PROJECT MANUAL

Mississippi Drive Corridor
City of Muscatine
Muscatine, IA

BOLTON & MENK

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CERTIFICATION

PROJECT MANUAL

for

Mississippi Drive Corridor

City of Muscatine

Muscatine, IA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Landscape Architect under the laws of the State of Iowa.

Gregory A Broussard Date 2/2/17

Gregory A Broussard

License No. 21974

My renewal date is December 31, 2017

Pages or sheets covered by this seal:

C1-C2, TOC 1, NB 1-4, IB 1-IB8, FP1-FP13, FC1-FC2, PPB1-PPB2, 1-4, 1-6, SC 1-SC10, SP1-SP6

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Landscape Architect under the laws of the State of Iowa.

Date 2/2/17

Casey Byers

License No. 00637

My renewal date is June 30, 2017

Pages or sheets covered by this seal:

TS1 - TS 28

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I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Landscape Architect under the laws of the State of Iowa.

Joseph J. Spradling

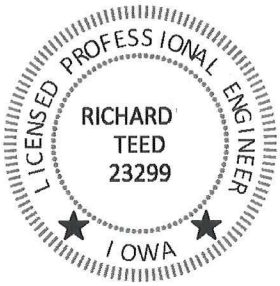
Date 2/2/17

License No. 20450

My renewal date is December 31, 2018

Pages or sheets covered by this seal:

C1-C2, TOC1, NB1-NB4, IB1-IB8, FP1-FP13, FC1-FC2, PPB1-PPB2, 1-4, 1-6, SC1-SC10, SP1-SP6



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Landscape Architect under the laws of the State of Iowa.

Richard A. Teed

Date 2/2/17

License No. 23299

My renewal date is December 31, 2017

Pages or sheets covered by this seal:

i-29, AWD0212B - AWD0212E

This project is based on
SUDAS STANDARD SPECIFICATIONS, 2017 EDITION
unless modified herein.

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MISSISSIPPI DRIVE CORRIDOR PROJECT

CITY OF MUSCATINE
MUSCATINE, IOWA

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PUBLIC NOTICE

NOTICE OF TIME AND PLACE OF PUBLIC HEARING ON THE MISSISSIPPI DRIVE CORRIDOR PROJECT

Public Notice is hereby given that the City Council of the City of Muscatine, Iowa will hold a Public Hearing to hear objections to the plans, specifications, form of contract, and cost estimate for the proposed Mississippi Drive Corridor Project. Said hearing will be held in the City Council Chambers, City Hall, Muscatine, Iowa on February 2nd, 2017 at 7:00 p.m. All interested persons are invited to attend and will be given an opportunity to be heard relative to this matter.

_____

Gregg Mandsager, City Administrator

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NOTICE TO BIDDERS
Mississippi Drive Corridor Project

Notice is hereby given that the City of Muscatine, Iowa, will receive sealed proposals in the office of the City Clerk, City Hall, (215 Sycamore Street, Muscatine, IA 52761) until 3:00 p.m., February 27th, 2017, for the Mississippi Drive Corridor Project for the City of Muscatine. At 3:35 p.m. on the same day the City's Purchasing Agent shall open the bids received and announce the results in the City Hall Council Chambers.

Time and Place for Pre-Bid Meeting. A Pre-Bid Meeting will be held at 10:00 AM. on February 10, 2017for the Mississippi Dive Corridor Improvements at City Hall, Lower Conference Room, City of Muscatine, 215 Sycamore Street, Muscatine, IA 52761

Bids will be reported to the City Council at their meeting to be held at 7:00 p.m., March 2nd, 2017. Said proposals shall be acted on at that time or at such later time and place as may then be fixed.

Description of the Type and Location of the Project

The Mississippi Drive Corridor is roadway, utilities, and streetscape construction project located on 2nd St from Mad Creek to Mulberry Ave and on Mississippi Drive from Mulberry Avenue to just east of Green St. Construction primarily includes pavement removal, excavation, concrete paving, subdrains, granular subbase, underground utility improvements, concrete paves, streetscape amenities. All streets are within corporate city limits of Muscatine, Iowa. Work must be completed by November 21st, 2018 with interim completion dates of June 30th, 2017, and November 22nd, 2017.

Proposals shall be submitted on a form furnished by the City and accompanied by a bid security in an amount equal to five (5) percent of the bid and shall stand as security that the successful bidder will enter into a contract for the work bid upon within ten (10) days after acceptance of his proposal by the City.

The City reserves the right to defer acceptance of any proposal for a period not to exceed thirty (30) calendar days and to reject any and all bids, to waive technicalities and to enter into such contract as it shall deem for the best interest of said City.

The Contractor must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex or national origin.

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Payment to the Contractor will be made from funds legally available for that purpose. Payment will be made on the basis of monthly estimates equal to ninety-five (95) percent of the contract price. The balance of the five (5) percent due to the contractor will not be made earlier than thirty (30) days from the final acceptance of said work by the City, subject to the conditions and in accordance with the provisions of Chapter 573 of the Code of Iowa. Before final payment will be made, the Contractor shall certify that all materials, labor and services have been paid for.

All work is to be performed and completed under the guidelines of OSHA and in strict compliance with plans and specifications prepared by the City of Muscatine Public Works Department, which have heretofore been approved by the City Council and are now on file for public examination.

Contract Documents

Proposed plans, specifications, and contract documents may be available for review at the Department of Finance, City Hall, City of Muscatine, 215 Sycamore St, Muscatine, Iowa 52761, between the hours of 8:00 a.m. and 5:00 p.m., Monday thru Friday.

You may view and download the digital plan documents for free by entering Quest project # 4825417 on the website's Project Search page at www.questcdn.com. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, viewing, downloading, and working with this digital project information.

This Notice is published by order of the City Council of the City of Muscatine, Iowa.

_____

Gregg Mandsager, City Administrator

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INSTRUCTIONS TO BIDDERS

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IB-01 BIDDER'S KNOWLEDGE

The proposed Mississippi Drive Corridor Project is located in the City of Muscatine, Iowa. Bidders shall familiarize themselves with the specifications and conditions, which will affect the construction. Specific items relating to the preparation of bids and the submission thereof are listed elsewhere in the Contract Documents. It will be the responsibility of the Bidder to examine all Contract Documents and to make a personal examination of the job site and the physical conditions, which may affect his bidding and performance under the contract.

IB-02 BIDDER'S QUALIFICATIONS

The Bidder may be required to satisfy the Owner as to his integrity, experience, equipment, personnel and financial ability to perform the work.

If the successful Bidder is a non-Iowa corporation, he shall submit proof to the Owner, prior to the execution of the contract, of authorization by the Secretary of State to do business in Iowa.

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IB-03 METHOD OF BIDDING

Bidder shall submit unit price bids as required for the work covered by the specifications. Prices shall cover complete work and include all costs incidental thereto, unless otherwise indicated.

The Engineer may change location, quantities, and combination of units as required during the progress of construction.

Bids will be computed using quantities shown in the proposal. The unit price quantities are approximate and only for comparison of bids.

In the event of discrepancies between unit prices and unit price extensions listed in Bidder's proposal, unit prices shall govern.

IB-04 SUBMISSION OF BIDS

The bids shall be submitted in duplicate on the proposal form included herewith. The proposal shall be submitted in a sealed envelope separate from the bid security. The envelope shall bear the return address of the Bidder and shall be addressed as follows:

TO: City Clerk
City Hall
215 Sycamore
Muscatine, Iowa 52761

Proposal for
Mississippi Drive Corridor Project

The bid shall be signed by a legally authorized representative of the Bidder.

The bid security shall be placed in a separate envelope attached to the envelope containing the bid.

Only the proposal form shall be included in the envelope with the bid. Do not submit plans and/or specifications with the bid.

IB-05 WITHDRAWAL OF BIDS

Bids may be withdrawn any time prior to the scheduled closing time for receipt of bids; but no bids may be withdrawn for a period of thirty (30) calendar days thereafter.

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IB-06 EVALUATION OF BIDS

The Owner may consider such factors as bid price, experience and responsibility of Bidder, and similar factors in determining which bid deems to be the best interest of the Owner for the project.

The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the agreement and to complete the work contemplated therein.

The Owner may reject any or all bids, waive informalities or technicalities in any bid, and accept that bid which it deems to be in its best interest.

IB-07 SALES TAX EXEMPTION

The City of Muscatine will provide each contractor and subcontractor for this project with a certificate of exemption and an authorization letter which can be presented to material suppliers which will allow the contractor/subcontractor to purchase building materials used in this contract exempt from Iowa sales tax and any applicable local option sales tax and school infrastructure local option tax except for such items noted in the Estimate Reference notes which are not tax exempt. Complete information on qualifying materials and supplies can be found at www.state.ia.us/tax, the Iowa Department of Revenue and Finance (IDRF) web site. Links can be found in the Business Taxes and Local Government categories. Bids submitted for this project should be submitted on this basis.

IB-08 EXECUTION OF CONTRACT

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance bond and payment bond within ten (10) calendar days from the date when Notice of Award is delivered to the Bidder. The Notice to Award shall be accompanied by the necessary Agreement and bond forms. In case of failure of the Bidder to execute the Agreement, the Owner may at his option consider the Bidder in default, in which case the bid bond accompanying the proposal shall become the property of the Owner.

The Owner, within thirty-one (31) days of receipt of acceptable performance bond, payment bond and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party and executed copy of the Agreement. Should the Owner not execute the Agreement within such period, the Bidder may, by written notice, withdraw his signed Agreement.

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Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

The Notice to Proceed shall be issued, in writing, following execution of the contract, by the Owner. The Contractor will acknowledge receipt of Notice to Proceed and work shall proceed within ten (10) days.

The contract, when executed, shall be deemed to include the entire agreement between the parties; the Contractor shall not claim any modification resulting from representation or promise made by representatives of the Owner or other persons.

IB-09 DISQUALIFICATION OF BIDDERS

Attention of bidders is directed to Section 553.23 of the current Code of Iowa, regarding unlawful combination in making public contracts.

IB-10 QUANTITIES

Estimated quantities shown on the proposal form are provided solely for the Contractor's information and shall not be construed as being necessarily accurate or complete.

Bidders must satisfy themselves of the accuracy of the estimated quantities in the bid tabulation included in the Form of Proposal by examination of the site and a review of the drawings and specifications including addenda. After bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

IB-11 COMPLETION DATE

All work must be completed by November 21st, 2018 with interim completion dates of June 30th, 2017, and November 22nd, 2017.

Contractor shall pay liquidated damages for noncompliance with said completion provisions at the rate of One Thousand Five Hundred dollars ($1,500.00) for each calendar day thereafter that the work remains incomplete beyond the June 30th, 2017 interim completion date and at the rate of One Thousand dollars ($1,000.00) for each calendar day thereafter that the work remains incomplete beyond the November 22nd, 2017 interim completion date and the November 21st, 2018 completion date. Contractor shall pay liquidated damages should construction activities exceed 210 working days in the amount of One Thousand dollars ($1,000.00) for each calendar day thereafter that the work remains incomplete beyond 210 working days if 210 working days are used prior to November 21st, 2018. Liquidated damages for failing to timely attain substantial completion and final completion are not additive and will not be imposed concurrently.

Should the Contractor fail to complete the construction work within the time specified, he shall

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reimburse the Owner for any extra engineering and inspection costs deemed necessary by the Owner necessitated by the continuance of the work beyond the time herein specified for completion. Such extra engineering costs, not included in the liquidated damages, charged to the Contractor as hereby agreed to in no way constitute a penalty, but said costs represent additional expense to the Owner caused by delayed prosecution of the work by the Contractor. Such additional expense will be deducted from the monies due the Contractor at the time of final payment, recognizing any extensions of time granted by the Owner.

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IB-12 GUARANTEE

The Contractor shall furnish a maintenance bond, subject to the Owner's approval, guaranteeing to keep all work constructed under this contract in good repair for a period of two (2) years from date of final acceptance. Good repair shall be construed to mean free from any functional or structural deterioration, except that caused from ordinarily reasonable use and acts of God, which appreciably reduces the effectiveness of the improvement for the purpose intended or any serious departure from the standards or original construction.

If, in the opinion of the Owner, such deterioration takes place, they shall so notify the Contractor by registered letter to the address given in the Contractor's proposal and send a copy of such notice to the bonding company, which notice is mutually agreed to be sufficient and adequate. If the Contractor shall not proceed to remedy such defects as are called to his attention in the notice within ten (10) days, the City shall cause the repairs to be made as it deems best, and the entire cost thereof shall be paid by the Contractor or his sureties.

IB-13 QUESTIONS AND ADDENDA

If any person contemplating submitting a bid for the proposed work, material or equipment is in doubt as to the true meaning of any part of the plans, specifications or other Contract Documents, he may request an interpretation thereof. The person submitting the request will be responsible for its prompt delivery.

Questions concerning interpretation or intent of the Contract Documents should be directed to:

James Edgmond, P.E.
Public Works Building
1459 Washington Street
Muscatine, IA 52761
Phone 563-263-8933
Fax 563-263-2127

Any oral interpretation given will be valid only if confirmed by written addendum. Information obtained from an officer, agent, or employee of the Owner shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the contract.

The Owner reserves the right to revise or amend the Contract Documents, prior to the date set for receipt of bids. Such revisions and amendments, if any, will be announced by an addendum or addenda to the Contract Documents.

Copies of such addenda as may be issued will be furnished to all holders of specifications.

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Bidders are required to acknowledge receipt of all addenda by listing such addenda in the Form of Proposal.

IB-14 PRECONSTRUCTION CONFERENCE

Following the award of contract, the Contractor and his subcontractors will be required to attend a preconstruction meeting at a time and place designated by the Owner.

IB-15 SUB-CONTRACTORS

The prime contractor shall submit to the Owner, in writing, the names of all sub-contractors along with the items and amounts to be sublet. The prime contractor shall not sublet more than 60% of the dollar amount of the contract. All sub-contractors shall be approved by the Owner before work is begun.

IB-16 BUY AMERICA

On all contracts, all products of iron, steel, or a coating of steel which are incorporated into the work shall be of domestic origin and shall be melted and manufactured in the United States. The Engineer may allow minimal amounts of these materials from foreign sources, provided the cost does not exceed 0.1% of the contract sum or $2,500, whichever is greater. This amount shall include transportation, assembly, and testing as delivered cost of foreign products to the project. Per Materials Iowa DOT I.M. 107, miscellaneous steel or iron components, subcomponents, and hardware, as defined by FHWA, will not be subject to Buy America requirements.

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MISSISSIPPI DRIVE CORRIDOR

CITY OF MUSCATINE - MUSCATINE, IOWA

FORM OF PROPOSAL

NOTE TO BIDDERS: Please do not use the Form of Proposal included in the bound volume of the specifications. Separate copies of this proposal will be furnished to bidders upon application to the Owner.

Name of Bidder _____

Address of Bidder _____

TO: The Honorable Mayor
and City Council
City Hall
Muscatine, Iowa 52761

GENTLEMEN:

A. The undersigned Bidder submits herewith bid security in the amount of $_____ in accordance with the terms set forth in the Instructions to Bidders.

B. The undersigned Bidder, having examined the plans, specifications, Notice to Bidders, the location and sites of the proposed work, the nature of the work to be done, extent and condition of existing structures affecting, or affected by the proposed work, and being fully advised as to the extent and character of the work and all existing local conditions, relative to construction difficulties, hazards, labor transportation, hauling, trucking, plant sites, and other factors affected by or affecting the work covered by this proposal as outlined in the specifications and plans, including Addenda _____ and _____.

HEREBY PROPOSES to furnish all materials, tools, appliances, plant and equipment; and to perform all necessary labor required for the complete construction of the Mississippi Drive Corridor Project for the City of Muscatine, Iowa and all items incidental thereto and to perform all work in accordance with the plans and specifications for said project, including all items to expense and profit, as follows:

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PROPOSAL FORM
MISSISSIPPI DRIVE CORRIDOR PROJECT

BID ITEMS AND QUANTITIES					
ITEM NO.	**DESCRIPTION**	**UNIT**	**APPROX. QUANTITY**	**UNIT PRICE**	**AMOUNT**
1	TRAFFIC CONTROL	LS	1		
2	RAILROAD FLAGGER	DAY	100		
3	RAILROAD PROTECTIVE LIABILITY INSURANCE PROVISION	LS	1		
4	CLEARING AND GRUBBING	LS	1		
5	TOPSOIL, OFF SITE	CY	100		
6	TOPSOIL, OFF SITE, LOAD & SPREAD	CY	3021		
7	EXCAVATION, CLASS 13	CY	8090		
8	SUBGRADE PREPARATION	SY	36460		
9	SUBGRADE STABILIZATION, 12-INCH	CY	976		
10	SUBGRADE TREATMENT, GEOTEXTILE	SY	2928		
11	SUBBASE, SPECIAL BACKFILL, 6-INCH	SY	8643		
12	SUBBASE, MODIFIED SUBBASE, 6-INCH	SY	36460		
13	REMOVAL OF KNOWN DUCT BANK, CONCRETE, 2'-6" WIDTH x 1'-0" HEIGHT	LF	15		
14	REMOVAL, HYDRANT	EA	6		
15	REMOVAL, TRAFFIC SIGNAL FOUNDATION	EA	24		
16	REMOVAL, STREET LIGHT POLES	EA	51		
17	EXPLORATORY EXCAVATION	LF	100		
18	TRENCH FOUNDATION	TON	500		
19	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	CY	19210		
20	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL, COHESIVE BACKFILL	CY	810		
21	RAVINE FILL AREA EARTHWORK MANAGEMENT	CY	20020		
22	TRENCH COMPACTION TESTING	LS	1		
23	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 8 INCH	LF	758		
24	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 12 INCH	LF	2698		
25	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 18 INCH	LF	185		

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ITEM NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT PRICE	AMOUNT
26	SANITARY SEWER SERVICE STUB, PVC, 6"	LF	593		
27	SANITARY SEWER SERVICE STUB, PVC, 8"	LF	27		
28	SANITARY SEWER SERVICE STUB, PVC, 12"	LF	51		
29	REMOVAL OF SANITARY SEWER, LESS THAN 36"	LF	5342		
30	STORM SEWER, TRENCHED, PVC, 4 INCH	LF	16		
31	STORM SEWER, TRENCHED, RCP, 12 INCH	LF	75		
32	STORM SEWER, TRENCHED, RCP, 15 INCH	LF	1890		
33	STORM SEWER, TRENCHED, RCP, 18 INCH	LF	1669		
34	STORM SEWER, TRENCHED, RCP, 24 INCH	LF	1337		
35	STORM SEWER, TRENCHED, RCP, 36 INCH	LF	82		
36	STORM SEWER, TRENCHED, RCP, 48 INCH	LF	199		
37	STORM SEWER WITH CASING PIPE, TRENCHLESS, RCP, 48 INCH	LF	75		
38	REMOVAL OF STORM SEWER, LESS THAN 36 INCH	LF	3504		
39	STORM SEWER ABANDONMENT, PLUG	LF	40		
40	SPECIAL PIPE CONNECTION, TYPE PC-1, CONCRETE COLLAR CONNECTION	EA	1		
41	TRENCHDRAIN, HDPE, 6 INCH	LF	113		
42	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 12"	LF	2148		
43	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 10"	LF	341		
44	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 8"	LF	55		
45	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 6"	LF	896		
46	WATER MAIN CASING PIPE, TRENCHLESS, RESTRAINED JOINT DUCTILE IRON CL. 52, 8"	LF	108		
47	FITTINGS	LBS	2994		
48	WATER SERVICE STUB, DIP, 6-INCH	EA	3		
49	WATER SERVICE STUB, COPPER, 1-1/2-INCH	EA	2		

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ITEM NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT PRICE	AMOUNT
50	WATER SERVICE STUB, COPPER, 1-INCH	EA	11		
51	VALVE, GATE VALVE, MECHANICAL JOINT, 12"	EA	6		
52	VALVE, GATE VALVE, MECHANICAL JOINT, 10"	EA	1		
53	VALVE, GATE VALVE, MECHANICAL JOINT, 8"	EA	1		
54	VALVE, GATE VALVE, MECHANICAL JOINT, 6"	EA	5		
55	TAPPING SLEEVE, 12"x8"	EA	1		
56	TAPPING SLEEVE, 10"x10"	EA	2		
57	TAPPING SLEEVE, 8"x6"	EA	1		
58	TAPPING SLEEVE, 6"x6"	EA	4		
59	HYDRANT, ASSEMBLY	EA	8		
60	MANHOLE TYPE SW-301, 60 INCH	EA	17		
61	MANHOLE TYPE SW-301, 72 INCH	EA	1		
62	MANHOLE TYPE SW-401, 60 INCH	EA	11		
63	MANHOLE TYPE SW-401, 72 INCH	EA	1		
64	MANHOLE TYPE SW-401, 84 INCH	EA	2		
65	MANHOLE TYPE SW-403	EA	3		
66	INTAKE TYPE SW-501	EA	39		
67	INTAKE TYPE SW-502, 60 INCH	EA	1		
68	INTAKE TYPE SW-503	EA	12		
69	INTAKE TYPE SW-505	EA	33		
70	INTAKE TYPE SW-506	EA	5		
71	INTAKE TYPE SW-511	EA	1		
72	INTAKE TYPE SW-512, 24 INCH	EA	4		
73	DROP CONNECTION, SW-307	EA	11		
74	MANHOLE ADJUSTMENT, MINOR	EA	9		
75	MANHOLE ADJUSTMENT, MAJOR	EA	7		
76	CONNECTION TO EXISTING MANHOLE	EA	11		
77	REMOVE MANHOLE	EA	41		
78	REMOVE INTAKE	EA	43		
79	GATEWELL TOP REPLACEMENT	EA	1		
80	PAVEMENT, PCC, 8 INCH	SY	3935		
81	PAVEMENT, PCC, 10 INCH	SY	23142		
82	PAVEMENT, PCC, 18 INCH	SY	220		
83	CURB AND GUTTER, 18 INCH, 6 INCH THICK	LF	373		
84	BEAM CURB	LF	517		
85	PCC PAVEMENT SAMPLES AND TESTING	LS	1		

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ITEM NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT PRICE	AMOUNT
86	PAVEMENT OR OVERLAY, HMA, 4 INCH	SY	1544		
87	REMOVAL OF SIDEWALK	SY	6756		
88	REMOVAL OF DRIVEWAY	SY	4330		
89	CONCRETE WALK, PCC, 5 IN.	SY	7177		
90	CONCRETE WALK, PCC, 6 IN.	SY	864		
91	MEDIAN CONCRETE, PCC, 5 IN.	SY	1535		
92	CONCRETE UNIT PAVERS WITH SAND SETTING BED & PCC SUBBASE	SF	12148		
93	HISTORIC PAVERS, TYPE A WITH SAND SETTING BED & PCC SUBBASE (PAVERS FURNISHED BY CITY)	SF	4689		
94	CROSSWALK PAVERS WITH 3/4" ASPHALT SETTING BED	SF	2321		
95	DETECTABLE WARNING	SF	991		
96	DRIVEWAY, PAVED, PCC, 7 INCH	SY	2599		
97	CONCRETE BAND, 12" WIDTH	SF	1226		
98	CONCRETE BAND, 18" WIDTH	SF	10256		
99	PAVEMENT REMOVAL	SY	36733		
100	TRAFFIC SIGNAL, IOWA AVENUE INTERSECTION	LS	1		
101	TRAFFIC SIGNAL, CEDAR STREET INTERSECTION	LS	1		
102	TRAFFIC SIGNAL, OAK STREET INTERSECTION	LS	1		
103	PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE	STA	248		
104	PAINTED SYMBOLS AND LEGENDS	EA	80		
105	PAVEMENT MARKINGS REMOVED	STA	23		
106	SEEDING, FERTILIZING & HYDROMULCHING	AC	4.1		
107	SOD	SQ	140		
108	DECIDUOUS SHRUBS	EA	250		
109	ORNAMENTAL TREE	EA	34		
110	PERENNIAL GROUND COVER (1 GAL)	EA	3655		
111	DECIDUOUS TREE	EA	70		
112	STRUCTURAL SOIL MIX	CY	290		
113	TREE GRATE AND FRAME	EA	8		
114	SWPPP PREPARATION	LS	1		
115	SWPPP MANAGEMENT	LS	1		
116	FILTER SOCKS, 20 INCH	LF	2000		
117	RIP RAP, EROSION STONE	TON	100		

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ITEM NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT PRICE	AMOUNT
118	SILT FENCE OR SILT FENCE DITCH CHECK	LF	2395		
119	STABILIZED CONSTRUCTION ENTRANCE	SY	890		
120	EROSION CONTROL MULCHING, HYDROMULCHING	ACRE	5		
121	INLET PROTECTION DEVICE, DROP IN PROTECTION	EA	114		
122	SEGMENTAL BLOCK RETAINING WALL	LS	1		
123	TYPE A CONCRETE STEPS, PCC	SF	36		
124	STEEL HANDRAIL	LF	16		
125	CONSTRUCTION SURVEY	LS	1		
126	MOBILIZATION	LS	1		
127	CONCRETE WASHOUT	LS	1		
128	OUTCROPPING BOULDER	EA	20		
129	BOULDER SEATWALLS	LF	150		
130	INTERSECTION MARKER	EA	4		
131	DISTRICT MONUMENT	EA	2		
132	KIOSK	EA	1		
133	STEEL BENCH	EA	6		
134	LITTER RECEPTACLE	EA	6		
135	BIKE RACK	EA	8		
136	HISTORIC MONUMENT AND PLAQUE SALVAGE AND REPLACE	EA	1		
137	REMOVE RETAINING WALL	LF	1519		
138	DUCT BANK, 3x2 CONFIGURATION	LF	3325		
139	DUCT BANK, 6X1 CONFIGURATION, PAPOOSE CREEK	LF	60		
140	DUCT BANK, 3X1 CONFIGURATION	LF	32		
141	VAULT, PRECAST, 7'x18'	EA	4		
142	ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 6-INCH	LF	5763		
143	ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 4-INCH	LF	667		
144	ELECTRICAL CONDUIT, OPEN CUT, HDPE PVC, 3-INCH	LF	330		
145	ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 2-INCH	LF	10990		
146	ELECTRICAL CONDUIT, TRENCHLESS, HDPE, VARIOUS SIZES	LF	54		
147	ELECTRICAL CONDUIT, TRENCHLESS, HDPE, VARIOUS SIZES	LF	48		

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ITEM NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT PRICE	AMOUNT
148	CASING PIPE, TRENCHLESS, STEEL, 14"x0.375", RAILROAD CROSSING NO. 1	LF	46		
149	SWITCHGEAR PAD	EA	2		
150	8'x8' TRANSFORMER PAD	EA	1		
151	3'x3' TRANSFORMER PAD	EA	3		
152	JUNCTION BOX, ELECTRICAL, 3'x6'	EA	2		
153	JUNCTION BOX, ELECTRICAL, 13"x24"	EA	16		
154	JUNCTION BOX, ELECTRICAL, 10" DIAMETER	EA	30		
155	VAULT, PRECAST, 6'x10'	EA	4		
156	FOUNDATION, STREET LIGHT	EA	50		
157	GFCI PEDESTAL	EA	15		
158	COMMUNICATION CONDUIT, OPEN CUT, HDPE, 2-INCH	LF	4917		
159	COMMUNICATION CONDUIT, OPEN CUT, HDPE, QUAD DUCT (4x1.5-INCH)	LF	2560		
160	COMMUNICATION CONDUIT, OPEN CUT, HDPE, 1-INCH	LF	2834		
161	HAND HOLE, COMMUNICATIONS, 30"x48"	EA	9		
162	HAND HOLE, COMMUNICATIONS, 17"x30"	EA	9		
163	HAND HOLE, COMMUNICATIONS, 10" DIAMETER	EA	1		
				TOTAL AMOUNT BID	

Company Name: _____

By: _____

_____
(Title)

Date: _____

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C. We further propose:

1. To do all extra work which may be required to complete the work contemplated at unit price or lump sum, to be agreed upon prior to starting such work.

2. To execute the form of contract with ten (10) days after Notice of Award is received and to complete all work by November 21st, 2018 with interim completion dates of June 30th, 2017, and November 22nd, 2017.

Contractor shall pay liquidated damages for noncompliance with said completion provisions at the rate of One Thousand Five Hundred dollars ($1,500.00) for each calendar day thereafter that the work remains incomplete beyond the June 30th, 2017 interim completion date and at the rate of One Thousand dollars ($1,000.00) for each calendar day thereafter that the work remains incomplete beyond the November 22nd, 2017 interim completion date and the November 21st, 2018 completion date. Contractor shall pay liquidated damages should construction activities exceed 210 working days in the amount of One Thousand dollars ($1,000.00) for each calendar day thereafter that the work remains incomplete beyond 210 working days if 210 working days are used prior to November 21st, 2018. Liquidated damages for failing to timely attain substantial completion and final completion are not additive and will not be imposed concurrently.

D. Attached, hereto, is an affidavit in proof that the undersigned Bidder has not colluded with any person in respect to this Bid or any other Bids or the submitting of Bids for the contract for which this Bid is submitted.

E. The undersigned Bidder states that this proposal is made in conformity with the Contract Documents and agrees that, in the event of any discrepancies or differences between any conditions of his proposal and the Contract Documents prepared by the Owner, the provisions of the latter shall prevail.

F. The total bid is based on estimated quantities, and the actual amount will be adjusted in accordance with the final determination of quantities involved, as explained in the Detailed Specifications. In case of error in the item totals as quoted, the proper figure based on the estimated quantities and the unit prices as quoted shall govern.

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G. The undersigned Bidder is prepared to submit the Bidders' Qualifications statement upon request.

Firm: _____

By: _____

_____
(Title)

_____
(Business Address)

(Seal - if bid is by a corporation)

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NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

EXHIBIT A

State of _____)
) ss.
County of _____)

(1) He is the _____ of _____, the Bidder that has submitted the attached Bid:

(2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham bid;

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement, or collusion or communication or conference with any other Bidder, firm, or person to fix the price or prices in the attached Bid or of any Bidder, or, to fix any, overhead, profit, or cost element of the bid price or the bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Muscatine or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant (Signed)

(Signed) _____

_____
Title

Subscribed and sworn to before me
this _____ day of _____, 2016.

_____

_____
Title

My commission expires _____

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NONCOLLUSION AFFIDAVIT OF SUBCONTRACTOR
EXHIBIT B

State of _____)
) ss.
County of _____)

_____, being first duly sworn, deposes and says that:

(1) He is the _____ of _____ _____, hereinafter referred to as the "Subcontractor";

(2) He is fully informed respecting the preparation and contents of the Subcontractor's Proposal submitted by the Subcontractor to _____, the Contractor for certain work in connection with the _____ Contract pertaining to the Mississippi Drive Corridor Project in Muscatine, Iowa;

(3) Such Subcontractor's Proposal is genuine and is not a collusive or sham bid;

(4) Neither the Subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement, or collusion or communication or conference with any other Bidder, firm, or person to fix the price or prices in the attached Bid or of any Bidder, or, to fix any overhead, profit, or cost element of the bid price or the bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of Muscatine or any person interested in the proposed Contract; and

(5) The price or prices quoted in the Subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

_____
Title

Subscribed and sworn to before me
this _____ day of _____, 2016.

_____

_____
Title
My commission expires _____

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STATEMENT OF BIDDER'S QUALIFICATIONS

EXHIBIT C

All questions must be answered and the data given must be clear and comprehensive. The statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

1. Name of Bidder.

2. Permanent main office address, including City, State & Zip Code.

3. When organized.

4. If a corporation, where incorporated.

5. How many years have you engaged in construction work under your present firm or trade name?

6. Contracts on Hand: Schedule these, showing gross amount of each contract and the appropriate anticipated dates of completion.

7. General character of work performed by your company.

8. Have you ever failed to complete any work awarded to you? If so, where and why?

9. Have you ever defaulted on a contract? If so, where and why?

10. List the more important contracts recently completed by you, stating the approximate gross cost for each, and the month and year completed.

11. List your major equipment <u>available for this contract</u>.

12. Experience in construction work similar in importance to this project.

13. Background and experience of the principal members of your organization including the officers.

14. Credit available: $_____.

15. Give bank reference.

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16. Will you upon request, fill out a detailed financial statement and furnish any other information that may be required by the City of Muscatine?

17. (a) Have you ever been a party to or otherwise involved in any action or legal proceeding involving matters related to race, color, nationality or religion? If so, give full details.

    (b) Have you ever been accused of discrimination based upon race, color, nationality, or religion in any action or legal proceeding, including any proceeding related to any Federal Agency? If so, give full details.

18. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the City of Muscatine in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated at _____ this _____ of _____
_____, 2017.

_____
(Name of Bidder)

By _____

Title _____

State of _____)
) ss
County of _____)

_____ being duly sworn, deposes and says that he is the _____ of _____ _____ and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this _____ day of _____, 2017.

_____
Notary Public

My Commission expires _____

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FORM OF CONTRACT

THIS AGREEMENT, made and entered into this ____ day of _____, 2017, by and between the City of Muscatine, Iowa, party of the first part, hereinafter referred to as the "City" and _____, party of the second part, hereinafter referred to as the "Contractor".

WITNESSETH

That the Contractor and the City for the consideration stated herein mutually agree as follows:

ARTICLE 1: Statement of work. The Contractor shall furnish all supervision, technical, personnel, labor, materials, machinery, tools, equipment, and services, including utility and transportation services and perform all work required for the construction of the Mississippi Drive Corridor Project, Muscatine, Iowa, all in strict accordance with the Contract Documents prepared by the City of Muscatine, Department of Public Works.

ARTICLE 2. The City will pay the Contractor for the performance of the contract, from funds legally available for that purpose. Payment will be made on the basis of an estimate equal to ninety-five (95) percent of the contract price, including materials, subject to approval of the City. The balance of the five (5) percent due to the Contractor will be made no earlier than thirty (30) days from the final acceptance of said work by the City.

The Contractor shall provide surety bond in the amount of 100% of the contract and shall guarantee the maintenance of the improvement for a period of two (2) years after its completion and acceptance by the City.

Completion Dates: All work shall be completed by November 21st, 2018 with interim completion dates of June 30th, 2017, and November 22nd, 2017.

The contract amount is $_____.

ARTICLE 3. Contract: The executed contract documents shall consist of the following:

a. This Agreement
b. Addenda Numbers_____
c. Plans
d. Notice to Bidders
e. Instruction to Bidders
f. Signed Copy of Proposal
g. Special Conditions
h. Detailed Specifications
i. Standard Specifications
j. General Conditions

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THIS AGREEMENT, together with other documents enumerated in this ARTICLE 3, with said other documents are as fully a part of the contract as if hereto attached or herein repeated, forms the contract between the parties hereto. In the event that any provision in any component part of this contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 3 shall govern, except as otherwise specifically stated.

IN WITNESS WHEREOF, the parties thereto have caused this AGREEMENT to be executed in triplicate original copies on the date and year first above written.

CITY OF MUSCATINE, IOWA	_____
	CONTRACTOR
_____	_____
By: Diana Broderson, Mayor	By:
	_____
	TITLE
ATTEST:_____	ATTEST:_____
By: Gregg Mandsager, City Administrator	
	_____
	TITLE

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PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS THAT, a Principal, hereinafter called the Contractor and

_____

(Here insert the legal title of Surety)

as Surety, hereinafter called the Surety, are held and firmly bound unto City of Muscatine, Muscatine County, Iowa as obligee, hereinafter called the Owner, in the amount of

_____

DOLLARS ($) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____, 2017, entered into a Contract with Owner for the

MISSISSIPPI DRIVE CORRIDOR PROJECT

in accordance with drawings and specifications prepared by the Department of Public Works, City of Muscatine, Iowa, which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then the obligation of this bond shall be null and void; otherwise it shall remain in full force and effect.

A. The Surety hereby waives notice of any alteration by Owner to be, in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for submission to Owner for completing the Contract in accordance with its terms and conditions, and upon determination by Owner and Surety of the lowest responsible Bidder, arrange for a contract between such Bidder and Owner, and make available as work progresses (even though there should be a default or a succession or defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price", as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the

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amount properly paid by Owner to Contractor.

B. The Contractor and his surety shall be obligated to remedy any defects in workmanship or materials that may develop in the improvements covered by this bond for a period of two (2) years from the date of acceptance of the improvements by the owner.

C. Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the contract falls due.

D. D. No right of action shall accrue to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of Owner.

IT IS A FURTHER CONDITION OF THIS OBLIGATION that the principal and surety shall, in accordance with the provisions of Chapter 573 of the Code of Iowa, pay to all persons, firms or corporations having contracts directly with the principal or with subcontractors all just claims due them for labor performed or materials furnished in the performance of the contract on account of which this bond is given.

The provisions of Chapter 573, Code of Iowa, are a part of this bond to the same extent as if they were expressly set out herein.

SIGNED AND SEALED THIS _____ DAY OF _____,
A.D. 2017.

IN THE PRESENCE OF: _____
PRINCIPAL

_____ _____
WITNESS TITLE

_____
SURETY

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Engineering – Southern Region
120 South Sixth Street Suite 900
Minneapolis, MN 55402
www.cpr.ca

CONTRACTOR-RAILROAD AGREEMENT

This Agreement is between_____("Contractor") and the SOO Line Railroad Company d/b/a Canadian Pacific with its principal place of business at 120 South Sixth Street, Suite 900 Minneapolis, MN, 55402 including its subsidiaries or parent corporations ("Railroad")

Contractor agrees that they shall provide the Railroad with proof of insurance as set forth below, prior to commencement of the, being anything done on, over or under the railroad right of way, hereinafter referred to as ("Work"). **Contractor requires a flagman at MP 219.37, Iowa Avenue, Ottumwa Subdivision, East Division, Muscatine, Iowa for the E Mississippi Drive Reconstruction Project .**

Contractor agrees to pay for flagging for the Work as follows:

1. For Railroad Flagman Service

Railroad Flagman Service Rates:

a. Estimated rates for the Railroad Flagman Service is $800 for an eight (8) Hour day.
b. Currently no overtime is approved for the Railroad Flagman Service.
c. Plus equipment & expenses (meals, mileage, etc.).

INDEMNIFICATION AND INSURANCE REQUIREMENTS

INDEMNIFICATION CLAUSE

Contractor agrees to defend, save harmless and indemnify the Railroad, its officers, directors, shareholders, agents, employees, successors and assigns from any loss, cost or damage by reason of Personal Injury or property damage of whatsoever nature or kind arising out of, or as a result of, the performance of the Work by the Contractor, its employees, agents or subcontractors.

INSURANCE

Contractor shall procure and maintain in effect at any time when any portion of the Work is being performed, the following insurance:

1. Comprehensive General Liability Insurance:

Comprehensive general liability insurance with a policy limit of not less than $2,000,000 per occurrence and $5,000,000 aggregate for bodily injury, death, and damage to or destruction of property (including the loss of use thereof). The policy will include those policy extensions commonly referred to as broad form completed operations, contractor's protective, collapse, and underground damage. The policy shall by its wording or by endorsement insure those

liabilities and obligations which this Agreement contemplates will be assumed by Contractor including liabilities and obligations to indemnify the Indemnified Parties. The policy shall be endorsed to require that CP be given not less than 30 days written notice in advance of cancellation or termination of the policy or of any change or amendment to the policy that restricts or reduces coverage. The policy shall be endorsed with a cross liability (severability of interest) endorsement in substantially the following form: "This policy shall insure each person, firm, or corporation hereunder in the same manner and to the same extent as if a separate policy had been issued to each, but the inclusion herein of more than one insured shall not operate to increase the limits of the insurance company's liabilities." The policy shall be endorsed to add the following as additional insured: SOO Line Railroad Company doing business as Canadian Pacific, and any railway company or contractor operating trains or rail equipment upon railway tracks in close proximity to the Property, together with the parent companies, subsidiaries, and affiliated companies of all of the foregoing (collectively, the Protected Parties). The policy shall also be endorsed to waive subrogation rights against the Protected Parties.

2. Automobile Liability and Property Damage Insurance:
Automobile liability and property damage insurance in an amount not less than $2,000,000, personal injury and property damage combined, covering the ownership, use, and operation of any motor vehicles and trailers licensed for use on public highways which are owned, leased, or controlled by Contractor and used in connection with the Work. The policy shall be endorsed to require that CP be given not less than 30 days written notice in advance of cancellation or termination of the policy or of any change or amendment to the policy that restricts or reduces coverage.

3. Workers Compensation Insurance:
Workers compensation insurance that meets the requirements of applicable state law.

4. Railroad Protective Liability Insurance: *<if applicable>*
Railroad protective liability insurance (occurrence form), in the name of the Soo Line Road Company d/b/a Canadian Pacific, with limits of no less than $2,000,000 per occurrence and $6,000,000 aggregate for personal injury and property damage.

5. Environmental Pollution Impairment Liability Insurance:
<if applicable>
Contractor's environmental Pollution Impairment liability insurance with a policy limit of not less than $5,000,000 per occurrence. The policy shall be endorsed to require that CP be given not less than 30 days written notice in advance of cancellation or termination of the policy or of any change or amendment to the policy that restricts or reduces coverage. The policy shall

be endorsed with a cross liability (severability of interest) endorsement in substantially the following form: "This policy shall insure each person, firm, or corporation hereunder in the same manner and to the same extent as if a separate policy had been issued to each, but the inclusion herein of more than one insured shall not operate to increase the limits of the insurance company's liabilities." The policy shall be endorsed to add the Protected Parties as additional insureds and to waive subrogation rights against the Protected Parties.

6. Other Policies of Insurance: *<if applicable>*

Such other insurance as may be necessary to protect the Protected Parties against certain other claims arising out of the Work, to wit:

a. claims under any workers' compensation law,
b. claims under the Federal Employer's Liability Act, and
c. any other claims for damages for personal injury or death.

7. Contractual Endorsement

Each policy of insurance shall include the following endorsement upon the certificate, or within the binder, policy or other contractual evidence signed by the insurer and in form acceptable to the SOO Line d/b/a CP:

Before Contractor enters the Property, CP must receive and approve certificates of insurance evidencing the coverage's required by sections 1, 2, and 3, 5, and 6, and endorsements 7 and CP must also receive and approve either the policy required by subparagraph 4 or a binder evidencing that that policy is in effect. CP reserves the right to demand a certified copy of any required policy, and Contractor shall provide such copy within 10 working days after CP shall give notice to demanding such copy. All of the required policies shall be issued by insurers acceptable to CP and shall be acceptable to CP in both form and substance. Contractor shall not enter the Property until all of the required policies have been approved in writing by CP if the contractor uses a subcontractor, the Contractor shall provide the required policies and shall, in addition, either require the subcontractor to provide insurance equivalent to that described herein (except that only one policy required by subparagraph 4 need be provided for the Work) or obtain endorsements to the contractor's policies naming the subcontractor as an additional insured party. If a subcontractor uses a sub-subcontractor, the sub-subcontractor shall either provide insurance equivalent to that required of the subcontractor or shall be named as an additional insured party on the contractor's or subcontractor's policies. In the event any required policy lapses, CP shall have the option of immediately terminating the work on premises, with or without notice to Contractor; such termination shall be without prejudice to CP's rights and privileges under this Agreement. The insurance coverage obtained pursuant to section "Insurance" and its sub-sections shall in no manner restrict or limit the liabilities assumed by Contractor under this Agreement.

Governing Law
This Agreement shall be construed and interpreted in accordance with the laws of the state in which the Property is located, without reference to the choice of law rules of that state.

