPP
395.7'	Infiltration	6	CIPP
416.6'	Catch Basin - #315		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

KANTOR BLVD.
(AREA A)

SHEET
21
SAI
Project No.
2015-006.10

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES, CULVERTS, & EASEMENTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area C1

From Structure: 1189
To Structure: 1161

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1189		
222.4'	Light Roots at Joint	3	CIPP
248.7'	5.7' Longitudinal Crack		CIPP
271.3'	Manhole - #1161		

From Structure: 1147
To Structure: 1161

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1147		
91.9'	Roots	7	Chemical Grout
99.7'	Roots	5	Chemical Grout
256.3'	Manhole - #1161		

From Structure: 1147
To Structure: 1148

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1147		
21.7'	Joint Offset - Medium		CIPP
30.1'	Catch Basin - #1148		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

QUINTUPLET DRIVE
AREA C1

SHEET
22
SAI
Project No.
2015-006.10

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10/27/2016

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES, CULVERTS, & EASEMENTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area C2

From Structure: 1280
To Structure: MES

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Manhole - #1280		
39.8'	Roots	8	Chemical Grout
48.8'	Roots	7	Chemical Grout
120.8'	Roots	5	Chemical Grout
169.0'	Joint Offset	5 - 7	25' CIPP
196.8'	Joint Offset	5 - 7	25' CIPP
250.0'	Roots	8	Chemical Grout
266.5'	Roots	6	Chemical Grout
275.5'	Sag	6	15' CIPP
290.8'	Joint Separated	12 - 12	15' CIPP
299.5'	Roots	8	Chemical Grout
315.4'	Roots	9	Chemical Grout
339.3'	Roots	5	Chemical Grout
346.6'	Joint Offset	5 - 7	Replace Pipe
355.0'	Joint Separated	12 - 12	Replace Pipe
365.1'	MES		

From Structure: 1261
To Structure: 1210

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1261		
10.2'	Roots at Joint	5	Chemical Grout
34.0'	Roots at Joint	5	Chemical Grout
41.9'	Roots at Joint	5	Chemical Grout
70.1'	Roots at Joint	5	Chemical Grout
102.7'	Hole w/ Visible Soil	7	Chemical Grout
126.8'	Hole w/ Visible Soil	5	Chemical Grout
170.6'	Manhole - #1210		

From Structure: 1261
To Structure: 1280W

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1261		
14.6'	Pipe Broken at Joint - Soil Visible	12 - 12	CIPP
14.6'	Medium Roots at Joint	5 - 6	Root Removal
32.1'	Catch Basin - #1280W		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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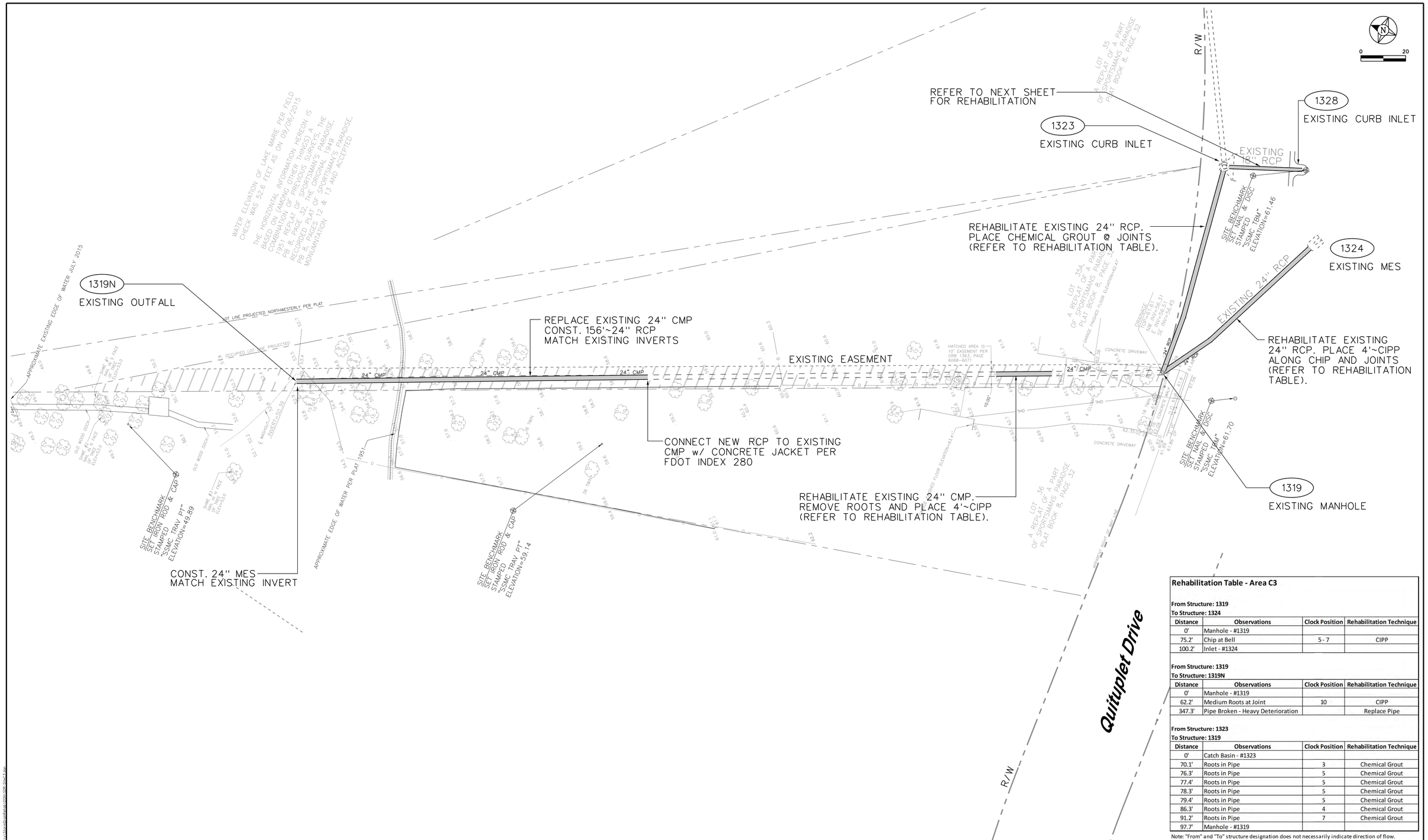
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

QUINTUPLET DRIVE AREA C2

SHEET
23
SAI Project No. 2015-006.10



Rehabilitation Table - Area C3

From Structure: 1319
To Structure: 1324

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Manhole - #1319		
75.2'	Chip at Bell	5 - 7	CIPP
100.2'	Inlet - #1324		

From Structure: 1319
To Structure: 1319N

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Manhole - #1319		
62.2'	Medium Roots at Joint	10	CIPP
347.3'	Pipe Broken - Heavy Deterioration		Replace Pipe

From Structure: 1323
To Structure: 1319

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1323		
70.1'	Roots in Pipe	3	Chemical Grout
76.3'	Roots in Pipe	5	Chemical Grout
77.4'	Roots in Pipe	5	Chemical Grout
78.3'	Roots in Pipe	5	Chemical Grout
79.4'	Roots in Pipe	5	Chemical Grout
86.3'	Roots in Pipe	4	Chemical Grout
91.2'	Roots in Pipe	7	Chemical Grout
97.7'	Manhole - #1319		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

EASEMENT TO LAKE MARIE
AREA C3

SHEET
24
SAI
Project No.
2015-006.10

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area C4

From Structure: 1350
To Structure: 1355

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1350		
17.3'	Joint Bell Broken - Gasket Exposed		CIPP
17.3'	Joint Separated - Void Visible		CIPP
29.2'	Cement Repair Protruding 1"	11 - 3	CIPP
30.9'	Catch Basin - #1355		

From Structure: 1355
To Structure: 1327

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1355		
41.0'	Circular Crack with Mineral Stains	1 - 4	Chemical Grout
204.9'	Manhole - #1327		

From Structure: 1323
To Structure: 1328

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1323		
25.1'	Roots at Joint	5	CIPP
25.1'	Crack at Joint	6 - 12	CIPP
30.9'	Catch Basin - #1328		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

QUINTUPLET DRIVE
AREA C4

SHEET
25
SAI
Project No.
2015-006.10

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10/27/2016

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area C5

From Structure: 1109
To Structure: 1107

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1109		
95.3'	1 Inch of Dirt and Bricks		Remove Debris
152.5'	Catch Basin - #1107		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

QUINTUPLET DRIVE
AREA C5

SHEET
26
SAI
Project No.
2015-006.10

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10/27/2016

Rehabilitation Table - Area D

From Structure: 704
To Structure: 703

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #704		
38.1'	Broken Pipe	6	CIPP
55.2'	Catch Basin - #703		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

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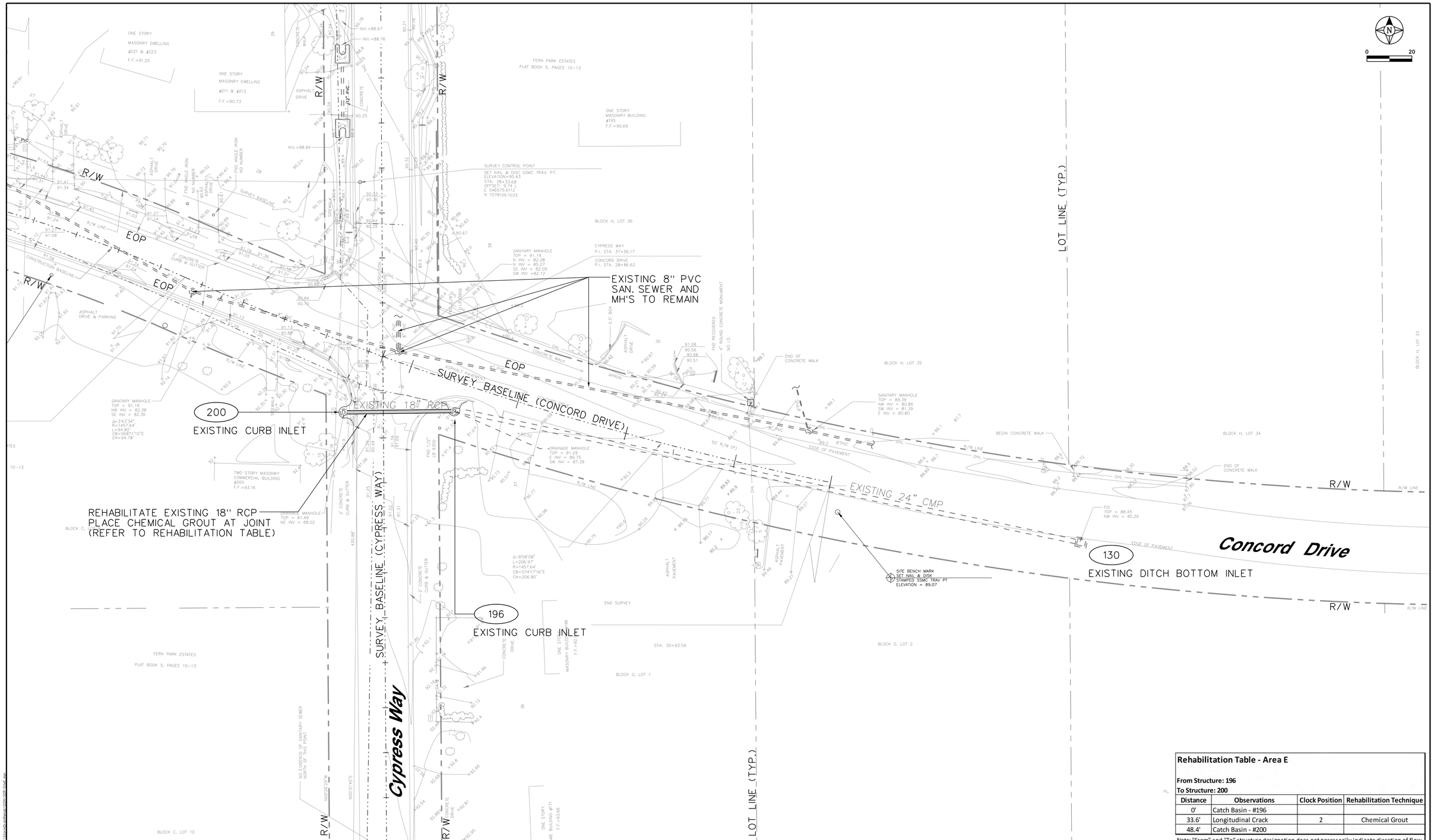
STORM DRAIN REHABILITATION PROJECT

GREGORY DRIVE (AREA D)

SHEET
27
SAI Project No. 2015-006.10



Rehabilitation Table - Area E

From Structure: 196
To Structure: 200

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #196		
33.6'	Longitudinal Crack	2	Chemical Grout
48.4'	Catch Basin - #200		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

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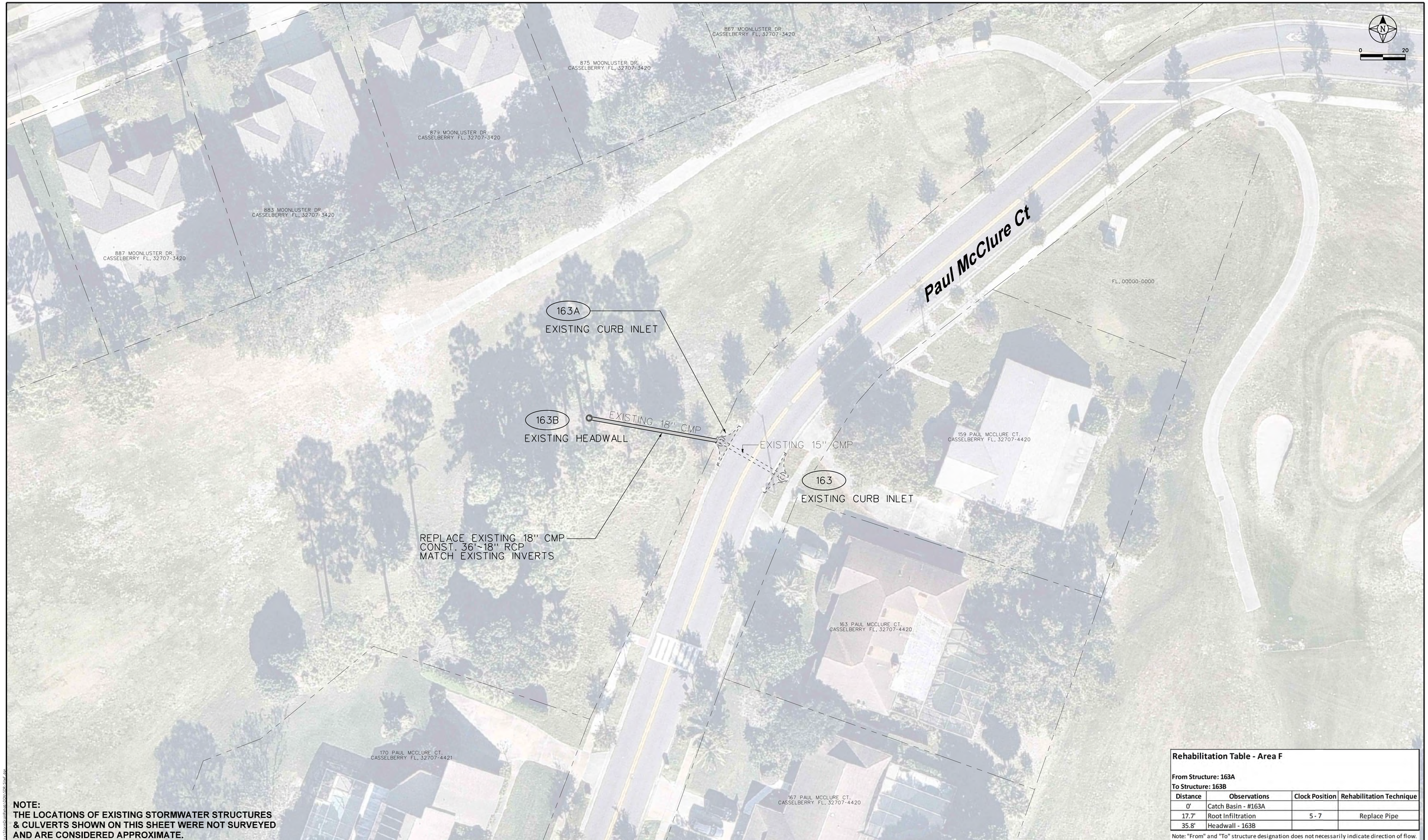
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

