


ADDENDUM NO. 3

DATE: February 26, 2018

TO: All Bidders

FROM: Boyce H. Evans, Purchasing Agent 

SUBJECT: Addendum No. 3 – Magnolia Avenue Streetscape Project

PROJECT NO.: 15A-R-0584 & 16A-R-0609

BIDS TO BE OPENED: **March 6, 2018, at 11:00 a.m. Eastern Time**

This addendum becomes a part of the Contract Documents and modifies the original specifications as noted.

Changes to the Contract Documents & Specifications:

Bid Proposal

A revised bid proposal form is attached to this addendum. The following is a summary of the changes made:

- 1.) The quantity for Item Number 5.30 has been revised.
- 2.) Item Number 14.10, Flowable Fill has been added.
- 3.) Item Number 22.05, Junction Box, Type 1 has been added.
- 4.) The description of Item Number 22.12.5 has been revised.
- 5.) Item Number 26.90, Stone Mulch has been added.
- 6.) Item Number 31.10 has been revised to Erosion Control, LS.
- 7.) Item Number 31.70, Catch Basin Protection (Type D) has been removed.
- 8.) The quantity for Item Number 63.10 has been revised.
- 9.) The description for Item Number 71.02 has been revised.
- 10.) The description for Item Number 71.03 has been revised.
- 11.) The description for Item Number 71.04 has been revised.
- 12.) Item Number 71.05 was removed.
- 13.) Item Number 71.06 was removed.
- 14.) The quantity for Item Number 303-01 has been revised.
- 15.) The quantity for Item Number 730-08.03 has been revised.
- 16.) Item Number 730-08.05 was added.

- 17.) The description for Item Number B3015b has been revised.
- 18.) The description for Item Number B3015f has been revised.
- 19.) The description for Item Number B3020c has been revised.

Revised Sheets

Revised sheets are attached to this addendum. The following is a summary of the changes made:

- 1.) Phase I & Phase II, Sheet 2A -
 - a. Item for No. 42 Catch Basin, > 4' – 8' Depth was removed
 - b. Quantity was reduced for Item No. 303-01
 - c. Quantity for Item No. 5.30 was increased
 - d. Item Numbers 71.02, 71.04, and 71.06 were combined into one pay item
 - e. Item No. 14.10 was added
 - f. Footnote for temporary grate was added
 - g. Made a single lump sum item for erosion control
 - h. Quantity for Item No. 63.10 was reduced
 - i. Pay Item No. 26.90 was added
 - j. Descriptions of Item Numbers A2620c, B3015b, B3020c were revised
- 2.) Phase I, Sheet 2B – Revised keynote 11
- 3.) Phase I, Sheet 2C – Revised keynote 11
- 4.) Phase I, Sheet 2E – Structure 1 revised to drain to 1C, not 1B
- 5.) Phase I, Sheet 2F – Street print XD detail added
- 6.) Phase I, Sheet 5 – Displayed sanitary linework
- 7.) Phase I, Sheet 5A – Removed hatching where drain pipes are to be abandoned
- 8.) Phase I, Sheet 6A - Removed hatching where drain pipes are to be abandoned
- 9.) Phase II, Sheet 2B – Revised keynote 11
- 10.) Phase II, Sheet 2D – Revised grate elevation for Structure 38A
- 11.) Phase II, Sheet 2E - Street print XD detail added
- 12.) Phase II, Sheet 4 – Displayed water linework
- 13.) Phase II, Sheet 5 – Displayed sanitary linework
- 14.) Phase II, Sheet 5A - Removed hatching where drain pipes are to be abandoned
- 15.) Phase II, Sheet 6 – Displayed sanitary linework
- 16.) Phase II, Sheet 27 – Revised cross section at Sta. 33+00

AT&T Duct Bank

AT&T has elected to not install a new duct bank along the north side of Magnolia Avenue.

Clarification of Contract Documents & Specifications:

The following are responses to questions received from potential bidders:

Questions

Question #1: Can you please clarify what each of the asphalt patching and sawcutting items, City and KUB, includes?

Response:

KUB Pay Items A6000 and B6000 - Temporary Patching: Used on an as needed or directed basis to return traffic flow to streets and sidewalks due to utility installation. Consists of Hot Mix Grading B or B-M or Cold Mix temporary asphaltic concrete surface as noted in KUB Specification 02740-2.06. Temporary patching placement, maintenance and schedule is specified in Section 02740-3.11.

KUB Pay Items A307-02.06 and B307-02.06 Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading B: For KUB trench repairs so as to return traffic to streets for greater periods than what is allowed for Temporary Patching. In locations of multiple street cuts due to utilities, the tonnage calculation for KUB utilities will be no greater than 5-feet wide for water lines and 7-feet wide for sewer lines. Temporary striping and other incidentals are included in this pay item as noted in KUB Specification 01270 – Measurement and Payment.

KUB Pay Items A6020 and B6020 Crushed Rock Surfacing, Roadways and Driveways: For restoration of existing gravel surfaces to remain and in accordance with KUB Section 01270 – Measurement and Payment and Section 02740 – Pavement Repair. This item is not intended for temporary patching. Sawcutting for KUB trench edges is considered incidental and the cost is to be included in utility trench work items.

Sawcutting trench edges other than for KUB water and sewer work, where directed, will be paid under City Pay Item 10.30. At the conclusion of the project, the entire roadway will receive cold planing of asphalt pavement, paid for under City Pay Item 38.10, and final asphalt surface course paid for with City Pay Item 411-02.11.

Question #2: Are there no concrete/electrical specs (for electrical, other than the KUB specs included)?

Response: KUB does not have standard electrical specifications. Their requirements have been incorporated into the construction drawings. Concrete shall be Class A 4000 psi as defined in City of Knoxville Technical Specification for Concrete, Section 15.0.

Question #3: Is the main line striping to be thermoplastic or paint?

Response: Permanent mainline striping shall be enhanced flat line thermoplastic. See sheet

2A/footnote #7 for reference.

Question #4: Will the 4” striping at 45 degrees at the parking areas be paint or thermoplastic?

Response: The 4” striping shall be thermoplastic or preformed plastic. See sheet 2A/footnote #7 for reference.

Question #5: Is the centerline channelization to be installed according to TDOT specifications for 12” transverse lines?

Response: Yes, the centerline channelization should be installed according to TDOT specs for 12” transverse lines, standard drawing T-M-3.

Question #6: Will the storm drainage pipe and structures require TDOT T-2’s and material certifications? If yes, how can these be provided if TDOT item numbers are not being used for the storm drainage items?

Response: Yes, the contractor can put the City pay item number on the form and the description will include the appropriate information (e.g. TDOT standard D-CB-12LP).

Question #7: It’s clear in the “Pavement Section for Storm Drain Cuts” detail on sheet 2B that the 13” of asphalt binder patching is paid as item 307-02.06 but is the final 14” of mineral aggregate base backfill shown to be paid as item 303-01?

Response: Yes. Item No. 303-01 should be used for the 14" of mineral aggregate base.

Question #8: Is there any geotechnical or subsurface boring information available for the project? If not, could a trench rock excavation item be added to the contract? It may be beneficial to the City of Knoxville to add the trench rock item rather than the contractor assume rock in all of the storm drainage excavations.

Response: No. All excavation will be considered unclassified as specified in City of Knoxville Technical Specification for Grading, Section 4.0.

Question #9: There is some confusion between the layout on sheet 5B, the storm table on sheet 2E, and detail 3 on Sheet 2F. Looking at the layout on sheet 5B the lowest new structure appears to be structure 1C. Following the layout on sheet 5B; structures 1 and 1A both appear to drain to structure 1C but the pipe table on sheet 2E shows structure 1 draining to 1B. Can you clarify?

Response: Structures 1 and 1A do indeed drain to 1C. The pipe table on sheet 2E should show structure 1 draining to 1C not to 1B. This sheet has been revised and included in this addendum to reflect the correction.

Question #10: What is tie in for the lowest point of the new 48" RCP? Is the new 48" RCP connecting to an existing 48" pipe or a 4'x4' culvert?

Response: Blind connection 1B is the lowest point where the proposed 48" RCP is to tie to the existing 48" RCP. The exact connection of the 4' X 4' box culvert to the existing 48" RCP is approximate based on video inspection. Therefore the exact location will need to be verified in the field prior tying into the existing 48" RCP at this location.

Question #11: The storm drainage work at the low point of the project will require removal and replacement of an existing guardrail. Can pay items be set up for that work?

Response: If it is elected to remove and replace the guardrail it shall be included in the cost of other items.

Question #12: Sheet 2E on Phase 1 lists storm structure #1 as a No. 51, but there is no pay item for a No. 51 catch basin. Should storm structure #1 be a No. 12 catch basin?

Response: Structure #1 should be a No. 51 catch basin. A pay item has been added to the estimated quantities sheet and Bid Proposal form to account for this structure.

Question #13: There are pay items for (1) 4'-8' depth type 42 inlet and (1) 8'-12' type 42 inlet but only one type 42 inlet is listed on either drainage table (sheet 2E Phase 1 and sheet 2D Phase 2), should one of the pay items be deleted?

Response: There is no #42 catch basin, > 4' - 8' depth located on the plans and therefore the associated pay item has been removed.

Question #14: Will the type 42 inlets require ADA or bike grates?

Response: No. The 42 inlet is in a grassy area and will not require an ADA or bike grate.

Question #15: What pay items will be used for storm structures listed as "junction box" on the storm structure tables?

Response: Pay item 22.05, Junction Box Type 1 has been added to the attached revised Bid Proposal form.

Question #16: Items 22.40.2 and 22.40.4 call for existing storm drainage structures to be converted to junction boxes without access, essentially making them blind connections. Can you confirm that COK will allow blind connections in their storm drainage system?

Response: Yes, in this case they will be allowed.

Question #17: What are the top of casting and invert elevations for storm structure 38A?

Response: Top of casting and invert elevations have been added to the plans. A revised Phase II Sheet 2D is attached to this addendum.

Question #18: Can precast be used for the GDOT Throated Inlets?

Response: Yes, GDOT has standard details for both precast and cast in place versions of the 1033F type basin. Details of the precast and cast in place version of the GDOT 1033F basin are included in this addendum.

Question #19: Are roof drain connections to be included in the 6" and 12" HDPE pipe items? If yes, can you provide details?

Response: Yes. The Contractor shall supply and install Fernco coupling to match up to existing roof drains at the right of way line. Cleanouts are not required at connection points. See notes regarding roof drains on the proposed layout sheets.

Question #20: There are several locations on the plans where existing storm drainage pipes are to be abandoned in place and filled with flowable fill but there is no pay item for flowable fill?

Response: A pay item for flowable fill has been added to the revised Bid Proposal form attached to this addendum.

Question #21: What is the difference between items 3.11 and 3.12?

Response: Item 3.12 includes removal of concrete along the roadway from face of curb to face of curb such as travel lane, parking/bike lanes, and concrete median band. Item 3.11 includes all other concrete not included in item 3.12.

Question #22: Is backfill to be included in item 3.16 (Removal of Subsurface Trolley Tracks) or paid separately?

Response: Backfill shall be included in the cost of removal.

Question #23: Can the existing water lines be abandoned in phases or will all the new water lines need to be installed, tested, and tied in before any of the old water lines can be taken out of service? If all new water lines must be installed before taking any existing lines out of service, how does this impact the north-then-south construction sequencing?

Response: Water lines can be abandoned in phases. Water lines can be abandoned after new lines are installed, tested, disinfected and services connected. Any temporary connections and valving required for filling and placing new lines into service shall be at the contractor's expense.

Question #24: The electrical plans say that the removal of the existing lighting facilities is by others. How will that work be coordinated and can the existing street lights on one side of Magnolia be taken out of service while that side of the Magnolia Streetscape project is being constructed?

Response: The existing lights are located on the back of right of way. These lights shall remain in service until it becomes absolutely necessary to remove them to allow for new construction. The contractor will need to coordinate the removal with KUB as KUB will be removing the existing lights.

Question #25: What is the spacing for the dowels between the 8” bus shelter pads and the surrounding 4” concrete? Are dowels required at any other locations?

Response: 12" O.C. and no.

Question #26: Can you explain the delineation for items 71.02, 71.04, and 71.06? From the details on the “H” sheets it is hard to determine the limits for those items.

Response: 71.02, 71.04 and 71.06 shall be combined into a single quantity to be reflected in 71.04. A revised Sheet 2A and Bid Proposal form have been attached to this addendum to reflect this change.

Question #27: If rock is encountered, will drilling and blasting of the deep 48” storm line be permitted?

Response: No.

Question #28: Please provide specifications and details for Bid Item 22.12.6 GDOT Throated Inlet 1033F.

Response: Details of precast and cast in place version of the GDOT 1033F basin are included in this addendum.

Question #29: Please provide specifications and details for Bid Item 21.3 Water Quality Unit w/ Diversion Box.

Response: See inset on Sheet 5B. Water Quality Unit shall be 10' diameter Hydro International Downstream Defender water quality unit. Reference manufacturer specifications for installation instructions and details. Diversion shall be as specified on the drawings (reference Standard Drawing D-MH-5) and note the requirement for a weir to be installed.

Question #30: Please provide specifications and details for Bid Item 22.12.7 Temporary Grate.

Response: Neenah Foundry R-3067-C, Combination Inlet Frame, Grate, Type L Grate.

Question #31: Please provide specifications and details for Bid Item A6000 Temporary Patching.

Response: See the response to Question #1 above and KUB Specification 02740.

Question #32: Please provide specifications and details for Bid Item 725-24.61 Training.

Response: See the Special Provision regarding Section 730K and reference section 730.07 for training requirements.

Question #33: Please provide missing Specification Section covering Measurement and Payment normally found in Division 1 for all of the non-KUB bid items. The individual specification section coverage of this topic does not cover the vast majority of bid items. Also, the measurement and payment portion of the Specification Section 32 90 00 Landscaping is missing.

Response: Measurement and payment method is included in revised Section 32 90 00 attached to this addendum. Measurement and payment sections are included in the other standard City of Knoxville technical specifications.

Question #34: Please provide missing Specification Section Summary of Work (for all contract work) normally found in Division 1.

Response: The Division 1 references in the Exterior Landscape Specification Section 32-90-00 have been removed. The streetscape work is defined in the plans and water & sanitary sewer work is defined in the plans and summarized in KUB's 01110 specification.

Question #35: Specification 02521 Part 2.1 (and several others) state: All products and materials must be equal ... water/wastewater material available for review at kub.org/standards. However, that web address does not appear to exist. Please make the KUB standards and details more available/accessible or delete that reference.

Response: The reference to kub.org/standards shall be deleted from all KUB Specification Sections.

Question #36: The Specifications State:

Remove trolley tracks incidental to pipe installation.

A. Specifically, what pipe installation bid item covers that?

B. So what are the three pavement/concrete removal Bid Items (3.11, 3.12 and 3.13) covering?

Response:

A. Excavation for utility installation is unclassified. Pricing for removal of trolley tracks shall be included in the pipe item to which it pertains as noted in KUB Specification 01110-1.3E.

B. Item 3.13 includes all asphalt removal on the project. Item 3.12 includes removal of concrete along the roadway from face of curb to face of curb such as travel lane, parking/bike lanes, and concrete median band. Item 3.11 includes all other concrete not included in item 3.12.

Question #37: Please add Bid Item(s) to cover Insertion Valves as stated in Specification Section 01110.

Response: Include the price for insertion valves in B3015f. The description has been revised from 12-inch Insertion Valve to 8-inch Insertion Valve on the attached revised Bid Proposal form.

Question #38: Please add Bid Item(s) to cover Fiberglass Manholes as stated in Specification 02530.

Response: All sanitary sewer manholes shall be precast concrete.

Question #39: Please add Bid Item(s) to cover Chimney Liner and Seals as stated in Specification 02530.

Response: Chimney liners and seals are not required for this project.

Question #40: Bid Item A2575a is 1" thick cementitious manhole lining. Please identify exactly which new and/or existing manholes where this would be applicable.

Response: Manholes 16-5, 16-7B, 16-7A and 16-7 are new manholes and do not require the 1" thick cementitious lining. Rehabilitation manholes require the 1" thick cementitious lining, and these manholes include Manholes 16-8, 38-5, 38-4, 38, 37, 36, 37-1, 37-2, 39 and 40.

Question #41: Please provide the average and peak sanitary sewer flow to be anticipated in connection with Bid Item A2630 Sewer Flow Control.

Response: All wastewater main piping on the project is 8-inch diameter. KUB's hydraulic model does not include these 8-inch mains. Although 8-inch main capacity can exceed 300 gpm, it is not expected that peak flows will reach the pipe capacity in the project area.

Question #42: The KUB Specifications state that the CONTRACTOR shall perform Work during the following hours: 6:00 a.m. – 6:00 p.m., Monday through Friday. The Contractor shall refer to the City of Knoxville Code of Ordinances – Chapter 18 – Noise regarding construction noise prior to 7:00 a.m. Mobilization and/or set up can take place from 6:00 a.m. and 7:00 a.m. Please verify and confirm that the above is correct or otherwise advise us.

Response: When construction is required that will block one or more lanes of Magnolia Avenue, the

hours of work shall be limited on weekdays to avoid conflict with peak hour traffic movement. Work on weekdays will be permitted between 7:00 A.M. and 7:00 P.M. Work on weekends will be permitted (except for unusual circumstances, i.e. parades, U.T. football games, etc.). Work at night will only be allowed with the City's permission.

Question #43: A conflict exists within the bid documents as follows: Specification Section 01450 states: "Contractor shall employ and pay for Testing Lab Services (for all except water quality control)": Whereas: Special Conditions Specifications state: "The City will engage a CEI Consultant. All tests normally to be performed by TDOT personnel on a TDOT project will be performed by the CEI consultant". Please resolve that conflict.

Response: The only KUB-required testing required will be for testing of water line, wastewater lines, manholes and appurtenances as specified in Division 02 of the KUB specifications. Any testing required for the streetscape project will be per the Special Conditions.

Question #44: Bid Item 63.10 Signage and Striping has a quantity of two (2) Lump Sums. Please clarify.

Response: Quantity has been changed to show a quantity of one (1) on the attached revised Sheet Number 2A and Bid Proposal form.

Question #45: Is a Construction Fence required for this project. If so, please revise the plans and details to show that.

Response: A construction fence is not required, but Contractors should take measures they deem necessary to secure their work zone and the cost of those measures shall be included in the cost for traffic control.

Question #46: The plans show River Rock in the median. Which Bid Item pays for that?

Response: River Rock shall be included in Item No. 26.90 - Stone Mulch.

Question #47: Please add Bid Item(s) to cover erosion control (EPSC) as stated in Specification Section 31.0.

Response: Item Numbers 31.10, Silt Barriers (Silt Fences) and 31.70 Catch Basin Protection (Type D) were included to cover this work. However, the attached Bid Proposal form has been revised to eliminate these pay items and add one lump sum pay item to address all erosion control.

Question #48: There is no caliper size listed for the trees, what size trees should be included in the bid?

Response: The trees shall all be sized at 3" caliper @ 6" above finish grade.

Question #49: Will the pre-bid sign in sheet be posted to the COK solicitation site?

Response: Yes, the sign in sheet is included in this addendum.

Question #50: On Sheet 2A - Estimated Quantities, part of the description is missing for KUB Estimated Quantity A2620c.

Response: The description of KUB Bid Item A2620c has been revised from "Diameter" to "Abandon Existing Sewers by Grouting In Place - 8-inch Diameter"

Question #51: On Sheet 2A - Estimated Quantities, there is a typo in KUB Estimated Quantity B3015b.

Response: The description of KUB Bid Item B3015b has been revised from "Air Valves, Blowoff Valves & Hydrants - 1" Aire Release Valve" to "Air Valves, Blowoff Valves & Hydrants - 1" Air Release Valve"

Question #52: On Sheet 2A - Estimated Quantities, the connection material is incorrect in KUB Estimated Quantity B3020c.

Response: The description of KUB Bid Item B3020c has been revised from "Tie-Ins to Existing Facilities, Connection to Existing 6" CL Water at Austin Street" to "Tie-Ins to Existing Facilities, Connection to Existing 6" CI Water at Austin Street".

Question #53: We cannot find "terra cotta" on Butterfield's site. Should the color be "weathered terra cotta" for the stamped and colored concrete?

Response: The integral color is U31-Weathered Terra Cotta. The release colors remain as Stone Gray and Walnut.

Question #54: Since the city is waiving their requirement that the prime contractor must perform 50% of the work, will the TDOT requirement that the prime contractor perform 30% of the work be enforced? See TDOT Standard Specifications for Road and Bridge Construction section 108.01.

Response: The TDOT requirement referenced does not apply since this project is funded by the City.

Question #55: If total closures of Magnolia are not permitted all utility crossings must be done in two halves, half of a crossing installed during the north side construction, the other half installed during south side construction. This has a dramatic impact on the KUB utility construction and may inhibit maintaining underground power to the street lighting circuits. Can occasional full closures of Magnolia be reconsidered?

Response: No, occasional full closures will not be allowed as it is considered an emergency route.

Question #56: The response to Addendum #2 question #14 states that base stone should be included in bid items 13.10, 13.12, 13.13, and 13.20. This contradicts the typical section sheets 2B (both Phases) and 2C (Phase 1), note 11 on those sheets refer to the 2" of stone as item 303-01. Please clarify? Also, what about the base stone for items 71.02, 71.04, and 71.06? Lastly, if the plans are revised to show that stone is to be included for these seven items, how does this affect the estimated quantities?

Response: The typical section sheets have been revised to reflect this change and are attached to this addendum. The base stone for the bench, trash receptacle, and bike rack pads will be paid for under the 71.04 item which now covers bench, trash receptacle, and bike racks pads. The quantity for Item Number 303-01 has been reduced to account these changes.

Question #57: Will layout need to be performed under the direct supervision of a Tennessee licensed Professional Engineer or a Tennessee Registered Land Surveyor in accordance with TDOT Standard Specifications for Road and Bridge Construction section 105.09?

Response: Yes.

Question #58: Since the city is waiving their requirement that the prime contractor must perform 50% of the work, will they also waive their acceptance policies and abide by TDOT Standard Specifications for Road and Bridge Construction section 107.14 should damage occur while the project is still on going?

Response: No. City of Knoxville acceptance policies will apply.

Question #59: The H sheets refer to the secondary color product, perma-tique, as a release agent. According to Butterfield's website perma-tique is applied to cured concrete and is not a release agent. The Butterfield color release agent is referred to as Perma-Cast Antiquing Release. Please confirm perma-tique is the intended product to be used for secondary color.

Response: The release agent is to be Butterfield Perma-Cast - SGR14-Walnut and SGR12-Storm Gray.

Question #60: Butterfield's website refers to sealer being required to protect the colored and "antiqued" concrete surface. No sealer is referenced in the plans or specs on the H sheets, will a specific sealer be required?

Response: Apply Clear Guard Cure and Seal by Butterfield (or Owner approved equal) per manufacturer recommendations. Cost item to be included in Pay Item Number 71.04.

Question #61: The landscape spec section 32 90 00, part 2 has specifications for inorganic soil amendments, organic soil amendments, and for planting soil. Which specification applies to bid item 26.20?

Response: Both the Topsoil and Planting Soil are to be tested per 32 90 00, Part 1.04.D and F. The test results will determine what of either the Inorganic Soil Amendments (329000-2.03) or the Organic Soil Amendments (329000-2.04) are to be added to either the Topsoil or Planting Soil mix. That will also determine where the amendments fall within Item Numbers 26.10 or 26.20.

Question #62: Reference Item 3.13, Removal of Asphalt Pavement – Is it correct that this item is for storm drain crossings and utility trenches? Is this item considered for milling/cold planing or just removal by any means and methods?

Response: Yes, Pay Item 3.13 is for storm drain crossings and utility trenches. At the conclusion of the project, the entire roadway will receive cold planing of asphalt pavement, paid for under Pay Item 38.10.

Question #63: Will this project consist of an asphalt index?

Response: No.

Question #64: Is there a detail for the sloping curb?

Response: Yes. Refer to TDOT standard drawing RP-MC-2, 6" mountable curb for the median sections.

END OF ADDENDUM NO. 3

BID PROPOSAL
CITY OF KNOXVILLE, TENNESSEE

Magnolia Avenue Streetscape Project
Phase I, Project No. 15A-R-0584
Phase II, Project No. 16A-R-0609

TO THE PURCHASING AGENT
CITY OF KNOXVILLE, TENNESSEE

_____ hereby propose(s) to furnish all material, labor, and appliances and do all work required to complete the Contract for the Magnolia Avenue Streetscape Project, Project No. 15A-R-0584 (Phase I) and Project No. 16A-R-0609 (Phase II), located in the City of Knoxville, Tennessee, in a workmanlike manner and in accordance with the plans of the Department of Engineering and

Bidder further agrees that in case of failure to sign a delivered contract within thirty (30) days, the certified check or bid bond accompanying this bid and the proceeds thereof shall be the property of the City of Knoxville if the City chooses to retain said bid bond or check.

BID SCHEDULE

CITY OF KNOXVILLE ESTIMATED ROADWAY QUANTITIES

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
1.10	Mobilization of Forces, Supplies and Equipment (Maximum Amount = \$14,000 + 1% of Contract	LS	1	_____	_____
1.50	Construction Stakes, Lines and Grades	LS	1	_____	_____
2.20	Tree and Shrub Removal	LS	1	_____	_____
3.10	Removal of Pipe	LF	2,277	_____	_____
3.11	Removal of Rigid Pavement, Sidewalk, Etc.	SY	6,886	_____	_____
3.12	Removal of Vehicular Concrete	SY	7,101	_____	_____
3.13	Removal of Asphalt Pavement	SY	5,411	_____	_____
3.14	Removal of Curb	LF	5,302	_____	_____
3.15	Removal of Curb and Gutter	LF	1,364	_____	_____
3.16	Removal of Subsurface Trolley Tracks	LF	1,375	_____	_____
4.20	Common Excavation	CY	1,900	_____	_____
5.30	Maintenance Stone	TON	2,500	_____	_____
10.30	Saw Cutting Asphalt Pavement	LF	14,330	_____	_____

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
12.41	4" Mountable Curb and Gutter, Type 4-30	LF	25		
12.46	4" Nonmountable Concrete Curb	LF	100		
12.95	10" Concrete Curb	LF	37		
13.10	Concrete Sidewalks	SF	41,113		
13.11	Concrete Steps	LS	1		
13.12	4" Thick Concrete Paving (Colored and Stamped)	SF	2,540		
13.13	8" Thick Concrete Paving (Colored and Stamped)	SF	415		
13.20	Concrete Driveways	SF	11,693		
14.10	Flowable Fill (Flowable Mortar)	CY	13		
20.07	6" HDPE	LF	576		
20.08	12" HDPE	LF	1,654		
20.14	18" R.C.P.	LF	2,195		
20.16	24" R.C.P.	LF	608		
20.18	30" R.C.P.	LF	382		
20.20	36" R.C.P.	LF	70		
20.22	42" R.C.P.	LF	25		
20.24	48" R.C.P.	LF	426		
21.30	Water Quality Unit w/Diversion Box	EA	1		
22.00	No. 3 Manhole, 4' - 8'	EA	3		
22.01	No. 3 Manhole, 8' - 12'	EA	2		
22.02	No. 3 Manhole, 16' - 20'	EA	1		
22.05	Junction Box, Type 1	EA	3		
22.10.2	No. 10 Catch Basin, > 4' - 8' Depth w/Bicycle Grate	EA	1		
22.12.1	No. 12 Catch Basin, 0' - 4' Depth w/Bicycle Grate	EA	1		
22.12.2	No. 12 Catch Basin, > 4' - 8' Depth w/Bicycle Grate	EA	24		
22.12.3	No. 12 Catch Basin, > 8' - 12' Depth w/Bicycle Grate	EA	18		
22.12.4	No. 12 Catch Basin, > 16' - 20' Depth w/Bicycle Grate	EA	1		
22.12.5	No. 51 Catch Basin, > 16' - 20' Depth w/Bicycle Grate	EA	1		
22.12.6	GDOT Throated Inlet 1033F	EA	3		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
22.12.7	Temporary Grate	EA	7		
22.15	Area Drain Catch Basin (TDOT No. 42) 8' - 12'	EA	1		
22.40.2	Conversion of Existing Catch Basin to Junction Box	EA	2		
22.40.3	Adjustment of Existing Manhole	EA	3		
22.40.4	Conversion of Existing Manhole to Junction Box	EA	1		
26.10	Topsoil	CY	820		
26.20	Planting Mix - Amendments	CY	95		
26.30	Shrubs/Groundcover	SF	26,180		
26.40	Ornamental Trees	EA	19		
26.50	Medium Shade Trees	EA	12		
26.60	Large Shade Trees	EA	42		
26.70	Sod	SF	15,720		
26.80	Hardwood Mulch	CY	340		
26.90	Stone Mulch	CY	8		
31.10	Erosion Control	LS	1		
31.15	Tree Protection Fencing	LF	292		
34.10	Construction Area Traffic Control	LS	1		
38.10	Cold Planing of Asphalt Pavement	TON	2,036		
39.10	Temporary Pavement Marking (Line)	LF	5,030		
42.00	Tactile Warning System, Cast In Place	EA	34		
63.10	Signage and Striping	LS	1		
70.01	Lighting Pole Assembly - Street Lighting	EA	20		
70.02	Lighting Pole Assembly - Pedestrian Lighting	EA	60		
70.03	Street Lighting Assembly, Pole & Arm By Others	EA	6		
70.04	In-Grade Lighting Fixtures	EA	9		
70.05	Lighting Control Panel Assemblies	EA	2		
70.06	LTG Branch Wiring, Under Sidewalk	LF	11,660		
70.07	LTG Branch Fittings	EA	87		
70.08	Secondary Service Lateral LCPI, Under Sidewalk	LF	99		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
70.09	Secondary Service Lateral LCP2	LF	275		
70.10	Service Risers	EA	2		
70.11	Pull Boxes	EA	7		
70.12	Concrete Encasement for Duct Banks	LF	891		
71.01	Benches	EA	31		
71.02	Trash Receptacles	EA	16		
71.03	Bike Loops	EA	23		
71.04	Bench, Trash Receptacle, and Bike Loop Pad	SF	6,210		
303-01	Mineral Aggregate, Type A Base, Grading D	TON	4,500		
307-02.01	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading A	TON	125		
307-02.06	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading B	TON	3,711		
307-02.08	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading B-M2	TON	81		
402-01	Bituminous Material for Prime Coat (PC)	TON	9		
403-01	Bituminous Material for Tack Coat (TC)	TON	19		
411-02.10	ACS Mix (PG70-22) Grading D	TON	2,480		
702-01.01	Extruded Sloping Curb	LF	3,014		
702-03	Concrete Combined Curb & Gutter	CY	641		
713-16.20	Sign (Street Name Sign)	EA	12		
713-16.21	Sign (Turning Traffic Yield to Pedestrian 30" R10-15L)	EA	1		
725-02.79	Fiber Optic Closure (48F Enclosure)	EA	3		
725-03.09	Ethernet Switch (Type A)	EA	3		
725-22.25	Conduit Bank (2" HDPE)	LF	5,051		
725-23.02	Fiber Optic Testing	LS	1		
725-23.12	Fiber Optic Cable (48F)	LF	2,641		
725-23.21	Fiber Optic Drop Cable (12F)	LF	150		
725-24.61	Training	LS	1		
730-01.02	Removal of Signal Equipment	EA	3		
730-02.09	Signal Head Assembly (130 with Backplate)	EA	24		
730-02.30	Signal Head Assembly (140 A3H with Backplate)	EA	1		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
730-03.21	Install Pull Box (Type B)	EA	12		
730-03.23	Install Pull Box (Fiber Optic - Type A)	EA	7		
730-03.24	Install Pull Box (Fiber Optic - Type B)	EA	3		
730-03.33	Fiber Optic Splice Fusion	EA	12		
730-05.01	Electrical Service Connection	EA	3		
730-05.02	Service Cable (2 Conductor, #8 AWG)	LF	242		
730-08.01	Signal Cable - 3 Conductor (14 AWG Stranded)	LF	3,058		
730-08.02	Signal Cable - 5 Conductor (14 AWG Stranded)	LF	3,393		
730-08.03	Signal Cable - 7 Conductor (14 AWG Stranded)	LF	685		
730-08.05	Signal Cable - 12 Conductor (14 AWG Stranded)	LF	1,534		
730-12.02	Conduit 2" Diameter (PVC)	LF	701		
730-12.03	Conduit 3" Diameter (PVC)	LF	147		
730-12.09	Conduit 3" Diameter (RGS)	LF	2,520		
730-13.07	Vehicle Detector (Sonem 2000 Priority Control)	EA	12		
730-13.08	Vehicle Detector (Wavetronix)	EA	12		
730-15.09	Cabinet (Sixteen Phase Base Mounted)	EA	3		
730-16.14	Controller (Sixteen Phase Actuated Naztec ATC)	EA	3		
730-23.30	Pedestal Pole (10')	EA	14		
730-23.72	Cantilever Signal Support (1 ARM @ 35')	EA	1		
730-23.80	Cantilever Signal Support (1 ARM @ 40')	EA	1		
730-23.88	Cantilever Signal Support (1 ARM @ 45')	EA	6		
730-23.98	Cantilever Signal Support (1 ARM @ 55')	EA	2		
730-23.99	Cantilever Signal Support (1 ARM @ 60')	EA	2		
730-26.06	Pedestrian Pushbutton Post	EA	5		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
730-26.11	Countdown Ped Sgnl Head w/Audible Push Button & 15 in Sign	EA	24		
730-35.06	Battery Back-Up and Power Conditioner	EA	3		
730-40.02	Temporary Traffic Signal System	LS	1		
Total of all Roadway Items				\$	