THE PARTIES HEREBY AGREE AND ACCEPT THESE TERMS

NAME OF CONTRACTOR

_____

Address:

_____

_____

Phone:

_____

Accepted By:_____

Date:_____

SOO LINE RAILROAD COMPANY d/b/a CANADIAN PACIFIC

By: _____

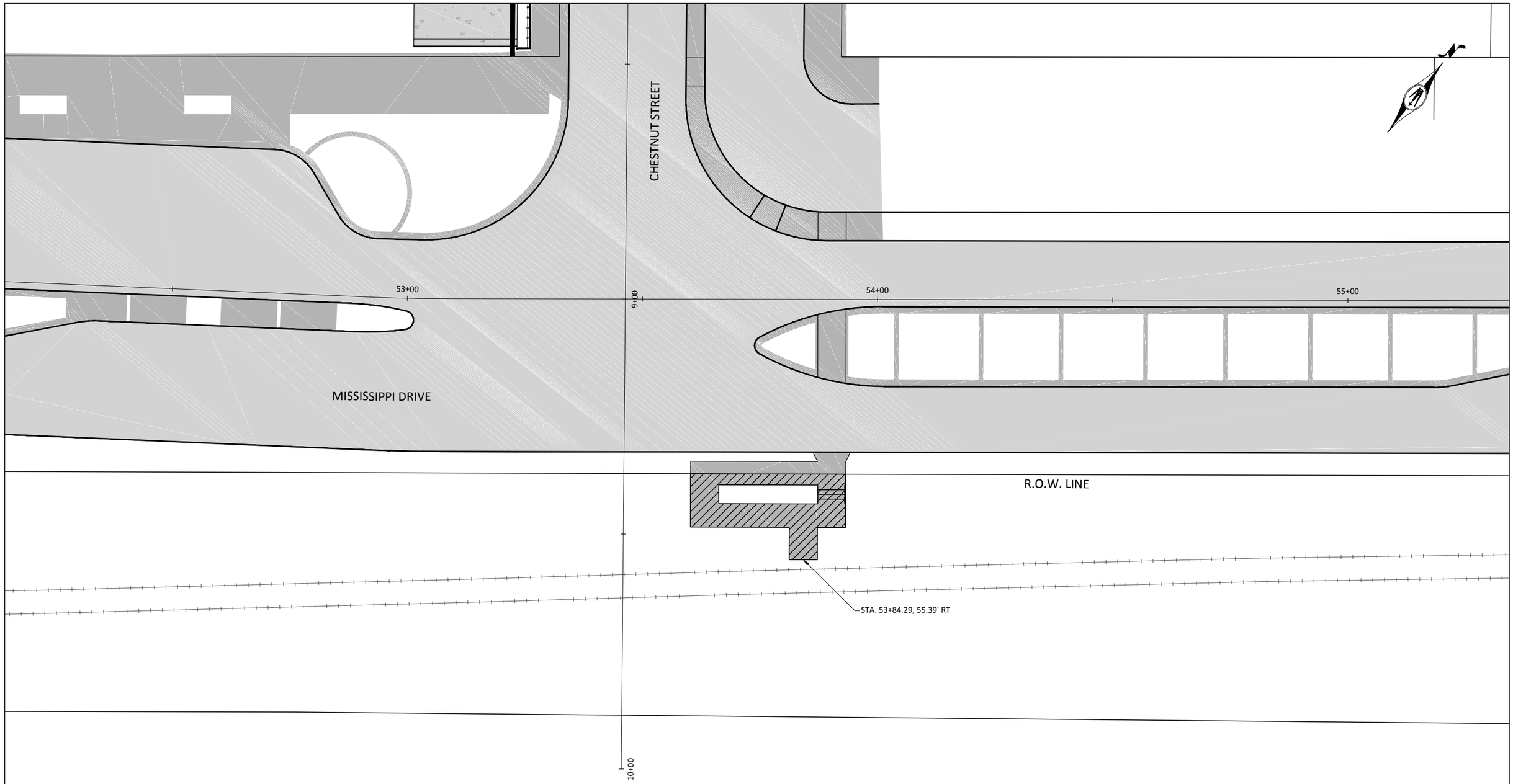
Its: _____

Date: _____

Railroad internal use only

Certificate of Insurance:

Named additional Insured Approved:_____ Limits approved:_____
Cancellation provision approved: _____ Work Authorized: _____ [initials]



HORIZ. SCALE 0 10 20 FEET

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MUSCATINE

BOLTON & MENK

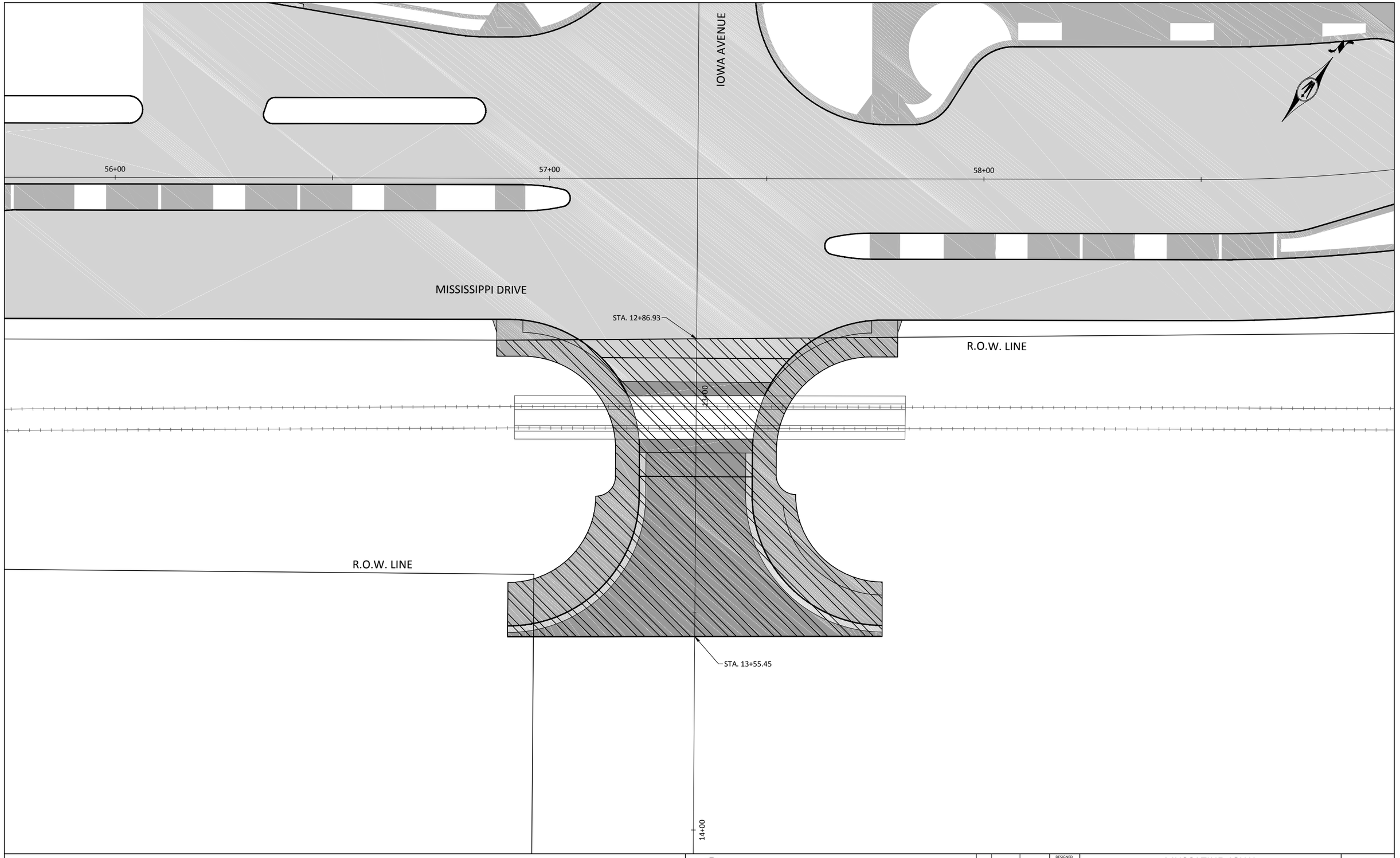
309 E 5TH STREET, SUITE 202
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
RIGHT-OF-WAY INFORMATION

SHEET 1



HORIZ. SCALE 0 10 20 FEET

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MUSCATINE

HDR

BOLTON & MENK

309 E 5TH STREET, SUITE 202
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

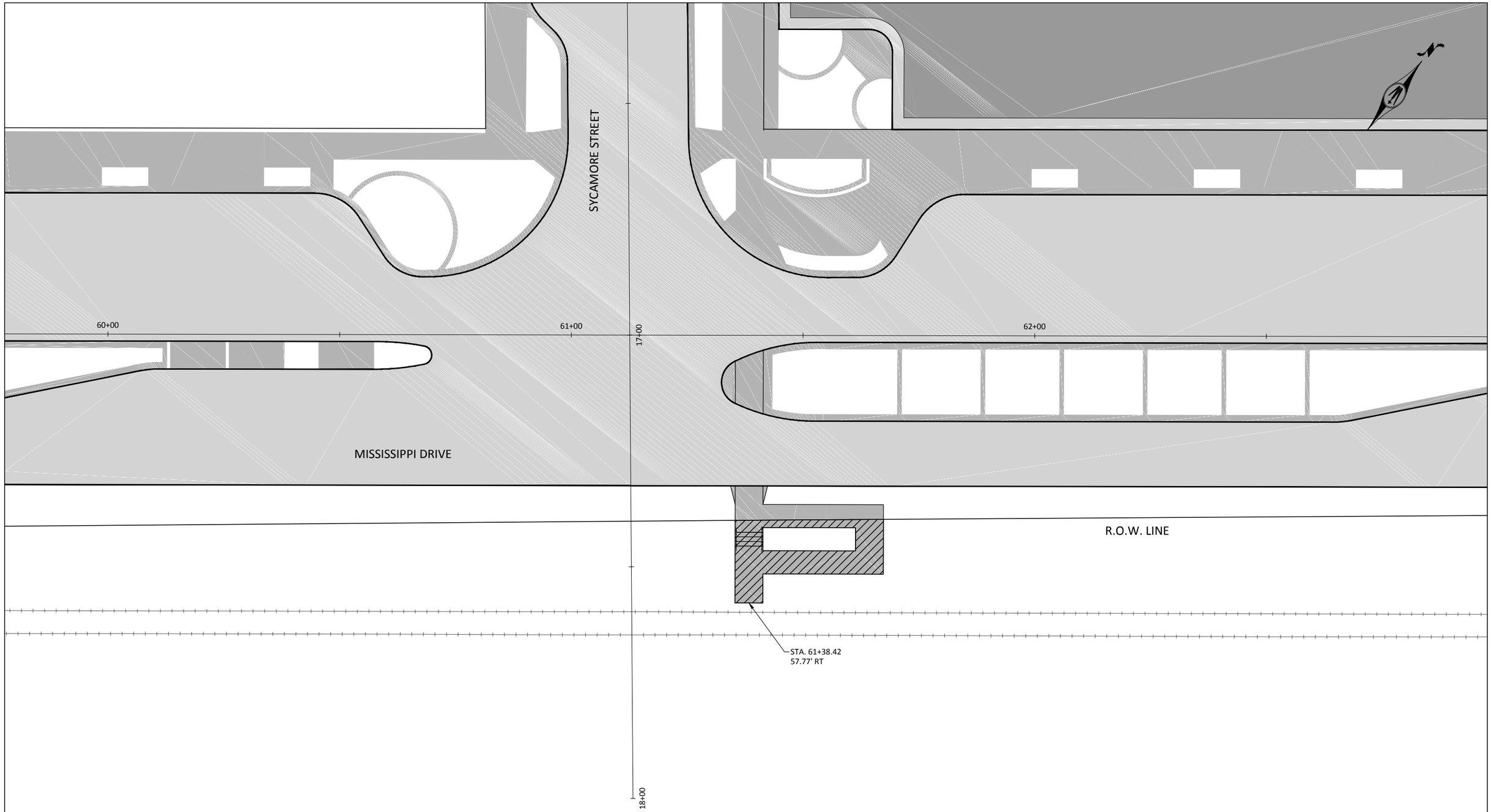
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

RIGHT-OF-WAY INFORMATION

SHEET 2



0 10 20
HORIZ. SCALE FEET

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MUSCATINE

HDR

BOLTON & MENK

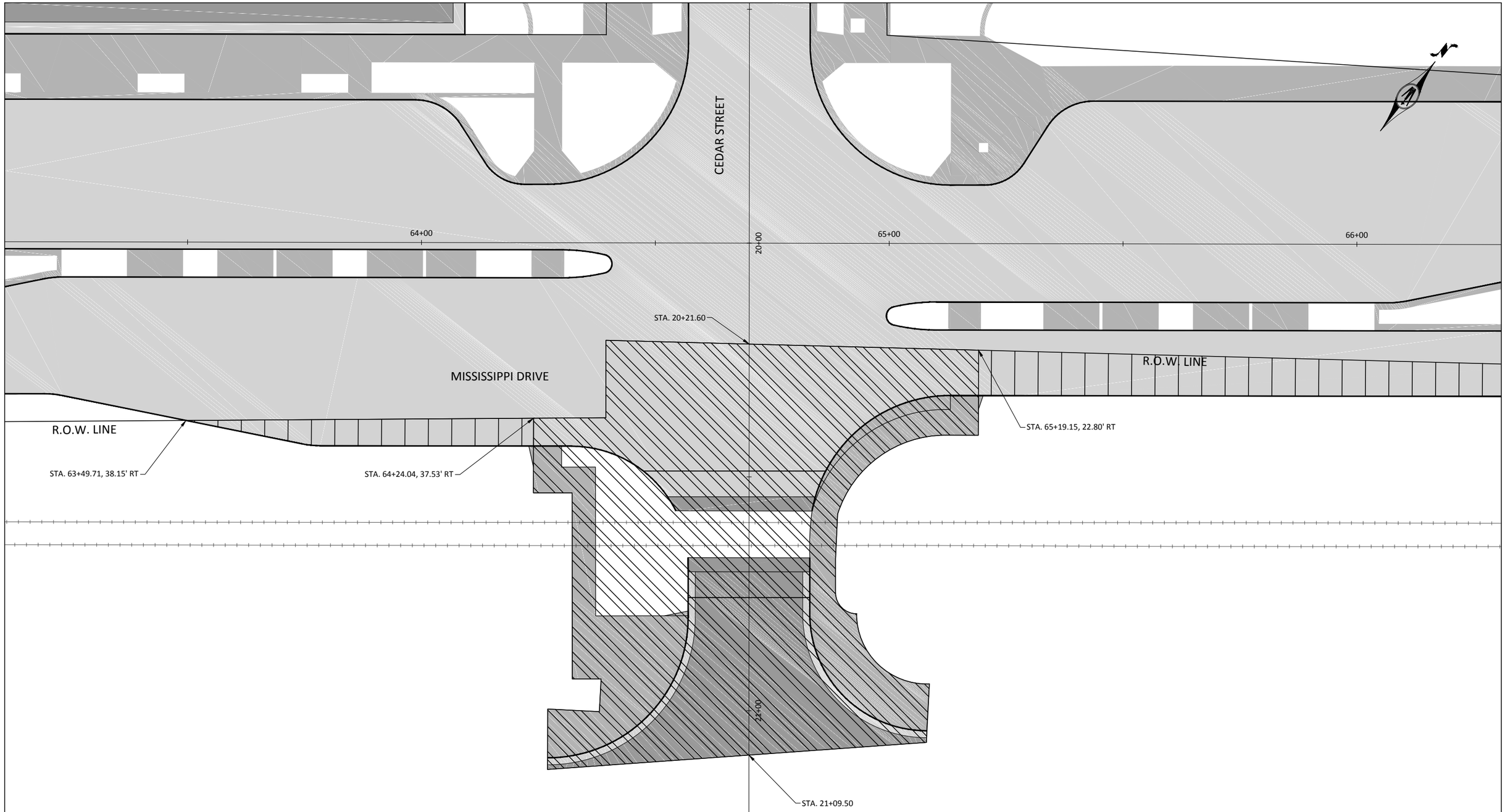
309 E 5TH STREET, SUITE 202
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
RIGHT-OF-WAY INFORMATION

SHEET 3



HORIZ. SCALE 0 10 20 FEET

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MUSCATINE

HDR

BOLTON & MENK

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DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

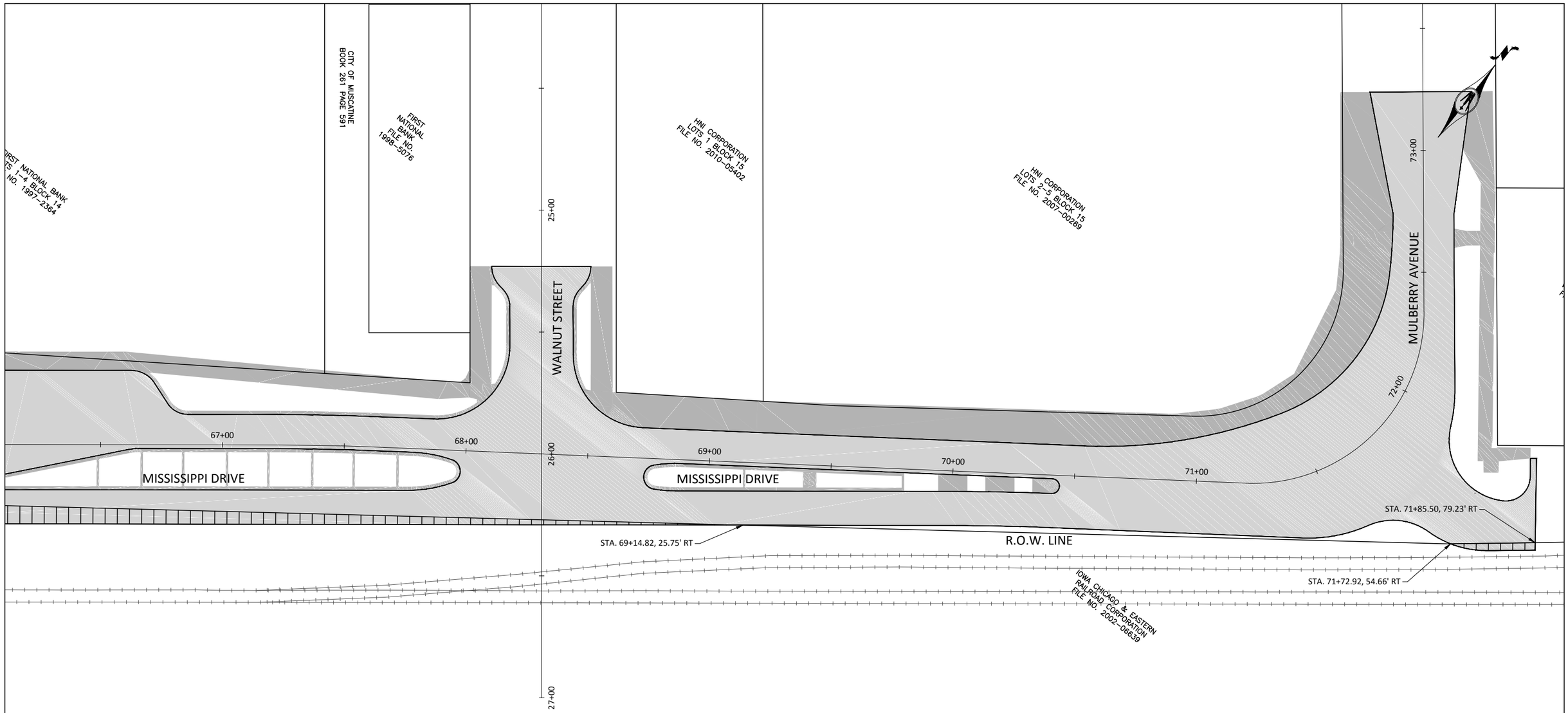
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

RIGHT-OF-WAY INFORMATION

SHEET 4



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MUSCATINE

HDR

BOLTON & MENK

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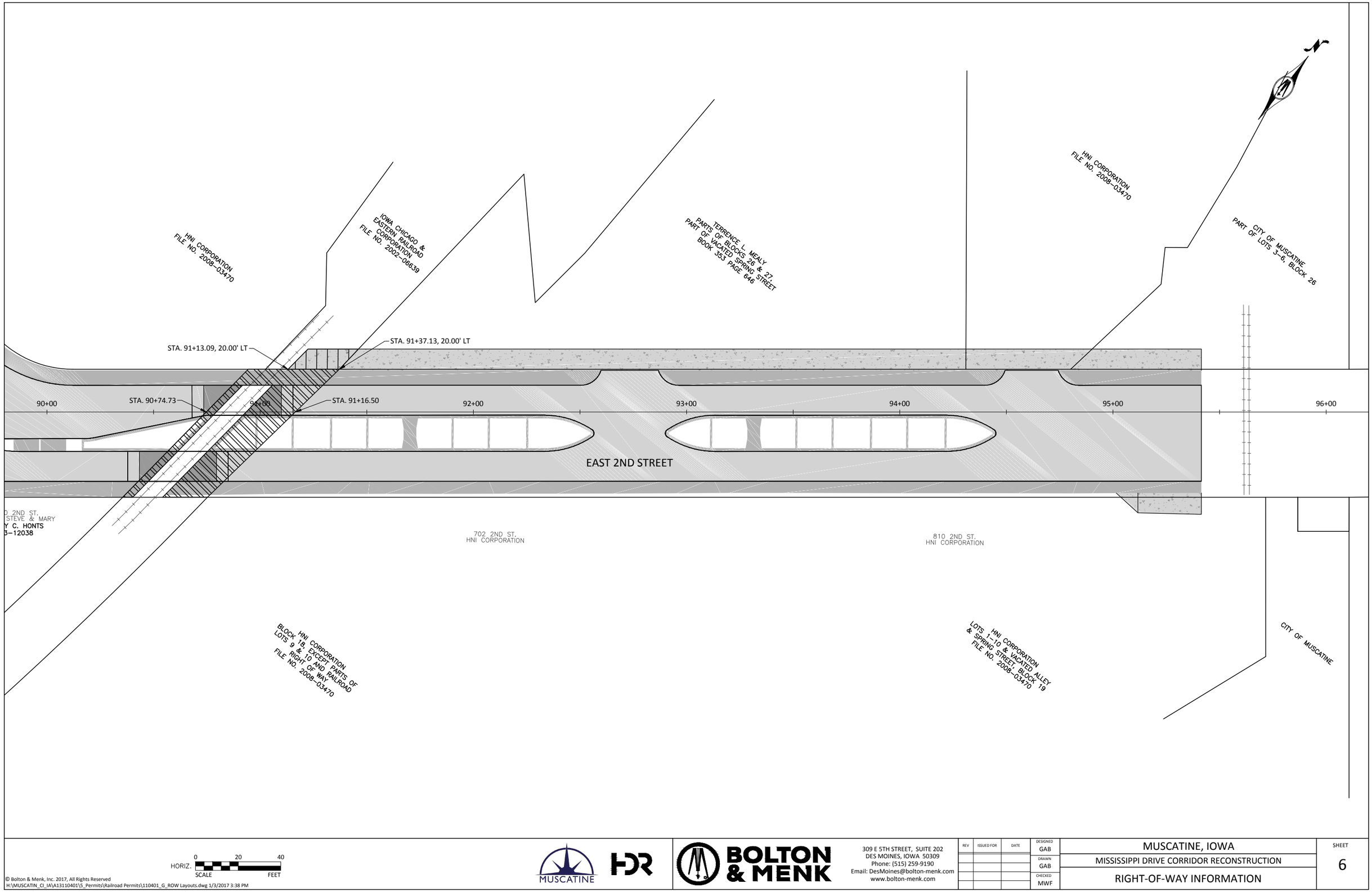
REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
RIGHT-OF-WAY INFORMATION

SHEET 5



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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
RIGHT-OF-WAY INFORMATION

SHEET 6

SPECIAL CONDITIONS
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SC-01 FORM OF DETAILED SPECIFICATIONS

The Detailed Specifications are of the abbreviated or outline type and the Contractor must supply omitted words or phrases by interference. Omissions of words or phrases such as "the contractor shall", "in conformance with", "shall be", "as noted on the plans", "according to the plans", "a", "an", "the", and "all" are intentional.

SC-02 DEFINITIONS

OWNER:	City of Muscatine, Iowa which is the Party of the First Part in the accompanying contract, acting through its authorized representatives, and referred to in these proceedings as "City" or "Owner".
ENGINEER:	A city Engineer of Muscatine, Iowa, or his authorized representative.
INSPECTOR:	The authorized representative of the Owner, assigned to the detailed inspection of the work or materials therefore, and to such other duties as may be delegated to him in these specifications.
CONTRACTOR:	The Party of the Second Part in the accompanying contract for the improvement covered by these specifications or his authorized representative.
SUBCONTRACTOR:	Any person, firm, or corporation who has, with the approval of the Owner, contracted with the Contractor to execute and perform in his stead all, or any part, of the contract.
SPECIFICATIONS:	The documents that set forth manner in which the proposed work is to be accomplished, which have been prepared by the Department of Public Works and their Consultants and approved by the Owner, official copies of which are now on file with the City Clerk.
WORK OR PROJECT:	The improvement that is to be made, the approximate quantities for which, and the location of, as set out in the NOTICE TO BIDDERS.

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PLANS:	Drawings that may indicate manner, materials, or requirements of this contract and are made a part of the Contract as if bound into the specifications.

SC-03 NOTICE TO PROCEED

The Contractor shall not commence work before receiving written notice to proceed and must begin within ten (10) days after such notice.

SC-04 MAINTENANCE AND CONTROL OF TRAFFIC

The Contractor shall conduct his work as to assure the least possible obstruction to access by the residents along the project. Suitable access shall mean a roadway of sufficient width, free from ruts, potholes and mud holes, and capable of carrying a passenger car without damage to the car. When access must be denied due to construction, the Contractor shall provide suitable access within 24 hours after responsible construction is completed. Whenever construction is stopped due to inclement weather, weekends, holidays or other reasons, suitable access shall be provided for all property owners.

Emergency vehicles shall be provided reasonable access at all times.

The Contractor shall maintain all equipment within the gross weight limits as licensed by the State of Iowa. Damage to existing sealcoat or concrete streets as a result of excessive loads shall be the Contractor's responsibility to repair. Damage to existing sealcoat or concrete streets as a result of construction equipment that maintains the licensed weight limit shall be the responsibility of the city.

All open excavations, machinery, material or other items on the project that could constitute a hazard shall be marked by lighted barricades to ensure the safety of the public. (See DS-01.03)

The Contractor shall furnish the name and telephone number of at least one individual who shall be responsible for maintaining project signs and barricades at night, weekends and any time workers are not present.

Existing traffic and street name signs which will interfere with construction will be removed and relocated by the Contractor at a location designated by the Engineer. Any signs damaged by the Contractor shall be repaired or replaced at no expense to the Owner.

SC-05 COPIES OF PLANS & SPECIFICATIONS

After award of contract, the Owner will furnish the Contractor three (3) sets of plans and specifications. Additional sets will be available upon request.

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SC-06 RIGHT-OF-WAY

All construction activity will be on rights-of-way provided by Owner.

SC-07 CONSTRUCTION FACILITIES

Limited storage space for materials and equipment will be available within portions of the right-of-way provided for construction.

All storage areas will be subject to approval.

The Contractor will arrange for any utilities required for construction facilities, and all expense will be borne by the Contractor.

SC-08 SALVAGE

All asphalt millings belong to the City and shall be delivered to the City maintenance yards located at 1459 Washington Street. Any items to be salvaged by the Contractor will be so noted on the plans or in the Detailed Specifications.

SC-09 WASTE SITE

A waste site for rubble and miscellaneous non-asphalt material will be provided and specified by the Engineer.

SC-10 INSURANCE

The Contractor shall purchase and maintain throughout the construction period, insurance in the following minimum requirements, and the coverage must be written in a company that has a Best's rating of B+ or better:

(1) Worker's compensation insurance including Employer's Liability and Occupation disease covering all Iowa employees for statutory Iowa benefits who perform any of the obligations assumed by the Contractor under the contract. The policy will contain broad form all states endorsement.
(2) Comprehensive General Liability, including independent contractors, completed operations and products, contractual liability, broad form property damage, personal injury, and X, C, and U coverage; coverages must meet the following limits. Deductibles on bodily injury are not acceptable:

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COVERAGE	MINIMUM LIMITS
Bodily Injury or Death	$1,000,000 each occurrence $5,000,000 aggregate
Property Damage	$1,000,000 each occurrence
Combined Single Limit	$1,000,000 each occurrence
Umbrella Liability Coverage	$2,000,000 Total

(3) Comprehensive General Automobile liability insurance on all self-propelled vehicles not covered under general liability and used in connection with the Contract, whether owner, non-owner, or hired:

COVERAGE	MINIMUM LIMITS
Bodily Injury or Death	$1,000,000 each occurrence
Property Damage	$1,000,000 each occurrence
Option: Combined Single Limit	$1,000,000 each occurrence

The Owner shall have the right at any time to require public liability insurance and property damage liability insurance greater than those required in the above paragraphs. In any such event, the additional premium or premiums payable solely as the result of such additional insurance shall be added to the bid price.

Any reductions in limits or coverages or exceptions to the insurance requirements can be made if requested in writing and mutually agreed to.

The Contractor shall furnish to the Owner, Certificates of Insurance evidencing compliance with the foregoing requirements before commencing any operations under this contract. (These Certificates shall contain a provision that the coverage afforded under the policies will not be canceled or materially changed until at least thirty (30) days prior written notice has been given to the Owner and Engineer).

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SC-11 CONTRACT TERMINATION

Provisions contained in Chapter 573A Code of Iowa providing for the termination of contracts in construction of public improvements when construction is stopped because of national emergency shall apply to and be a part of this contract and binding on all parties including subcontractors and sureties upon any bond given or filed in connection therewith.

SC-12 CODES AND STANDARDS

a. Perform work in accordance with best present day installation and manufacturing practices; conform to "Manual of Accident Prevention in Construction" by the Associated General Contractors of America, Inc., and Iowa Employment Safety Commission requirements.

b. Comply with all applicable laws, building and construction codes, and requirements of governmental agencies under those jurisdiction work is being performed; fees for permits and licenses shall be paid by Contractor.

c. Unless specifically noted to the contrary, conform with and test in accordance with applicable sections of latest revisions of codes and standards listed in Detailed Specifications.

d. Conflicts:

    1. Between referenced codes and standards: code or standard establishing more stringent requirements shall be followed.

    2. Between referenced codes and standards and specifications and/or plans: one establishing more stringent requirements shall be followed.

    3. Between specifications and plans: plans shall govern.

e. All work included under this Contract shall be done in accordance with the Occupational Safety and Health Act of 1970 (Williams-Steiger Act) as amended and enforced by the governmental authority responsible for the local enforcement of the Act. Enforcement and responsibility for fulfilling this provision of the specifications shall rest solely with the contractor, his superintendents, and his foreman, and in no way shall rest with the Owner or the Engineer.

f. All work included under this contract shall be done in accordance with the Secretary of Labor's Safety and Health Standards established under PL 31-54.

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SC-13 SURVEYS AND STAKING (Applicable Only When Construction Survey is not a Bid Item)

The Contractor will be responsible for any survey and/or staking required and will be incidental to the project.

SC-14 MATERIAL TEST AND CERTIFICATION

Material tests or certification will be required on all materials (pre-cast concrete structures included) incorporated in the project. Such testing and certification costs shall be paid for by the Contractor. Two (2) copies of the test results or certification should be filed with the Engineer prior to the material usage.

The class, date of manufacture, and trademark shall be plainly marked or stenciled on the inside of each segment of reinforced concrete pipe not later than 24 hours after the pipe is made.

SC-15 PAYMENT

Separate payment will be made for only those items specifically listed in the proposal. Payment will be made for the quantities of work completed in accordance with Item DS-05 included in the Detailed Specifications.

Payment will also be made in accordance with the Notice to Bidders.

SC-16 COORDINATION OF CONSTRUCTION BY THE CONTRACTOR

Coordination work with other contractors, Owner and Engineer to assure orderly and expeditious progress of work.

Select order of work and establish schedule of working hours for construction, subject to approval of Owner and Engineer.

Maintain existing water systems, sewer systems, gas systems, electrical utilities, highways and railroads in substantially continuous operation during construction, unless specifically permitted otherwise by Engineer or other authority.

Perform work hazardous to operation of existing water systems, sewer systems, gas systems, electrical utilities, railroads and highways, or which will require interruption of service, at times specifically approved by Owner and Engineer, or authority in charge of specific utility or service involved.

The Contractor shall be responsible for giving advance notice to all public and private utility companies of his work and use all necessary precautions to prevent damage to all utilities. The

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Contractor shall be held responsible for all damages and will bear the cost of any repairs or damages caused by his neglect.

Make any temporary connections necessary for maintaining service during course of work and continued operation of sewer system at Contractor's expense.

Make temporary connections in workmanlike manner; avoid hazards to personnel or service.

Remove temporary connections after permanent connections are made.

Schedule construction to minimize interruptions to utility service or use of street barricades and detours.

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SC-17 SANITARY FACILITIES

Sanitary facilities shall be provided by Contractor for use of all construction personnel, including those of other contractors, for the duration of the project, as follows:

Facilities shall consist of chemical units, complete with weather-tight enclosure adequately ventilated, and equipped with latching door.

Chemical units shall be maintained weekly or at lesser periods if determined necessary. Chemical units shall be in accordance with the rules and regulations of the locality of the project (state, county or city).

Contractor shall furnish toilet paper for the chemical units and shall replenish supply whenever required.

Sanitary facilities remain property of the Contractor and, upon completion of the work, shall be removed from the site.

SC-18 MINOR WORK

Any minor work not specifically mentioned in the specifications or shown on the plans but obviously necessary for the proper completion of the work shall be considered as being a part of and included in the contract and shall be executed in the proper manner and the contractor shall not be entitled to extra or additional compensation for same.

SC-19 SITE CLEANUP

The Contractor shall be responsible for removal of all debris remaining at the project site, which is the result of the various construction operations. The final cleanup of the project site must be completed to the satisfaction of the Owner and Engineer before final payment will be made.

SC-20 FINAL INSPECTION AND ACCEPTANCE

The Contractor shall notify the Engineer when work is considered to be complete and ready for final inspection.

The Engineer, after determining that the work is ready for final inspection and giving ten (10) days notice to the Contractor, will make final inspection and tests he deems necessary to determine that provisions of the specifications are satisfied.

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The Owner will not accept work or make final payment to the Contractor until the Engineer has certified that the work of the Contractor is complete and in conformance with the specifications.

SC-21 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

The Contractor assumes full responsibility for the safekeeping of all materials and equipment and for all unfinished work until final acceptance by the Owner, and if any of it be damaged or be destroyed from any cause, he shall replace it at his own expense.

The Contractor shall indemnify and save harmless the Owner against any liens for nonpayment of his bills in connection with the contract work. The Contractor shall furnish the Owner satisfactory evidence that all persons who have done work or furnished materials, equipment, or service of any type under this contract have been fully paid prior to the acceptance of the work by the Owner.

Contractor will indemnify, defend, keep and save harmless, Owner, its agents, officials and employees against all suits or claims that may be based on bodily injury to persons or damage to property of others, or personal injury including libel and slander that is the result of an error, omission or negligent act of Contractor or any person employed by the Contractor, sub-contractor or any person employed by the Contractor, sub-contractor or agent of either.

If the contract involved construction of a structure that would normally be the subject of builders risk insurance, Contractor will purchase such a policy for the full-completed value of the structure, with allowable exclusions. This policy will be written on an "all risk" basis. The named insured will include the owner, general contractor, and any subcontractors as their interest may appear. A deductible of 2% of the completed value with a maximum of $5,000 will be permitted.

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SPECIAL PROVISIONS
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01 – Section 7030 – Sidewalks, Shared Use Paths, and Driveways Special Provisions.....SP 3-4
02 – Section 9030 – Plant Material and Planting Special Provisions.....SP 5-6

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SP-01 SECTION 7030 – SIDEWALKS, SHARED USE PATHS, AND DRIVEWAYS SPECIAL PROVISIONS

*This special provision amends Section 7030 as it pertains to the following bid items:

- Concrete unit pavers, Type B & C, with sand setting bed and PCC subbase
- Historic pavers, Type A, with sand setting bed and PCC subbase (pavers furnished by City)
- Crosswalk concrete unit pavers, Type D, on concrete base with 3/4" asphalt setting bed
- Detectable warnings

1.03 Submittals: Add the following to item C.

C. Concrete unit paver types and source, manufacturer specifications, HMA setting bed mix design and gradation reports, samples of each type of paver showing color and texture, and polymeric sand joint filler.

1.08 Measurement and Payment: Item F covers the measurement and payment for all concrete unit pavers with concrete subbase. Delete item 1. Revise item 2 per the following.

F. Concrete Unit Pavers

1. Delete.

2. Concrete Unit Pavers with Concrete Base:

a. Measurement: Measurement will be in square foot (SF) for the area of concrete unit pavers placed on a concrete base. The area of the concrete base will not be measured separately.

b. Payment: Payment will be at the unit price per square foot (SF) for the area of concrete unit pavers placed on concrete base.

c. Includes: Unit price includes, but is not limited to, Subgrade preparation, concrete base, rebar, HMA setting bed (if required by specified installation), neoprene asphalt mastic (if required by specified installation), concrete unit pavers and polymeric sand joint filler.

2.03 Brick Pavers: Replace text with the following.

A. Refer to Sheet T.01 of the contract documents for list of concrete unit paver types, color and manufacturer information.

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B. Contractor shall furnish an additional 5% of each paver type to Owner at completion of project, palletized and delivered to City yard. Cost is incidental to paver unit bid price.

2.06 Brick Joint Filler: Replace text with the following.

A. Joint filler for concrete unit pavers shall consist of polymeric sand. Acceptable products are Alliance – Gator Maxx or Techniseal NextGel, color to be approved by Engineer.

B. Contractor shall furnish two (2) additional bags of joint filler to Owner at completion of project, delivered to City yard. Cost is incidental to paver unit bid price.

2.07 Detectable Warnings: Replace text with the following.

Refer to contract documents for a description of detectable warning panel, size and location.

3.06 Brick Sidewalks: This section shall apply to concrete unit pavers set on concrete base. Refer to contract documents for installation details and manufacturer standard specifications.

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SP-02 SECTION 9030 – PLANT MATERIAL AND PLANTING SPECIAL PROVISIONS

*This special provision amends Section 9030 as it pertains to the following bid items:

- Deciduous Shrubs
- Ornamental Trees
- Perennial Ground Cover (1 Gal.)
- Deciduous Trees

1.08 Measurement and Payment: Replace with the following.

1. Measurement: Each tree, shrub, groundcover or perennial plant accepted in place will be counted. Amended planting soil shall be considered incidental to plant bid items.

2. Payment: Payment will be at the unit price for each tree, shrub, or groundcover perennial plant. Payment will be made according to the following:

a. 100% of unit price at initial acceptance (less retainage). Initial acceptance will be determined by Engineer. Plant material shall be thriving, fully maintained and show no signs of stress. Upon substantial completion of entire project, a one-year warranty period will commence. Contractor shall provide one-year warranty certificate with start and finish dates as directed by Engineer. Contractor shall maintain all plant material as necessary, including watering, to ensure healthy, vigorous plant material throughout warranty period.

b. At end of one-year warranty period, the Contractor and Engineer will conduct a thorough review of all plant material. Any plant material not thriving shall be replaced with same size, species and quality as originally planted, per contract documents, at no additional cost to the Owner. A one-year warranty period will apply to all replacement plant material.

3. Includes: Unit price includes, but is not limited to, delivery, excavation, installation, watering, placing amended planting soil, backfill, mulching, wrapping, staking or guying, herbicide, maintenance during establishment and warranty periods, and replacements.

2.02 Mulch: Replace with the following.

A. Finely shredded, hardwood mulch.

B. Particle sizes ranging from 0.25-0.5 inch diameter and maximum 3 inches in length.

C. Green or freshly chipped or shredded mulch shall be rejected.

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D. Mulch shall be free of weeds, weed seed, chaff, diseases, or other foreign material.

2.03 Backfill Material: Replace with the following.

A. Planting backfill shall consist of amended planting soil as indicated on contract documents. See 'T' Sheet Series for amended soil mix design.

B. Excavated soil from planting pits may be amended with compost and sand to the ratios described in amended planting soil notes. Existing soil must be approved for use.

C. Ensure backfill material is loose, friable, and free of clods and rocks 2 inches in diameter or larger. Do not use frozen or muddy soil as backfill material.

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TS-01 SECTION 02220 – STRUCTURAL PLANTING SOIL

PART 1 -- GENERAL

1.1 Summary

A. Section Includes:

1. All labor, materials, equipment, and supervision required to furnish and install the structural soil to finished grade for designated tree plantings, as shown on the Plan Sheets or directed by the Engineer.

1.2 Measurement and Payment

A. Structural Planting Soil:

1. Payment shall be per cubic yard and shall include all costs to supply, mix, haul, place and compact the structural soil material. All costs associated with subgrade preparation shall be included in this bid item. Excavation for structural soil will be paid separate, under common excavation bid item.

1.3 Submittals

A. Product labels and data sheets

B. Chemical analysis of structural soil

C. 1 Gallon sample of structural soil mix

PART 2 -- MATERIALS

2.1 Clay Loam

A. Clay Loam shall be a “loam” based on the “USDA classification system” as determined by mechanical analysis (ASTM D-422) and it shall be of uniform composition, without admixture of subsoil. It shall be free of stones greater than one-half inch, lumps, plants and their roots, debris and other extraneous matter over one inch in diameter or excess of smaller pieces of the same materials. It shall not contain toxic substances harmful to plant growth. It shall be obtained from naturally well-drained areas, which have never been stripped of topsoil before and have a history of satisfactory vegetative growth. Clay loam shall contain not less than 2% or more than 5% organic matter as determined by the loss on ignition of over-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 230 degrees F., plus or minus 9 degrees.

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B. Mechanical analysis for a Loam/Clay Loam shall be as follows:

Textural Class	% of Total Weight
Gravel	less than 5%
Sand	20-45%
Silt	20-50%
Clay	20-40%

C. Chemical analysis: Meet or be amended to meet the following criteria:

1. pH between 5.5 to 6.5.
2. Percent organic matter 2% - 6% by dry weight.
3. Nutrient levels as required by the testing laboratory recommendations for the type of plants to be grown in the soil.
4. Soluble salt less than 1.0 Millimho per cm.
5. Cation Exchange Capacity (CEC) greater than 10.
6. Carbon/Nitrogen Ratio less than 33:1.

D. No topsoil shall come from USDA - classified prime farmland.

2.2 Crushed Stone

A. Crushed Stone shall be either granite or limestone. The size of the crushed stone shall be 0.75 inches to 1.5 inches allowing for 5% to 10% to be greater than 1.5 inches, and 5% to 10% less than 0.75 inches.

B. Acceptable aggregate dimensions will not exceed 2.5:1.0 for any two dimensions chosen.

C. Minimum 90% with one fractured face, minimum 75% with two or more fractured faces.

D. Results of Aggregate Soundness Loss test shall not exceed 18%.

E. Losses from LA Abrasion tests shall not exceed 40%.

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2.3 Fertilizer

A. Commercial fertilizer shall comply with State and United States fertilizer laws. Fertilizer shall be formulated for mixing into the soil and be certified by the manufacturer to provide controlled release of nitrogen continuously for a period of no less than nine months and no more than 12 months.

B. Fertilizer percentages of weight of ingredients and application rates shall be as recommended by the soil testing results. Contractor tor to coordinate any required testing and action required.

2.4 Sulfur

A. Sulfur shall be commercial granular, 96% pure sulfur, delivered in containers with the name of the manufacturer, material and analysis appearing on the container.

B. Sulfur used to lower soil pH above 6.5 shall be ferrous sulfate formulation.

2.5 Lime

A. Agricultural limestone containing a minimum of 85% carbonates. Minimum gradation: 100% passing 10 mesh sieve; 98% passing 20 mesh sieve; 55% passing 60 mesh sieve and 40% passing 100 mesh sieve.

2.6 Hydrogel

A. Hydrogel shall be a potassium propenoate-propenamide copolymer Hydrogel (Gelscape® Hydrogel Tackifier) as manufactured by Amereq Corp. (800) 832-8788, or approved equal.

2.7 Water

A. The installing contractor shall be responsible to furnish his own supply of water (as needed)

2.8 Structural Soil Blend

A. A uniformly blended mixture of crushed stone, clay loam and hydrogel mixed in the following proportions:

Material	Unit of Weight
Specified Crushed Stone	100 units dry weight
Specified clay loam	20-25 units (to achieve minimum CBR of 50)

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Hydrogel	0.035 units dry weight
Moisture	ASTM D698/AASHTO T-99 optimum moisture

PART 3 -- EXECUTION

3.1 Mixing and Quality Control

A. All structural soil mixing shall be performed at the producer's yard using appropriate soil measuring, mixing and shredding equipment of sufficient capacity and capability to assure proper quality control and consistent mix ratios. No mixing of Structural Soil at the project site shall be permitted.

B. Should the independent laboratory test results of the clay loam reveal a need to amend it, to meet specifications, the amending materials should be added to the clay loam following the rates and recommendations provided by the licensed producer of the structural soil.

3.2 Underground Utilities and Subsurface Conditions

A. The installing contractor shall notify the engineer of any subsurface conditions which will affect the contractors ability to install the structural soil

B. The installing contractor shall locate and confirm all underground utility lines and structures prior to the start of any excavation

C. The installing contractor shall repair any underground utilities or foundations damaged during the progress of the is work

3.3 Site Preparation

A. Do not proceed with the installation of structural soil material until all walls, curbs, footings and utility work in the area have been installed. For site elements dependent on structural soil for foundation support, postpone installation of such elements until immediately after the installation of structural soil.

B. Excavate and compact the proposed subgrade to depths, slopes and widths as shown on the drawings. Maintain all required angles of repose of the adjacent materials as shown on the drawings. Do not over excavate compacted subgrades of adjacent pavement or structures.

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C. Do not proceed with the installation of structural soil until the confirmation of the subgrade elevation and compaction and all utility work in the area has been installed. All subsurface drainage systems shall be operational prior to installation of structural soil.

3.4 Installation of Structural Soil

A. Install structural soil in 6 inch lifts and compact each lift.

B. Compact all materials to at least 95% Proctor Density from a standard compaction curve AASHTO T 99 (ASTM D 698). No compaction shall occur when moisture content exceeds maximum as listed herein. Delay compaction if moisture content exceeds maximum allowable as directed by the engineer.

C. Bring structural soil to finished grades as shown on the drawings and protect from contamination as directed by the engineer.

D. The engineer may periodically check the material being delivered, prior to installation for color and texture consistency with the approved sample provided by the installing contractor as part of the submittal for structural soil. If the engineer determines that the delivered structural soil varies significantly from the approved samples, the engineer shall contact the licensed producer.

E. Structural soil should not be stockpiled long-term. Any structural soil not installed immediately should be protected by a tarp or other waterproof covering.

3.5 Clean-Up

A. Upon completion of the structural soil installation operations, clean areas within the contract limits. Remove all excess fills, soils and mix stockpiles and legally dispose of all waste materials, trash and debris. Remove all tools and equipment and provide a clean, clear site. Sweep, do not wash, all paving and other exposed surfaces of dirt and mud until the paving has been installed over the structural soil material. Do no washing until finished materials covering structural soil material are in place.

END OF SECTION

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TS–02 SECTION 02870 – SITE FURNISHINGS

PART 1 -- GENERAL

1.1 Summary

A. SECTION INCLUDES

1. Requirements for furnishing and installing site furnishings.

B. MEASUREMENT AND PAYMENT

1. Measurement and payment for site amenities shall be per unit quantity and shall include all equipment, materials, and labor to install site furnishings complete. Footings and/or attachment hardware are incidental to the unit price.

1.2 Submittals

A. Shop Drawings: Shop drawings to be submitted for each item, including color chips of the same material as the site furniture item.

B. Product Data: Submit manufacturer's assembly and installation drawings.

C. Color Samples: Submit color samples for approval prior ordering

1.3 Ordering, Delivery, Handling, and Storage

A. Contractor shall be responsible for execution of all phases of site furnishings work, including ordering, shipping, storage, and installation, and shall protect furnishing from damage by construction and clean-up activities following installation until acceptance of project by Owner.

PART 2 -- PRODUCTS

2.1 Benches

A. Victor Stanley

RBF-28 Steel Bench, 6' Length, Black
Andrew Hosmer
P.O. Drawer 330

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Dunkirk, MD 20754
Tel: 301.855.8300 ext. 323

B. Approved Equal

2.2 Litter Receptacle

A. Victor Stanley

SDC-36 (SteelSites Side Door Receptacle, Convex Lid, Keyed Lock, Black)
Andrew Hosmer
P.O. Drawer 330
Dunkirk, MD 20754
Tel: 301.855.8300 ext. 323

B. Approved Equal

2.3 Bike Racks

A. Victor Stanley

BFRE-161 (Freesia Bike Rack, with crossbar, surface mount, Black)
Andrew Hosmer
P.O. Drawer 330
Dunkirk, MD 20754
Tel: 301.855.8300 ext. 323

B. Approved Equal

PART 3 -- EXECUTION

3.1 General

A. Install all site furnishings at locations described on the Drawings.

3.2 Installation

A. Install all site furnishings as per manufacturer's recommendations.

END OF SECTION

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PART 4 -- GENERAL

4.1 Section Includes

A. Quarried limestone products for outcropping boulders and boulder seatwalls.

4.2 Measurement and Payment

A. Limestone Outcropping Boulders as indicated on the plans, complete-in-place will be measured and paid as per Each (EA) of outcropping boulder installed complete. Unit bid price shall include, but not limited to, furnish and install all items necessary to complete including outcropping boulder and aggregate base.

B. Limestone Boulder Seatwall as indicated on the plans, complete-in-place will be measured and paid as per Linear Foot (LF) of outcropping boulder seatwall. Unit bid price shall include, but not limited to, fabricating, furnish and install all items necessary to complete including outcropping boulder, and aggregate pins per contract documents.

1. Concrete base beneath outcropping seatwall will be paid at per Square Foot (SF) unit of 12” and 18” Concrete Band, see plan drawings for locations.

4.3 Submittals

A. Product Data: Provide data on stone units including source and description of type, finish, and size.

B. Shop Drawings:

1. Submit cutting and setting drawings indicating sizes, dimensions, sections, and profiles of stones; arrangement and provisions for jointing and anchoring.

C. Submit 3 samples showing, color range, vein direction, markings, surface finish of each product specified.

D. Submit stone fabricator's installation instructions

PART 5 -- PRODUCTS

5.1 Stone Supplier

A. Weber Stone Company

12791 Stone City Rd X28

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Anamosa, Iowa 52205
Chad Foley: 319-462-3581

B. Or approved Equal

5.2 Stone

A. Boulder Seatwall

1. Anamosa Limestone Custom Block
2. Color: Buff/Natural
3. Splitface front/back, natural top/bottom, w/ sawn/mitered jointing
4. Minimum width 18”, max. width 30”, varies as needed to maintain consistent radius on face of wall
5. See Boulder Seatwall details for face of wall radius and length for each wall.
6. Boulder seatwalls shall be tagged by each location by supplier prior to delivery to site. Stone supplier shall provide shop drawings indicating location of each section of each wall for installation.

B. Outcropping Boulders

1. Anamosa Limestone Outcropping
2. Color: Buff/natural
3. Natural surface, all sides
4. Size varies, 18”-24” depth x 24”-36” width x 18-24” height
5. See plans for locations, see outcropping details for installation

5.3 Anchoring Pins

A. STAINLESS STEEL PINS

1. 1/2” X 6” Stainless steel pins, two (2) per block, see contract documents for locations.

PART 6 -- EXECUTION

6.1 Preparation

A. Stone shall be brushed free of dust and foreign matter.

B. Wet stone sufficiently to take up surface absorption

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6.2 Setting

A. Boulder Seatwall

1. Dry fit boulder seatwall sections together prior to pinning in place.
2. Review mockup of each wall in place with Engineer prior to pinning.
3. Install boulder seatwalls per installation details in contract documents.
4. Mitered joints shall fit tight and be free of voids and gaps.
5. Upon completion, remove any jagged or sharp stone edges.

B. Outcropping Boulders

1. Engineer to approve boulder selection prior to installation. Any boulders not meeting the specified description, shall be rejected at Contractor's expense.
2. Upon placement of boulders, review final orientation with Engineer for any required field adjustments.

6.3 Cleaning

A. Keep stone work as clean as possible as work progresses. Upon completion clean stone thoroughly with water or detergent and water and fiber brushes. Thoroughly rinse when complete with clean water. Do NOT use acids or wire brushes.

B. Special consideration and protection shall be provided when brickwork is cleaned above the limestone. Strong acid compounds used for cleaning brick will burn and discolor the limestone.

END OF SECTION

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TS–04 04850 - STONE MASONRY

PART 1 - GENERAL

6.4 Section Includes

A. This section includes all labor, materials, equipment, supervision and items of pertinence required to furnish and install stone masonry work for the Intersection Marker, District Marker, and Kiosk.

B. This section includes specifications for unit masonry, stone veneer masonry and pre-cast stone caps.

6.5 Measurement and Payment

A. Stone Masonry shall be considered as an incidental to the associated bid items including: Intersection Marker, District Marker, and Kiosk. Refer to details shown on plans and the following.

6.6 Submittals

A. Shop Drawings

1. Stone masonry details shall be included in the shop drawings for each feature. Information shall include material type, finish, size, attachment, etc. necessary for complete installation.
2. All masonry work including unit masonry, veneer masonry and cap installation shall be covered by shop drawings.