CONCORD DRIVE (AREA E)

SHEET **28**

SAI Project No. 2015-006.10



NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area F

From Structure: 163A
To Structure: 163B

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #163A		
17.7'	Root Infiltration	5 - 7	Replace Pipe
35.8'	Headwall - 163B		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

Designed by: BRW
Drawn by: BJG/ADB
Checked by: RBG
Approved by: BRW
Vertical Datum: NAVD 1988

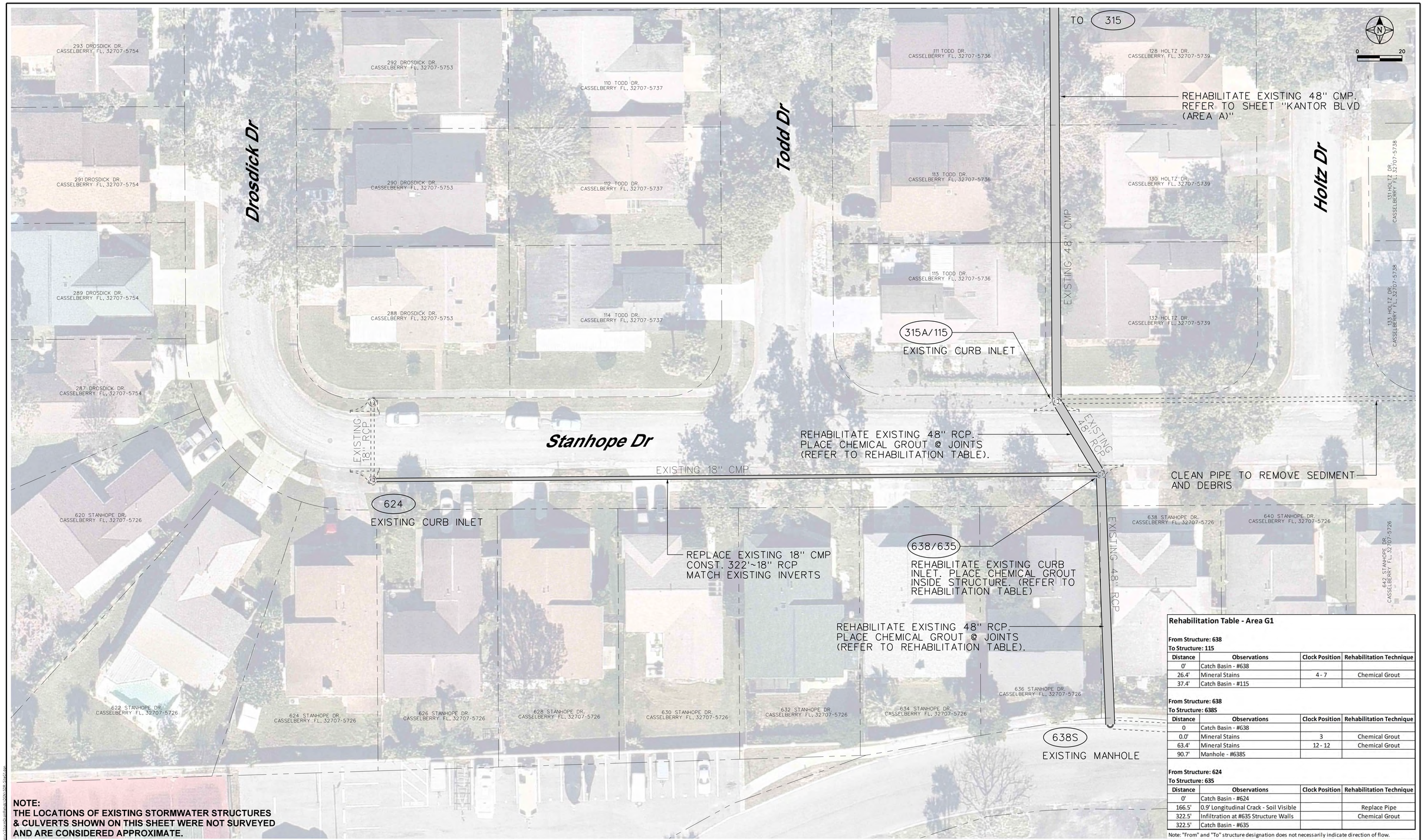
SINGHOFEN & ASSOCIATES, INC.
STORMWATER MANAGEMENT AND CIVIL ENGINEERING
11723 Orpington Street, Suite 100
Orlando, Florida 32817
Ph: (407) 679-3001
Fax: (407) 679-2691
DBPR No. 5112

CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

Paul McClure Court
(Area F)

SHEET
29
SAI
Project No.
2015-006.10



NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area G1

From Structure: 638
To Structure: 115

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #638		
26.4'	Mineral Stains	4 - 7	Chemical Grout
37.4'	Catch Basin - #115		

From Structure: 638
To Structure: 638S

Distance	Observations	Clock Position	Rehabilitation Technique
0	Catch Basin - #638		
0.0'	Mineral Stains	3	Chemical Grout
63.4'	Mineral Stains	12 - 12	Chemical Grout
90.7'	Manhole - #638S		

From Structure: 624
To Structure: 635

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #624		
166.5'	0.9' Longitudinal Crack - Soil Visible		Replace Pipe
322.5'	Infiltration at #635 Structure Walls		Chemical Grout
322.5'	Catch Basin - #635		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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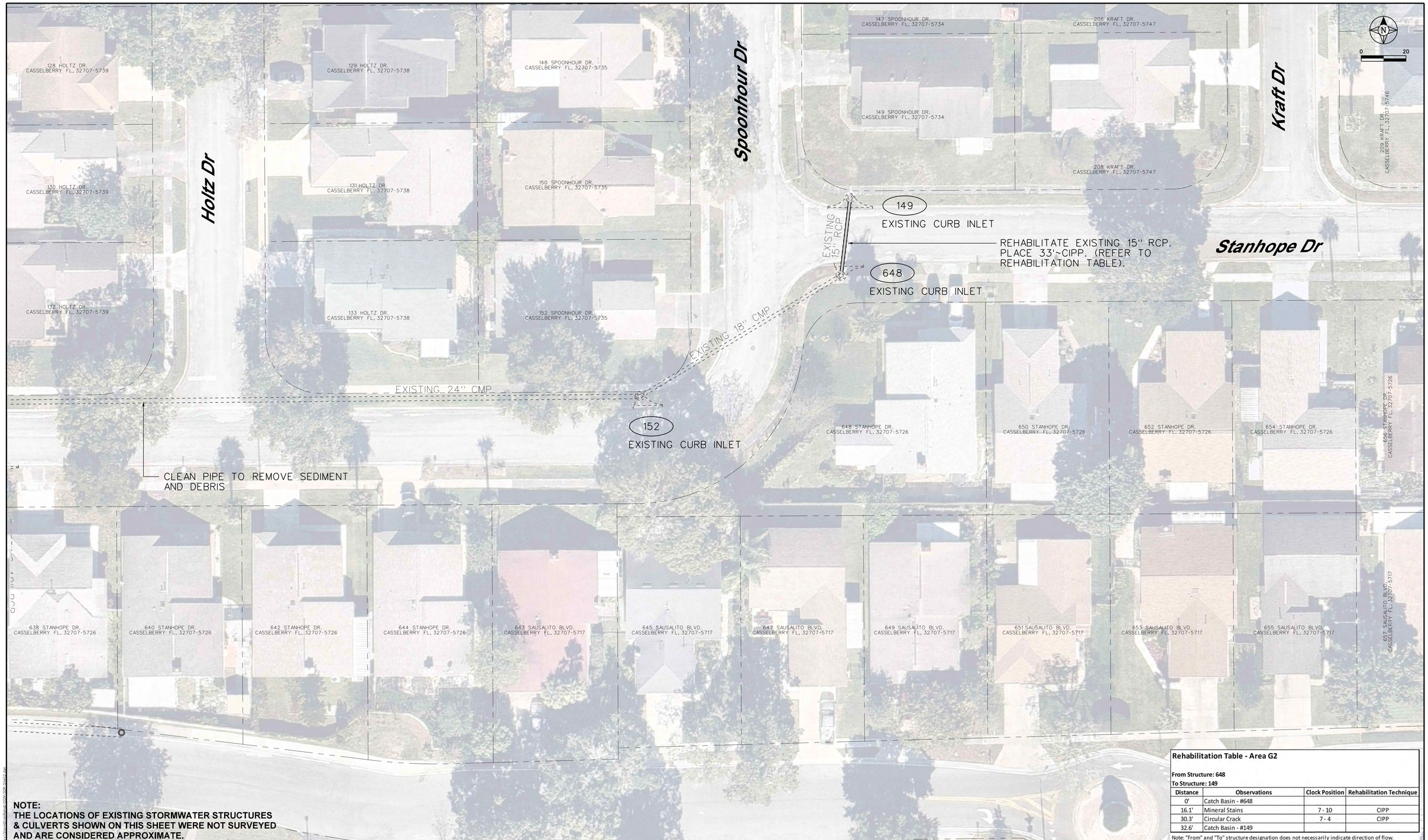
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

STANHOPE DRIVE (AREA G1)

SHEET **30**

SAI Project No. 2015-006.10



NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area G2

From Structure: 648
To Structure: 149

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #648		
16.1'	Mineral Stains	7 - 10	CIPP
30.3'	Circular Crack	7 - 4	CIPP
32.6'	Catch Basin - #149		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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Vertical Datum: NAVD 1988

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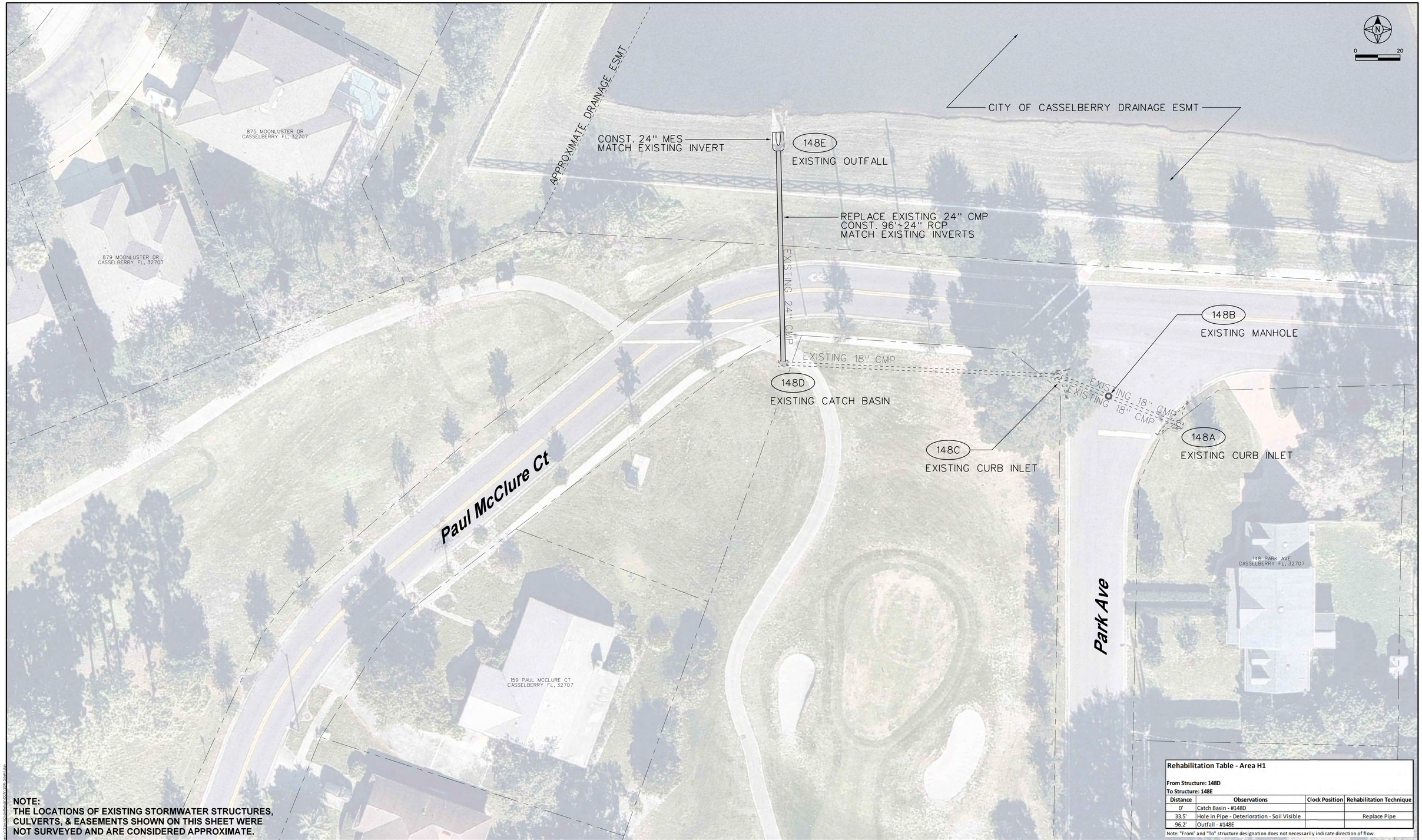
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

STANHOPE DRIVE (AREA G2)

SHEET
31
SAI Project No. 2015-006.10



NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES, CULVERTS, & EASEMENTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area H1

From Structure: 148D
To Structure: 148E

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #148D		
33.5'	Hole in Pipe - Deterioration - Soil Visible		Replace Pipe
96.2'	Outfall - #148E		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