KUB ESTIMATED QUANTITIES

A1000	Mobilization (Limited to Unit Price Bid or 8.25% of Project Bid Total, Whichever is Less)	LS	1		
A1010a	Traffic Control, Plans	LS	1		
A1010b	Traffic Control Implementation	LS	1		
A1015	Pre-Construction Site Video Recording	LS	1		
A1016	Temporary Guying of Utility Poles	EA	3		
A2115a	Gravity Sewer Pipe, PVC, 8 Inches, Paved, 0 - 6 Feet Deep	LF	146		
A2175a	Gravity Sewer Pipe, DIP, 8 Inches, Paved, 0 - 6 Feet Deep	LF	31		
A2176a	Gravity Sewer Pipe, DIP, 8 Inches, Paved, Installed Within 16" Steel Casing, 0 - 6 Feet Deep	LF	100		
A2395	Closed Circuit Television (CCTV) Inspections (As Directed by Owner)	LF	300		
A2400c	Pipe Heavy Cleaning (As Directed by Owner), 8 - Inch Diameter	LF	300		
A2405	Point Repair in Roadway	LF	10		
A2415c	Pipe Bursting, 8 - Inch Diameter	LF	1,760		
A2420	PVC Sewer Lateral Appurtenances	EA	20		
A2425a	PVC Sewer Lateral, 6-Inch Diameter, In Road	LF	500		
A2425b	PVC Sewer Lateral, 6-Inch Diameter, In Easement	LF	60		
A2435a	Manhole, Concrete, 4-Foot Diameter, 0 - 6 Feet Deep	EA	3		
A2495e	Drop Manhole, 4-Foot Diameter, 12 - 14 Feet Deep	EA	1		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
A2575a	Manhole Lining, 1-Inch Thick Cementitious Lining, 4 - Foot Diameter	VF	100		
A2590	Abandon Existing Manhole	EA	1		
A2620c	Abandon Existing Sewers by Grouting in Place, 8 - Inch Diameter	LF	300		
A2630	Sewer Flow Control	LS	1		
A6000	Temporary Patching	LF	500		
A307-02.06	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading B	TON	610		
A6020	Crushed Rock Surfacing, Roadways, and Driveways	SY	165		
A6025	Seeding	SY	450		
A6030	Sodding	SY	5		
B3000f	Water Line, 8" DIP Water Line Under Pavement or Within 3' of Edge of Pavement per Section 02321	LF	2,800		
B3000g	Water Line, 6" DIP Water Line Under Pavement or Within 3' of Edge of Pavement per Section 02321	LF	140		
B3000j	Water Line, 2" Water Line Under Pavement or Within 3' of Edge of Pavement per Section 02321	LF	250		
B3000s	Water Line, 8" Restrained Joint Gaskets	EA	140		
B3005b	Water Main Bore, 2" Directional Bore	LF	1,825		
B3010a	Water Valve Installation, 2" HDPE Valve	EA	3		
B3010b	Water Valve Installation, 4" Gate Valve	EA	1		
B3010c	Water Valve Installation, 6" Gate Valve	EA	1		
B3010d	Water Valve Installation, 8" Gate Valve	EA	15		
B3015a	Air Valves, Blowoff Valves, & Hydrants, 2" Blow-Off Valve Assembly	EA	5		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
B3015b	Air Valves, Blowoff Valves, & Hydrants, 1" Air-Release Valve	EA	2		
B3015d	Air Valves, Blowoff Valves, & Hydrants, Fire Hydrant Assembly	EA	7		
B3015f	Air Valves, Blowoff Valves, & Hydrants, 8" Insertion Valve	EA	1		
B3020a	Tie-Ins to Existing Facilities, Sta. 0+00 Line "A"	EA	1		
B3020b	Tie-Ins to Existing Facilities, Sta. 0+00 Line "B"	EA	1		
B3020c	Tie-Ins to Existing Facilities, Connection to Existing 6" CI Water at Austin Street	EA	1		
B3020d	Tie-Ins to Existing Facilities, Connection to Existing 12" Water at Bertrand St.	EA	1		
B3020e	Tie-Ins to Existing Facilities, Connection to Existing 14" Water at Bertrand St.	EA	1		
B3020f	Tie-Ins to Existing Facilities, Sta. 23+24.74 End of Line "A"	EA	1		
B3025a	Service Connections, Reconnection (Service Tap) - 1" and Smaller	EA	31		
B3025b	Service Connections, Reconnection (Service Tap) - 1 1/2" - 2"	EA	7		
B3025e	Service Connections, Reconnection (Fireline) - 4"	EA	1		
B3025f	Service Connections, Reconnection (Fireline) - 6"	EA	1		
B3025h	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 1" and Smaller	EA	30		
B3025i	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 1 1/2" - 2"	EA	7		
B3025k	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 4"	EA	1		
B3025o	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 3/4" Copper Service Pipe	LF	793		

ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	PRICE PER UNIT	TOTAL PRICE PER ITEM
B3025p	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 1" Copper Service Pipe	LF	126		
B3025pp	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 1 1/2" Copper Service Pipe	LF	160		
B3025q	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 2" Copper Service Pipe	LF	110		
B3025s	Service Connections, Meter Well and Lid, Meter Horn, and Associated Fittings - 4" Dip Service Pipe	LF	34		
D.1a	Deductive Line Item, Credit for Reuse of Existing Meter Well and Lid	EA	-38		
B3030a	Retire Existing Water Facilities, Abandon Existing Mains	LS	1		
B3030b	Retire Existing Water Facilities, Abandoned Existing Water Valves, Air Valves, & Blowoff Assemblies	EA	50		
B3030c	Retire Existing Water Facilities, Abandon Existing Fire Hydrants	EA	7		
B6000	Temporary Patching	LF	750		
B307-02.06	Asphalt Concrete Mix (PG70-22) (BPMB-HM) Grading B	TON	2,625		
B6020	Crushed Rock Surfacing, Roadways, and Driveways	SY	585		
B6025	Seeding	SY	1,600		
B6030	Sodding	SY	15		
Total of all KUB Items				\$	
TOTAL BID				\$	
TOTAL BID (In Words):					

SECTION 32 90 00
EXTERIOR LANDSCAPE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to this Section.

1.02 SUMMARY OF WORK:

- A. Extent of Landscape Work is indicated on Drawings and in schedules.
- B. Provide and furnish all labor, materials and equipment required or inferred from Drawings and Specifications to complete the Work of this Section.

1.03 QUALITY ASSURANCE:

A. Industry Reference Standards:

- 1. National List of Scientific Plant Names, 1982.
- 2. American National Standards Institute, Inc. (ANSI):
ANSI Z60.1 - 96 American Standard for Nursery stock by the American Association of Nurseryman.
- 3. American Society for Testing and Materials (ASTM):
 - D 1140-97 Test Method for Amount of Material in Soils Finer Than the No. 200 Sieve.
 - D 2434-68 (94) Test Method for Permeability of Granular Soils (Constant Head).
 - D 2487-00 Standard Test Method for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
 - D 2940-98 Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports.
 - D 2974-87(95) Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.
 - D 4972-95a Test Method for pH of Soils.
 - D 5268-92(96) Specification for Topsoil Used for Landscaping Purposes.
 - F 405-97 Specifications for Corrugated Polyethylene (RE) Piping and Fittings.

B. Qualifications:

- 1. Installer Qualifications: Engage a firm specializing in landscape installation. Submit written documentation of successful completion of ten (10) projects of similar size, scope and complexity to work specified for this Project.
 - a. Firm Experience Period: Seven (7) years of experience.
 - b. Field Foreman Experience: Five (5) years of experience with installing firm.

- C. Soil-Testing Laboratory Qualifications: Engage a reputable independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct testing and analysis of existing surface soils representative of planting areas and lawn areas on site, new topsoil to be used in soil mixes and soil mixes with reference to

specified plant materials. Soil report to include analysis of a minimum of three (3) soil samples from different locations for existing on-site surface soils.

1.04 SUBMITTALS:

- A. Approval: Obtain approval from Landscape Architect for all submittals prior to the beginning of Work, unless otherwise approved.
- C. Topsoil Location and Sample: Furnish Landscape Architect with written statement stating location of property from which topsoil is to be obtained, depth to be stripped, and crops grown during past two (2) years. Submit one (1) cubic foot of topsoil proposed for use.
- D. Topsoil Test Report: Submit results of soil analysis by a qualified soil-testing laboratory, for information only, of topsoil proposed for use in planting soil mixes. Report shall include percentages of deleterious materials; organic matter; gradation of sand, silt, and clay content, as determined by test methods included in Part 2 - Products; cation exchange capacity; pH level; mineral, major nutrient and micro nutrient content of top soil.
- E. Planting Soil Mix Sample: Submit one cubic foot of each proposed planting soil mix.
- F. Planting Soil Mix Test Report: Submit results of soil analysis by a qualified soil-testing laboratory, for information only, of each planting soil mix as specified. Report shall included percentages of organic matter; pH level; mineral; major nutrient and micro nutrient content of each mix.
 - 1. State recommended quantities of nitrogen, phosphorus, potash and other nutrients and soil amendments to be added for suitable plant growth.
- G. On Site Soil Report: Submit results of soil analysis by a qualified soil-testing laboratory, for information only, of on site soil. Report shall include pH level, mineral; major nutrient and micro nutrient content of on site soil.
 - 1. State recommended quantities of nitrogen, phosphorus, potash and other nutrients and lime to be added for suitable plant growth.
- H. Product Data: Submit, for information only, product data for proprietary materials and items, including soil amendments, soil conditioner, and other packaged products.
- I. Soil Permeability Test Report: Submit laboratory test results of planting soil mix to be used in all structured planters. Planting soil mix shall be tested in accordance with ASTM D 2434.
- J. Tree Pit Drainage Certification: Submit written documentation certifying that results of drainage test on tree pits and planting beds comply with requirements contained here in.
- K. Fertilizer Analysis: Submit, for information only, label or technical data for fertilizer bearing the trade name, manufacturer's name, weight and analysis for fertilizers used in planting soil mixes and on sodded lawn areas.
- L. Planting Schedule: Submit planting schedule showing scheduled dates for each type of planting in each area of site. The Owner may require special schedule requirements for specific areas of the project, prior to beginning the Work.
- M. Certification: Prior to acceptance of plant material submit certificates of inspection as required by governmental authorities, and manufacturer's or vendors certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials

comply with specified requirements. Submit seed vendor's certified statement for each grass seed mixture required, stating botanical and common name, percentage by weight, and percentages of purity, germination, and weed seed for each grass seed species.

- N. Maintenance Instructions: Upon completion of the installation, submit typewritten recommendations for maintenance of any portion of the landscape which, in the opinion of the Contractor, requires special attention.
- O. Installer Certification: Submit written documentation certifying that Installer complies with requirements of "Installer Qualifications" above.
- P. Filter Fabric: Submit, manufacturer's product data, for information only, including specifications, installation instructions and general recommendations.

1.05 MATERIAL QUANTITIES:

- A. It is the Contractor's responsibility to total and confirm all material quantities. Items quantified by an area (i.e., square feet - sf., square yard - sq. yd.) or volume (cubic feet - cu. ft., cubic yard - cu. yd.) shall be calculated and confirmed by the Contractor. The quantities listed on the plant list are estimated. In the event of a discrepancy between the totals listed on the plant list and the numerical callouts on the Drawings, the Drawings shall govern. The actual total quantities shall be determined by the Contractor.

1.06 METHOD OF MEASUREMENT

- A. Landscape quantities shall be measured by the unit for the completion of the work as described in this Section.

1.07 BASIS OF PAYMENT

- A. Plants: Partial payments for landscape items will be made on an as completed basis and on a unit price basis. The following items are presumed to be included in the Unit Price for each landscape item:
 - 1. Plant materials
 - 2. Freight
 - 3. Labor necessary for moving, digging, planting, watering and maintaining plant materials through Final Completion.
 - 4. Equipment necessary for moving, digging, watering and maintaining plant material through Final Completion.
- B. Mulch: Partial payment for mulching will be made on an as completed basis and on a cubic yard unit price basis. The following items are presumed to be included in the Unit Price for mulch:
 - 1. Mulch materials
 - 2. Freight
 - 3. Labor necessary for moving, spreading and finishing mulch. This also includes replacing mulch that is displaced by whatever means up to Final Completion.
 - 4. Equipment necessary for moving, spreading and finishing mulch.

1.08 DELIVERY, STORAGE AND HANDLING:

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored on site.
- B. Sod: Time delivery so that sod will be placed within twenty-four (24) hours after stripping. Protect sod against drying and breaking of rolled strips.
- C. Trees, Shrubs and Ground Cover: Provide freshly dug trees and shrubs. Do not prune prior to delivery. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Provide protective covering during shipment.
 - 1. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.
- D. Deliver trees, shrubs and ground cover after preparations for planting have been completed and plant immediately. If planting is delayed more than six (6) hours after delivery, set trees, shrubs and ground cover in shade, protect from current and forecasted weather and mechanical damage, and keep roots moist.
 - 1. Set balled stock on ground or in partially excavated hole and cover rootball with soil, peat moss, sawdust or other acceptable material.
 - 2. Do not remove container-grown stock from containers until planting time.
 - 3. Heal-in bare-root stock. Soak roots in water. Do not let roots dry out.
 - 4. Water root systems of plant material stored on-site. Water as often as necessary to maintain root systems in a moist condition.
- E. Label at least one (1) tree and one (1) shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.
- F. Do not remove labels attached to plant material by the Landscape Architect until directed to do so.

1.09 PROJECT CONDITIONS:

- A. Insurance on plant material and other materials stored or installed is the responsibility of the Contractor. Such insurance shall cover fire, theft, vandalism and other unusual phenomenon. Should the Contractor elect not to provide such insurance, he will in no way hold the Owner responsible for any losses incurred by the aforementioned acts. The Contractor is responsible for all costs incurred in replacing damaged or stolen materials prior to Date of Substantial Completion of the Work.
- B. Proceed with and complete landscape work as rapidly as portions of Site become available, working within seasonal limitations for each kind of landscape work required.
- C. Existing Grades: Existing grades will be within 0.05 feet of grades shown on the Civil Engineering Drawings when landscape work is to begin. Determine condition of existing grades prior to beginning the Work. When irregular or incomplete grading conditions are encountered, notify the Owner in writing before beginning the Work. Determine location of existing drainage patterns and maintain patterns in completed Work. Perform Work in a manner which will avoid damage to finished grading and drainage patterns. All damage to finished grading and drainage resulting from Work covered in these Contract Documents shall be repaired at the Contractor's expense.
- D. Existing Utilities: Determine location of underground utilities. Perform Work in a manner which will avoid possible damage. Excavate as required. Maintain grade stakes set by

others unless removal is mutually agreed upon by parties concerned. All damage to utilities resulting from Work covered in these Contract Documents shall be repaired at the Contractor's expense.

- E. Existing Conditions: Perform landscape Work in the Tree Protection Zones and in existing or previously completed landscape areas to avoid damage and disturbance to these areas. Limit work in these areas to only that necessary to perform work specified herein and shown on the Drawings. Return and repair any areas damaged or disturbed while performing the Work to the existing conditions encountered prior to the Work.
- F. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect in writing before planting.
- G. Weather Limitations: Proceed with planting when existing and forecasted weather conditions are suitable.
- H. Planting Schedule: Prepare a proposed planting schedule. Schedule dates for each type of landscape work during contract period. Coordinate schedule with General Contractor and Irrigation Contractor.
- I. Coordination With Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Landscape Architect. If planting of trees and shrubs occurs after lawn Work, protect lawn areas and promptly repair damage to lawns resulting from plant operations.

1.10 WARRANTY:

- A. Warranty for a period of one (1) year, following the Date of Substantial Completion, all trees, shrubs, groundcovers, plants and grass against any defects including death and unsatisfactory growth, as determined by the Landscape Architect. Warranty shall include the complete cost to supply and install all replacement plant materials according to the requirements herein. Defects resulting from lack of adequate maintenance, neglect or abuse by the Owner, abuse or damage by others, or unusual phenomenon or incidents beyond the Contractor's control are excepted. Should questions arise concerning the responsibility of replacement, the Landscape Architect will be available for arbitration provided the Owner and Contractor mutually desire.
- B. Remove and replace all trees, shrubs, groundcovers and lawn, or other plants found to be more than 25 percent dead or in unhealthy condition during warranty period as determined by Landscape Architect or Owner. Make replacements immediately unless required to plant in the succeeding planting season.
- C. Replacements: Match adjacent specimens of same species. Replacements are subject to all requirements stated in the Contract Documents and are subject to observation by the Landscape Architect prior to digging.
- D. Repair grades, lawn areas, paving and any other damage resulting from replacement planting operations, at no additional cost to the Owner.
- E. Inspect Project site monthly during warranty period to determine what changes, if any, should be made in the maintenance program. Submit all recommended changes in writing to the Landscape Architect and the Owner.

- F. Replacements made during the Warranty Period or following the site visit for Final Acceptance will carry an additional one (1) year warranty beginning at the time of replacement.

PART 2 - PRODUCTS

2.01 SOURCE QUALITY CONTROL:

- A. General: Only plant material grown in a recognized nursery in accordance with good horticultural practice will be accepted. Provide healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun-scald, injuries, abrasions or disfigurement.
- B. Observation of Plant Material Prior to Digging:
 - 1. Contractor must locate all plant material to be supplied for the Project and inform the Landscape Architect in writing of location within thirty (30) days of the date of the Contract or notice to proceed, which ever is first.
 - 2. The Landscape Architect may select and tag the trees required for the Project, at the Contractor's sources. In any event the Landscape Architect shall approve 100 percent of the trees required for the Project.
 - 3. In the event plant material is found to be unacceptable, the Contractor will pursue other sources until acceptable plant material is found, at no additional cost to the Owner. If, due to unacceptable plant material at the Contractor's source, additional tagging trips are required by the Landscape Architect, the Contractor will reimburse the Landscape Architect for his time and travel expenses.
 - 4. Approval at the plant source does not impair the right of the Landscape Architect to observe and reject material at the time of shipping or during progress of the Work.
- C. Shipping:
 - 1. Ship landscape materials with certificates of inspection required by governing authorities. Inspection by Federal and/or State Governments at Grower does not preclude rejection of plants at the site by the Landscape Architects. Comply with regulations applicable to landscape materials. Prepare plants for shipment to prevent damage to the plants.
 - 2. From March 15th to September 15th, ship plant material to be transported over one hundred (100) miles at night only. Make arrangements to have plant material watered during shipment as necessary to avoid excessive stress. Plant material may be rejected if not properly shipped.
 - 3. Do not ship plant material in temperatures below 20 degrees Fahrenheit.
- D. Do Not Make Substitutions: If specified landscape material is not obtainable, submit to Landscape Architect proof of non-availability and for use of equivalent material. For proof of non-availability submit a written statement from a minimum of twelve (12) reliable nursery sources (American Nurserymen's Association Members) that the plant in question is not obtainable in the Eastern United States.
- E. Analysis and Standards: Package standard products with manufacturer's certified analysis. Including but not limited to:
 - 1. Soil Amendments
 - 2. Grass Materials

3. Mulch

- F. Approval and Selection of Materials and Work: The selection of all materials and the execution of all operations required under the Drawings and Specifications is subject to the approval of the Landscape Architect. The Landscape Architect has the right to reject any and all materials and any and all Work which, in his opinion, does not meet the requirements of the Contract Documents at any stage of the operations. The Contractor shall remove rejected work and/or materials from Project site and replace promptly.

2.02 TOPSOIL:

- A. Topsoil **has not** been stockpiled for re-use in planting soil and other Landscape Work.
- B. Provide new topsoil which is fertile, friable, pervious, sandy loam, surface soil; free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than one and one-half (1) inch in any dimension, and other extraneous or toxic matter harmful to plant growth.
- C. Obtain topsoil from local sources or from areas having similar soil characteristics to that found at Project Site. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than four (4) inches; do not obtain from bogs or marshes, unless specified.
- D. Topsoil: ASTM D 5268 complying with the following composition as determined by the indicated test methods:
1. Deleterious Materials: 2 percent max. by mass; ASTM D 2487. (Rock, gravel, slag, cinder, stone).
 2. Organic Material: 5-10 percent min. by mass; ASTM D 2974.
 3. Sand Content: 20 to 40 percent by mass; ASTM D 1140.
 4. Silt and Clay Content: 40 to 50 percent by mass; ASTM D 1140.
 5. pH Range: 5 to 7; ASTM D 4972.

2.03 INORGANIC SOIL AMENDMENTS:

- A. Lime: ASTM C 602, Class T, agricultural limestone containing a minimum of 80 percent calcium carbonate equivalent, with a minimum 99 percent passing a No. 8 sieve and a minimum 75 percent passing a No. 60 sieve.
- B. Aggregate Soil Conditioner: Rotary kiln expanded slate specially graded for use as a horticultural soil conditioner with the following composition as determined by the indicated test methods:
1. Dry Loose Unit Weight: 48-55 lbs/cu.ft.; ASTM C 29.
 2. Specific Gravity: To meet 1.45 to 1.60 dry bulk; ASTM C 127.
 3. Gradation: 3/8-inch to No. 8; ASTM C 330 with 100 percent passing the 3/4-inch sieve.
 4. Absorption: Five percent or more; ASTM C 127.
 5. LA Abrasion: Weight loss between 20 percent and 30 percent; AASHTO T 96.
 6. Chemical Characteristic:
 - a. pH: 6.5 to 10 range.
 - b. Soluble salts: To meet horticultural rural range of 0.75 to 3.5 mmhos/cm.
 7. Process the slate using only non-hazardous fuels such as coal or natural gas.
 8. The expanded slate shall be free of clay lumps and organic impurities.

9. Obtain aggregate soil conditioner from a single supplier.
10. Available Products: Subject to compliance with the requirements, aggregate soil conditioners that may be incorporated in the Work includes, but is not limited to the following:
 - a. Acceptable Supplier and Products:
 - 1) Supplier: Caroline Stalite Company
 - a) Product: 5/16-inch Perma Till

- C. Coarse Sand: Clean, washed, natural or manufactured sand, free of extraneous or toxic matter with the following grain size distribution or coarser; ASTM C136.

Sieve Size	% Passing
.5 in.	100.0
.375 in.	98.0
#4	98.0
#10	93.0
#20	21.0
#60	1.0
#140	0.5
#200	0.5

2.04 ORGANIC SOIL AMENDMENTS:

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch (25-mm) sieve; soluble salt content of 4 to 6 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
1. Organic Matter Content: 50 percent minimum of dry weight.
 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste that meet all State Environmental Protection Agency requirements.
 3. Available Products: Subject to compliance with the requirements, compost products that may be incorporated in the Work includes, but is not limited to the following:
 - a. Acceptable Supplier and Products:
 - 1) Supplier: EARTH Products, LLC
 - a) Product: EARTH Food
 - 2) Supplier: It Saul Natural, LLC
 - a) Product: Hen Manure Compost
- B. Humus: Air dried, finely shredded, and pH range suitable for intended horticultural use. Humus shall be completely decomposed forest type including composted leaves, bark and organic wastes.
- C. Peat: Air dried, finely shredded or granular texture, completely decomposed and free of fibers with pH range suitable for intended horticultural use. Peat shall be a naturally occurring, highly organic and derived primarily from plant materials.
- D. Shredded Pine Bark: Shredded bark pieces between one-half (1/2) inch and two (2) inches in length with partially decomposed bark matter.

2.05 FERTILIZER:

- A. Bonemeal: Commercial, raw, finely ground; minimum of 4 percent nitrogen and 20 percent phosphoric acid.
- B. Superphosphate: Commercial phosphate mixture, soluble, minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-released nitrogen, 50 percent derived from natural organic sources, phosphorous, and potassium in the following composition:
 - 1. General: For trees, shrubs and groundcover, provide a homogeneous fertilizer complete with micro nutrients having an analysis of 12-4-8 (12 pounds of nitrogen, 4 pounds of available phosphoric acid, and 8 pounds of water soluble potash respectively for each 100 pounds of mixture).
 - 2. For trees, shrubs, and ground cover provide fertilizer with adjusted analysis in accordance with results and recommendations of planting soil mix test reports.
 - 3. For lawns, provide fertilizer in accordance with results and recommendations of existing on site surface soil report relative to lawn installation. Provide nitrogen in a form that will be available to lawn during initial period of growth.
- D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in existing on site surface soil reports from a qualified soil-testing laboratory.

2.06 PLANTING SOIL:

- A. Planting Soil Mix For On-Grade Plantings: Provide soil mix amended as per laboratory recommendations. Basic planting soil mix consists of:
 - 1. 60 percent topsoil (as specified)
 - 2. 40 percent prepared additives (by volume as follows)
 - a. 2 parts humus, peat, and/or compost
 - b. 1 part shredded pine bark (bark pieces between 1/2 inch and 2 inches in length)
 - c. 1 part sterilized composted cow manure
 - 3. Commercial fertilizer as recommended in soil report
 - 4. Lime as recommended in soil report
- B. Planting Soil Mix for Annual Color and Perennial Plantings: Provide manufacturer's pre-mixed soil mix.
 - 1. Acceptable Manufacturer and Product:
 - a. Manufacturer: It Saul Natural, LLC.
 - 1) Product: Mr. Natural CLM
- C. Humus shall be omitted from planting soil mixes if topsoil used has an organic content of 40 percent or greater as determined by the topsoil test report.

2.07 PLANT MATERIALS:

- A. General:

1. Provide plants true to species and variety, complying with recommendations of ANSI Z60.1 "American Standard for Nursery Stock". Nomenclature to comply with "National List of Scientific Plant Names."
 2. Specific requirements concerning plant material and the manner in which it is to be supplied are shown on the Drawings and plant list.
 3. Acclimatization: Plants must have grown under climatic conditions similar to those of the locality of the project site for a minimum of two (2) years immediately prior to being planted on the Project.
- B. Quality and Size:
1. Furnish nursery grown plants, freshly dug, normally shaped and well branched, fully foliated when in leaf and with healthy well developed root systems. Plants to be free of disease, insect infestations or their eggs and larvae, and defects such as knots, sun scald, injuries, abrasions and disfigurement.
 2. Furnish plants to match as closely as possible whenever symmetry is called for.
 3. Provide trees and shrubs of sizes shown or specified. Trees and shrubs of larger size may be used if acceptable to the Landscape Architect, and if sizes of roots or rootballs are increased proportionately. The increased size will not result in additional cost to the Owner.
 4. Stock Specified in a Size Range: Within each size range not less than 50 percent the plants must be of the maximum size specified.
 5. Balled and Burlapped Plants: Plants designated "B&B" are to have firm, natural balls of soil corresponding to sizes specified in ANSI Z60.1 "American Standard for Nursery Stock". Balls to be firmly wrapped in biodegradable burlap and securely tied with biodegradable heavy twine, rope and/or wire baskets. Plants with loose, broken or manufactured rootballs will be rejected. Rootballs shall be lifted from the bottom only, not by stems or trunks.
 6. Container grown plants in cans, plastic containers or timber boxes will be acceptable in lieu of balled and burlapped plants provided that they are of specified quality. The container must be removed prior to planting, with care being exercised as to not injure the plant.
- C. Trees:
1. Provide trees of height and caliper listed or shown and with branching configuration recommended by ANSI Z60.1 for type and species required. Provide single stem trees except where special forms are specified in the Contract Documents.
 2. Provide self supporting trees with straight trunks and leaders intact. Where required in the Contract Documents, provide trees with character as described.
 3. Determining dimensions for trees are caliper, height and spread. Caliper shall be measured six (6) inches above ground for trees up to and including four (4) inch caliper. Trees over four (4) inch caliper shall be measured twelve (12) inches above ground. Specified height and spread dimensions refer to the main body of the plant and not branch tip to tip. Take measurements with branches in natural position.
- D. Tree Forms: Do not limb up tree forms more than two (2) feet before planting. Prune to desired shape as directed by Landscape Architect.
- B. Shrubs: Provide established and well-rooted plants, in removable containers, with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of shrub.

- F. Ground Cover: Provide established and well-rooted plants, in removable containers or integral peat pots, having not less than minimum number and length of runners by ANSI Z60.1 for the pot size specified.
- G. Grass Materials:
 - 1. Grass Seed: Provide fresh, clean, new crop-seed complying with tolerance for purity and germination established by Association of Official Seed Analysts. Provide seed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified on Drawings.
 - 2. Sod: Provide viable sod of uniform density, color, and texture, strongly rooted, not less than two (2) years old and free of weeds and undesirable native grasses. Only provide sod capable of growth and development when planted (viable, not dormant). Provide machine cut sod of a uniform minimum soil thickness of five-eighths (5/8) inch, plus thickness of top growth and thatch. Sod pieces to be consistent in size and shape. All sod must be a true certified turfgrass.

2.08 MISCELLANEOUS LANDSCAPE MATERIALS:

- A. Burlap for wrapping earthball shall be biodegradable jute mesh not less than 7.2 oz. per square yard. Wrapping materials made from man made fibers are unacceptable.
- B. Guy Stakes, Upright Stakes, and Deadmen: Grade No. 2 or better, uniform grade pressure preservative treated pine AWWPA C-2, or sound new hardwood or redwood free of knots, holes and other defects, two (2) by two (2) inches by thirty (30) inches long, pointed at one end.
- C. Guys Ties: Woven synthetic strap manufactured specifically for this purpose.
 - 1. Manufacturer: Arbor-Tie
- D. Hose: One half (1/2) inch diameter black reinforced rubber or plastic garden hose. Cut to required lengths to protect tree trunks from damage by wires. Used hose is acceptable.
- E. Water and water transportation is the sole responsibility of the Contractor.
- F. Mulch:
 - 1. Shredded Pine Bark Mulch: Premium grade shredded and ground, one (1) inch maximum particle size in any dimension.
 - a. Submit sample for approval.
- G. Lawn Anti-Erosion Mulch: Clean, threshed straw of wheat, rye, oats or barley.
- H. Anti-Desiccant: Water-insoluble emulsion type, film-forming agent designed to permit transpiration but retard excessive loss of moisture from plants. Deliver in manufacturer's fully labeled containers and mix in accordance with manufacturer's instructions.

PART 3 - EXECUTION

3.01 PREPARATION:

- A. General:

1. Contractor shall examine conditions under which planting is to be installed, review applicable architectural and engineering Drawings, and be familiar with alignment of underground utilities before digging.
 2. Planting Time: Planting operations are to be performed at such times of the year as the job may require, with the stipulation that the Contractor guarantees the plant material as specified. Plant only during periods when weather conditions are suitable.
 3. Verify layout information shown on the Drawings, in relation to property survey and existing bench marks before proceeding to layout the work. Locate and protect existing benchmarks and control points. Preserve reference points (coordinates) shown on the Drawings during construction.
 4. Work from lines established by the property survey, established bench marks and markers to set coordinate points for the tree locations on the Project. Calculate and measure required dimensions. Do not scale Drawings to determine dimensions.
 5. Tree Locations: Locate and layout tree (coordinate) locations by instrumentation and similar appropriate means.
 6. Layout individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Landscape Architect's acceptance before start of excavation for planting work. Make adjustments as requested.
 7. Notify Landscape Architect of adverse sub-surface drainage or soil conditions. State conditions and submit a recommendation for correction including costs. Obtain approval for method of correction prior to continuing Work in the affected area. In the event that alternate locations are selected, the Contractor shall prepare such areas at no additional expense to the Owner.
- B. Excavation for Trees and Specimen Shrubs:
1. Excavate pits, beds and trenches with vertical sides, as specified and as shown on the Drawings.
 2. Loosen hardpan and moisture barrier until hardpan has been broken and moisture is allowed to drain freely.
 3. For balled and burlapped (B&B trees and shrubs), make excavations at least four (4) feet wider than the ball diameter for the top twelve (12) inches of the pit. For the remaining depth of the pit, excavate at least two (2) feet wider than the full diameter and equal to the ball depth, plus an allowance for setting of ball on a layer of compacted backfill. Allow for six (6) inch minimum setting layer of excavated soil.
 4. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.
- C. Test Drainage:
1. Tree and Specimen Shrub Pits: Fill each pit with water. If percolation is less than 100 percent within a period of twelve (12) hours, drill a ten (10) inch diameter auger hole to a depth up to five (5) feet below the bottom of the pit. Fill auger hole with drainage gravel and cover with filter fabric. Retest pit. In case drainage is still unsatisfactory, notify Landscape Architect, in writing, of the condition before planting trees in the questionable areas. Contractor is fully responsible for warranty of the plant material.
- D. Subsoil Removal:
1. If test results allow, the use of existing soil is allowed. Dispose of subsoil removed and not used in the planting operations at an off-site location.

3.02 FIELD QUALITY CONTROL:

- A. Testing: Contractor shall employ testing agency to perform soil permeability test in accordance with ASTM 2434 on planting soil mix to be used in structured planters prior to procuring and installing drainage matting. Test results shall be used to determine weight of integral non-woven filter fabric.

3.03 PREPARATION OF PLANTING SOIL:

- A. Before mixing, clean topsoil, or existing surface soil if using a soil conditioner, of roots, plants, clods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
- B. Mix specified soil amendments and fertilizers with topsoil, or soil conditioner with existing surface soil at rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.
- C. For pit and trench type backfill, mix planting soil prior to backfilling and keep covered until used.
- D. For planting soil prepared with a manufactured soil conditioner, mix planting soil in large batches before backfilling, stock pile for use at site and keep covered until used. Do not mix soil conditioner at individual planting sites.
- E. For groundcover and shrub beds, mix planting soil either prior to planting or apply on a surface layer over prepared bed area and mix both thoroughly in the bed before planting.
 - 1. Mix lime, if required, with dry soil prior to mixing of fertilizer.
 - 2. Prevent lime from contacting roots of acid-loving plants.
 - 3. Apply phosphoric acid fertilizer (in addition to that constituting a portion of complete fertilizers) directly to subgrade before applying planting soil and tilling.

3.04 PREPARATION OF SHRUB AND GROUNDCOVER PLANTING BEDS:

- A. Layout planting beds on the ground to the lines shown on the Drawings. Have layout approved by Landscape Architect prior to constructing the bed.
- B. Outline bed adjacent to sod with a trench edge as shown on the Drawings. Place soil for trench edge within bed area.
- C. Loosen existing soil to a minimum depth of twelve (12) inches using a roto tiller or similar equipment. Remove all sticks, stones, rubbish and other material detrimental to plant growth.
- D. Spread four (4) inch minimum layer of planting soil mix over entire bed area. (Additional soil mix may be necessary to build up shrub beds to grade as shown on the Drawings.) Work planting soil mix into top of loosened soil with roto tiller.
- E. Smooth planting areas to conform to specified grades after settlement has occurred. Slope surface of shrub beds to drain toward the trench edge.
- F. Mass preparation of beds is not applicable for areas exceeding 4:1 slope.