B. Product Data: For the following products:

1. Stone Veneer manufacturer's data
2. CMU block manufacturer's data
3. Pre-cast stone caps manufacturer's data
4. Grout Mix design and data
5. Mortar Mix design and data
6. Waterproofing Membrane product data

C. Samples for Verification:

1. Pointing mortar/grout samples for color selection
2. Joint sealant for color selection

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3. Pre-cast stone cap for color and finish selection
4. Stone Veneer Mockups
   (a) 24”x24” mock-up for each feature showing typical joint connections, veneer sizing and finish
   (b) Sample to be approved and available on site during construction.
   (c) Mockups will be used for quality control and will not be a part of permanent construction.

D. Qualification Data

1. Submit data verifying qualifications and five (5) years of experience for manufacturer and installer of similar stone product. Include list of three (3) completed projects having similar scope with water feature work identified by name, location, date, reference names, and phone numbers.

6.7 Quality Assurance

A. Minimum 5 years of documented experience with work of similar scope and complexity required by this Project involving water feature design.

B. Single Source Responsibility for Pre-Cast Caps: Obtain pre-cast cap units of uniform texture and color, from one manufacturer for each different product required for each continuous surface of visually related surfaces.

C. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

D. Single Source Responsibility for Stone Veneer Materials: Obtain stone veneer of uniform quality, including color variations and surface texture, from one manufacturer for each component.

6.8 Delivery and Storage

A. Deliver materials to project site in undamaged condition.

B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, or other causes. Limit moisture absorption of concrete masonry units during delivery and until time of installation to the maximum percentage specified for Type I units for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest project site.

C. Store cementitious materials off the ground, under cover, and in dry location.

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D. Store aggregates where grading and other required characteristics can be maintained.

E. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

F. Precast concrete to be stored insecure area in original packaging. Protect from damage by other trades.

6.9 Field Conditions

A. Cold-Weather Requirements

1. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
2. Cold-weather procedures when ambient temperature falls below 40°F (4°C) or the temperature of masonry units is below 40°F (4°C).

B. Hot-Weather Requirements

1. Implement hot-weather construction procedures in accordance with ACI 530.1/ASCE 6/TMS 602.
2. Hot-weather procedures when ambient temperature exceeds 100°F (38°C), or exceeds 90°F(32°C) with a wind velocity greater than 8 mph.

PART 7 -- PRODUCTS

7.1 Precast Concrete Cap

A. Materials:

1. Portland Cement: ASTM C-150 specifications for Portland Cement.
2. Aggregates: All aggregates to meet ASTM C-33 specifications, cleaned, and properly graded to size. Aggregates shall be blended to meet individual project requirements.
3. Coloring: Pigments used shall be inorganic, resistant to alkalinity, and used per manufacturer's recommendations. Color and texture to be approved by Landscape Architect.
4. Reinforcement and Hardware: To conform to ACI and manufacturer's design.
   (a) Reinforce precast with deformed rods or wire or both as recommended by precast concrete manufacturer.
5. Caulks and Sealants: Urethane or polyurethane sealant, with color selected by Engineer from standard color palette.

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6. Sealer: Colorless, pure acrylic water-repellent penetrating sealer, to maintain natural look of concrete surface with no glue or gloss, darkening or color change.

B. Manufactured Units:

1. Sizing Tolerances: All units to conform to shop drawings, with 1/16" tolerance in dimensions.
2. Precast Surfaces and Edges:
   (a) All exposed edges to have minimum 1/8" chamfer, except where otherwise noted, to prevent chipping.
   (b) Finished surfaces to match approved color sample.
   (c) All precast concrete finished surfaces to be sealed with a sealer approved by manufacturer.

C. Manufacturers:

1. Wausau Tile, Inc., Terra-Form Division, Wausau, WI (800) 388-8728
2. Midwest Cast Stone (913) 371-3300
3. Edwards Cast Stone (563) 556-0535
4. Approved Equal.

7.2 Concrete Masonry Units

A. General: Comply with referenced standards and other requirements indicated below applicable to each form of concrete masonry unit required.

B. Concrete Masonry Pilaster Block: Provide units complying with characteristics indicated below for grade, type, face size, exposed face, and weight classification.

1. Grade N.
2. Size: Manufacturer's standard units with nominal face dimensions per shop drawings.
3. Type 1, moisture-controlled units. Cure units by ASTM Type 1 method.
4. Hollow Load-Bearing Block: Materials shall comply to ASTM C 90 for material and strength, and as follows:
   (a) Weight Classification: Normal weight.

7.3 Limestone Veneer

A. Splitface Limestone Veneer

1. Weber Stone Company

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12791 Stone City Rd X28
Anamosa, Iowa 52205
Chad Foley: 319-462-3581

2. See construction documents for type, size and finish.

7.4 Mortar and Grout Materials

A. Portland Cement: ASTM C 150, Type I, except Type III may be used for cold weather construction. Provide natural color or white cement as required to produce required mortar color.

B. Hydrated Lime: ASTM C 207, Type S.

C. Aggregate for Mortar: ASTM C 144, except for joints less than ¼" use aggregate graded with 100% passing the No. 16 sieve.

D. Aggregate for Grout: ASTM C 404

E. Water: Clean and potable

F. Mortar color: Submit samples to Engineer for Approval.

7.5 Masonry Cleaners

A. Manufacturer's standard strength general purpose cleaner designed for new masonry surfaces of type indicated; composed of blended organic and inorganic acids combined with special wetting systems and inhibitors, expressly approved for intended use by manufacturer of masonry units being cleaned.

1. Products: Subject to compliance with requirements, provide "Sure Klean" No. 600 Detergent; ProSoCo, Inc.

7.6 Mortar and Grout Mixes

A. Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, anti-freeze compounds or other admixtures, unless otherwise indicated. Do not use calcium chloride in mortar or grout.

B. Mixing: Combine and thoroughly mix cementitious, water, and aggregates in a mechanical batch mixer; comply with referenced ASTM standards for mixing time and water content.

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C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification, for types or mortar required, unless otherwise indicated.

1. Limit cementitious materials in mortar to Portland cement-lime
2. Use Type S mortar for all masonry.

D. Grout for Unit Masonry: Comply with ASTM C 476 for grout for use in construction of reinforced and non-reinforced unit masonry. Use grout of consistency indicated or, if not otherwise indicated, of consistency (fine or coarse) at time of placement which will completely fill all spaces intended to receive grout. Grout to have 3000 psi ultimate compressive strength.

7.7 Steel

A. Steel shall comply with ASTM 615 and be Grade 60.

B. Shop bends only

PART 8 -- EXECUTION

8.1 Installation

A. Cleaning Reinforcing: Before placing, remove loose rust, ice, and other coatings from reinforcing.

B. No stone veneer shall be installed until supporting structure is approved by owner's representative.

C. Install stone veneer with vertical end joints staggered randomly to form an offset pattern.

8.2 Construction Tolerances

A. Variation in Cross-Sectional Dimension: For all elements, from dimensions shown, do not exceed minus 1/4" nor plus 1/2"

B. Variation in Mortar joint Thickness: Do not exceed bed joint thickness indicated by more than plus or minus 1/8", with a maximum thickness limited to 1/2". Do not exceed head joint thickness indicated by more than plus or minus 1/8".

C. Setting cap:

1. Set accurately as shown on approved shop drawings.
2. Alignment of cap should be straight and true to all dimensions, not to vary more than 1/8" in length, height, or width.

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3. Install anchors as shown on details.
4. Fill joints between with manufacturer-approved joint sealant as specified in shop drawings.

8.3 Laying Stone Veneer

A. Lay out veneer in advance for accurate spacing of surface bond patterns with uniform joint widths and to accurately locate openings, movement-type joints, returns, and offsets. Avoid the use of less than half-size units at corners.

B. Pattern Bond: Lay exposed masonry in the bond pattern shown or, if not shown, lay in running bond with vertical joint in each course centered on units or courses above and below.

C. Stopping and Resuming Work: Rack back 1/2-unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly (if required) and remove loose masonry units and mortar prior to laying fresh masonry.

8.4 Mortar Bedding And Jointing

A. Lay solid brick size masonry units with completely filled bed and head joint; butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.

B. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and in all courses of piers, columns and pilasters, and where adjacent to cells or cavities to be reinforced or filled with concrete or grout. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.

C. Set stone caps in full bed or mortar. Fill dowel, anchor, and similar holes solid. Wet stone joint surface thoroughly before setting; for stone surfaces which are soiled, clean bedding, and exposed surfaces with fiber brush and soap powder followed by thorough rinsing with clear water.

D. Maintain joint widths shown, except for minor variations required to maintain bond alignment. If not shown, lay walls with 3/8” joints.

E. Cut joints flush for masonry walls that are to be concealed or to be covered by other materials, unless otherwise indicated.

F. All mortar joints in stone veneer to be per shop drawings.

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G. Remove masonry units disturbed after laying; clean and reset in fresh mortar. Do not pound corners or jambs to shift adjacent stretcher units that have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.

8.5 Repair, Pointing, And Cleaning

A. Remove and replace masonry units which are loose, chipped, broken, stained, or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including corners, openings, and adjacent work to provide a neat, uniform appearance, prepared for application of sealants.

C. Final Cleaning: After mortar is thoroughly set and cured, clean masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and non-metallic scrape hoes or chisels.
2. Test cleaning methods on sample column; leave 1/2 column unclean for comparison purposes. Obtain approval of sample cleaning by Owner's Representative prior to proceeding with cleaning of masonry.
3. Protect adjacent stone and on-masonry surfaces from contact with cleaner by waterproof masking tape.
4. Saturate wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clean water.
5. Use bucket and brush hand cleaning method described in BIA "Technical note No. 20 Revised" to clean brick masonry made from clay or shale using job mixed detergent solution.
6. Clean concrete unit masonry to comply with masonry manufacturer's directions and applicable NCMA "Tek" bulletins.

D. Protection: Provide final protection and maintain conditions in a manner acceptable to installer, which ensures unit masonry work being without damage and deterioration at time of substantial completion.

E. WARNING Do not use wire brushes, acid-type cleaning agents, cleaning agents containing caustic compounds or abrasives, or other materials or methods that could damage stone.

END OF SECTION

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TS–05 SECTION 05500 – CUSTOM METAL FABRICATIONS

PART 1 -- GENERAL

1.1 Work Included

A. This section covers the fabrication, furnishing, materials, tools, equipment, labor, and performances of all work and services necessary or incidental for the fabrication of metal elements as indicated on the drawings or as specified herein.

1.2 Method of Measurement and Payment

A. Measurement and compensation for all metal fabricated elements shall be at the contract bid price for each contract item installed complete, per UNIT as noted in the contract documents. The bid amount shall be full compensation for all costs of shop drawings, structural engineering, furnishing, and installing all items as specified and shown on the construction documents plans and details, including, but not limited to the following:

B. Furnish and installation of Intersection Marker, per EACH. Including all items necessary for fabrication and installation, including but not limited to: Concrete footing, split face limestone veneer, aluminum metal work and framing, internal wiring internal LED light, LED Driver, extruded push through acrylic letters, mounting hardware, fit and finish etc.

C. Furnish and installation of District Monument, per EACH. Including all items necessary for fabrication and installation, including but not limited to: Concrete footing, structural core, limestone veneer, pre-cast concrete cap, ornamental lettering and metal work, mounting hardware, fit and finish etc.

D. Furnish and installation of KIOSK, per EACH. Including all items necessary for fabrication and installation, including but not limited to: Concrete footing, split face limestone veneer, steel framing, weather proof display cabinet, internal LED light, LED Driver, high pressure laminate graphic panel, mounting hardware, fit and finish etc.

1.3 Quality Assurance

A. Fabricator shall have Minimum of 5 years of experience with similar elements for all fabrication elements that are required to be UL Approved.

B. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

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1.4 References

A. ASTM A653/A 653-M-00 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized)-or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process).

B. ASTM A123/A122M-00- Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

C. ASTM B117 Test Method – Salt Spray (Fog) Testing.

D. ASTM A787-96 Standard Specifications for Electric-Resistance-Welded Metallic-Coated Carbon Steel Mechanical Tubing

E. ASTM B209–10 Standard Specifications for Aluminum and Aluminum-Alloy Sheet and Plate

F. ASTM B221 Standard Specifications for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

G. ASTM B308 / B308M Standard Specifications for Aluminum-Alloy 6061-T6 Standard Structural Profiles

H. ASTM B429 Standard Specifications for Aluminum-Alloy Extruded Structural Pipe and Tube

I. Aluminum Association – Aluminum Design Manual

J. TT-P-645 – Paint, Aluminum, Heat Resisting

1.5 Submittal

A. Submit data verifying qualifications and min five (5) years of experience for fabricator and installer of similar fabrications and components. Include list, min three (3) of completed projects having similar scope of work identified by name, location, date, reference names, and phone numbers.

B. Manufacturer's literature

C. Manufacturer's documentation with min of 5 year experience (as required)

D. Warranty information for all components and finishes

E. Certified shop drawings detailing dimensions, materials, structural engineering, footings, anchor bolts, and finishes shall be submitted prior to fabrication.

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F. Actual color chips of selected color from requested color palettes shall be selected by Owners Representative.

1.6 Product Handling And Storage

A. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

PART 2 -- MATERIALS

2.1 Materials

A. Materials for all signage features and structures shall be as detailed on drawings. Fabrication and finishing of structures and elements shall be completed as per shop drawings. Onsite fabrication and finishing of structure is not allowed.

B. Stainless steel as detailed to be: Stainless Steel Grade 316

C. Aluminum Tubing as detailed to be: Alloy and temper 6016-T6

D. All hardware, anchor bolts, washers, lock washers and nuts shall be stainless steel. Stud anchors shall have a minimum pullout strength of 8000 pounds based on 4000 psi concrete unless otherwise noted.

PART 3 -- EXECUTION

3.1 Preparation

A. All new installation shall be laid out by the contractor in accordance with the construction plans. Verify areas to receive structures or elements are completed to final grades, elevations, and materials.

B. Coordinate installation with work of other sections of these specifications.

3.2 Installation

A. Install all elements and structures in accordance with the Drawings, Specifications, and manufacturer's instructions.

B. Field cutting, drilling, or welding of prefinished metal components will not be allowed without prior approval of the Engineer.

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3.3 Cleaning

A. The contractor shall clean any dirt or protective wrap following installation and remove all excess materials and trash from the jobsite.

END OF SECTION

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PART 4 -- GENERAL

4.1 Section Includes:

A. High performance coatings as identified in plans and specs as Powder Coat Finish for Handrails, District Monument, Kiosk and Intersection Marker.

4.2 References

A. FS TT-P-28 - Paint, Aluminum, Heat Resisting (1200 degrees F.); Federal Specifications and Standards; Revision G, 1985.

B. SSPC-SP 2 - Hand Tool Cleaning; Society for Protective Coatings; 1982 (Ed. 2004).

C. SSPC-SP 3 - Power Tool Cleaning; Society for Protective Coatings; 1982 (Ed. 2004).

D. SSPC-SP 5 - White Metal Blast Cleaning; Society for Protective Coatings; 2000 (Ed. 2004).

E. SSPC-SP 6 - Commercial Blast Cleaning; Society for Protective Coatings; 2000 (Ed. 2004).

F. SSPC-SP 7 - Brush-Off Blast Cleaning; Society for Protective Coatings; 2000 (Ed. 2004).

G. SSPC-SP 10 - Near-White Blast Cleaning; Society for Protective Coatings; 2000 (Ed. 2004).

H. SSPC-SP 11 - Power Tool Cleaning to Bare Metal; Society for Protective Coatings; 1987 (Ed. 2004).

4.3 Submittals

A. Samples: Submit two samples 6 x 6 inch in size illustrating colors available for selection.

B. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Maintenance Data: Include cleaning procedures and repair and patching techniques.

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4.4 Quality Assurance

A. Maintain one copy of each referenced document that applies to application on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

C. Applicator Qualifications: Company specializing in performing the work of this section with minimum 3 years documented experience.

4.5 Mock-Up

A. Provide mock-up, 2 feet long by 2 feet wide, illustrating coating, color, and surface sheen, for each specified coating.

B. Mock-up may remain as part of the Work.

4.6 Warranty

A. Correct defective Work within a five year period after Date of Substantial Completion.

B. Warranty: Include coverage for bond to substrate.

4.7 Maintenance Products

A. Provide 1 gallon of color matched exterior grade polyurethane paint for each color specified, for Contracting Authority's maintenance use.

B. Label each container with manufacturer's name, product number, and color number.

PART 5 -- PART 2 PRODUCTS

5.1 Manufacturers

A. High-Performance Coatings:

1. H.B. Fuller Company; Product Omega Caliber Weatherable Powder Coat
2. PPG Architectural Finishes, Inc; Product Environchron Powder Coat
3. Tiger Dry-Lac; Product Series 49 Polyester TGIC Powder Coating
4. Approved Equal

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5.2 Materials

A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, number of coats specified does not include primer or filler coat.

1. Colors: Selected from manufacturer's standard colors and as approved by owner.

B. Primers: As recommended by coating manufacturer for specific substrate.

PART 6 -- PART 3 EXECUTION

6.1 Examination

A. Verify existing conditions before starting work.

B. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.

6.2 Preparation

A. Clean surfaces of loose foreign matter.

B. Remove finish hardware, fixture covers, and accessories and store.

C. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent.

D. Ferrous Metal:

1. Solvent clean.
2. Remove loose rust, loose mill scale, and other foreign substances using power tools according to SSPC-SP 3.

E. Protect adjacent surfaces and materials not receiving coating from overspray; mask if necessary to provide adequate protection. Repair damage.

6.3 Priming

A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

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6.4 Coating Application

A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified by manufacturer.

B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

6.5 Cleaning

A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean surfaces immediately of overspray, splatter, and excess material.

C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

6.6 Protection Of Finished Work

A. Protect elements adjacent to the work of this section from damage and disfigurement.

END OF SECTION

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MUSCATINE POWER AND WATER

MISSISSIPPI DIRVE CORRIDOR RECONSTRUCTION

STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS

2017

MUSCATINE POWER AND WATER
3205 CEDAR STREET
MUSCATINE, IA 52761
JANUARY 2017

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1.1 GENERAL REQUIREMENTS

A. **Standard Specification covers construction, connections to, and repairs made on Muscatine Power and Water's (MP&W or Owner) water distribution system.**

B. **Standard Specification is intended to cover installations by both MP&W in-house personnel and outside contractors and serve as a guide for design of water main improvements for MP&W's water system.**

C. **Questions regarding interpretation or changes to the Standard Specifications should be directed to Manager, Water and Utility Services or Owner's Project Leader at Muscatine Power and Water, 3205 Cedar Street, Muscatine, Iowa 52761.**

D. **Standard Specification is on file at the offices of the Iowa Department of Natural Resources (IDNR) in Des Moines, Iowa.**

E. **Any exceptions or modifications to Standard Specifications for specific projects shall be made in writing. Should these specifications contained herein conflict with SUDAS 2016, then these standard specifications shall be the prevailing standard/specification.**

F. **Unforeseen circumstances or conditions encountered during construction must be reported to MP&W Manager, Water and Utility Services or Owner's Project Leader immediately.**

G. **No water main extensions or services tapped from MP&W owned facilities will be permitted without prior approval by MP&W.**

1.2 DESIGN STANDARDS

A. **Fire Protection: Water distribution system shall be designed in accordance with the grading schedule for Municipal Fire Protection recommended fire flows by the Insurance Service Offices and 10 States Standards.**

B. **Hydrant Location: Hydrants shall be spaced not more than 400 feet apart in single family residential districts and no more than 300 feet or about one city block apart in other districts. Spacing may vary slightly to allow placement of fire hydrants on extensions of property lines.**

C. **Valve Spacing: Valves shall be installed so that not over 800 feet of water main, with services, will be shut off at any time. Transmission mains with no services shall have valves located so that not over 1200 feet of main will be shut off at any time.**

D. **Bury Depth: All waterlines shall be buried with a 5'-0" bury depth to the top of pipe unless otherwise designed and approved by MP&W. Where conflicts occur with other utilities not identified on the plans Contractor shall obtain approval from MP&W for recommended bury depth.**

1.3 PERMITS

A. **Plans for water main extensions or modifications prepared by engineering personnel other than MP&W's shall be submitted to MP&W for design review, approval, and IDNR permitting before the work is bid.**

B. **Permits for utilizing or crossing IDOT, County, Railroad, and other utilities' right of way/easements will be acquired by Owner unless otherwise noted in the Water Main Extension Agreement or the Detailed Specifications for the Project.**

C. **Contractor shall obtain Street Excavation Permits and Street Closure Permits from the City of Muscatine's Building and Zoning Department at Muscatine's City Hall located at 215 Sycamore Street, Muscatine, Iowa 52761.**

D. **Storm water permitting will be acquired by contractor unless otherwise noted in the Water Main Extension Agreement or the Detailed Specifications for the Project. Costs of compliance with requirements of storm water permit will be handled by contractor unless otherwise outlined in the Water Main Extension Agreement or in the Detailed Specifications for the Project.**

1.4 CODES AND STANDARDS

A. **In the event of a conflict between codes and standards, the one establishing the more stringent requirements shall be followed (10 States, AWWA, or SUDAS 2016).**

B. **The following standards and specifications are used in or referred to in this Standard Specification:**

1. American Water Works Association (AWWA).

2. 10 States Standards (above all for fire flow and design).

3. SUDAS 2016

4. Occupational Safety and Health Act of 1970, as amended (OSHA).

5. American National Standards Institute (ANSI).

6. Iowa Department of Health.

7. Iowa Department of Transportation (IDOT).

8. Iowa Department of Natural Resources (IDNR).

9. American Society for Testing and Materials (ASTM).

10. City of Muscatine, Iowa, Codes and Standards.

11. Muscatine Power and Water's rules and regulations as outlined in WATER CUSTOMER SERVICE HANDBOOK.

12. Muscatine Power and Water's current "Backflow Prevention Policy".

13. Steel Structures Painting Council (SSPC).

C. **The most current versions or updates of the above specifications are to be used unless otherwise noted in the Detailed Specifications for the Project.**

D. **Copies of all codes and standards referenced in these Standard Specifications are on file for review at the offices of Muscatine Power and Water, 3205 Cedar Street, Muscatine, Iowa 52761.**

1.5 MATERIALS

A. **<u>Pipe Types</u>: Pipe, joints and couplings (as applicable) shall be legibly and permanently marked with critical information including: nominal pipe size, pressure class, dimensions ration, applicable conformance standards (e.g. ANSI / AWWA / ASTM), manufacturer's name, production record code, seal or mark of testing agency verifying suitability of pipe material for potable water service and for use in fire protection systems (e.g. UL / FM / NSF, as applicable. All water main distribution pipe shall be 6 inches in diameter or larger. Where the distribution system is significantly looped then 6-inch diameter pipe is the minimum standard in residential areas. For dead end water mains 8-inch diameter is the minimum acceptable pipe diameter in residential areas. Where fire flows larger than 1,500 gpm then larger pipe diameter will be required and shall be specified on the plans.**

1. Ductile iron water main pipe (DIP). DIP pipe shall be used for all pipes larger than 12 inches in diameter unless alternate materials are shown on the Drawings, and may be used for pipe 12-inches in diameter and smaller. DIP shall conform to ANSI/AWWA C151/A21.51. Pipe shall be cement-mortar lined in accordance with ANSI/AWWA C104/A21.4.53. Thickness design of pipe shall conform to ANSI/AWWA C150/A21.51. Pipe shall be manufactured with a bituminous coal tar base exterior coating system not less than 1 mil thick in accordance with AWWA C-151/ANSI A-21.4.

Nitrile gaskets shall be provided for water main construction unless noted and approved by MP&W. No exceptions are allowed where it is determined that hydrocarbon contamination is present

All pipe and pipe joints shall be push-on, restrained or mechanical as required by the design and shall conform to ANSI/AWWA C111/A21.11 unless otherwise designed and approved by MP&W. Pipe shall be minimum Class 52 unless specified otherwise on the Plans or in the Detailed Specifications for the Project.

2. Polyvinyl Chloride Pipe (PVC): PVC may be used for all pipe 12-inches in diameter and smaller, in accordance with the Project Documents. All pipe shall be manufactured in accordance with AWWA C900. Pipe joints shall be bell-and-spigot, push-on type with integral elastomeric gasket, in conformance with ASTM D3139 and ASTM F477.

Pipe shall be homogeneous throughout and free of visible cracks, holes, foreign material blisters, and other visible deleterious faults. Pipe shall be manufactured from rigid polyvinyl chloride compound with cell classification 12454-B as defined in ASTM D-1784. Normal laying length is 20 feet.

PVC pipe shall not be permitted in identified LUST sites where possible hydrocarbon contamination may occur.

3. Restrained Joint Polyvinyl Chloride Pipe (RJ-PVC). RJ-PVC may be used for pipe 12-inches in diameter and smaller, in accordance with the Project Documents and as approved by the Engineer. All pipe shall be manufactured in accordance with AWWA C900. Pipe joints shall be non-metallic mechanically restrained elastomeric bell-and-spigot joints of either coupled or integral bell type in conformance with ASTM F-477 and AWWA C-900.

Pipe shall be homogeneous throughout and free of visible cracks, holes, foreign material blisters, and other visible deleterious faults. Pipe shall be manufactured from rigid polyvinyl chloride compound with cell classification 12454-B as defined in ASTM D-1784. Normal laying length is 20 feet.

RJ-PVC pipe shall not be permitted in identified LUST sites where possible hydrocarbon contamination may occur.

4. High Density Polyethylene water main pipe (HDPE): High density polyethylene (HDPE) pipe and fittings shall conform to ANSI/AWWA C906.99. Follow the AWWA standard for Polyethylene Pressure Pipe and Fittings for Water Distribution and Transmission which is C906-07. Any deviations in material or workmanship including fusing shall be rejected if it does not conform with C906-07.

HDPE pipe shall be ductile iron pipe size with black with two blue stripes. Wall thickness shall be DR11 unless specified differently on the plans. HPDE pipe will be permitted on a case-by-case basis as shown as approved by MP&W. HDPE shall not be permitted in identified LUST sites where possible hydrocarbon contamination may occur.

5. Mechanical Joint Restrained Joints: Full body style, ductile iron radial type bolt retainer glands for mechanical join applications design for respective pipe material being used and for MJ fittings and valves. Split-ring retainer glands will not be permitted on new construction except under special circumstances. All glands shall be of uniform thickness and utilize a standard MJ gasket and match standard MJ bold circle, using 304/316 SS bolts and nuts (Teflon coated) required for installation.

Acceptable mechanical joint restraint styles include EBAA IRON INC. 1100, 1100SD, or 1100HD Series MEGALUG Mechanical Joint Restraints and shall meet oversize requirements

6. Other Restraints: Tie rod system or assembly is subject to Owner's approval. Tie rods shall be no less than 3/4-inch diameter threaded steel coated with two coats of coal tar epoxy paint or approved spray on bituminous automotive undercoating material.

7. Casing Pipe: Steel casing for bored and jacked steel casings shall be smooth wall, welded steel pipe of diameter and minimum wall thickness shown on Plans, with a minimum 3/8" thickness. Defined by IDOT.

a) Casing Spacers: Casing spacers shall be specifically manufactured for installation of ductile iron water main in steel casings. Spacers shall be able to remain securely fastened to the water main during installation of water main in the casing. Choice of casing spacers is subject to Owner's approval. Powerseal Model 4810.

b) End Seals: End seals for steel casings shall be rubber, HDPE or neoprene wrap around type with stainless steel bands manufactured for that specific purpose and sized accordingly. Choice of end seals is subject to Owner's approval. Powerseal end seals.

B. **Pipe Fittings: Ductile iron fittings shall conform to ANSI/AWWA C110/A21.10 (full-body) and ANSI/AWWA C153/A21.53 (compacts). Fittings shall be cement-mortar lined in accordance with ANSI/AWWA C104/A21.4.95. For pipes smaller than 4-inches fittings shall be push-on. For pipes with a nominal diameter 4 inches and larger fittings shall be mechanical joint or as specified by the specific Plans for the Project. Bolts, nuts and washers shall be stainless steel or high strength low alloy Corten Blue.**

HDPE pipe fittings for new construction shall conform to ANSI/AWWA C906.99 and be heat fused. When restrained mechanical joints are specified for HDPE pipe Mueller AquaGrip or Engineer approved equal shall be provided.

C. **Tapping Sleeves: Tapping sleeves for ductile iron or PVC water main pipe taps shall be all stainless steel per ASTM A-240, fully enclosed tapping sleeve, full wrap gasket, full flange, and stainless steel bolts and nuts with 3/4 inch NPT test plug with stainless plug. Approved tapping sleeve styles include JCM-432, Ford-FTSS, Mueller-H-304 or approved equal with nitrile gasket.**

D. **Valves and Valve Boxes:**

1. Gate Valves: All gate valves shall conform to AWWA C509. Acceptable manufacturer is Mueller. Gate valves shall meet the following specific requirements: Resilient seated wedge type. Manufacturer Tested to 500 psig, 250 psig working pressure, turn clockwise (right) to open, epoxy coated (triple dipped). Stainless steel bolts in the bonnet, bi-directional flows and flat bottom for handling, brass trim, triple O-ring seal on stem and O-ring seal on bonnet with the top two replacements with valve open, non-rising stem with 2-inch square wrench nut with notification washers made from polymer, all bolts to be stainless steel.

2. Butterfly Valves: Butterfly valves shall only be used in special circumstances and shall conform to AWWA C504. Butterfly valves shall meet the following specific requirements: Steel adjusting packing, stainless shaft. stem with 2-inch square wrench nut, turn clockwise (right) to open, epoxy coated, all bolts to be stainless steel, domestic preferred.

3. Tapping Valves: Tapping valves shall be fully open style to accommodate Owner's Hydra-Stop tapping and hydra-stopping machine (flange to mechanical joint). Tapping valves can be MJ x MJ if using the Ford FTSS sleeve with MJ outlet. All tapping valves shall conform to the applicable flange only tapping sleeve requirements for gate valves. Approved application is MJ x MJ gate valve with the Ford FTSS sleeve with MJ outlet.

4. Valve Boxes: Valve Boxes shall be domestic only, heavy duty, like Tyler 664S or East Jordan with centering ring or approved equal. Cover shall have the word "WATER" cast into the cover. Provide 5'-0" standard length unless specified otherwise. Bury depths greater than 5' need a valve nut extender.

5. Extension Stems: Extension stems shall be provided for buried valves when the operating nut is more than 5'-6" below finished grade. Each extension stem for a buried valve shall extend to between 5'-0" and 5'-6" of the ground surface, no exceptions will be allowed, and shall be provided with spacers, which sill center the stem in the valve box, and shall be equipped with a 2-inch wrench nut painted red.

E. **Fire Hydrants: Fire hydrants shall conform to AWWA C502. All hydrants shall be Mueller Centurion meeting the following specific requirements: 6-inch mechanical joint connection, direction to OPEN shall be clockwise (right), nozzles: two 2-1/2-inch hose nozzles, one 4-1/2-inch pumper nozzle, nozzles to be National Standard Thread (NST) style, O-ring packing nitrile, suitable for 5'-0" depth of cover unless specified otherwise on Plans. Valve opening of 4-1/2 inch, automatic drain valve to drain hydrant barrel when main valve is closed. Operating nut shall be National Standard 1 inch square, oversized mechanical joint shoe, epoxy coated bowl. All underground parts shall be constructed of ductile iron with Stainless steel bolts. Shall include 1" washed rock around the drips in the hydrant.**

Exposed hydrant body shall be factory primed painted white and buried portion shall have top coats black.

F. **Tracer Wire: All tracer wire components for water main pipe shall be Copperhead brand, blue polyethylene jacketed direct bury type.**

1. Open-Cut Installation: use number 12 superflex part number\ 1230B-SF-500', 1,000', 2,500' with a 45 mil coating.

2. Horizontal Directional Drill Installation: #12 ccs Extra high strength – Blue – "Soloshot" – for HDD, part number 1245B-EHS-500', 1,000', 2,500' with a 45 mil coating.

Tracer wire splices shall be Copperhead Industries LLC tracer wire. Dry-con connectors – 3WB-01-Blue, 3-way direct bury lug connector. Snake Pit Trace Wire Boxes – RP14*TP for roadway, LD14*TP – Adjustable for light duty. Copperhead 1 lb. magnesium anode used on dead-end trace wires. Cobra Test Station for service ends, T3-B75, Blue.

G. **Gravel Backfill: Gravel for drainage shall be clean washed gravel 3/4 inch to 1-inch size without fines or standard washed pea gravel.**

H. **Corrosion Protection: All ductile iron pipe, fittings and buried hydrant barrels shall be protected from corrosive soils by wrapping with NLT 10-mil thick polyethylene tubing or sheeting conforming to ANSI/AWWA C105/A21.5. The ploy-wrap shall be secured around the pipe with 2-inch wide by 10-mil thick tape supplied by the poly-wrap manufacturer.**

I. **Insulation: Insulation shall be required where water main pipe is above the ground elevation. Insulation shall be Pittsburg Corning Foamglas with Pitwrap. Insulation thickness shall be as shown on the Plans, no less than 5 inches thick. Bells will be covered.**

J. **Services: All new water service piping shall have a minimum 1" nominal diameter from the main to the service meter. During water main replacement projects all services shall be replaced to the meter setter with approved pipe material if the existing service line is not approved service line material.**

Service lines 2 inches in diameter and smaller, but no less than 1" shall be Type K (heavy), soft annealed, seamless copper. Connections to existing service lines (where required) shall be 3 piece compression type, Mueller 110 Conductive Compression Connection. If the main is wrapped with poly-wrap, so should service for 3-4 feet.

Tapping pipe saddles shall be as follows:

1. Service Saddle for DIP: Tapping ductile iron or cast iron pipe for 1-1/2 inch and 2 inch sizes shall be JCM 406, ROMAC Style 202NS, Smith Blair 317, Mueller DR2S or Ford FC202 service saddles, nylon or thick epoxy coated with stainless steel straps for use on ductile iron or cast iron pipe. Torque to manufacturer's specifications.

2. Service Saddle for HDPE: Tapping HDPE pipe for 1-1/2 inch or 2 inch sizes shall be JCM 406 or ROMAC 202N-H, nylon or plastic coated with stainless steel straps for use on HDPE pipe and should be supplied with concave or spring washers. Fused saddles can be Integrity of Fischer Brand electrofusion branch saddles.

Corporation and curb stops shall be as follows:

3. Corporation: Mueller No. B-25008, 1" brass. Corporations are provided by Owner unless otherwise specified in Detailed Specifications for Project. Lead free brass.

4. Curb Stops: Lead free brass Mueller H-10314 curb stop box and valve with 5' long curb box, extension type – arch pattern base, one piece lid with rod, upper section lid to be two hole.

K. **Backflow Prevention: Backflow prevention devices shall conform to requirements of MP&W's current "Backflow Prevention Policy" and MP&W's current "Customer Service Handbook". Check with MP&W's Metering Department for latest updates of both documents.**

L. **Concrete: Concrete shall be air entrained with a minimum 28 day compressive strength of 4000 psi. In instances where high early strength is desirable as in cases where it is desirable to open roadways sooner to traffic or to shorten maintenance time for traffic control signage and barricades for street cuts, IDOT M-4 mix shall be used. For kickers, a minimum of 24 hours for cure time on M-4 is required.**

M. **Seeding, Fertilizer and Mulch: The rates of seed, fertilizer, and water applications required by this Subsection M are minimums, and the Contractor shall be solely responsible for the establishment of 70% grass coverage of all unpaved or otherwise uncovered areas of soil within the limits of the Project or disturbed soil by the Contractor. Additional labor, materials, equipment and incidentals to establish the 70% coverage shall be subsidiary to the pay items "Seeding and Fertilizing".**

All areas which have been disturbed by the Contractor during construction shall be graded and shaped to the grades shown on the Drawings, and shall be finished with 6 inches of topsoil provided by the Contractor and approved by the Engineer. Topsoil may be either material selected from the site or imported material. shall be the following:

1. Fertilizer: Fertilizer to be seed starter 13-13-13 or 15-15-15. Fertilizer is to be applied at a rate of 50 pounds per 4000 square feet.

2. Seed: Seed mix to be equal parts Kentucky Bluegrass, Fescue and perennial rye. Seed mix is to be applied at rate of 5 pounds per 1000 square feet.

3. Mulch: Mulch to be clean straw pinned in place over all seeded areas. Straw mulch is to be applied at rate of one 40 pound bale per 600 square feet.

An equivalent hydro seeding application may also be considered.

1.6 SUBMITTALS

A. **All shop drawing submittals shall include a standard transmittal form.**

B. **Shop drawing submittals shall include one electronic in PDF and one hard copy of all submittal items required in the Detailed Specifications for the Project.**

C. **Contractor shall submit manufacturer's catalog data for all items to be used in constructing the Project, one electronic Adobe .pdf file and one hard copy**

D. **Contractor shall submit certificates from manufacturers evidencing compliance with standards listed in this Standard Specification and as listed in the Detailed Specifications for the Project.**

1.7 TRAFFIC CONTROL

A. **Traffic control shall be coordinated with City of Muscatine Police and Engineering Departments or the Iowa Department of Transportation as appropriate.**

B. **Traffic control shall meet the requirements of IDOT "Work Zone Safety Guidelines for Utilities", current edition and MUTCD.**

1.8 INSPECTION AND TESTING

A. **Construction Inspection: Construction will be inspected by Owner's Project Leader or other designated representative. No pipe or appurtenances shall be buried prior to final approval by Owner or Owner Representative. All change orders must be processed in writing through the Project Leader.**

B. **Compaction Testing: In place density testing for compaction shall be conducted for water main installation under a roadway. If the water main installation is installed during a road improvement project the compaction testing may be completed by another Contractor. Compaction testing is not required when the water main is installed 10' or more outside of the roadway unless stated otherwise on the Plans or in the Detailed Specifications for the Project. In the event of a disagreement as to whether the compaction requirements have been met when no testing is required, the Contractor shall enlist the services of an Owner-approved independent soil testing company to make field tests as necessary to establish compliance with this Standard Specification. Contractor shall pay costs of all failing tests and Owner shall pay costs of all passing tests. Costs of laboratory determinations will be divided between Contractor and Owner based on percentage of field tests each is responsible to pay for. Moisture density testing shall conform to ASTM D1557. Field density tests, when required, shall be performed as directed by Owner's Project Superintendent. A minimum of one test shall be taken every 300 feet along the trench for each 8-inch lift or layer of backfill material. Field density tests shall conform to ASTM D1556.**

C. **Concrete Testing: One set of four concrete test cylinders shall be taken for each concrete pour. Cylinders will be retained by Owner and broken if a question arises as to the strength of the concrete provided. Each cylinder shall be provided with a tag giving the date, time, location and strength requirements specified for the Project. Tag to be taped to each cylinder with several wraps of fiber packing tape.**

D. **Material Inspection: All pipe and appurtenances are subject to inspection by the Owner at the point of delivery. Material found to be defective due to manufacture or damaged in shipment shall be rejected or recorded on the bill of lading and removed from the job site. The Owner may perform tests as specified in the applicable AWWA standard to ensure conformance with the standard. In case of failure of the pipe or appurtenance to comply with such Specifications, responsibility for replacement of the defective materials becomes that of the Contractor.**

E. **Filling and Flushing: Pipe and appurtenances to be tested shall be filled slowly with potable water. After filling, lines shall be flushed at blow-offs and dead-ends at a minimum velocity of 3.0 feet per second in the pipeline to be tested (refer to AWWA C651-14 Table 3 for required flow and openings). Flushing shall be carried out until turbidity-free (< 5 NTU or system ambient values) water is obtained from all points along the main. Certain contaminants resist flushing at any feasible velocity and pigging of the main may be required. A special pipeline pig may be required when the required flushing velocity cannot be achieved or when needed to conserve water during water use restriction period or to remove cake deposits or to prevent erosion damage, nuisance or traffic interruption, as directed by the Engineer.**

F. **Pressure and Leakage Testing: Pressure test after initial flushing of line and before bacteriological testing has commenced. An Owner's Representative shall be present at the beginning and end of each pressure test. The owner shall be notified of the time of the test a minimum of 24 hours prior to the test. The Owner's Representative shall record the test pressure at 30 minute intervals. The duration of the pressure test shall be a minimum of two hours and cannot commence until the Owner's Representative records the initial test pressure. The pipeline shall be allowed to stabilize at the test pressure before conducting the hydrostatic test.**

1. Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and hydrants. After all the air has been expelled, all corporation cocks shall be closed and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged or left in place as directed by the Owner.

2. All exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damaged or defective pipe, fittings, valves, hydrants, or joints that are discovered during the pressure test shall be repaired or replaced with sound material, and the test shall be repeated until line passes test to Owner's satisfaction.

3. All make up water and make up water containers and pumps shall be cleaned and disinfected with a 6 to 8% chlorine bleach solution.

4. When hydrants are in the test section, the test shall be made against the auxiliary valves of the hydrant.

5. The contractor may be responsible for disinfection of the water main on a case by case basis.

Pressure testing shall be conducted through Owner installed corporations and not through fire hydrants.

The pressure test shall consist of holding a minimum hydrostatic pressure of 150 pounds per square inch for a period of two hours at the lowest elevation of the test section. Test pressure shall not exceed pipe, thrust-restraint, or appurtenances' design pressure at the lowest section of pipeline being tested. Water mains shall be pressure tested at valved sections, not exceeding 1200 feet in total length. Valves shall not be operated in either direction at differential pressures exceeding the rated valve working pressure.

A two pound test gauge with a minimum capacity of 160 pounds will be required. The test shall conform to the applicable sections of AWWA C-600, AWWA C-605 or AWWA C-906. The hydrostatic test pressure shall not vary by more than +/- 5.0 psig for the duration of the test period. The test pressure shall be maintained within this tolerance by adding make-up water through a metered pressure test pump into the pipeline test segment. The meter on the pressure test pump shall be capable of reading to the nearest 0.10 gallon increment. All make-up water added shall be accurately measured in gallons (and fractions thereof) by suitable methods. The total make-up water added during and at the conclusion of the test period to reach the required test pressure shall not exceed the calculated leakage allowance for the pipeline segment being hydrostatically test as outlined in sections AWWA C-600, AWWA C-605 or ASTM F2164.

CAUTION: Pressurize HDPE pipe in accordance with manufacturer's recommendations. Pressurizing HDPE pipe for testing or placing into service requires additional precautions: Leaks at pressurized fusion joints may immediately precede catastrophic and sudden pipe separation and result in violent and dangerous movement of piping or attached parts and cause a sudden release of piping contents under pressure. Never approach or attempt to repair or stop leaks while pipe is pressurized. Always depressurize pipe before making corrections. Faulty fusion joints cannot be repaired. They must be cut out and rejoined using proper heat fusion procedures.

G. **<u>Tracer Wire Inspection</u>: Tracer wires will be tested by Owner for continuity shortly after pressure testing has been completed.**

H. **<u>Disinfection</u>: At a minimum the standards set forth in AWWA C651 shall be followed excluding the use of calcium hypochlorite granular tablets. Preferred disinfection method is the continuous-feed method for new waterline construction.**

A more specific description of the process follows:

Once the pipe section has been slowly filled, the bacterial/disinfection test will be officially started. The test requires the pipe to stand for 24 hours undisturbed after the initial chlorination testing confirms that a minimum of 25 ppm available chlorine is present when using the continuous-feed method. If less than 25 ppm of chlorine is available at initial filling, the test will be considered invalid and pipe must be rechlorinated. After 24 hours the residual will be checked to confirm that not less than 10 ppm of chlorine is available. If confirmed, the pipe can be flushed until the available chlorine is equal to the normal distribution levels and a sample for analysis will be drawn. The pipe shall be isolated again for 24 hours. After 24 hours, the water will be tested a second time to confirm not less than 0.3 ppm of chlorine remains in the main. If confirmed a second sample will be drawn for bacteriological analysis. Failure of any of the above test results will require re-chlorination to the minimum 25 ppm and repeat bacteria testing. All chlorinated water needs to be de-chlorinated by an approved method before it is released to the environment.

The contractor may be responsible for de-chlorination of the water main from high test chlorination on a case by case basis.

I. **<u>Bacteriological Testing</u>: Owner will take two bacteriological samples 24-hours apart for in-house analysis after disinfection for each sample location as required in AWWA C651. Contractor shall assist Owner in collecting samples as required. Owner will not place installation into operation until test results from water samples taken test out satisfactory. One set of bacteriological tests shall be collected from every 1,200 foot section of new water main, plus one set from the end of the line and at least one set from each branch.**

For any failed bac-t test, the IDNR must be notified by MP&W lab staff. All pressure testing and bacteriological tests shall be completed prior to the

installation of service lines.

1.9 LOCATING BURIED UTILITIES

A. **Contractor shall contact the Iowa One-Call system at 1-800-292-8989 for locations prior to doing any excavating (48 hour notice required).**

B. **All utility crossing shall be exposed by pot-holing or day-lighting prior to crossing with underground drilling equipment, HDD, moles, etc.**

1.10 PROTECTION OF EXISTING FACILITIES

A. **Contractor shall exercise care to assure that all private and publicly owned facilities, buildings, poles, wires, walkways, roadways, and other items near the construction area and not shown as removal items on the Plans are protected so they are not damaged or destroyed.**

B. **Contractor shall repair or replace all damaged items.**

1.11 WORK BY OWNER AND COORDINATION WITH OWNER

A. **Contractor shall coordinate activities with Owner so that disturbances to normal utility water system operations are minimized. Contractor shall provide a minimum 24 hour notice to Owner to allow adequate scheduling of men and equipment. Contractor shall assume all responsibilities for costs incurred due to the lack of 24 hour notice to Owner. MP&W must be notified at least 3 working days before a scheduled water outage to allow time for customer notification.**

B. **Operation of all valves and hydrants during charging of main, pressure testing, disinfection and bacteria testing shall be by Owner unless Owner specifically directs otherwise.**

C. **Owner will provide tapping and corporations up to 2-inch size required for blowing off air and making pressure tests to line segments installed. On contracts for developers, costs for this work are to be paid by the developer. On in house contracts let by MP&W, costs for this work will be paid by MP&W and not billed to contractor.**

D. **Tapping of existing water mains with taps of up to 12-inch size will be done by Owner unless otherwise noted in Detailed Specifications for the Project. On contracts for developers, costs for this work are to be paid by the developer. On in house contracts let by MP&W, costs for this work will be paid by MP&W and not billed to contractor.**

E. **Owner will hold electrical poles where necessary for construction if construction is within the Owner's electrical service area. Contractor shall provide a minimum 24 hour notice to Owner to allow adequate scheduling of men and equipment. On projects contracted by Muscatine Power and Water there will be no charge to Contractor for this service. On all other projects, Contractor will be billed for this service. Contractor will be responsible for the coordination and fees charged by utilities for this service outside MP&W's electrical service area.**

1.12 TRENCH EXCAVATION

A. **Trench excavations shall be in compliance with 29 CFR Part 1926 OCCUPATIONAL SAFETY AND HEALTH STANDARDS-EXCAVATIONS.**

B. **Sheeting, shoring, bracing, and trench boxes shall be of an OSHA approved design and certified in accordance with current OSHA rules and regulations. Sheeting and shoring materials shall be removed in a manner that avoids damage or disturbance to the work completed or adjacent structures or pavements. Trench boxes shall be lifted prior to moving forward to prevent displacement of pipe in place.**

C. **Compact light weight trench boxes or shoring shall be required in front yard stop box replacements for contractor's safety and to minimize disturbances to lawn, sidewalk and parking areas.**

D. **Excavation depth to provide a minimum 5'-0" cover over top of pipe.**

E. **Trench width shall be ample to permit the pipe to be laid and joined properly but should be no more than 12 inches on either side of the pipe. Keep walls of trench vertical below top of pipe.**

F. **Level trench bottom to provide uniform bearing and support for full length of the pipe barrel. Provide bell holes for each pipe joint. Stones found in the trench shall be removed for a depth of at least 6 inches below bottom of pipe.**

G. **If soft, spongy, or otherwise unsuitable materials are encountered which do not provide suitable bedding or support for the pipe, Contractor shall notify Owner's Project Leader or designated representative immediately.**

If removal of unsuitable material is authorized, contractor is responsible for removal of material.

Contractor shall replace unsuitable materials with Owner approved crushed stone, sand or manufactured sand as appropriate. New materials shall be placed and compacted in accordance with backfill portion of this Standard

Specification.