PAUL McCLURE CT & PARK AVE AREA H1

SHEET
32
SAI Project No. 2015-006.10

144
EXISTING MH

EXISTING 18" CMP

138A
EXISTING CURB INLET

EXISTING 18" CMP

138
EXISTING CURB INLET

Park Ave

171 PAUL MCCLURE CT
CASSELBERRY FL, 32707

175 PAUL MCCLURE CT
CASSELBERRY FL, 32707

142 PARK AVE
CASSELBERRY FL, 32707

140 PARK AVE
CASSELBERRY FL, 32707

138 PARK AVE
CASSELBERRY FL, 32707

136 PARK AVE
CASSELBERRY FL, 32707

50 S WINTER PARK DR
CASSELBERRY FL, 32707

54 S WINTER PARK DR
CASSELBERRY FL, 32707

58 S WINTER PARK DR
CASSELBERRY FL, 32707

0 20

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

NO IMPROVEMENTS NEEDED

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

PARK AVE
AREA H2

SHEET
33
SAI
Project No.
2015-006.10

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area H3

From Structure: 126B
To Structure: 126A

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #126B		
12.1'	Bulge	8	Replace Pipe
27.2'	Catch Basin - #126A		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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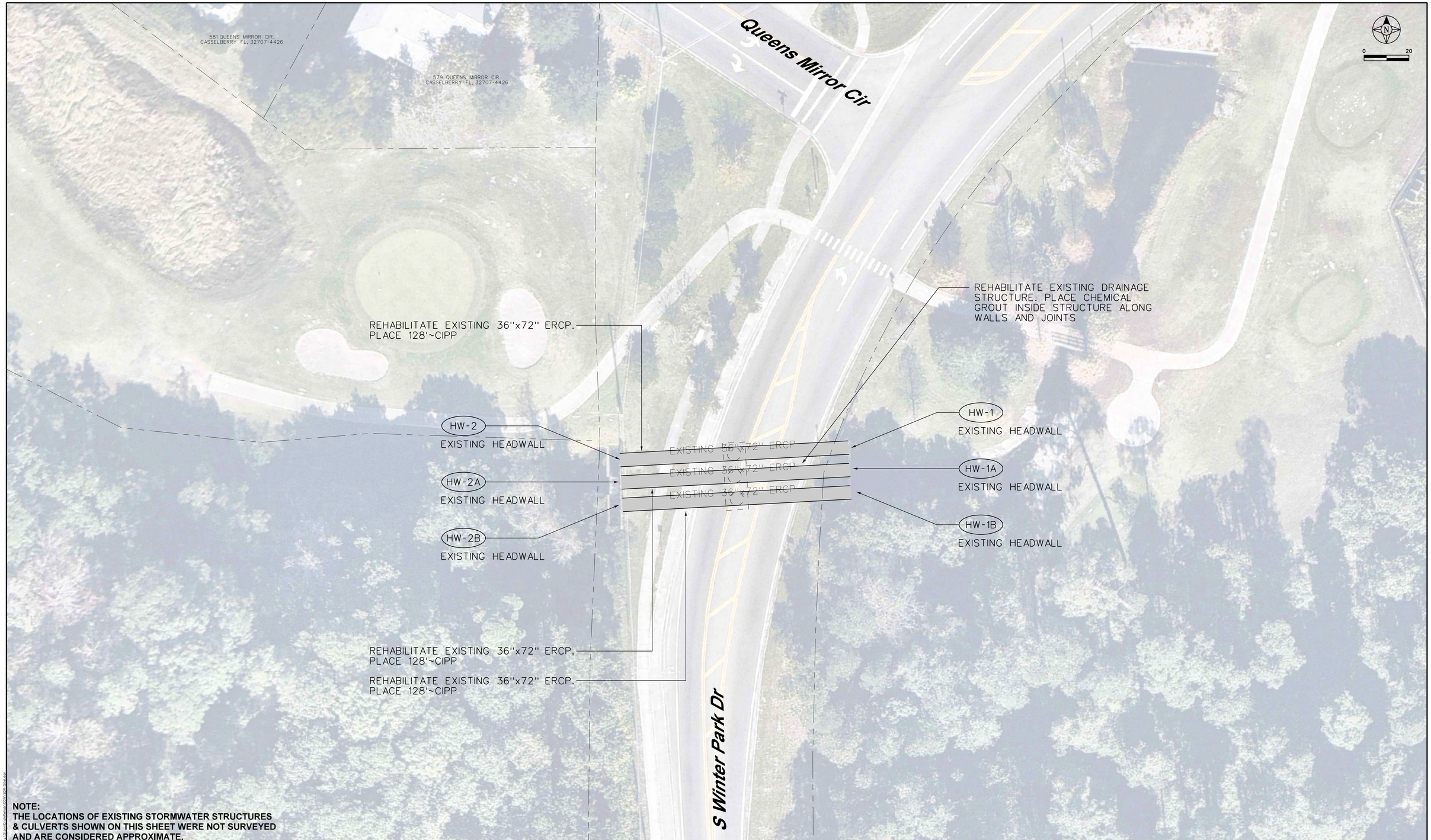
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

PARK AVE
AREA H3

SHEET
34
SAI
Project No.
2015-006.10



NOTE:
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Revision	Date	Approved
PER CITY	4/29/16	BRW

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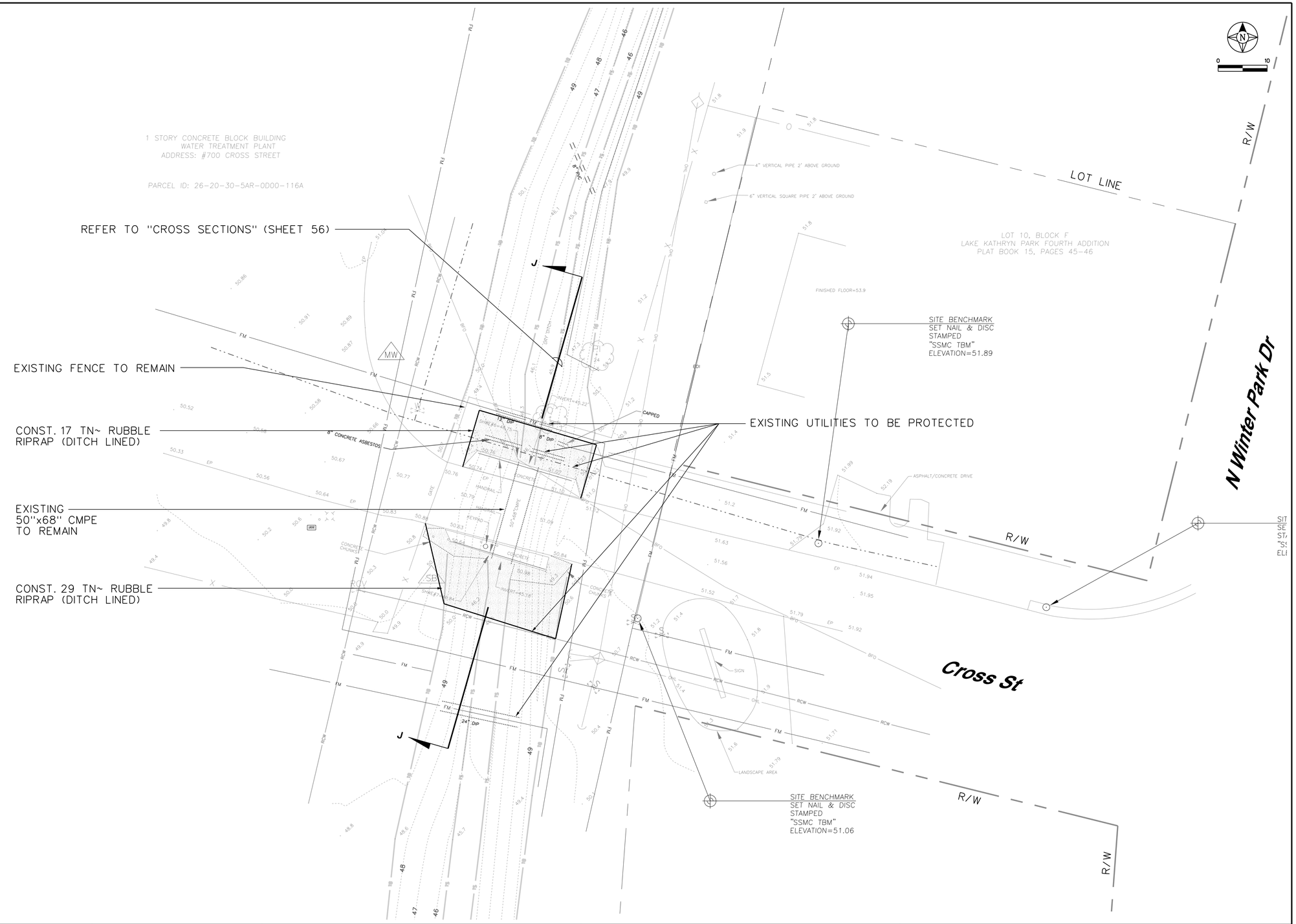
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

S WINTER PARK DRIVE
(AREA I)

SHEET
35
SAI
Project No.
2015-006.10



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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

CROSS STREET
(AREA J)

SHEET
36
SAI
Project No.
2015-006.10

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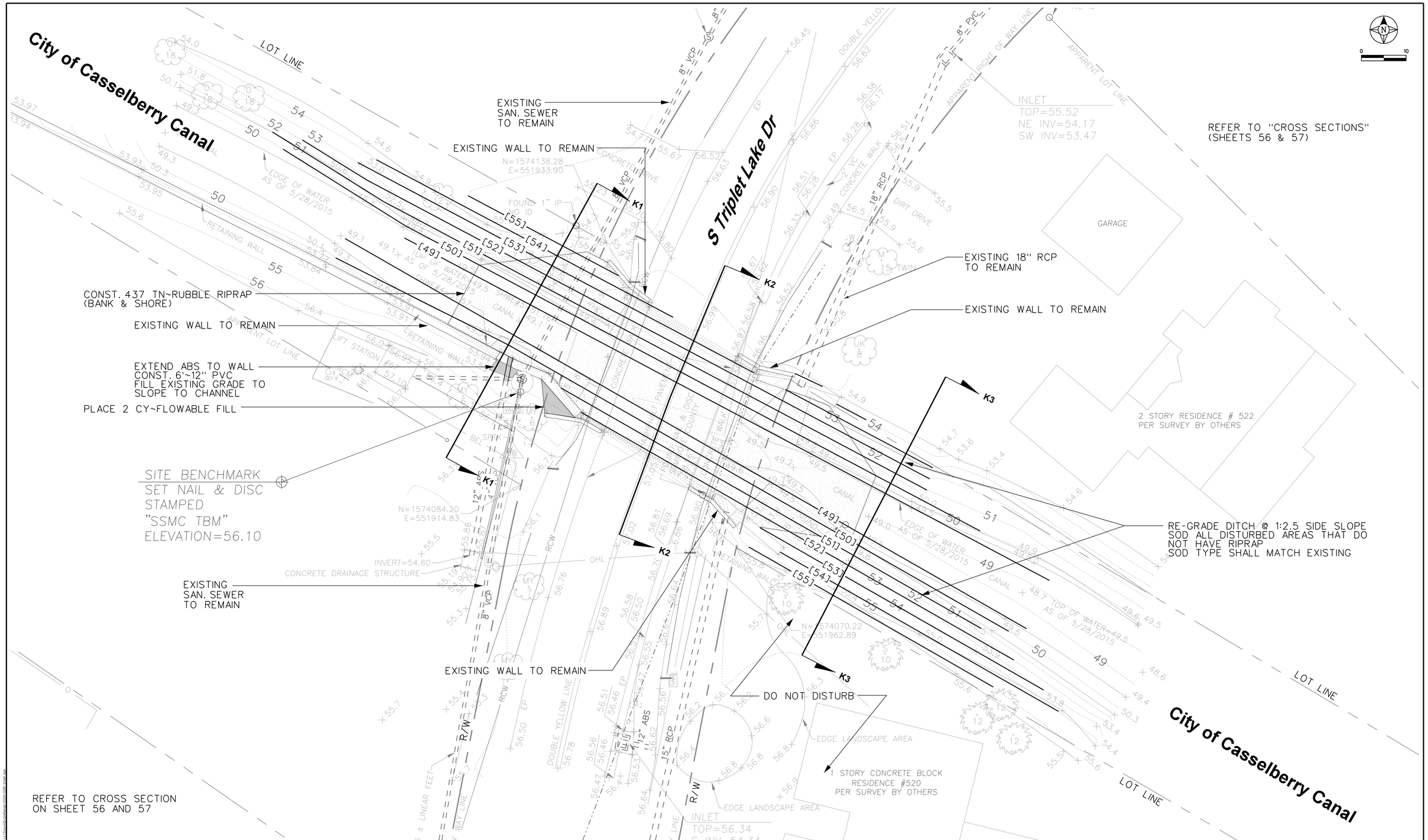
10/27/2016



Revision	Date	Approved
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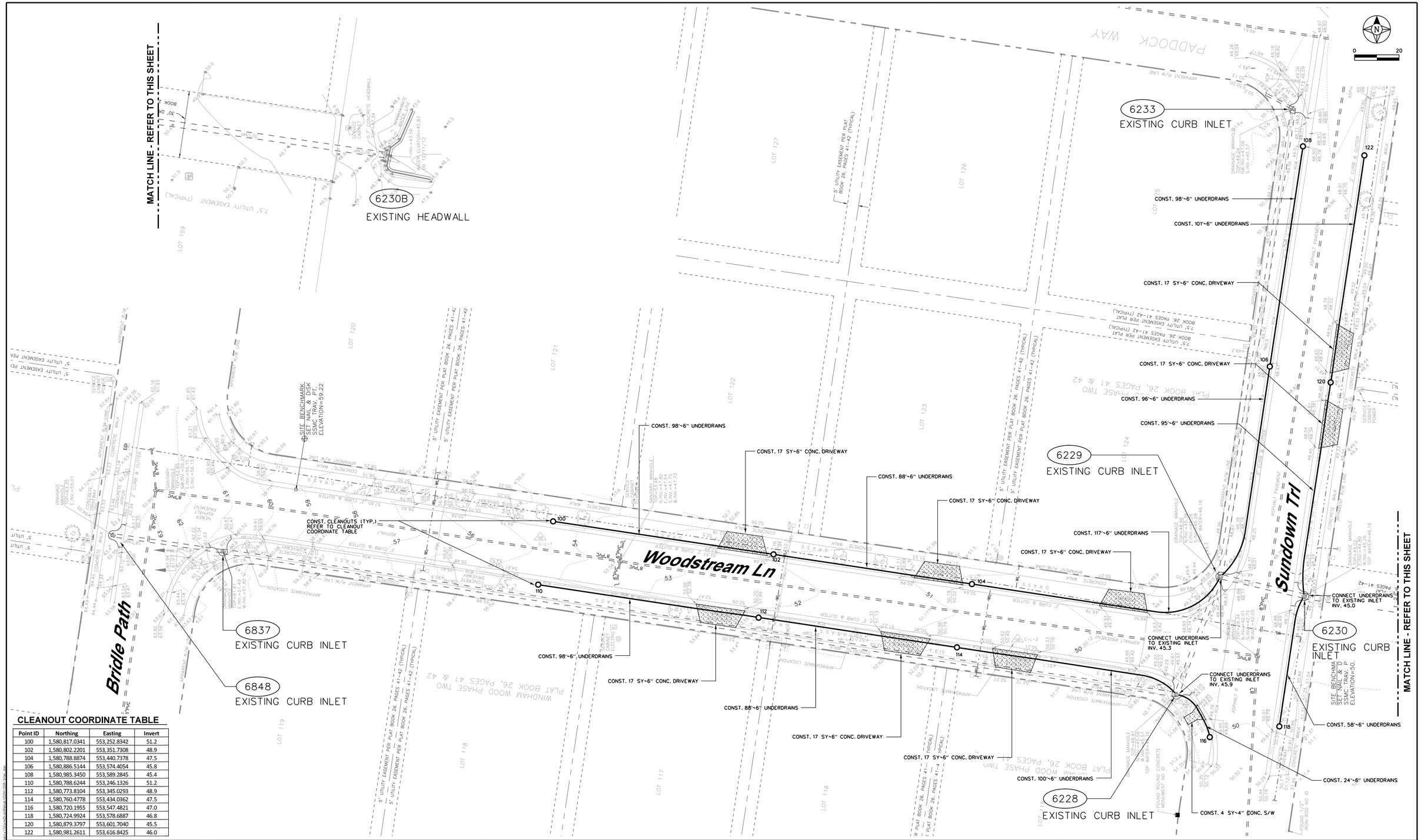
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