3.05 PREPARATION OF ANNUAL COLOR AND PERENNIAL BEDS:

- A. Excavate bed to a depth of four (4) inches, break through 'hard pan' and remove all stone, roots, debris, etc. Remove excavated soil.
- B. Roto till excavated bed to a depth of six to eight (6-8) inches.
- C. Slope the base of the bed to the trench edge.
- D. Spread six (6) inch minimum layer of planting soil mix over entire bed. Work planting soil mix into top of loosened soil with roto tiller.
- E. Place additional planting soil mix to build up bed a minimum of six (6) inches above existing grade for annual color beds and four (4) inches above existing grade for perennial beds. Roto till entire bed to a depth of twelve (12) inches.

3.06 PREPARATION FOR PLANTING LAWNS:

- A. Loosen the grade of lawn areas to a minimum depth of six (6) inches. Remove stones over one and one-half (1½) inches in any dimension and sticks, roots, rubbish and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
- B. Place approximately one-half (1/2) of total amount of topsoil required. Work into top of loosened subgrade to create a transition layer and then place remainder of topsoil mixture to minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement. (Insert Paragraph if included in scope and coordinate with Alternate No. 2 & 3).
- C. Allow for sod thickness in areas to be sodded.
- D. Grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges and fill depressions as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.
- E. Fertilize and lime prior to start of grassing operation. Apply ground limestone at the rate recommended by soil test analysis and work into top six (6) inches of soil. Apply fertilizer at the recommended rate; work into top two (2) inches of soil. The fertilizer application shall not precede the placement of sod by more than three (3) days.
- F. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.
- G. Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.
- H. Preparation of Unchanged Grades: Where lawns are to be planted in areas that have not been altered or disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: Till to a depth of not less than six (6) inches; apply soil amendments and initial fertilizers as specified; remove high areas and fill in depressions; till soil to a homogenous mixture of fine texture, free of lumps, clots, stones, roots and other extraneous matter. Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Dispose of such material outside of Owner's property; do not turn over into soil being prepared for lawns.

3.07 PLANTING TREES AND SPECIMEN SHRUBS:

- A. Set balled and burlapped (B&B) stock on layer of compacted excavated existing soil, plumb and in center of pit or trench with top of ball two to three (2-3) inches above the finish grade and also two to three (2-3) inches above the grade they bore to natural grade before transplanting. Remove all straps and ropes made of man-made fibers completely from rootball. Loosen and remove burlap and biodegradable ropes from top half of rootball. Cut and remove the top half of all wire baskets before backfilling. Use planting soil mixture to backfill plant pits. When plants are set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately two thirds (2/3) full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
- B. Remove all man made or impervious materials from the rootball and trunk before final installation of trees and specimen shrubs.
- C. Set container grown stock as specified for balled and burlapped stock, except remove containers, without damaging rootballs, prior to backfilling.
- D. Apply anti-desiccant using power spray to provide an adequate film over trunks, branches, stems, twigs and foliage. If deciduous trees or shrubs are moved in full leaf, spray with anti-desiccant at nursery before moving and again after planting as per manufacturer's recommendations.
- E. Mulching: Immediately after planting work has been completed, mulch pits, trenches and planting beds. Provide a minimum depth of two (2) inches of bark. Finish edges according to the Drawings.
- F. Water: Soak all plants immediately after planting, continue watering thereafter as necessary until Date of Substantial Completion.
- G. Smooth planting areas to conform to specified grades after full settlement has occurred and mulch has been applied.

3.08 STAKING, GUYING AND PRUNING:

- A. Stake and guy trees immediately after planting. Plants shall be plumb after staking or guying. Maintain stakes, wires and guys until Final Acceptance of the Work.
- B. Staking trees of one (1) inch caliper and under or four (4) feet height: Use single stake with rubber hose and wire loop around trunk. Use only wooden stakes as specified.
- C. Staking trees of one (1) to two and three quarters (2-3/4) inch caliper: Drive stakes securely into ground and fasten to tree with wire and tie. Use hose around wire so wire is not in contact with plant, or use Cinch-tie of appropriate size. Adhere to staking details unless alternate detail has been approved by Landscape Architect prior to beginning of planting operation.
- D. Guying trees of three (3) inch caliper and larger: Guy trees according to detail. Position guys around trunk at approximately two-fifths (2/5) the height of the tree. Anchor guys in ground either to notched stakes or steel rods driven securely into ground with top end three (3) inches below finish grade.
- E. Pruning: Unless otherwise directed by the Landscape Architect do not cut tree leaders. Remove only injured or dead branches from trees, if any. Prune shrubs at the direction of the Landscape Architect.

- F. Remove and replace promptly any plants pruned or mis-formed resulting from improper pruning.
- G. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures.

3.09 PLANTING SHRUB AND GROUNDCOVER BEDS:

- A. Excavate large enough area in loosened soil to install specified container grown plants.
- B. Remove containers without damaging the rootball and set in excavated hole.
- C. Place container grown plant in excavated hole with top of rootball even with final shrub bed elevation.
- D. Backfill rootball with soil from the bed and lightly compact soil around plant to eliminate voids and air pockets.
- E. Mulching: Immediately after planting mulch planting beds with a minimum depth of two (2) inches of bark. Finish edges according to the Drawings. Remove all mulch from foliage of plants.
- F. Watering: Soak entire area immediately after planting. Continue watering thereafter as necessary until Date of Substantial Completion.

3.10 INSTALLING LAWNS:

- A. Seeding New Lawns:
 - 1. The grass seed shall be applied at the rate specified in the Seed Schedule and at the planting dates indicated.
 - 2. Sow seed using a spreader or hydro-seeding machine.
 - 3. Do not seed when wind velocities affect even distribution. Do not sow when seed bed is crusty or frozen. Sow in equal quantities in two (2) directions at right angles to each other.

GRASS SEEDING SCHEDULE

<u>Seed Type</u>	<u>Seeding Rate Lbs/1000 sf</u>	<u>Planting Dates</u>	<u>Visible Seedling Stand Under Ideal Conditions</u>	<u>Ultimate Mowing Height</u>
1. Tall Fescue	6 – 8	Sept 15 – Nov 15	8 days*	2 – 2-1/2"
3. Annual Ryegrass	4 – 6	Oct 1 – Mar 1	6 days*	2 – 2-1/2"

*Planting dates for type 1-3 are for NE Tennessee region only. These dates differ for other areas where seasonal variations require modification. According to the Plant Hardiness Zone Map published by the United States Department of Agriculture, 1990, these dates refer to Zones 7a and 7b.

- 4. If seed bed is left slightly rough or furrowed, no "planting" of the seed is necessary. If seed bed is smooth and very dry, the seed should be lightly raked into the top quarter (1/4) inch of seed bed.
- 5. Protect seeded areas with slopes not exceeding 1:5 by spreading wheat straw or hay mulch. The quantity of mulch to be applied shall be that to uniformly form a continuous blanket at least three-quarters (3/4) of an inch and not more than one

and one-half (1½) inches in loose depth over the seeded area. Spread by hand, blower, or other suitable equipment.

- a. Bond straw mulch by spraying with asphalt emulsion at a rate of 10 to 13 gal./1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.
6. Protect seeded areas with slopes exceeding 1:5 with erosion-control fiber mesh and 1:3 with erosion-control blankets installed and stapled according to manufacturer's written instructions.
7. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
 - a. Mix slurry with nonasphaltic tackifier.
 - b. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply mulch at a minimum rate of 1500-lb/acre dry weight but not less than the rate required to obtain specified seed-sowing rate.
8. Thoroughly moisten seeded area immediately after seeding. If rainfall is insufficient lightly water planting area until grass is established.
9. Protect seeded areas from traffic and disturbance.
10. Scarify, re-seed and re-fertilize seeded areas that do not show satisfactory growth within fifteen (15) days after sowing, until a satisfactory stand is established. Seeded areas are considered established when a dense grass stand has developed of a uniform green color, reasonably free from weeds, the specified grass is vigorous and growing well, and no bare spots larger than one (1) square foot area is apparent. Full coverage is required in thirty (30) days. Irregularities resulting from diseases and insect infestation are unacceptable. Mow grass at height specified in seeding schedule.
11. After two (2) or three (3) mowings the new lawn shall be fertilized with ammonium nitrate at the rate of 50 lbs/acre. Nitrogen shall be applied with mechanical hand spreader capable of producing uniform coverage. One (1) application is mandatory. Nitrogen shall not be applied between October 15 and March 15, unless noted otherwise.

B. Sodding New Lawns:

1. Water soil prior to receiving sod. At the time of sod placement soil must be moist but not saturated.
2. Lay sod within twenty-four (24) hours from time of stripping. If not possible, sod may be stored on site up to thirty-six (36) hours after stripping provided sod is properly protected: unstack, unroll and place in shade and keep moist until installation.
3. Do not plant dormant sod.
4. Do not plant sod on frozen ground.
5. Lay sod to form a solid mass with tightly fitted joints. Snugly fit ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.
6. Anchor sod with wood pegs to prevent slippage on slopes equal to or greater than 3:1 and wherever erosion can be anticipated. Lay sod perpendicular to slope direction, with staggered joints.
7. Water sod thoroughly with a fine spray immediately after planting until soil is damp to a depth of four (4) inches. If rainfall is insufficient, keep sodded area moist until grass has securely rooted into the planting area.

C. Reconditioning Existing Lawns:

1. Recondition existing lawn areas damaged by Contractor's operations including storage of materials and equipment and movement of vehicles. Also recondition existing lawn areas where minor regrading is required.
2. Provide fertilizer, seed or sod and soil amendments as specified for new lawns and as required to provide a satisfactorily reconditioned lawn. Provide new topsoil as required to fill low spots and meet new finish grades.
3. Cultivate bare and compacted areas thoroughly to provide a satisfactory planting bed.
4. Remove diseased and unsatisfactory lawn areas; do not bury under soil. Remove topsoil containing foreign materials resulting from Contractor's operations including oil drippings, stone, gravel and other loose building materials.
5. Where substantial lawn remains (but is thin), mow, rake, aerate if compacted, fill low spots, remove humps and cultivate soil, fertilize, and seed. Remove weeds before seeding or if extensive, apply selective chemical weed killers as required. Apply a seedbed mulch, if required, to maintain moist condition.
6. Thoroughly water newly planted areas immediately after planting. If rainfall is insufficient, lightly water planting area until new grass is established.

3.11 MAINTENANCE:

- A. Begin maintenance immediately after planting.
- B. Maintain trees, shrubs lawns, and other plants until Date of Substantial Completion of the Work.
- C. Maintain trees, shrubs, lawns and other plants by watering, pruning, cultivating, weeding, and re-mulching as required for healthy growth. Restore trench edges around mulch rings and along bed limes. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.
- D. Maintain lawns by watering, weeding, mowing, repair of eroded areas and re-seeding or re-sodding as necessary to establish a uniform stand of the specified grasses.
- A. Remove all trees, shrubs, ground covers, lawn or other plants which die, turn brown and/or defoliate prior to Date of Substantial Completion from the site. Replace immediately with plant material of the same species, quantity, size and meeting all requirements.

3.12 CLEAN UP AND PROTECTION:

- A. During Landscape Work, keep pavements clean and work area in an orderly condition.
- B. Upon completion of Work, clear grounds of debris, superfluous materials and all equipment. Remove from site to satisfaction of Landscape Architect and Owner.
- C. Protect landscape Work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape Work as directed, at no additional cost to the Owner.
- D. Theft: Contractor is responsible for theft of plant material at the Project site before, during and after planting, until the Date of Substantial Completion of the Work.

3.13 OBSERVATION AND ACCEPTANCE:

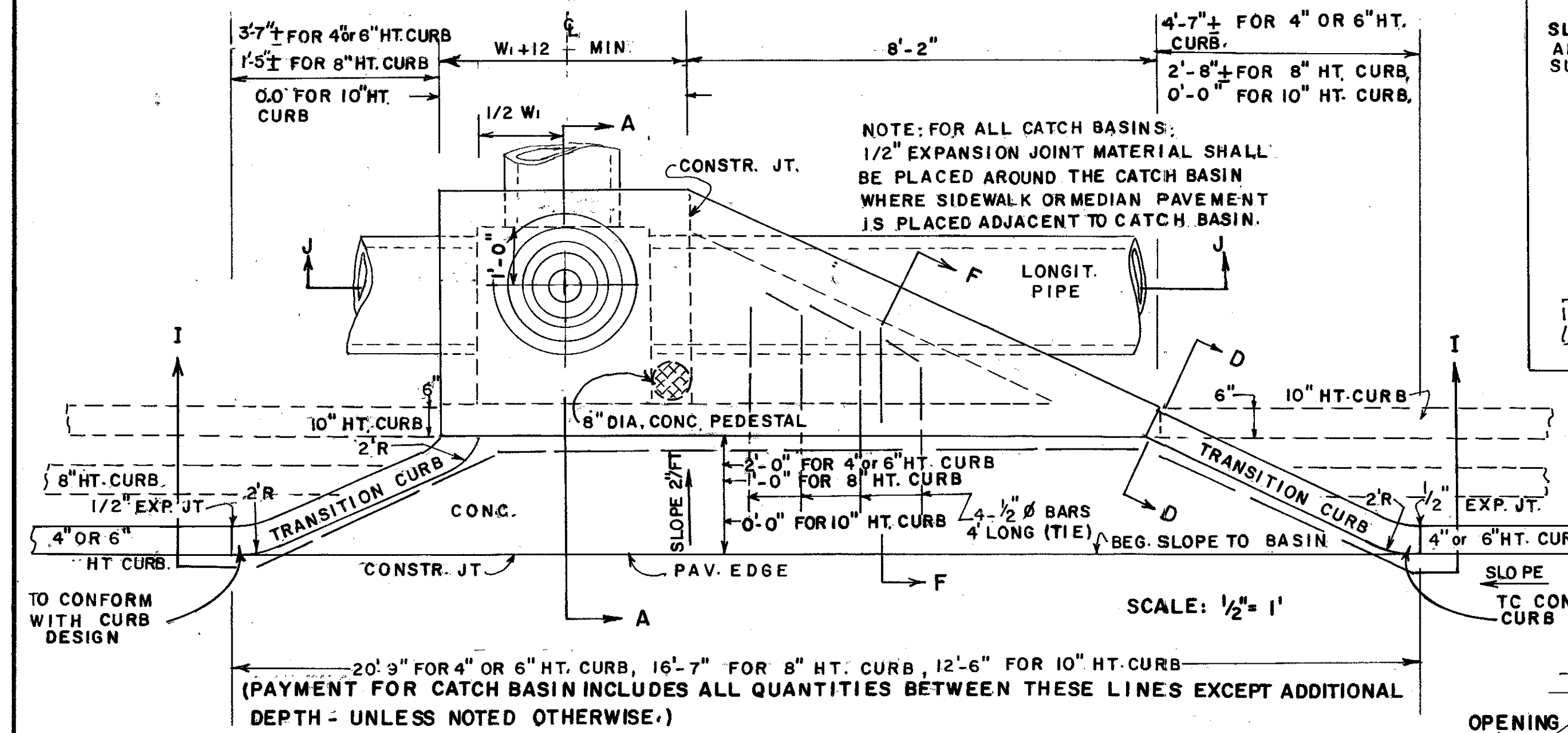
- A. Periodic site visits will be made by the Landscape Architect to review the quality and progress of the Work. Work found to be unacceptable must be corrected within five (5) calendar days. Remove rejected plants and materials promptly from the Project.
- B. Upon completion of Work, the Contractor shall notify the Landscape Architect and the Owner at least ten (10) days prior to requested date of site visit for Substantial Completion of all or portions of the Work. Landscape Architect will issue a punch list for work to be corrected. All work on the punch list must be completed within five (5) working days from date of site visit. Where Work does not comply with requirements, replace rejected Work and continue specified maintenance until by Landscape Architect finds work to be acceptable.
- C. If a site visit to verify Substantial Completion has been scheduled and the Landscape Architect arrives at the site and determines that the Landscape Development is not substantially complete, the Contractor shall be responsible for all costs incurred by the Landscape Architect to re-visit the site. Reimbursable expenses include but are not limited to the following: mileage, airfare, consultant's time, parking fee, meals, rental car, etc. All incurred expenses will be deducted from the final contract amount.
- D. Certificate of Substantial Completion will be issued for acceptable Work. If punch list items are issued with the Certificate, they must be corrected within five (5) working days.
- E. One (1) Year Warranty commences on the date of issuance of the Certificate of Substantial Completion. Refer to Section 02900, 1.08 Warranty.
- F. Final Acceptance: One (1) year after Date of Substantial Completion of the Work in total the Landscape Architect and/or the Owner will visit the site to determine Final Acceptance. Upon satisfactory completion of repairs and/or replacements the Landscape Architect and/or the Owner will certify, in writing, the Final Acceptance of the Work. The Final Acceptance letter will serve as evidence that the Contractor's one (1) year warranty obligations have been met.

END OF SECTION 32 90 00

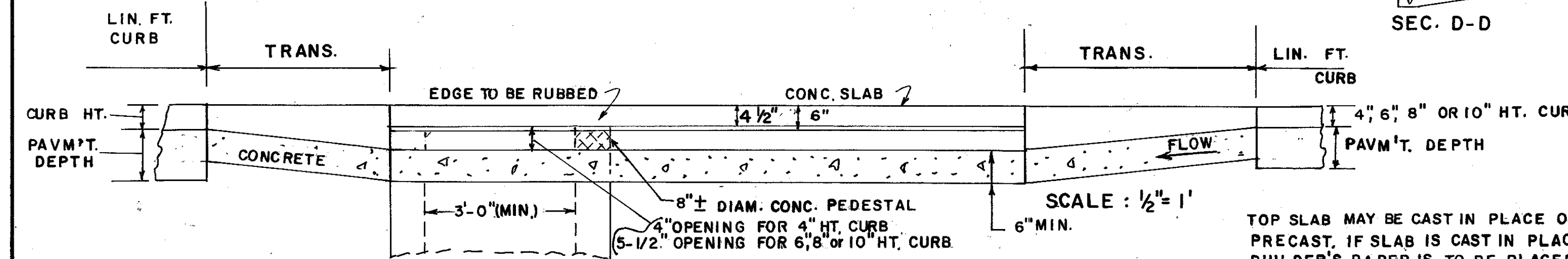
STATE	PROJECT NUMBER / SHEET NO.	TOTAL SHEETS
GA		

CATCH BASIN

(IF CATCH BASIN HAS LONGITUDINAL PIPE OVER 24", SEE DETAILS AT RIGHT)

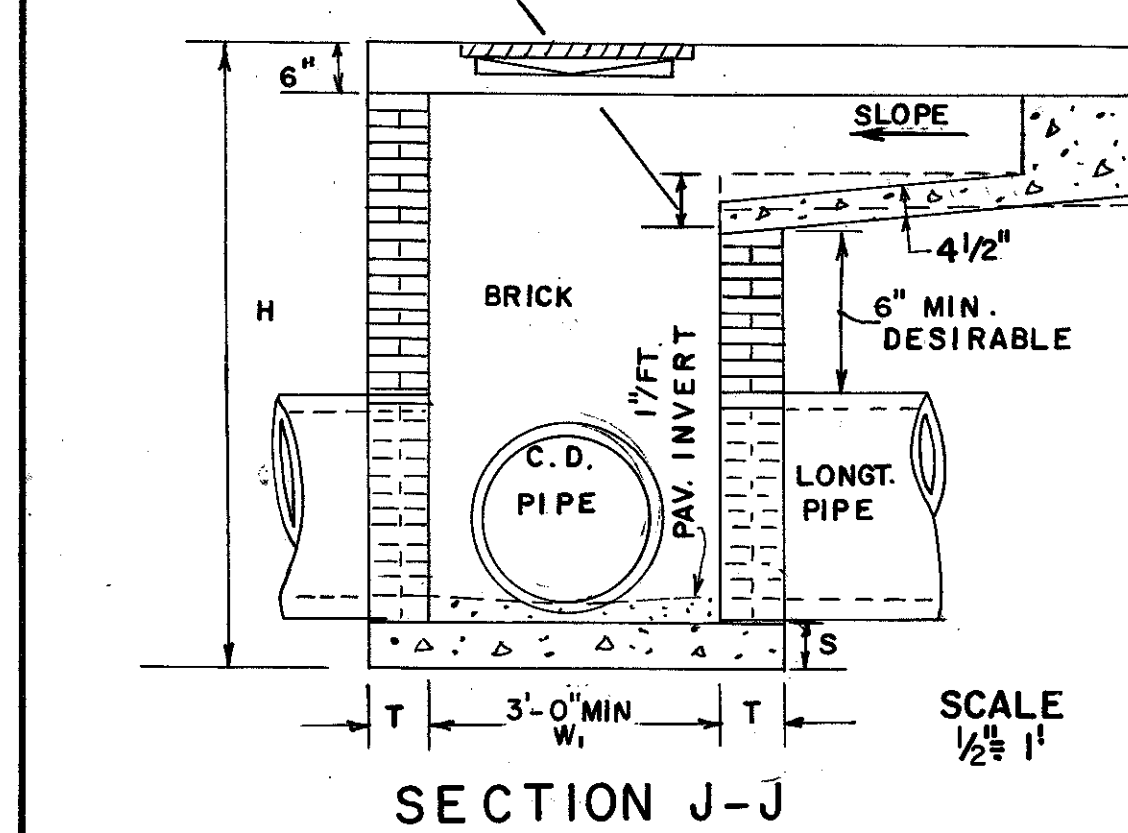


PLAN VIEW

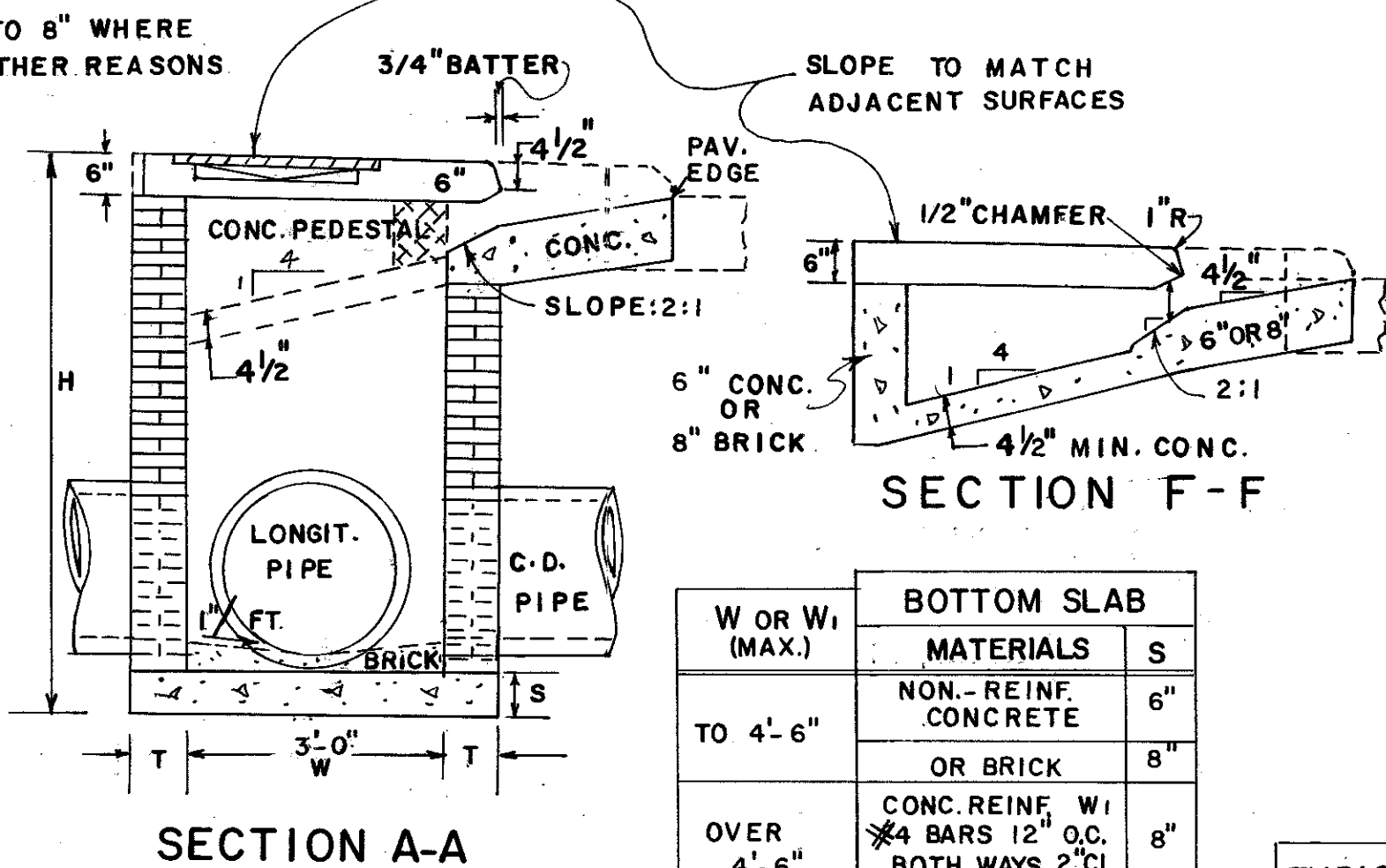


SECTION I-I

NOTE: NORMAL SLOPE OF CONCRETE APRON TO BE INCREASED BY 4" TO 8" WHERE "H" PERMITS AND LONGITUDINAL PIPE IS LOWERED FOR OTHER REASONS



SECTION J-J



SECTION A-A

W OR W ₁ (MAX.)	BOTTOM SLAB	
	MATERIALS	S
TO 4'-6"	NON-REINF. CONCRETE	6"
	OR BRICK	8"
OVER 4'-6"	CONC. REINF. W/ 4 BARS 12" O.C. BOTH WAYS, 2" CL. FROM SLAB TOP	8"

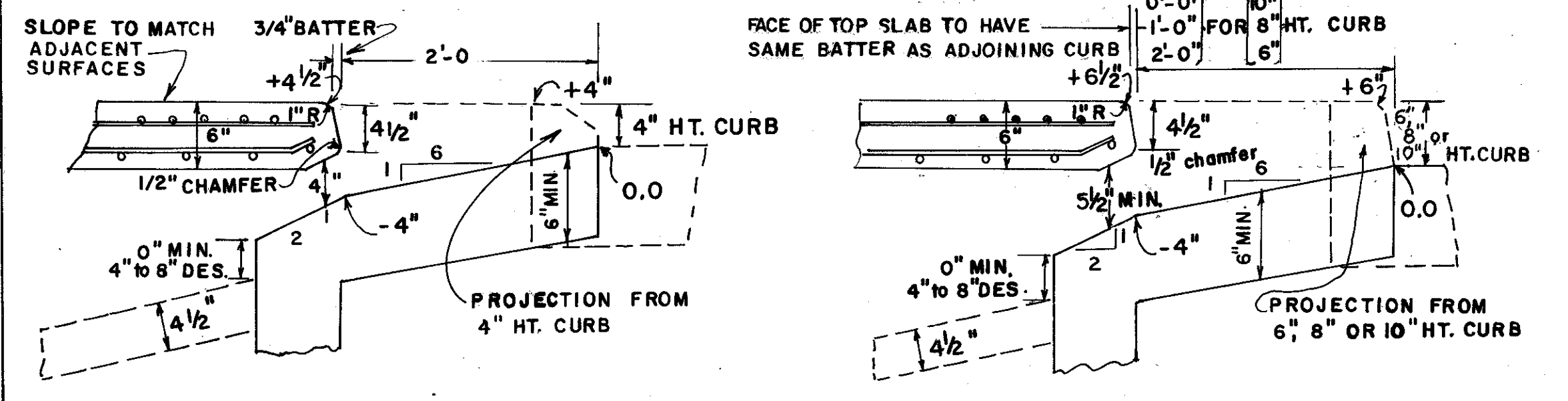
DEPTH LIMITS FOR INCREASING "T"

TYPICAL MAX. DIMENSIONS				
PIPE DIA.	H (MIN.)	W OR W ₁	Δ E	
12	4'-4"	3'-0"	3'-1"	
15	4'-7"	3'-0"	3'-4"	
18	4'-10"	3'-0"	3'-7"	
24	5'-6"	3'-0"	4'-2"	
30	6'-2"	3'-7"	4'-10"	
36	6'-10"	4'-6"	5'-5"	
42	7'-4"	5'-3"	5'-9"	
48	8'-0"	6'-0"	6'-4"	
54	8'-6"	6'-8"	6'-10"	
60	9'-2"	7'-4"	7'-5"	

NOTE: THE MIN. H & MIN. Δ E GIVEN IN THE ABOVE TABLE ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONC. PIPE AND MAY BE VARIED, IF CONDITIONS PERMIT WITH THE VARIED DIMENSIONS SPECIFIED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. W & W₁ DIMENSIONS DO NOT HAVE TO BE EQUAL.

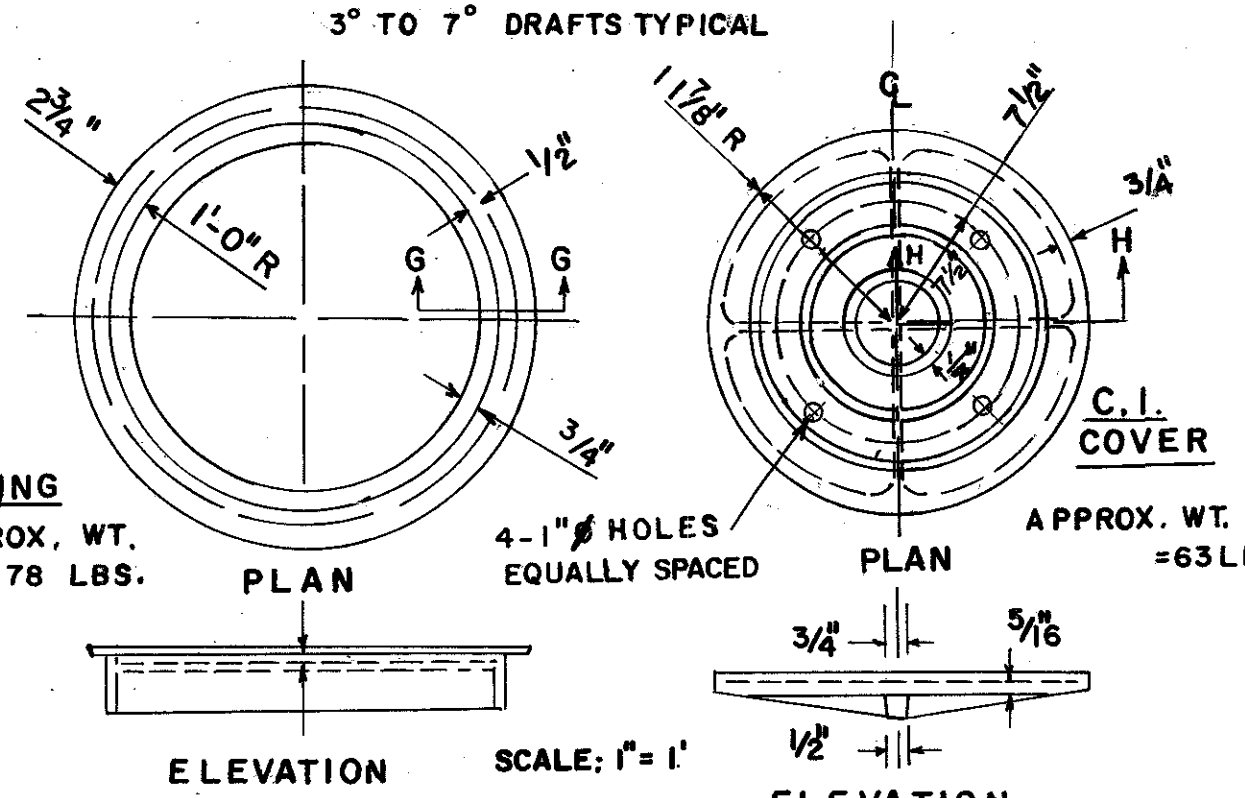
Δ E = MINIMUM DIFFERENCE IN ELEVATION FROM PAVEMENT EDGE TO FLOW LINE OF OUTLET PIPE.

DETAIL OF TOP SLAB, REINF. STEEL & CLEARANCES REQ'D.

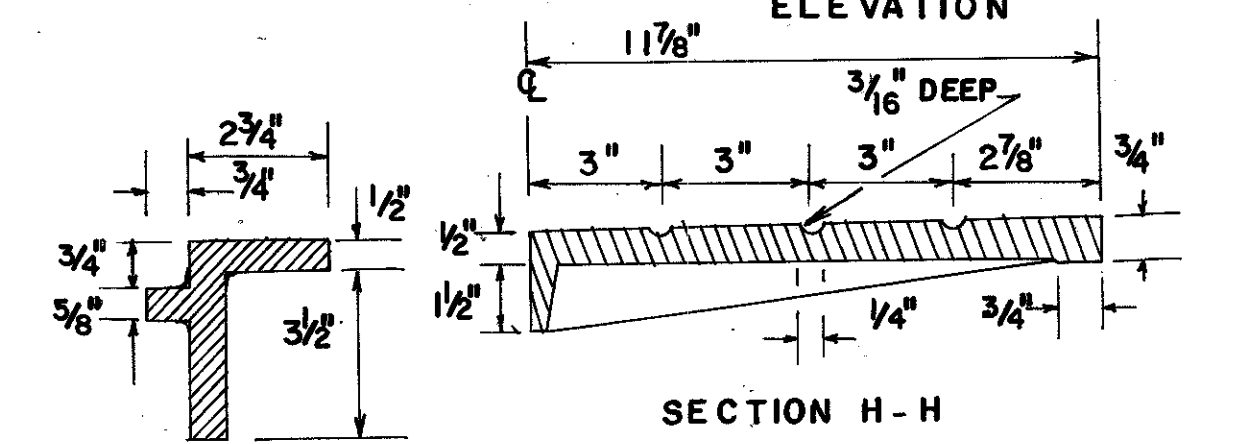


NOTE: TYPICAL TREATMENTS FOR SKEWED PIPE ARE: CIRCULAR PRECAST UNITS; PRECAST SWIVEL SECTIONS; PIPE ELBOWS OR INCREASED BOX SIZES TO ACCOMMODATE THE SKEW.