H. **All pipe installations shall be conducted only in dry materials. Contractor shall take such steps as are necessary to prevent surface and ground water from flowing into the excavation. Remove all accumulated water by pumping or dipping with equipment bucket.**

I. **Dewatering systems, if required, shall be subject to Owner's approval and shall remain in place until construction work and testing have been completed.**

J. **Removal of pavement and road surfaces shall be a part of the trench excavation. Pavement removal shall conform to City of Muscatine Public Works requirements. The dimensions of pavement removed shall not exceed the dimensions of the opening required for installation of pipe, valves, hydrants, fittings, and other structures by more than 12 inches in any direction, unless otherwise directed by Owner's Project Superintendent or required by City of Muscatine "Guidelines for Repairs in Streets". Pavements shall be sawed to ensure the breakage, removal and replacement of pavement along straight lines.**

1.13 BACKFILL AND COMPACTION

A. **Backfill shall not proceed until water main installation, thrust blocking or thrust restraints have been inspected and approved by Owner's Project Leader or designated representative.**

B. **Backfill materials shall be suitable soils from trench excavation or from a borrow area approved by Owner's Project Leader. Suitable materials shall be free of debris, small stones, rock, roots, lumps, frozen materials or any other items that will prevent placing and compacting the material to the density required.**

C. **Backfill under or within 10 feet of the edge of roadways or parking areas shall be manufactured sand compacted in accordance with this Standard Specification.**

D. **Backfill materials shall be approved by Owner's Project Leader prior to placement.**

E. **Backfill shall be placed on both sides of pipe simultaneously to prevent displacement. Place backfill in successive horizontal lifts of not more than 8 inches loose depth. This depth may be adjusted if it can be shown that required compaction can be achieved utilizing a different layer thickness. Backfill shall be placed and compacted using hand equipment up to 18 inches above top of pipe. Refer to Attachment 5 for more details.**

F. **Place material at proper moisture content for obtaining specified density.**

G. **Compaction requirements are as follows:**

1. Areas beneath or within 10 feet of edge of roadways or parking areas shall be compacted to 95 percent of maximum dry density as determined by ASTM D1557.

2. All other areas shall be compacted to 90 percent of maximum dry density as determined by ASTM D1557.

3. Method of compaction is subject to Owner's approval.

H. **"Flooding" or "jetting" of backfill trench is not an acceptable compaction method or process and will not be approved.**

1.14 PIPE AND MATERIAL HANDLING AND STORAGE

A. **All pipe, fittings, valves, hydrants, and accessories shall be loaded and unloaded by lifting with hoists or skidding in order to avoid shock or damage. Under no circumstances shall materials be dropped. Pipe handled on skid ways shall not be rolled or skidded against pipe on the ground.**

B. **Slings, hooks, or pipe tongs shall be used in such a manner as to prevent damage to the exterior surface or internal lining of the pipe.**

C. **Stored materials shall be kept safe from damage. The interior of all stored and placed pipe, fittings, and other appurtenances shall be kept free from dirt or foreign matter at all times by use of tight fitting end plugs or sturdy durable plastic bags or other Owner approved means. Pipe and fittings contaminated with mud and surface water shall be removed from the site and not used in construction unless thoroughly cleaned by the Contractor and inspected and approved by Owner. Valves and hydrants shall be drained and stored in a manner that will protect them from damage by freezing.**

D. **Gaskets for mechanical and push-on joints shall be stored in a cool location, out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis.**

E. **Mechanical-joint bolts shall be handled and stored in a dry location in a manner that will ensure proper use with respect to types and sizes.**

F. **Staging will not occur prior to one week of construction and placed in a neat and orderly fashion.**

1.15 PIPE INSTALLATION

A. **Ductile iron pipe installation shall conform to the requirements of ANSI/AWWA C600. PVC pipe installation shall conform to the requirement of AWWA C605. HDPE installation shall conform to the requirement of AWWA M55.**

B. **Proper implements, tools, and facilities shall be provided and used for the safe and convenient performance of the work. All pipe, fittings, valves, and hydrants shall be lowered carefully into the trench by means of suitable tools, rigging and equipment, in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench. The trench shall be dewatered prior to installation of the pipe.**

C. **All pipe, fittings, valves, hydrants, and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the Owner, who may prescribe corrective repairs or reject the materials.**

D. **All lumps, blisters, and excess coating shall be removed from the socket and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be wiped clean and dry and be free from dirt, sand, grit, or any foreign materials before the pipe is laid.**

E. **Foreign material shall be prevented from entering the pipe while it is being placed in the trench. No debris, tools, clothing, or other materials shall be placed in the pipe at any time.**

F. **As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material. Lay pipe in dry bedding material.**

G. **At all times when pipe-laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the Owner. When practical, the plug shall remain in place until the trench is pumped completely dry. Care must be taken to prevent pipe flotation, should the trench fill with water.**

H. **Cutting pipe for insertion of valves, fittings, or closure pieces shall be done in conformance with all safety recommendations of the manufacturer of the cutting equipment. Cutting shall be done in a safe, workmanlike manner without creating damage to the pipe or cement-mortar lining. All PPE shall be used while cutting, including safety glasses and a shield. Pipe may be cut using a hydraulic squeeze cutter, abrasive pipe saw, rotary wheel cutter or guillotine pipe saw. Cut ends and rough edges shall be ground smooth, and for push-on joint connections, the cut end shall be beveled by methods recommended by the manufacturer and approved by the Owner.**

I. **For installations requiring polyethylene encasement for ductile-iron pipe, the encasement shall be installed in accordance with ANSI/AWWA C105/A21.5 and recommendations of DUCTILE IRON PIPE RESEARCH ASSOCIATION INSTALLATION GUIDE FOR DUCTILE IRON PIPE. This includes overlapping and the correct tape to be used on the joints. Use 10 mil blue or black polywrap pipe sleeve from AA Thread or equivalent. Use 10 mil PVC tape to bind ends with 1 ½' overlap. On mechanical or open joints with couplings, use cross laminated HDPE joint wrap, 10 mil XLAM HDPE joint wrap.**

J. **Restraining glands shall be used when pressure testing against a dead-end section of pipe. Engineer shall determine the required length of pipe to be restrained. Under typical installation methods, which included a bury depth of 5'-0" then 20 LF of restrained joint pipe is acceptable for 6-inch pipe or smaller and 40 LF of restrained joint pipe is acceptable for 8-inch, 10-inch, or 12-inch pipe. For larger pipe sizes refer to project plan or Engineer.**

K. **Pipe which is damaged or unsound will be rejected and marked. Sound pipe before installation to detect cracks.**

L. **Use suitable fittings where grades or alignments require offsets greater than manufacturer's recommended joint deflections.**

M. **Follow manufacturer's recommended installation and assembly practices.**

N. **CAUTION: Pressurizing HDPE pipe for testing or placing into service requires additional precautions: Leaks at pressurized fusion joints may immediately precede catastrophic and sudden pipe separation and result in violent and dangerous movement of piping or attached parts and cause a sudden release of piping contents under pressure. Never approach or attempt to repair or stop leaks while pipe is pressurized. Always depressurize pipe before making corrections. Faulty fusion joints cannot be repaired. They must be cut out and rejoined using proper heat fusion procedures.**

O. **TRENCHLESS INSTALLATION**

1. General: Select a method of installation that is appropriate for the soil conditions anticipated and will 1) allow the pipe to be installed to the desired line and grade within the specified tolerances; 2) prevent heaving or settlement of the ground surface or damage to nearby facilities; and 3) prevent damage to the carrier pipe and any lining materials within the carrier pipe.

2. Installation Method: Horizontal directional drilling (HDD) shall be the primary method for installing pipe with trenchless technology. HDD installs pipe from a surface-launched drilling rig. A pilot bore is formed and then enlarged by back reaming and removing the spoil material. The pipe is then pulled in place. Other methods may be allowed with the Engineer's approval.

3. Line and Grade: Install pipe at line and grade that will allow the carrier pipe to be installed at its true starting elevation and grade within the specified maximum alignment deviation of the pipe centerline. When no deviation tolerances are specified in the contract documents, apply the following maximum deviations to the carrier pipe.

4. Pressurized Pipe: Tolerances for installation of pressurized water main pipe shall include horizontally accuracy of ± 2.0 feet, vertical accuracy ± 1.0 foot, while maintaining the minimum depth specified in the contract documents. Greater deviation or interference with other identified facilities may be cause for rejection.

5. Deviation from Line and Grade: Installations deviating from the specified tolerances that cannot be adjusted to conform to the specified tolerances may be rejected by the Engineer. If nonconforming installation is not rejected, provide all additional fittings, manholes, or appurtenances needed to accommodate horizontal or vertical misalignment, at no additional cost to the Owner. Abandon rejected installation and place special fill materials, at no additional cost to the Owner. Replace abandoned installations, including all additional fittings, manholes, or appurtenances required to replace rejected installations.

6. Casing Pipe or Un-cased Carrier Pipe Installation: Install pipe by approved methods. Use a jacking collar, timbers, and other means as necessary to protect the driven end of the pipe from damage. Do not exceed the compressive or tensile strength capacity of the pipe during pushing or pulling operations. Fully support bore hole at all times to prevent collapse. Insert pipe as soil is removed, or support bore with drilling fluid. Fully weld all casing pipe joints. Use an interlocking connection system when approved by the Engineer. Fill space between the inside of the bore hole and the outside of the pipe with special fill material if the space is greater than 1 inch.

7. Pit Restoration: Remove installation equipment and unused materials from the launching and receiving pits. When the carrier pipe extends beyond the limits of trenchless installation and into the bore pit, place bedding and backfill material according to this Section. Place suitable backfill material in the pit. Apply the testing requirements of this Section. Restore the site to original condition or better.

1.16 TRACER WIRE INSTALLATION

A. **Copperhead tracer wire shall be installed on top of water main once backfill has been brought up to top of pipe.**

B. **Tracer wires will be tested for continuity before final acceptance of the Project. Wires without continuity shall be repaired or reinstalled by Contractor.**

C. **Tracer wire shall be brought up to ground level at all valve boxes and installed in a separate tracer wire box. At all dead ends and valve/hydrants, a tracer wire anode will be installed. See the tracer wire specification drawings in Attachment 4 for more detail.**

D. **Tracer wire access boxes will be placed at a maximum distance of 500'.**

1.17 HORIZONTAL AND VERTICAL SEPARATIONS

A. **Horizontal Separation of Gravity Sewers from Water Mains:**

1. Separate gravity sewer mains from water mains by a horizontal distance of at least 10 feet unless: (a) the top of a sewer main is at least 18 inches below the bottom of the water main, and (b) the sewer is placed in a separate trench or in the same trench on a bench of undisturbed earth at a minimum horizontal separation of 3 feet from the water main.

2. When it is impossible to obtain the required horizontal clearance of 3 feet and a vertical clearance of 18 inches between sewers and water mains, the sewers must be constructed of water main materials meeting the requirements of SUDAS Section 5010, 2.01. However, provide a linear separation of at least 2 feet.

B. **<u>Separation of Sewer Force Mains from Water Mains</u>: Separate sewer force mains and water mains by a horizontal distance of at least 10 feet unless:**

1. The force main is constructed of water main materials meeting a minimum pressure rating of 150 psi and the requirements of SUDAS Section 5010, 2.01 and,

2. The sewer force main is laid at least 4 linear feet from the water main.

C. **<u>Separation of Sewer and Water Main Crossovers</u>: Comply with SUDAS section 3.07.C.3 for all sewer separation requirements at sewer crossings.**

1. Vertical separation of sanitary and storm sewers crossing under any water main should be at least 18 inches when measured from the top of the sewer to the bottom of the water main. If physical conditions prohibit the separation, the sewer may be placed not closer than 6 inches below a water main or 18 inches above a water main. Maintain the maximum feasible separation distance in all cases. The sewer and water pipes must be adequately supported and have watertight joints. Use a low permeability soil for backfill material within 10 feet of the point of crossing.

2. Where the sanitary sewer crosses over or less than 18 inches below a water main, locate one full length of sewer pipe of water main material so both joints are as far as possible from the water main.

3. Where the storm sewer crosses over or less than 18 inches below a water main, locate one full length of sewer pipe of water main material or reinforced concrete pipe (RCP)with flexible O-ring gasket joints so both joints are as far as possible from the water main.

D. **<u>Surface Water Crossings</u>: Comply with the Recommended Standards for Water Works, 2007 Edition, section 3.07 CONFLICTS (Section from SUDAS)**

1. <u>Above-water Crossings</u>: Ensure the pipe is adequately supported and anchored; protected from vandalism, damage, and freezing; and accessible for repair or replacement.

2. Underwater Crossings: Provide a minimum cover of 5 feet over the pipe unless otherwise specified in the contract documents. When crossing water courses that are greater than 15 feet in width, provide the following: (a) pipe with flexible, restrained, or welded watertight joints, (b) valves at both ends of water crossings so the section can be isolated for testing or repair; ensure the valves are easily accessible and not subject to flooding, and (c) permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source.

E. **No water pipe shall pass through or come in contact with any part of a sewer manhole, sewer, or other appurtenance. A minimum horizontal separation of 3 feet shall be maintained.**

F. **Should physical conditions exist such that exceptions to above separations are required, Contractor shall obtain Owner's Project Superintendent's assistance for details which will provide protection equal to that provided by above items. When it is impossible to obtain the minimum specified separation distances, the IDNR must specifically approve any variance from the requirements from Section 10.17.**

1.18 CONNECTIONS TO EXISTING WATER MAINS

A. **Existing water mains shall remain in service during installation of new water main. Length of time for tie-in shall be kept to a minimum. Coordinate tie-in with Owner.**

B. **Uncover existing mains, to which connections are to be made, a sufficient time ahead of pipe laying operations to verify fittings required.**

C. **Clean and disinfect existing main and inside of fittings and valves in accordance with Disinfection and De-chlorination section of this Standard Specification.**

D. **In general, a 6' by 8' hole will be required for MP&W to make a safe tapping connection. If a tap larger than 4" is being made, 6' of clearance is needed from the face of the tapping valve. The side of the pipe that is being tapped needs to be excavated lower so water does not come up on to the pipe or contaminate the tapping machine. Any excavation over 5' deep requires trench protection.**

1.19 GATE VALVES AND FITTINGS

A. **Prior to installation, valves shall be inspected for direction of opening, number of turns to open, freedom of operation, tightness of pressure-containing bolting and test plugs, cleanliness of valve ports and seating surfaces, handling damage, and cracks. Defective valves shall be corrected or held for inspection by the Owner. Valves shall be closed before being installed.**

Valves, fittings, plugs, and caps shall be set and joined to the pipe in the manner specified for all valves for cleaning, laying, and joining pipe. Valves 12 inches and larger should be provided with special support, such as crushed stone or concrete blocks so that the pipe will not be required to support the weight of the valve. Valves shall be installed in the closed position.

B. **Install valves with stems vertical, except where shown otherwise on plans.**

C. **Tighten valve glands on new and existing valves as work is installed; replace O-rings if required and retighten glands after valves are placed in operation and brought up to operating pressure. Replace any O-rings which are deteriorated or in unsatisfactory condition.**

D. **A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve. Valve box shall be centered over the operating nut of the valve using one standard centering ring manufactured for that purpose. The box cover shall be flush with the surface of the finished area unless otherwise directed by the Owner.**

E. **All valves shall be restrained to the pipe and/or fittings.**

F. **In no case shall valves be used to bring misaligned pipe into alignment during installation. Pipe shall be supported in such a manner as to prevent stress on the valve.**

G. **If valves are going to be deeper than 5' from ground surface, MP&W requires an valve nut extension. If deeper than 8', a solid valve box will be required.**

1.20 TAPPING VALVES AND SLEEVES

A. **Conform to requirements for gate valves and fittings listed above.**

B. **Follow manufacturer's recommended assembly and installation practices.**

C. **All valves and sleeves will be blocked for support.**

1.21 FIRE HYDRANTS

A. **Prior to installation, all hydrants shall be inspected for direction of opening, nozzle threading, operating-nut and cap-nut dimensions, tightness of pressure-containing bolting, cleanliness of inlet elbow, handling damage, and cracks. Defective hydrants shall be replaced or held for inspection by the Owner.**

B. **All hydrants shall be set plumb and shall have their nozzles parallel with or at right angles to the curb, with steamer (largest) nozzle facing the curb.**

C. **Hydrants shall be set to the established grade and set to the bury line marked on the hydrant so the breakaway will work correctly.**

D. **Hydrant drains shall not be connected to, or located within 10 feet of, sanitary sewers and storm drains.**

E. **All fire hydrants shall be independently valved. Refer to Attachment 2 for plan layout of valving and pipe.**

F. **Flush hydrants will be used at the discretion of the Utility.**

G. **Hydrants must meet new specifications for lead free brass.**

H. **Hydrants need to be blocked with hard blocks and shims. Pour concrete only if poor soils are in the area. Refer to Attachment 1 for more details.**

1.22 THRUST RESTRAINT/BLOCKING

A. **<u>Thrust blocking</u>: Provide cast-in-placed concrete thrust blocks where buried piping changes direction, changes size, and at dead ends, unless otherwise noted on the Plans or approved by the Engineer. Concrete shall have a minimum compressive strength of 4000 psi in 28 days. Allow concrete adequate time to reach a compressive strength of 3000 psi prior to pressure testing. Concrete thrust blocks shall be cast against undisturbed vertical edge of trench for bearing, the bearing surface of thrust block shall be symmetrical vertically and horizontally with respect to line of force of pipe or joint, thrust blocks at dead ends, at plugs and at caps shall be removable so that lines may be easily extended after testing and a period of normal service, and thrust blocks at fittings shall be placed in such a manner as to permit tightening of mechanical joint bolts after placement of trust block.**

Thrust blocks shall be subject to inspection and approval of the Owner's Project Superintendent prior to water main testing.

B. **Tie rods: Tie rods and fittings shall be suitable for use with mechanical joint fittings. Coat tie rods and fittings with 2 coats of coal tar paint or spray on bituminous automotive undercoating material after installation. Tie-rod assemblies and systems are subject to Owner's approval.**

C. **Thrust restraint: Mechanical joint restraints for push on or mechanical joints may be used instead of concrete blocking when indicated on the Plans or in the Detailed Specifications for the Project. The preferred method is to use joint restraints (i.e. Megalugs) in addition to concrete blocking or poured kickers.**

D. **A detail drawing showing typical thrust block installations is found in Attachment 3 at the end of these specifications. Thrust blocking from pipe sizes greater than 20-inches will be as shown on the Plans or in Detailed Specifications for the Project.**

Sizes of thrust blocks in square feet of bearing area for water mains based on soil bearing capacity of 2000 pounds per square foot are listed in the table below:

Table 2 - Bearing Area of thrust Blocks in Square Feet

Pipe Size (Inches)	90° Bend	45° Bend	22-1/2° Bend	11-1/4° Bend	Dead End or Tee
4	3	2	2	1	2
6	6	3	2	1	4
8	10	5	3	2	7
10	14	8	4	2	10
12	20	11	6	3	14
14	26	14	8	4	19
16	34	19	10	5	24
18	40	22	11	6	28
20	52	28	15	7	37

1.23 SURFACE RESTORATION

A. **Reopen backfilled areas to traffic or former use as soon as possible. Refer to Attachment 6 and 7 for typical trench and roadway repairs.**

B. **Fill all depressions and grade disturbed areas to provide smooth uniformly sloping surfaces with positive drainage.**

C. **Seeding details are noted in Section 1.5.M**

D. **Agricultural areas shall have topsoil stripped back to a depth of 12 inches. Topsoil shall be kept separate from other excavated materials and spread back over disturbed areas after water main installation and backfill operations have been completed.**

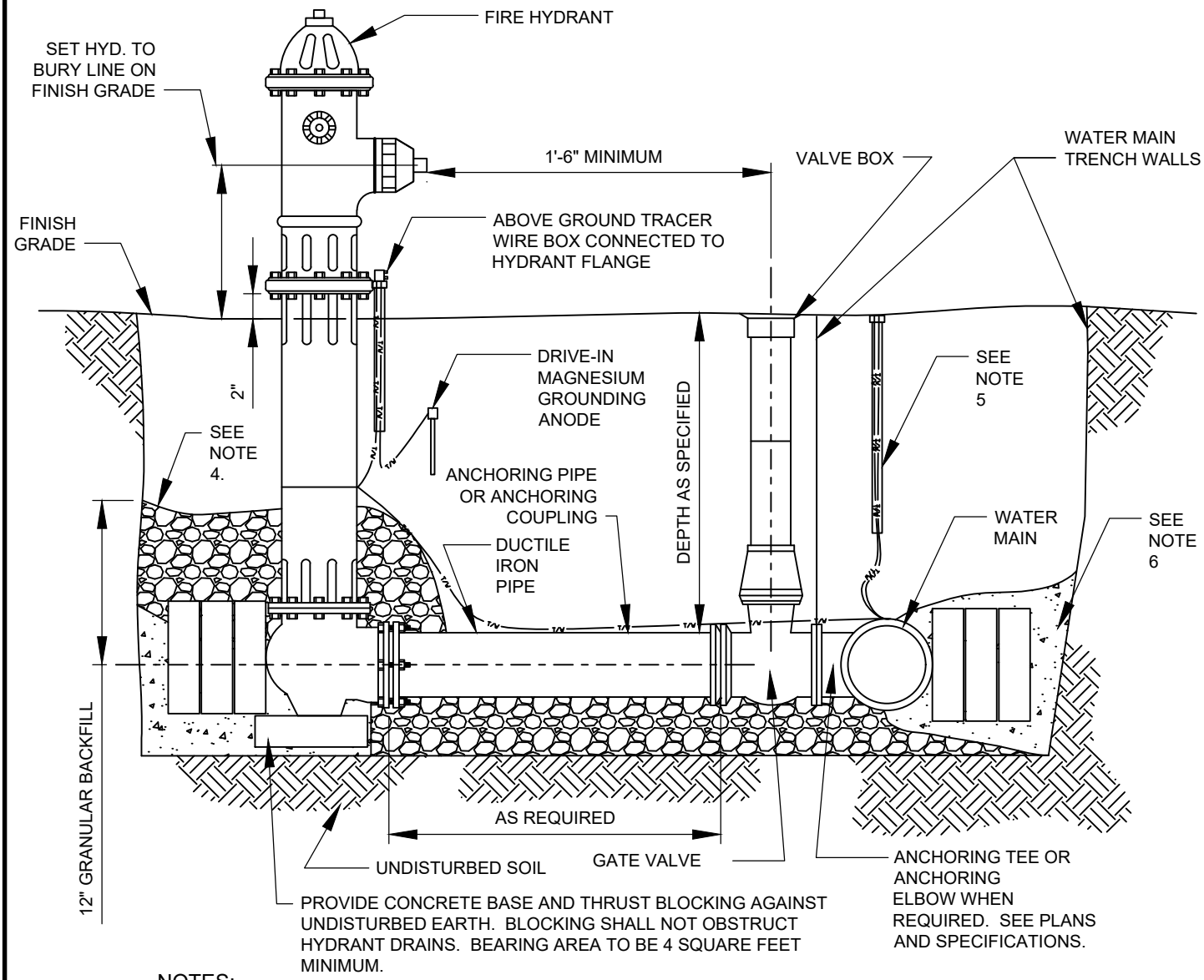
E. **Apply fertilizer, seeding and mulch at rates provided for in Materials portion of this Standard Specification.**

1.24 CLEAN UP

A. **Contractor shall keep site clean and orderly. Contractor shall remove all brush, rubbish, rocks, spoil and other waste materials off site for disposal. Owner reserves the right to instruct the contractor on clean up time lines. Excess materials from all demolitions and excavations shall be disposed of offsite by Contractor, at Contractor's expense, unless otherwise shown on Plans or described in Detailed Specifications for the Project. Leave site generally as it was prior to construction. Site shall be picked up, raked and left in a finished, smooth, clean, seeded and mulched condition.**

ATTACHMENTS

1. Hydrant Installation Detail Elevation – AWD0212A
2. Hydrant Installation Detail Plan – AWD0212B
3. Thrust Block Details – AWD0212C
4. Tracer Wire Installation Plan – AWD0212D
5. Trench Detail – AWD0212E
6. City Guidelines for Repairs in Streets, City of Muscatine, Iowa
7. Typical Trench and Street Repairs, City of Muscatine, Iowa
8. Full Depth Hot Mix Asphalt Finish Patches



NOTES:

1. ALTERNATE MECHANICAL JOINT RESTRAINT SYSTEMS ARE SUBJECT TO OWNER'S APPROVAL.
2. APPLY POLYETHYLENE ENCASEMENT ON PIPE, VALVE, VALVE BOX FIRE HYDRANT AND FITTINGS AS SPECIFIED.
3. HYDRANT STEAMER NOZZLE TO BE TURNED TOWARDS STREET UNLESS SPECIFIED OTHERWISE.
4. INSTALL LAYER OF FILTER FABRIC OR 4 MIL PLASTIC FILM BARRIER OVER DRAIN FIELD. DRAIN FIELD COMPRISED OF 1/2 CU. YD. MINIMUM OF 1" WASHED GRAVEL.
5. USE SNAKEPIT TRACER WIRE BOXES ON WATERMAIN AS SPECIFIED IN PLANS.
6. USE CONCRETE BLOCKS IF SOIL IS LOAD BEARING, OTHERWISE, USE POURED CONCRETE THRUST BLOCK AS SPECIFIED IN PLANS.

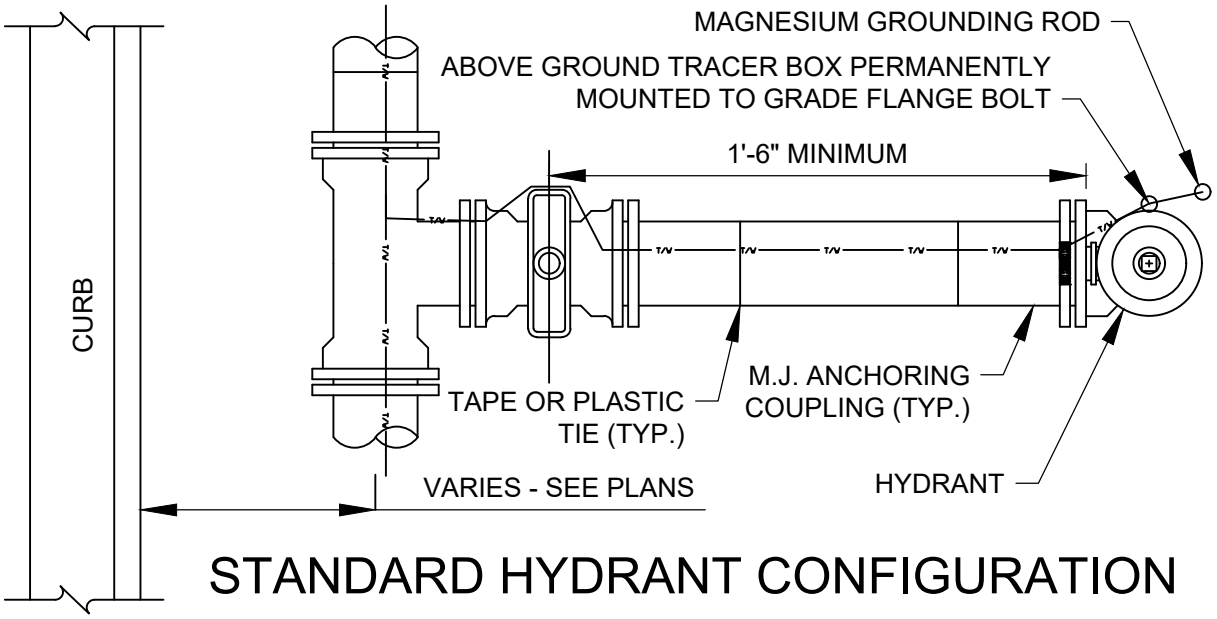
DRAWN BY: S. WIESKAMP	DATE: 11/30/04
APPROVED BY: A. GROSS	DATE: 2-18-15
REVISED BY: A. HANEY	DATE: 2-12-15
SCALE: NONE	

HYDRANT INSTALLATION DETAIL ELEVATION

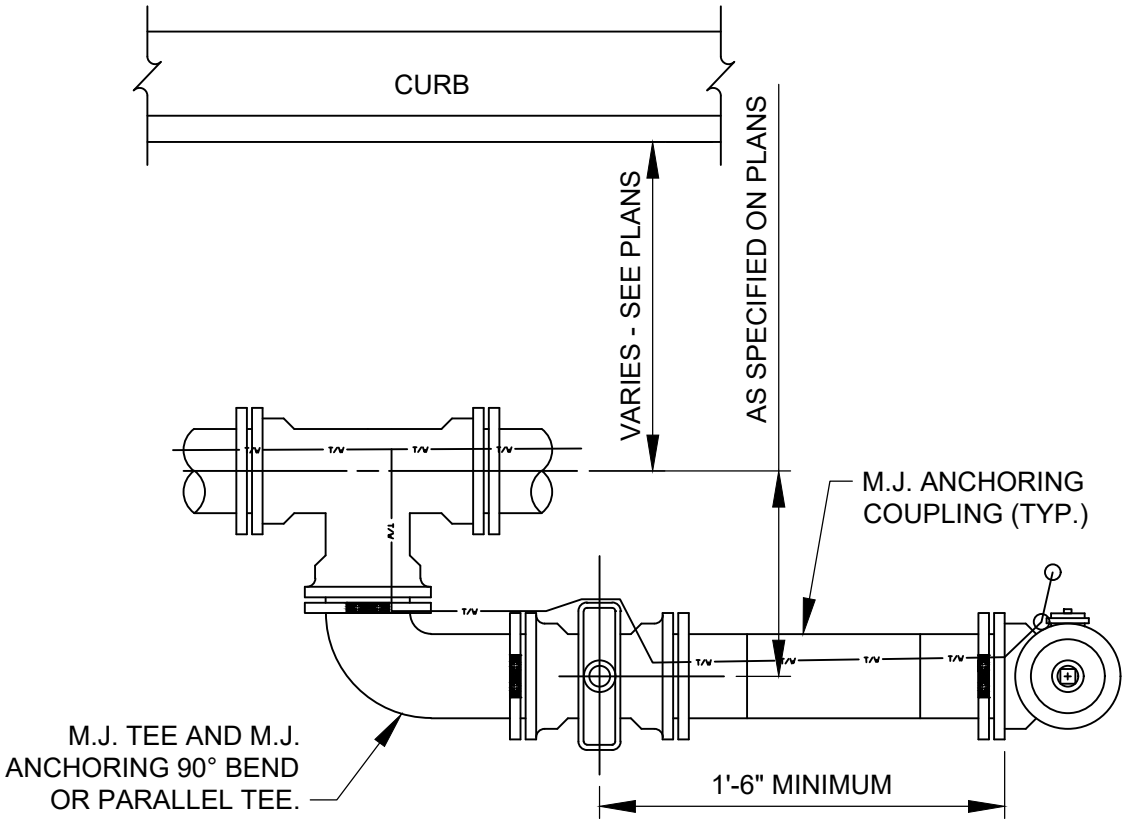
MUSCATINE POWER & WATER

FILE No. 142

DRAWING No. AWD0212A



STANDARD HYDRANT CONFIGURATION



PARALLEL HYDRANT CONFIGURATION

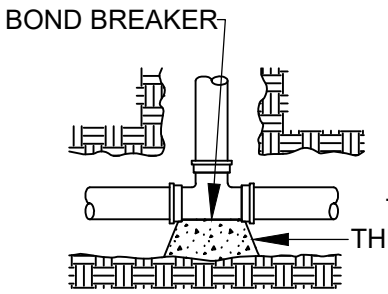
DRAWN BY: S. WIESKAMP	DATE: 11/30/04
APPROVED BY: A. GROSS	DATE: 2/17/15
REVISED BY: A. HANEY	DATE: 2/17/15
SCALE: NONE	

HYDRANT INSTALLATION DETAIL PLAN

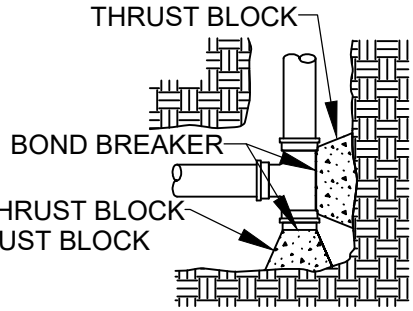
MUSCATINE POWER & WATER

FILE No. 142

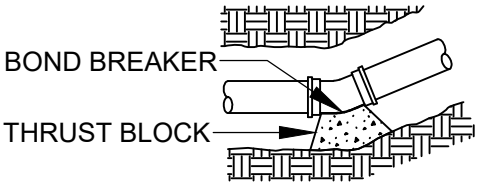
DRAWING No. AWD0212B



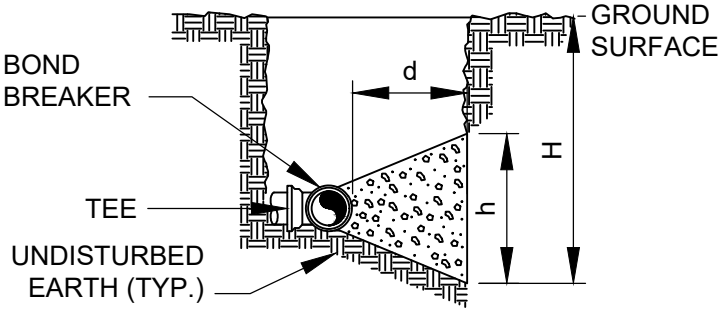
TEE (PLAN)



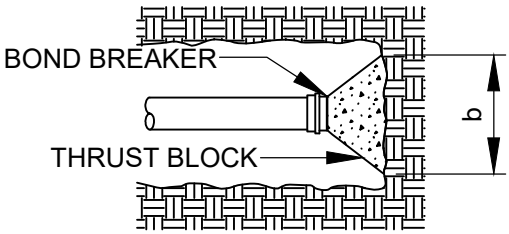
PLUGGED TEE (PLAN)



BEND (PLAN)



ELEVATION



DEAD END (PLAN)

NOTES:

1) BEARING SURFACE SHOULD, WHERE POSSIBLE, BE PLACED AGAINST UNDISTURBED SOIL. WHERE IT IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY, VERIFIED BY IN PLACE DENSITY TESTING.

2) BLOCK HEIGHT (h) SHOULD BE EQUAL TO OR LESS THAN ONE-HALF THE TOTAL DEPTH TO THE BOTTOM OF THE BLOCK, (H), BUT NOT LESS THAN THE PIPE DIAMETER.

3) BLOCK HEIGHT (h) SHOULD BE CHOSEN SUCH THAT THE CALCULATED BLOCK WIDTH (b) VARIES BETWEEN ONE AND TWO TIMES THE HEIGHT.

4) DO NOT ALLOW CONCRETE TO DIRECTLY CONTACT JOINTS OR FITTING BOLTS, PROTECT JOINTS AND BOLTS WITH POLYETHYLENE ENCASEMENT.

5) BLOCK DEPTH (d) SHALL BE AT LEAST $\frac{1}{2}$ BLOCK HEIGHT (H).

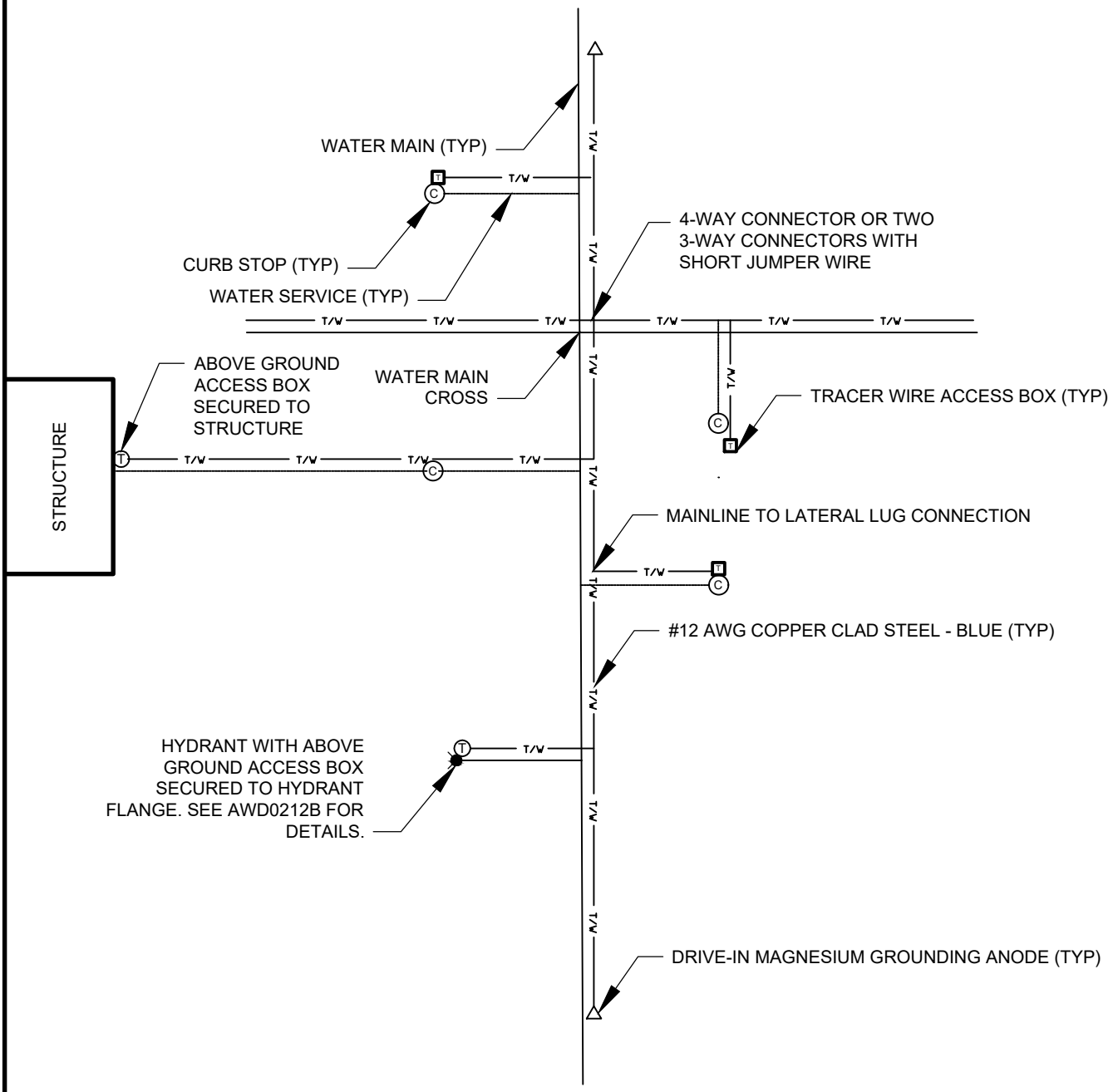
DRAWN BY: S. WIESKAMP	DATE: 12/02/04
APPROVED BY: Gerald R. Peterson	DATE: 01/13/05
REVISED BY: E.B.GLENNEY	DATE: 3-28-08
SCALE: NONE	

THRUST BLOCK DETAILS

MUSCATINE POWER & WATER

FILE No. 142

DRAWING No. AWD0212C



NOTES

1. TRACER WIRE SHOWN OFFSET FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON TOP OF PIPE AND FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

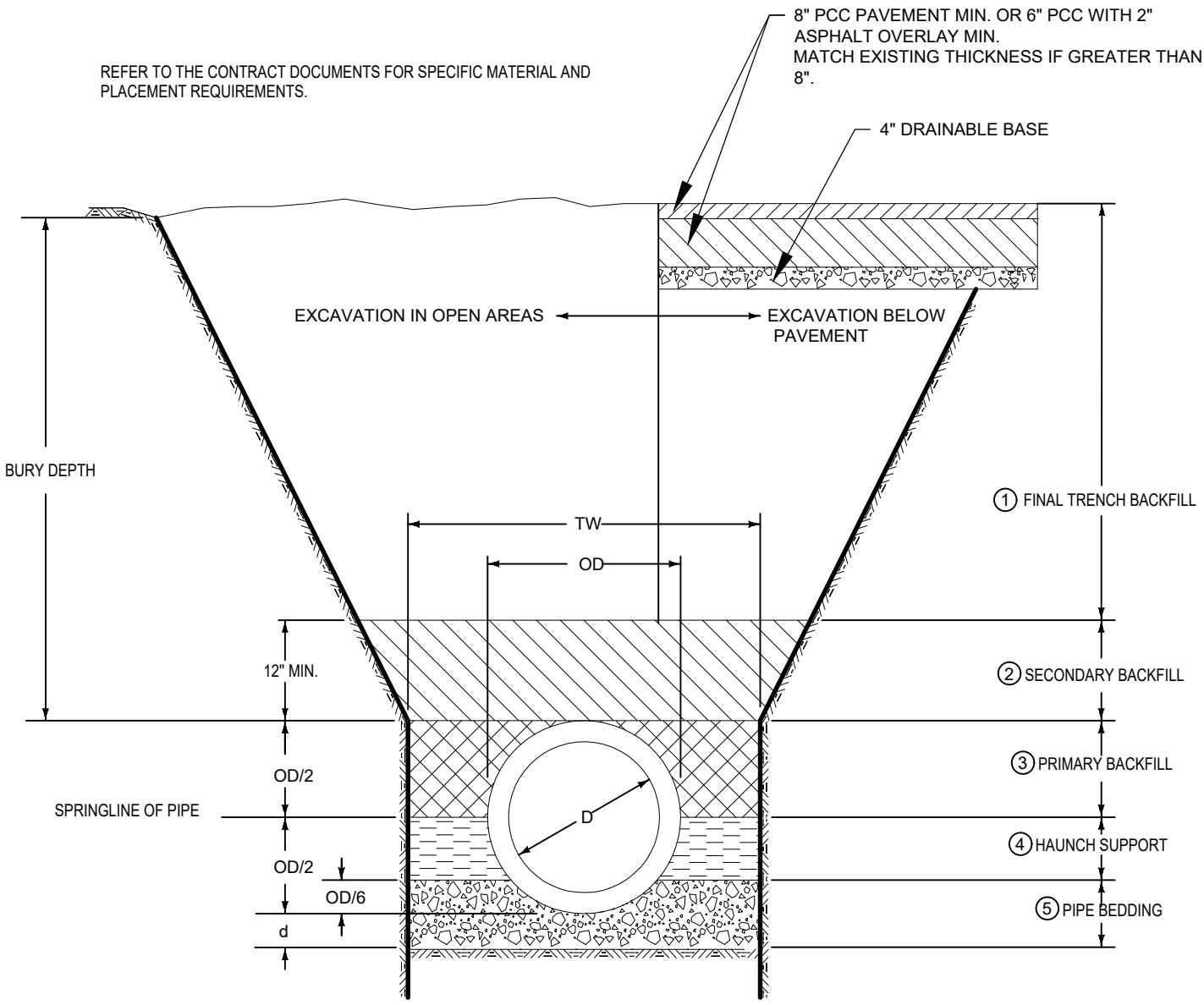
DRAWN BY: A. HANEY	DATE: 2/10/15
APPROVED BY: A. GROSS	DATE: 2/18/15
REVISED BY: A. HANEY	DATE: 2/10/15
SCALE: NONE	

TRACER WIRE INSTALLATION PLAN

MUSCATINE POWER & WATER

FILE No. 142

DRAWING No. AWD0212D



① BACKFILL SHALL BE CLEAN SAND OR MANUFACTURED SAND WITHIN 10 FT. OF PAVEMENT.

②③④ BACKFILL SHALL BE CLEAN SAND OR MANUFACTURED SAND REGARDLESS OF LOCATION.

⑤ IF ROCKS OR UNSUITABLE SOILS ARE ENCOUNTERED, OVER EXCAVATE AND REPLACE WITH COMPACTED ROCK OR MANUFACTURED SAND; OTHERWISE PIPE CAN BE BEDDED ON NATIVE MATERIALS.

Key

OD = OUTSIDE DIAMETER OF PIPE

D = INSIDE DIAMETER OF PIPE

TW = TRENCH WIDTH AT TOP OF PIPE, MAX IS OD + 12" EACH SIDE

d = DEPTH OF BEDDING MATERIAL BELOW PIPE, 6"

DRAWN BY: A. HANEY	DATE: 5-22-15
APPROVED BY: AHREN GROSS	DATE: 5-28-15
REVISED BY:	DATE:
SCALE: NONE	

TRENCH DETAIL

MUSCATINE POWER & WATER

FILE No. 142

DRAWING No. AWD0212E

CITY GUIDELINES FOR REPAIRS IN STREETS

City of Muscatine, Iowa

1. Dimensions for a Utility Patch:

   A. Minimum dimensions for a utility patch bounding a joint or pavement edge shall be six (6) feet.

   B. A patch inside a pavement panel (interior patch) not bounded by a joint or an edge shall have minimum dimensions of four (4) feet.

   C. All sides of an interior patch shall be at least four (4) feet from a pavement joint.

   D. Patches should be eight (8) inch thickness minimum.

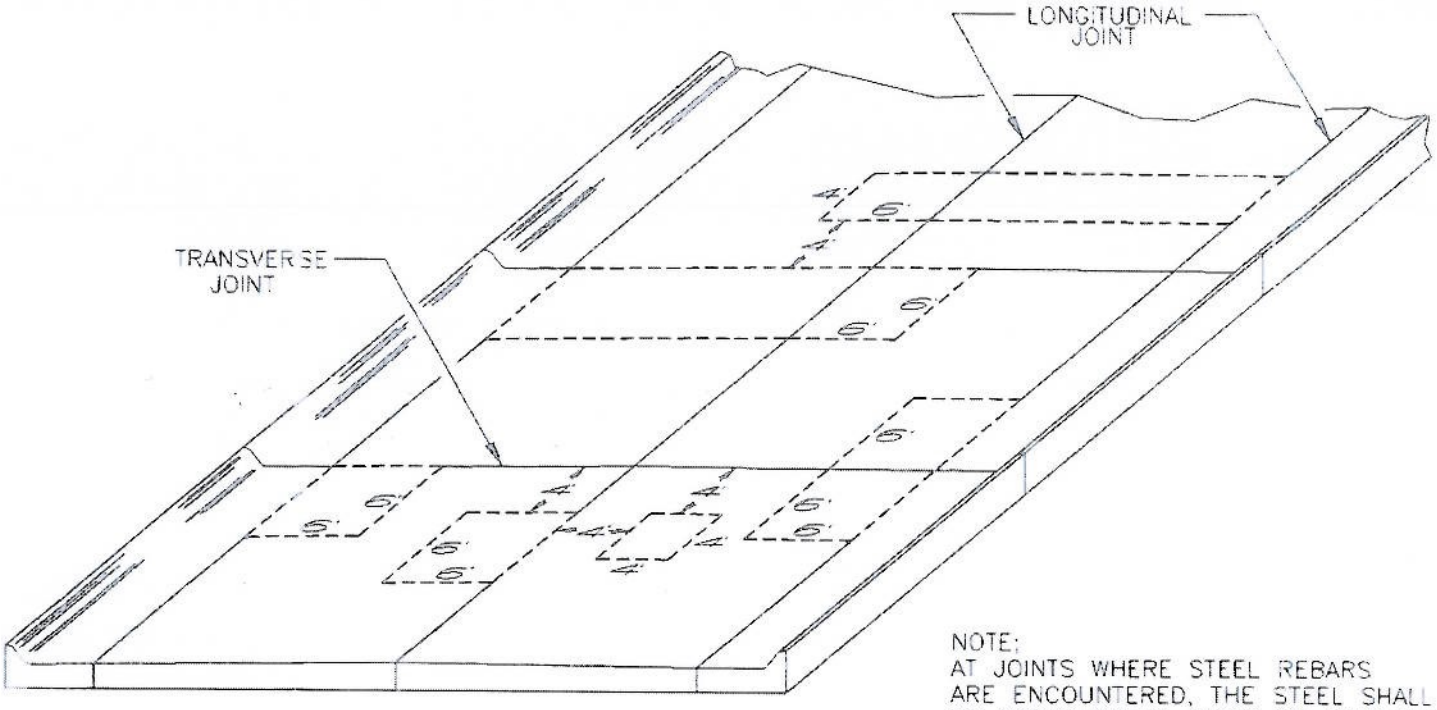
2. Untreated granular material shall not be placed within eighteen (18) inches of the slab, unless otherwise authorized.