QUEENS MIRROR CIRCLE (AREA K)

SHEET **37**

SAI Project No. 2015-006.10



CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
100	1,580,817.0341	553,252.8342	51.2
102	1,580,802.2201	553,351.7308	48.9
104	1,580,788.8874	553,440.7378	47.5
106	1,580,886.5144	553,574.4054	45.8
108	1,580,985.3450	553,589.2845	45.4
110	1,580,788.6244	553,246.1326	51.2
112	1,580,773.8104	553,345.0293	48.9
114	1,580,760.4778	553,434.0362	47.5
116	1,580,720.1955	553,547.4821	47.0
118	1,580,724.9924	553,578.6887	46.8
120	1,580,879.3797	553,601.7040	45.5
122	1,580,981.2611	553,616.8425	46.0

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

WOODSTREAM LANE
(AREA L)

SHEET
38
SAI
Project No.
2015-006.10

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES, CULVERTS, & EASEMENTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area M

From Structure: 139
To Structure: OUTFALL

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Manhole - #139		
49.4'	Mineral Stains at Joint	7 - 10	Chemical Grout
121.9'	Root Infiltration at Joint	10 - 2	Chemical Grout
130.0'	Material Change - RCP to ADS		
155.0'	Outfall		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

Designed by: BRW
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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

EASEMENT FROM CARRIAGE HILL DRIVE
(AREA M)

SHEET
39
SAI
Project No.
2015-006.10

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES, CULVERTS, & EASEMENTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area N

From Structure: 277F
To Structure: 277B

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #277F		
130.8'	Material Change - RCP to HDPE		
130.8'	Infiltration at Material Change	9	Chemical Grout
132.8'	Offset Joint - Camera unable to pass	12 - 12	Chemical Grout

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

277/285 SECRET WAY
(AREA N)

SHEET
40
SAI
Project No.
2015-006.10

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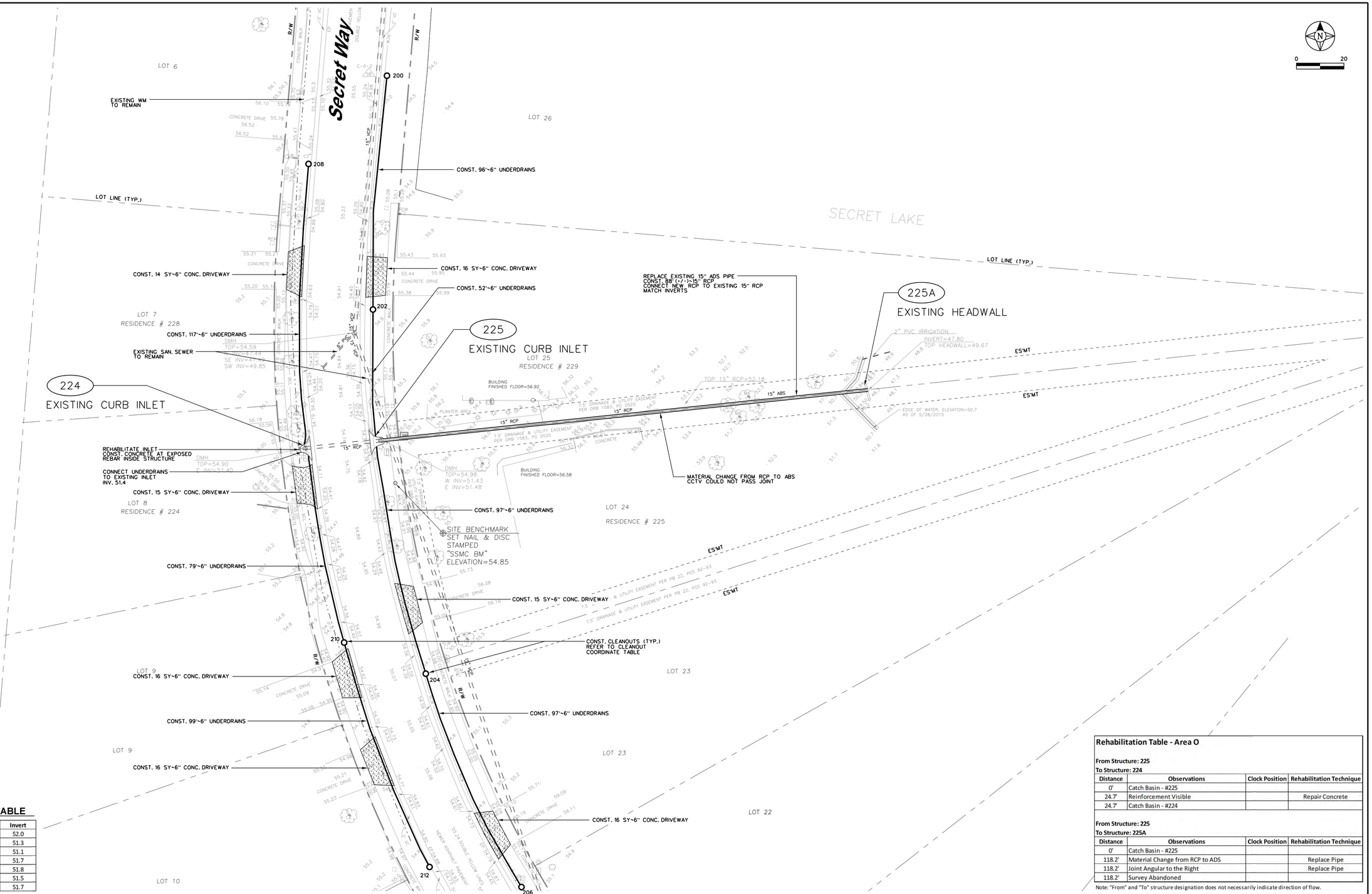
10/22/2016



CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
200	1,578,011.2648	550,271.6426	52.0
202	1,577,912.8147	550,265.7470	51.3
204	1,577,759.4631	550,287.9943	51.1
206	1,577,669.6218	550,328.3115	51.7
208	1,577,974.1139	550,238.6045	51.8
210	1,577,772.5773	550,253.5881	51.5
212	1,577,678.0821	550,289.5759	51.7

Rehabilitation Table - Area O

From Structure: 225
To Structure: 224

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #225		
24.7'	Reinforcement Visible		Repair Concrete
24.7'	Catch Basin - #224		

From Structure: 225
To Structure: 225A

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #225		
118.2'	Material Change from RCP to ADS		Replace Pipe
118.2'	Joint Angular to the Right		Replace Pipe
118.2'	Survey Abandoned		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
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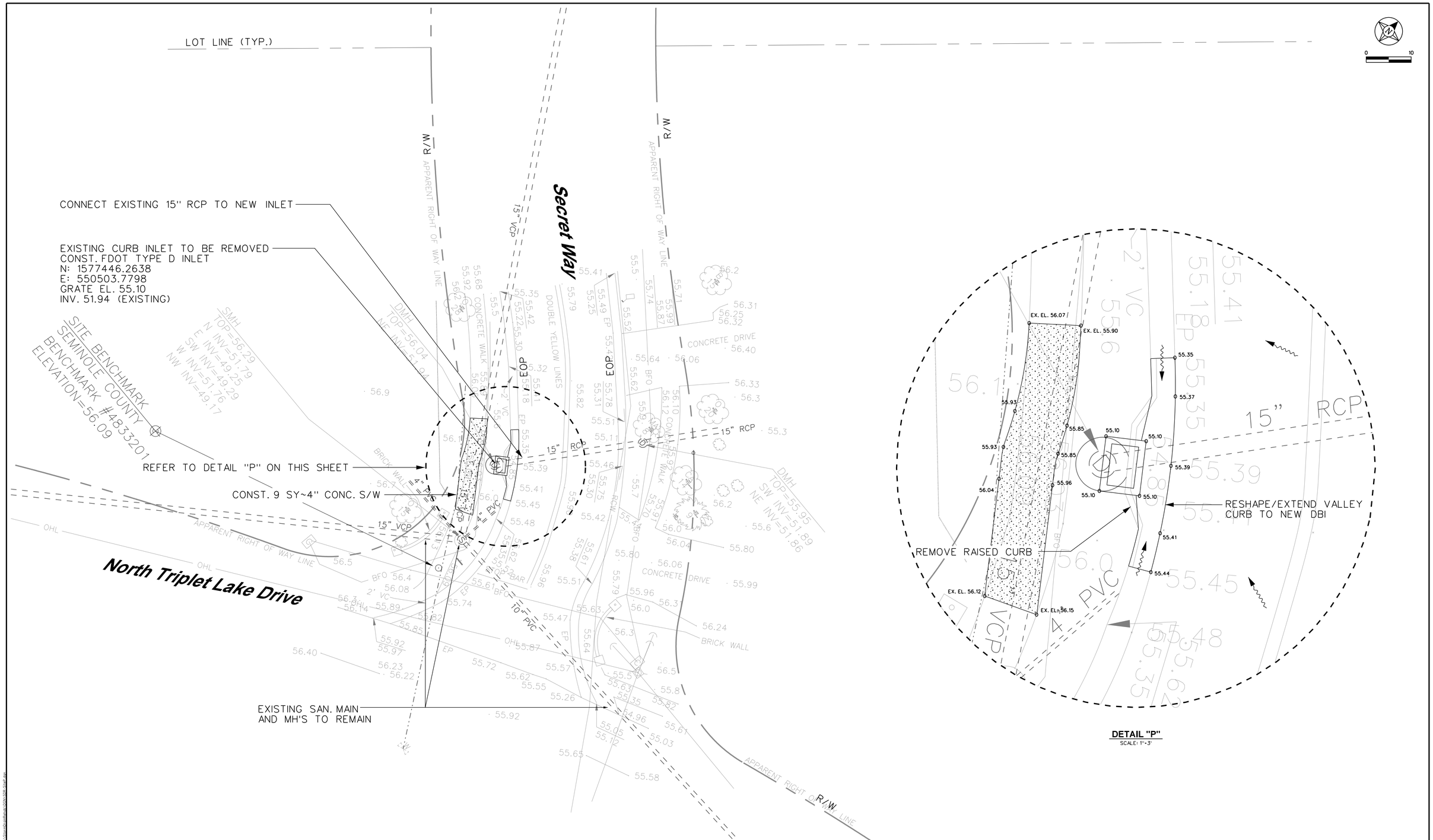
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

224/228 SECRET WAY (AREA O)

SHEET 41

SAI Project No. 2015-006.10



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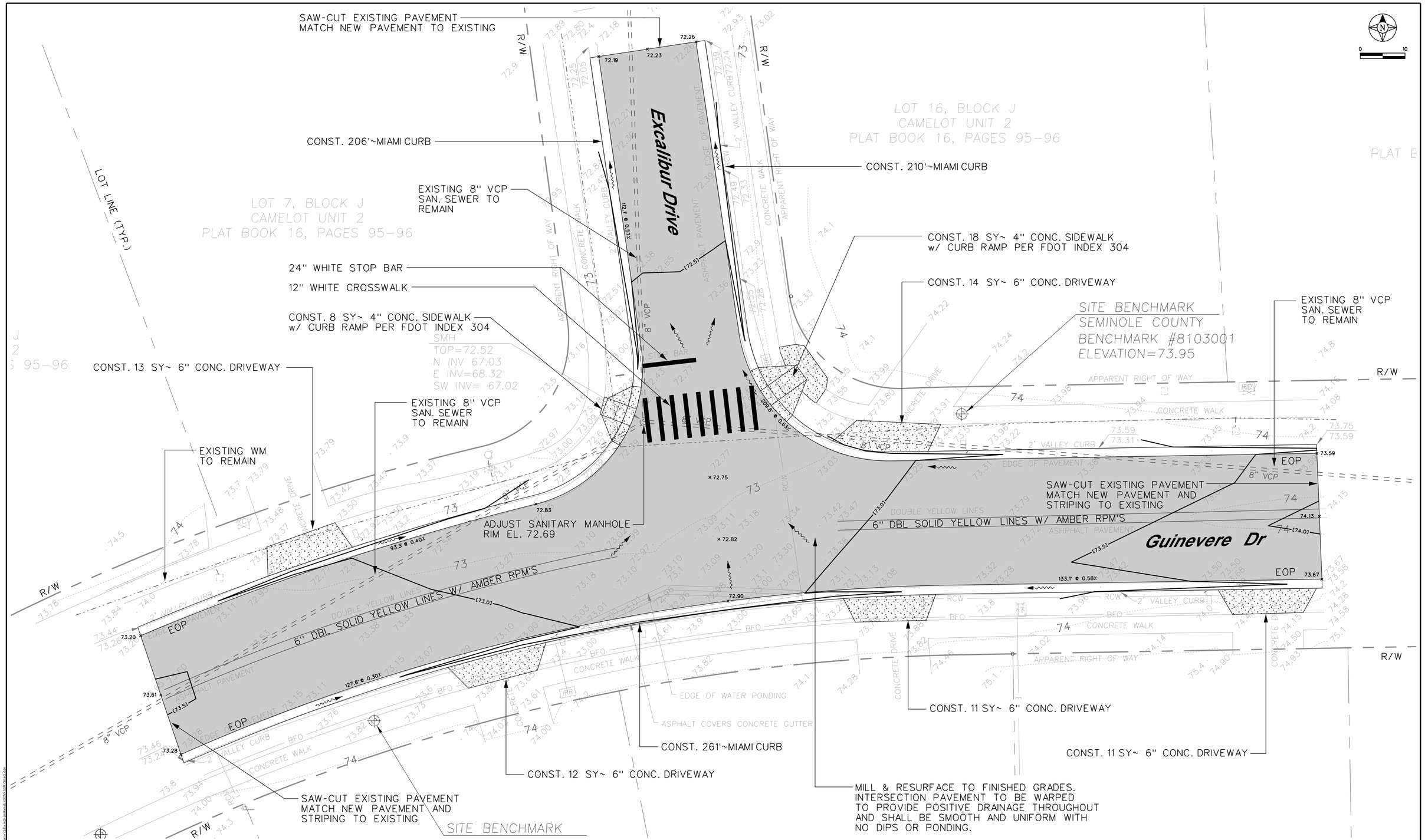
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