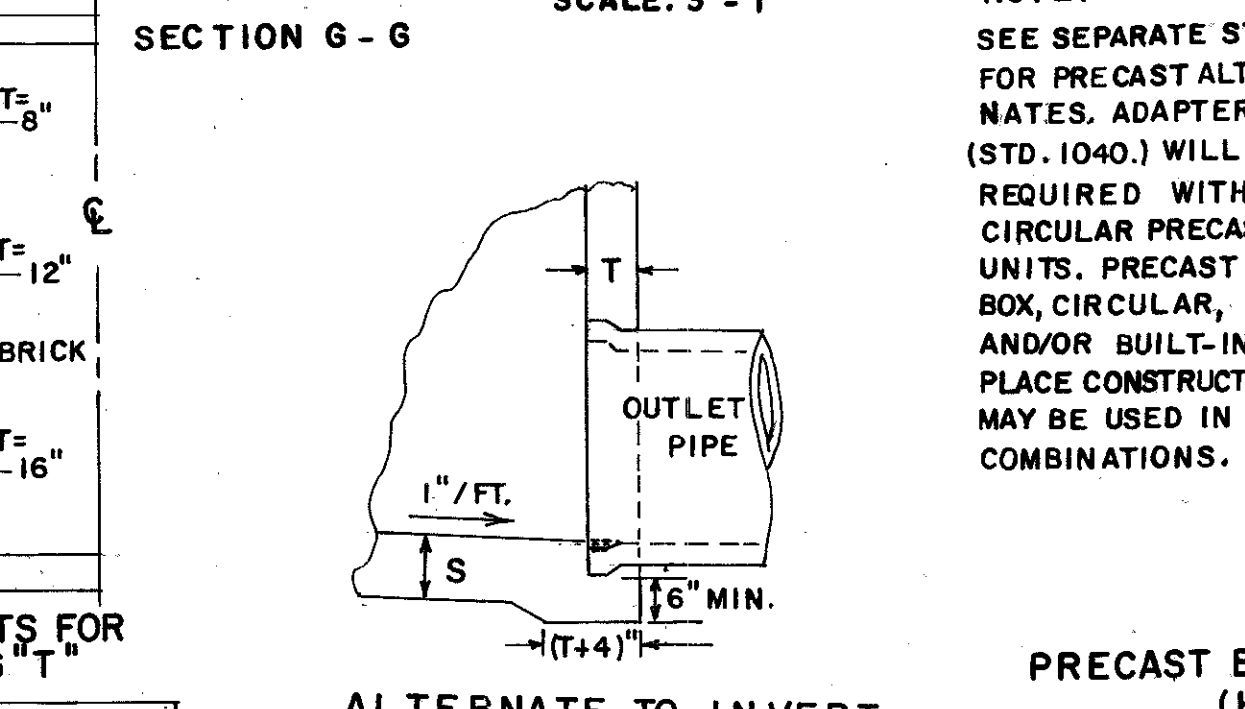
CASTING DETAILS



ELEVATION



SECTION H-H

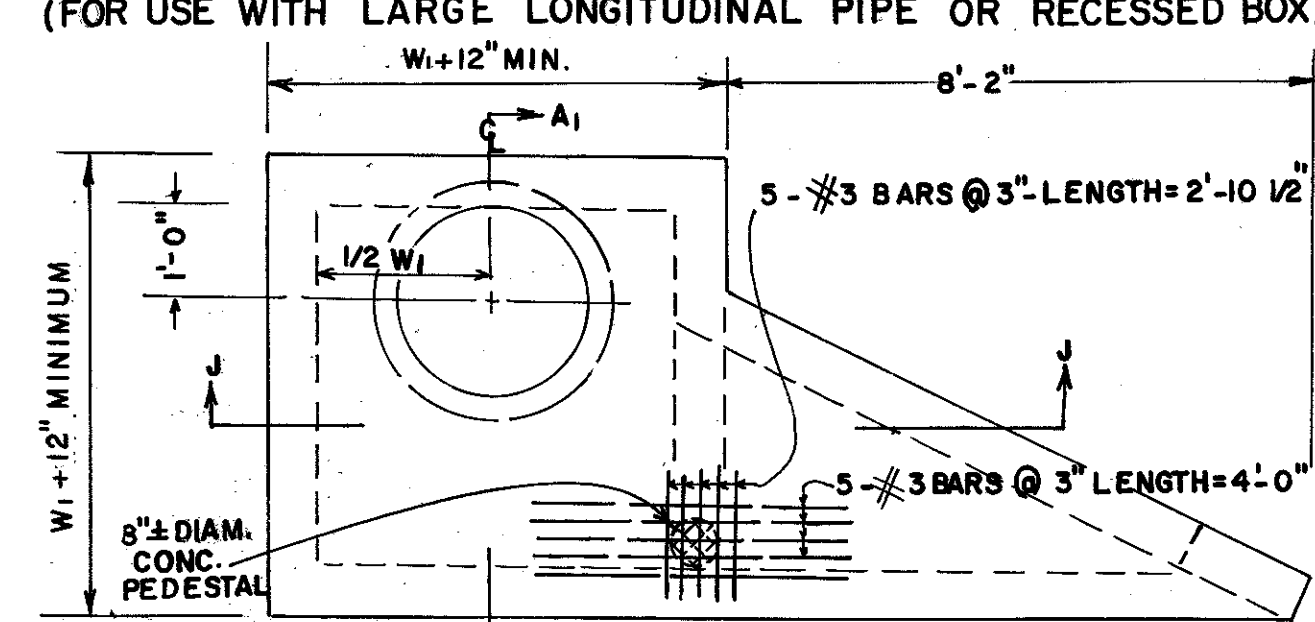


SECTION G-G

ALTERNATE TO INVERT

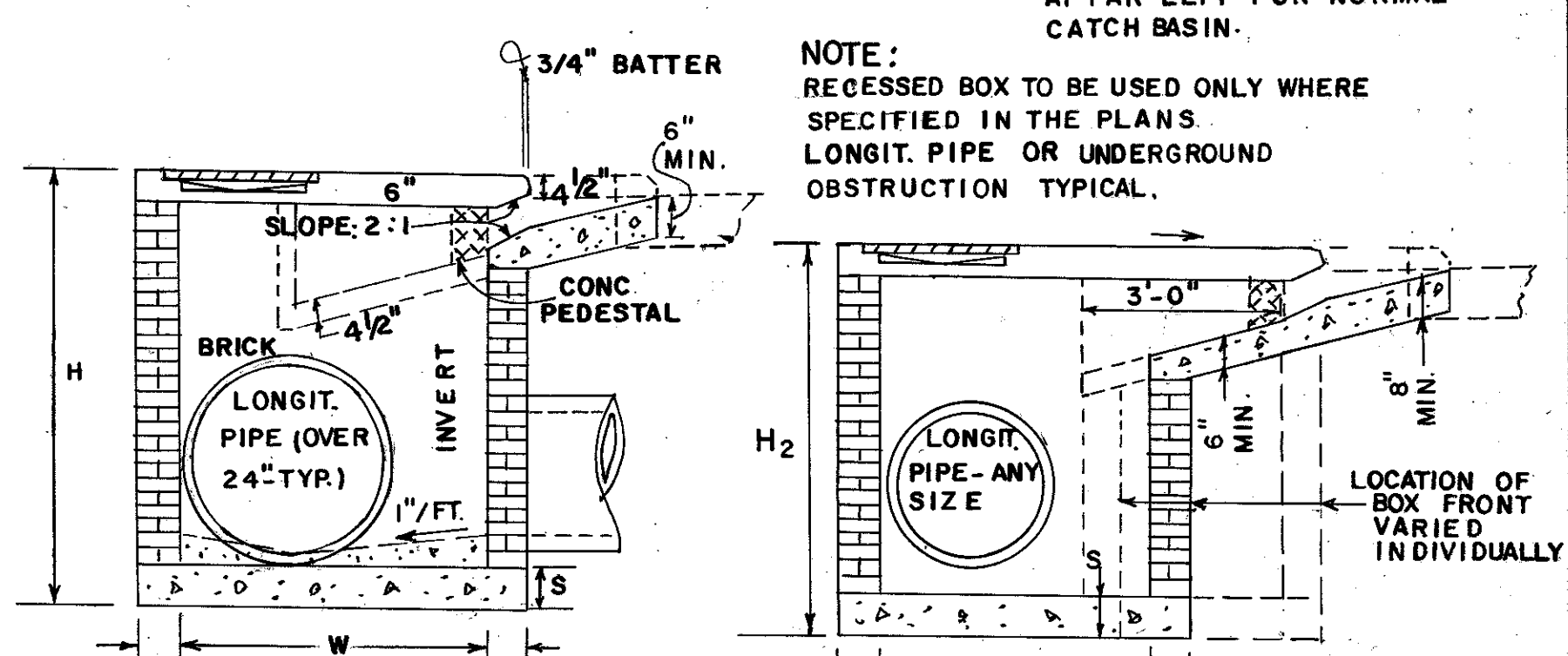
PRECAST BOX ON BRICK (HALF SECTION)

CATCH BASIN (WITH PROTRUDED BACK)



PART PLAN

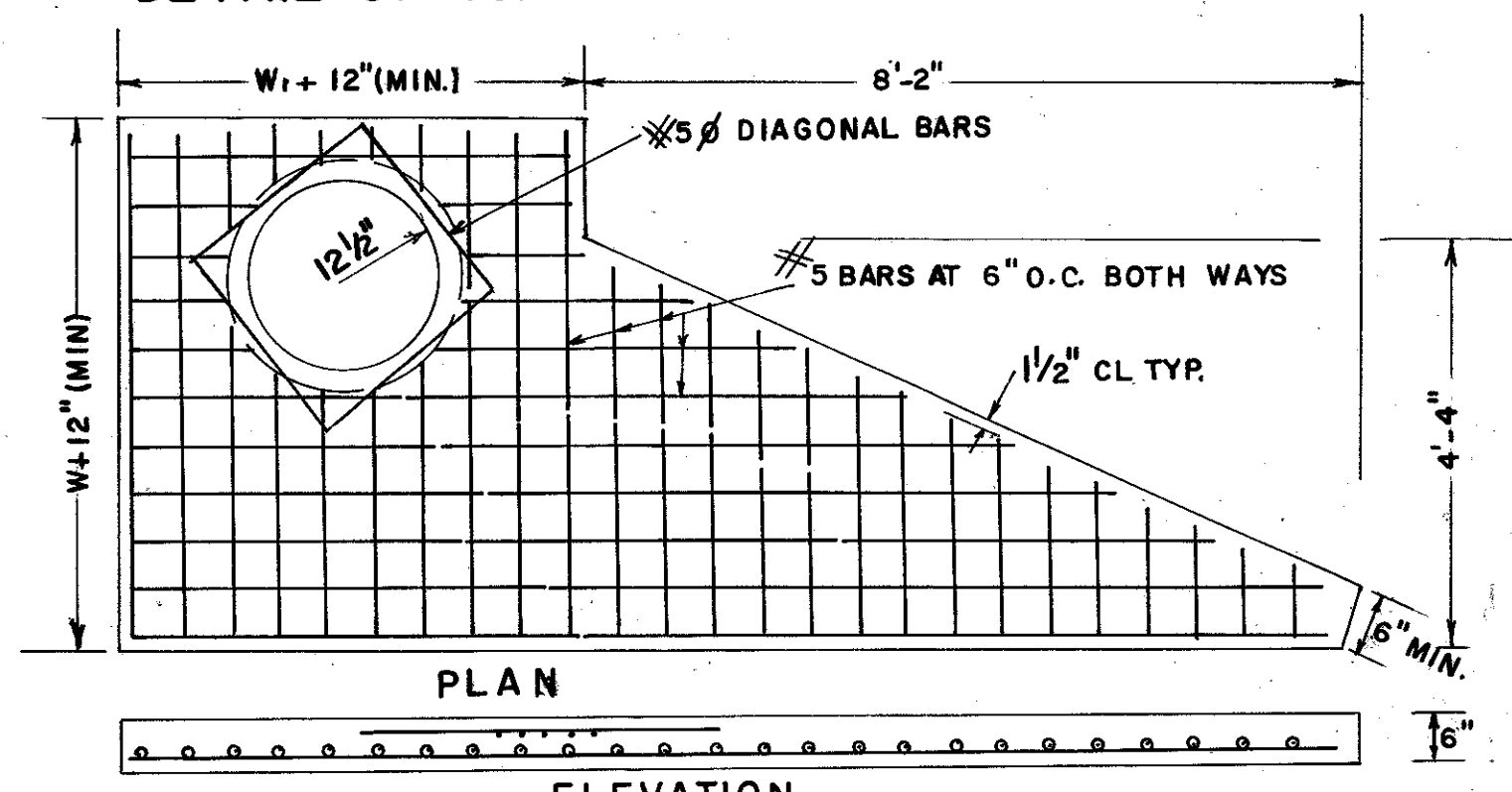
NOTE: DETAILS NOT SHOWN HERE WILL BE SIMILAR TO THESE AT FAR LEFT FOR NORMAL CATCH BASIN.



SECTION A'-A' (FOR LARGE LONGITUDINAL PIPE)

SECTION A'-A' (FOR RECESSED BOX)

DETAIL OF TOP REINFORCED CONCRETE SLAB



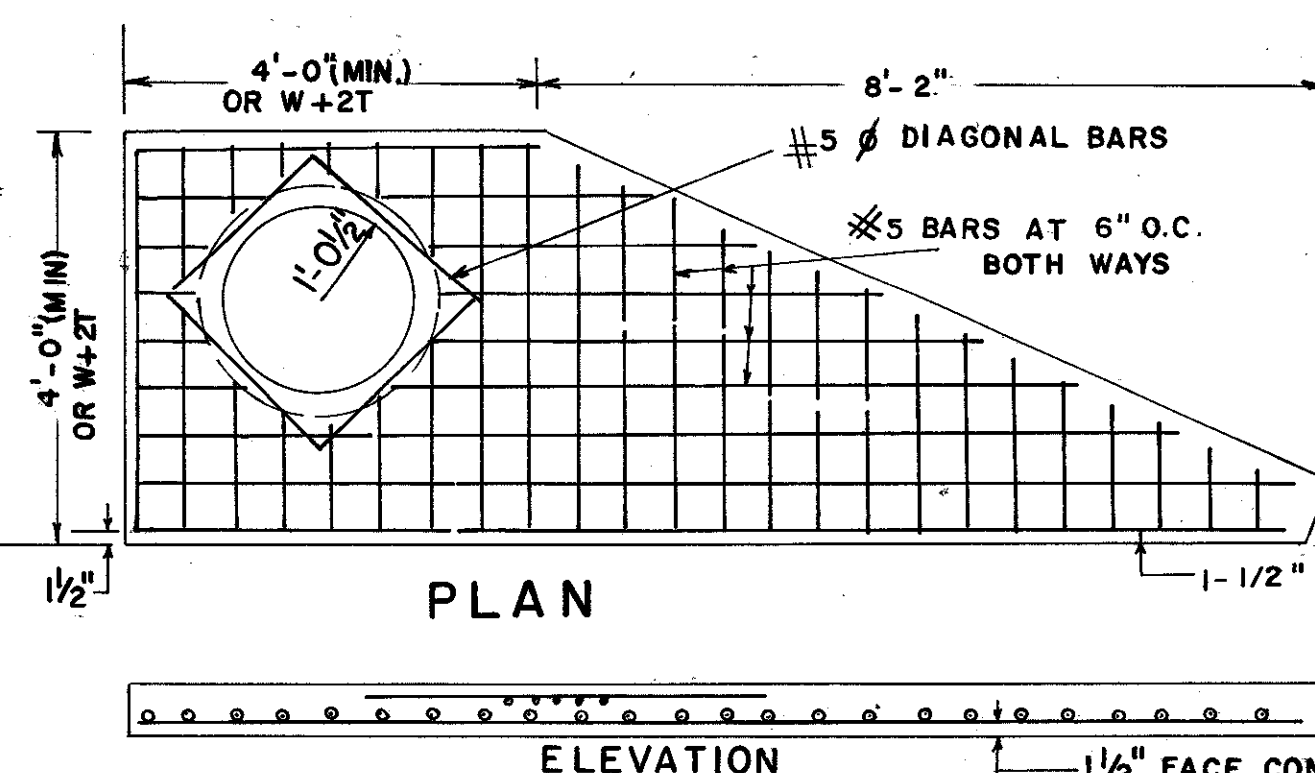
PLAN

ELEVATION

NOTE: PIPE SIZES, NUMBER, ALIGNMENT, & INVERTS SHOWN ARE ILLUSTRATIVE. SEE PLANS FOR SPECIFICS. INVERTS TO BE FORMED WITH GROUT OR CONCRETE AS DIRECTED BY THE ENGINEER OR AS SHOWN IN THE PLANS.

SEE SEPARATE STANDARDS FOR PRECAST ALTERNATES.

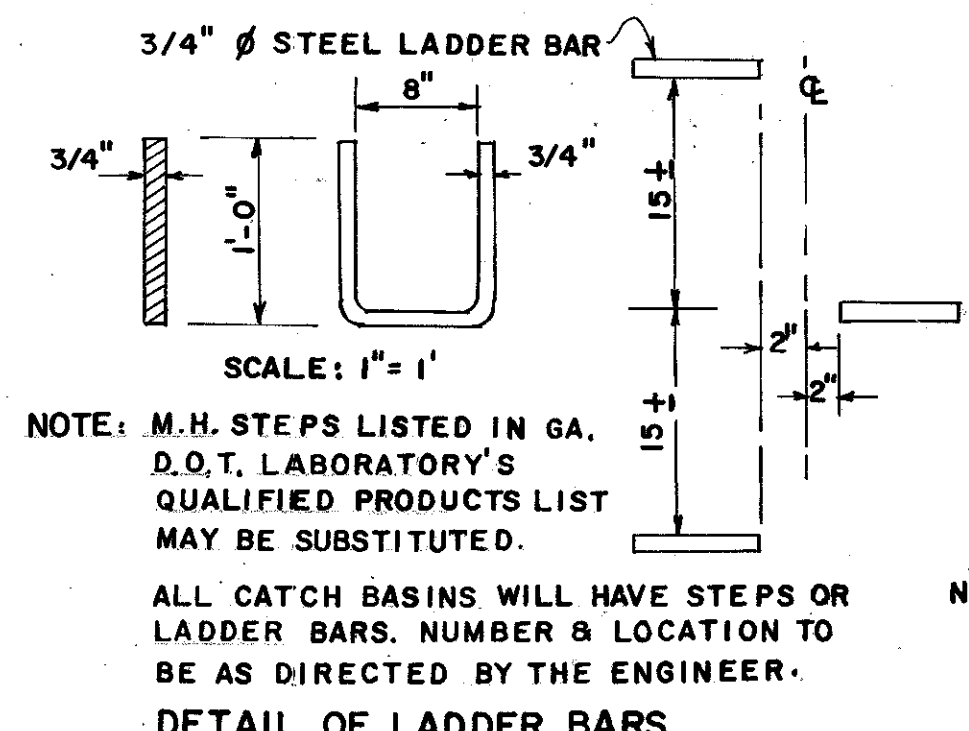
DETAIL OF TOP REINFORCED CONCRETE SLAB



PLAN

ELEVATION

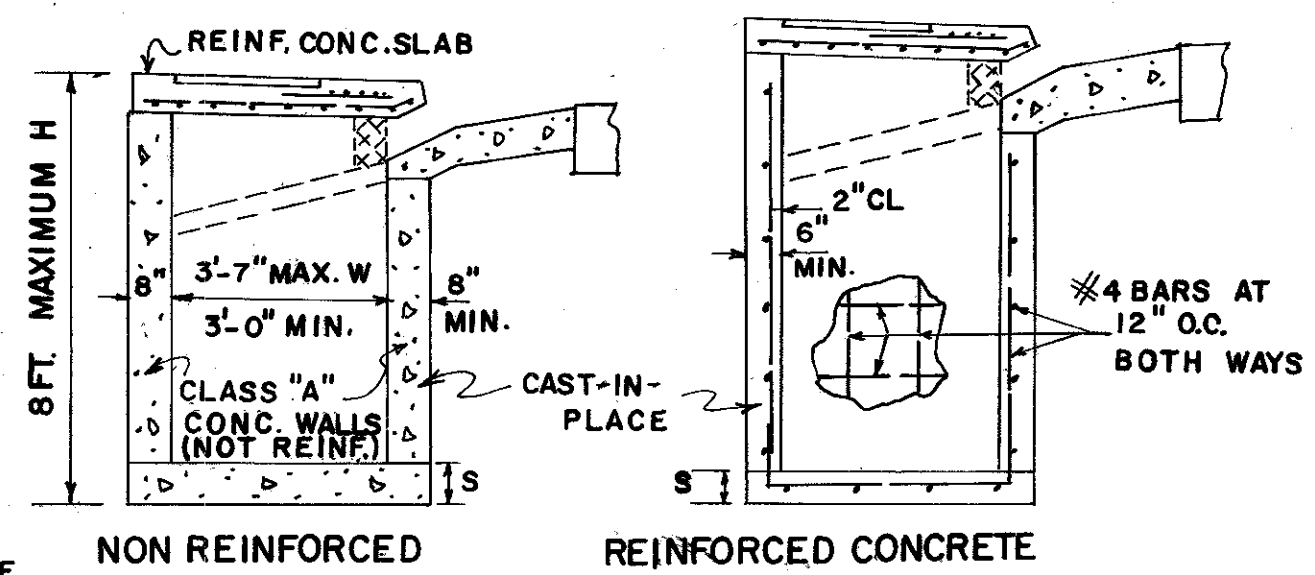
NOTE: ALL BARS IN PLAN VIEW ARE PLACED AT 6" O.C. NOTE: FOR DETAIL OF REINFORCING STEEL IN TOP PORTION OF SLAB SEE PART PLAN @ TOP RIGHT.



DETAIL OF LADDER BARS

NOTE: M.H. STEPS LISTED IN GA. D.O.T. LABORATORY'S QUALIFIED PRODUCTS LIST MAY BE SUBSTITUTED.

ALL CATCH BASINS WILL HAVE STEPS OR LADDER BARS. NUMBER & LOCATION TO BE AS DIRECTED BY THE ENGINEER.



NON REINFORCED SMALL BASIN (W, NOT OVER 3'-7")

REINFORCED CONCRETE

CONSTRUCTION ALTERNATES

NOTE: DETAILS NOT SHOWN ABOVE FOR CONCRETE CATCH BASINS WILL BE SIMILAR TO THOSE SHOWN FOR BRICK CATCH BASINS.

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

STANDARD

CATCH BASINS

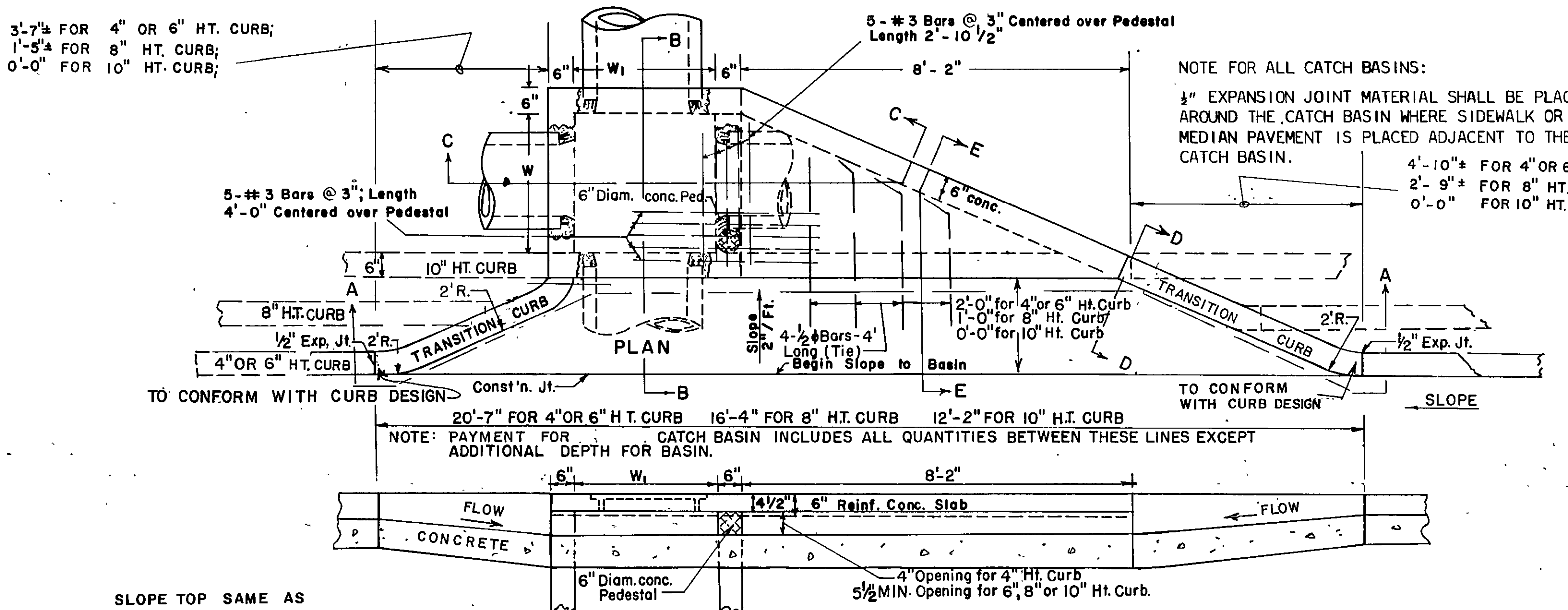
FOR USE WITH HEADER OR INTEGRAL CURBS 4, 6, 8" & 10" HEIGHTS

SCALE AS SHOWN REV. & REDR. AUGUST, 1982

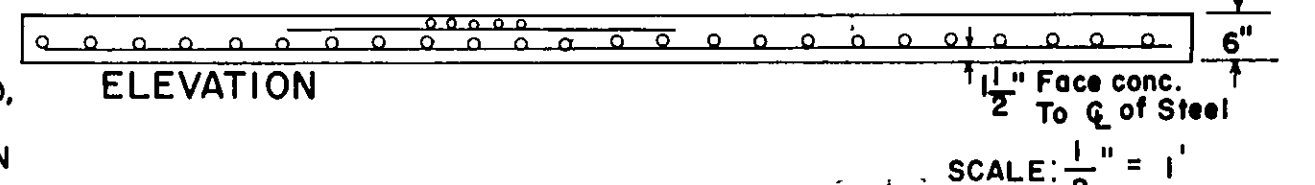
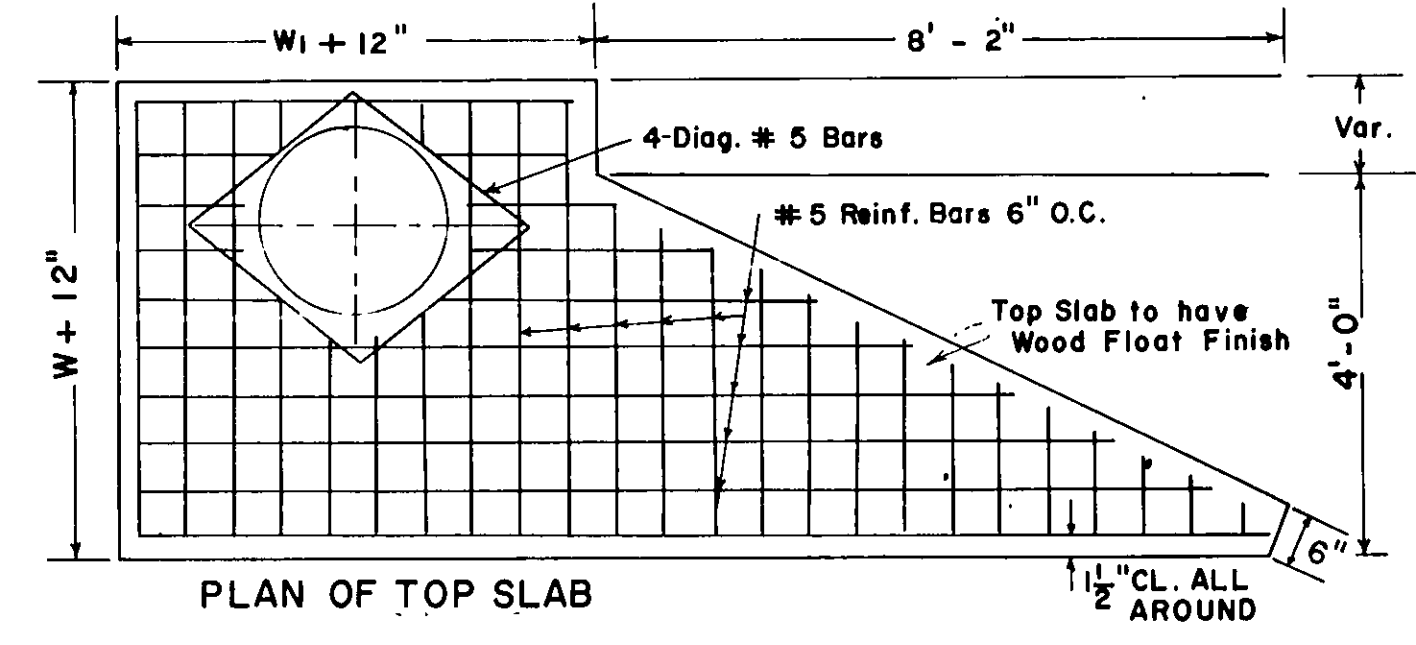
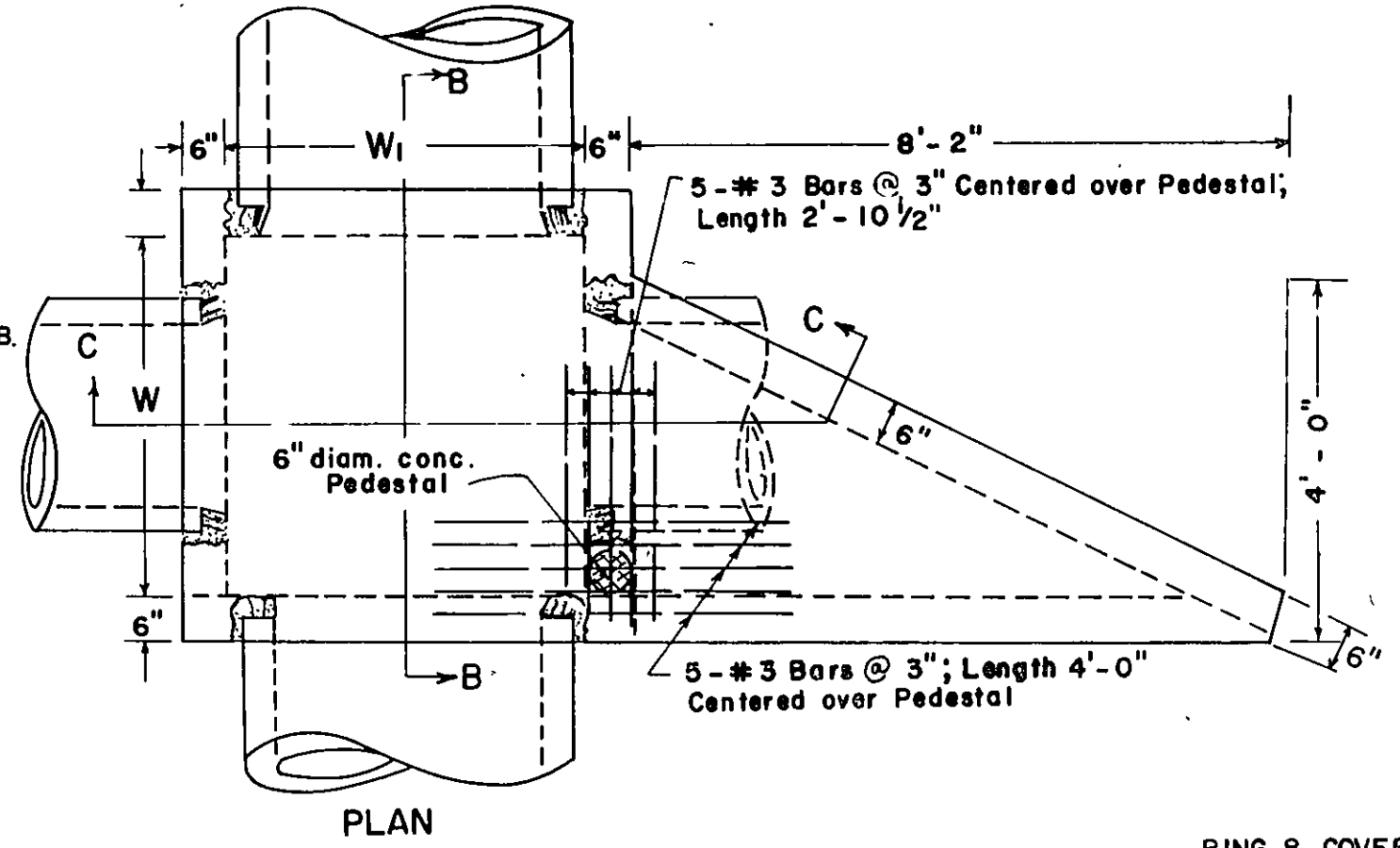
REV. R.M.U.	(SUBMITTED)	<i>Floyd G. Hardy</i>	NUMBER 1033F
REDR. G.M.E.		STATE ROAD & AIRPORT DESIGN ENGR.	
CHK. R.K.C.	(APPROVED)	<i>Thomas D. Mordue</i>	
		STATE HIGHWAY ENGINEER	

CATCH BASIN (IF CATCH BASIN HAS LONGITUDINAL PIPE OVER 24", SEE DETAILS AT RIGHT)