3. Saw cuts shall be a minimum of four (4) inches deep, preferably full depth.

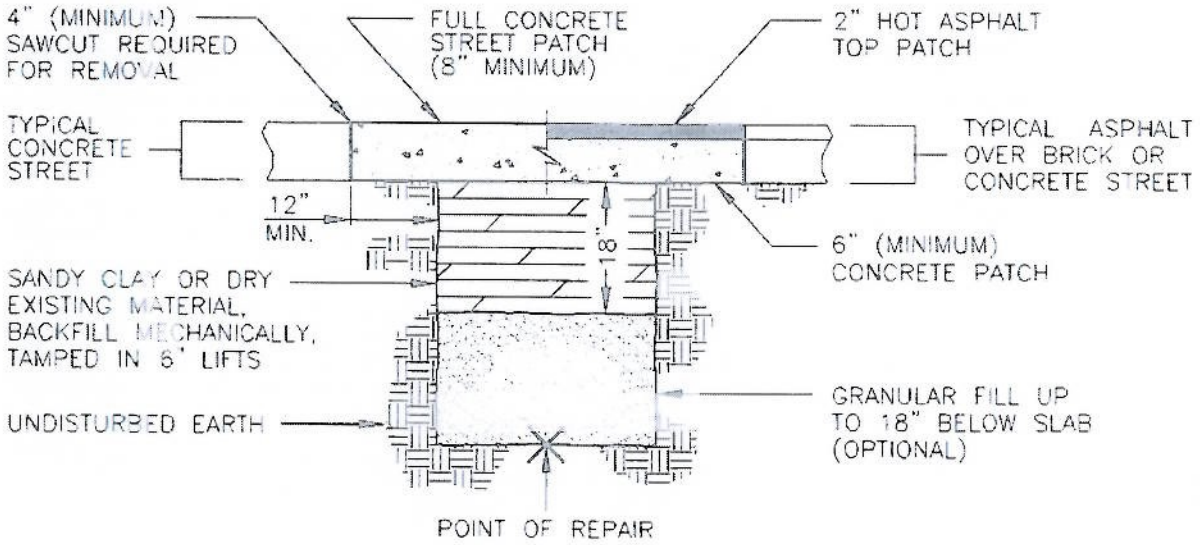
4. Asphalt streets and sealcoated streets shall be patched with a minimum of three (3) inches of hot mix asphalt.

5. No frozen material may be placed in the fill.

6. Contractors are required to obtain excavation permits, and to have all utilities located prior to excavation.



MINIMUM SIZE PATCHES
FOR STREET REPAIR



TYPICAL TRENCH AND
STREET REPAIR

FULL DEPTH HOT MIX ASPHALT FINISH PATCHES

TRAFFIC CONTROL: Furnishing, placing and removal of all signs, barricades, and flag man shall be the responsibility of the contractor and shall be in compliance with the current manual on uniform traffic control devices.

PAVEMENT REMOVAL: When repairing A.C. or P.C.C. pavement, the pavements shall be sawed full depth of the existing pavement and removed. If the base material is unstable, it shall also be removed.

Except where an existing transverse or longitudinal joint forms the edge of the patch, the edge shall be constructed by sawing full depth of the pavement resulting in a reasonably vertical edge when removing the material. The work shall be done in such a manner that the edges and remaining pavement are not damaged.

CLEANING AND PREPARATION: All loose material and debris shall be removed with hand tools and air blast. The entire area shall be free of foreign material and moisture. All removal material shall remain the property of the Contractor and shall be removed from the job site and disposed of at the Contractor's disposal area.

The base shall be dry and tamped with a mechanical tamper until the desired compaction is achieved.

TACK COAT: Tack coat may be SS-1, SS-1H. RC-70 and MC-70 may be used after 1 October. Tack Coat shall only be applied when the surface temperature exceeds 35 degrees Fahrenheit.

HOT MIX ASPHALT MIXTURE: The existing surface and the surface of each layer shall be free of moisture and foreign material before placing mixture. The hot mix asphalt temperature range shall be 245 to 330 degrees Fahrenheit when placed. The hot mix asphalt mixture shall use a ½" Type "A" aggregate and shall meet or exceed 300,000 ESAL H.M.A. criteria.

The contractor shall furnish a plant certification specifying the H.M.A. is in compliance with specifications along with a job mix formula for each 100 ton of mix or as required by the Engineer.

EQUIPMENT: Hand tools, mechanical tamper and a vibratory roller suitable for the work. All equipment shall be approved by the Engineer.

PROCEDURE: Tack coat shall be applied to all vertical surfaces that will come in contact with the hot mixture.

The application rate of the tack coat material shall not exceed 0.15 gal per square yards. The H.M.A. mix shall not be placed when the surface temperature is below 35 degrees Fahrenheit.

The hot mix asphalt mixture shall be placed in lifts not exceeding 3" after compaction. Each lift shall be compacted with a mechanical tamper. The final lift shall be compacted with a vibratory roller and placed so that after compaction the surface of the patch is flush with the existing pavement.

The patch may be open to traffic when the patch temperature is cool to the touch and all excess material and debris have been cleaned and removed by the Contractor.

GEOTECHNICAL REPORT

Mississippi Drive Corridor
City of Muscatine
Muscatine, IA

Braun Intertec Corporation
1901 16th Avenue SW, Suite 2
Cedar Rapids, IA 52404

Phone: 319.365.0961
Fax: 319.365.1306
Web: braunintertec.com

December 2, 2016 Project B16-10125

Jim Edgmond, City Engineer
City of Muscatine
1459 Washington Street
Muscatine, IA 52761

Re: Geotechnical Data Report
Proposed Mississippi Drive Improvements
Muscatine, Iowa

Dear Mr. Edgmond:

We are pleased to present this Geotechnical Data Report for the proposed Mississippi Drive Improvements project in Muscatine, Iowa. A summary of our findings is presented in the attached report.

Thank you for making Braun Intertec your geotechnical consultant for this project. If you have questions about this report, or if there are other services that we can provide in support of our work to date, please call us at 319-365-0961.

Sincerely,

BRAUN INTERTEC CORPORATION

Andrew Schweizer, EIT
Staff Engineer

Timothy T. Wiles, PE
Principal/Senior Engineer

AA/EOE

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Appendix: Log of Boring Sheets
Sieve and Hydrometer test Results (6)
CBR Test Results (4)
Descriptive Terminology

BRAUN INTERTEC

A. Introduction

A.1. Project Description

We understand that this project consists of the reconstruction of the following streets in Muscatine, Iowa:

- Green Avenue from Mill Street to Hershey Avenue
- Hershey Avenue from Green Street to Elm Street
- West Mississippi Drive from Elm Street to Mulberry Avenue
- Mulberry Avenue from Mississippi Drive to East 2nd Street
- East 2nd Street from Mulberry Avenue to Orange Street

We also understand that a roundabout is planned at the intersection of Hershey Avenue and Green Street.

A.2. Purpose

The purpose of this geotechnical investigation is to characterize subsurface geologic conditions at selected boring locations and provide a brief summary of our findings.

A.3. Background Information and References

To facilitate our investigation, we relied on the provided boring location plan, RFP, and aerial photos of the site from Google Earth™.

B. Results

B.1. Exploration Logs

B.1.a. Log of Boring Sheets

Log of Boring sheets for our penetration test borings are included in the Appendix. The logs identify and describe the geologic materials that were penetrated, present the results of penetration resistance tests performed within them and water levels observed.

Strata boundaries were inferred from changes in the penetration test samples and the auger cuttings. The boundary depths likely vary away from the boring locations, and the boundaries themselves may also occur as gradual rather than abrupt transitions.

B.1.b. Geologic Origins

Geologic origins assigned to the materials shown on the logs and referenced within this report were based on: (1) a review of the background information and references cited above, (2) visual classification of the geologic material samples retrieved during the course of our subsurface exploration, (3) penetration resistance testing performed for the project, (4) available common knowledge of the geologic processes and environments that have impacted the site and surrounding area in the past, and (5) laboratory testing results on material samples retrieved during drilling.

B.2. Boring Locations

A boring location plan was not practical for the format of this report. The borings were drilled in the traffic lanes, along the shoulders or in the right-of-way of the streets listed in section A.1 above. Specific locations are documented by the coordinates listed on each boring log.

B.3. Geologic Profile

B.3.a. Pavement and Aggregate Base

Our borings initially encountered existing roadway surface materials consisting of asphalt pavement, Portland Cement Concrete pavement, and an aggregate base layer. Type and thickness of pavement varied across the site. Asphalt overlay pavement was encountered in ten of our borings to depths ranging from 1 to 4 inches. Portland Cement Concrete pavement was encountered in all borings at the existing ground surface or below an asphalt overlay to depths ranging from 4 to 13 inches. Aggregate base material was encountered in all borings below the pavement materials to depths ranging from 11 to 18 inches.

B.3.b. Existing Fill

Immediately below the pavement materials and aggregate base, all borings except Boring RB-15 encountered existing fill extending to depths ranging from 3½ to 10 feet below existing grade. Some of the existing fill appears to have received some compactive effort, however, the composition and consistency of the fill appear to be highly variable. The existing fill generally consisted of sandy lean clay (CL), silty sand (SM) and poorly-graded sand (SP) with variable amounts of gravel, sand, and debris. The existing fill was variable in color and density with blow counts ranging from 2 to 21 blows per foot (bpf).

B.3.c. Alluvium

Below the existing fill, Borings RB-01, RB-05, RB-15, and RB-19 encountered alluvial soils to the boring termination depths of approximately 10 feet below existing grade. These soils generally consisted of lean

clay (CL) or poorly graded sand (SP). The alluvial lean clay contained trace amounts of organics, was generally dark gray, moist, and rather soft in consistency. The alluvial poorly graded sand was generally fine- to medium-grained, brown, moist to wet, and very loose to loose in density with blow counts ranging from 4 to 8 bpf.

B.3.d. Glacial Till

Below the existing fill, brown and gray glacial till was encountered in Borings RB-12 and RB-13 to boring termination depths of approximately 10 feet below existing grade. These soils generally consisted of sandy lean clay (CL) with trace amounts of gravel. The glacial till was generally brown, moist, and rather stiff in consistency, with blow counts ranging from 9 to 11 bpf.

B.3.e. Bedrock

Bedrock was encountered in Borings RB-10 and RB-11 at depths of approximately 4 and 3½ feet below existing grade, respectively. The bedrock generally consisted of highly weathered limestone.

B.3.f. Groundwater

Groundwater was not observed in the borings while drilling. Seasonal and annual fluctuations of groundwater should be expected.

C. Laboratory Testing

Laboratory tests were assigned by HDR personnel. The test results are shown on the boring logs at the depths corresponding to the samples tested or on separate lab sheets included in the appendix. It should be noted that there wasn't sufficient sample size for the grain size, CBR and standard compaction test for the bulk samples from Borings RB-5, RB-16, RB-21 and RB-23. For those samples, the grain size tests were omitted.

D. Procedures

D.1. Penetration Test Borings

Boring locations were marked and located by Braun Intertec using a hand-held GPS. Surface elevations were determined by the project surveyor. Once borings were marked and utilities located, penetration test borings were drilled with an ATV-mounted drill rig equipped with power augers. The borings were performed in general accordance with ASTM D 1586. Standard penetration tests (with split spoon sampling) or thin-walled tube samples were taken at 2½-feet intervals to termination depths of approximately 10 feet. Actual sample intervals and corresponding depths are shown on the boring logs.

The drillers checked for groundwater as the penetration test borings were advanced. The boreholes were then backfilled bentonite chips and patched with asphalt. A boring location sketch is included in the Appendix.

D.2. Material Classification

The geologic materials encountered were visually and manually classified by a geotechnical engineer in accordance with ASTM Standard Practice D 2488. A chart explaining the classification system is attached. Soil samples retrieved were returned to our facility for review and storage.

E. Qualifications

E.1. Variations in Subsurface Conditions

E.1.a. Material Strata

Our evaluation of the subsurface conditions was developed from a limited amount of site and subsurface information. It is not standard practice to retrieve material samples from exploration locations continuously with depth, and therefore strata boundaries and thicknesses must be inferred to some extent. Strata boundaries may also be gradual transitions, and can be expected to vary in depth, elevation and thickness away from the exploration locations.

Variations in subsurface conditions present between exploration locations may not be revealed until additional exploration work is completed, or construction commences. If any such variations are revealed, our recommendations should be re-evaluated. Such variations could increase construction costs, and a contingency should be provided to accommodate them.

E.1.b. Groundwater Levels

Groundwater observations were recorded on the field logs during drilling. It should be noted that the observation periods were relatively short, and groundwater levels can be expected to fluctuate in response to rainfall, flooding, irrigation, seasonal freezing and thawing, surface drainage modifications and other seasonal and annual factors.

E.2. Use of Report

This report is for the exclusive use of the parties to which it has been addressed. Without written approval, we assume no responsibility to other parties regarding this report. Our evaluation may not be appropriate for other parties or projects.

E.3. Standard of Care

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

Appendix

BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-01**

LOCATION: Latitude: 41.413585
Longitude: -91.057882

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
546.1	0.0						
545.8	0.3	PAV	Asphalt Pavement				
545.0	1.1	PAV	PCC Pavement				
544.6	1.5	AGG	Aggregate Base	15		13	LL= N/A, PL= NP, PI= NP P200= 28% q_p= 1.0 tsf
543.1	3.0	FILL	FILL: Silty Sand with Gravel, dark brown, dry				
540.1	6.0	FILL	FILL: Sandy Lean Clay with wood fragments, brown and gray, moist				
538.6	7.5	FILL	FILL: Lean Clay, trace Sand and Gravel, gray, moist	8			
536.1	10.0	CL-ML	SILTY CLAY, trace Gravel and Organics, gray, moist (Alluvium)				q_p= 1.0 tsf
			END OF BORING. Water not observed while drilling. Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-02**

LOCATION: Latitude: 41.414800
Longitude: -91.057731

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
555.2	0.0						
555.0	0.3	PAV	Asphalt Pavement				
554.1	1.1	PAV	PCC Pavement				
553.7	1.5	AGG	Aggregate Base				
		FILL	FILL: Sandy Lean Clay, trace Gravel, dark brown, dry	15		14	
552.2	3.0	FILL	FILL: Sandy Lean Clay with wood fragments, gray, moist				Bulk sample from 2 to 8 feet. q_p= 1.0 tsf
549.2	6.0	FILL	FILL: Sandy Lean Clay, trace Gravel and roots, light brown and gray, moist to wet				q_p= 1.0 tsf
545.2	10.0			3			
			END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-03**

LOCATION: Latitude: 41.415308
Longitude: -91.057955

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	DD pcf	Tests or Notes
559.7	0.0							
558.7	1.0	PAV	PCC Pavement					
558.2	1.5	AGG	Aggregate Base					
		FILL	FILL: Lean Clay, trace Sand and Gravel, brown and gray, moist	9				*No recovery
						19	109	q_p= 1.0 tsf
								q_p= 1.0 tsf
								q_p= .05 tsf
549.7	10.0		END OF BORING.					
			Water not observed while drilling.					
			Boring then backfilled.					

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-04**

LOCATION: Latitude: 41.415629
Longitude: -91.057541

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
568.5	0.0						
568.3	0.3	PAV	PCC Pavement				
567.0	1.5	AGG	Aggregate Base				Bulk sample from 1 to 10 feet.
566.0	2.5	FILL	FILL: Sandy Lean Clay, brown, moist				
565.5	3.0	FILL	FILL: Poorly Graded Sand with Silt, fine- to medium-grained, orange brown, moist				q_p= 0.5 tsf
		FILL	FILL: Lean Clay with Sand, brown and gray, moist to wet	11		18	q_p= 2.0 tsf
							q_p= 2.5 tsf
558.5	10.0		END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-05**

LOCATION: Latitude: 41.415268
Longitude: -91.056191

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
555.6	0.0					
554.9	0.8	PAV	PCC Pavement			
554.1	1.5	AGG	Aggregate Base			
552.6	3.0	FILL	FILL: Silty Sand, trace Gravel and Organics, fine- to medium-grained, brown and gray, dry	12		
547.6	8.0	FILL	FILL: Sandy Lean Clay, trace Gravel, brown and gray, moist			q_p= 1.5 tsf q_p= 1.0 tsf
545.6	10.0	CL	LEAN CLAY, trace Organics, dark gray, moist (Alluvium)			q_p= 1.0 tsf
			END OF BORING. Water not observed while drilling. Boring then backfilled.			Bulk sample from 3 to 8 feet. LL= 28, PL=15, PI=13 P200= 58%

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-06**

LOCATION: Latitude: 41.415249
Longitude: -91.055261

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
556.7	0.0					
556.0	0.8	PAV	PCC Pavement			
555.2	1.5	AGG	Aggregate Base			
		FILL	FILL: Sandy Lean Clay, trace Organics, brown and gray, dry	13		q_p= 4.0 tsf
						q_p= 3.0 tsf
				11		
546.7	10.0		END OF BORING.			
			Water not observed while drilling.			
			Boring then backfilled.			

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-07**

LOCATION: Latitude: 41.415506
Longitude: -91.053589

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
556.0	0.0						
555.2	0.8	PAV	PCC Pavement				
554.5	1.5	AGG	Aggregate Base				
553.0	3.0	FILL	FILL: Silty Sand, trace Gravel, fine- to medium-grained, brown, dry	15			
550.0	6.0	FILL	FILL: Lean Clay with Gravel, trace Organics, brown, dry	7		27	
548.0	8.0	FILL	FILL: Wood fragments	6			
546.0	10.0	FILL	FILL: Lean Clay, trace Organics, gray	3		44	
			END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-08**

LOCATION: Latitude: 41.415802
Longitude: -91.053070

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
558.0	0.0						
557.1	0.9	PAV	PCC Pavement				
556.5	1.5	AGG	Aggregate Base				
		FILL	FILL: Silty Sand with brick fragments, trace Gravel, fine- to medium-grained, brown and dark gray, dry	21		12	P200= 23%
555.0	3.0						
		FILL	FILL: Lean Clay, trace Gravel, dark gray, dry	5		18	
552.0	6.0						
		FILL	FILL: Wood fragments				
550.0	8.0						
		FILL	FILL: Lean Clay with debris (PVC fragments), trace Gravel, gray, moist	5		39	
548.0	10.0						
			END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-09**

LOCATION: Latitude: 41.416489
Longitude: -91.051845

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/26/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	DD pcf	Tests or Notes
563.7	0.0							
562.8	0.9	PAV	PCC Pavement					
562.2	1.5	AGG	Aggregate Base					
		FILL	FILL: Sandy Lean Clay with brick fragments, brown and gray, dry to moist	10		15		
						13	123	q_u= 2050 psi
				12		15		
				7				*No Recovery
553.7	10.0		END OF BORING.					
			Water not observed while drilling.					
			Boring then backfilled.					

LOG OF BORING N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 12/2/16 16:14

BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-10**

LOCATION: Latitude: 41.416882
Longitude: -91.051382

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
566.0	0.0						
565.2	0.8	PAV	PCC Pavement				
564.5	1.5	AGG	Aggregate Base				
		FILL	FILL: Sandy Lean Clay, trace Gravel, orange brown and gray, dry to moist	9		15	LL= 32, PL= 13, PI= 19 P200= 53% q_p= 1.5 tsf
562.0	4.0		AUGER REFUSAL at 4 feet. Water not observed while drilling. Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 12/2/16 16:14

BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-11**

LOCATION: Latitude: 41.417127
Longitude: -91.050719

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
566.7	0.0					
566.4	0.3	PAV	Asphalt Pavement			
565.8	0.9	PAV	PCC Pavement			
		FILL	FILL: Lean Clay, trace Sand and Gravel, brown and gray, dry	8		
563.2	3.5					
		LS	Highly weathered LIMESTONE	50/3"		*No Recovery
				50/0"		*No Recovery
558.7	8.0					
			AUGER REFUSAL AT 8 FEET.			
			Water not observed while drilling.			
			Boring then backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 12/2/16 16:14

BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-12**

LOCATION: Latitude: 41.419020
Longitude: -91.047665

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
557.4	0.0						
557.1	0.3	PAV	Asphalt Pavement				
556.6	0.8	PAV	PCC Pavement				
555.9	1.5	AGG	Aggregate Base				
		FILL	FILL: Lean Clay, trace Sand and Organics, dark gray and brown, dry to wet	9		19	
				5			Bulk sample from 3 to 8 feet.
552.4	5.0						
		CL	LEAN CLAY with SAND, trace Gravel, brown, moist, rather stiff (Glacial Till)				q_p= 1.5 tsf
				11			
547.4	10.0						
			END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-13**

LOCATION: Latitude: 41.419404
Longitude: -91.046906

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
556.0	0.0						
555.2	0.8	PAV	PCC Pavement				
554.5	1.5	AGG	Aggregate Base				
		FILL	FILL: Silty Gravel with Sand, trace Organics, brown and gray, dry	16		11	LL= N/A, PL= NP, PI= NP P200= 30%
				5			
550.0	6.0						q_p= 1.0 tsf
		CL	LEAN CLAY with SAND, trace Gravel, brown, moist, rather stiff (Glacial Till)				
				9			
546.0	10.0						
			END OF BORING. Water not observed while drilling. Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-14**

LOCATION: Latitude: 41.420102
Longitude: -91.045558

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
554.5	0.0						
553.7	0.8	PAV	PCC Pavement				
553.0	1.5	AGG	Aggregate Base				
		FILL	FILL: Lean Clay, trace Sand and wood fragments, dark gray, dry	11		14	
				7			
549.0	5.5						
		FILL	FILL: Lean Clay, trace Sand and Organics, brown and gray, moist				q_p= 3.0 tsf
				7			
544.5	10.0						
			END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-15**

LOCATION: Latitude: 41.420494
Longitude: -91.045047

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
554.9	0.0					
554.7	0.3	PAV	Asphalt Pavement			
553.8	1.1	PAV	PCC Pavement			
553.4	1.5	AGG	Aggregate Base			
		SP	POORLY GRADED SAND, fine- to medium-grained, brown, dry to moist, very loose to loose (Alluvium)	6		
				6		
				5		
				4		
544.9	10.0		END OF BORING.			
			Water not observed while drilling.			
			Boring then backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-16**

LOCATION: Latitude: 41.421196
Longitude: -91.043766

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
550.8	0.0						
550.7	0.1	PAV	Asphalt Pavement				
549.9	0.9	PAV	PCC Pavement				
549.4	1.4	AGG	Aggregate Base				
		FILL	FILL: Sandy Lean Clay with brick fragments, trace Gravel, brown, moist	9		17	
				5			
							q_p= 2.5 tsf
542.8	8.0						
			Boring terminated due to obstruction.				Bulk sample from 3 to 8 feet.
			Water not observed while drilling.				LL= 27, PL= 16, PI= 11
			Boring then backfilled.				P200= 50%

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-17**

LOCATION: Latitude: 41.421568
Longitude: -91.043043

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	Tests or Notes
552.9	0.0					
552.7	0.3	PAV	Asphalt Pavement			
552.2	0.8	PAV	PCC Pavement			
551.7	1.3	AGG	Aggregate Base	9		Bulk sample from 2 to 8 feet.
		FILL	FILL: Poorly Graded Sand with Silt and Clay pockets, orange brown, dry	5		
546.9	6.0					
		FILL	FILL: Lean Clay with Sand, trace Gravel, brown and gray, moist	6		q_p= 3.5 tsf
542.9	10.0					
			END OF BORING.			
			Water not observed while drilling.			
			Boring then backfilled.			

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-18**

LOCATION: Latitude: 41.422439
Longitude: -91.041369

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
551.3	0.0						
551.2	0.1	PAV	Asphalt Pavement				
550.6	0.7	PAV	PCC Pavement				
549.8	1.5	AGG	Aggregate Base				
		FILL	FILL: Sandy Silty Clay, trace Gravel, brown to dark brown, moist	6		17	LL= 24, PL= 17, PI= 7 P200= 63%
				6			
							q_p= 2.5 tsf
				9			
541.3	10.0		END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-19**

LOCATION: Latitude: 41.422909
Longitude: -91.040800

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
552.5	0.0						
551.8	0.8	PAV	PCC Pavement				
551.0	1.5	AGG	Aggregate Base				
		FILL	FILL: Lean Clay, trace Sand, brown, moist	6		26	
548.5	4.0						q_p= 1.0 tsf
		SP-SM	POORLY GRADED SAND with SILT, fine- to medium-grained, brown, moist to wet, loose (Alluvium)	5			
				8			
542.5	10.0						
			END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-20**

LOCATION: Latitude: 41.423895
Longitude: -91.041223

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
557.0	0.0						
556.2	0.8	PAV	PCC Pavement				
555.5	1.5	AGG	Aggregate Base				
554.0	3.0	FILL	FILL: Silty Sand with Clay pockets, brown, dry	12			
552.0	5.0	FILL	FILL: Sandy Silt, trace Gravel, brown to dark brown, dry	8		16	LL= N/A, PL= NP, PI=NP P200= 50% Bulk sample from 3 to 8 feet. q_p= 2.0 tsf
549.0	8.0	FILL	FILL: Poorly Graded Sand with Silt, orange brown, moist				
547.0	10.0	FILL	FILL: Lean Clay with Sand, brown, moist	5			
			END OF BORING. Water not observed while drilling. Boring then backfilled.				

BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-21**

LOCATION: Latitude: 41.424161
Longitude: -91.040483

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
551.0	0.0						
550.8	0.2	PAV	Asphalt Pavement				
550.0	1.0	PAV	PCC Pavement				
549.5	1.5	AGG	Aggregate Base				
		FILL	FILL: Lean Clay, trace Sand and Gravel, brown and gray, moist	12		17	q_p= 1.5 tsf
				7			
				10			
541.0	10.0		END OF BORING.				
			Water not observed while drilling.				Bulk sample from 3 to 8 feet. LL= 34, PL=15, PI=19 P200= 87%
			Boring then backfilled.				

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BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-22**

LOCATION: Latitude: 41.425027
Longitude: -91.039175

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
548.7	0.0						
547.7	1.0	PAV	PCC Pavement				
547.2	1.5	AGG	Aggregate Base				
		FILL	FILL: Lean Clay with Sand, brown and gray, dry to wet	10		14	Bulk sample from 2 to 8 feet. q_p= 2.0 tsf
				14			
				2			
538.7	10.0		END OF BORING.				
			Water not observed while drilling.				
			Boring then backfilled.				

(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 12/2/16 16:14

BRAUN INTERTEC

LOG OF BORING

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: **RB-23**

LOCATION: Latitude: 41.425437
Longitude: -91.038434

DRILLER: R.Hunt/C.Gracey | METHOD: Power Auger | DATE: **10/27/16** | SCALE: **1" = 4'**

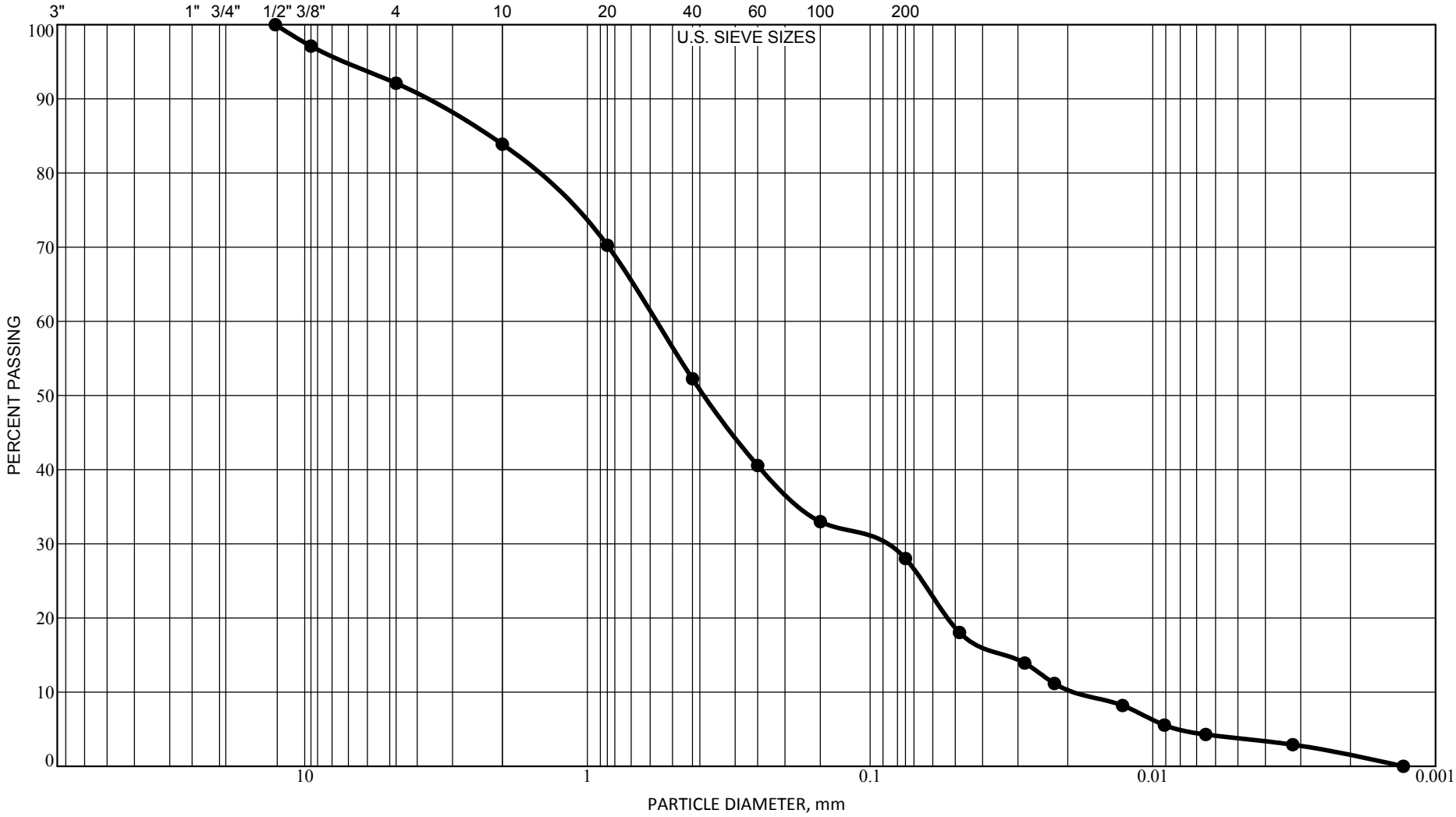
(See Descriptive Terminology sheet for explanation of abbreviations)

Elev. feet	Depth feet	Symbol	Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908)	BPF	WL	MC %	Tests or Notes
548.9	0.0						
548.7	0.2	PAV	Aspahlt Pavement				
548.2	0.8	PAV	PCC Pavement				
547.4	1.5	AGG	Aggregate Base				
		FILL	FILL: Lean Clay, trace Sand, brown and gray, dry to wet	15		14	
				4			q_p= 1.0 tsf
				4			
538.9	10.0		END OF BORING.				
			Water not observed while drilling.				Bulk sample from 2 to 8 feet.
			Boring then backfilled.				LL=26, PL= 13, PI=13 P200= 65%

LOG OF BORING N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 12/2/16 16:14

GRAIN SIZE ACCUMULATION CURVE (AASHTO)

GRAVEL			SAND		FINES	
COARSE	MEDIUM	FINE	COARSE	FINE	SILT	CLAY



BRAUN INTERTEC

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: RB-01 DEPTH: 1.5'-3.0'

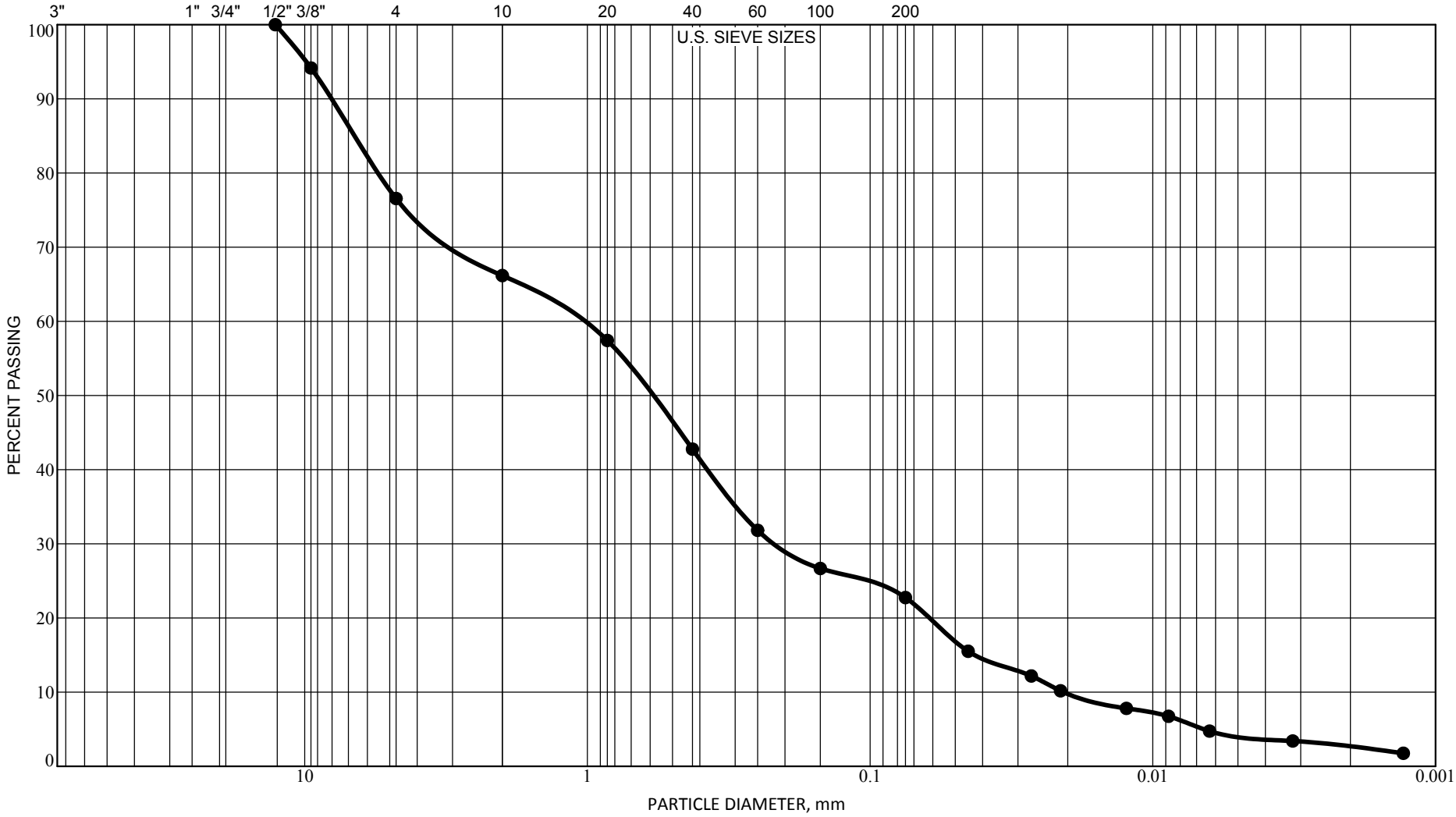
GRAVEL	16.1%
SAND	55.9%
SILT	26.6%
CLAY	1.4%

CLASSIFICATION:

GS AASHTO N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 11/17/16 14:34

GRAIN SIZE ACCUMULATION CURVE (AASHTO)

GRAVEL			SAND		FINES	
COARSE	MEDIUM	FINE	COARSE	FINE	SILT	CLAY



BRAUN INTERTEC

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: RB-08 DEPTH: 1.5'-3.0'

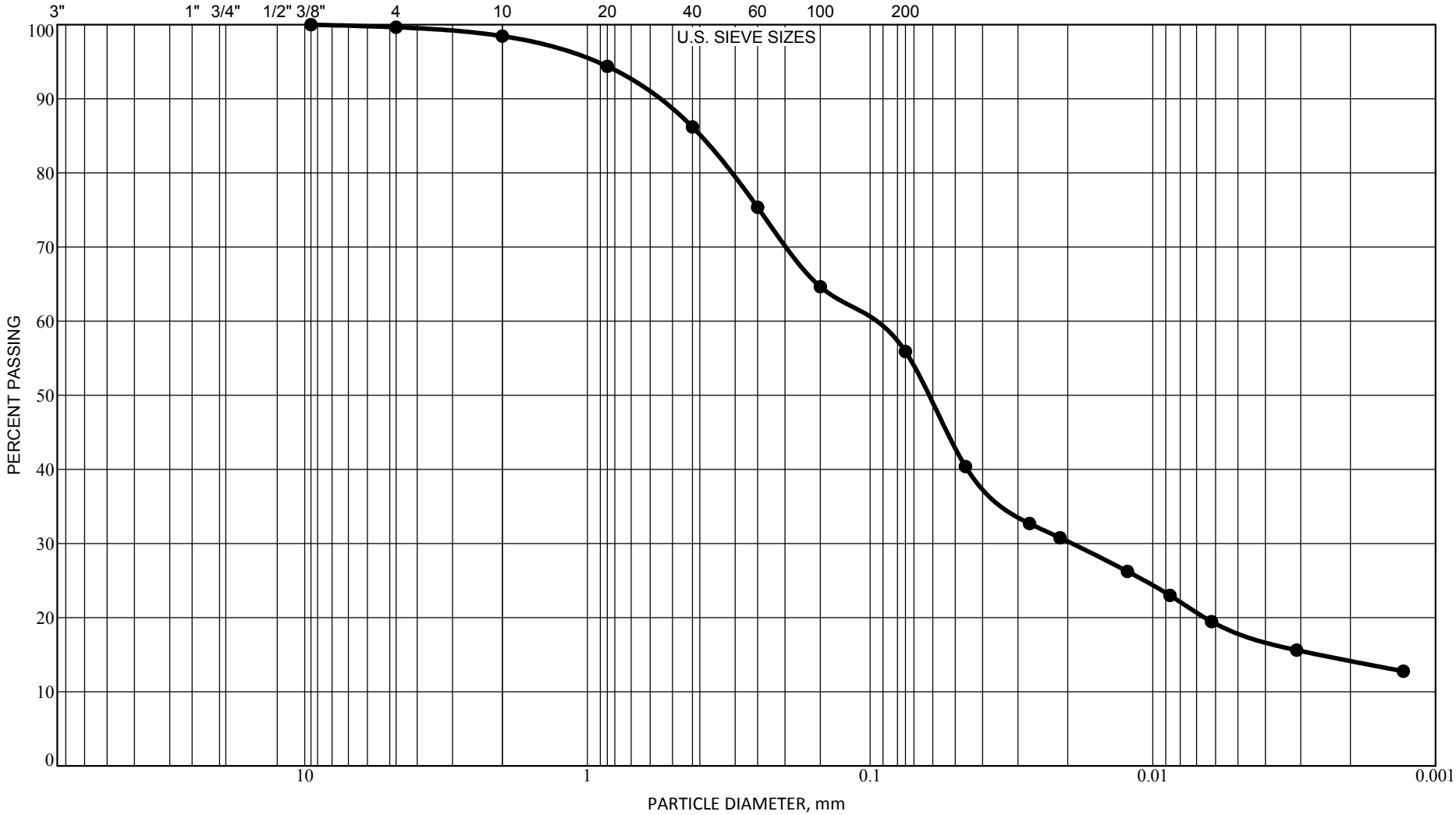
GRAVEL	33.8%
SAND	43.4%
SILT	20.2%
CLAY	2.5%

CLASSIFICATION:

GS AASHTO N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 11/17/16 14:34

GRAIN SIZE ACCUMULATION CURVE (AASHTO)

GRAVEL			SAND		FINES	
COARSE	MEDIUM	FINE	COARSE	FINE	SILT	CLAY



BRAUN INTERTEC

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: RB-10 DEPTH: 1.5'-3.0'

GRAVEL	1.5%
SAND	42.6%
SILT	41.7%
CLAY	14.2%

CLASSIFICATION:

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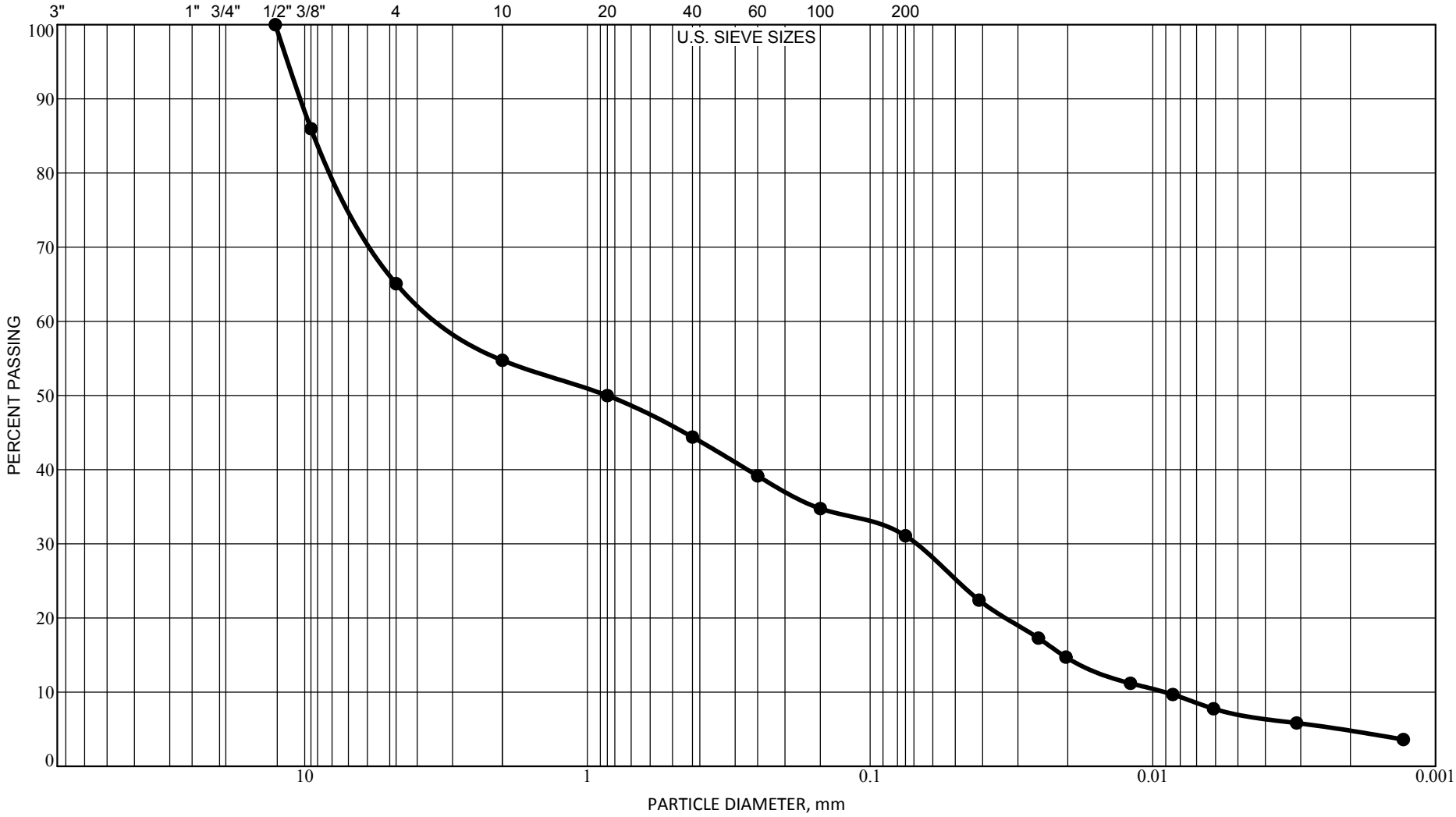
GRAIN SIZE ACCUMULATION CURVE (AASHTO)

GRAVEL			SAND		FINES	
COARSE	MEDIUM	FINE	COARSE	FINE	SILT	CLAY



BRAUN INTERTEC

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

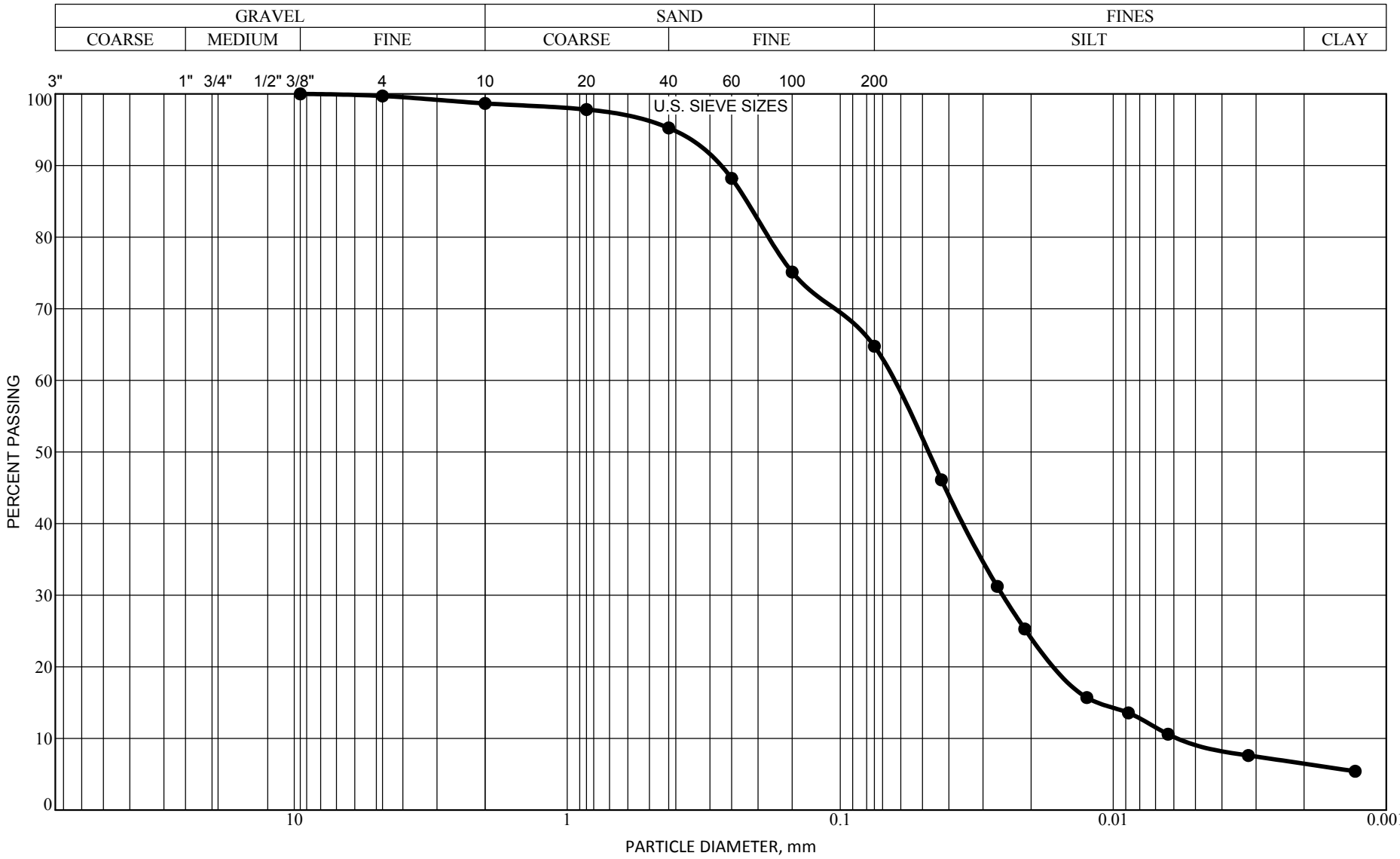
BORING: RB-13 DEPTH: 1.5'-3.0'

GRAVEL	45.3%
SAND	23.7%
SILT	26.4%
CLAY	4.7%

CLASSIFICATION:

GS AASHTO N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 11/17/16 14:34

GRAIN SIZE ACCUMULATION CURVE (AASHTO)