INTERSECTION OF
SECRET WAY & N TRIPLET LAKE DR.
(AREA P)

SHEET
42
SAI
Project No.
2015-006.10



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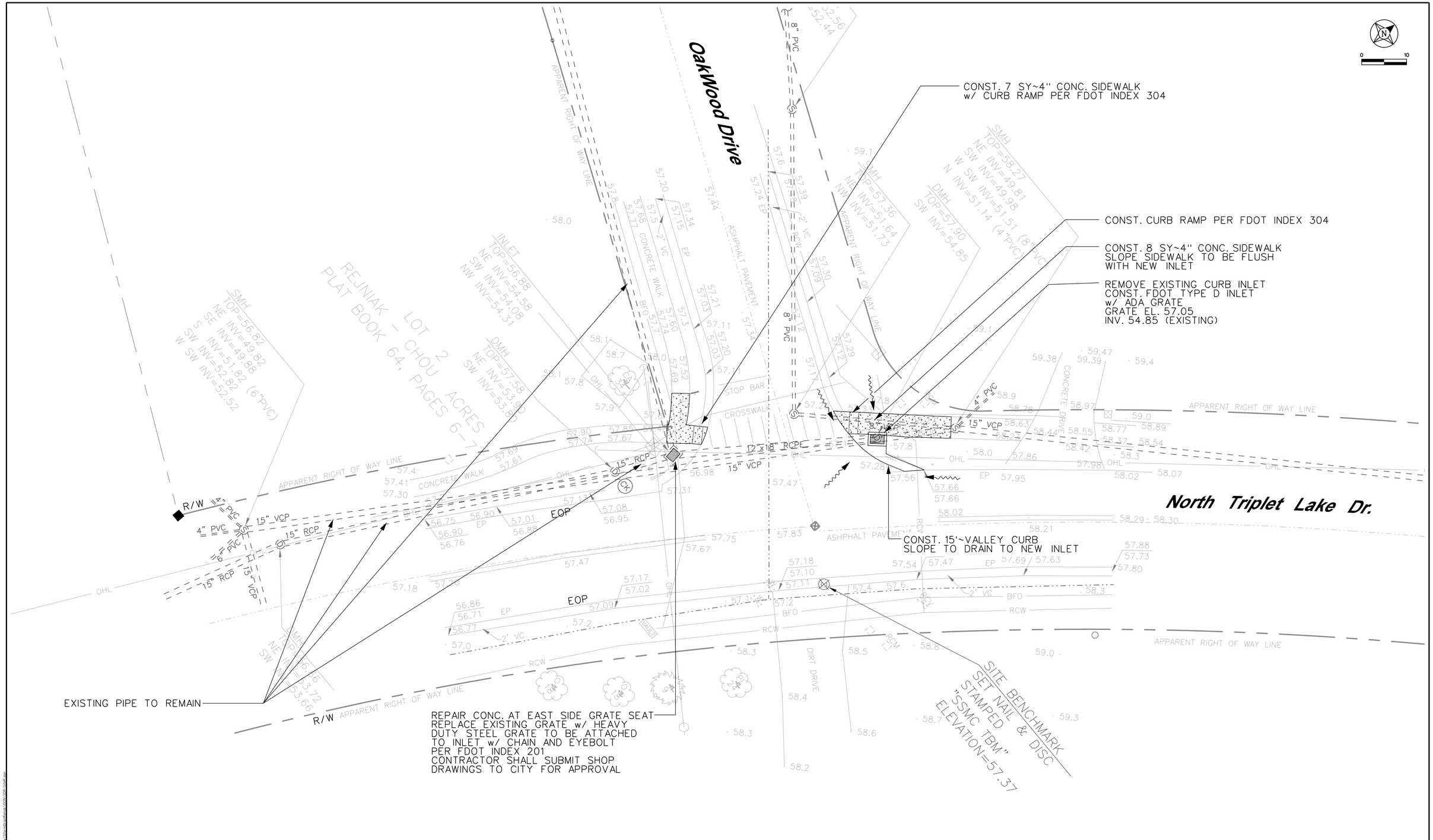
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

INTERSECTION OF GUINEVERE DRIVE AND EXCALIBUR DRIVE (AREA Q)

SHEET
43
SAI
Project No.
2015-006.10



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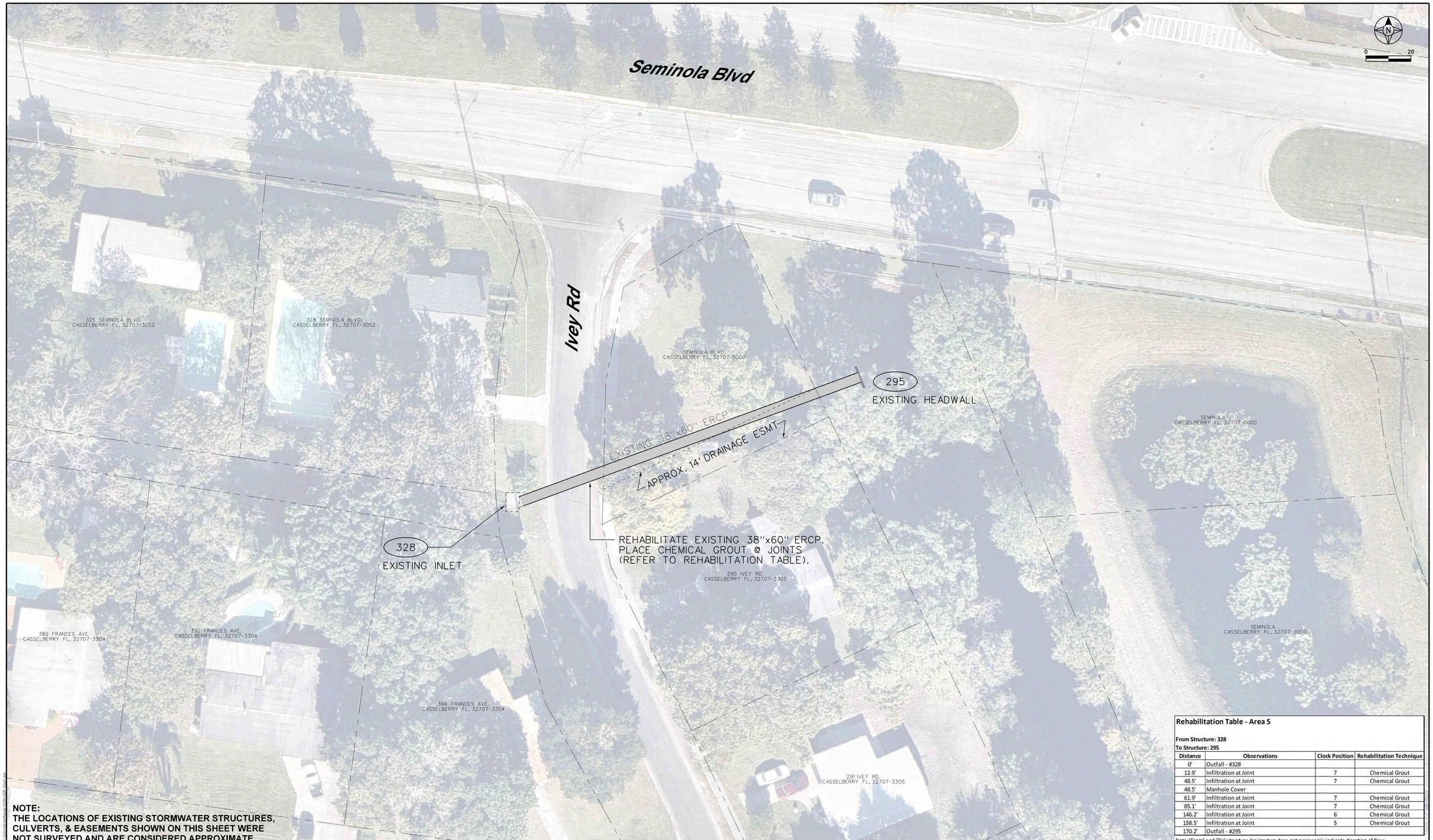
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

INTERSECTION N TRIPLET LAKE DR.
& OAKWOOD DR.
(AREA R)

SHEET
44
SAI
Project No.
2015-006.10



NOTE:
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Rehabilitation Table - Area S

From Structure: 328
To Structure: 295

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Outfall - #328		
12.9'	Infiltration at Joint	7	Chemical Grout
48.5'	Infiltration at Joint	7	Chemical Grout
48.5'	Manhole Cover		
61.9'	Infiltration at Joint	7	Chemical Grout
85.1'	Infiltration at Joint	7	Chemical Grout
146.2'	Infiltration at Joint	6	Chemical Grout
158.5'	Infiltration at Joint	5	Chemical Grout
170.2'	Outfall - #295		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

IVEY ROAD
(AREA S)

SHEET
45
SAI
Project No.
2015-006.10

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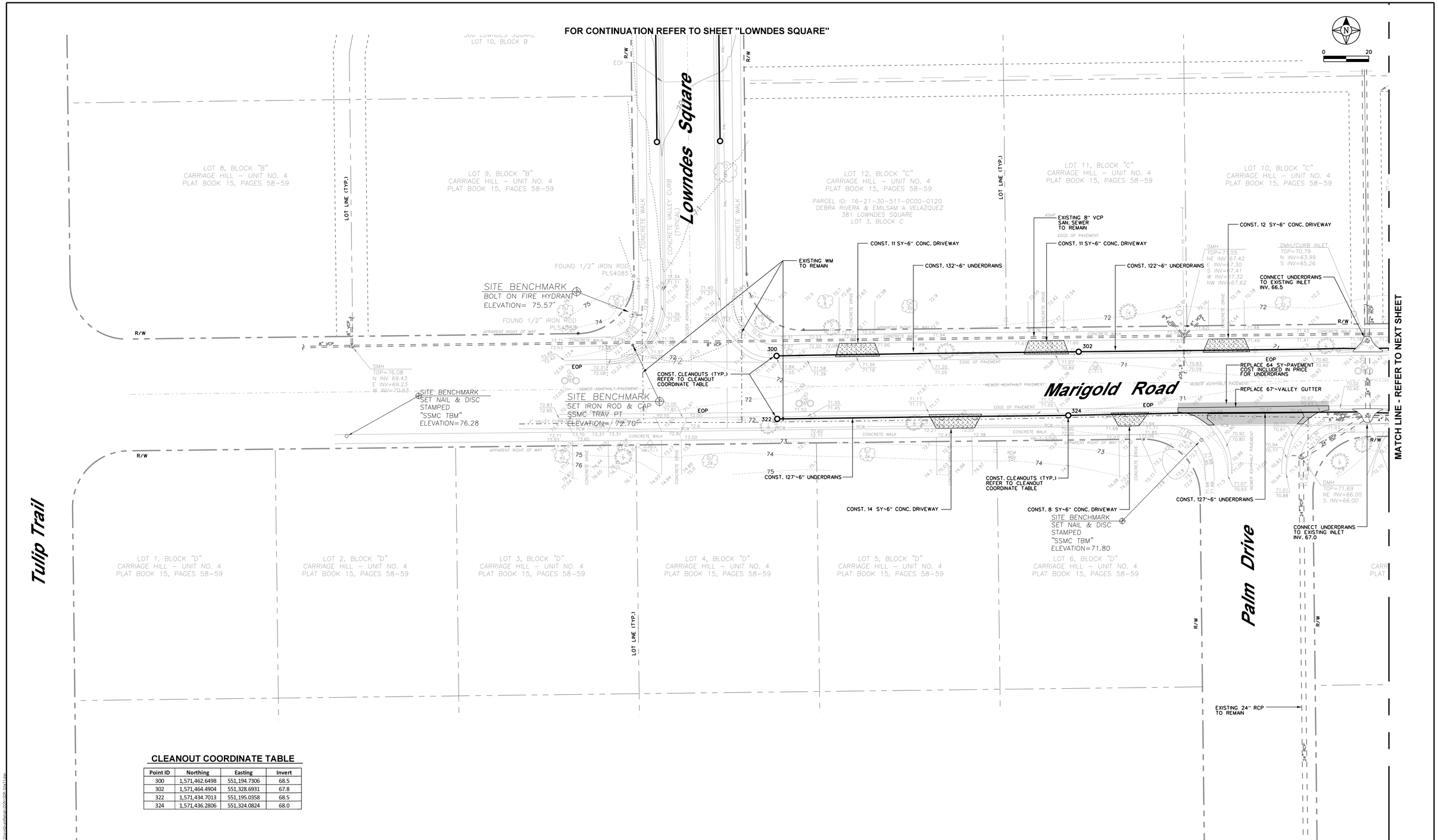
10/27/2016



CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
300	1,571,462.6498	551,194.7306	68.5
302	1,571,464.4904	551,328.6931	67.8
322	1,571,434.7013	551,195.0358	68.5
324	1,571,436.2806	551,324.0824	68.0

Revision	Date	Approved
PER CITY	4/29/16	BRW

Designed by: BRW
Drawn by: BJG/ADB
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SINGHOFEN & ASSOCIATES, INC.
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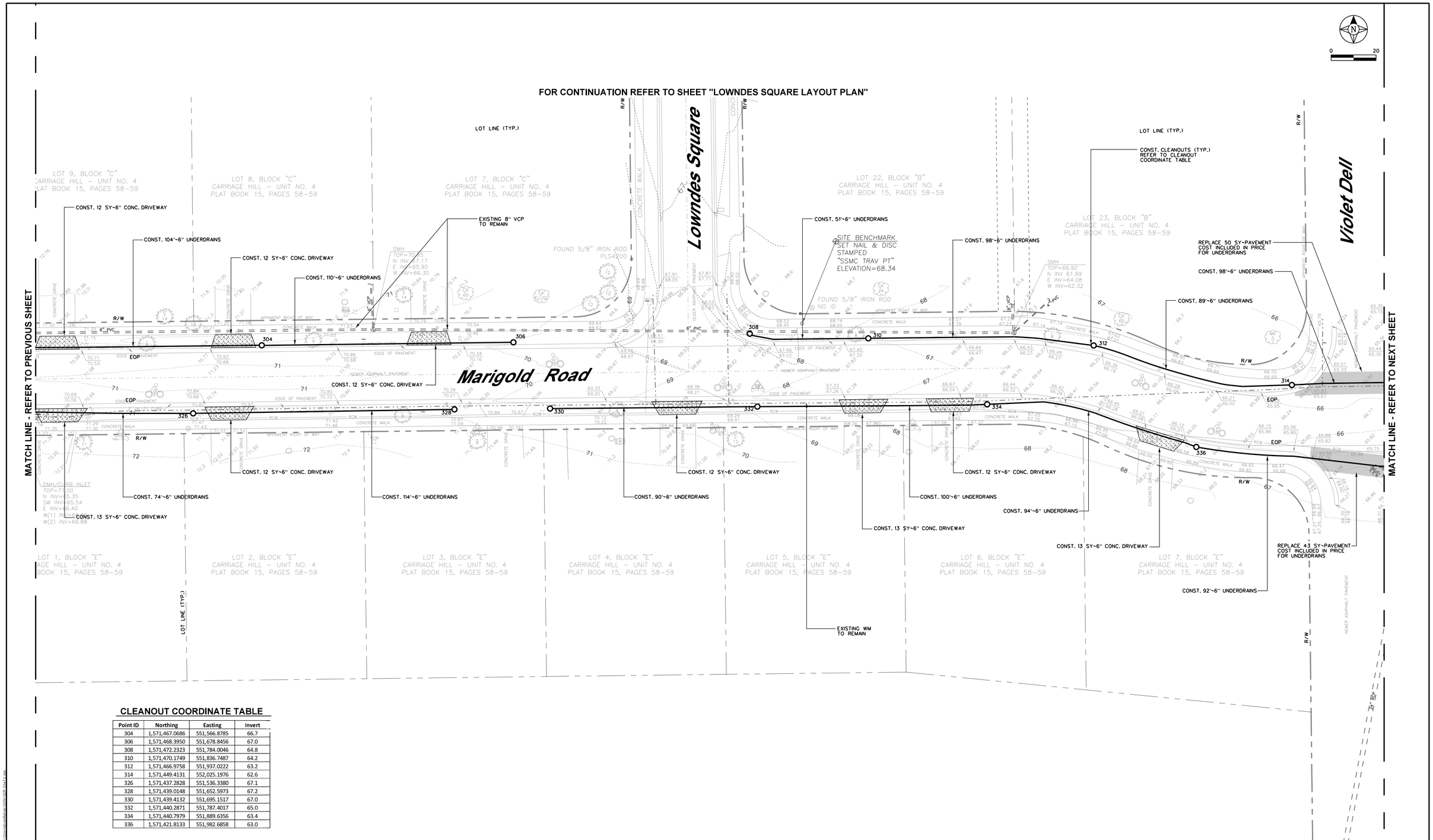
DBPR No. 5112

CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

MARIGOLD ROAD
(SITE T)

SAI
Project No.
2015-006.10



CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
304	1,571,467.0686	551,566.8785	66.7
306	1,571,468.3950	551,678.8456	67.0
308	1,571,472.2323	551,784.0046	64.8
310	1,571,470.1749	551,836.7487	64.2
312	1,571,466.9758	551,937.0222	63.2
314	1,571,449.4131	552,025.1976	62.6
326	1,571,437.2828	551,536.3380	67.1
328	1,571,439.0148	551,652.5973	67.2
330	1,571,439.4132	551,695.1517	67.0
332	1,571,440.2871	551,787.4017	65.0
334	1,571,440.7979	551,889.6356	63.4
336	1,571,421.8133	551,982.6858	63.0

Revision	Date	Approved
PER CITY	4/29/16	BRW

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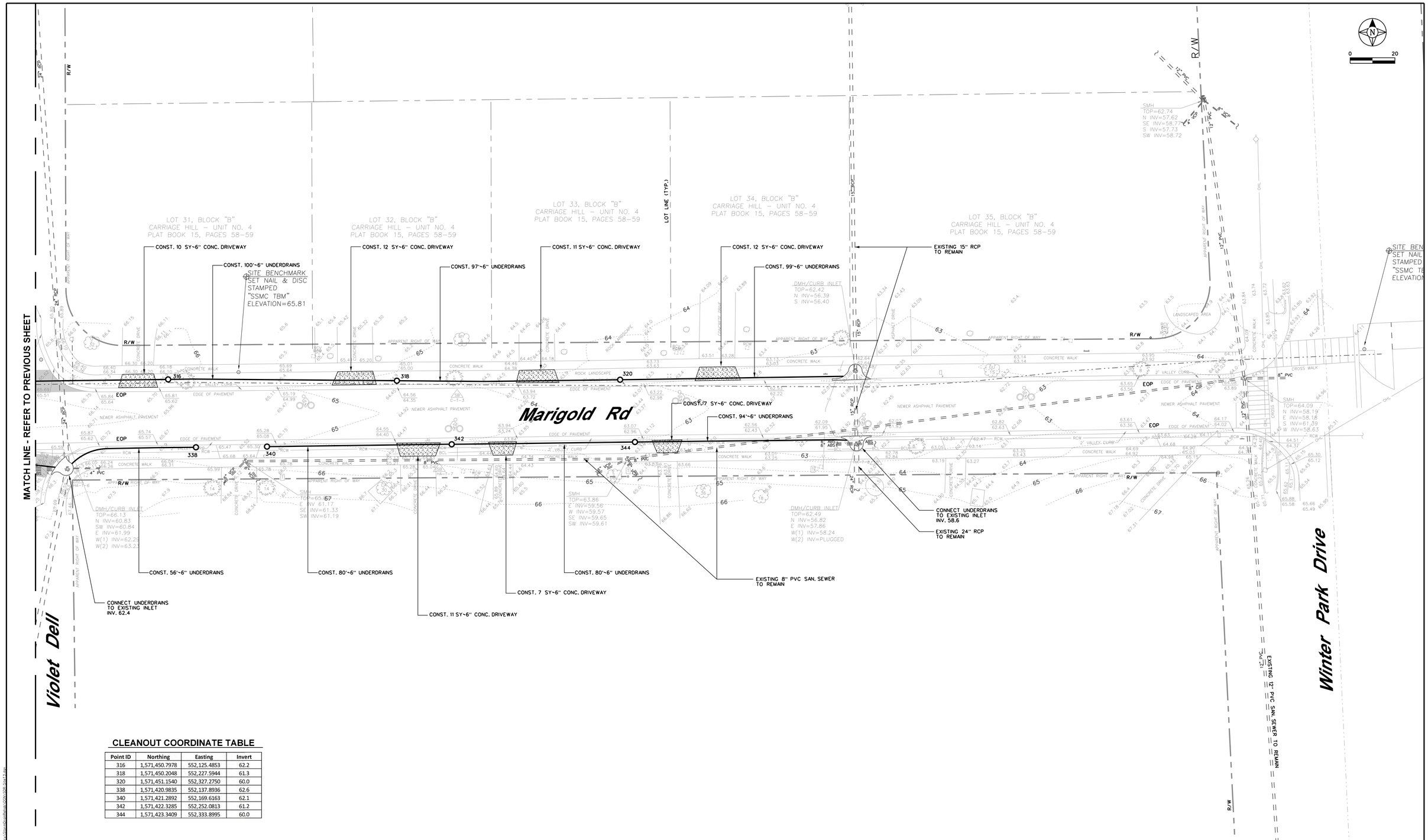
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

MARIGOLD ROAD (SITE T)

SHEET 47

SAI Project No. 2015-006.10



CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
316	1,571,450.7978	552,125.4853	62.2
318	1,571,450.2048	552,227.5944	61.3
320	1,571,451.1540	552,327.2750	60.0
338	1,571,420.9835	552,137.8936	62.6
340	1,571,421.2892	552,169.6163	62.1
342	1,571,422.3285	552,252.0813	61.2
344	1,571,423.3409	552,333.8995	60.0

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

MARIGOLD ROAD
(SITE T)

SHEET
48
SAI
Project No.
2015-006.10

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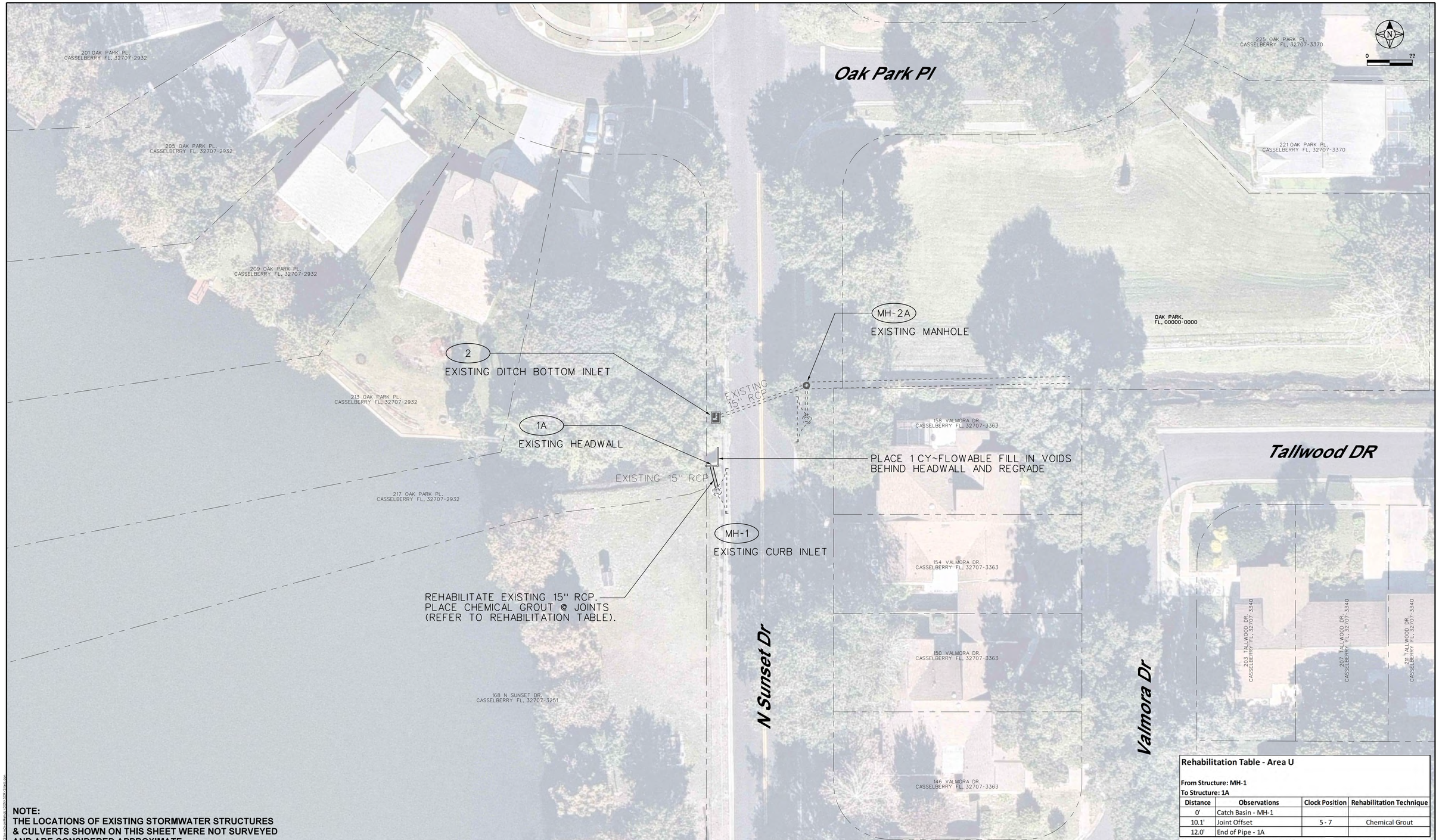
10/27/2016



Rehabilitation Table - Area U

From Structure: MH-1
To Structure: 1A

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - MH-1		
10.1'	Joint Offset	5 - 7	Chemical Grout
12.0'	End of Pipe - 1A		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Revision	Date	Approved
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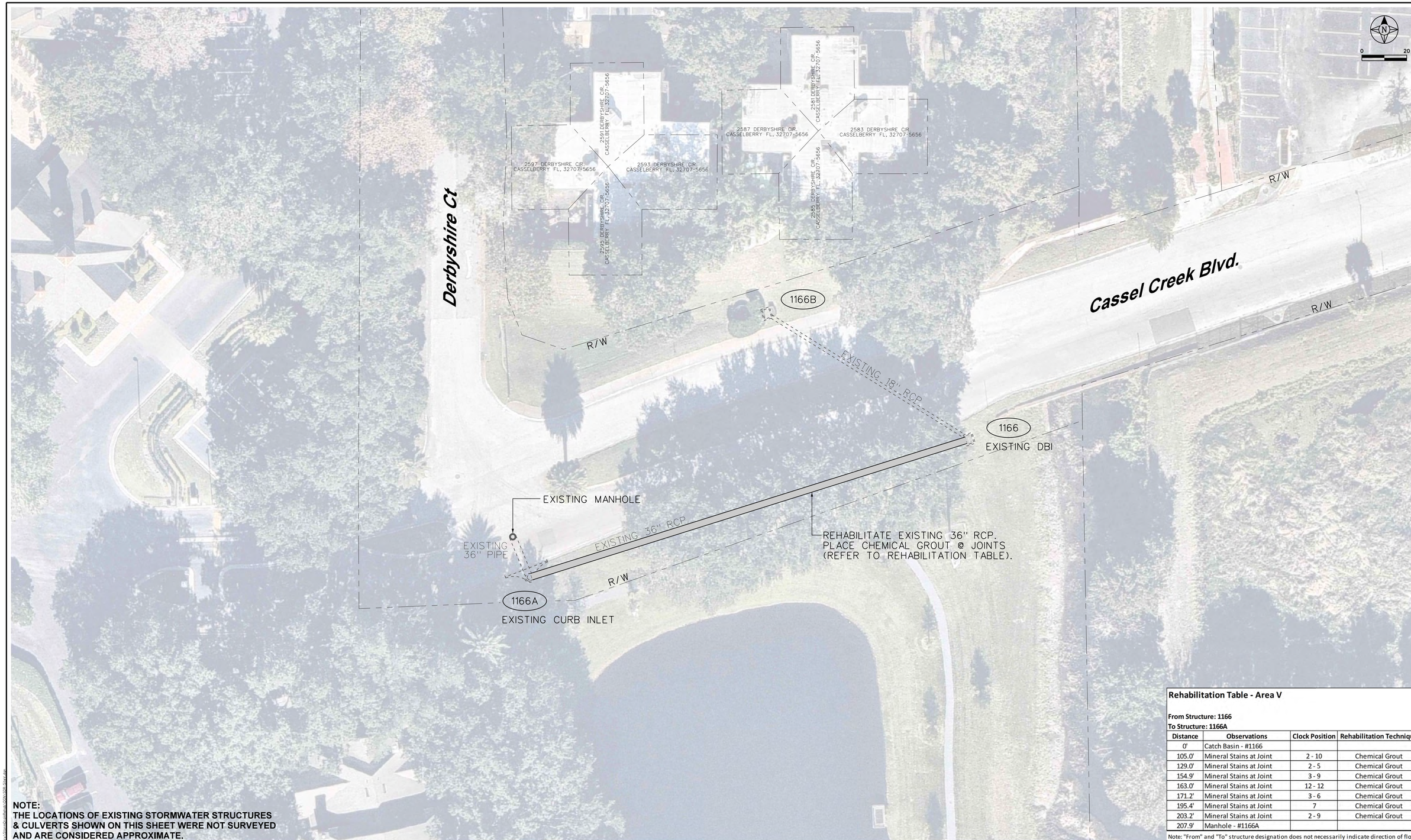
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

N SUNSET DRIVE
(AREA U)

SHEET
49
SAI
Project No.
2015-006.10



NOTE:
THE LOCATIONS OF EXISTING STORMWATER STRUCTURES & CULVERTS SHOWN ON THIS SHEET WERE NOT SURVEYED AND ARE CONSIDERED APPROXIMATE.