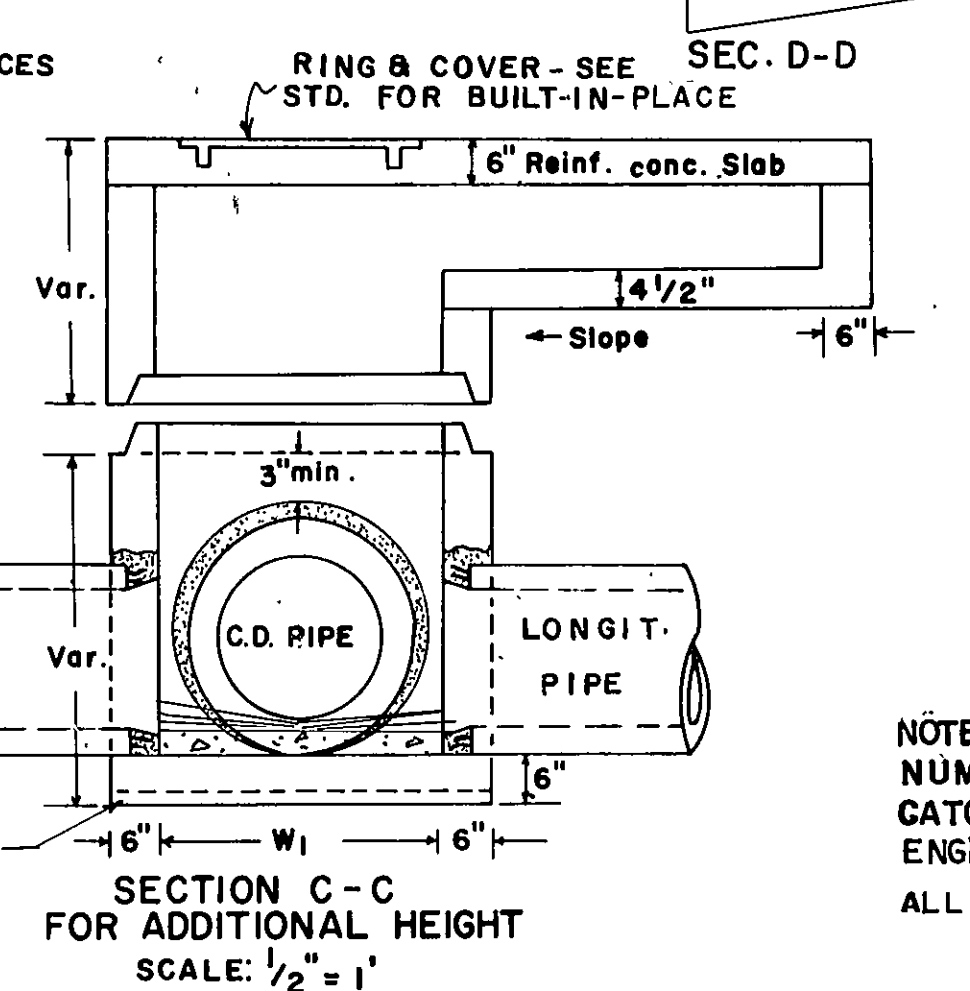
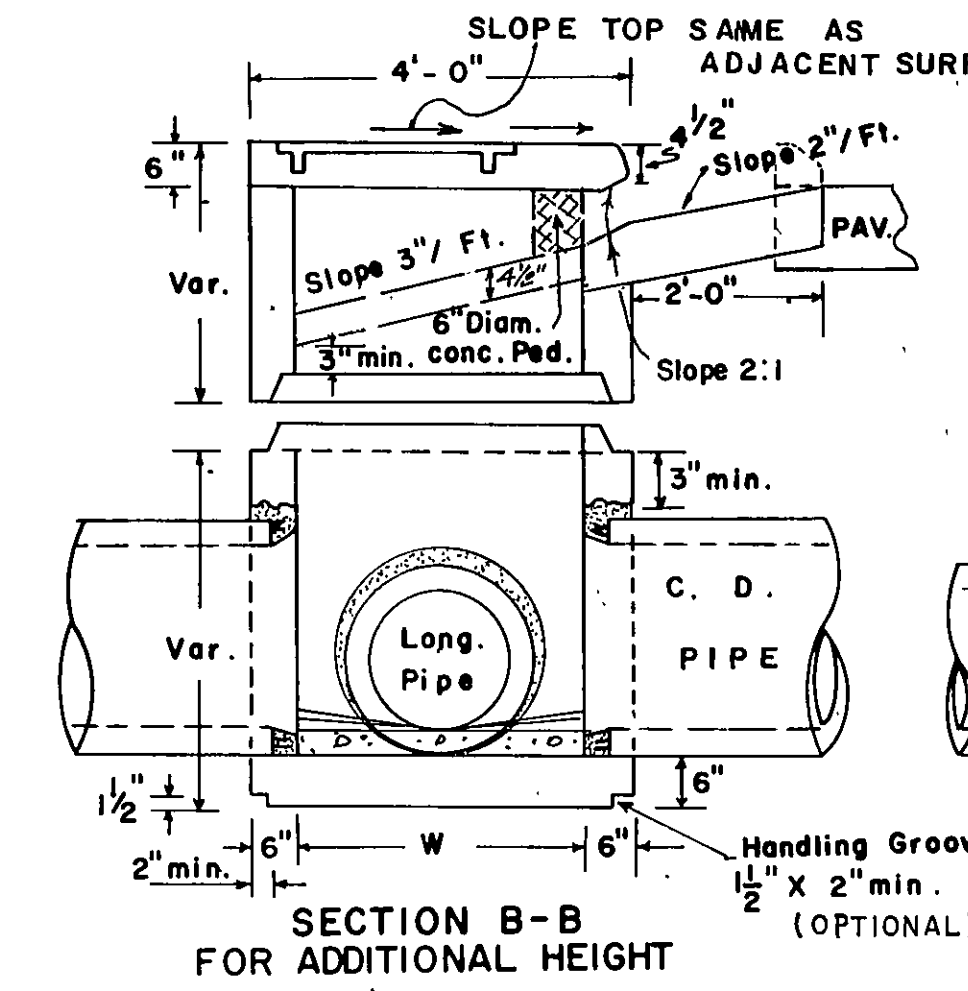
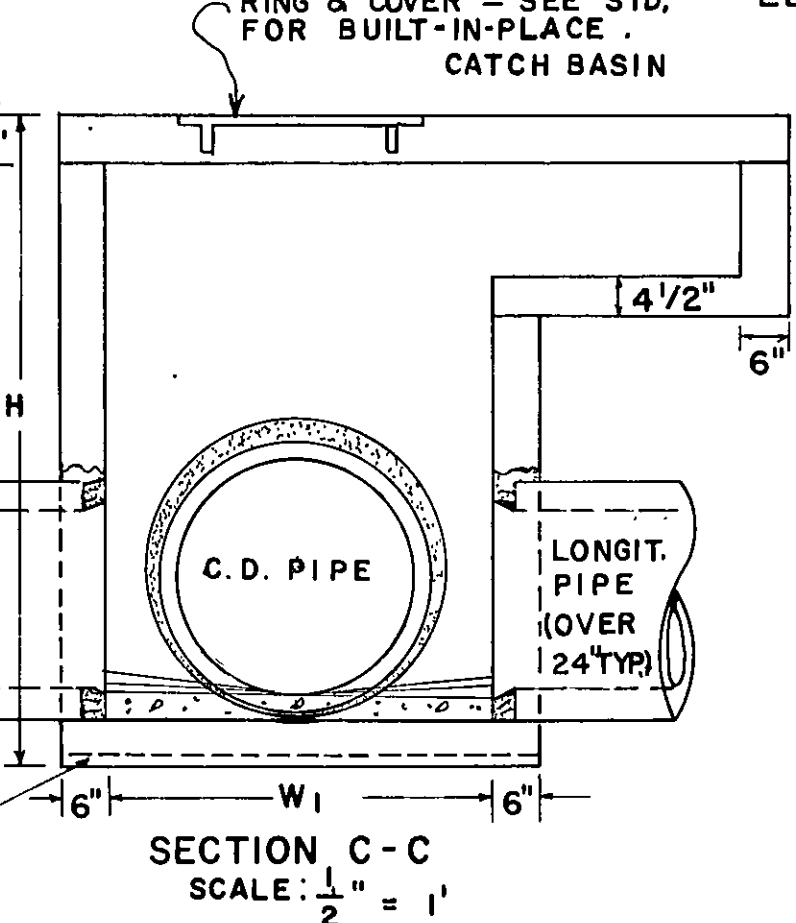
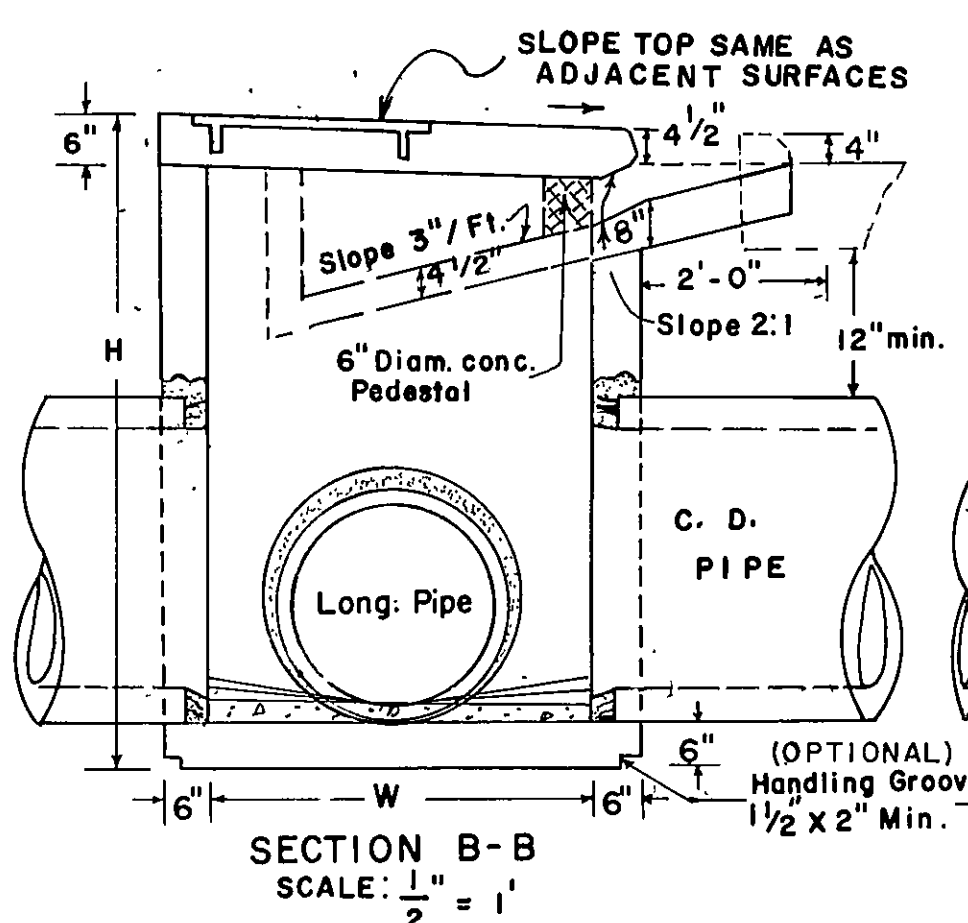
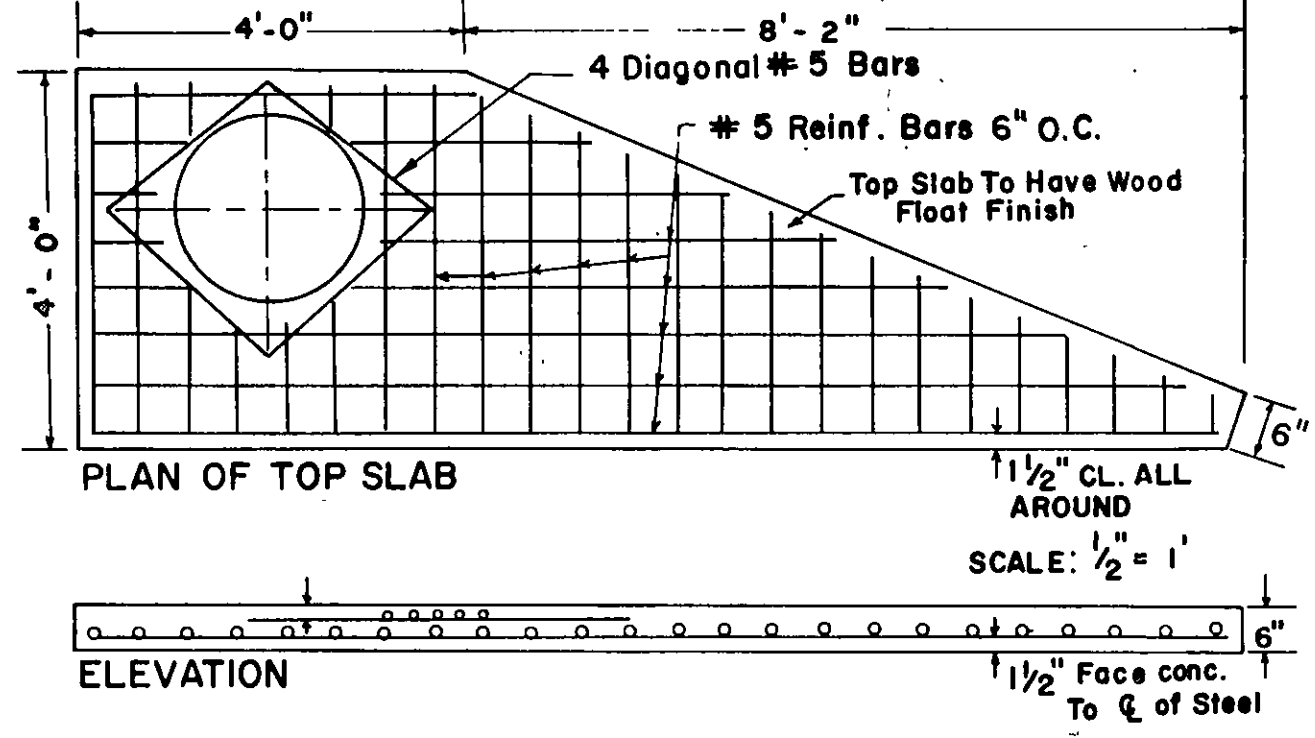
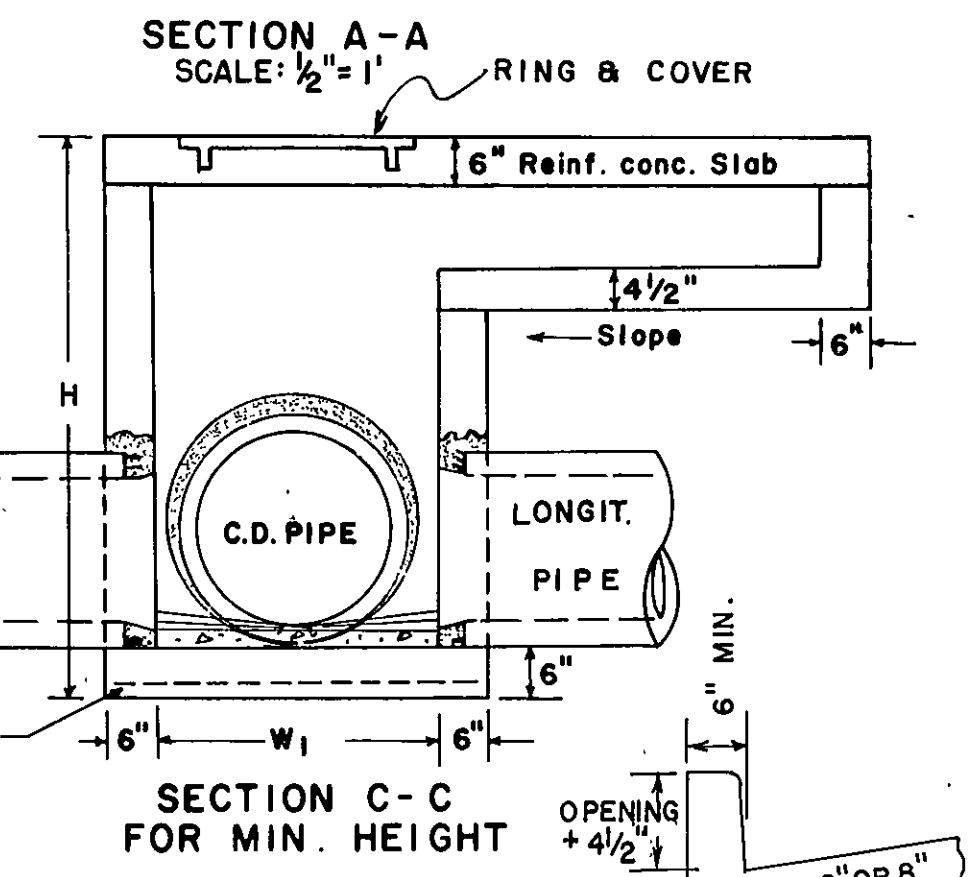
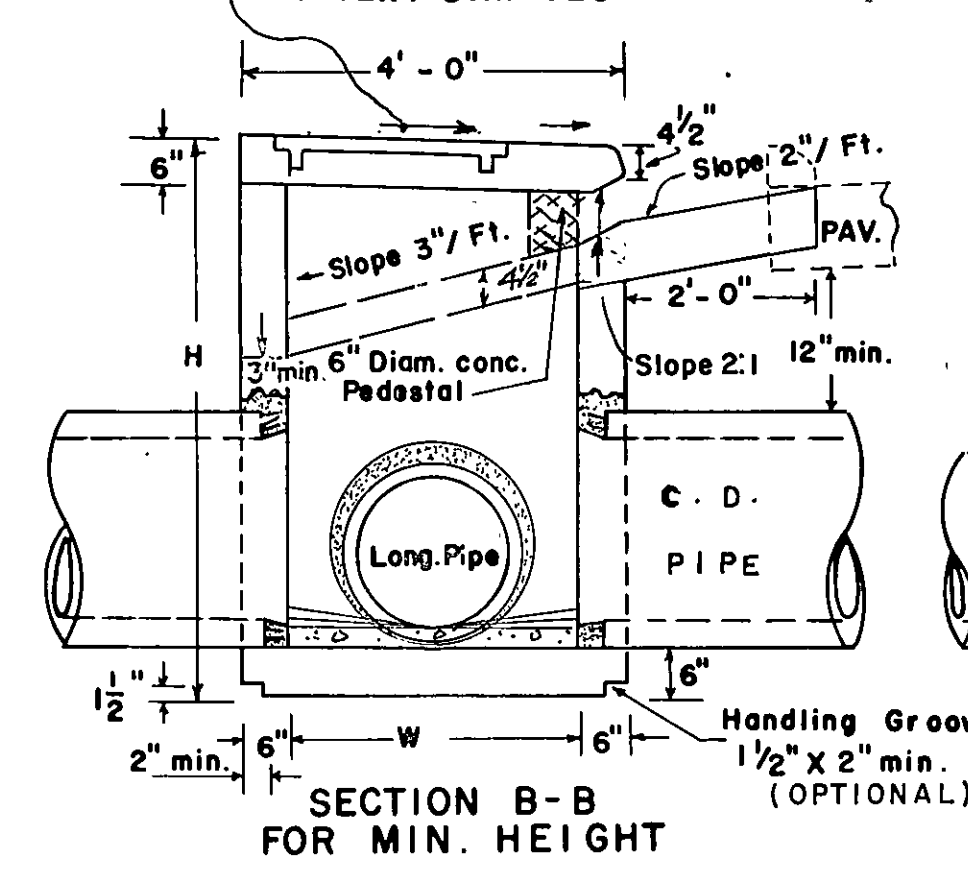
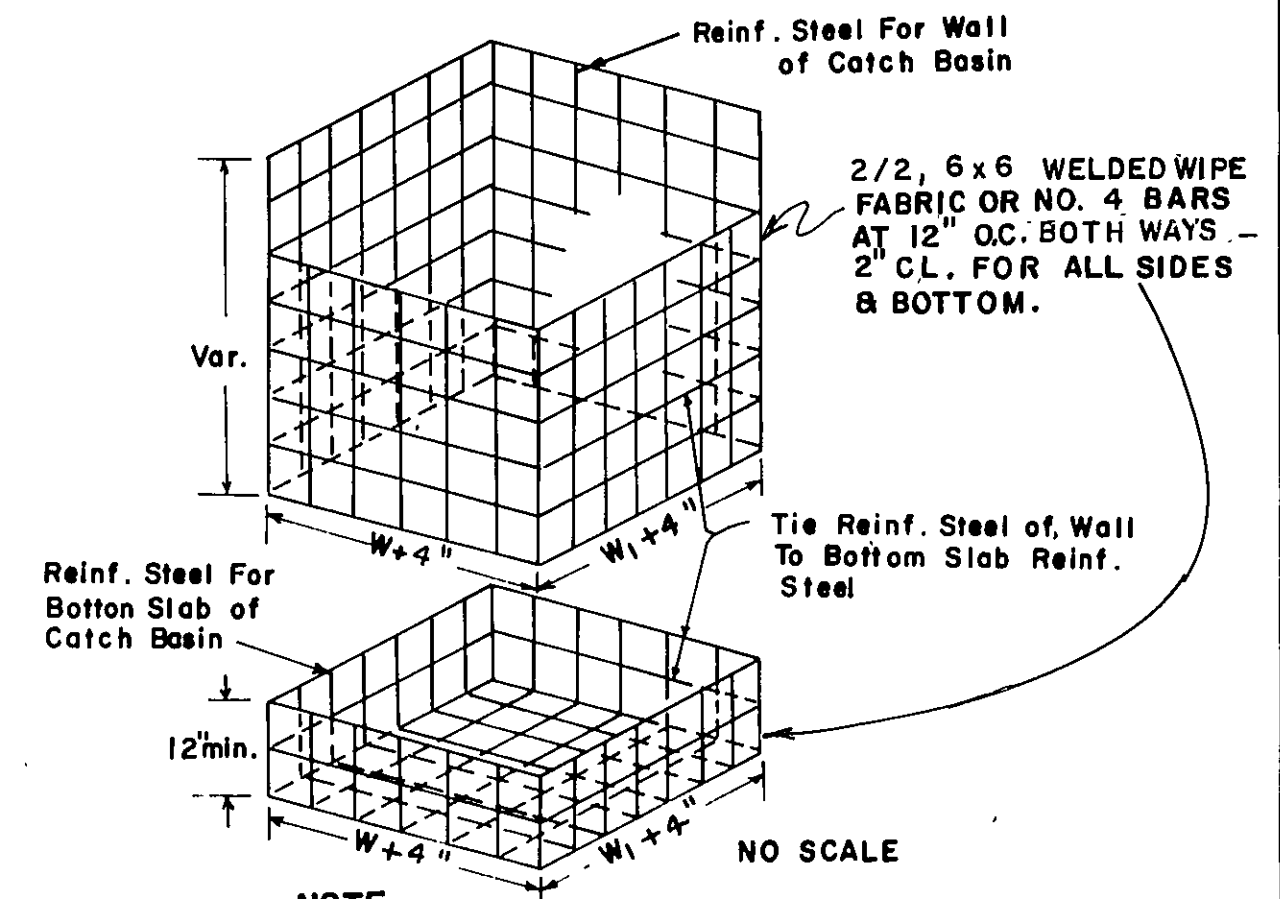
3'-7 1/2" FOR 4" OR 6" HT. CURB;
 1'-5 1/2" FOR 8" HT. CURB;
 0'-0" FOR 10" HT. CURB;



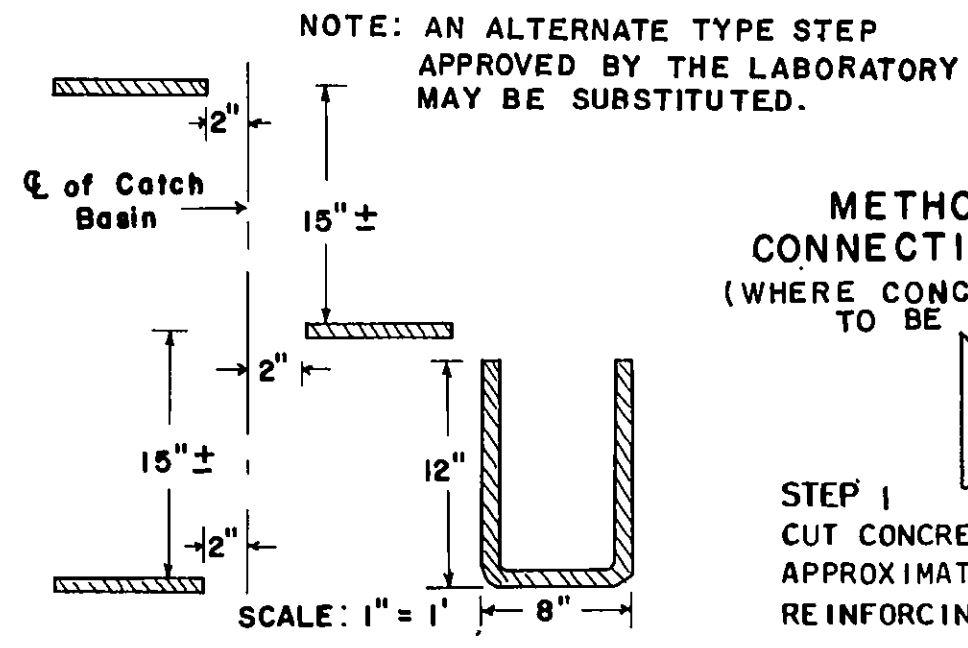
CATCH BASIN (TYPICAL FOR CATCH BASIN WITH LONGITUDINAL PIPE OVER 24")



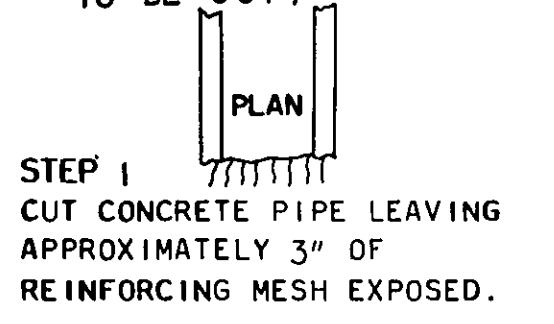
REINFORCING-ISOMETRIC VIEW



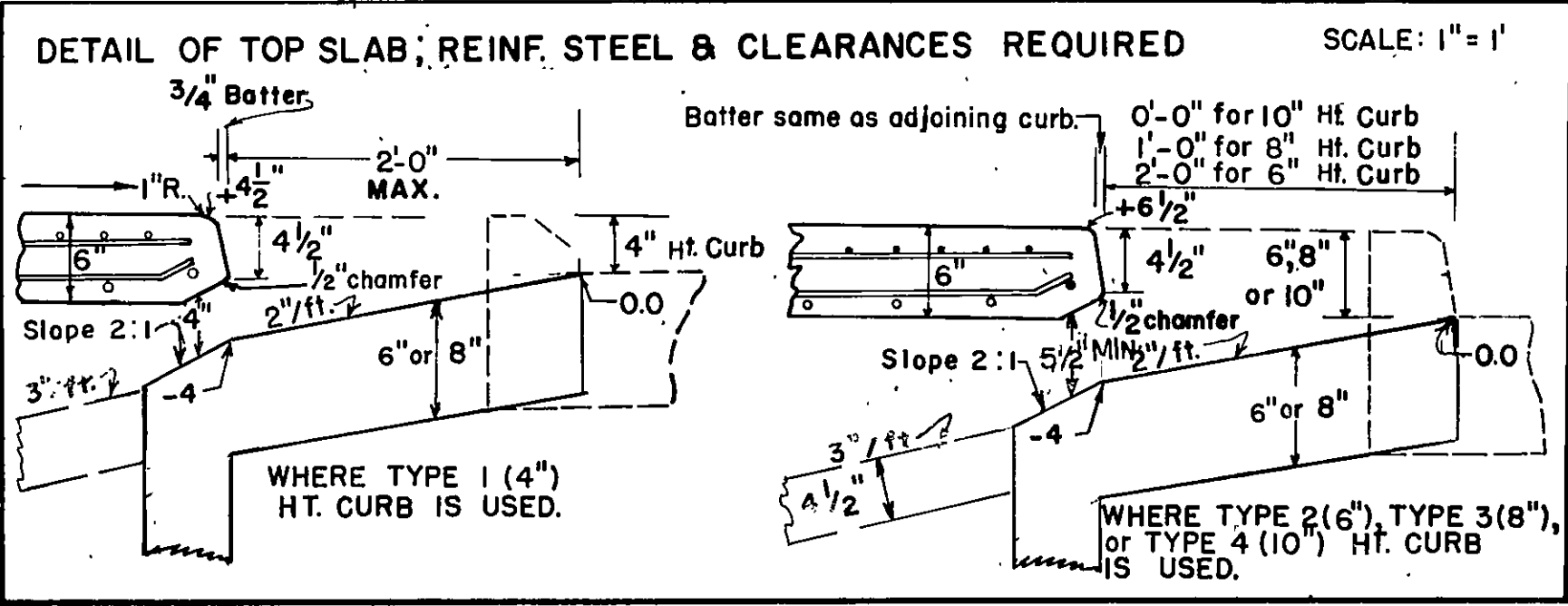
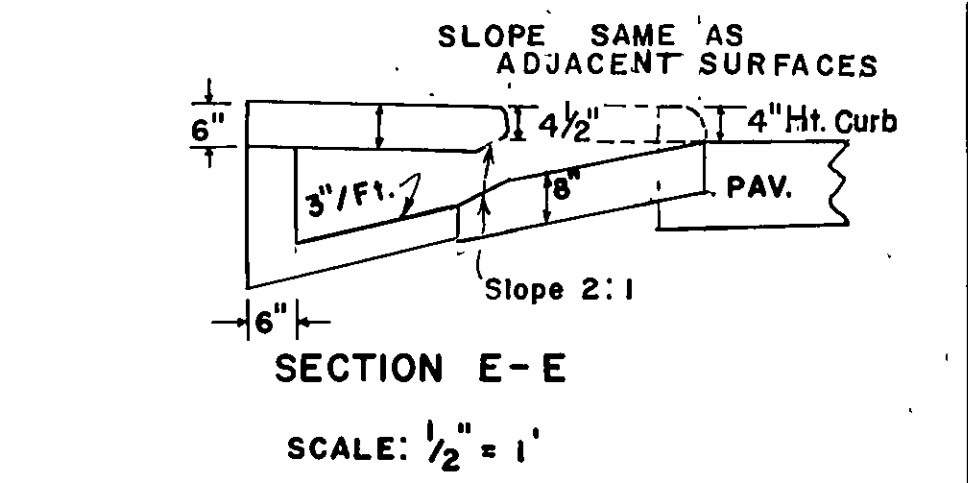
DETAIL AND ARRANGEMENT OF LADDER BARS



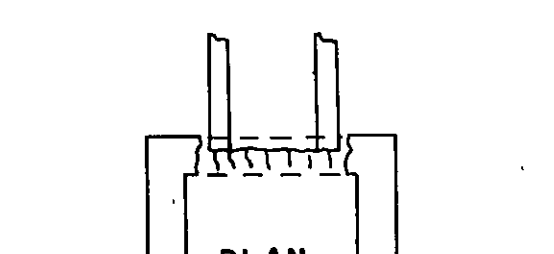
METHOD OF CONNECTING PIPE (WHERE CONCRETE PIPE HAS TO BE CUT)



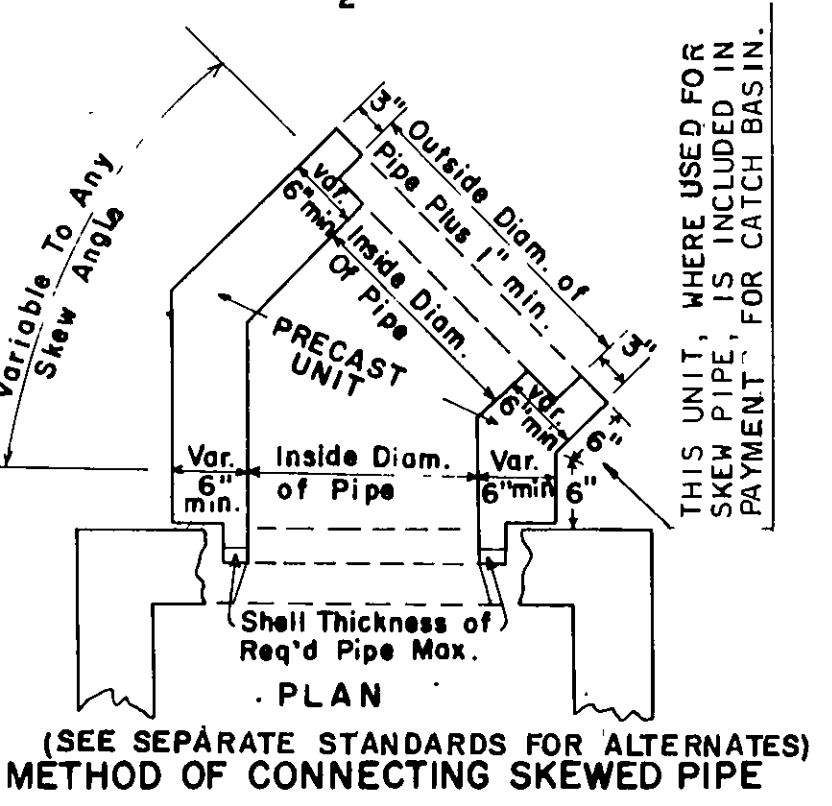
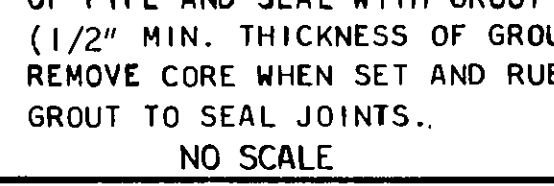
NOTE: NUMBER AND LOCATION OF LADDER BARS IN CATCH BASIN TO BE AS DIRECTED BY THE ENGINEER.
 ALL CATCH BASINS WILL HAVE STEPS OR LADDER BARS.



STEP 2 POSITION PIPE APPROXIMATELY 3" INTO OPENING OF WALL.