BRAUN INTERTEC

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

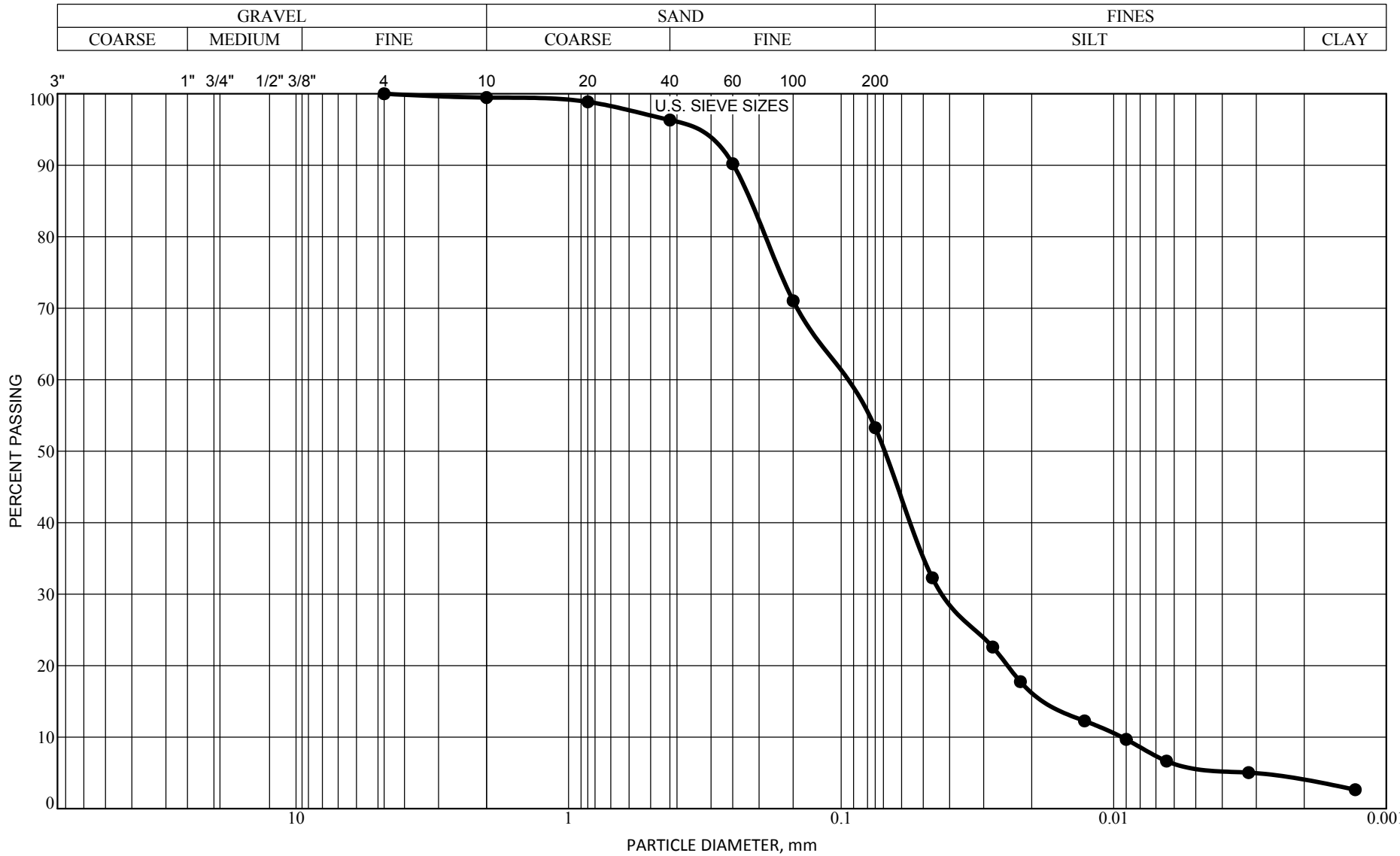
BORING: RB-18 DEPTH: 1.5'-3.0'

GRAVEL	1.3%
SAND	33.9%
SILT	58.3%
CLAY	6.5%

CLASSIFICATION:

GS AASHTO N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 11/17/16 14:34

GRAIN SIZE ACCUMULATION CURVE (AASHTO)



BRAUN INTERTEC

Braun Project B16-10125
Geotechnical Evaluation
Mississippi Drive Improvements
Muscatine, Iowa

BORING: RB-20 DEPTH: 3.5'-5.0'

GRAVEL	0.5%
SAND	46.2%
SILT	49.5%
CLAY	3.8%

CLASSIFICATION:

GS AASHTO N:\GINT\PROJECTS\CEDARRAPIDS\2016\B1610125.GPJ BRAUN_V8_CURRENT.GDT 11/17/16 14:34

Braun Intertec Corporation
11001 Hampshire Avenue South
Minneapolis, MN 55438
Phone: 952.995.2000

California Bearing Ratio Test Report

Report No: CBR:W16-010531-S1
Issue No: 1

Client: Jim Edgmond
City of Muscatine
1459 Washington Street
Muscatine, IA, 52761
Project: B1610125
Mississippi Drive Improvements, Muscatine, Iowa
Mississippi Drive
Muscatine, IA, 52761
TR: Jeremy Elkin, jelkin@braunintertec.com

Laboratory Results Reviewed by:

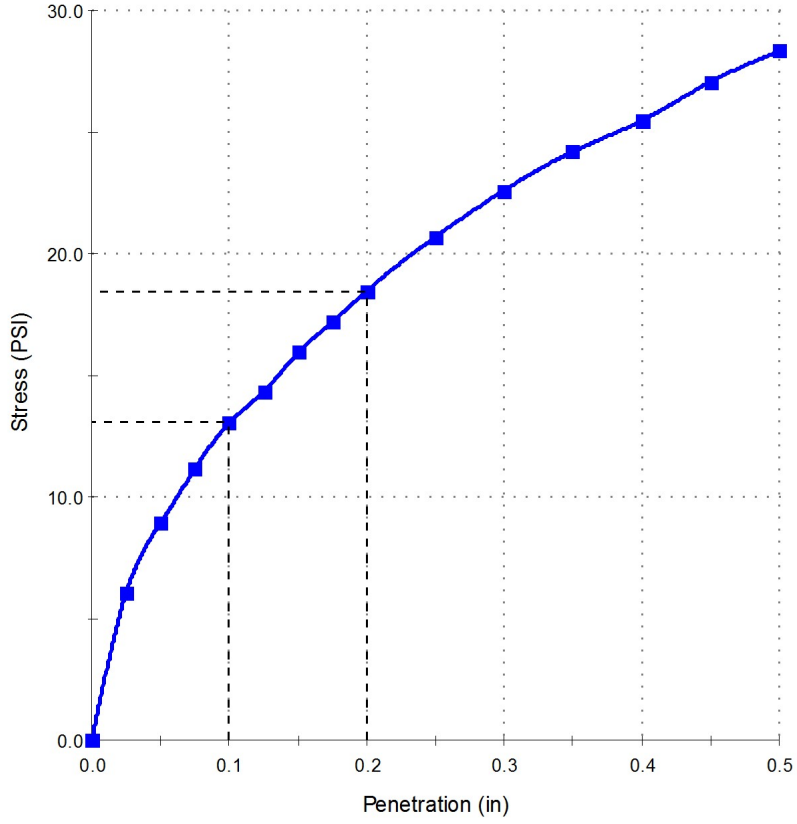
ISO/IEC 17025

Jason Limley
Engineering Technician III
Date of Issue: 11/16/2016

Sample Details

Sample ID:	W16-010531-S1	Alternate Sample ID:	P-01
Sampled By:	Drill Crew	Date Sampled:	
Sampling Method:	Soil Boring	Source:	Onsite material
Material:	Sandy Lean Clay	Specification:	
Sample Location:	B-5, 3'-10'		

Stress vs Penetration



Test Results

ASTM D 1883 - 07

CBR At 0.1in (%):	1.3
CBR At 0.2in (%):	1.2
Compactive Effort:	ASTM D 698
Number of Blows:	25
% of Maximum Dry Density:	94.6
Dry Density Before Soaking (lb/ft³):	111.9
MC Before Compaction (%):	16.9
MC After Compaction (%):	16.5
Moisture Content of Top 1in (%):	17.1
Average Moisture Content (%):	
Maximum Dry Density (lb/ft³):	118.3
Optimum Moisture Content (%):	12.9
Sample Condition:	soaked
Swell (%):	0.1
Surcharge Mass (lb):	10.00
Oversize Material (%):	0.0
Date Tested:	11/16/2016

Comments

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Braun Intertec Corporation
11001 Hampshire Avenue South
Minneapolis, MN 55438
Phone: 952.995.2000

California Bearing Ratio Test Report

Report No: CBR:W16-010531-S2
Issue No: 1

Client: Jim Edgmond
City of Muscatine
1459 Washington Street
Muscatine, IA, 52761
Project: B1610125
Mississippi Drive Improvements, Muscatine, Iowa
Mississippi Drive
Muscatine, IA, 52761
TR: Jeremy Elkin, jelkin@braunintertec.com

Laboratory Results Reviewed by:

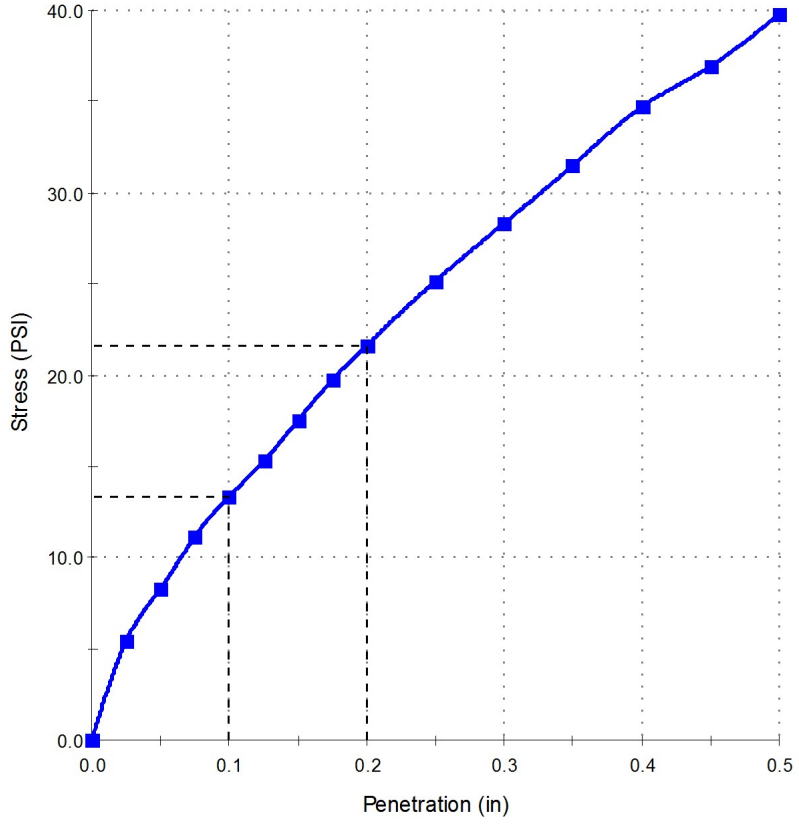
ISO/IEC 17025

Jason Limley
Engineering Technician III
Date of Issue: 11/16/2016

Sample Details

Sample ID:	W16-010531-S2	Alternate Sample ID:	P-02
Sampled By:	Drill Crew	Date Sampled:	
Sampling Method:	Soil Boring	Source:	Onsite material
Material:	Clayey Sand	Specification:	
Sample Location:	B-16, 3'-8'		

Stress vs Penetration



Test Results

ASTM D 1883 - 07

CBR At 0.1in (%):	1.3
CBR At 0.2in (%):	1.4
Compactive Effort:	ASTM D 698
Number of Blows:	22
% of Maximum Dry Density:	94.9
Dry Density Before Soaking (lb/ft³):	113.5
MC Before Compaction (%):	16.6
MC After Compaction (%):	16.0
Moisture Content of Top 1in (%):	16.3
Average Moisture Content (%):	
Maximum Dry Density (lb/ft³):	119.6
Optimum Moisture Content (%):	12.8
Sample Condition:	soaked
Swell (%):	0.2
Surcharge Mass (lb):	10.00
Oversize Material (%):	0.0
Date Tested:	11/16/2016

Comments

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Braun Intertec Corporation
11001 Hampshire Avenue South
Minneapolis, MN 55438
Phone: 952.995.2000

California Bearing Ratio Test Report

Report No: CBR:W16-010531-S3
Issue No: 1

Client: Jim Edgmond
City of Muscatine
1459 Washington Street
Muscatine, IA, 52761
Project: B1610125
Mississippi Drive Improvements, Muscatine, Iowa
Mississippi Drive
Muscatine, IA, 52761
TR: Jeremy Elkin, jelkin@braunintertec.com

Laboratory Results Reviewed by:

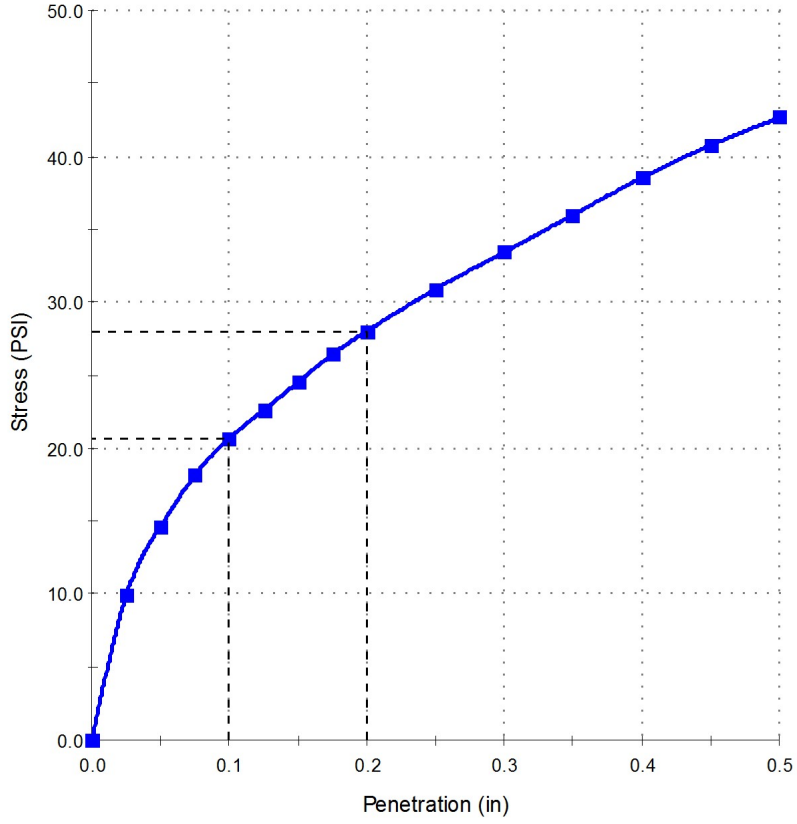
ISO/IEC 17025

Jason Limley
Engineering Technician III
Date of Issue: 11/16/2016

Sample Details

Sample ID:	W16-010531-S3	Alternate Sample ID:	P-03
Sampled By:	Drill Crew	Date Sampled:	
Sampling Method:	Soil Boring	Source:	Onsite material
Material:	Lean Clay with Sand	Specification:	
Sample Location:	B-21, 3'-8'		

Stress vs Penetration



Test Results

ASTM D 1883 - 07

CBR At 0.1in (%):	2.1
CBR At 0.2in (%):	1.9
Compactive Effort:	ASTM D 698
Number of Blows:	19
% of Maximum Dry Density:	95.0
Dry Density Before Soaking (lb/ft³):	105.5
MC Before Compaction (%):	19.1
MC After Compaction (%):	18.6
Moisture Content of Top 1in (%):	19.3
Average Moisture Content (%):	
Maximum Dry Density (lb/ft³):	111.0
Optimum Moisture Content (%):	15.0
Sample Condition:	soaked
Swell (%):	0.1
Surcharge Mass (lb):	10.00
Oversize Material (%):	0.0
Date Tested:	11/16/2016

Comments

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Braun Intertec Corporation
11001 Hampshire Avenue South
Minneapolis, MN 55438
Phone: 952.995.2000

California Bearing Ratio Test Report

Report No: CBR:W16-010531-S4
Issue No: 1

Client: Jim Edgmond
City of Muscatine
1459 Washington Street
Muscatine, IA, 52761
Project: B1610125
Mississippi Drive Improvements, Muscatine, Iowa
Mississippi Drive
Muscatine, IA, 52761
TR: Jeremy Elkin, jelkin@braunintertec.com

Laboratory Results Reviewed by:

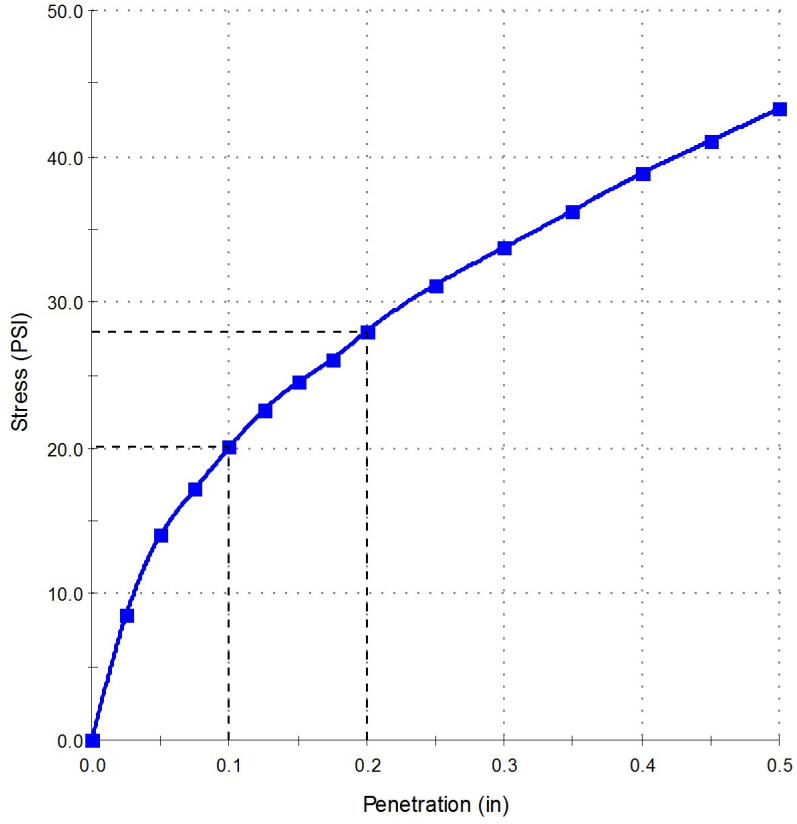
ISO/IEC 17025

Jason Limley
Engineering Technician III
Date of Issue: 11/16/2016

Sample Details

Sample ID:	W16-010531-S4	Alternate Sample ID:	P-04
Sampled By:	Drill Crew	Date Sampled:	
Sampling Method:	Soil Boring	Source:	Onsite material
Material:	Sandy Lean Clay	Specification:	
Sample Location:	B-23, 2'-8'		

Stress vs Penetration



Test Results

ASTM D 1883 - 07

CBR At 0.1in (%):	2.0
CBR At 0.2in (%):	1.9
Compactive Effort:	ASTM D 698
Number of Blows:	27
% of Maximum Dry Density:	94.8
Dry Density Before Soaking (lb/ft³):	114.3
MC Before Compaction (%):	15.6
MC After Compaction (%):	15.1
Moisture Content of Top 1in (%):	15.5
Average Moisture Content (%):	
Maximum Dry Density (lb/ft³):	120.6
Optimum Moisture Content (%):	11.6
Sample Condition:	soaked
Swell (%):	0.0
Surcharge Mass (lb):	10.00
Oversize Material (%):	0.0
Date Tested:	11/16/2016

Comments

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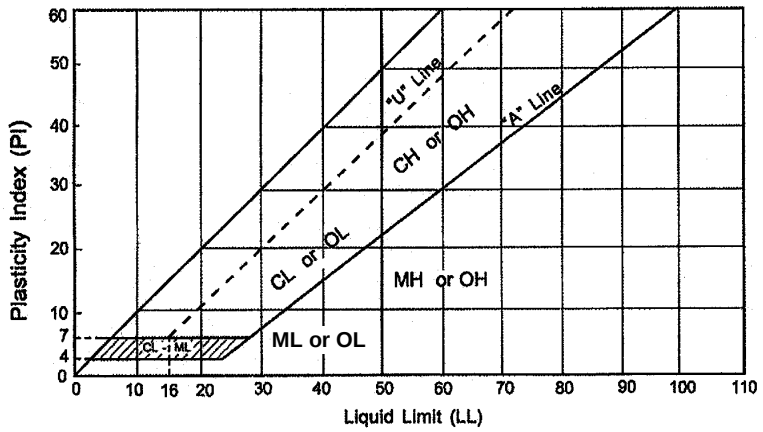
BRAUN INTERTEC

Descriptive Terminology of Soil

Standard D 2487
Classification of Soils for Engineering Purposes
(Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [a]				Soils Classification	
				Group Symbol	Group Name [b]
Coarse-grained Soils more than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines [e]	$C_u \geq 4$ and $1 \leq C_c \leq 3$ [c]	GW	Well-graded gravel [d]
			$C_u < 4$ and/or $1 > C_c > 3$ [c]	GP	Poorly graded gravel [d]
		Gravels with Fines More than 12% fines [e]	Fines classify as ML or MH	GM	Silty gravel [d f g]
			Fines classify as CL or CH	GC	Clayey gravel [d f g]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines [i]	$C_u \geq 6$ and $1 \leq C_c \leq 3$ [c]	SW	Well-graded sand [h]
			$C_u < 6$ and/or $1 > C_c > 3$ [c]	SP	Poorly graded sand [h]
		Sands with Fines More than 12% [i]	Fines classify as ML or MH	SM	Silty sand [f g h]
			Fines classify as CL or CH	SC	Clayey sand [f g h]
Fine-grained Soils 50% or more passed the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI > 7 and plots on or above "A" line [j]	CL	Lean clay [k l m]
			PI < 4 or plots below "A" line [j]	ML	Silt [k l m]
		Organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OL	Organic clay [k l m n]
				OL	Organic silt [k l m o]
	Silts and clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line	CH	Fat clay [k l m]
			PI plots below "A" line	MH	Elastic silt [k l m]
		Organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OH	Organic clay [k l m p]
				OH	Organic silt [k l m q]
Highly Organic Soils	Primarily organic matter, dark in color and organic odor			PT	Peat

a. Based on the material passing the 3-inch (75mm) sieve.
b. If field sample contained cobbles or boulders, or both, add "with cobbles or boulders or both" to group name.
c. $C_u = D_{60}/D_{10}$ $C_c = \frac{(D30)^2}{D_{10} \times D_{60}}$
d. If soil contains ≥15% sand, add "with sand" to group name.
e. Gravels with 5 to 12% fines require dual symbols:
   GW-GM well-graded gravel with silt
   GW-GC well-graded gravel with clay
   GP-GM poorly graded gravel with silt
   GP-GC poorly graded gravel with clay
f. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
g. If fines are organic, add "with organic fines: to group name.
h. If soil contains ≥15% gravel, add "with gravel" to group name.
i. Sand with 5 to 12% fines require dual symbols:
   SW-SM well-graded sand with silt
   SW-SC well-graded sand with clay
   SP-SM poorly graded sand with silt
   SP-SC poorly graded sand with clay
j. If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay.
k. If soil contains 10 to 29% plus No. 200, add "with sand" or "with gravel" whichever is predominant.
l. If soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.
m. If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
n. PI ≥ 4 and plots on or above "A" line.
o. PI < 4 or plots below "A" line.
p. PI plots on or above "A" lines.
q. PI plots below "A" line.



Laboratory Tests

DD	Dry density, pcf	**OC**	Organic content, %
WD	Wet density, pcg	**S**	Percent of saturation, %
MC	Natural moisture content, %	**SG**	Specific gravity
LL	Liquid limit, %	**C**	Cohesion, psf
PL	Plastic limits, %	**Ø**	Angle of internal friction
PI	Plasticity index, %	**qu**	Unconfined compressive strength, psf
P200	% passing 200 sieve	**qp**	Pocket penetrometer strength, tsf

Particle Size Identification

Boulders..... over 12"
Cobbles ..... 3" to 12"
Gravel
  Coarse ..... 3/4" to 3"
  Fine..... No. 4 to 3/4"
Sand
  Coarse ..... No. 4 to No. 10
  Medium..... No. 10 to No. 40
  Fine..... No. 40 to No. 200
Silt ..... <No. 200, PI< 4 or below "A" line
Clay ..... <No. 200, PI ≥ 4 and on or about "A" line

Relative Density of Cohesionless Soils

Very Loose..... 0 to 4 BPF
Loose..... 5 to 10 BPF
Medium dense ..... 11 to 30 PPF
Dense ..... 31 to 50 BPF
Very dense..... over 50 BPF

Consistency of Cohesive Soils

Very soft..... 0 to 1 BPF
Soft..... 2 to 3 BPF
Rather soft ..... 4 to 5 BPF
Medium..... 6 to 8 BPF
Rather stiff ..... 9 to 12 BPF
Stiff ..... 13 to 16 BPF
Very stiff..... 17 to 30 BPF
Hard..... over 30 BPF

Drilling Notes

Standard penetration test borings were advanced by 3 1/4" or 6 1/4" ID hollow-stem augers, unless noted otherwise. Jetting water was used to clean out auger prior to sampling only where indicated on logs. All samples were taken with the standard 2" OD split-tube samples, except where noted.

Power auger borings were advanced by 4" or 6" diameter continuous flight, solid-stern augers. Soil classifications and strata depths were inferred from disturbed samples augered to the surface, and are therefore, somewhat approximate.

Hand auger borings were advanced manually with a 1 1/2" or 3 1/4" diameter auger and were limited to the depth from which the auger could be manually withdrawn.

BPF: Numbers indicate blows per foot recorded in standard penetration test, also known as "N" value. The sampler was set 6" into undisturbed soil below the hollow-stem auger. Driving resistances were then counted for second and third 6" increments, and added to get BPF. Where they differed significantly, they are reported in the following form: 2/12 for the second and third 6" increments, respectively.

WH: WH indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

WR: WR indicates the sampler penetrated soil under weight of rods alone; hammer weight, and driving not required.

TW: TW indicates thin-walled (undisturbed) tube sample.

Note: All tests were run in general accordance with applicable ASTM standards.

CITY OF MUSCATINE, IA

CONSTRUCTION PLANS FOR

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

GOVERNING SPECIFICATIONS

THE 2017 EDITION OF THE "IOWA STATEWIDE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS" SHALL GOVERN.

IOWA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION", SERIES 2015 AND ALL CURRENT GENERAL SUPPLEMENTAL SPECIFICATIONS AND MATERIALS INSTRUCTIONAL MEMORANDUM SHALL GOVERN AS REFERENCED.

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

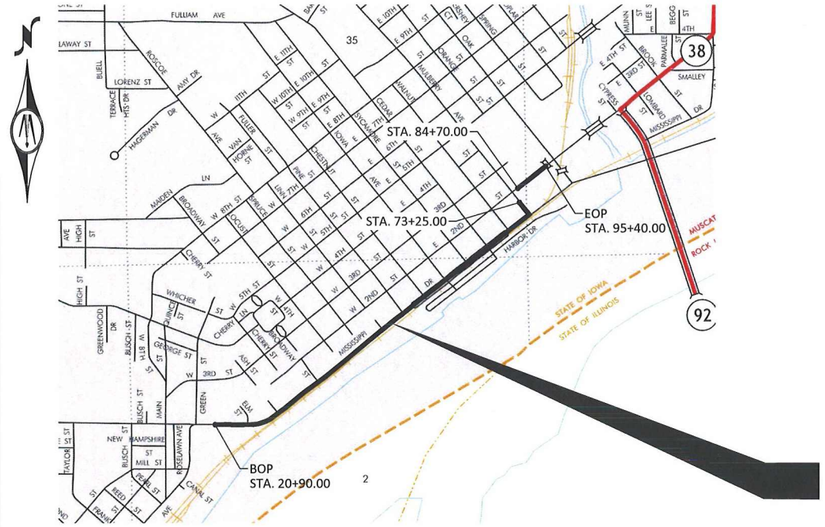
IOWA ONE CALL
1-800-292-8989 | 811
www.iowaonecall.com
Know what's below. Call before you dig.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

PLAN REVISIONS		
DATE	SHEET NUMBER	APPROVED BY

MILEAGE SUMMARY — 105-1 / 09-27-94

Div.	Location	Lin. Ft.	Miles
1	URBAN: MISSISSIPPI DRIVE STA. 20+90.00 TO STA. 73+25.00	5235.00	0.991
2	URBAN: EAST 2ND STREET STA. 84+70.00 TO STA. 95+40.00	1070.00	.203
	TOTAL NET LENGTH OF PROJECT	6305.00	1.194



PROJECT LOCATION

MAP OF PORTIONS OF THE CITY OF MUSCATINE

INDEX OF SHEETS

SHEET NO	TITLE
A.01	TITLE SHEET
A.02	LEGEND
B.01-B.14	TYPICAL SECTIONS AND DETAILS
C.01-C.08	QUANTITIES AND ESTIMATE REF. NOTES
C.09-C.26	TABULATIONS
C.27-C.46	EROSION CONTROL
D.01-D.20	MISSISSIPPI - PLAN AND PROFILE
D.21-D.24	EAST 2ND - PLAN AND PROFILE
D.25-D.28	MISCELLANEOUS - PLAN AND PROFILE
E.01-E.11	SIDE ROAD PLAN AND PROFILE
F.01-F.16	REMOVALS
G.01-G.06	ALIGNMENT & BENCHMARK INFORMATION
H.01-H.11	RIGHT-OF-WAY INFORMATION
J.01-J.06	STAGING AND TRAFFIC CONTROL
K.01-K.10	PAVEMENT MARKINGS
L.01-L.20	JOINTING PLAN
L.21-L.31	INTERSECTION DETAILS
M.01-M.35	UTILITY SHEETS
M.36-M.53	MPW PLAN SHEETS
N.01-N.03	SIGNAL PLAN
S.01-S.24	PEDESTRIAN RAMP DETAILS
T.01-T.23	LANDSCAPE PLAN
U.01-U.09	LANDSCAPE DETAILS
W.01-W.32	MISSISSIPPI - CROSS SECTIONS
X.01-X.10	SIDE ROAD CROSS SECTIONS

CITY OF MUSCATINE
ENGINEERING DEPARTMENT
MUSCATINE, IOWA

A Resolution of Necessity regarding this project was approved by the Muscatine City Council on 2-2-2017

Approved for construction: James G. Edgmond
James Edgmond
City Engineer

UTILITY CONTACTS

Muscatine Public Works Department
1459 Washington St
Muscatine, IA 52761
Jim Edgmond
City Engineer
ph. 563-263-8933

Sewer Department
1459 Washington St
Muscatine, IA 52761
Matt Chandler

Street Department
1459 Washington St
Muscatine, IA 52761
Randy Howell

Water Mains:
Muscatine Power & Water
3205 Cedar St
Muscatine, IA 52761
Ricky Teed
ph. 563-263-2631

Electric Lines:
Eastern Iowa Light & Power
600 East 5th St
Wilton, IA 52778
Chad Ruden
ph. 563-529-3727

Muscatine Power & Water
3205 Cedar St
Muscatine, IA 52761
Dennis Easley
ph. 563-263-2631

Communication Lines:
Century Link
3908 Utica Ridge Rd
Bettendorf, IA 52722
Antonio Glessner
ph. 563-355-6402

Windstream
1450 N. Center Point Rd
Hiawatha, IA 52233
Joe Green
ph. 319-790-7510

Muscatine Power & Water
3205 Cedar St
Muscatine, IA 52761
Tom Lewis
ph. 563-263-2631

Iowa Communications Network (ICN)
400 East 14th St
Des Moines, IA 50319
Kent Frie
ph. 515-725-4725

Gas Mains:
Alliant Energy
215 Oak St
Muscatine, IA 52761
John Carney
ph. 563-288-3322

GREGORY A. BROUSSARD 21974 — LICENSED PROFESSIONAL ENGINEER — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

GREGORY A. BROUSSARD, P.E.

REG. NO. 21974 DATE: 2/2/17

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2017

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A.01 - A.02, B.03 - B.07, C.01 - C.24, C.27, C.32 - C.46, D.12 - D.28, E.04 - E.11, F.06 - F.11, G.01 - G.06, H.01 - H.11, L.04 - L.20, L.23 - L.31, M.05 - M.17, M.26 - M.35, S.04 - S.24, W.14 - W.32, X.02 - X.10

ROB J. HAALAND 19529 — LICENSED PROFESSIONAL ENGINEER — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

ROB J. HAALAND, P.E.

REG. NO. 19529 DATE: 2/2/17

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2016

PAGES OR SHEETS COVERED BY THIS SEAL:

J01 - J.06, K.04 - K.10

CASEY BYERS 00637 — PROFESSIONAL LANDSCAPE ARCHITECT — IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

CASEY BYERS

REG. NO. 00637 DATE: 2/2/17

MY LICENSE RENEWAL DATE IS JUNE 30, 2017

PAGES OR SHEETS COVERED BY THIS SEAL:

T.01 - T.23, U.01 - U.09

JOSEPH J. SPRADLING 20450 — LICENSED PROFESSIONAL ENGINEER — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

JOSEPH J. SPRADLING

REG. NO. 20450 DATE: 2/2/17

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2018

PAGES OR SHEETS COVERED BY THIS SEAL:

B.01 - B.02, C.01 - C.24, C.28 - C.31, D.01 - D.11, E.01 - E.03, F.01 - F.05, K.01 - K.03, L.01 - L.03, L.21 - L.22, M.01 - M.04, M.18 - M.25, S.01 - S.03, W.01 - W.13, X.01

RICHARD H TEED 23299 — LICENSED PROFESSIONAL ENGINEER — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

RICHARD H TEED, P.E.

REG. NO. 23299 DATE: 2/2/2017

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2017

PAGES OR SHEETS COVERED BY THIS SEAL:

B.08 - B.14, C.01 - C.08, C.25 - C.26, F.12 - F.16, M.36 - M.53, N.01 - N.03

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MUSCATINE HDR

BOLTON & MENK

309 E 5TH STREET, SUITE 202
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TITLE SHEET

SHEET A.01

EXISTING

- IRON PIPE MONUMENT SET
- MONUMENT FOUND
- CAST IRON MONUMENT FOUND
- STONE MONUMENT FOUND
- POST SET
- BENCH MARK
- AUTO SPRINKLER
- ANTENNA
- AIR CONDITIONER
- ANCHOR
- AIR PUMP
- APRON
- BASKETBALL HOOP
- BIRD FEEDER
- BENCH
- BRACE POLE
- CATCH BASIN
- CLOTHES LINE POLE
- CONTROL POINT
- CLEAN OUT
- COMMUNICATION PEDESTAL
- CURB STOP VALVE
- DITCH TOP
- DRINKING FOUNTAIN
- DOWN SPOUT
- ELECTRIC MANHOLE
- ELECTRIC METER
- ELECTRIC PEDESTAL
- ELECTRIC TRANSFORMER
- EXHAUST VENT
- FLAG POLE
- FILL PIPE
- GAS MANHOLE
- GAS REGULATOR
- GAS VALVE
- GAS METER
- ACCESS GRATE
- HANDICAPPED PARKING
- HAND HOLE
- HYDRANT
- IRRIGATION CONTROL VALVE
- LIGHT DECORATIVE
- LIGHT POLE
- MAILBOX
- METER
- POST
- MANHOLE
- LIFT STATION MANHOLE
- MONITORING WELL
- ORDER MICROPHONE
- PARK GRILL
- GAS PUMP
- POST INDICATOR VALVE
- PARKING METER
- SANITARY MANHOLE
- SATELLITE DISH
- SEMAPHORE TRAFFIC LIGHT
- SIGNAL BOX
- SIGNAL POLE - RR
- SOIL BORING
- SIREN
- SPRINKLER HEAD
- STORM MANHOLE
- TELEPHONE MANHOLE
- PUBLIC TELEPHONE
- TILE INLET
- TILE RISER
- TRAFFIC ARM BARRIER
- TRAFFIC SIGN
- TRANSMISSION TOWER
- UTILITY POLE
- VACUUM
- VENT PIPE
- DECIDUOUS TREE
- CONIFEROUS TREE
- STUMP
- BUSH
- WELL
- WATER MANHOLE
- WATER METER
- WATER SPIGOT
- WATER VALVE
- WETLAND / MARSH
- WETLAND - DELINEATED

- OVERHEAD ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- GAS LINE
- FIBER OPTIC LINE
- UNDERGROUND COMMUNICATIONS LINE
- OVERHEAD UTILITY LINE
- WATER SYSTEM
- STORM SEWER
- TILE LINE
- SANITARY SEWER
- SANITARY FORCEMAIN
- CULVERT
- INTERMEDIATE CONTOURS
- INDEX CONTOURS
- COUNTY LINE
- CITY LIMITS
- SIXTEENTH LINE
- QUARTER LINE
- SECTION LINE
- ADJACENT LINES
- EASEMENT LINE
- BUILDING SETBACK LINE
- FENCE LINE
- GUARD RAIL
- ACCESS CONTROL LINE
- CENTERLINE
- PROPERTY / LOT LINE
- ROAD RIGHT-OF-WAY LINE
- RAILROAD RIGHT-OF-WAY LINE
- GRAVEL EDGE
- BITUMINOUS EDGE
- CONCRETE EDGE
- CURB & GUTTER
- WATER EDGE
- WATER CENTERLINE
- HIGHWATER LINE
- WETLAND EDGE
- SWALE CENTERLINE
- RAILROAD TRACKS
- TREE DRIP LINE

PROPOSED

- ALIGNMENT/CENTERLINE (22+00)
- RIGHT-OF-WAY LINE
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS
- CURB & GUTTER
- CURB & GUTTER (OUT)
- BITUMINOUS EDGE
- CONCRETE EDGE
- GRAVEL EDGE
- SILT FENCE-PREASSEMBLED
- SILT FENCE-HEAVY DUTY
- EROSION PROTECTION AT INLET
- MANHOLE
- CATCH BASIN
- STORM INLET
- APRON
- STORM SEWER
- PERFORATED PIPE DRAIN
- STORM DRAIN TILE
- CULVERT W/APRON
- STORM MANHOLE NUMBER (1)
- SANITARY SEWER
- SANITARY FORCEMAIN
- SANITARY SEWER SERVICE
- SANITARY LIFT STATION (L)
- SANITARY MANHOLE
- SANITARY MANHOLE NUMBER (A)
- WATERMAIN
- WATERMAIN SERVICE
- WATER SYSTEM MANHOLE
- HYDRANT
- HYDRANT W/ VALVE
- VALVE
- CURBSTOP
- BEND
- REDUCER
- CROSS
- TEE
- CAP
- SLEEVE
- SIGN
- LIGHT POLE
- GUARD RAIL
- SOIL BORING (B-?)
- WETLAND
- BUSH
- CONIFEROUS TREE
- DECIDUOUS TREE

ABBREVIATIONS

AC	ACRE(S)	PT	POINT OF TANGENCY
BOP	BEGINNING OF PROJECT	PCC	PORTLAND CEMENT CONCRETE
CF	CUBIC FOOT	R/W	RIGHT OF WAY
CY	CUBIC YARD	RCP	REINFORCED CONCRETE PIPE
DIA	DIAMETER	RT	RIGHT
ELEV	ELEVATION	SF	SQUARE FOOT
EOP	END OF PROJECT	STA	STATION
F.L.	FLOW LINE	STM	STORM
FT	FEET	SY	SQUARE YARD
HDPE	HIGH-DENSITY POLYETHYLENE	TYP	TYPICAL
HMA	HOT MIX ASPHALT	VPC	VERTICAL POINT OF CURVATURE
HP	HIGH POINT	VPI	VERTICAL POINT OF INTERSECTION
IN	INTAKE	VPT	VERTICAL POINT OF TANGENCY
LEN	LENGTH		
LF	LINEAR FOOT		
LP	LOW POINT		
LT	LEFT		
PC	POINT OF CURVATURE		
PI	POINT OF INFLECTION		

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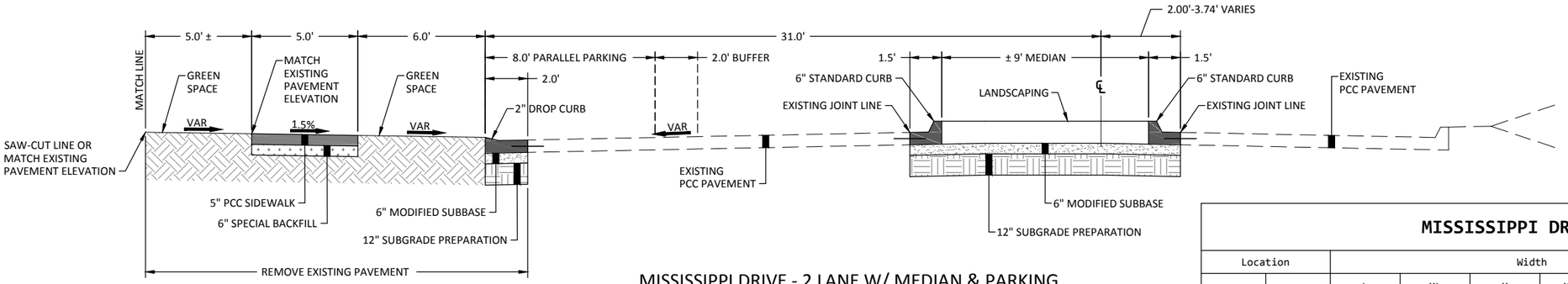
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
LEGEND

SHEET A.02



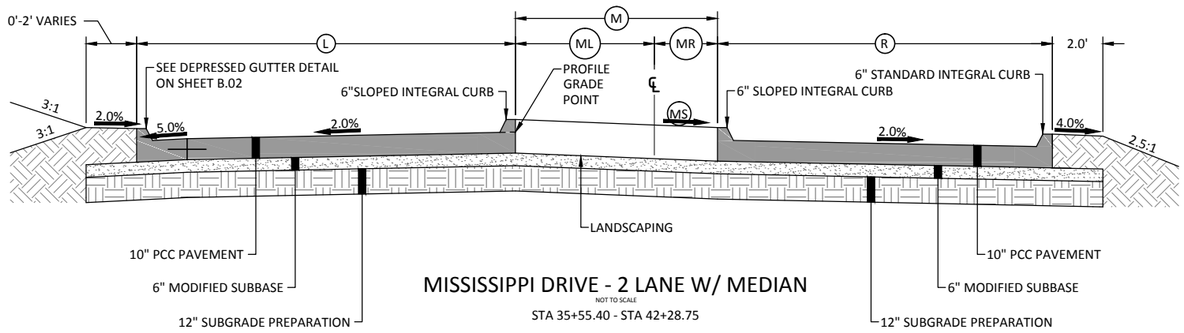
MISSISSIPPI DRIVE - 2 LANE W/ MEDIAN & PARKING

NOT TO SCALE

STA 28+59.21 - STA 34+20.60

MISSISSIPPI DRIVE

Location		Width						Remarks
START STATION	END STATION	L	ML	M	MS	MR	R	
		(ft)	(ft)	(ft)	(%)	(ft)	(ft)	
35+55.40	36+55.40	16.2-15.0	6-5.5	9.5-8.0	1.36-4.0	3.5-2.5	15.9-13.25	
36+55.40	42+28.75	15.0	5.5	8.0	4.0	2.5	13.25	
42+28.75	43+28.75	15.0-14.0	5.5	8.0-11.0	4.0	2.5-5.5	13.25	



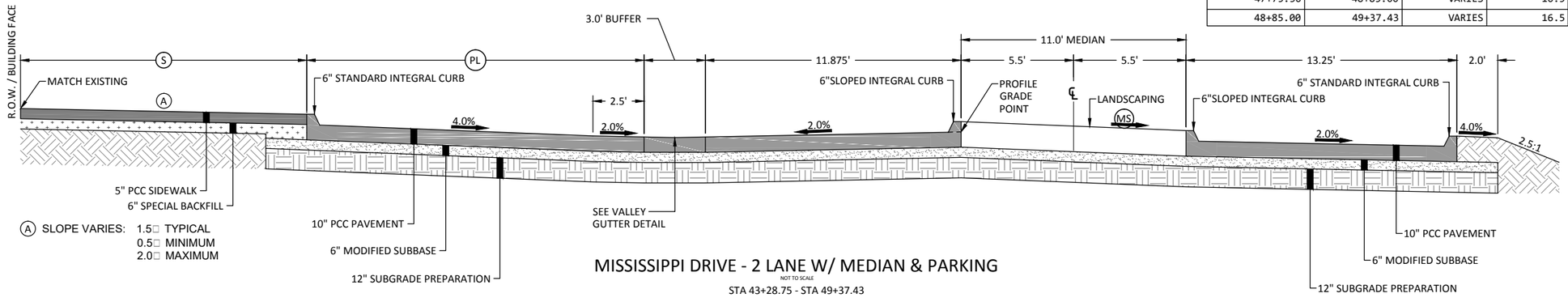
MISSISSIPPI DRIVE - 2 LANE W/ MEDIAN

NOT TO SCALE

STA 35+55.40 - STA 42+28.75

MISSISSIPPI DRIVE

Location		Width			Remarks
START STATION	END STATION	S	PL	MS	
		(ft)	(ft)	(%)	
43+28.75	43+32.30	0.0	0.0	4.0	
43+32.30	48+50.69	VARIES	0.0-16.5	4.0	
48+50.69	43+66.23	VARIES	16.5	4.0	
43+66.23	43+87.94	VARIES	16.5-0.0	4.0	
44+22.94	44+44.88	VARIES	0.0-16.5	4.0	
44+44.88	45+88.03	VARIES	16.5	4.0	
45+88.03	46+09.97	VARIES	16.5-0.0	4.0	
46+69.97	47+11.42	VARIES	0.0	4.0	
47+53.42	47+75.36	VARIES	0.0-16.5	4.0	
47+75.36	48+85.00	VARIES	16.5	4.0	
48+85.00	49+37.43	VARIES	16.5	4.0-2.55	



MISSISSIPPI DRIVE - 2 LANE W/ MEDIAN & PARKING

NOT TO SCALE

STA 43+28.75 - STA 49+37.43

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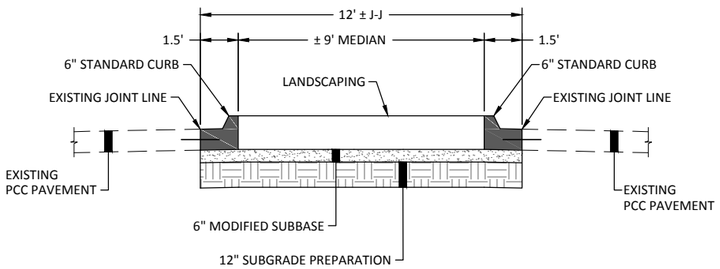
TYPICAL SECTIONS

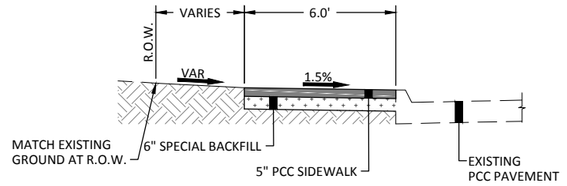
SHEET B.01



MISSISSIPPI DRIVE MEDIAN

NOT TO SCALE

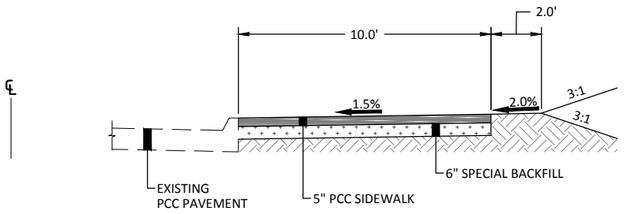
STA 28+66.62 - STA 33+53.66
STA 34+04.77 - STA 35+55.40



HERSHEY AVENUE SIDEWALK - NORTH

NOT TO SCALE

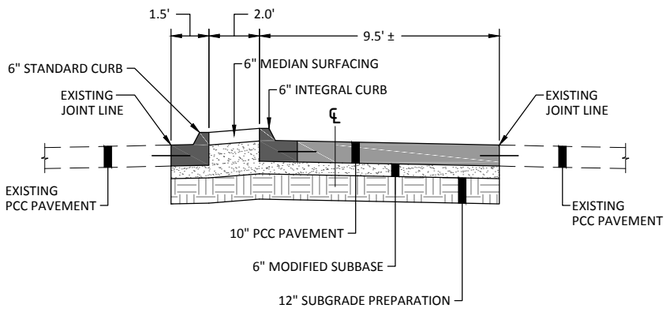
STA 20+89.83 - STA 23+33.06



HERSHEY AVENUE SIDEWALK - SOUTH

NOT TO SCALE

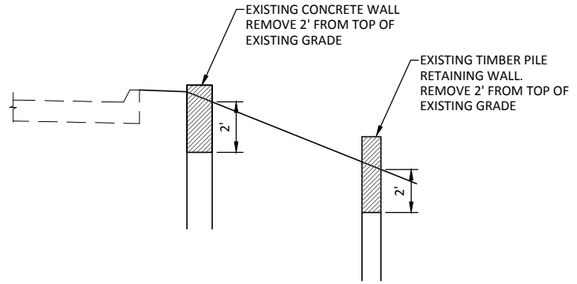
STA 20+89.02 - STA 23+11.07



HERSHEY AVENUE - LEFT TURN LANE

NOT TO SCALE

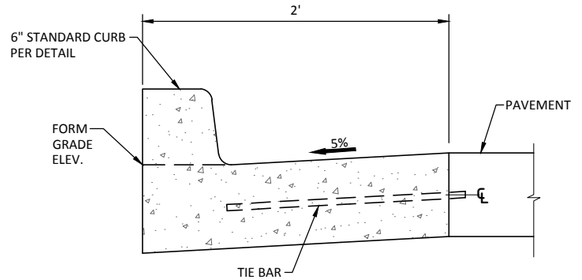
STA 21+88.24 - STA 23+32.06
STA 26+13.37 - STA 28+02.58



NOTE: REFER TO GEOTECHNICAL REPORT FOR RECOMMENDATIONS WHEN REGRADING THE FORESLOPE AFTER THE REMOVAL OF THE RETAINING WALL.