Rehabilitation Table - Area V

From Structure: 1166
To Structure: 1166A

Distance	Observations	Clock Position	Rehabilitation Technique
0'	Catch Basin - #1166		
105.0'	Mineral Stains at Joint	2 - 10	Chemical Grout
129.0'	Mineral Stains at Joint	2 - 5	Chemical Grout
154.9'	Mineral Stains at Joint	3 - 9	Chemical Grout
163.0'	Mineral Stains at Joint	12 - 12	Chemical Grout
171.2'	Mineral Stains at Joint	3 - 6	Chemical Grout
195.4'	Mineral Stains at Joint	7	Chemical Grout
203.2'	Mineral Stains at Joint	2 - 9	Chemical Grout
207.9'	Manhole - #1166A		

Note: "From" and "To" structure designation does not necessarily indicate direction of flow.

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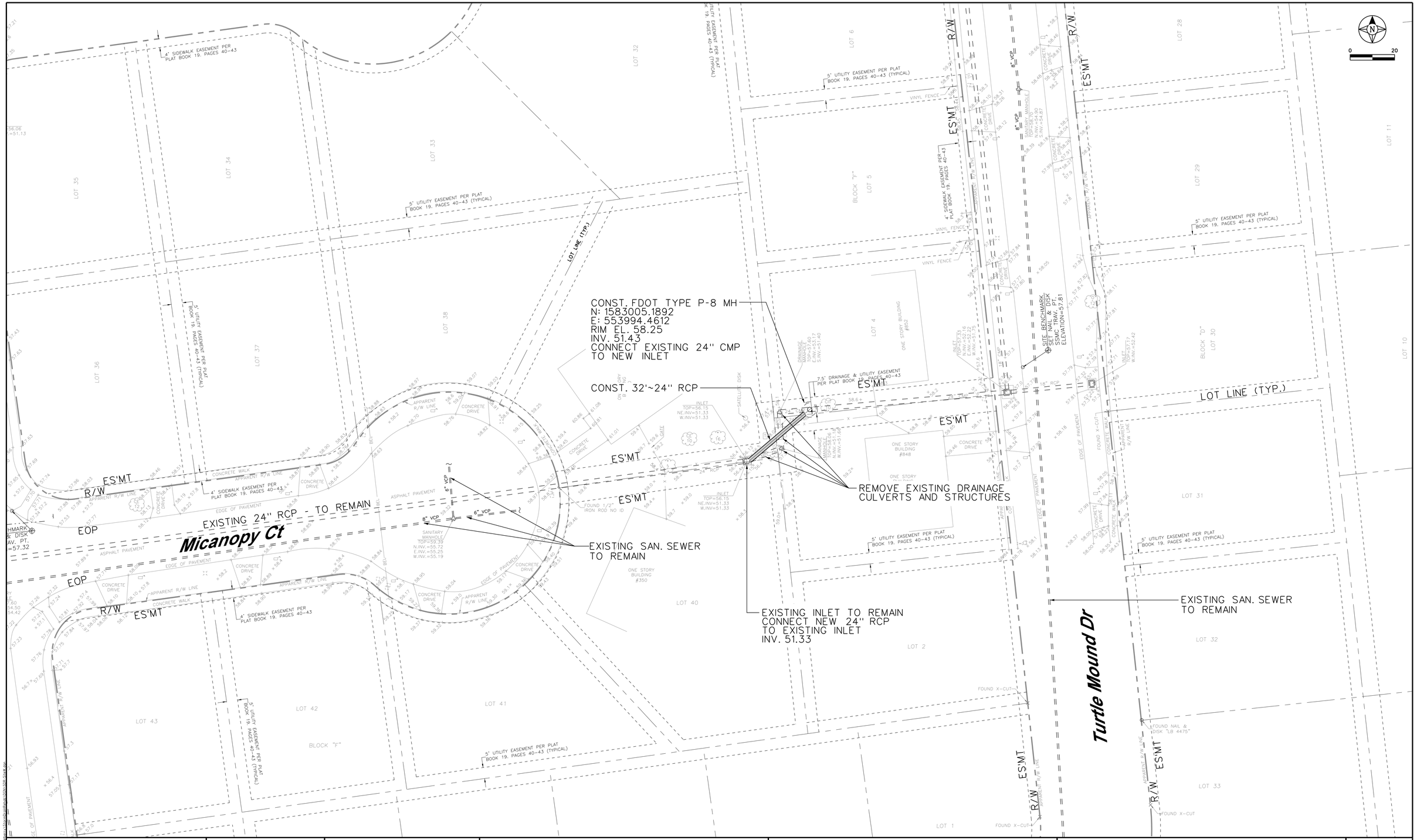
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

CASSEL CREEK BLVD.
(AREA V)

SHEET
50
SAI
Project No.
2015-006.10



Revision	Date	Approved
PER CITY	4/29/16	BRW

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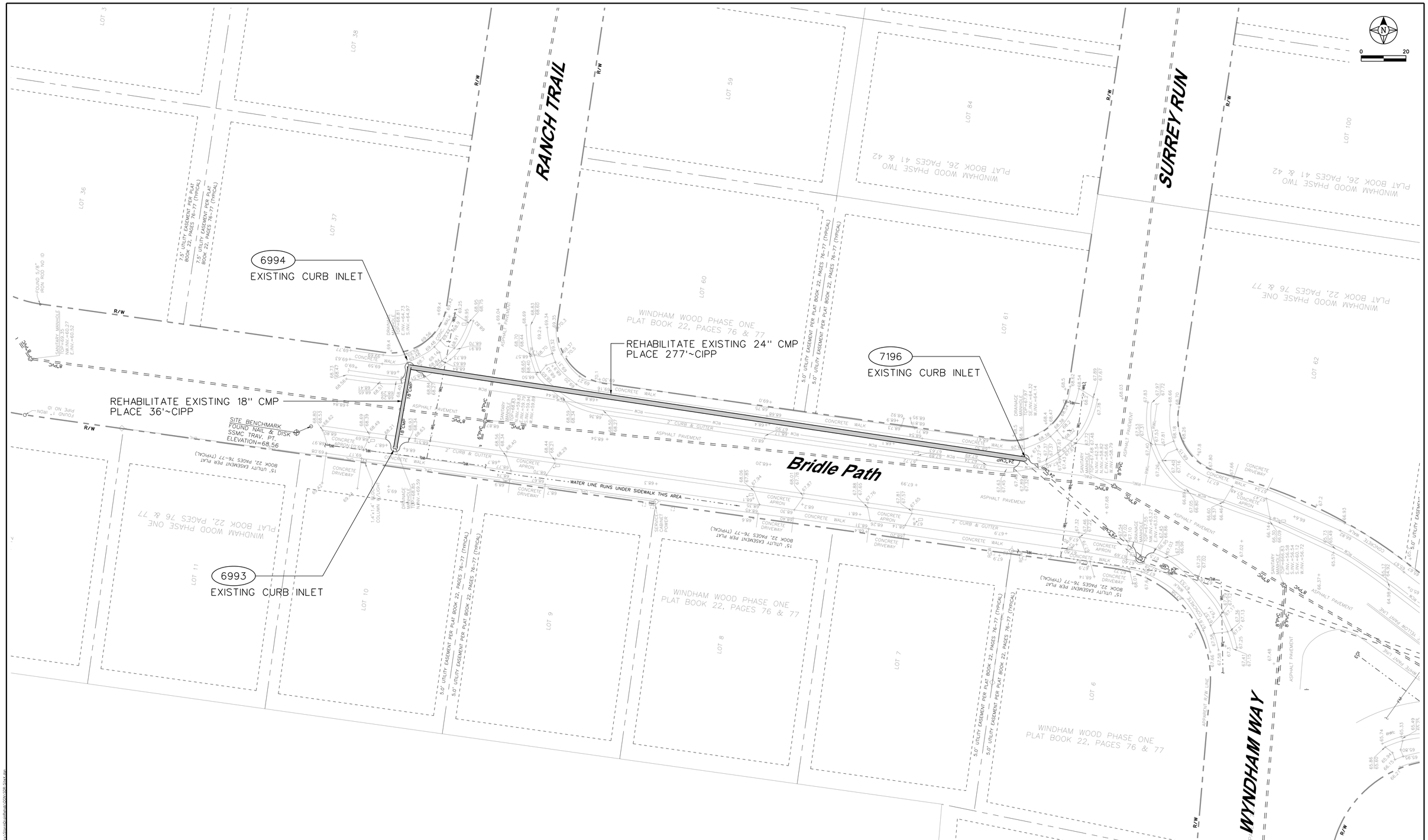
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

MICANOPY CT. EASEMENT
(AREA W)

SHEET
51

SAI
Project No.
2015-006.10



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PER CITY	4/29/16	BRW

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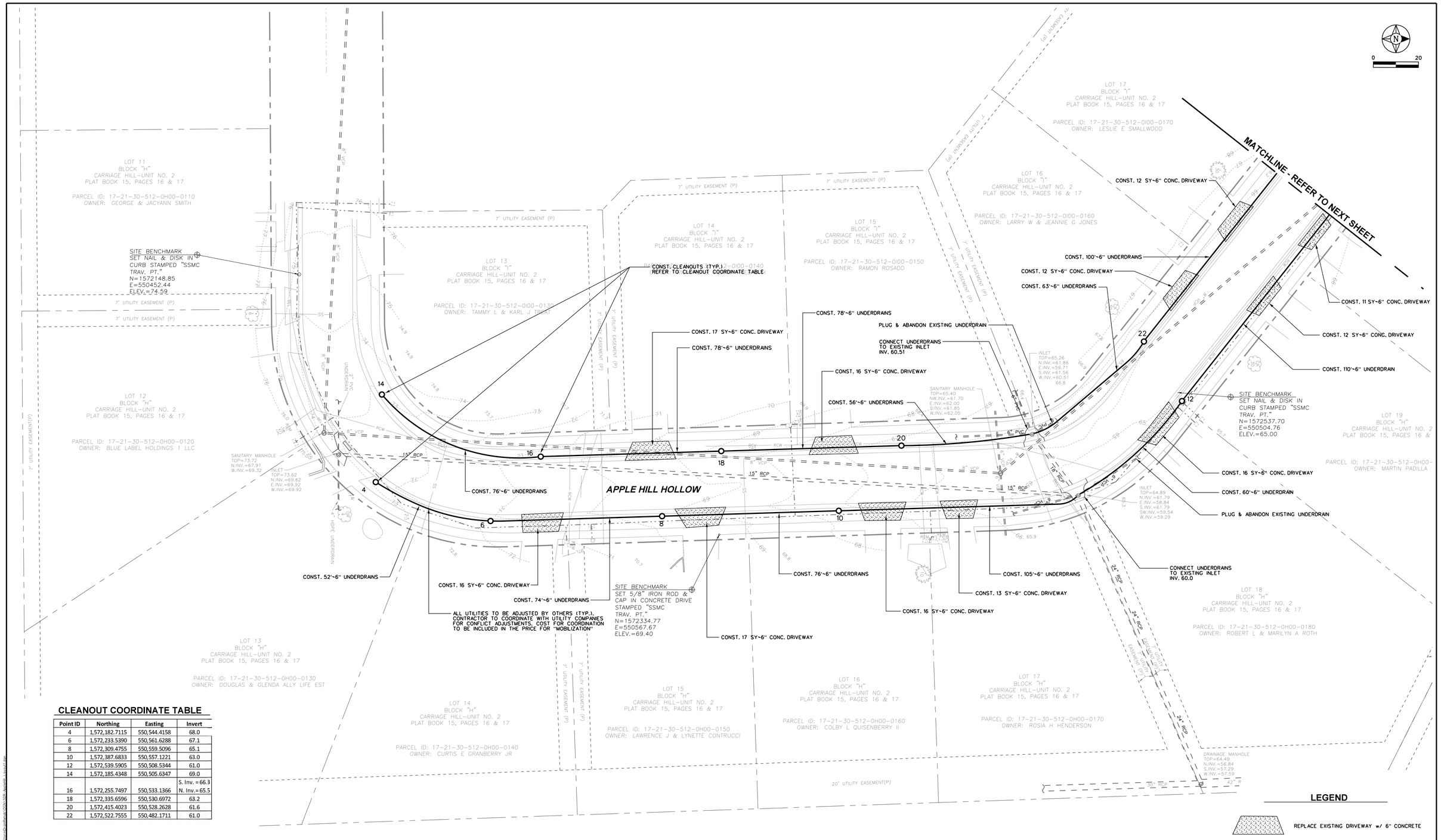
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

BRIDLE PATH
(AREA X)

SHEET
52
SAI
Project No.
2015-006.10



CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
4	1,572,182.7115	550,544.4158	68.0
6	1,572,233.5390	550,561.6288	67.1
8	1,572,309.4755	550,559.5096	65.1
10	1,572,387.6833	550,557.1221	63.0
12	1,572,539.5905	550,508.5344	61.0
14	1,572,185.4348	550,505.6347	69.0
16	1,572,255.7497	550,533.1366	S. Inv. = 66.3 N. Inv. = 65.5
18	1,572,335.6596	550,530.6972	63.2
20	1,572,415.4023	550,528.2628	61.6
22	1,572,522.7555	550,482.1711	61.0

LEGEND

REPLACE EXISTING DRIVEWAY w/ 6" CONCRETE

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

APPLE HILL HOLLOW LAYOUT PLAN

SHEET
53
SAI Project No.
2015-006.10

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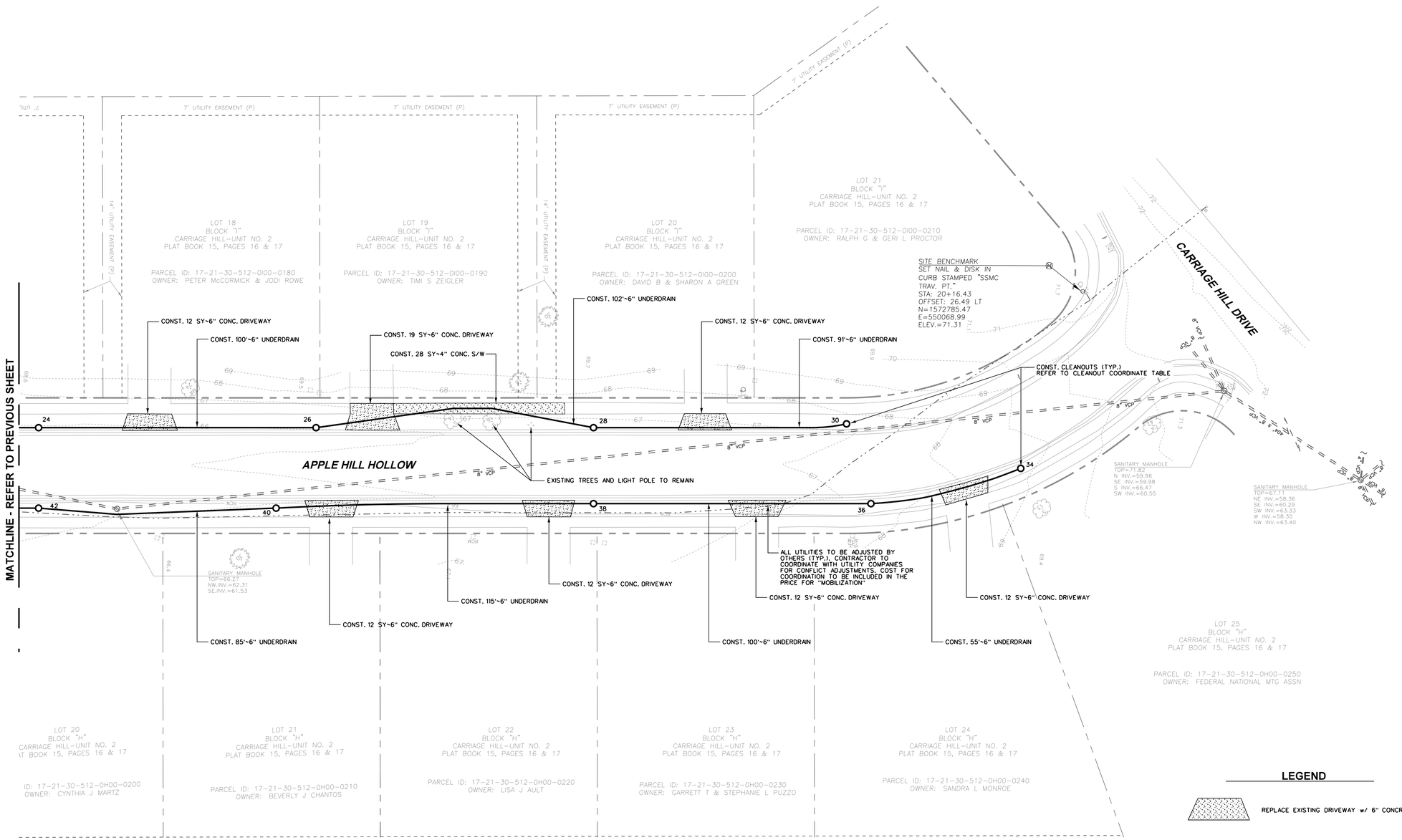
10/27/2016



CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
24	1,572,586.1283	550,401.9329	61.9
26	1,572,649.5766	550,321.7495	62.1
28	1,572,713.0249	550,241.5661	62.3
30	1,572,769.7878	550,167.5645	63.5
34	1,572,822.5082	550,127.4083	64.7
36	1,572,798.4305	550,178.7573	63.5
38	1,572,734.9822	550,258.9407	62.3
40	1,572,663.6947	550,351.6965	62.0
42	1,572,609.3827	550,420.3339	61.6

LEGEND

REPLACE EXISTING DRIVEWAY w/ 6" CONCRETE

Revision	Date	Approved
PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY FLORIDA

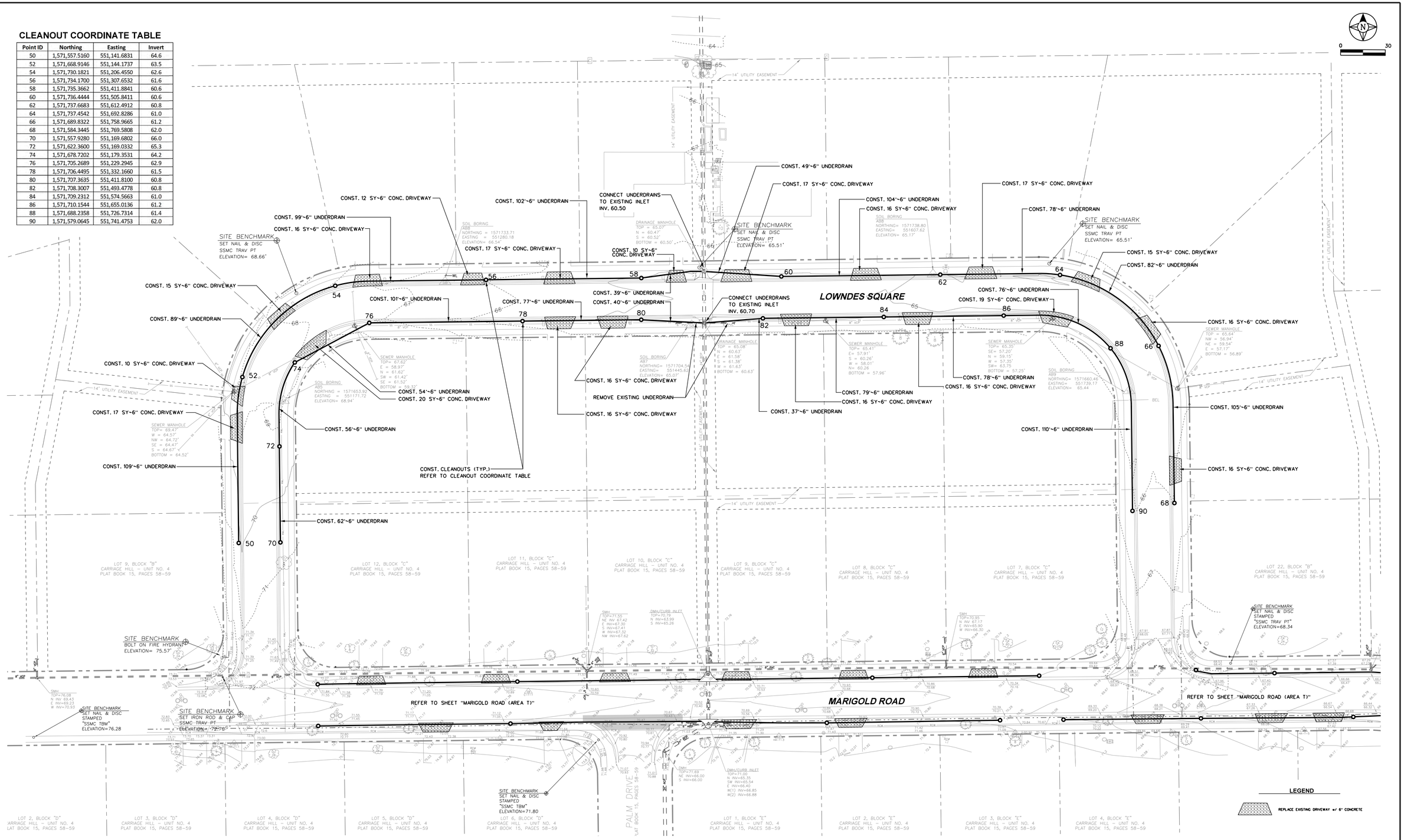
STORM DRAIN REHABILITATION PROJECT

APPLE HILL HOLLOW LAYOUT PLAN

SHEET
54
SAI Project No.
2015-006.10

CLEANOUT COORDINATE TABLE

Point ID	Northing	Easting	Invert
50	1,571,557.5160	551,141.6831	64.6
52	1,571,668.9146	551,144.1737	63.5
54	1,571,730.1821	551,206.4550	62.6
56	1,571,734.1700	551,307.6532	61.6
58	1,571,735.3662	551,411.8841	60.6
60	1,571,736.4444	551,505.8411	60.6
62	1,571,737.6683	551,612.4912	60.8
64	1,571,737.4542	551,692.8286	61.0
66	1,571,689.8322	551,758.9665	61.2
68	1,571,584.3445	551,769.5808	62.0
70	1,571,557.9280	551,169.6802	66.0
72	1,571,622.3600	551,169.0332	65.3
74	1,571,678.7202	551,179.3531	64.2
76	1,571,705.2689	551,229.2945	62.9
78	1,571,706.4495	551,332.1660	61.5
80	1,571,707.3635	551,411.8100	60.8
82	1,571,708.3007	551,493.4778	60.8
84	1,571,709.2312	551,574.5663	61.0
86	1,571,710.1544	551,655.0136	61.2
88	1,571,688.2358	551,726.7314	61.4
90	1,571,579.0645	551,741.4753	62.0



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PER CITY	4/29/16	BRW

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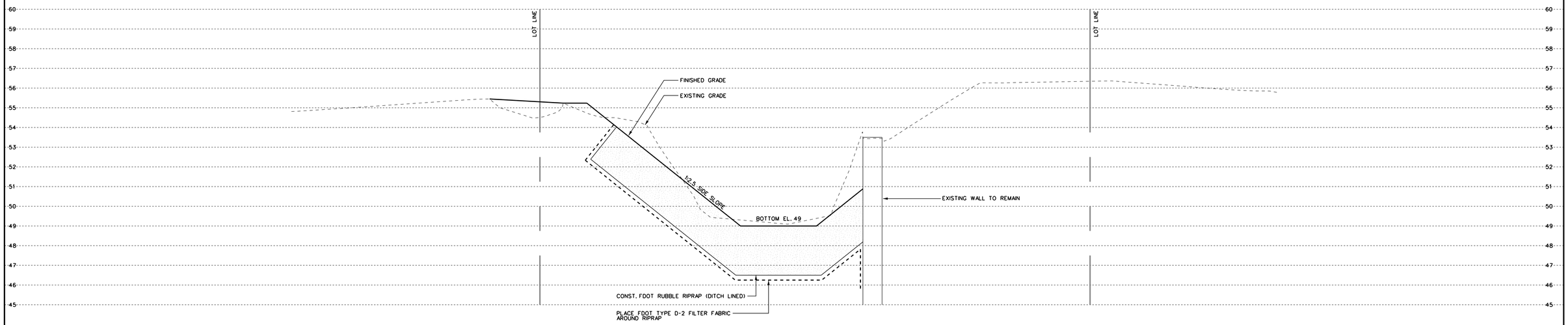
CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

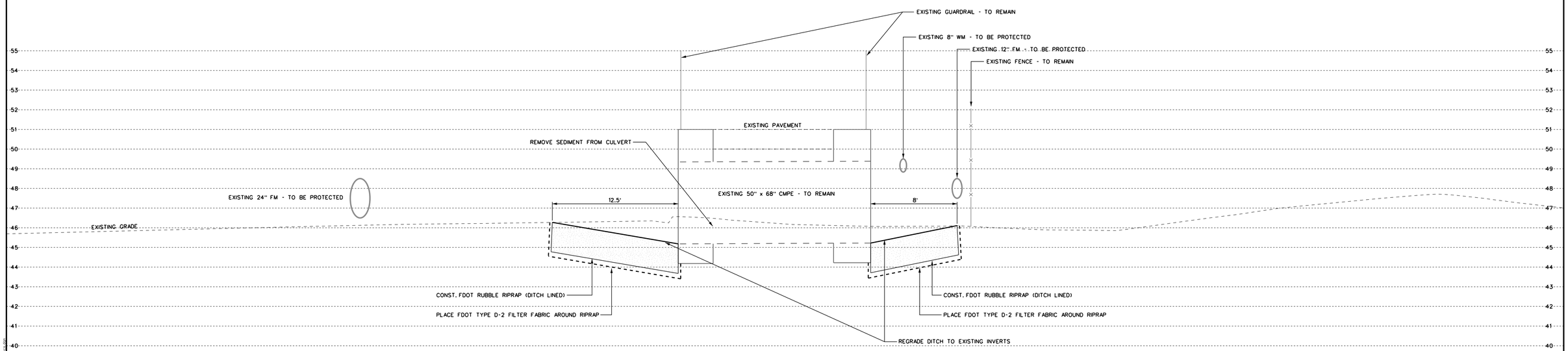
LOWNDES SQUARE
LAYOUT PLAN

SHEET
55
SAI
Project No.
2015-006.10



SECTION K1-K1

HSCALE 1"=10'
VSCALE 1"=5'



SECTION J-J

HSCALE 1"=10'
VSCALE 1"=5'

Revision	Date	Approved
PER CITY	4/29/16	BRW

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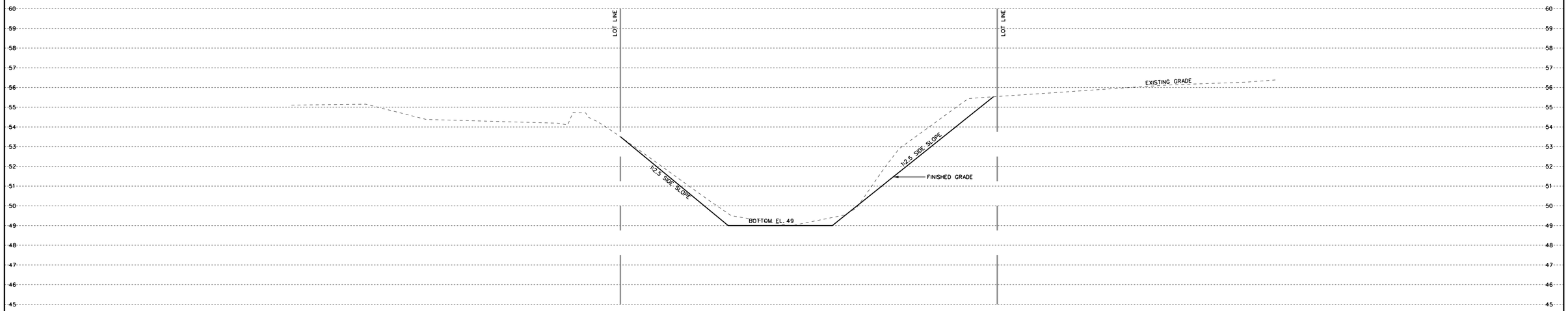
CITY OF CASSELBERRY FLORIDA

STORM DRAIN REHABILITATION PROJECT

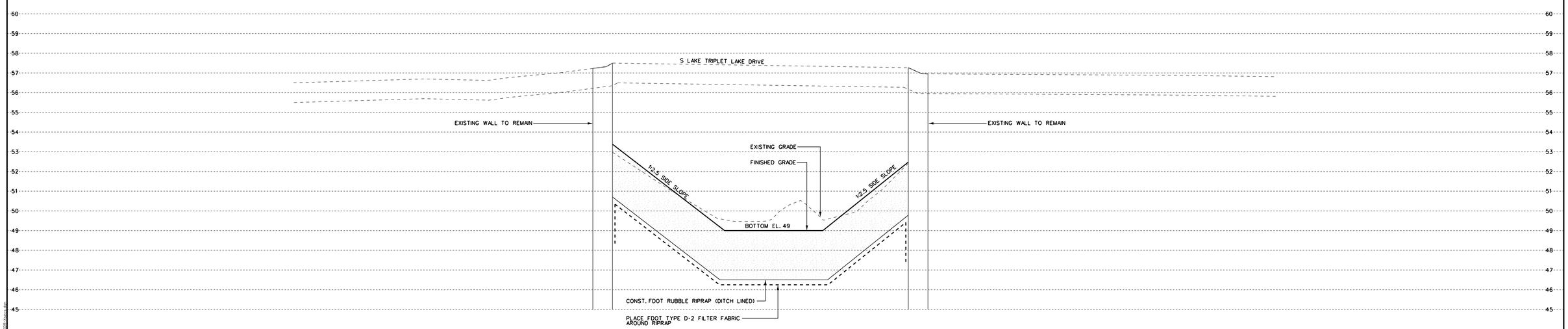
CROSS SECTIONS

SHEET
56
SAI Project No. 2015-006.10



SECTION K3-K3

HSCALE 1"=10'
VSCALE 1"=5'



SECTION K2-K2

HSCALE 1"=10'
VSCALE 1"=5'

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PER CITY	4/29/16	BRW

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CITY OF CASSELBERRY
FLORIDA

STORM DRAIN
REHABILITATION PROJECT

CROSS SECTIONS

SHEET
57
SAI
Project No.
2015-006.10

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10/27/2016