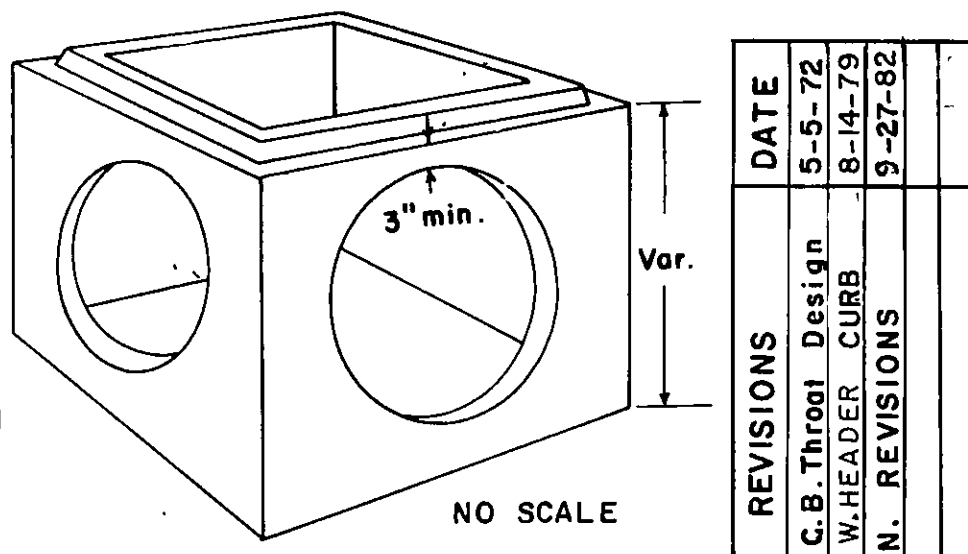
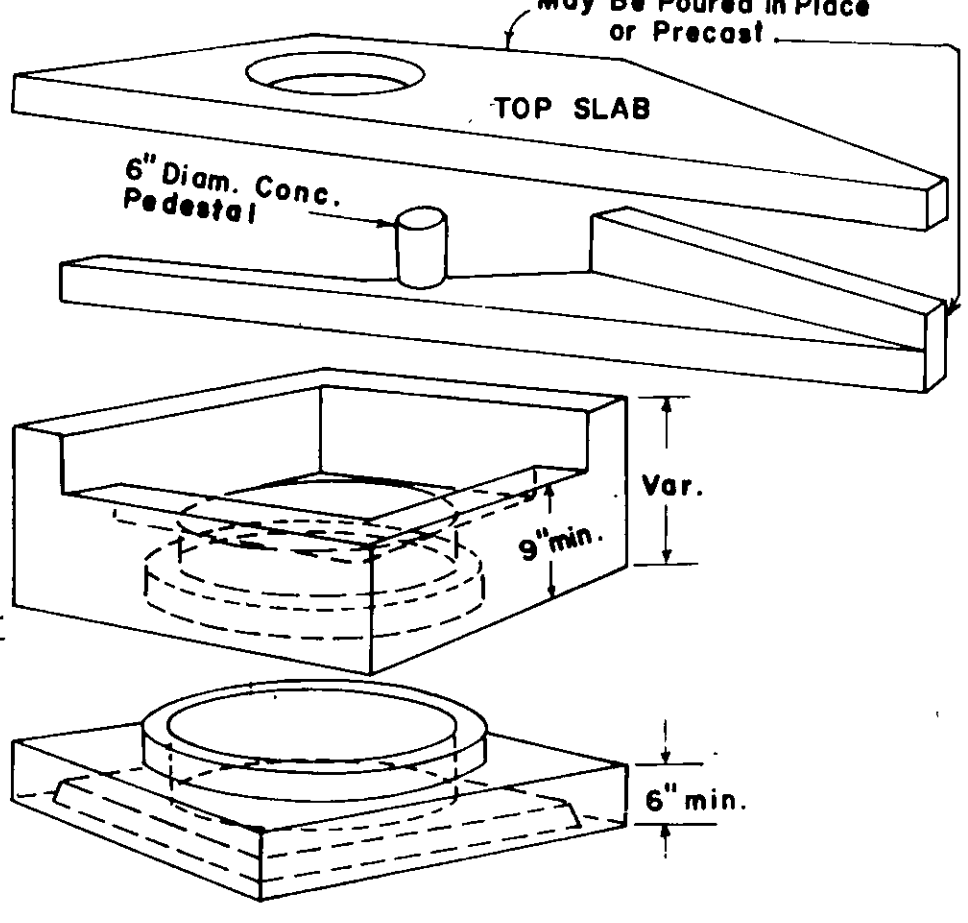
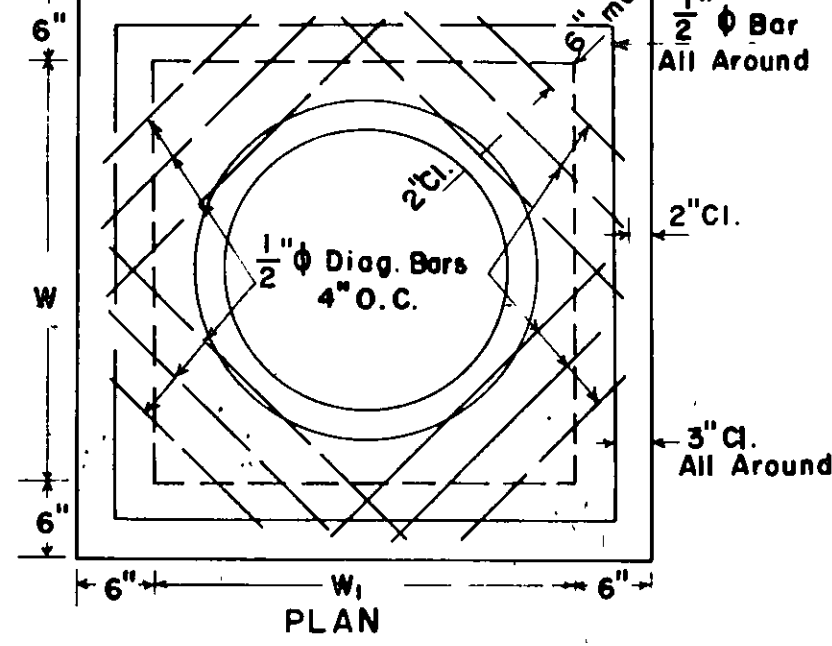


STEP 3 POSITION CONICAL CORE INSIDE OF PIPE AND SEAL WITH GROUT (1/2" MIN. THICKNESS OF GROUT) REMOVE CORE WHEN SET AND RUB GROUT TO SEAL JOINTS.



IF THIS SWIVEL SECTION SLAB IS USED TO REDUCE THE W AND W1 DIMENSIONS, INCREASE THE MIN. THICKNESS TO 9" AND USE REINF. STEEL. SEE DETAIL BELOW.

DETAIL FOR REINFORCED STEEL



SWIVEL SECTION MAY BE USED WHERE SKEWED PIPE CONNECTS TO PRECAST CONCRETE BOX.

NOTE: THE ABOVE VIEW DEPICTS PRECAST BOX. SEE SEPARATE STANDARDS FOR CIRCULAR ALTERNATE OR BUILT-IN-PLACE BOX.

DIMENSIONS FOR CATCH BASINS		
PIPE SIZE	NORMAL W OR W1	MIN. H
12"	3'-0"	4'-4"
15"	3'-0"	4'-7"
18"	3'-0"	4'-10"
24"	3'-6"	5'-6"
30"	3'-6"	6'-2"
36"	4'-0"	6'-10"
42"	5'-0"	7'-4"
48"	5'-0"	8'-0"
54"	6'-0"	8'-6"
60"	6'-0"	9'-2"

NOTE: DIMENSIONS FOR CATCH BASINS ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONCRETE PIPES AND MAY BE VARIED IF CONDITIONS PERMIT AND THE ENGINEER APPROVES. W & W1 DIMENSIONS DO NOT HAVE TO BE EQUAL.

ALTERNATE: BUILT-IN-PLACE, PRECAST BOX AND/OR PRECAST CIRCULAR UNITS WITH THE REQUIRED ADAPTERS, REDUCERS, FITTINGS, CONNECTIONS, ETC. MAY BE USED IN COMBINATIONS.

NOTE: FOR RING & COVER DETAILS AND OTHER DETAILS NOT SHOWN, SEE STANDARD 1033F FOR BUILT-IN-PLACE CATCH BASIN.

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

STANDARD PRECAST CATCH BASINS

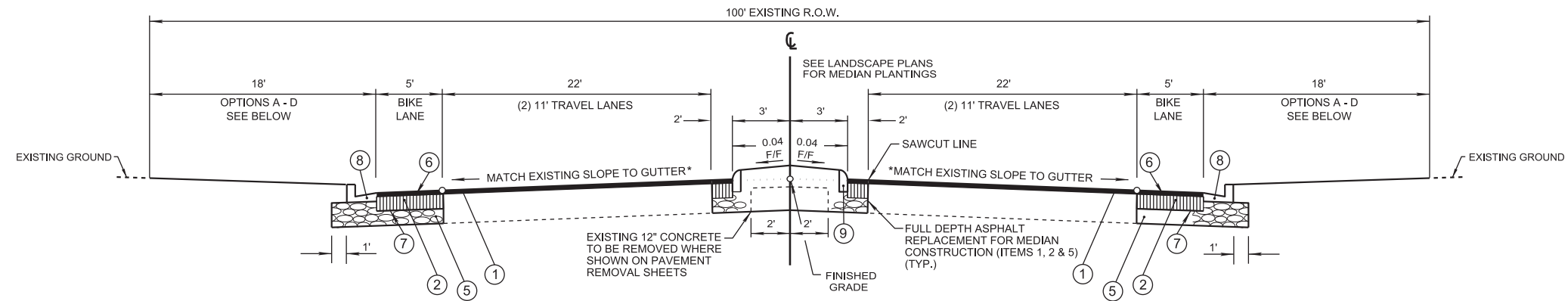
FOR USE WITH HEADER OR INTEGRAL CURBS 4", 6", 8" OR 10" HEIGHTS

SCALE AS SHOWN

DESIGNED BY R.M.U. TRACED BY R.M.U. CHECKED BY R.B.S.
 SUBMITTED BY STATE HIGHWAY ENGINEER
 APPROVED BY STATE HIGHWAY ENGINEER

DATE 5-5-72
 REVISIONS 8-14-79
 9-27-82
 FEB. 1967
 NUMBER 1033F
 PRECAST

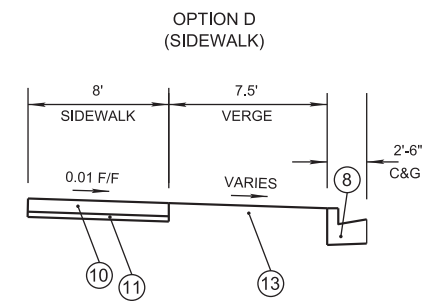
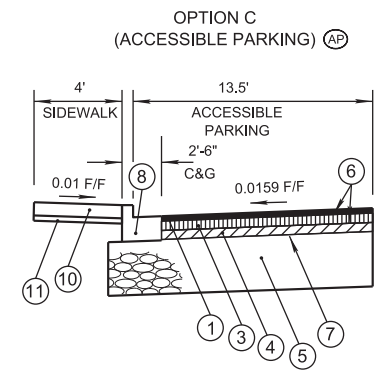
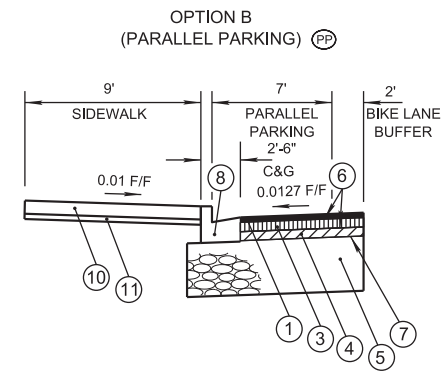
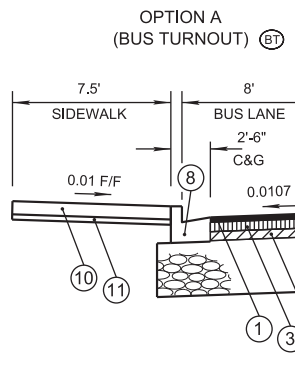
PROJECT No.	YEAR	SHEET No.	
15A-R-0584	2017	2B	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - ITEM NO. REVISION



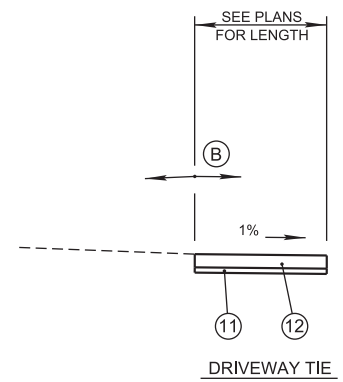
MAGNOLIA AVENUE TYPICAL

MEDIAN ONLY CONSTRUCTION TO BEGIN STA. 6+96.50
 TYPICAL TRANSITION STA 8+39.00 TO STA. 9+00.00
 STA 9+00.00 TO STA. 23+19.79

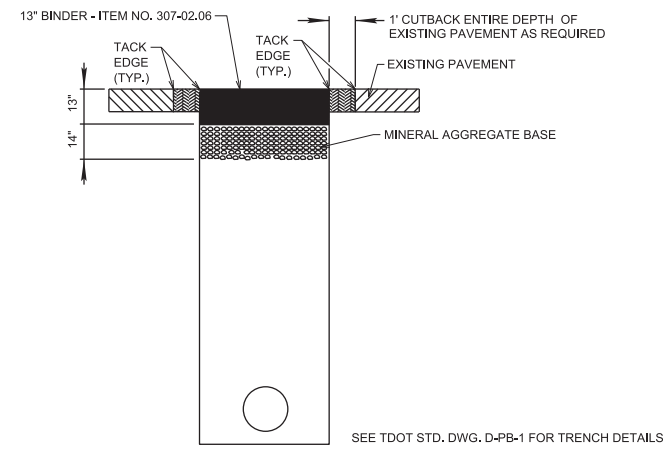
* MILL 1.5" OF EXISTING NORTH AND SOUTH TRAVEL LANES



PROPOSED PAVEMENT SCHEDULE	
1	1.5" ASPHALTIC CONCRETE SURFACE MIX - ITEM NO. 411-02.10 (ACS) MIX (PG70-22) GRADING "D" SURFACE (159 LBS./S.Y.)
2	11.5" BINDER - ITEM NO. 307-02.06 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "B" (1299.5 LBS./S.Y.)
3	2" BINDER - ITEM NO. 307-02.08 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "B-M2" (226 LBS./S.Y.)
4	3" BASE - ITEM NO. 307-02.01 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "A" (345 LBS./S.Y.)
5	14" MINERAL AGGREGATE BASE - ITEM NO. 303-01 MINERAL AGGREGATE, TYPE "A" BASE, GRADING "D"
6	TACK COAT - ITEM NO. 403-01 BITUMINOUS MATERIAL (GENERAL USE - 0.07 GAL./S.Y FULL DEPTH, 0.10 GAL./S.Y. MILLING) REQUIRED FOR EACH LAYER
7	PRIME COAT - ITEM NO. 402-01 BITUMINOUS MATERIAL (0.35 GALS./S.Y.)
8	6" TYPE 6-30 CURB & GUTTER - ITEM NO. 702-03 CONCRETE COMBINED CURB AND GUTTER, D = 12"
9	6" TYPE A MOUNTABLE CURB - ITEM NO. 702-01.01 EXTRUDED MOUNTABLE CURB
DRIVEWAYS, SIDEWALKS & SLOPES	
10	4" CONCRETE SIDEWALK (COK SECTION 13.0)
11	2" MINERAL AGGREGATE BASE - TO BE INCLUDED IN THE UNIT PRICE OF ITEM NO. 13.10 AND 13.20
12	6" CONCRETE DRIVEWAY (COK SECTION 13.0)
13	4" TOPSOIL AND SOD (COK SECTIONS 26.0 & 28.0)



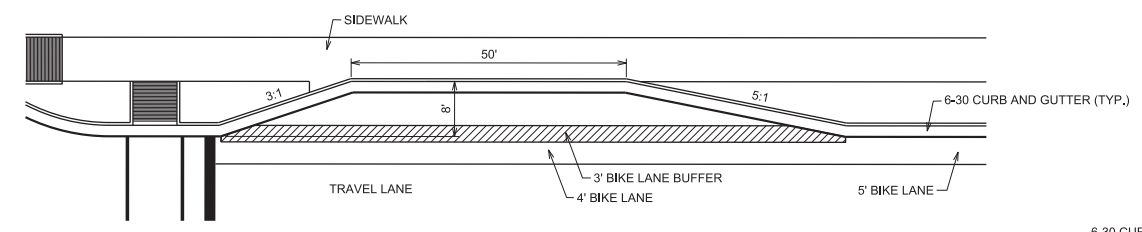
- NOTES:
- (A) DRIVEWAY TO BE PAVED TO THE EXISTING R.O.W.
 - (B) ALGEBRAIC DIFFERENCE IN GRADES SHALL NOT EXCEED 10%



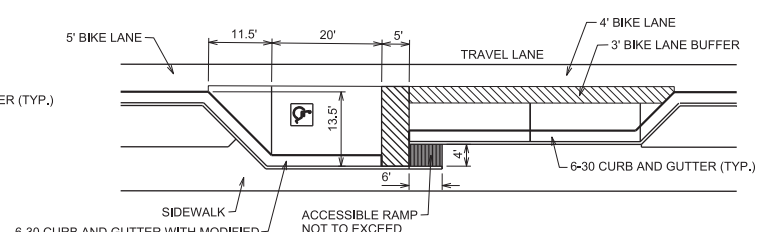
PAVEMENT SECTION FOR STORM DRAIN CUTS

N.T.S.

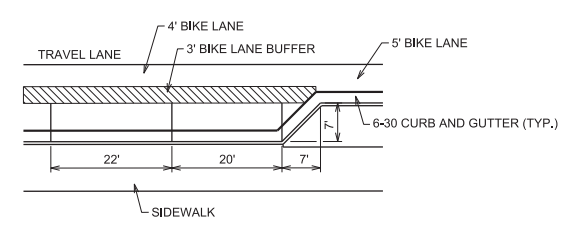
NOTE: FINAL SURFACE SHALL BE 1.5" ASPHALTIC CONCRETE SURFACE ITEM NO. 411-02.10 AND SHALL BE APPLIED AFTER MILLING OF EXISTING PAVEMENT



BUS TURNOUT PLAN VIEW



ACCESSIBLE PARKING PLAN VIEW



PARALLEL PARKING PLAN VIEW



02/22/2018

CITY OF KNOXVILLE
 OFFICE OF REDEVELOPMENT

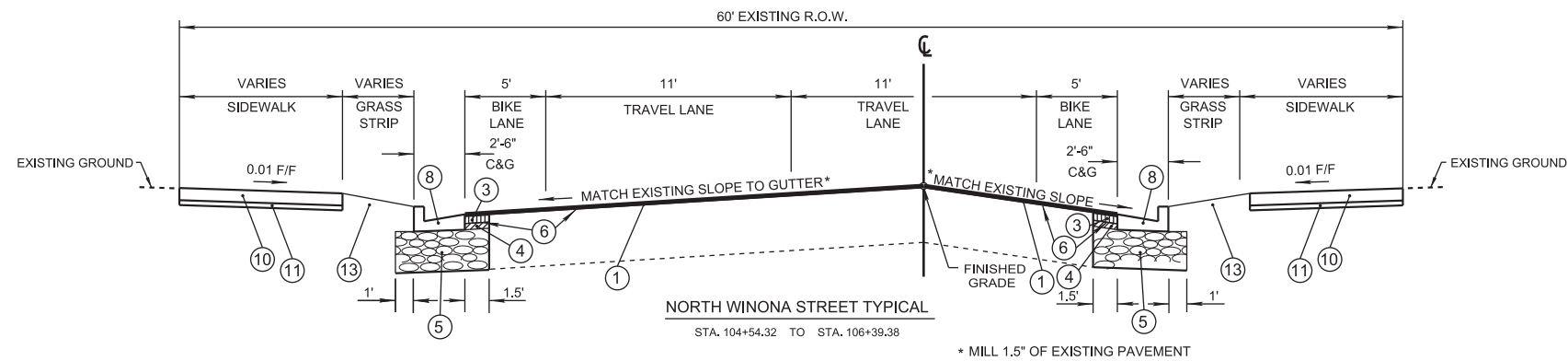
**TYPICAL SECTIONS,
 PAVEMENT SCHEDULE &
 CONSTRUCTION DETAILS**

MAGNOLIA AVENUE
 STREETScape PROJECT
 PHASE I

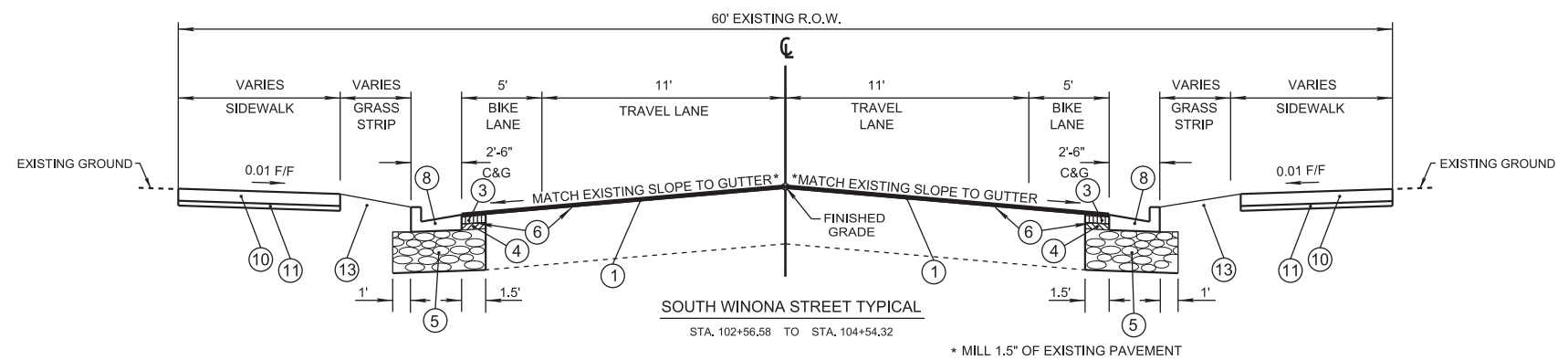
DRAWN: ALF
 DESIGNED: MLK
 DATE: 11-06-17
 CHECKED: AW
 APPROVED: COT

2/23/2018
 F:\361361231_36123001_04_CAD_Civil\Phase1\PL01\3612300_02B_Typ1.dgn

PROJECT No. 15A-R-0584	YEAR 2017	SHEET No. 2C	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - ITEM NO. REVISION



PROPOSED PAVEMENT SCHEDULE	
①	1.5" ASPHALTIC CONCRETE SURFACE MIX - ITEM NO. 411-02.10 (ACS) MIX (PG70-22) GRADING "D" SURFACE (159 LBS./S.Y.)
②	11.5" BINDER - ITEM NO. 307-02.06 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "B" (1299.5 LBS./S.Y.)
③	2" BINDER - ITEM NO. 307-02.08 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "B-M2" (226 LBS./S.Y.)
④	3" BASE - ITEM NO. 307-02.01 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "A" (345 LBS./S.Y.)
⑤	14" MINERAL AGGREGATE BASE - ITEM NO. 303-01 MINERAL AGGREGATE, TYPE "A" BASE, GRADING "D"
⑥	TACK COAT - ITEM NO. 403-01 BITUMINOUS MATERIAL (GENERAL USE - 0.07 GAL./S.Y. FULL DEPTH, 0.10 GAL./S.Y. MILLING) REQUIRED FOR EACH LAYER
⑦	PRIME COAT - ITEM NO. 402-01 BITUMINOUS MATERIAL (0.35 GALS./S.Y.)
⑧	6" TYPE 6-30 CURB & GUTTER - ITEM NO. 702-03 CONCRETE COMBINED CURB AND GUTTER, D = 12"
⑨	6" TYPE A MOUNTABLE CURB - ITEM NO. 702-01.01 EXTRUDED MOUNTABLE CURB
DRIVEWAYS, SIDEWALKS & SLOPES	
⑩	4" CONCRETE SIDEWALK (COK SECTION 13.0)
⑪	2" MINERAL AGGREGATE BASE - TO BE INCLUDED IN THE UNIT PRICE OF ITEM NO. 13.10 AND 13.20
⑫	6" CONCRETE DRIVEWAY (COK SECTION 13.0)
⑬	4" TOPSOIL AND SOD (COK SECTIONS 26.0 & 28.0)

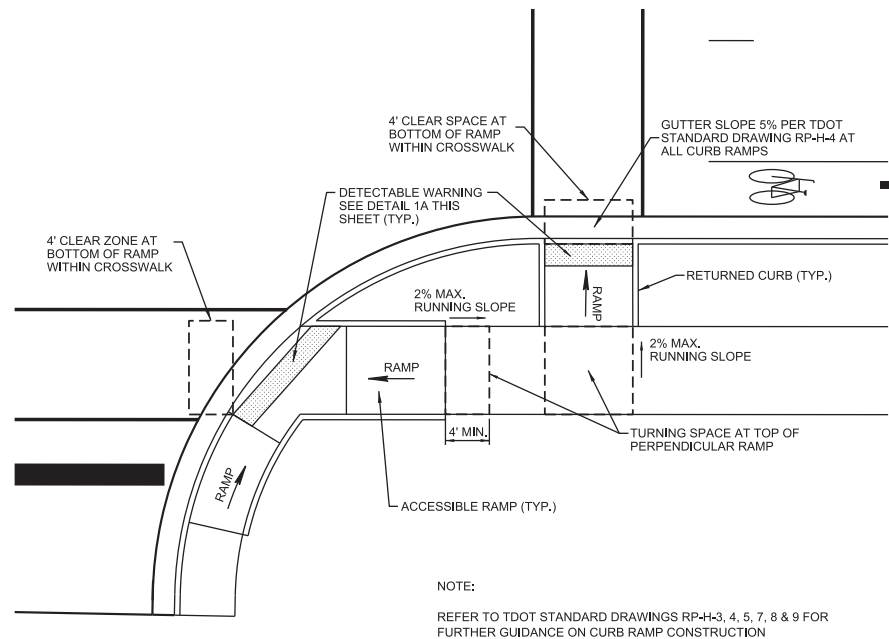


02/22/2018

CITY OF KNOXVILLE OFFICE OF REDEVELOPMENT	DRAWN: ALF DESIGNED: MLK DATE: 11-06-17 CHECKED: AW APPROVED: COT
SIDE ROAD TYPICAL SECTIONS AND PAVEMENT SCHEDULE	
MAGNOLIA AVENUE STREETScape PROJECT PHASE I	

2/23/2018 P:\1361361231_36123001_04_CAD\Civil\Phase1\PL01\3612300_02C_Typ1.dgn

PROJECT No.	YEAR	SHEET No.	
15A-R-0584	2017	2F	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - CROSSWALK REVISION

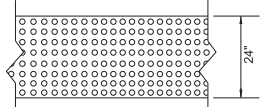


NOTE:
REFER TO TDOT STANDARD DRAWINGS RP-H-3, 4, 5, 7, 8 & 9 FOR FURTHER GUIDANCE ON CURB RAMP CONSTRUCTION

1 ACCESSIBLE RAMP DETAIL
2F N.T.S.

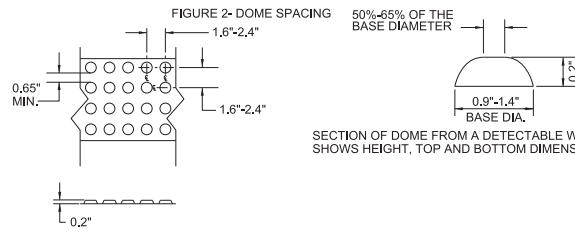
- 1) DETECTABLE WARNING SHALL BE FULL WIDTH OF RAMP
- 2) DEPTH OF DETECTABLE WARNING SHALL BE 24".
- 3) TACTILE WARNING SYSTEM SHALL BE PLACED AT BACK OF CURB.
- 4) TRUNCATED DOMES SHALL BE ALIGNED WITH DIRECTION OF TRAVEL.
- 5) DETECTABLE WARNINGS SHALL BE YELLOW IN COLOR.
- 6) ALL DETECTABLE WARNINGS ON PROPOSED RAMPS SHALL BE ARMOR TILE OR ADA SOLUTIONS CAST IN PLACE SYSTEM OR EQUIVALENT.

FIGURE 1- DOME ALIGNMENT



PLAN VIEW OF A DETECTABLE WARNING SURFACE SHOWING DOMES ALIGNED IN ROWS, NOT SKEWED DIAGONALLY

FIGURE 2- DOME SPACING

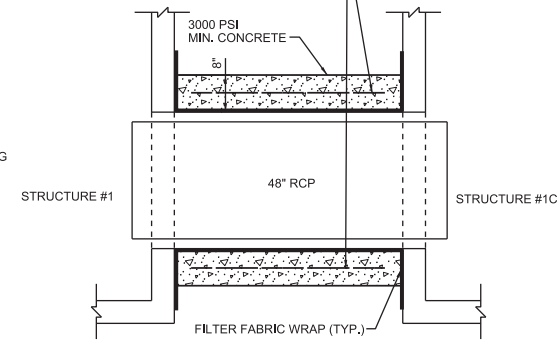


PLAN AND SECTION VIEWS OF DETECTABLE WARNING DOMES AND THEIR RELATIVE SPACING ON THE X AND Y AXIS.

NOTE: ALL CONSTRUCTION ACTIVITIES SHALL BE COMPLETED IN FULL COMPLIANCE WITH THE PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT OF WAY (PROWAG)

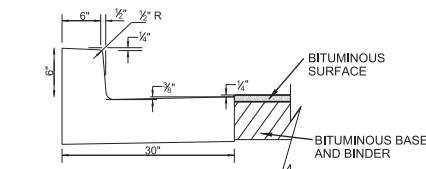
1A DETECTABLE WARNING
2F N.T.S.

ANY WIRE MESH ARRANGEMENT WHICH PROVIDES 0.126 SQUARE INCHES OF STEEL AREA PER LINEAR FOOT BOTH WAYS MAY BE USED PROVIDED THE WIRES ARE SPACED A MINIMUM OF 2" AND/OR A MAXIMUM OF 6" ON CENTERS



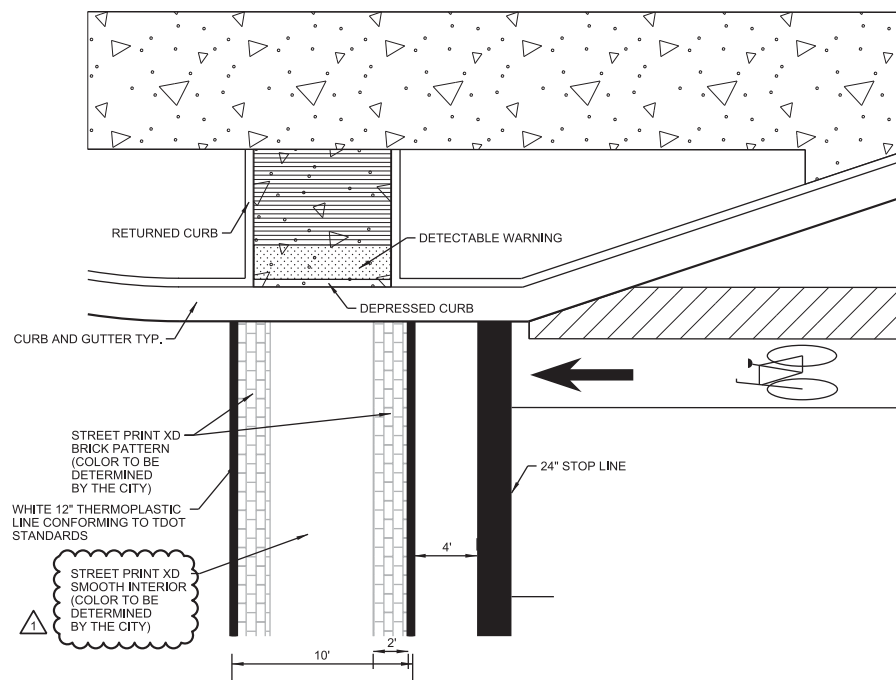
STRUCTURE #1 48" RCP STRUCTURE #1C

3 CONCRETE COLLAR
N.T.S.

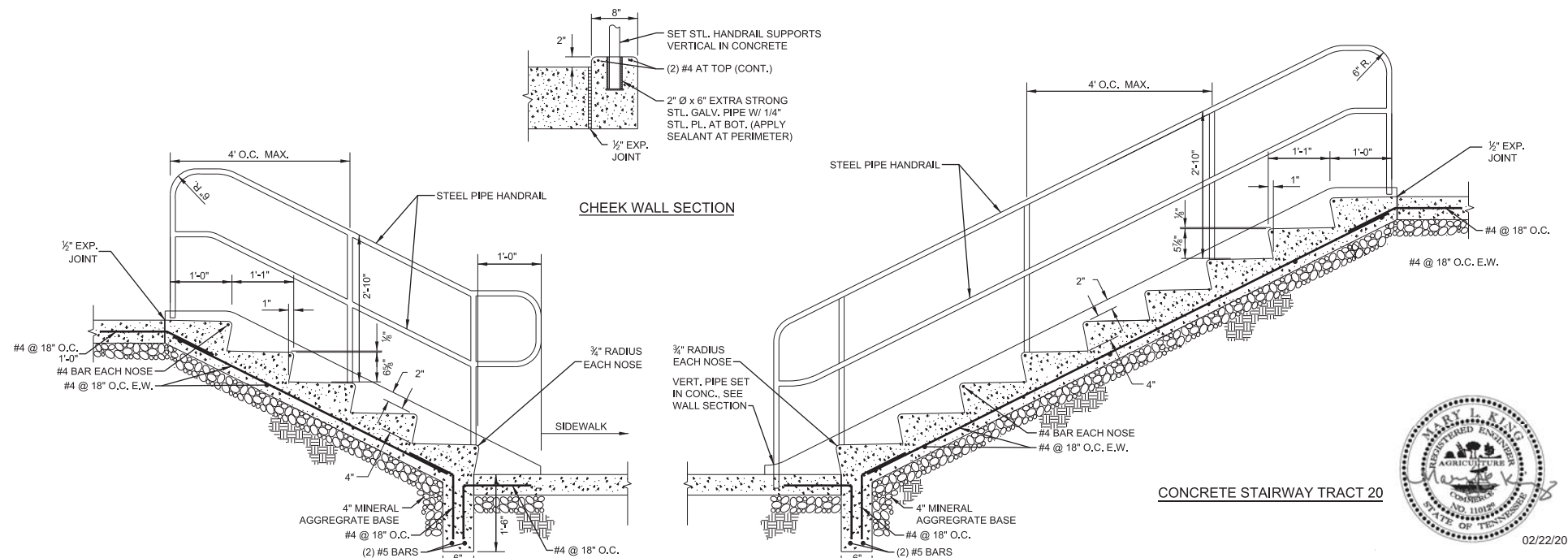


NOTES:
PREFORMED 1/2" EXPANSION JOINTS SHALL BE EQUALLY SPACED AT 24" CENTERS.
1/4" CONTRACTION JOINTS SHALL BE EQUALLY SPACED AT 8" CENTERS BETWEEN EXPANSION JOINTS.
FOR SPECIFICATIONS, SEE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION SECTION 702
CONCRETE EXPANSION JOINTS ARE TO BE 3/4" PREFORMED FIBER IN ACCORDANCE WITH WITH SECTION 905

3 CURB AND GUTTER AT ACCESSIBLE PARKING
2F N.T.S.



5 CROSSWALK WITH BRICK PATTERN
2F N.T.S.



NOTE:
STAIRS WITH LESS THAN 4 RISERS WILL NOT REQUIRE HANDRAIL UNLESS NOTED OTHERWISE.