PARTIAL WALL REMOVAL DETAIL

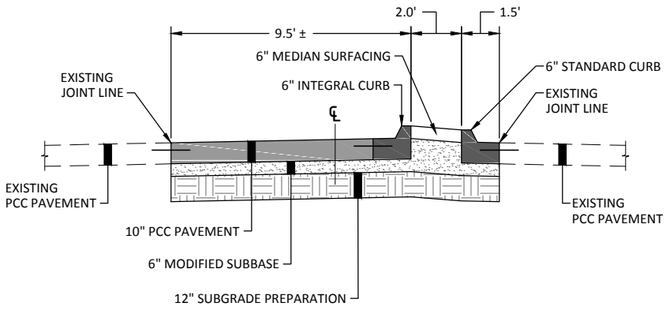
NOT TO SCALE



NOTE: IT IS ASSUMED THE DEPRESSED GUTTER WILL BE CONSTRUCTED MONOLITHICALLY AND THE TIE BARS SHOWN WILL NOT BE NEEDED. IF NOT, THAN THE #5 TIE BARS ON 24" CENTERS SHALL BE USED.

DEPRESSED GUTTER DETAIL

NOT TO SCALE



HERSHEY AVENUE - LEFT TURN LANE

NOT TO SCALE

STA 23+98.23 - STA 25+70.09

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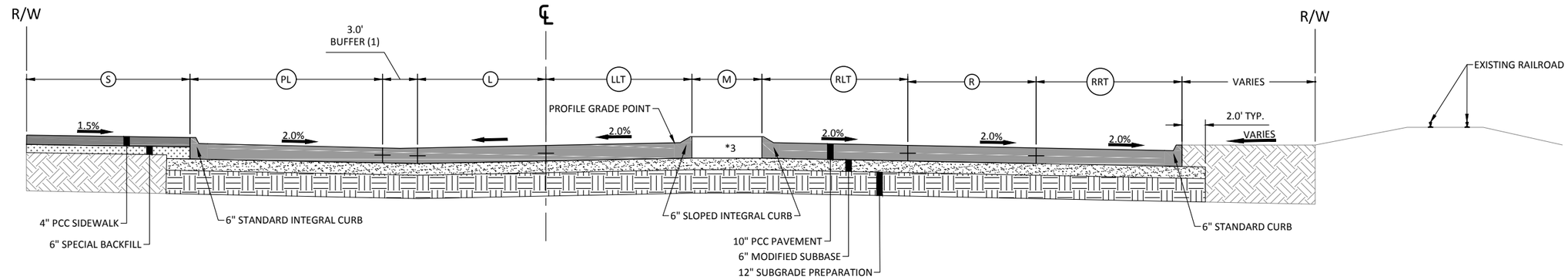
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TYPICAL SECTIONS

SHEET B.02



MISSISSIPPI DRIVE

Location		Width								Remarks
START STATION	END STATION	S (ft)	PL (ft)	L (ft)	LLT (ft)	M (ft)	RLT (ft)	R (ft)	RRT (ft)	
50+57.69	51+82.60	VARIES	16.5	12.5	0	17-20	0	14	0	
51+82.60	52+30.51	VARIES	16.5	12.5	0	20-9	1.5-12.5	12.5	0	
52+30.51	52+89.22	VARIES	16.5	12.5	0	9	12.5	12.5	0	
54+01.60	55+18.31	VARIES	0	14	0	20	0	14	0	
55+18.31	55+73.65	VARIES	0	14	0	20-9	1.5-12.5	12.5	0	
55+73.65	56+03.14	VARIES	0	14	0	9	12.5	12.5	0	
56+03.14	56+94.27	VARIES	0	14	0	9	12.5	12.5	0	
57+73.87	58+69.82	VARIES	16.5	11	12.5	9	0	14	0	
58+69.82	59+30.06	VARIES	16.5	11	12.5-1.5	9-20	0	14	0	
59+30.06	59+55.80	VARIES	0	14	0	20	0	14	0	
59+55.80	60+10.94	VARIES	16.5	12.5	0	20-9	1.5-12.5	12.5	0	
60+10.94	60+57.16	VARIES	16.5	12.5	0	9	12.5	12.5	0	
61+52.40	62+64.49	VARIES	16.5	12.5	0	20	0	14	0	
62+64.49	63+19.49	VARIES	16.5	12.5	0	20-9	1.5-12.5	12.5	0	
63+19.49	63+74.82	VARIES	16.5	12.5	0	9	12.5	11	1.5-12.5	
63+74.82	64+30.04	VARIES	16.5	12.5	0	9	12.5	11	12.5	
65+10.05	66+06.73	VARIES	16.5	11	12.5	9	0	14	0	
66+06.73	66+65.69	VARIES	16.5	11	12.5-1.5	9-20	0	14	0	
66+65.69	67+76.63	VARIES	0	14	0	20	0	14	0	
68+86.55	70+40.91	VARIES	0	14	0	14-9	0	14	0	
70+40.91	73+24.00	VARIES	0	VARIES	0	0	0	VARIES	0	

1 / B.03 MISSISSIPPI DRIVE (PINE TO MULBERRY)
TYPICAL SECTION NOT TO SCALE

NOTES:

1. VALLEY GUTTER SHALL BE POURED INTEGRAL TO MAINLINE PAVING.
2. IF PL, LLT, RLT, OR RRT IS ZERO, CURB WILL BE INSTALLED ON RELATIVE SIDE OF L OR R. ALL DIMENSIONS SHOWN IN THE TABLE REFLECT ADDITION OF CURB IN THESE SECTIONS.

*3. MEDIAN MATERIAL VARIES, REFER TO T SHEETS FOR DETAILS

LEGEND

S	SIDEWALK
PL	PARKING LEFT
L	LEFT LANE
LLT	LEFT SIDE LEFT TURN LANE
M	MEDIAN
RLT	RIGHT SIDE LEFT TURN LANE
R	RIGHT LANE
RRT	RIGHT SIDE RIGHT TURN LANE

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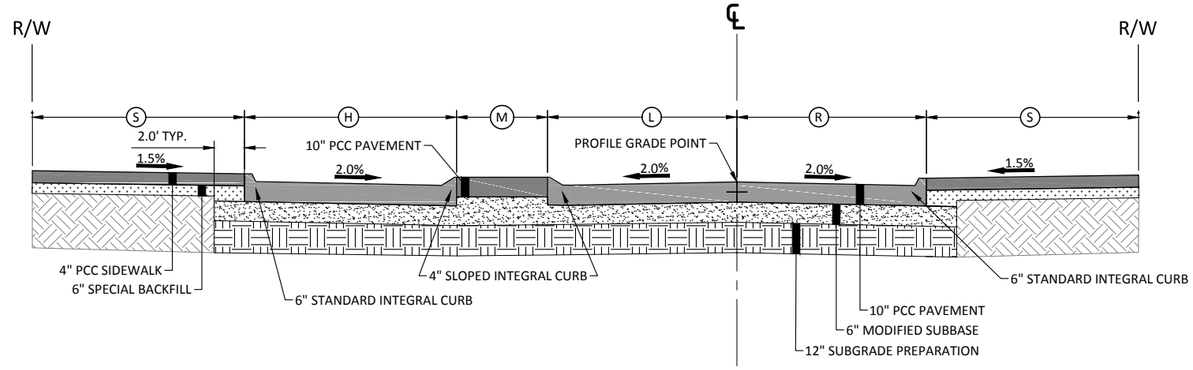
TYPICAL SECTIONS

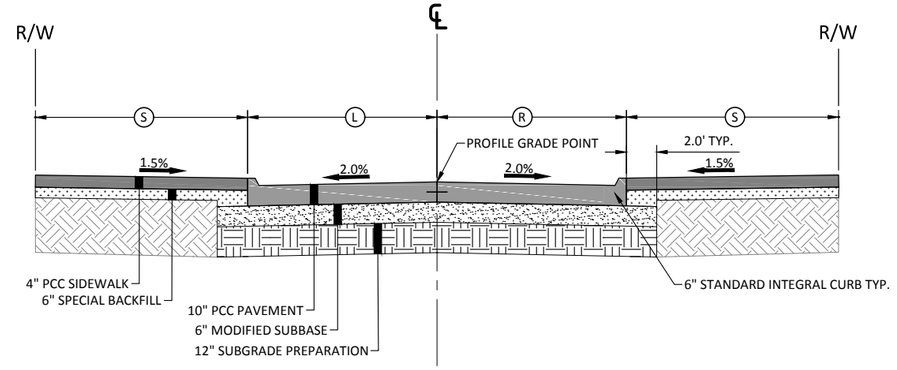
SHEET B.03



CHESTNUT STREET

Location		Width						Remarks
START STATION	END STATION	S (ft)	H (ft)	M (ft)	L (ft)	R (ft)	S (ft)	
07+03.75	07+77.64	VARIES	0	0	37.5-12.5	12.5	VARIES	
07+77.64	08+57.21	VARIES	21	4	12.5	12.5	VARIES	

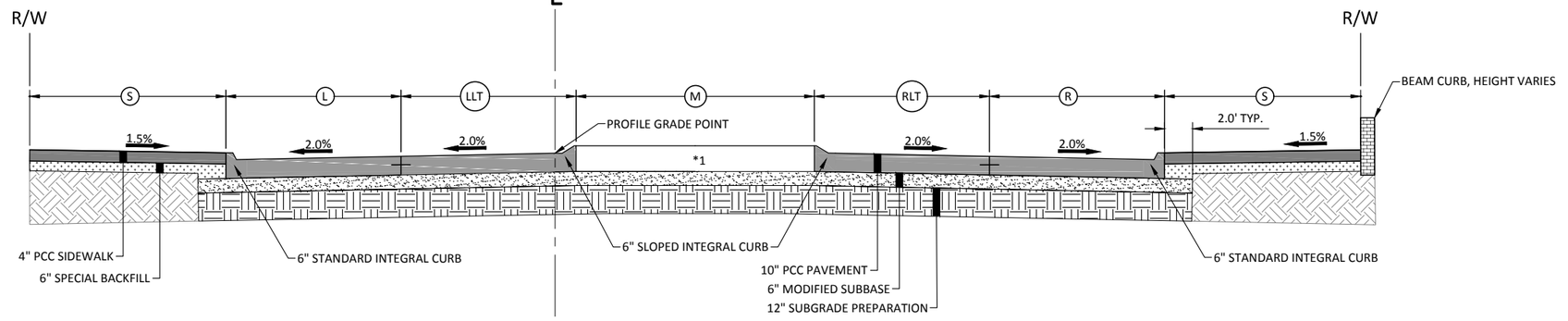
1 B.04 CHESTNUT STREET
TYPICAL SECTION NOT TO SCALE



SIDE STREETS

Location		Width				Remarks
START STATION	END STATION	S (ft)	L (ft)	R (ft)	S (ft)	
03+23.09	03+57.35	VARIES	14.5	14.5	VARIES	PINE STREET
11+17.84	11+62.46	VARIES	31.5	25.5	VARIES	IOWA STREET
11+62.46	12+07.29	VARIES	14.5	14.5	VARIES	IOWA STREET
13+10.01	13+55.45	VARIES	13	13	VARIES	IOWA STREET
16+23.00	16+57.89	VARIES	14.5	14.5	VARIES	SYCAMORE STREET
19+12.84	19+57.55	VARIES	14.5	14.5	VARIES	CEDAR STREET
20+67.30	21+06.76	VARIES	13	13	VARIES	CEDAR STREET
25+23.05	25+59.27	VARIES	14.5	14.5	VARIES	WALNUT STREET
27+57.29	27+73.27	VARIES	14.5	14.5	VARIES	ORANGE STREET
30+29.83	31+26.20	VARIES	13.5	13.5	VARIES	OAK STREET
32+07.87	32+45.69	VARIES	13.5	13.5	VARIES	OAK STREET

*ROAD CROSS SLOPE AS SHOWN UNLESS NOTED DIFFERENTLY ON E SHEETS



2 B.04 SIDE STREETS
TYPICAL SECTION NOT TO SCALE

E. 2ND STREET

Location		Width							Remarks
START STATION	END STATION	S (ft)	L (ft)	LLT (ft)	M (ft)	RLT (ft)	R (ft)	S (ft)	
84+72.11	85+22.11	VARIES	12.5	0	0	0	12.5	VARIES	
86+15.76	86+47.78	VARIES	12.5	12.5	6	0	14	VARIES	
86+47.70	87+06.65	VARIES	12.5	12.5-1.5	6-17	0	14	VARIES	
87+06.65	87+60.77	VARIES	14	0	17	0	14	VARIES	
87+60.77	88+19.73	VARIES	14	0	17-6	1.5-12.5	12.5	VARIES	
88+19.73	88+60.65	VARIES	14	0	6	12.5	12.5	VARIES	
89+86.91	90+21.46	VARIES	12.5	12.5	6	0	14	VARIES	
90+21.46	90+68.02	VARIES	12.5	12.5-1.5	6-17	0	14	VARIES	
90+68.02	92+33.31	VARIES	14	0	17	0	14	VARIES	
92+33.31	93+13.31	VARIES	12.5	0	0	0	12.5	VARIES	
93+13.31	94+21.85	VARIES	14	0	17	0	14	VARIES	
94+21.85	95+56.94	VARIES	14	0	0	0	14	VARIES	

3 B.04 EAST SECOND STREET
TYPICAL SECTION NOT TO SCALE

NOTES:

*1. MEDIAN MATERIAL VARIES, REFER TO T SHEETS FOR DETAILS.

LEGEND

S	SIDEWALK
H	HOTEL DRIVEWAY
L	LEFT LANE
LLT	LEFT SIDE LEFT TURN LANE
M	MEDIAN
RLT	RIGHT SIDE LEFT TURN LANE
R	RIGHT LANE

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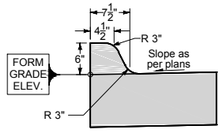
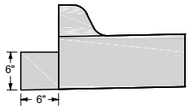
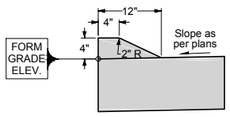
SHEET B.04



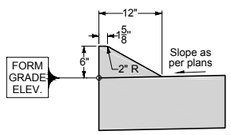
6" STANDARD CURB



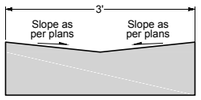
6" CURB LUG



4" SLOPED CURB

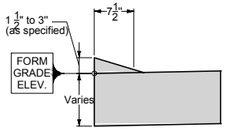


6" SLOPED CURB

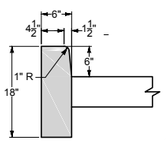


VALLEY GUTTER

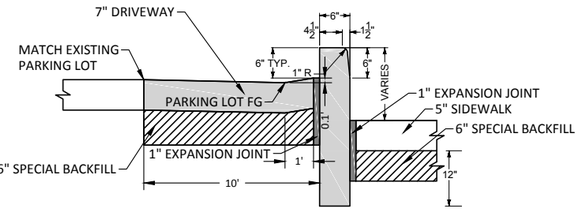
* VALLEY GUTTER SHALL BE POURED AS INTEGRAL TO MAINLINE PAVING



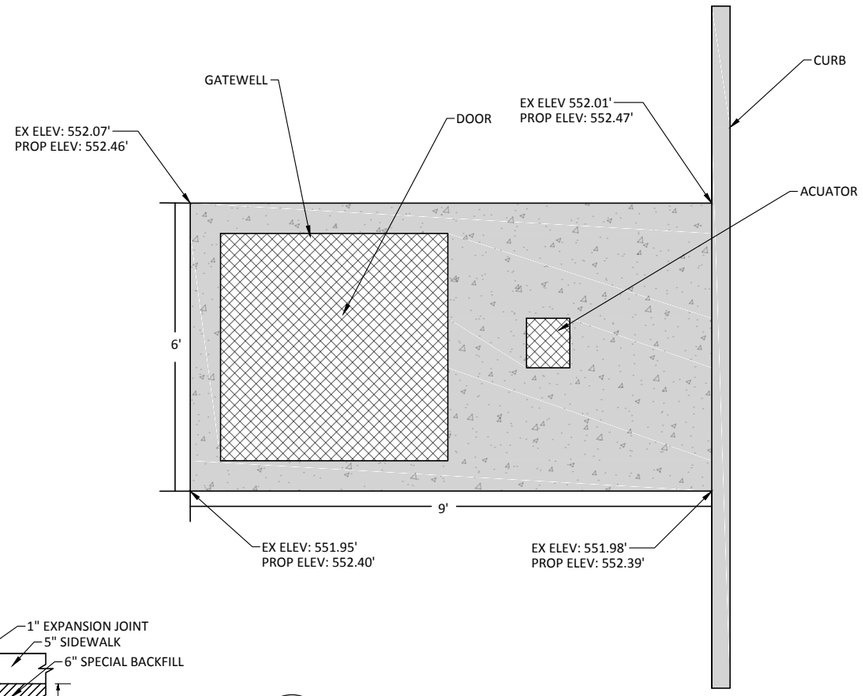
DRIVEWAY DROP CURB



BEAM CURB
(ALONG E. 2ND)



BEAM CURB
(AT INTERSECTION OF
WALNUT AND MISSISSIPPI)

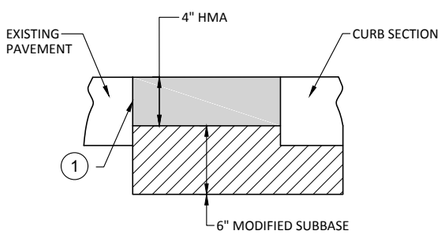


2 B.05 GATEWELL IMPROVEMENTS
TYPICAL SECTION NOT TO SCALE

NOTES:

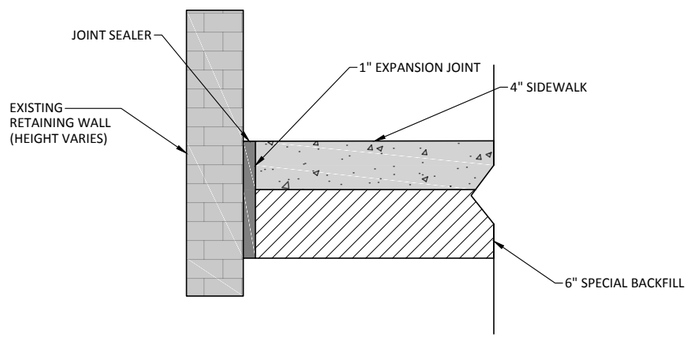
1. CONTRACTOR SHALL REMOVE EXISTING HATCH DOORS AND HINGES. FRAME SHALL REMAIN IN PLACE. CONTRACTOR TO DISPOSE OF ALL DOORS AND HINGES.
2. POUR NEW CONCRETE SLAB ON TOP OF EXISTING STRUCTURE
3. TOP SHALL BE REINFORCED WITH #4 BARS SPACED 12" ON CENTER IN BOTH DIRECTIONS
4. REPLACE HINGE DOOR & FRAME WITH NEENAH R-6665-2H OR APPROVED EQUAL
5. REMOVE ACTUATOR LID ON EXISTING STRUCTURE. INSTALL NEW ACCESS POINT ON TOP OF EXISTING ACTUATOR. REPLACE WITH NEENAH R3486 OR APPROVED EQUAL.

1 B.05 TYPICAL CURB DETAILS
TYPICAL SECTION NOT TO SCALE

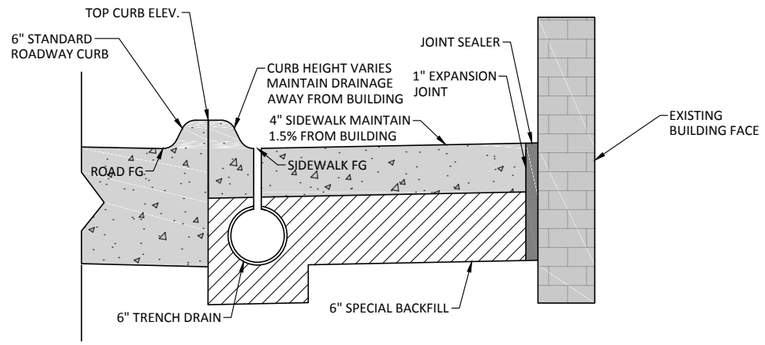


(1) WHEN REMOVING PAVEMENT, SAW TO FULL DEPTH OR 10 INCHES, WHICHEVER IS LESS.

3 B.05 4" HMA SECTION
TYPICAL SECTION NOT TO SCALE



4 B.05 SIDEWALK ABUTTING EXISTING RETAINING WALL
TYPICAL SECTION NOT TO SCALE



5 B.05 E. 2ND STREET SPECIAL SIDEWALK DETAIL
TYPICAL SECTION NOT TO SCALE

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MUSCATINE HDR

BOLTON & MENK

309 E 5TH STREET, SUITE 202
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

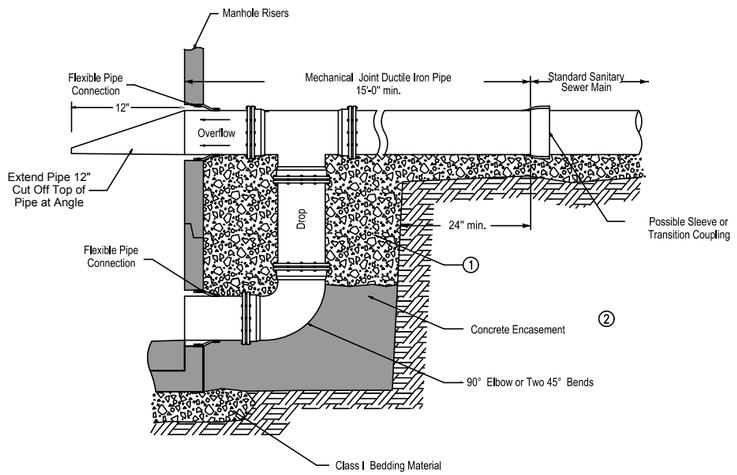
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
DETAILS

SHEET B.05

Construct drop and overflow from ductile iron pipe of same diameter specified for sewer main. Provide mechanical joints for all ductile iron pipe and fittings.

(1) Place Class 1 bedding material, CLSM, flowable mortar, or concrete from top of elbow to bottom of sewer main.

(2) Encase elbow in concrete. 12 inches minimum on all sides.



1 B.06 SANITARY SEWER DROP CONNECTION
TYPICAL SECTION NOT TO SCALE

SUDAS	Iowa Department of Transportation	REVISION
FIGURE 6010.307	STANDARD ROAD PLAN	NEW 04-21-09
		SW-307
		SHEET 1 of 1
REVISIONS: New. Replaces SUDAS Figure 6020.6A and 6020.6B. Will replace RA-52.		
MODIFIED		
DROP CONNECTION FOR SANITARY SEWER MANHOLE		

FIGURE 6010.307 | SHEET 1 OF 1

2 B.06 BACK-IN PARKING SIGN DETAIL
TYPICAL SECTION NOT TO SCALE

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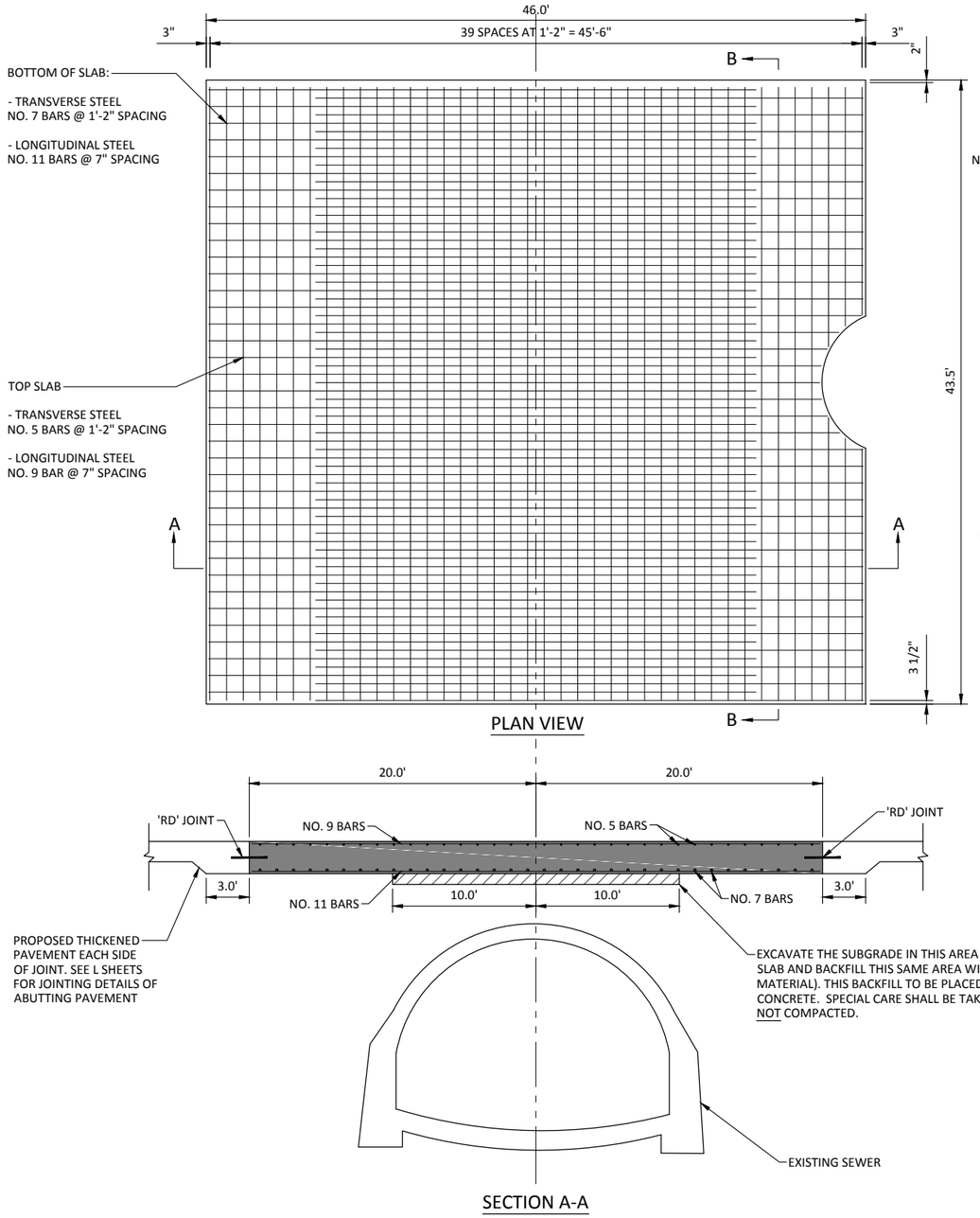
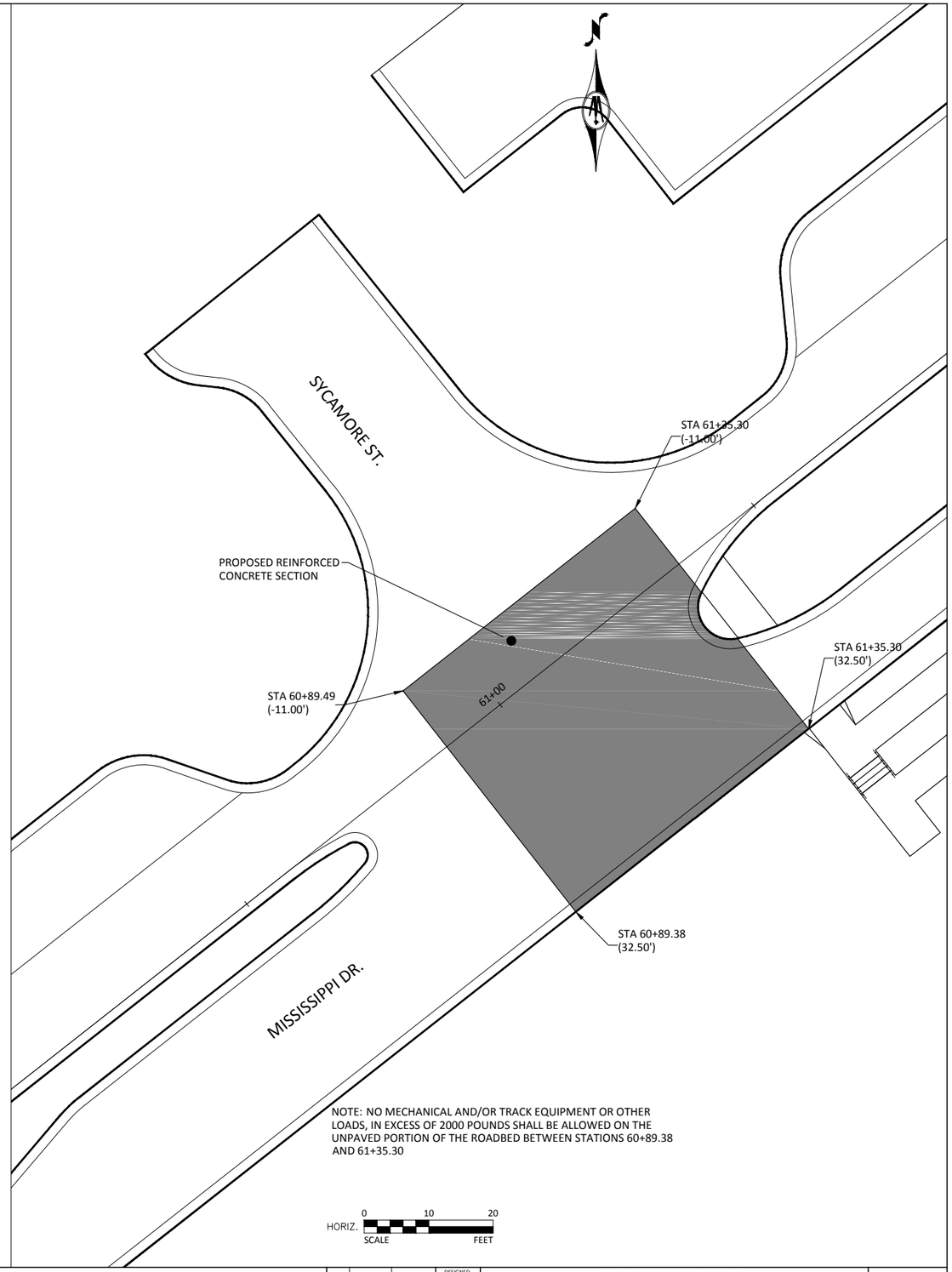
REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
DETAILS

SHEET B.06





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MUSCATINE

HDR

BOLTON & MENK

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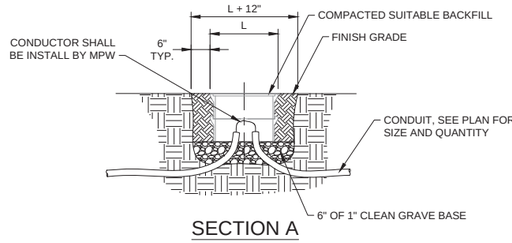
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

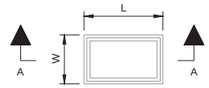
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PAPOOSE CREEK PAVEMENT DETAIL

SHEET
B.07



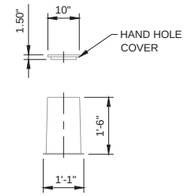
SECTION A



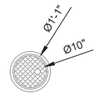
PLAN VIEW

1A JUNCTION BOX / HANDHOLE DETAIL (TYP.)

SCALE: 1/2" = 1'-0"



FRONT VIEW



TOP VIEW

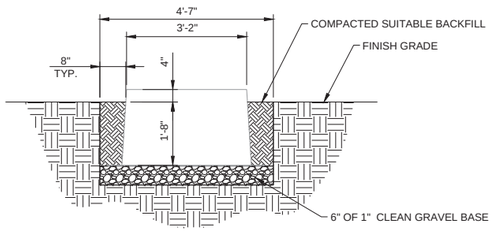
1B 10" JUNCTION BOX / HAND HOLE DETAIL

SCALE: 1/2" = 1'-0"

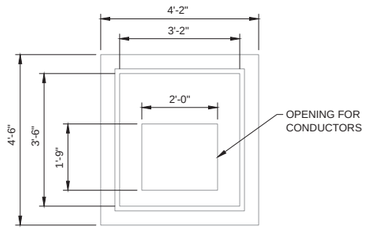
JUNCTION BOX AND HAND HOLE SCHEDULE *

NO.	TYPE	W	L	D	PART NO.	
					COVER	BOX
1.	8" x 18" JUNCTION BOX	11-1/2"	21-1/2"	8"	PC0218HA0017	PC0818BG08
2.	13" x 24" JUNCTION BOX	15-1/2"	25"	18"	PG1324HA0017	PG1324BA18
3.	17" x 30" HAND HOLE	19-1/4"	19-1/4"	24"	PG1730HA0021	PG1730BA24
4.	24" x 36" JUNCTION BOX	26"	26"	24"	PG2436HA0017	PG2436BA24
5.	30" x 48" HAND HOLE	32-1/8"	49-5/8"	24"	PG3048HA0021	PG3024BA24
6.	10" JUNCTION BOX					PE10HDX
7.	10" HAND HOLE					PE10HDX

* NOTE:
1. JUNCTION BOXES SHALL BE LOCATED AS INDICATED ON THE PLANS FOR FEED LIGHTING AND SINGLE PHASE JUNCTIONS.
2. ALL RECTANGULAR JUNCTION BOXES AND HAND HOLES SHALL BE A QUAZITE POLYMER CONCRETE BOX.
3. ALL ROUND HAND HOLES SHALL BE PENCELL HIGH DENSITY POLYETHYLENE BOXES.



SECTION VIEW

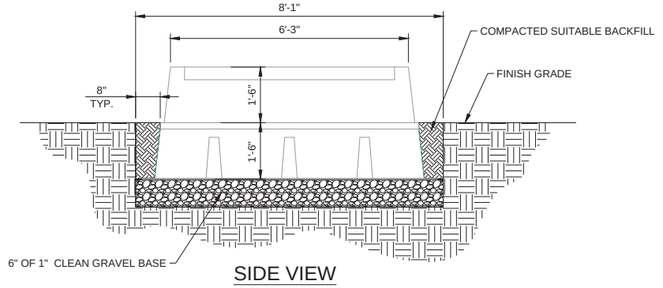


PLAN VIEW

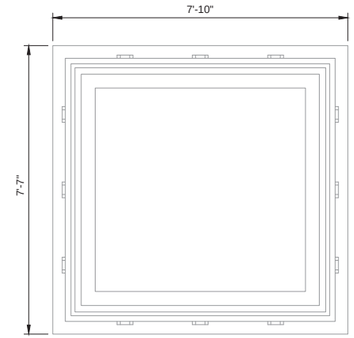
NOTE:
1. SINGLE PHASE TRANSFORMER PAD MOUNTS SHALL BE A PROGLASS, INC. TRANSFORMER BOX PAD, STOCK NO. TX423824-TI

2 SINGLE PHASE FIBERGALSS TRANSFORMER PAD

SCALE: 1/2" = 1'-0"



SIDE VIEW

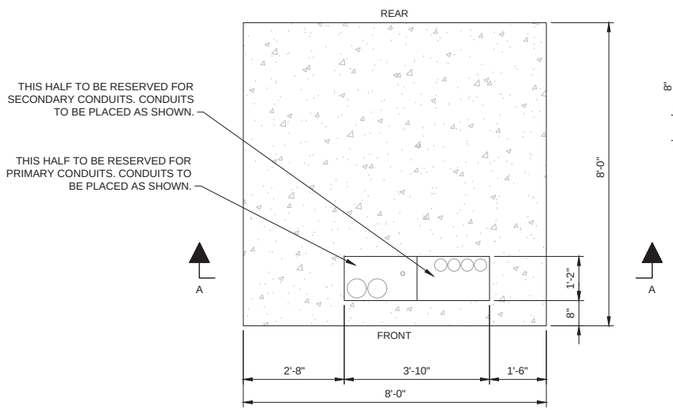


PLAN VIEW

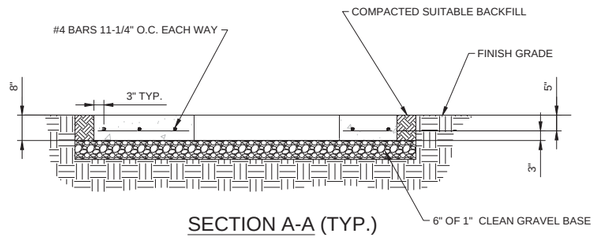
NOTE:
1. ABOVE GROUND SWITCHGEAR PAD MOUNTS SHALL BE A NORDIC FIBERGLASS, INC SWITCHGEAR FIBERGLASS PAD. MODEL NO.: GS-75-73-36-MG-67x62

3 SWITCHGEAR PAD - FIBERGLASS

SCALE: 1/2" = 1'-0"



PLAN VIEW

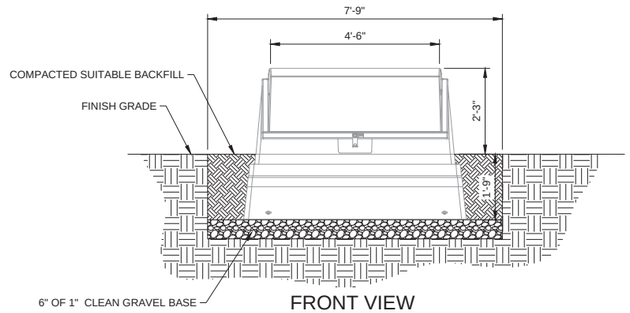


SECTION A-A (TYP.)

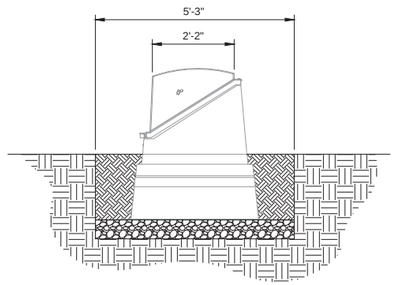
NOTE:
1. CONCRETE WILL BE IN ACCEPTANCE WITH SUDAS SECTION 7010.
2. IF PAD IS PLACED ON DISTURBED GROUND ALL BACKFILL UNDER PAD WILL BE MANUFACTURED SAND. COMPACT TO 90% OF STANDARD PROCTOR DENSITY.
3. ANY CONDUIT PLACED IN BOX OUT SHALL BE FLUSH WITH THE TOP OF THE PAD SURFACE.
4. 1" PVC SLEEVE FOR GROUND ROD SHALL BE INSTALLED TO A DEPTH OF 5'-0" FROM TOP OF PAD.
5. PAD SURFACE MUST EXTEND A MIN. OF 4" ABOVE FINAL GRADE.
6. PRIMARY CONDUITS TO BE SEPARATED FROM SECONDARY CONDUITS BY A MINIMUM OF 6".
7. CONCRETE FILLED, GALVANIZED PROTECTIVE POST SHALL BE INSTALLED AS SHOWN ON THE PLANS.
8. FINAL PAD LOCATION TO BE SPECIFIED ON PLANS.
9. CALL 563-262-3322 FOR INSPECTION BEFORE POURING THE PAD.
10. FORMS TO BE REMOVED BY CONTRACTOR
11. CLEARANCES SHOWN ARE THOSE RECOMMENDED BY NFPA-70 AND MPW EQUIPMENT LIFTING CAPABILITIES.

4 THREE PHASE TRANSFORMER PAD - CONCRETE

SCALE: 1/2" = 1'-0"



FRONT VIEW



SIDE VIEW

NOTE:
1. ABOVE GROUND 3'x6' SECTIONALIZING CABINET SHALL BE A NORDIC FIBERGLASS, INC MODEL NO.: ND-350-MG-101-X-X

5 3'x6' JUNCTION BOX

SCALE: 1/2" = 1'-0"

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

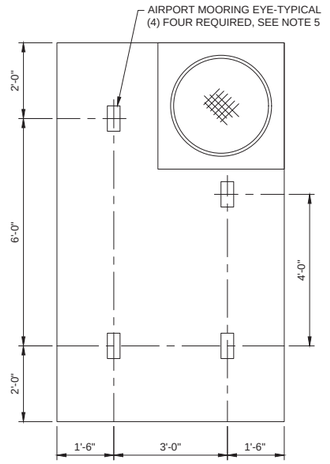
DRAWN BY:	DATE:
DAMION SHANNON	11/10/2016
DESIGNED BY:	DATE:
RICHARD H. TEED	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

MUSCATINE POWER & WATER

UNDERGROUND

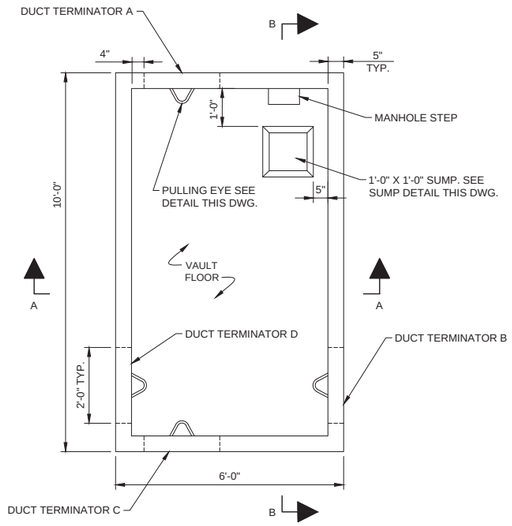
MISSISSIPPI DR. CORRIDOR
PRIMARY XFRM / SWGR PADS &
JUNCTION BOX DETAILS

REF No.
SCALE: NOTED FILE No. 59
DRAWING No. DUG0095A REV. No. 0
SHEET No. B.08



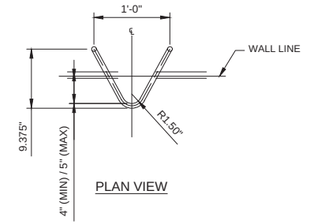
PLAN - SOLID LID

SCALE: 1/2" = 1'-0"

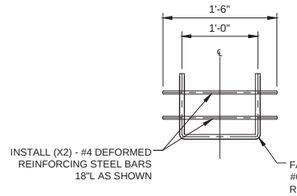


FLOOR

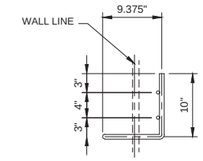
SCALE: 1/2" = 1'-0"



PLAN VIEW



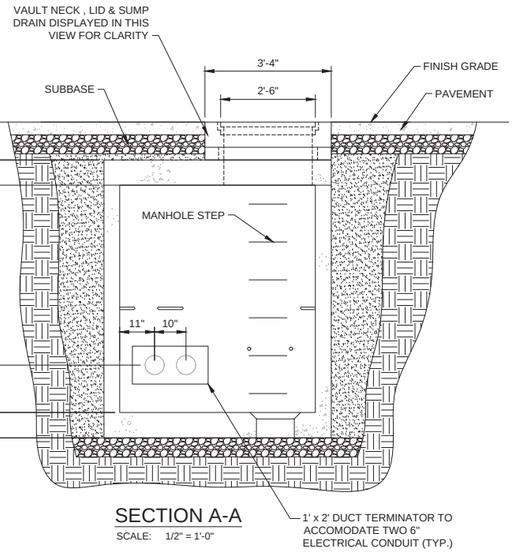
FRONT VIEW



SIDE VIEW

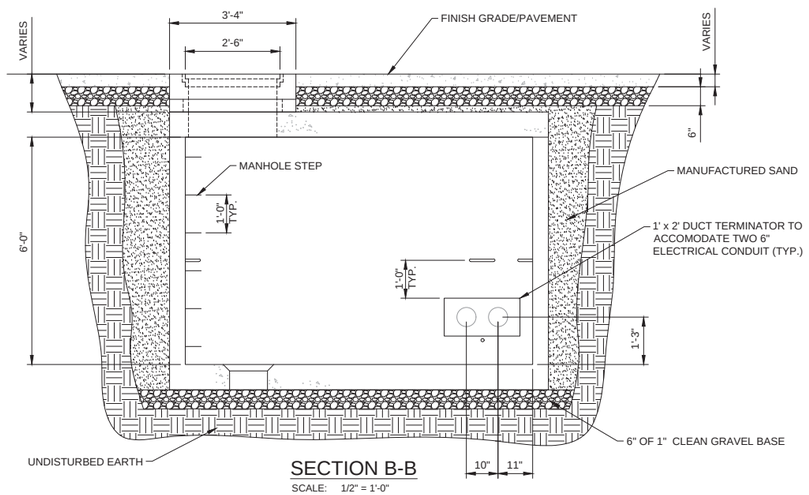
NOTES:

ALL MATERIAL TO BE GALVANIZED AFTER SHOP WORK & SHALL CONFORM TO A.S.T.M. DESIGNATION 123-33 WITH ANY REVISION THEREOF.



SECTION A-A

SCALE: 1/2" = 1'-0"

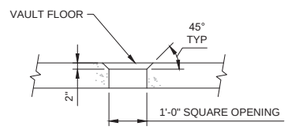


SECTION B-B

SCALE: 1/2" = 1'-0"

PULLING EYE DETAIL

SCALE: 1" = 1'-0"



ELEVATION

SUMP DETAIL

SCALE: 1/2" = 1'-0"

GENERAL CONSTRUCTION NOTE:

1. VAULTS SHALL INCLUDE PRECAST BASE, WELL, 12" ADJUSTING RING AND MANHOLE COVER SLAB WITH NEENAH R-5900-G FRAME AND COVER, DUCT TERMINATORS, ROD HOLE, BUTYL RUBBER JOINT SEAL AND DELIVERY TO JOB SITE.
2. VAULTS SHALL BE DESIGNED WITH AASHTO H20 LOADING REQUIREMENTS.
3. REINFORCED WITH GRADE 60 REBAR.
4. CONTRACTOR SHALL UNLOAD AND SET ALL SECTIONS AT JOB SITE.
5. FASTEN 5" CONDUIT TO WALL WITH 12" STAND-OFF BRACKET ANCHORED INTO WALL.
6. ANCHOR RACKING TO WALLS AS REQUIRED
7. REFER TO PLANS FOR MANHOLE GRADE ELEVATION.
8. REINFORCING STEEL TO BE TIED TO AND PLACE THROUGH HOLES IN AIRPORT MOORING EYES.
9. AIRPORT MOORING EYE NEENAH CAT. NO. R-3490

VAULT MANUFACTURER REFERENCE:

1. WILKINSON PRECAST INC.
   3089 HWY 22
   P.O. BOX 388
   RIVERSIDE, IA 52327
   TE: 319-648-2708
2. FORTERRA
   525 SOUTH 11TH STREET
   WEST DES MOINES, IA 50265
   TE: 515-223-8761
   QUOTE NO.: 7916003EV1
3. OLDCASTLE PRECAST
   5230 NORTH WEST 17TH
   TOPEKA, KS 66618
   TE: 785-232-2982
   QUOTE NO.: S022471-2
4. APPROVED EQUAL

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D. BY	APPV. BY	APPV. BY	DATE

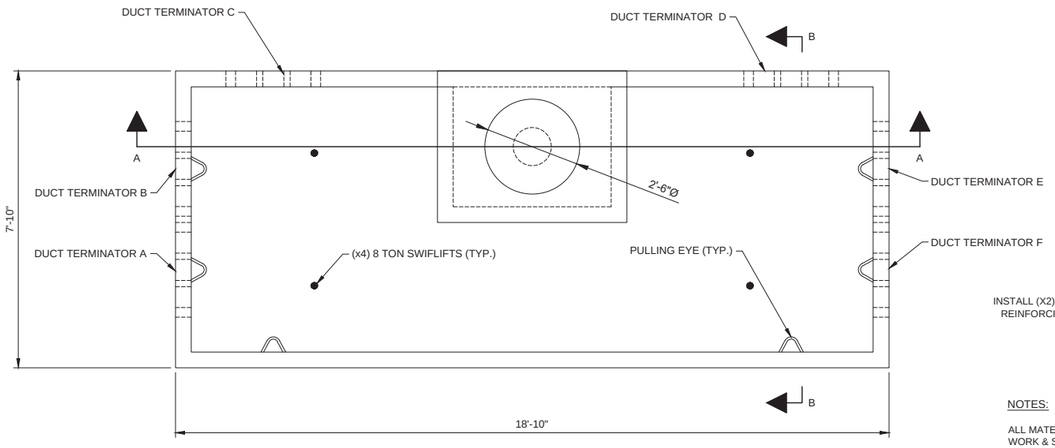
DRAWN BY:	DATE:
DAMION SHANNON	11/10/2016
DESIGNED BY:	DATE:
RICHARD H. TEED	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

MUSCATINE POWER & WATER

UNDERGROUND

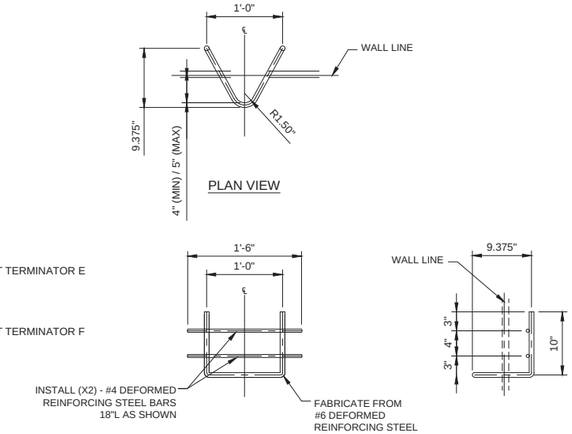
MISSISSIPPI DR. CORRIDOR
6'x10' VAULT DETAIL

REF No.		SHEET No.
SCALE: NOTED	FILE No. 59	B.09
DRAWING No. DUG0095B	REV. No. 0	



PLAN - SOLID LID

SCALE: 1/2" = 1'-0"

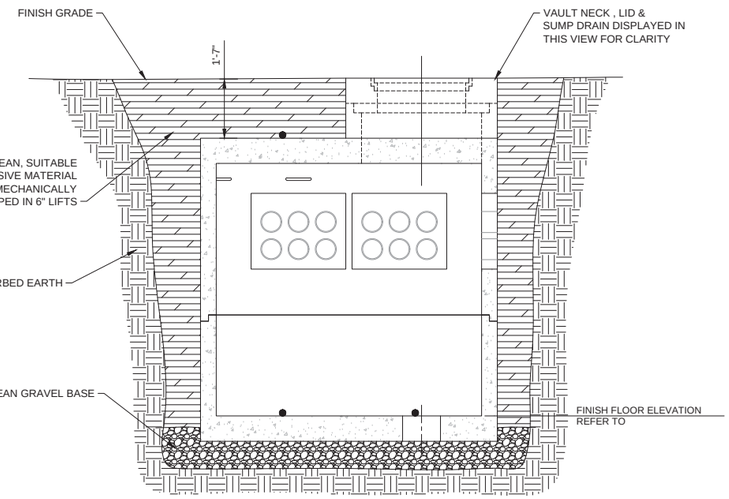


NOTES:

ALL MATERIAL TO BE GALVANIZED AFTER SHOP WORK & SHALL CONFORM TO A.S.T.M. DESIGNATION 123-33 WITH ANY REVISION THEREOF.