6 CONCRETE STAIRWAYS
2F N.T.S.

2/23/2018 P:\361361231_36123001_04_CAD\Civil\Phase1\PL01\3612300_02F_Detail.dgn



02/22/2018

CITY OF KNOXVILLE OFFICE OF REDEVELOPMENT	DRAWN: ALF
	DESIGNED: MLK
CONSTRUCTION DETAILS	DATE: 11-06-17
	CHECKED: AW
MAGNOLIA AVENUE STREETScape PROJECT PHASE I	APPROVED: COT

PROJECT No.	YEAR	SHEET No.	
15A-R-0584	2017	5	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - DISPLAYED SANITARY

NOTES:
 1. ALL EXISTING STORM PIPES AND ASSOCIATED STRUCTURES WILL BE COMPLETELY REMOVED WITHIN PROJECT LIMITS EXCEPT WHERE NOTED



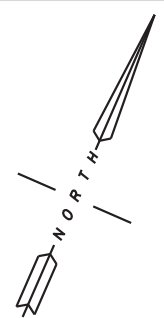
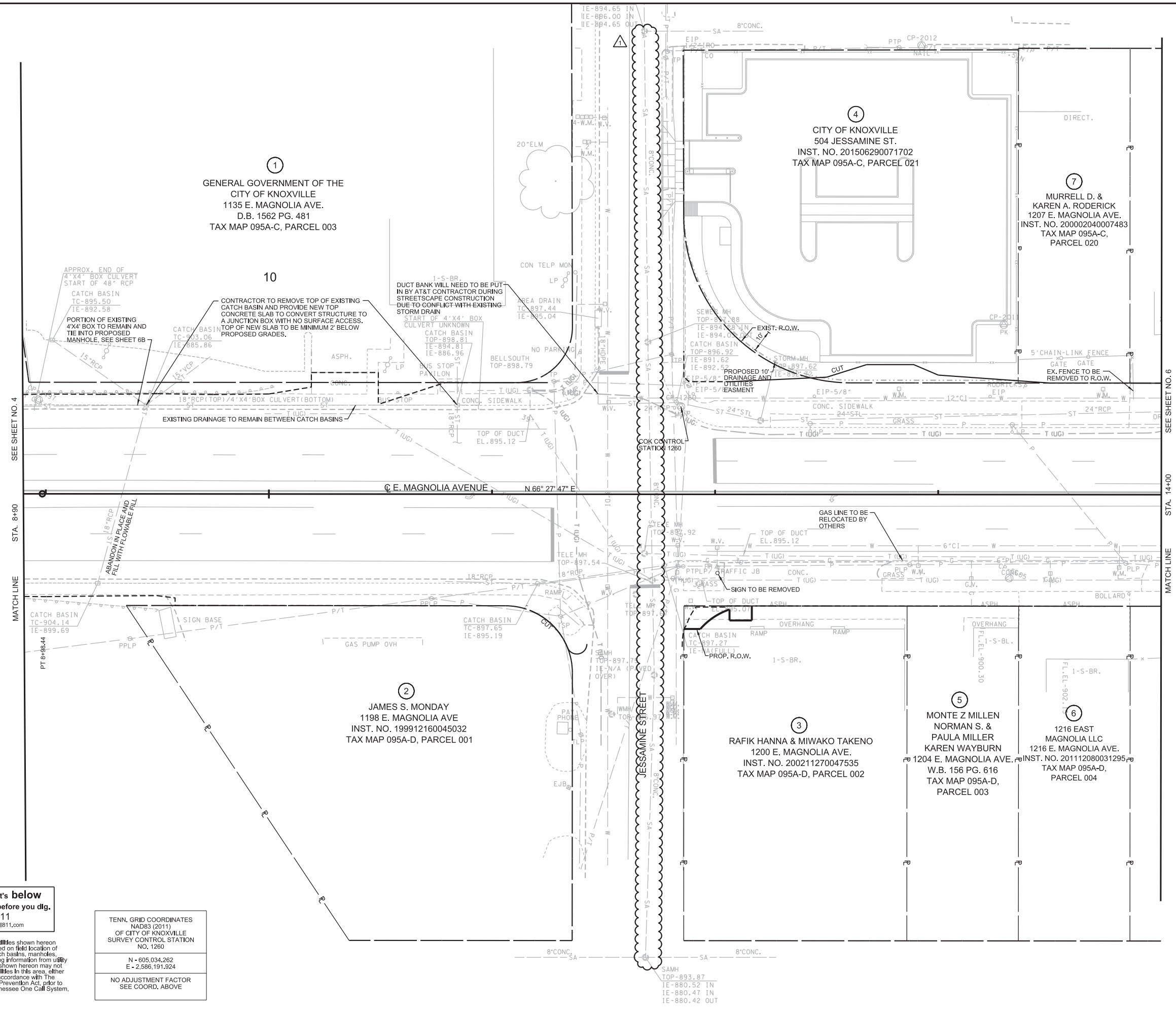
02/22/2018

CITY OF KNOXVILLE
OFFICE OF REDEVELOPMENT

PRESENT LAYOUT
MAGNOLIA AVENUE
STREETSCAPE PROJECT
PHASE I

8+90 TO STA. 14+00
SCALE: 1" = 20'

DRAWN: ACM
DESIGNED: MLK
DATE: 11-06-17
CHECKED: AW
APPROVED: COT



811 Know what's below
Call before you dig.
811
www.call811.com



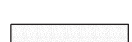
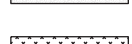
TENN. GRID COORDINATES NAD83 (2011) OF CITY OF KNOXVILLE SURVEY CONTROL STATION NO. 1260
N - 605,034,262 E - 2,586,191,924
NO ADJUSTMENT FACTOR SEE COORD. ABOVE

Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.

2/23/2018
F:\361361231_36123001_04_CAD_C1_VL Phase11_Plan01\3612300_05_Present.dgn

PROJECT No.	YEAR	SHEET No.	
15A-R-0584	2017	5A	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - REVISED ASP. REMOVAL

LEGEND

	AREAS OF ASPHALT TO BE REMOVED (CITY OF KNOXVILLE)
	AREAS OF CONCRETE TO BE REMOVED (CITY OF KNOXVILLE)
	AREAS OF ASPHALT TO BE REMOVED (KNOXVILLE UTILITIES BOARD)
	AREAS OF CONCRETE TO BE REMOVED (KNOXVILLE UTILITIES BOARD)

- NOTES:**
- ALL CUT AND FILL SLOPES IN AREAS OF CONCRETE AND ASPHALT SHALL BE SAWCUT
 - REFERENCE ELECTRICAL PLANS FOR ELECTRICAL DEMOLITION.
 - RUBBER-TIRED EQUIPMENT ONLY TO BE USED NEAR EXISTING VEGETATION

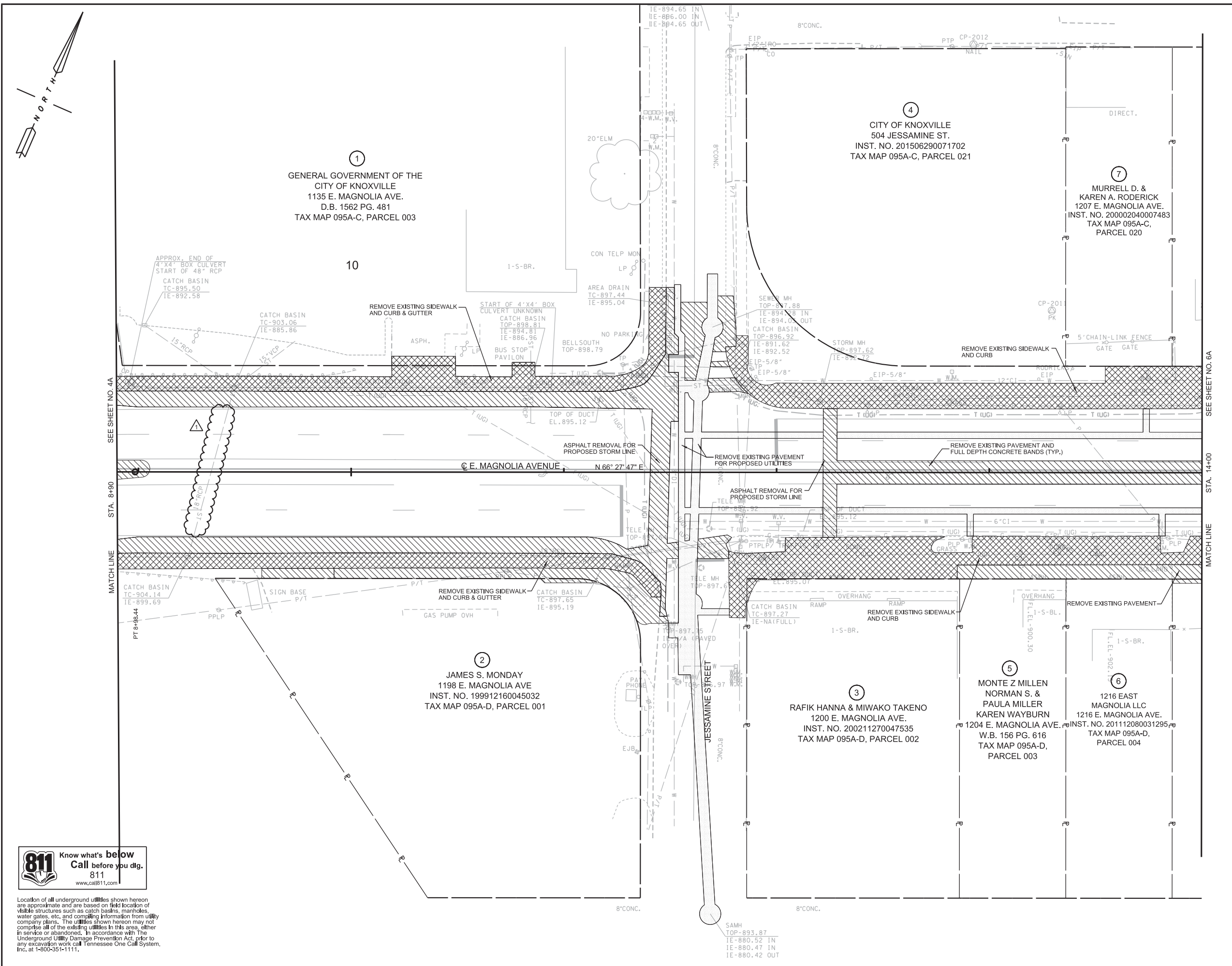


**CITY OF KNOXVILLE
OFFICE OF REDEVELOPMENT**

PAVEMENT REMOVAL
MAGNOLIA AVENUE
STREETSCAPE PROJECT
PHASE I

STA. 8+90 TO STA. 14+00
SCALE: 1" = 20'

DRAWN: ACM	DESIGNED: MLK
DATE: 11-06-17	CHECKED: AW
APPROVED: COT	

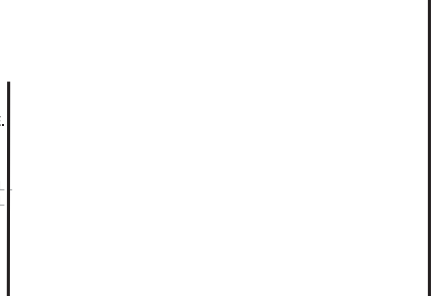
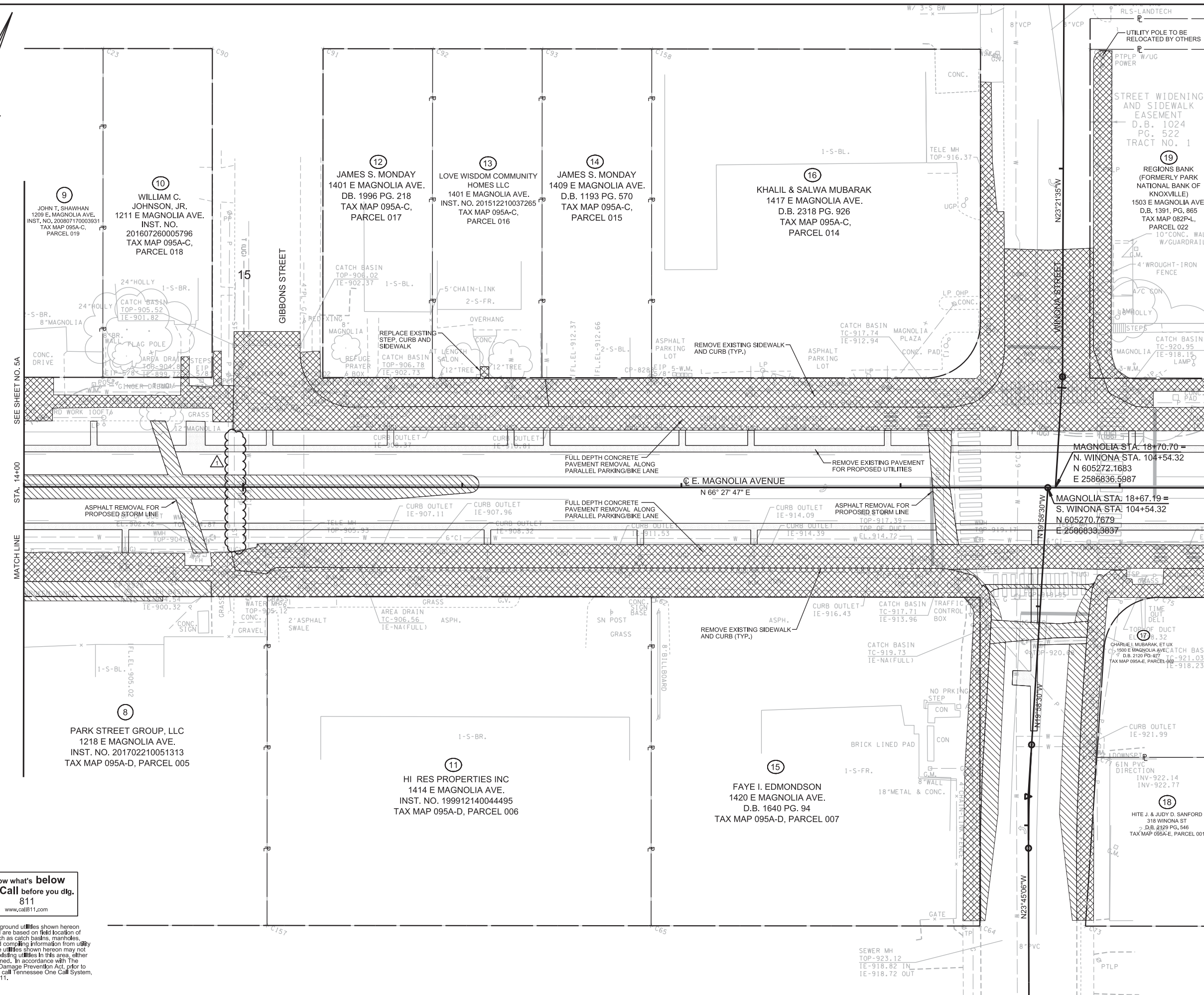
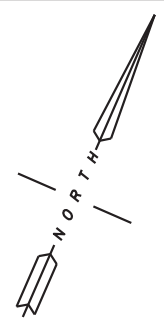


811 Know what's below
Call before you dig.
811
www.call811.com

Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.

2/23/2018
F:\361361231_36123001_04_CAD_Civil\Phase11_Plan\0113612300_05A_Pavement Removal.dgn

PROJECT No.	YEAR	SHEET No.	
15A-R-0584	2017	6A	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - REVISED ASP. REMOVAL



- NOTES:**
- ALL CUT AND FILL SLOPES IN AREAS OF CONCRETE AND ASPHALT SHALL BE SAWCUT
 - REFERENCE ELECTRICAL PLANS FOR ELECTRICAL DEMOLITION.
 - RUBBER-TIRED EQUIPMENT ONLY TO BE USED NEAR EXISTING VEGETATION



02/22/2018



Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.

CITY OF KNOXVILLE
OFFICE OF REDEVELOPMENT

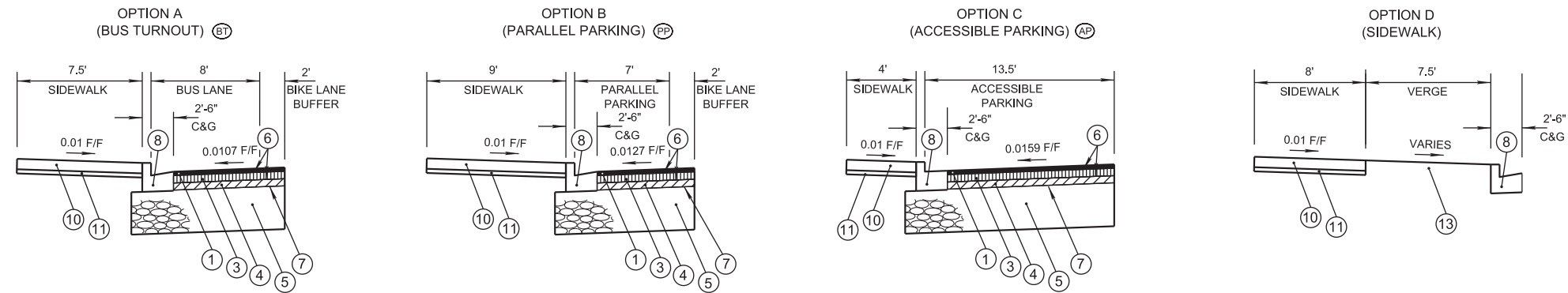
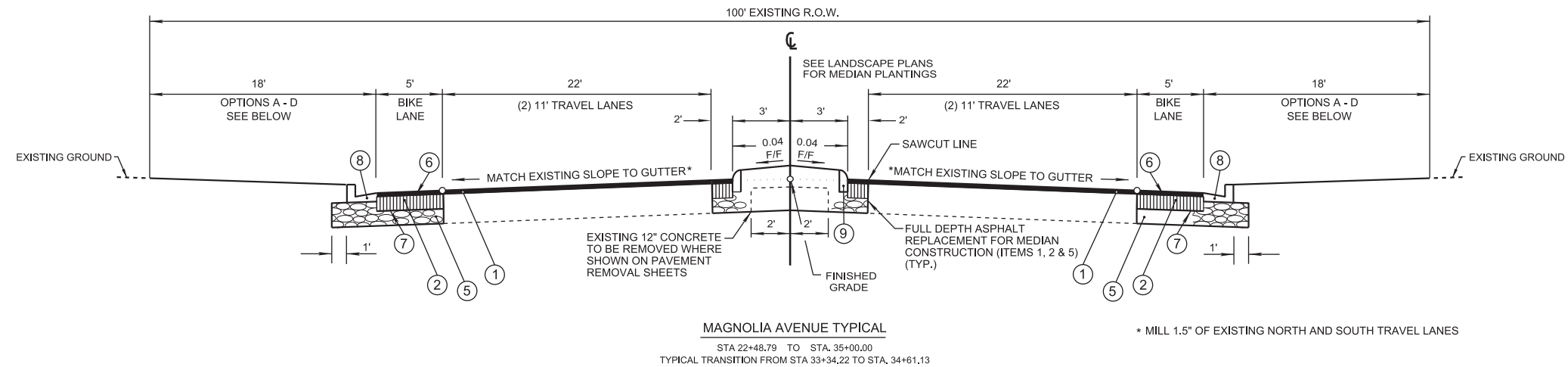
PAVEMENT REMOVAL
MAGNOLIA AVENUE
STREETSCAPE PROJECT
PHASE I

STA. 14+00 TO STA. 19+40
SCALE: 1" = 20'

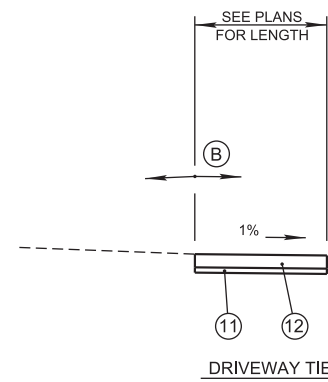
DRAWN: ACM
DESIGNED: MLK
DATE: 11-06-17
CHECKED: AW
APPROVED: COT

2/23/2018 F:\361361231_36123001_04_CAD_Civil\Phase1\PL01\3612300_06A_Pavement Removal.dgn

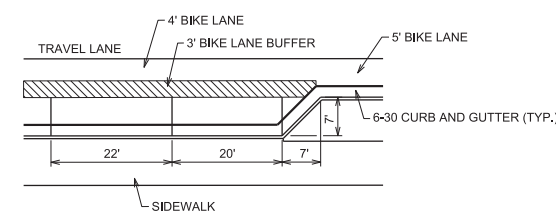
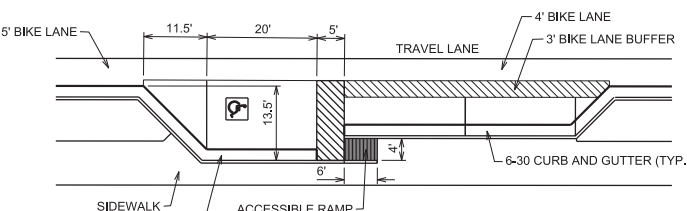
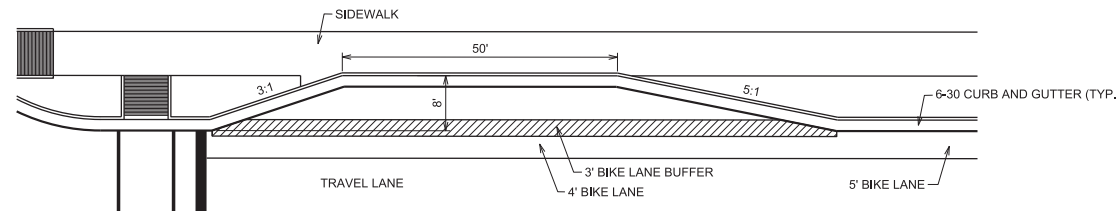
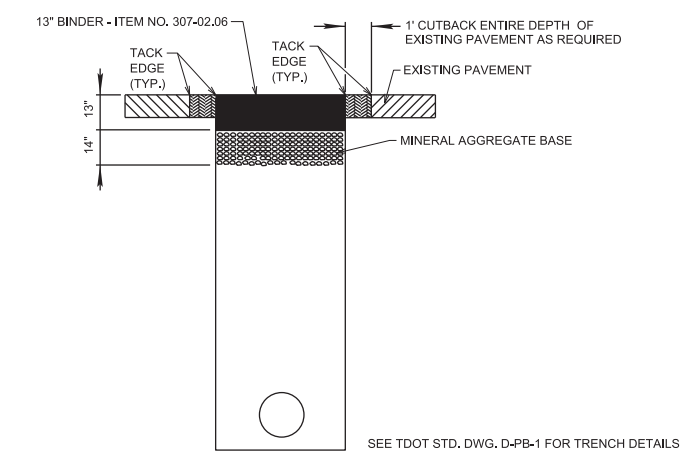
PROJECT No.	YEAR	SHEET No.	
16A-R-0609	2017	2B	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - ITEM NO. REVISION



PROPOSED PAVEMENT SCHEDULE	
1	1.5" ASPHALTIC CONCRETE SURFACE MIX - ITEM NO. 411-02.10 (ACS) MIX (PG70-22) GRADING "D" SURFACE (159 LBS./S.Y.)
2	11.5" BINDER - ITEM NO. 307-02.06 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "B" (1299.5 LBS./S.Y.)
3	2" BINDER - ITEM NO. 307-02.08 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "B-M2" (226 LBS./S.Y.)
4	3" BASE - ITEM NO. 307-02.01 ASPHALT CONCRETE MIX (PG70-22) (BPMB-HM) GRADING "A" (345 LBS./S.Y.)
5	14" MINERAL AGGREGATE BASE - ITEM NO. 303-01 MINERAL AGGREGATE, TYPE "A" BASE, GRADING "D"
6	TACK COAT - ITEM NO. 403-01 BITUMINOUS MATERIAL (GENERAL USE - 0.07 GAL./S.Y. FULL DEPTH, 0.10 GAL./S.Y. MILLING) REQUIRED FOR EACH LAYER
7	PRIME COAT - ITEM NO. 402-01 BITUMINOUS MATERIAL (0.35 GALS./S.Y.)
8	6" TYPE 6-30 CURB & GUTTER - ITEM NO. 702-03 CONCRETE COMBINED CURB AND GUTTER, D = 12"
9	6" TYPE A MOUNTABLE CURB - ITEM NO. 702-01.01 EXTRUDED MOUNTABLE CURB
DRIVEWAYS, SIDEWALKS & SLOPES	
10	4" CONCRETE SIDEWALK (COK SECTION 13.0)
11	2" MINERAL AGGREGATE BASE - TO BE INCLUDED IN THE UNIT PRICE OF ITEM NO. 13.10 AND 13.20
12	6" CONCRETE DRIVEWAY (COK SECTION 13.0)
13	4" TOPSOIL AND SOD (COK SECTIONS 26.0 & 28.0)



- NOTES:**
- (A) DRIVEWAY TO BE PAVED TO THE EXISTING R.O.W.
 - (B) ALGEBRAIC DIFFERENCE SHALL NOT EXCEED 10% EXCEPT AS SHOWN ON NORTH BERTRAND CROSS SECTION STA. 201+97.75 DUE TO EXISTING CONSTRAINTS.



CITY OF KNOXVILLE
 OFFICE OF REDEVELOPMENT

**TYPICAL SECTIONS,
 PAVEMENT SCHEDULE &
 CONSTRUCTION DETAILS**

MAGNOLIA AVENUE
 STREETScape PROJECT
 PHASE II

DRAWN: ALF
 DESIGNED: MLK
 DATE: 11-06-17
 CHECKED: AW
 APPROVED: COT

2/23/2018
 F:\361361231_36123001_04_CAD_Civil\Phase2\PL01\3612300_02B_Pkg_Typ1.cad.s.dgn

PROJECT No.	YEAR	SHEET No.	
16A-R-0609	2017	2D	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - REVISED 38A GRATE EL.

CATCH BASINS AND MANHOLES										
SHEET NO.	DRAINAGE CODE	BASELINE	STATION	OFFSET (FT.)	GRATE/TOP ELEV. ①	INVERT ELEV.	STRUCTURE TYPE	INSIDE DIMENSIONS	DEPTH (FT.) ②	STANDARD DRAWING
4B	35	MAGNOLIA AVENUE	23+50.00	41.00' LT.	937.09	932.00	NO. 12 CB	48" DIA.	5.09	D-CB-12RA
4B	36	MAGNOLIA AVENUE	23+55.60	41.00' RT.	937.16	930.50	NO. 12 CB	48" DIA.	6.66	D-CB-12RA
5B	50	MAGNOLIA AVENUE	28+20.50	41.00' LT.	937.58	933.00	NO. 12 CB	48" DIA.	4.58	D-CB-12RA
5B	49	MAGNOLIA AVENUE	28+89.85	34.00' LT.	936.84	929.25	NO. 12 CB	48" DIA.	7.59	D-CB-12RA
③ 5B	51	MAGNOLIA AVENUE	28+89.85	34.00' RT.	936.84	929.75	THROATED 1033F		7.09	GDOT 1033F
5B	48	MAGNOLIA AVENUE	29+85.20	34.00' LT.	935.06	928.25	NO. 12 CB	32"X32"	6.81	D-CB-12LP
③ 5B	52	MAGNOLIA AVENUE	30+00.00	34.00' RT.	934.61	930.50	THROATED 1033F		4.11	GDOT 1033F
6B	47	MAGNOLIA AVENUE	31+64.00	34.00' LT.	928.10	923.00	NO. 12 CB	48" DIA.	5.10	D-CB-12RA
6B	42	MAGNOLIA AVENUE	31+64.00	39.00' RT.	928.00	923.50	NO. 12 CB	48" DIA.	4.50	D-CB-12RA
6B	41	BERTRAND STREET	200+56.45	17.00' LT.	928.37	922.25	NO. 12 CB	48" DIA.	6.12	D-CB-12RA
6B	46	BERTRAND STREET	201+88.70	15.00' LT.	925.20	920.50	NO. 12 CB	48" DIA.	4.70	D-CB-12RA
6B	37	BERTRAND STREET	201+88.52	1.57' RT.	925.71	918.75	NO. 3 MH	120" DIA.	6.96	D-MH-2
6B	40	BERTRAND STREET	200+59.00	17.00' RT.	927.64	922.00	NO. 12 CB	48" DIA.	5.64	D-CB-12RA
6B	43	BERTRAND STREET	201+89.50	15.00' RT.	925.36	921.50	NO. 12 CB	48" DIA.	3.86	D-CB-12RA
6B	44	MAGNOLIA AVENUE	32+49.00	34.00' LT.	927.07	922.50	NO. 12 CB	48" DIA.	4.57	D-CB-12RA
6B	38	MAGNOLIA AVENUE	32+51.05	34.00' RT.	927.15	919.50	NO. 12 CB	108" DIA.	7.65	D-CB-12RC
① 6B	38A	MAGNOLIA AVENUE	33+04.10	46.31' RT.	928.50	921.36	JUNCTION BOX	32"X32"	7.14	D-JBS-1
6B	38B	MAGNOLIA AVENUE	33+04.10	34.00' RT.	927.60	920.43	NO. 12 CB	62"X62"	7.17	D-CB-12SC
6B	39	MAGNOLIA AVENUE	33+59.00	34.00' RT.	928.09	921.25	NO. 12 CB	72" DIA.	6.84	D-CB-12RB
6B	45	MAGNOLIA AVENUE	33+75.40	36.90' LT.	928.20	923.00	NO. 12 CB	48" DIA.	5.20	D-CB-12RA

- ① INDICATES ELEVATION AT CENTER OF STRUCTURE FOR MANHOLES, JUNCTION BOXES AND AREA DRAINS OR AT FACE OF CURB FOR NO. 12 CURB INLETS.
- ② DEPTHS INDICATED ARE FROM THE TOP OF GRATE TO OUTLET FLOW ELEVATION.
- ③ REFER TO GEORGIA'S DEPARTMENT OF TRANSPORTATION STANDARD DRAWING 1033F FOR DETAILS OF THROATED INLET.

STORM DRAINAGE PIPES								
SHEET NO.	FROM		TO		GRADE	RCP - CLASS III		
	CODE	OUTLET ELEV.	CODE	INLET ELEV.		SIZE & LENGTH (L.F.)		
						18"	24"	48"
4B	35	932.00	EXIST.	931.75	0.37%	68		
4B	36	930.50	EXIST.	930.25	0.34%	73		
5B	50	933.00	49	929.50	5.30%	66		
5B	51	929.75	49	929.50	0.39%	64		
5B	52	930.50	51	930.00	0.47%	106		
5B	49	929.25	48	928.53	0.78%	92		
5B	48	928.25	47	924.44	2.18%	175		
6B	47	923.00	46	921.29	4.75%	36		
6B	41	923.50	40	923.25	0.83%	30		
6B	46	920.50	37	921.00	-3.85%		13	
6B	42	928.00	41	922.55	17.03%	32		
6B	40	922.00	38	921.50	1.09%	46		
6B	39	921.25	38B	920.68	1.16%			49
6B	38A	921.36	38B	921.03	3.00%	11		
6B	38B	920.43	38	919.75	1.45%			47
6B	38	919.50	37	919.31	0.19%			102
6B	44	922.50	43	922.23	0.71%		38	
6B	43	921.50	37	921.25	2.50%		10	
6B	45	923.00	44	922.75	0.20%		125	
TOTALS						799	186	198



02/22/2018



Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with The Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.

CITY OF KNOXVILLE
OFFICE OF REDEVELOPMENT

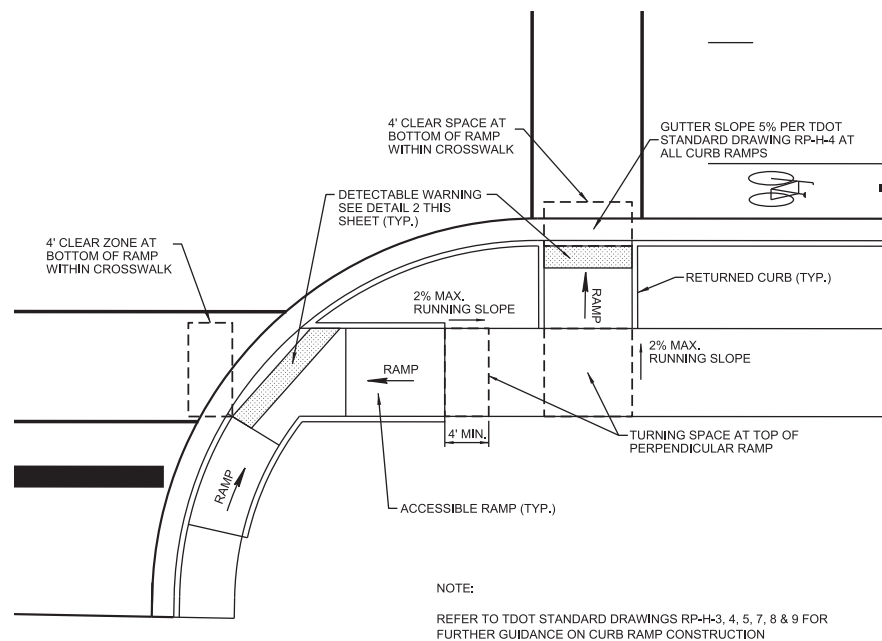
DRAINAGE STRUCTURES AND QUANTITIES

MAGNOLIA AVENUE
STREETScape PROJECT
PHASE II

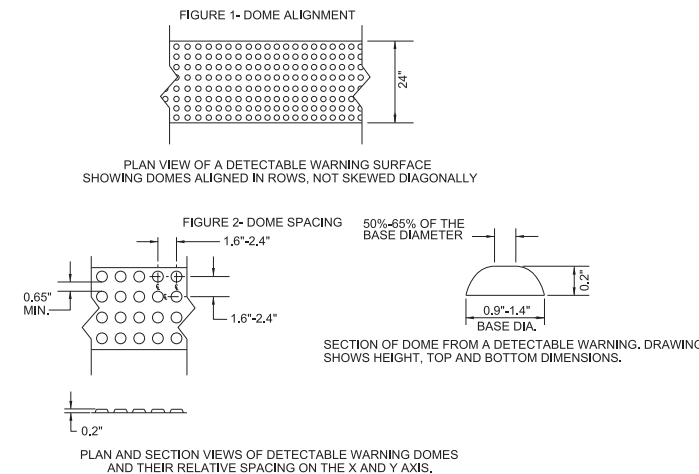
DRAWN: ACM
DESIGNED: MLK
DATE: 11-06-17
CHECKED: AW
APPROVED: COT

PROJECT No. 16A-R-0609	YEAR 2017	SHEET No. 2E	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - CROSSWALK REVISION

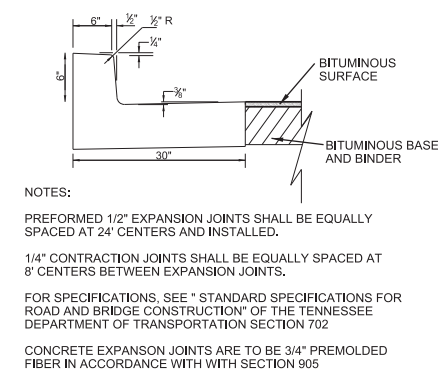
- 1) DETECTABLE WARNING SHALL BE FULL WIDTH OF RAMP
- 2) DEPTH OF DETECTABLE WARNING SHALL BE 24".
- 3) TACTILE WARNING SYSTEM SHALL BE PLACED AT BACK OF CURB.
- 4) TRUNCATED DOMES SHALL BE ALIGNED WITH DIRECTION OF TRAVEL.
- 5) DETECTABLE WARNINGS SHALL BE YELLOW IN COLOR.
- 6) ALL DETECTABLE WARNINGS ON PROPOSED RAMPS SHALL BE ARMOR TILE OR ADA SOLUTIONS CAST IN PLACE SYSTEM OR EQUIVALENT.



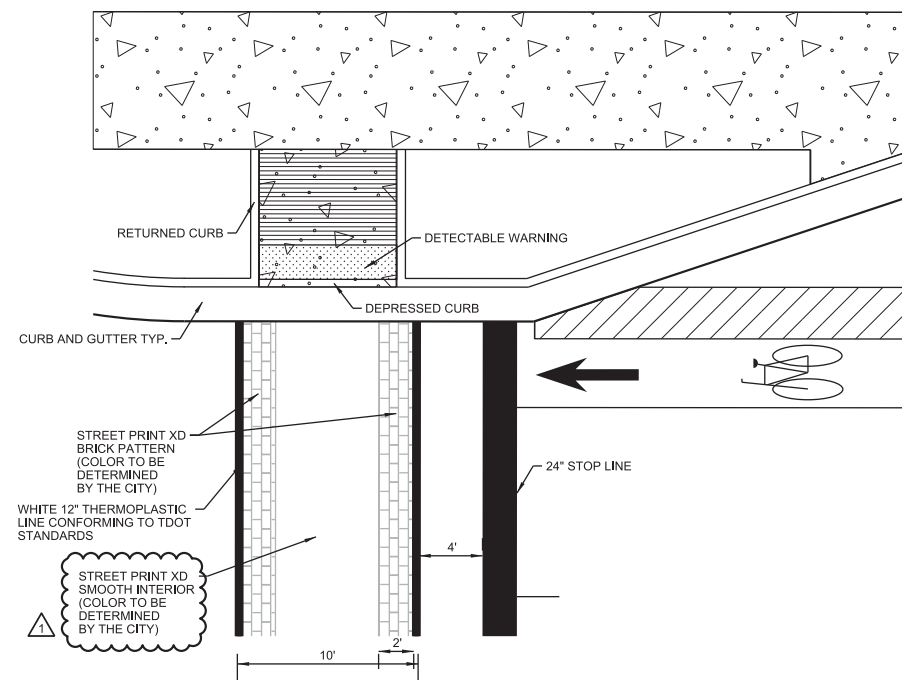
1 ACCESSIBLE RAMP DETAIL
2F N.T.S.



2 DETECTABLE WARNING
5A N.T.S.



3 CURB AND GUTTER AT ACCESSIBLE PARKING
5A N.T.S.



4 CROSSWALK DETAIL
5A N.T.S.

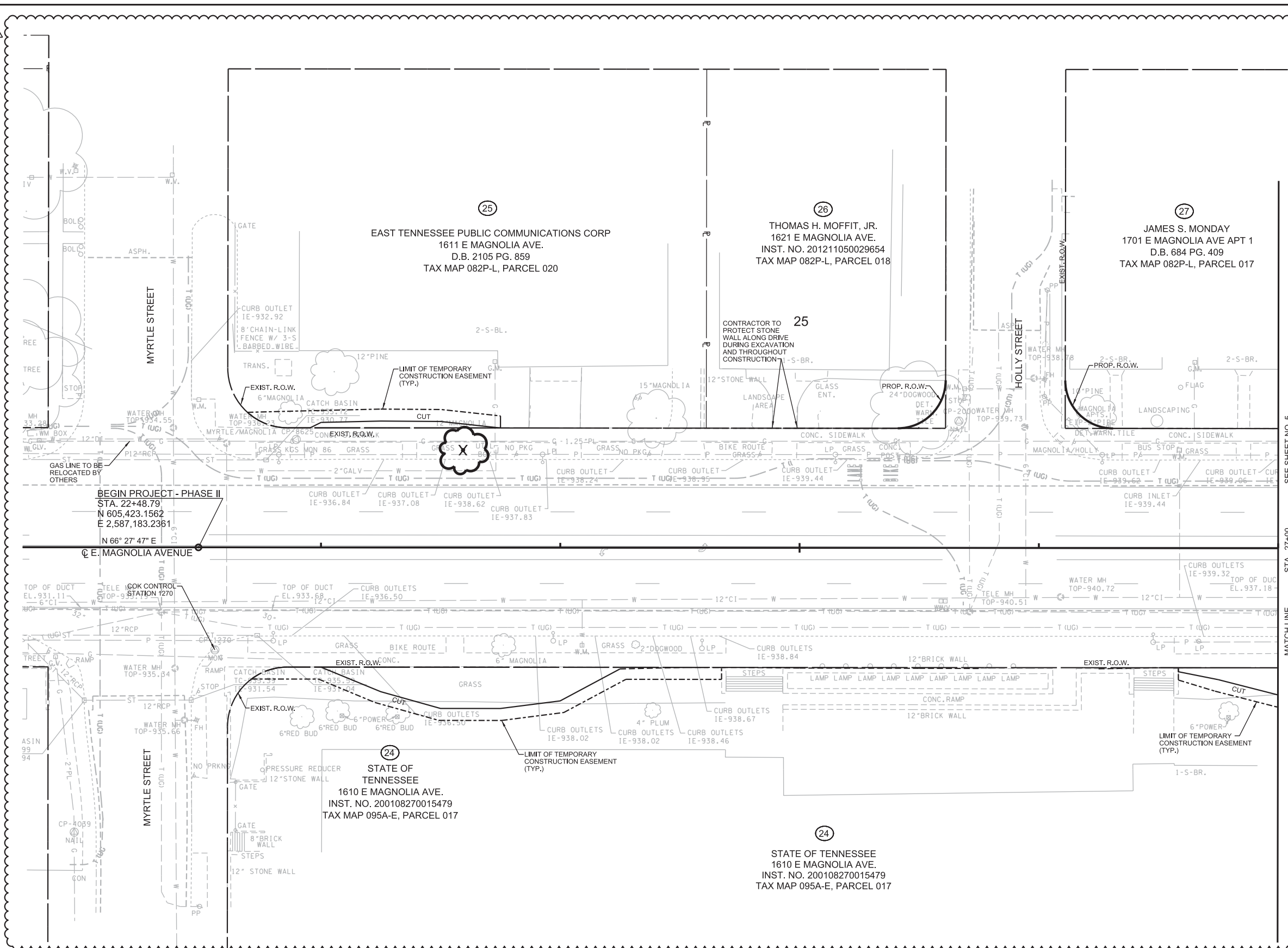
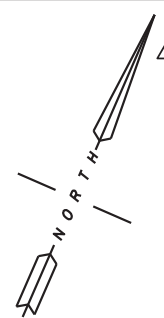


02/22/2018

CITY OF KNOXVILLE OFFICE OF REDEVELOPMENT	DRAWN: ALF DESIGNED: MLK DATE: 11-06-17 CHECKED: AW APPROVED: COT
CONSTRUCTION DETAILS	
MAGNOLIA AVENUE STREETScape PROJECT PHASE II	

2/23/2018
F:\361361231_36123001_04_CAD\Civil\Phase2\PL01\3612300_02E_PWD.dwg all is .dgn

PROJECT No.	YEAR	SHEET No.	
16A-R-0609	2017	4	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - DISPLAYED WATER LINE



LEGEND



NOTES:
 1. ALL EXISTING STORM PIPES AND ASSOCIATED STRUCTURES WILL BE COMPLETELY REMOVED WITHIN PROJECT LIMITS EXCEPT WHERE NOTED

SEE SHEET NO. 5
MATCH LINE STA. 27+00



02/22/2018



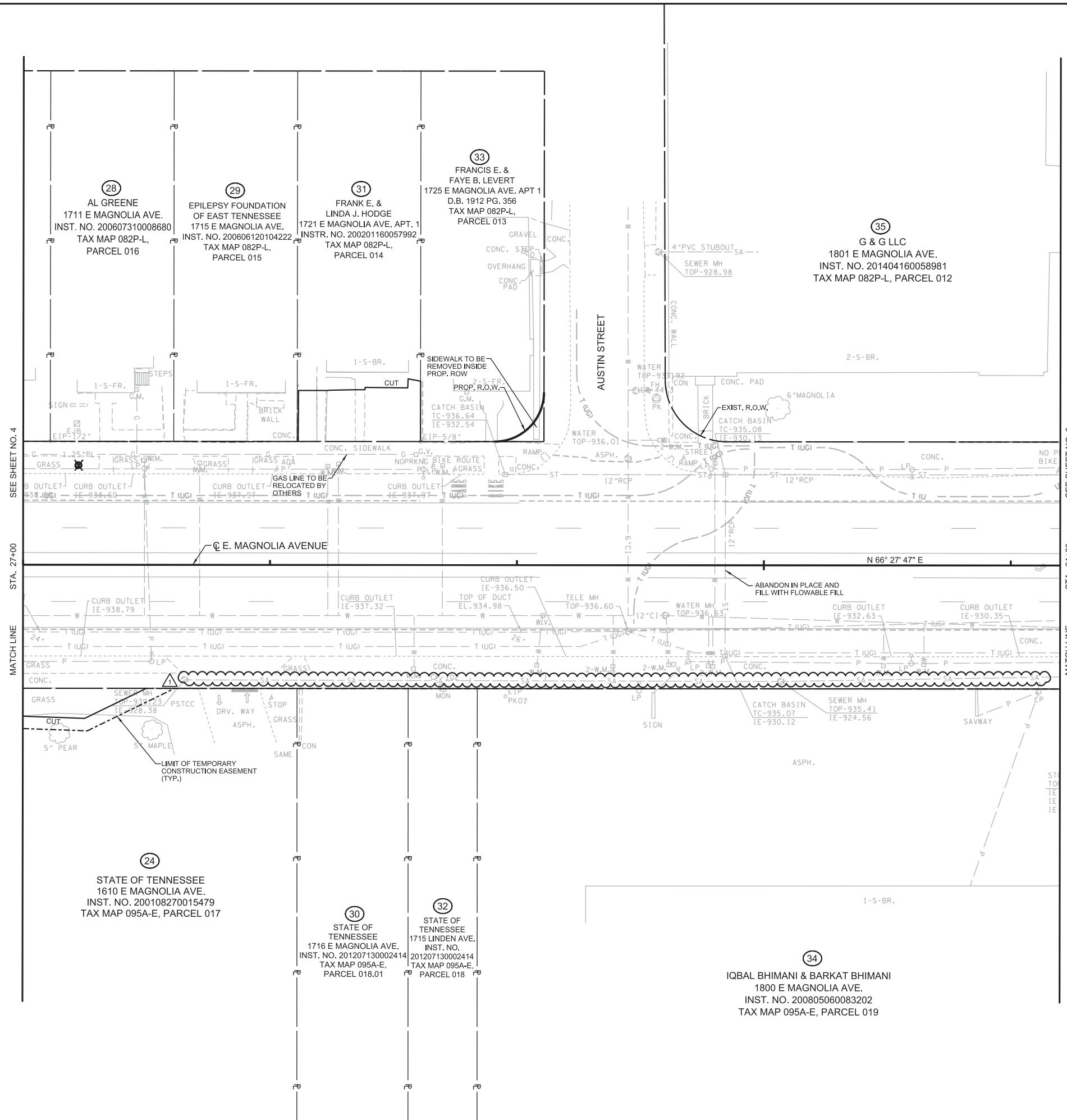
TENN. GRID COORDINATES
 NAD83 (2011)
 OF CITY OF KNOXVILLE
 SURVEY CONTROL STATION
 NO. 1270
 N - 605,386,660
 E - 2,587,206,639
 NO ADJUSTMENT FACTOR
 SEE COORD. ABOVE

CITY OF KNOXVILLE
 OFFICE OF REDEVELOPMENT
PRESENT LAYOUT
 MAGNOLIA AVENUE
 STREETScape PROJECT
 PHASE II
 BEGIN OF PROJECT TO STA. 27+00
 SCALE: 1" = 20'

DRAWN: ACM
 DESIGNED: MLK
 DATE: 11-06-17
 CHECKED: AW
 APPROVED: COT

2/23/2018
 F:\361361231_36123001_04_CAD_Civil\Phase2\PL01\3612300_04_Ph2_Present.dgn

PROJECT No.	YEAR	SHEET No.	
16A-R-0609	2017	5	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - DISPLAYED SANITARY



LEGEND



NOTES:
 1. ALL EXISTING STORM PIPES AND ASSOCIATED STRUCTURES WILL BE COMPLETELY REMOVED WITHIN PROJECT LIMITS EXCEPT WHERE NOTED



Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.

CITY OF KNOXVILLE
OFFICE OF REDEVELOPMENT

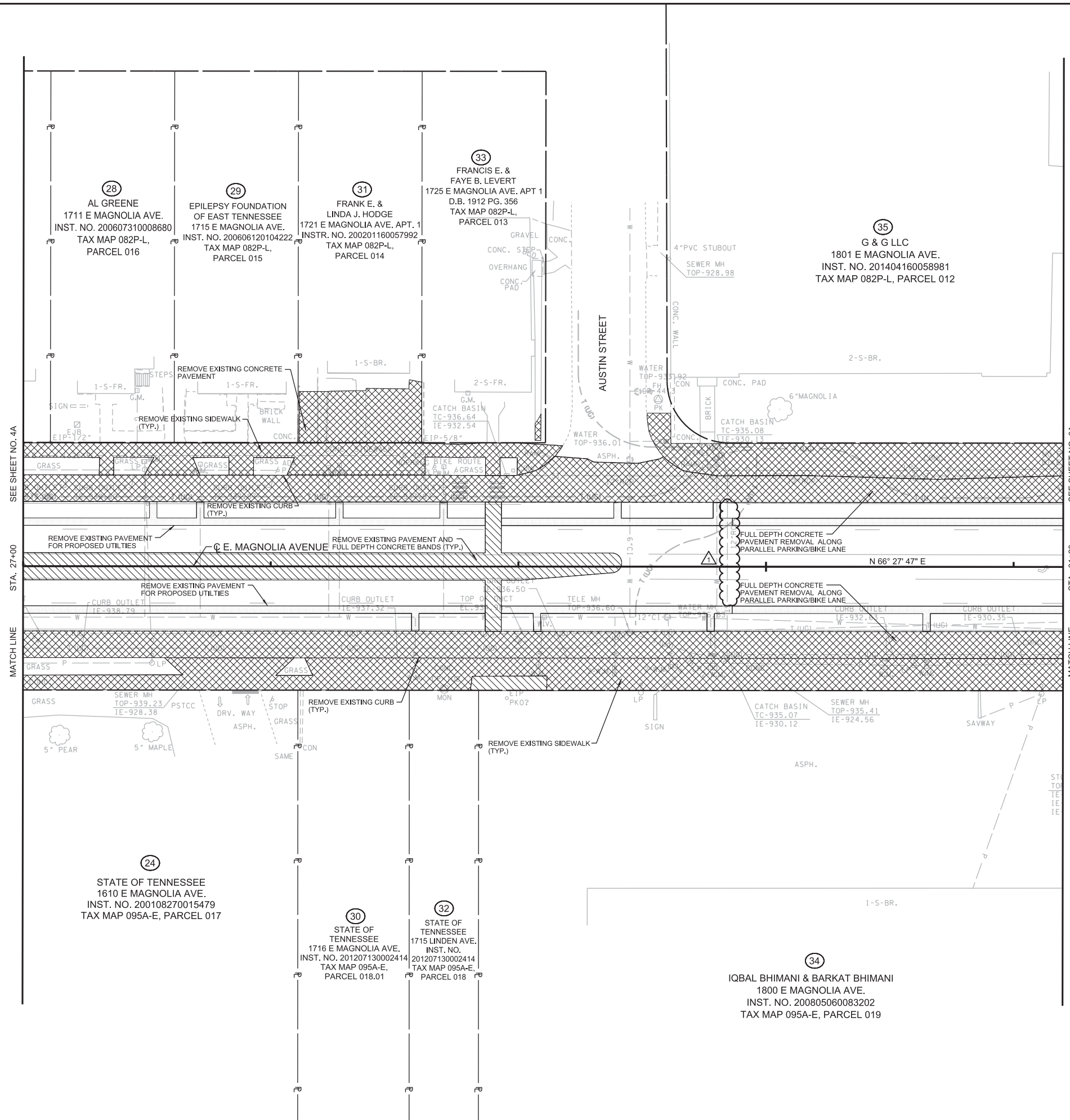
PRESENT LAYOUT
MAGNOLIA AVENUE
STREETSCAPE PROJECT
PHASE II

STA. 27+00 TO STA. 31+20
SCALE: 1" = 20'

DRAWN: ACM	DESIGNED: MLK
CHECKED: AW	APPROVED: COT

2/23/2018 P:\361361231_36123001_04_CAD_C1_VL\Phase2\PL01\3612300_05_Ph2_Present.dgn

PROJECT No.	YEAR	SHEET No.	
16A-R-0609	2017	5A	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - REVISED ASP. REMOVAL



LEGEND

- AREAS OF ASPHALT TO BE REMOVED (CITY OF KNOXVILLE)
- AREAS OF CONCRETE TO BE REMOVED (CITY OF KNOXVILLE)
- AREAS OF ASPHALT TO BE REMOVED (KNOXVILLE UTILITIES BOARD)
- AREAS OF CONCRETE TO BE REMOVED (KNOXVILLE UTILITIES BOARD)

- NOTES:**
- ALL CUT AND FILL SLOPES IN AREAS OF CONCRETE AND ASPHALT SHALL BE SAWCUT
 - REFERENCE ELECTRICAL PLANS FOR ELECTRICAL DEMOLITION.
 - RUBBER-TIRED EQUIPMENT ONLY TO BE USED NEAR EXISTING VEGETATION



Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.



02/22/2018

CITY OF KNOXVILLE
OFFICE OF REDEVELOPMENT

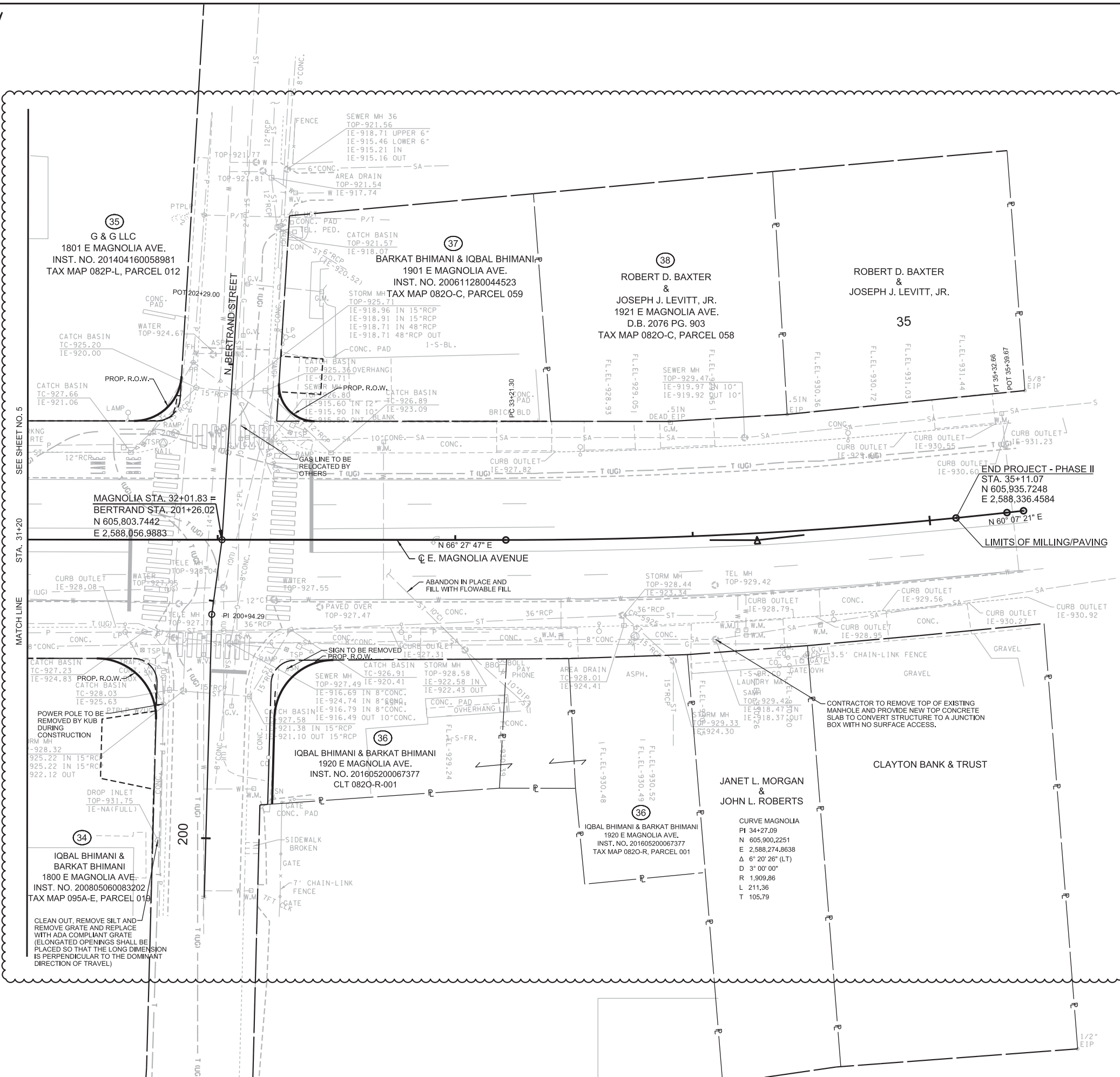
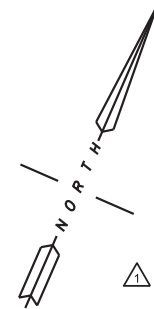
PAVEMENT REMOVAL
MAGNOLIA AVENUE
STREETSCAPE PROJECT
PHASE II

STA. 27+00 TO STA. 31+20
SCALE: 1" = 20'

DRAWN: ACM
DESIGNED: MLK
DATE: 11-06-17
CHECKED: AW
APPROVED: COT

2/23/2018
F:\361361231_3612300_04_CAD_Civil\Phase2\PL01\3612300_05A_Pkg_Pavement Removal.dgn

PROJECT No.	YEAR	SHEET No.	
16A-R-0609	2017	6	
REVISIONS			
No.	DATE	BY	BRIEF DESCRIPTION
1	02-22-2018	MLK	ADDENDUM 3 - DISPLAYED SANITARY



NOTES:
 1. ALL EXISTING STORM PIPES AND ASSOCIATED STRUCTURES WILL BE COMPLETELY REMOVED WITHIN PROJECT LIMITS EXCEPT WHERE NOTED



Location of all underground utilities shown hereon are approximate and are based on field location of visible structures such as catch basins, manholes, water gates, etc. and compiling information from utility company plans. The utilities shown hereon may not comprise all of the existing utilities in this area, either in service or abandoned. In accordance with the Underground Utility Damage Prevention Act, prior to any excavation work call Tennessee One Call System, Inc. at 1-800-351-1111.

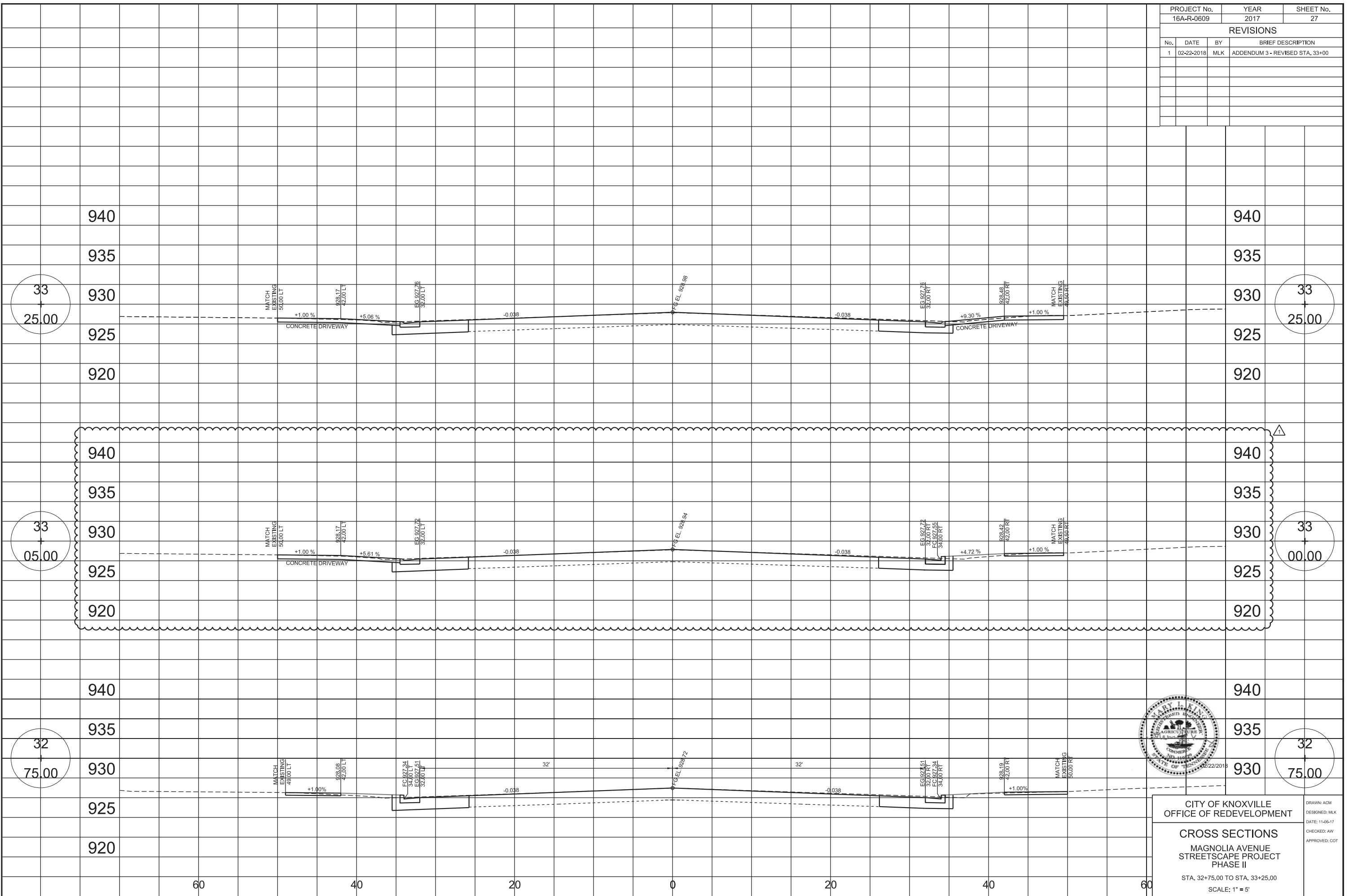


02/22/2018

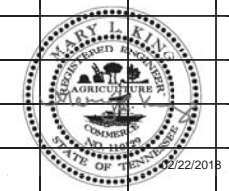
CITY OF KNOXVILLE OFFICE OF REDEVELOPMENT		DRAWN: ACM DESIGNED: MLK DATE: 11-06-17 CHECKED: AW APPROVED: COT
PRESENT LAYOUT MAGNOLIA AVENUE STREETSCAPE PROJECT PHASE II		
STA. 31+20 TO END OF PROJECT SCALE: 1" = 20'		

2/23/2018 11:36:35 AM C:\Users\mlk\OneDrive\Documents\16A-R-0609_P162_Present.dgn

PROJECT No.	16A-R-0609	YEAR	2017	SHEET No.	27
REVISIONS					
No.	DATE	BY	BRIEF DESCRIPTION		
1	02-22-2018	MLK	ADDENDUM 3 - REVISED STA. 33+00		



2/23/2018 P:\136136123\36123000_04_CADD\CI_VL\Phase2\PL_CIT\36123000\mgm\1\CR\ss\sect\locSheet_s_Phr.dgn



CITY OF KNOXVILLE
OFFICE OF REDEVELOPMENT

CROSS SECTIONS
MAGNOLIA AVENUE
STREETSCAPE PROJECT
PHASE II

STA. 32+75.00 TO STA. 33+25.00
SCALE: 1" = 5'

DRAWN: ACM
DESIGNED: MLK
DATE: 11-06-17
CHECKED: AW
APPROVED: COT

PRE-BID MEETING FOR
MAGNOLIA AVENUE STREETScape PROJECT
TO OPEN ON FEBRUARY 20, 2018 AT 11:00 AM (EASTERN TIME)
February 6, 2018 2:00 PM

NAME OF ATTENDEES	COMPANY NAME	ADDRESS	DAYTIME PHONE #	EMAIL ADDRESS
Brian Smith	Durocop Asphalt	P.O. Box 53426 ^{Knoxville TN} 37950	865-524-3355	BrianSmith@DurocopAsphalt.com
Clint Fleming	Jones Bros Co	2836 John Deere Dr.	865-809-3371	CFleming@JonesBrosInc.com
Tommy Catcher	Merit Construction	10435 Dutchman Road, ³⁷⁹³²	865-804-6171	tcatcher@meritconstruction.com
John Quillin	Jones Bros Contractors	2836 John Deere Drive	865-313-4308	jquillin@jonesbrosinc.com
MELANIE ANDERSON	ADAMS CONTRACTING	131 PROSPEROUS PL, 19A ^{LEX, KY} 40509	859-536-9139	melanie@adamscontractingky.com
TODD L. BUTLER	Southern Constructors Inc.	P.O. Box 9476 ; KNOXVILLE, TN 37940	865-579-5351	TButler@SouthernConstructorsInc.com
BRYAN BERRY	COK		865-215-2543	bberry@knoxvilletn.gov
Karen McKeelhan	City of Knoxville	3131 Morris Ave. 37909	865-215-6125	kjmckeelhan@knoxvilletn.gov
ERIC VREZAN	COK		865-215-3480	EVREZAN@KnoxvilleTN.GOV

PLEASE PRINT

PRE-BID MEETING FOR
MAGNOLIA AVENUE STREETScape PROJECT
TO OPEN ON FEBRUARY 20, 2018 AT 11:00 AM (EASTERN TIME)
February 6, 2018 2:00 PM

NAME OF ATTENDEES	COMPANY NAME	ADDRESS	DAYTIME PHONE #	EMAIL ADDRESS
CASEY TYREE	BARGE	520 W Summit Hill Dr. Ste 1202 Knoxville	865-934-4140	Casey.Tyree@barge-design.com
Andrew Clark	Barge	"	865-934-4146	andrew.clark@barge-design.com
MIKE LAIL	ROGERS GROUP, INC.	601 Maryville Pike - Knoxville, TN 37920	865-293-3071	MIKE.LAIL@ROGERSGROUPINC.COM
Randy West	Jones Bros, Inc	2836 John Deere Dr. - Knoxville, TN 37917	865-748-9917	rwest@jonesbrosinc.com
Steve Miller	Twin K Construction	13271 Scott Hwy Helenwood TN 37755	423-569-2049	smiller@twinkconstruction.com
Ives Carpenter	SCC	1150 Masville Pike 37920	865-579-5351	wcarpenter-usathconstruction.com
Paul Stacey	LSI	204 River Hills Drive	615-533-3360	PaulStacey3@LSIpros.net
MIKE WEL	Blalock Construction	405 Robert Anderson Rd, Sevierville	865-457-4433	MIKEWEL@blalockconstruction.com
Robin Tipton	COK	3131 Morris Ave Knoxville 37909	865-215-6105	r_tipton@knoxville.tn.gov
WALTER JAMISON	B&B LUMBER SERVICES, INC.	2425 MARTIN LUTHER KING JR AVE TN KNOX	865-525-3877	WALTER@bandblum.com

PLEASE PRINT

PRE-BID MEETING FOR
MAGNOLIA AVENUE STREETScape PROJECT
TO OPEN ON FEBRUARY 20, 2018 AT 11:00 AM (EASTERN TIME)
February 6, 2018 2:00 PM

p. 3 of 3

NAME OF ATTENDEES	COMPANY NAME	ADDRESS	DAYTIME PHONE #	EMAIL ADDRESS
Robert C. Givens	DCSI	Knoxville, TN	845-523-9730	ROBERT@DCSIQC.COM
DAWN MICHELLE	COK	400 MAIN ST SU 105	865-599-1234 x2607	DMFOSTER@KNOXVILLETN.GOV

PLEASE PRINT

Boyle H. Evers 12/6/18
Boyle H. Evers
Purchasing Agent
City of Knoxville