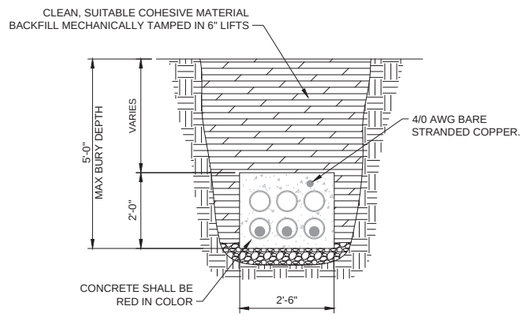
PULLING EYE DETAIL

SCALE: NO SCALE



SECTION B-B

SCALE: 1/2" = 1'-0"

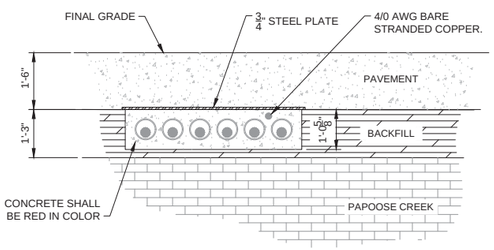


3x2 DUCT SECTION (TYP.)

SCALE: 1/2" = 1'-0"

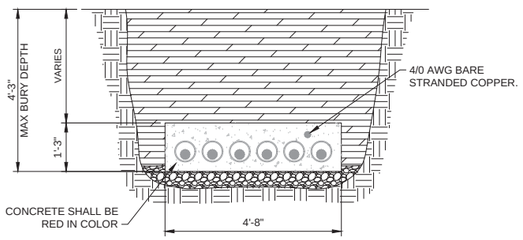
3x1 DUCT SECTION (TYP.)

SCALE: 1/2" = 1'-0"



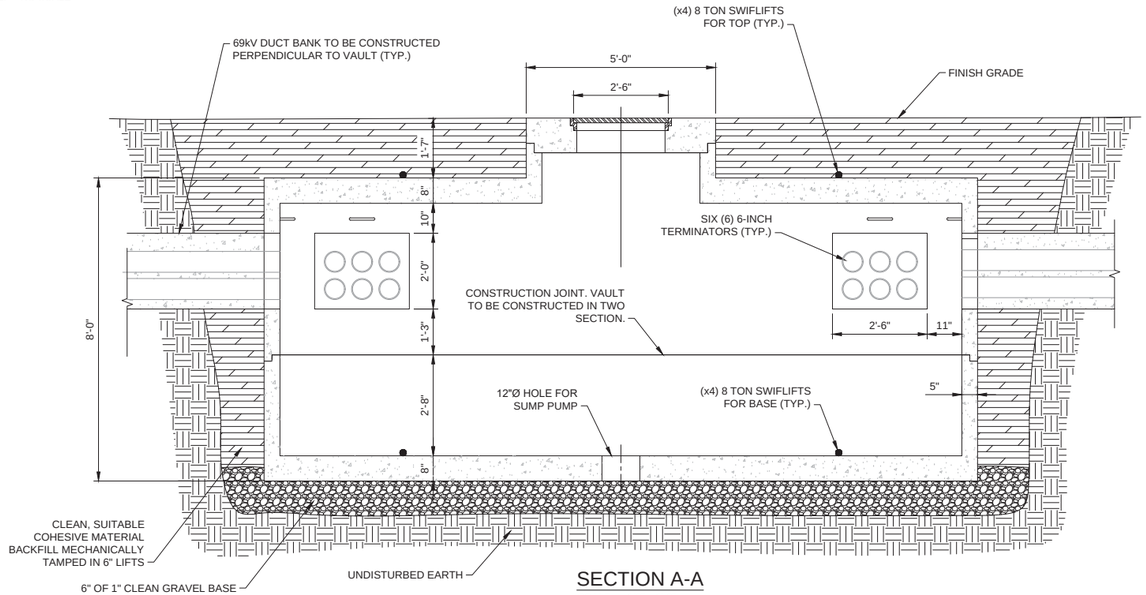
6x1 DUCT SECTION AT PAPOOSE CREEK

SCALE: 1/2" = 1'-0"



6x1 DUCT SECTION (TYP.)

SCALE: 1/2" = 1'-0"



SECTION A-A

SCALE: 1/2" = 1'-0"

GENERAL CONSTRUCTION NOTE:

1. DUCT BANK CONSTRUCTION MAY USE EARTH FORM CONSTRUCTION WHEN PERMITTED BY ENGINEER. THERE SHALL BE GOOD COHESIVE SOIL, THAT STANDS UP WELL AND CUT TO THE EXACT SIZE.
2. VAULTS SHALL INCLUDE PRECAST BASE, WELL, 12" ADJUSTING RING AND MANHOLE COVER SLAB WITH NEENAH R-5900-G FRAME AND COVER, DUCT TERMINATORS, ROD HOLE, BUTYL RUBBER JOINT SEAL AND DELIVERY TO JOB SITE.
3. VAULTS SHALL BE DESIGNED WITH AASHTO H20 LOADING REQUIREMENTS.
4. REINFORCED WITH GRADE 60 REBAR.
5. CONTRACTOR SHALL UNLOAD AND SET ALL SECTIONS AT JOB SITE.
6. FASTEN 5" CONDUIT TO WALL WITH 12" STAND-OFF BRACKET ANCHORED INTO WALL.
7. ANCHOR RACKING TO WALLS AS REQUIRED.
8. REFER TO PLANS FOR MANHOLE GRADE ELEVATION.
9. REINFORCING STEEL TO BE TIED TO AND PLACE THROUGH HOLES IN AIRPORT MOORING EYES.
10. AIRPORT MOORING EYE NEENAH CAT. NO. R-3490

VAULT MANUFACTURER REFERENCE:

1. WILKINSON PRECAST INC.
   3089 HWY 22
   P.O. BOX 388
   RIVERSIDE, IA 52327
   TE: 319-648-2708
2. FORTERRA
   525 SOUTH 11TH STREET
   WEST DES MOINES, IA 50265
   TE: 515-223-8761
   QUOTE NO.: 7916003EV1
3. OLDCASTLE PRECAST
   5230 NORTH WEST 17TH
   TOPEKA, KS 66618
   TE: 785-232-2982
   QUOTE NO.: S022471-2
4. APPROVED EQUAL

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

DRAWN BY:	DATE:
DAMION SHANNON	11/10/2016
DESIGNED BY:	DATE:
RICHARD H. TEED	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

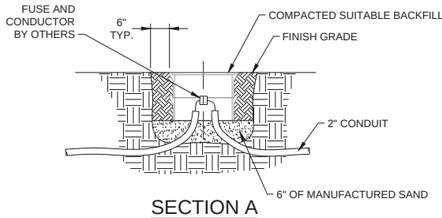
MUSCATINE POWER & WATER

UNDERGROUND

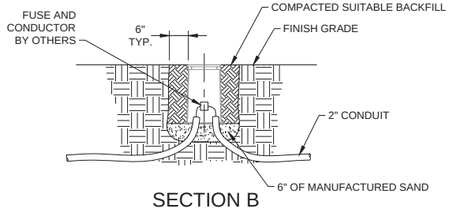
MISSISSIPPI DR. CORRIDOR
69kV LINE VAULT DETAIL

REF No.			
SCALE: NOTED	FILE No.	59	
DRAWING No.		REV. No.	
DUG0095C		0	

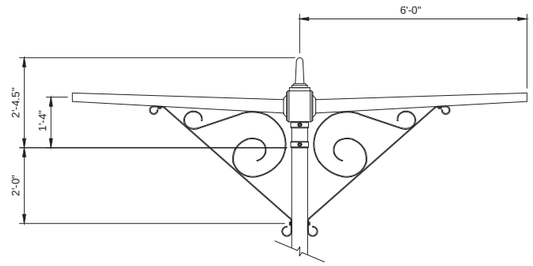
SHEET No. B.10



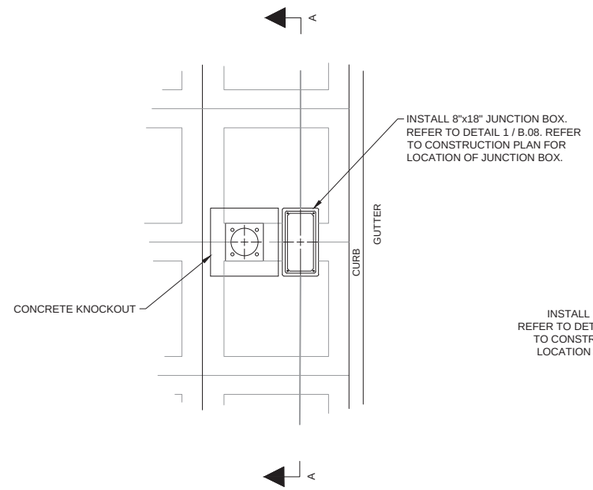
SECTION A

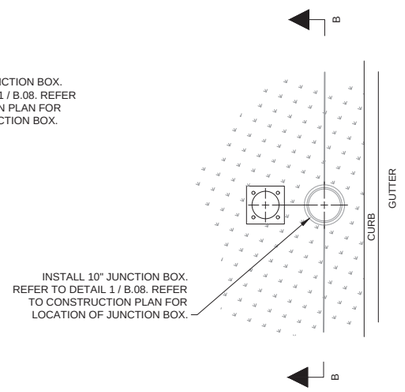


SECTION B

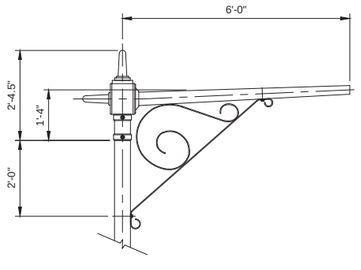


3 6' DOUBLE ARM
SCALE: 1/2" = 1'-0"

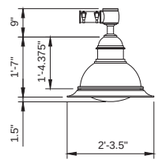




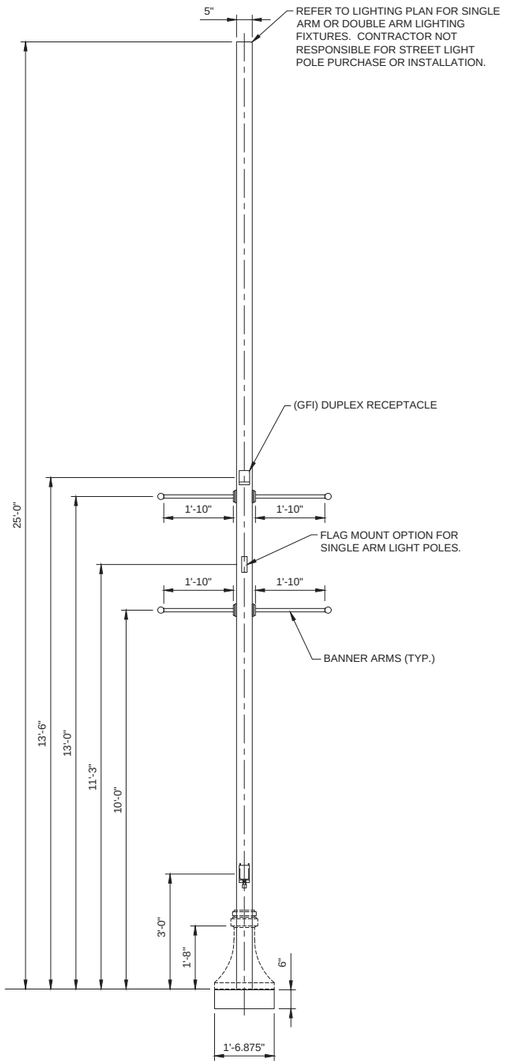
PLAN VIEW



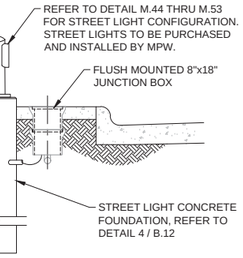
4 6' SINGLE ARM
SCALE: 1/2" = 1'-0"



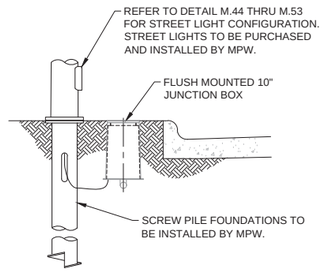
5 CAST IRON HOOD DETAIL
SCALE: 1/2" = 1'-0"



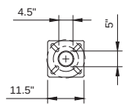
6 BANNER ARM DETAIL - FRONT VIEW
SCALE: 1/2" = 1'-0"



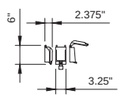
1 LIGHT FOUNDATION - CONCRETE
SCALE: NOT TO SCALE



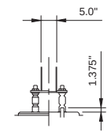
2 LIGHT FOUNDATION - SCREW PILE
SCALE: NOT TO SCALE



7 POLE SHAFT (ANCHOR PLATE) TOP VIEW
SCALE: 1/2" = 1'-0"



8 RECEPTACLE
SCALE: 1/2" = 1'-0"



9 BASE & BOLTS
SCALE: 1/2" = 1'-0"

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

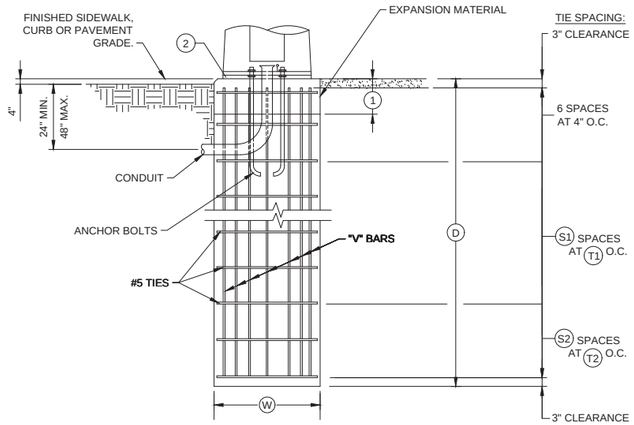
DRAWN BY:	DATE:
DAMION SHANNON	01/02/2017
DESIGNED BY:	DATE:
RICHARD H. TEED	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

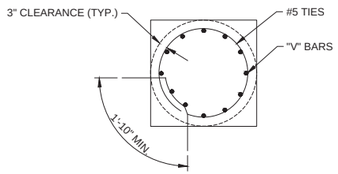
MUSCATINE POWER & WATER

STREET LIGHTS

MISSISSIPPI DR. CORRIDOR
DECORATIVE STREET LIGHT DETAIL

REF No.			SHEET No.
SCALE: NOTED	FILE No. 46		B.11
DRAWING No. DSL0076A	REV. No. 0		

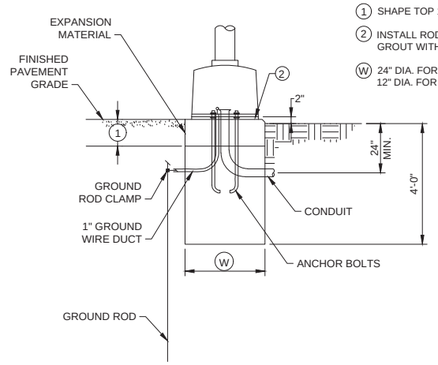




FOOTING DIMENSIONS TABLE								
TYPE	D	W	"V" BARS		S1	T1	S2	T2
			COUNT	SIZE				
A	12'-0"	3'-0"	12	8	9	12"	N/A	N/A
B	14'-0"	3'-0"	12	8	11	12"	N/A	N/A
C	16'-0"	3'-0"	12	8	12	8"	5	12"

PROVIDE FOOTING TYPE AS SPECIFIED IN THE CONTRACT DOCUMENTS ON SHEET C.25.

1 MAST ARM POLE FOOTING
SCALE: NONE

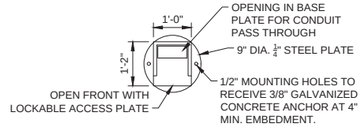


1. SHAPE TOP 11 INCHES WITH FORMS.
2. INSTALL RODENT GUARD OR NON-SHRINK GROUT WITH WEEP HOLE.
W. 24" DIA. FOR AN 8' MOUNTING HEIGHT AND 12" DIA. FOR A 5'-6" MOUNTING HEIGHT.

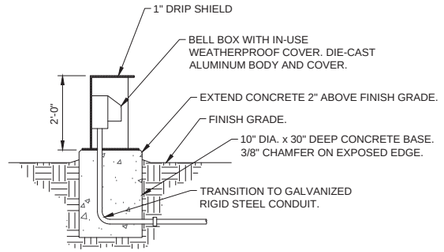
2 PEDESTAL POLE FOOTING
SCALE: NONE

FABRICATION NOTES:

1. AS MANUFACTURED BY POVOLNY SPECIALTIES OR EQUAL
2. STANCHION-1/8" GALVANIZED STEEL
3. BASE-1/4" GALVANIZED STEEL
4. ALL JOINTS TO BE CONTINUOUS WELDED AND GROUND SMOOTH
5. FULL GALVANIZED FINISH ALL SIDES
6. ETL LISTED IN COMPLIANCE WITH UL 50
7. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL

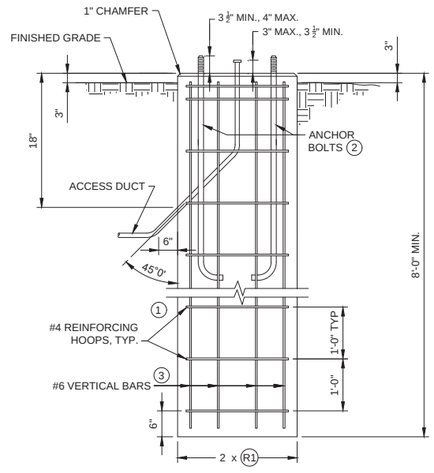


PLAN



SECTION

3 GFCI PEDASTAL
SCALE: NONE

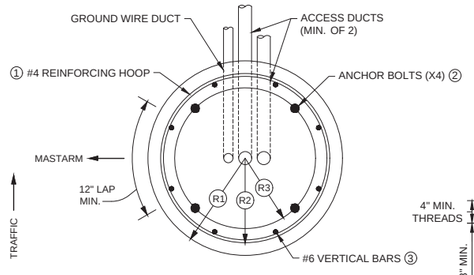


TYPICAL SECTION
TYPE A FOUNDATION

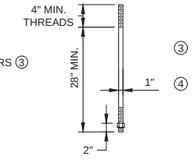
R1 = RADIUS OF FOUNDATION TO BE MINIMUM OF 2" GREATER THAN R2.

R2 = RADIUS OF THE REINFORCING HOOP. MINIMUM OF 1" GREATER THAN R3.

R3 = RADIUS OF THE ANCHOR BOLT CIRCLE.



PLAN



ALTERNATIVE 4
ANCHOR BOLT

MINIMUM DIAMETER OF FOUNDATION IS DETERMINED BY THE ANCHOR BOLT CIRCLE REQUIRED FOR THE DIAMETER OF THE BOLE BEING INSTALLED. WHERE DIMENSIONAL REQUIREMENTS INDICATED CANNOT BE MET WITH NORMAL FOUNDATIONS, ENLARGE THE FOUNDATION AS NECESSARY TO ACCOMMODATE THE REQUIRED DIAMETER AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.

PROVIDE MINIMUM 2" CLEAR FOR ALL REINFORCEMENT.

CAP OPEN ENDS OF CONDUIT DURING CONSTRUCTION TO PREVENT INFILTRATION OF FOREIGN MATERIAL. AFTER THE CABLE IS INSTALLED SEAL THE UPPER END OF THE DUCTS AGAINST ENTRY OF MOISTURE BY A METHOD APPROVED BY THE ENGINEER.

FOR ACCESS DUCTS, USE A 2" NOMINAL INSIDE DIAMETER DUCT.

WHEN PRECAST FOUNDATIONS ARE USED, BACKFILL WITH CLASS B CONCRETE. WHEN CAVING SOIL OR GROUND WATER IS PRESENT, REMOVE TO PROVIDE AN ACCEPTABLE CONDITION PRIOR TO PLACING CLASS B CONCRETE.

1. #4 BARS LAPPED A MINIMUM OF 12" AS INDICATED. HOOPS MAY BE WELDED TO VERTICAL BARS.
2. USE FULL LENGTH GALVANIZED ANCHOR BOLTS. REFER TO THE MANUFACTURER'S REQUIREMENTS FOR ANCHOR BOLT DIMENSIONS. OBTAIN A TEMPLATE FROM THE LIGHT POLE MANUFACTURER FOR ANCHOR BOLT PLACEMENT. DO NOT WELD ANCHOR BOLTS.
3. PLACE 8 BARS SPACED EQUALLY. USE #7 BARS WHEN THE MOUNTING HEIGHT IS GREATER THAN 44 FEET.
4. IF DEPTH FROM FINISHED GROUND LINE TO BOTTOM OF FOUNDATION IS LESS THAN 48", ALTERNATIVE ANCHOR BOLT MAY BE USED.

4 STREET LIGHT CONCRETE FOUNDATION
SCALE: NONE

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 01/12/2017
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

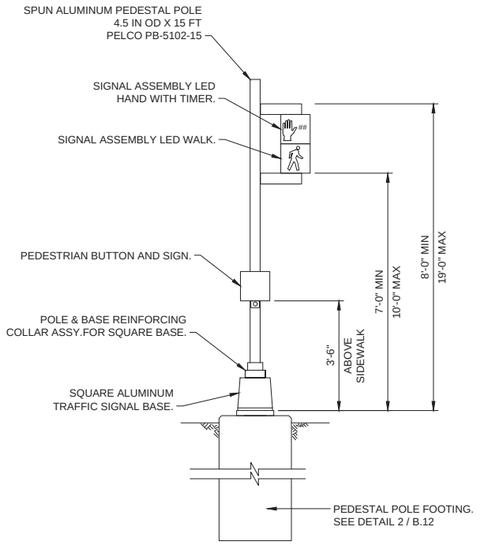
MUSCATINE POWER & WATER

STREET LIGHTS

MISSISSIPPI DR. CORRIDOR
STREET LIGHT FOUNDATION DETAIL

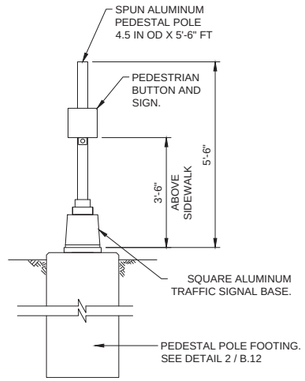
REF No.
SCALE: NOTED — FILE No. 46
DRAWING No. DSL0077A — REV. No. 0

SHEET No. B.12



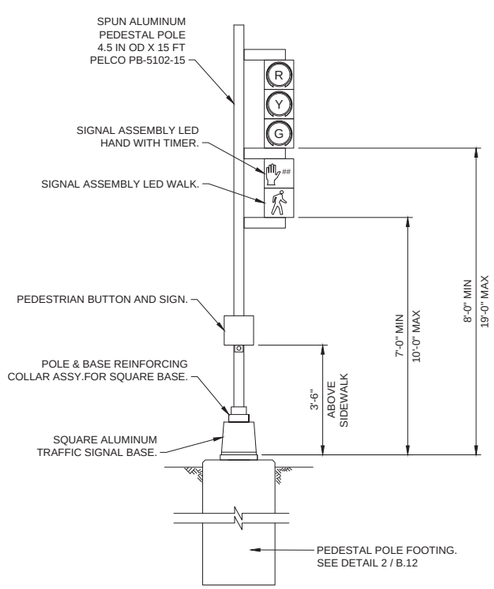
TRAFFIC SIGNAL POLE DETAIL - TYPE 1A

SCALE: NONE



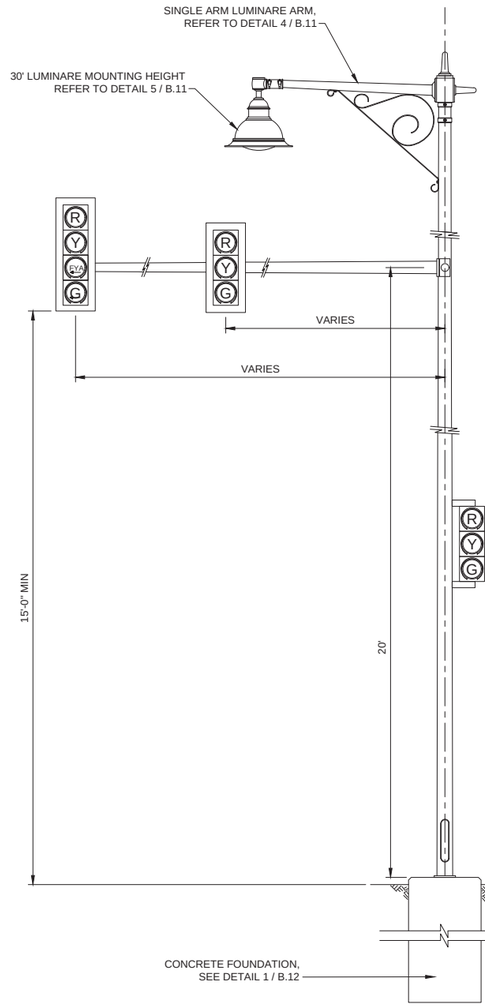
TRAFFIC SIGNAL POLE DETAIL - TYPE 1B

SCALE: NONE



TRAFFIC SIGNAL POLE DETAIL - TYPE 2

SCALE: NONE

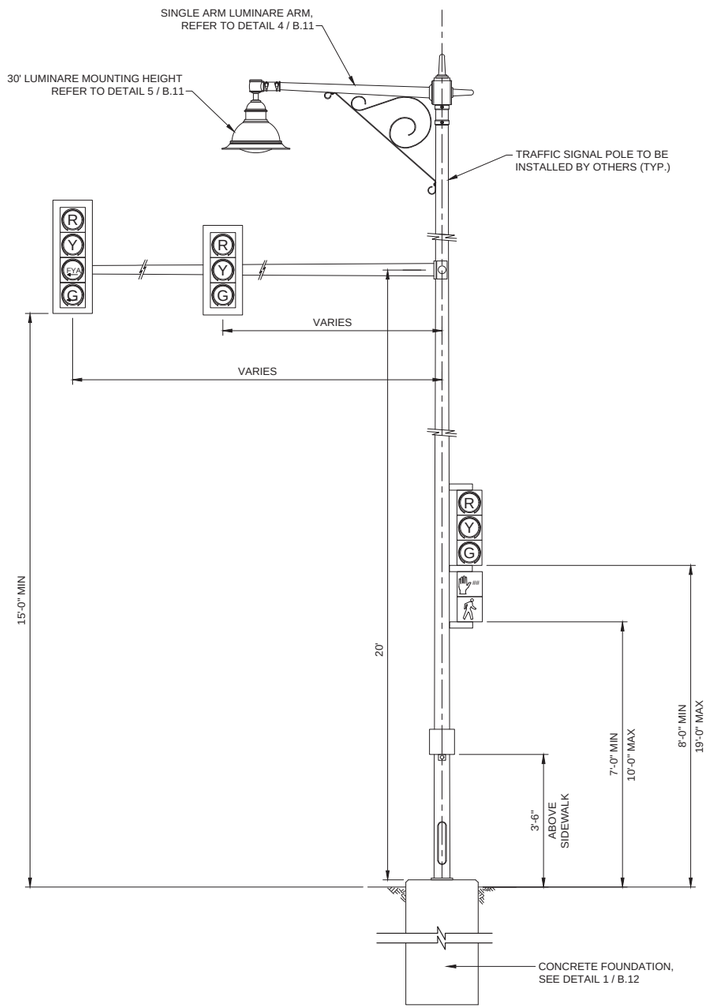


TRAFFIC SIGNAL POLE DETAIL - TYPE 3

SCALE: NONE

CONSTRUCTION NOTE:

1. CONTRACTOR RESPONSIBLE FOR ALL CONCRETE STREET LIGHT AND TRAFFIC SIGNAL POLE FOUNDATIONS ONLY.
2. MPW TO PROVIDE ALL ANCHOR BOLTS AND BOLT PATTERN TEMPLATES.
3. CONTRACTOR **NOT** RESPONSIBLE FOR ANY STREET LIGHT OR TRAFFIC SIGNAL POLES.



TRAFFIC SIGNAL POLE DETAIL - TYPE 4

SCALE: NONE

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

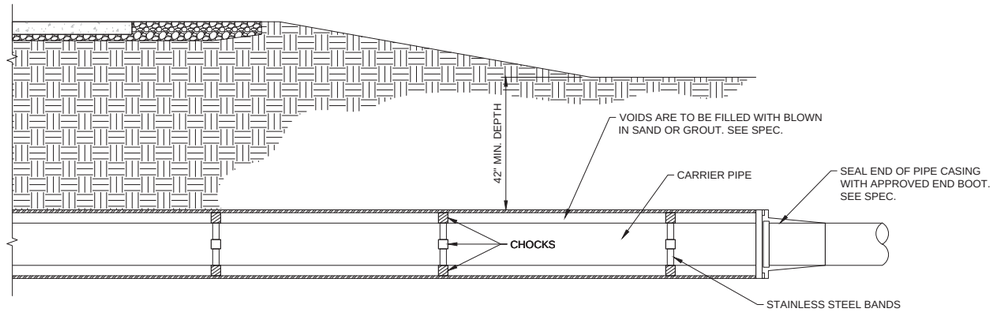
DRAWN BY:	DATE:
DAMION SHANNON	01/09/2017
DESIGNED BY:	DATE:
RICHARD H. TEED	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

MUSCATINE POWER & WATER

STREET LIGHTS

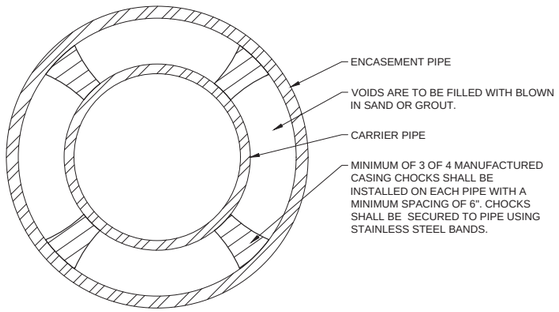
MISSISSIPPI DR. CORRIDOR
TRAFFIC SIGNAL AND
STREET LIGHT DETAIL

REF No.		SHEET No.
SCALE: NOTED	FILE No. 46	B.13
DRAWING No. DTR0134A	REV. No. 0	



ENCASEMENT PROFILE DETAIL

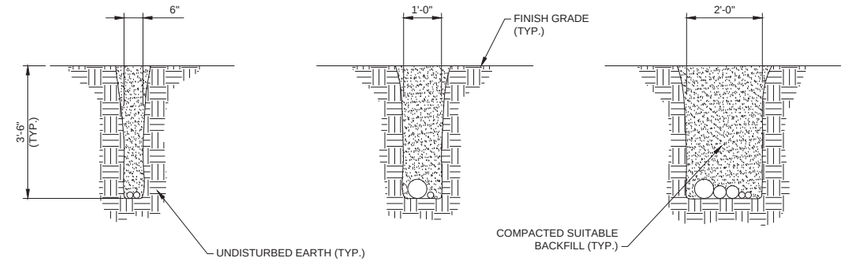
SCALE: NONE



CROSSING ENCASEMENT	
PIPE SIZE	CROSSING ENCASEMENT
1-1/2" DIP	3" STEEL
2" DIP	4" STEEL
2-1/2" DIP	6" STEEL
3" DIP	6" STEEL
4" DIP	8" STEEL
6" DIP	12" STEEL
8" DIP	14" STEEL
10" DIP	16" STEEL
12" DIP	20" STEEL
18" DIP	24" STEEL
24" DIP	30" STEEL

ENCASEMENT SECTION DETAIL

SCALE: NONE



ELECTRICAL / COMMUNICATION TRENCH DETAIL (TYP.)

SCALE: 1/2" = 1'-0"

GENERAL CONSTRUCTION NOTES

CONDUIT DELIVERY STORAGE, AND HANDLING SHALL COMPLY WITH SUDAS DIVISION 1 - GENERAL PROVISIONS AND CONVENANTS.

CONDUIT MATERIAL SPECIFICATIONS:

1. FURNISH WATER PROOF FITTINGS OF IDENTICAL OR COMPATIBLE MATERIAL TO THE CONDUIT. USE STANDARD FACTORY ELBOWS, COUPLINGS, AND OTHER FITTINGS.
2. USE A MANUFACTURED CONDUIT SEALING COMPOUND THAT IS READILY WORKABLE MATERIAL AT TEMPERATURES AS LOW AS 30°F AND WILL NOT MELT OR RUN AT TEMPERATURES AS HIGH AS 300°F.
3. PLASTIC CONDUIT AND FITTINGS
   - 3.1. PVC
     - 3.1.1. PVC SCHEDULE 40 PLASTIC CONDIUT AND FITTINGS COMPLYING WITH NEMA TC-2 (PIPE), MENA TC-3 (FITTINGS, AND UL 651 FOR SCHEDULE 40 HEAVY WALL TYPE.
     - 3.1.2. SOLVENT WELDED, SOCKET TYPE FITTINGS, EXCEPT WHERE OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
     - 3.1.3. PROVIDE BELL END FITTINGS OR BUSHINGS.
   - 3.2. HDPE
     - 3.2.1. COMPLY WITH ASTM F 2160 (CONDUIT) AND STM D 3350 (HDPE MATERIAL), SDR 13.5.
     - 3.2.2. USE BLACK COLORED CONDUIT WITH WITH STRIPE FOR ALL ELECTRICAL CONDUIT OR CONDUIT FOR INTERSECTIONS AND ORANGE COLORED CONDUIT FOR COMMUNICATION.
     - 3.2.3. CONTINUOUS REEL OR STRAIGHT PIECES TO MINIMIZE SPLICING.
     - 3.2.4. FOR DISSIMILAR CONDUIT CONNECTIONS, PROVIDE AN ADHESIVE COMPATIBLE WITH BOTH MATERIAL.

CONDUIT INSTALLATION SPECIFICATIONS:

1. PLACE CONDUIT TO A MINIMUM DEPTH OF 30 INCHES AND A MAXIMUM DEPTH OF 60 INCHES BELOW THE GUTTERLINE. WHEN CONDUIT IS PLACED BEHIND THE CURB, PLACE TO A MINIMUM DEPTH OF 24 INCHES AND A MAXIMUM DEPTH OF 48 INCHES BELOW TOP OF CURB.
2. CHANGE DIRECTION AT HANDHOLES OR BY BENDING, SUCH THAT THE CONDUIT WILL NOT BE DAMAGED OR ITS INTERNAL DIAMETER CHANGES. ENSURE BENDS ARE UNIFORM IN CURVATURE AND THE INSIDE RADIUS OF CURVATURE OF ANY BEND IS NO LESS THAN SIX TIMES THE INTERNAL DIAMETER OF THE CONDUIT.
3. ON THE EXPOSED ENDS OF CONDUIT, PLACE BELL-END FITTINGS ON PVC OR HDPE CONDUIT AND BUSHINGS ON STEEL CONDUIT PRIOR TO INSTALLING CABLE. EXTEND ALL CONDUITS A MINIMUM OF 2-INCHES AND A MAXIMUM OF 14-INCHES ABOVE THE FINISHED SURFACE OF ANY FOUNDATION, FOOTING, OR STRUCTURAL BASE.
4. PACK CONDUIT ENDS WITH A CONDUIT SEALING COMPOUND.
5. WHEN PLACING CONDUIT UNDER PAVEMENTS, USE THE TRENCHLESS INSTALLATION METHODS DESCRIBED IN SECTION 3020.
6. MINIMUM TRENCH WIDTH SHALL BE 2 INCHES GREATER THAN THE NOMINAL DIAMETER OF EACH CONDUIT ADDED TOGETHER.
7. ALL CONDUIT SHALL BE INSTALLED ON THE BOTTOM OF THE TRENCH. STACKING CONDUIT SHALL NOT BE PERMITTED.
8. SUITABLE BACKFILL SHALL BE MANUFACTURED SAND WHEN TRENCH IS WITHIN 10'-0" OF ROADWAY OR UNDER PAVEMENT.

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

DRAWN BY:	DATE:
DAMION SHANNON	01/09/2017
DESIGNED BY:	DATE:
RICHARD H. TEED	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
WATER & ELECTRIC
CASING PIPE & ELECTRIC CONDUIT

REF No.		SHEET No.
SCALE: NOTED	FILE No. 46	B.14
DRAWING No. DUG0095D	REV. No. 0	

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QNTY
SECTION 1010 - GENERAL PROVISIONS					
1	1070-206-A-0	TRAFFIC CONTROL	LS	1	
2	1070-212-A-1	RAILROAD FLAGGER	DAY	100	
3	1070-302-4	RAILROAD PROTECTIVE LIABILITY INSURANCE PROVISION	LS	1	
SECTION 2010 - EARTHWORK, SUBGRADE, AND SUBBASE					
4	2010-108-C-0	CLEARING AND GRUBBING	LS	1	
5	2010-108-D-3	TOPSOIL, OFF SITE	CY	100	
6	2010-108-D-X	TOPSOIL, OFF SITE, LOAD & SPREAD	CY	3,021	
7	2010-108-E-0	EXCAVATION, CLASS 13	CY	8,090	
8	2010-108-G-0	SUBGRADE PREPARATION	SY	36,460	
9	2010-108-G-X	SUBGRADE STABILIZATION, 12-INCH	CY	976	
10	2010-108-H-0	SUBGRADE TREATMENT, GEOTEXTILE	SY	2,928	
11	2010-108-I-1	SUBBASE, SPECIAL BACKFILL, 6-INCH	SY	8,643	
12	2010-108-I-2	SUBBASE, MODIFIED SUBBASE, 6-INCH	SY	36,460	
13	2010-108-X-1	REMOVAL OF KNOWN DUCT BANK, CONCRETE, 2'-6" WIDTH x 1'-0" HEIGHT	LF	15	
14	2010-108-X-2	REMOVAL, HYDRANT	EA	6	
15	2010-108-X-3	REMOVAL, TRAFFIC SIGNAL FOUNDATION	EA	24	
16	2010-108-X-4	REMOVAL, STREET LIGHT POLES	EA	51	
17	2010-108-X-5	EXPLORATORY EXCAVATION	LF	100	
SECTION 3010 - TRENCH EXCAVATION AND BACKFILL					
18	3010-108-C-0	TRENCH FOUNDATION	TON	500	
19	3010-108-D-0	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	CY	19,210	
20	3010-108-D-0	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL, COHESIVE BACKFILL	CY	810	
21	3010-108-X-X	RAVINE FILL AREA EARTHWORK MANAGEMENT	CY	20,020	
22	3010-108-F-0	TRENCH COMPACTION TESTING	LS	1	
SECTION 4010 - SANITARY SEWERS					
23	4010-108-A-1	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 8 INCH	LF	758	
24	4010-108-A-1	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 12 INCH	LF	2,698	
25	4010-108-A-1	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 18 INCH	LF	185	
26	4010-108-E-0	SANITARY SEWER SERVICE STUB, PVC, 6"	LF	593	
27	4010-108-E-0	SANITARY SEWER SERVICE STUB, PVC, 8"	LF	27	
28	4010-108-E-0	SANITARY SEWER SERVICE STUB, PVC, 12"	LF	51	
29	4010-108-H-0	REMOVAL OF SANITARY SEWER, LESS THAN 36"	LF	5,342	
SECTION 4020 - STORM SEWERS					
30	4020-108-A-1	STORM SEWER, TRENCHED, PVC, 4 INCH	LF	16	
31	4020-108-A-1	STORM SEWER, TRENCHED, RCP, 12 INCH	LF	75	
32	4020-108-A-1	STORM SEWER, TRENCHED, RCP, 15 INCH	LF	1,890	
33	4020-108-A-1	STORM SEWER, TRENCHED, RCP, 18 INCH	LF	1,669	
34	4020-108-A-1	STORM SEWER, TRENCHED, RCP, 24 INCH	LF	1,337	
35	4020-108-A-1	STORM SEWER, TRENCHED, RCP, 36 INCH	LF	82	
36	4020-108-A-1	STORM SEWER, TRENCHED, RCP, 48 INCH	LF	199	
37	4020-108-B-2	STORM SEWER WITH CASING PIPE, TRENCHLESS, RCP, 48 INCH	LF	75	
38	4020-108-C-0	REMOVAL OF STORM SEWER, LESS THAN 36 INCH	LF	3,504	
39	4020-108-E-2	STORM SEWER ABANDONMENT, PLUG	LF	40	
40	4020-201-A-3	SPECIAL PIPE CONNECTION, TYPE PC-1, CONCRETE COLLAR CONNECTION	EA	1	
41	4040-108-A-0	TRENCHDRAIN, HDPE, 6 INCH	LF	113	
SECTION 5010 - PIPE AND FITTINGS					
42	5010-108-A-1	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 12"	LF	2,148.0	
43	5010-108-A-1	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 10"	LF	341.0	
44	5010-108-A-1	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 8"	LF	55.0	
45	5010-108-A-1	WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 6"	LF	896.0	
46	5010-108-B-2	WATER MAIN CASING PIPE, TRENCHLESS, RESTRAINED JOINT DUCTILE IRON CL. 52, 8"	LF	108.0	
47	5010-108-C-2	FITTINGS	LBS	2,994.0	
48	5010-108-D-0	WATER SERVICE STUB, DIP, 6-INCH	EA	3.0	
49	5010-108-D-0	WATER SERVICE STUB, COPPER, 1-1/2-INCH	EA	2.0	
50	5010-108-D-0	WATER SERVICE STUB, COPPER, 1-INCH	EA	11.0	
SECTION 5020 - VALVES, FIRE HYDRANTS, AND APPURTENANCES					
51	5020-108-A-0	VALVE, GATE VALVE, MECHANICAL JOINT, 12"	EA	6.0	
52	5020-108-A-0	VALVE, GATE VALVE, MECHANICAL JOINT, 10"	EA	1.0	
53	5020-108-A-0	VALVE, GATE VALVE, MECHANICAL JOINT, 8"	EA	1.0	
54	5020-108-A-0	VALVE, GATE VALVE, MECHANICAL JOINT, 6"	EA	5.0	
55	5020-108-B-0	TAPPING SLEEVE, 12"x8"	EA	1.0	
56	5020-108-B-0	TAPPING SLEEVE, 10"x10"	EA	2.0	
57	5020-108-B-0	TAPPING SLEEVE, 8"x6"	EA	1.0	
58	5020-108-B-0	TAPPING SLEEVE, 6"x6"	EA	4.0	
59	5020-108-H-0	HYDRANT, ASSEMBLY	EA	8.0	
SECTION 6010 - STRUCTURES FOR SANITARY AND STORM SEWERS					
60	6010-108-A-0	MANHOLE TYPE SW-301, 60 INCH	EA	17.0	
61	6010-108-A-0	MANHOLE TYPE SW-301, 72 INCH	EA	1.0	
62	6010-108-A-0	MANHOLE TYPE SW-401, 60 INCH	EA	11.0	
63	6010-108-A-0	MANHOLE TYPE SW-401, 72 INCH	EA	1.0	
64	6010-108-A-0	MANHOLE TYPE SW-401, 84 INCH	EA	2.0	
65	6010-108-A-0	MANHOLE TYPE SW-403	EA	3.0	
66	6010-108-B-0	INTAKE TYPE SW-501	EA	39.0	
67	6010-108-B-0	INTAKE TYPE SW-502, 60 INCH	EA	1.0	
68	6010-108-B-0	INTAKE TYPE SW-503	EA	12.0	
69	6010-108-B-0	INTAKE TYPE SW-505	EA	33.0	
70	6010-108-B-0	INTAKE TYPE SW-506	EA	5.0	
71	6010-108-B-0	INTAKE TYPE SW-511	EA	1.0	
72	6010-108-B-0	INTAKE TYPE SW-512, 24 INCH	EA	4.0	
73	6010-108-C-0	DROP CONNECTION, SW-307	EA	11.0	
74	6010-108-E-0	MANHOLE ADJUSTMENT, MINOR	EA	9.0	
75	6010-108-F-0	MANHOLE ADJUSTMENT, MAJOR	EA	7.0	
76	6010-108-G-0	CONNECTION TO EXISTING MANHOLE	EA	11.0	
77	6010-108-H-0	REMOVE MANHOLE	EA	41.0	
78	6010-108-H-0	REMOVE INTAKE	EA	43.0	
79	6010-108-X-0	GATEWELL TOP REPLACEMENT	EA	1.0	
SECTION 7010 - PORTLAND CEMENT CONCRETE PAVEMENT					
80	7010-108-A-0	PAVEMENT, PCC, 8 INCH	SY	3,935.0	
81	7010-108-A-0	PAVEMENT, PCC, 10 INCH	SY	23,142.0	
82	7010-108-A-0	PAVEMENT, PCC, 18 INCH	SY	220.0	
83	7010-108-E-0	CURB AND GUTTER, 18 INCH, 6 INCH THICK	LF	373.0	
84	7010-108-F-0	BEAM CURB	LF	517.0	
85	7010-108-I-0	PCC PAVEMENT SAMPLES AND TESTING	LS	1.0	
SECTION 7020 - HOT MIX ASPHALT PAVEMENT					
86	7020-108-B-0	PAVEMENT OR OVERLAY, HMA, 4 INCH	SY	1,544.0	
SECTION 7030 - SIDEWALKS, SHARED USE PATHS, AND DRIVEWAYS					
87	7030-108-A-0	REMOVAL OF SIDEWALK	SY	6,756.0	
88	7030-108-A-0	REMOVAL OF DRIVEWAY	SY	4,330.0	
89	7030-108-E-0	CONCRETE WALK, PCC, 5 IN.	SY	7,177.0	
90	7030-108-E-0	CONCRETE WALK, PCC, 6 IN.	SY	864.0	
91	7030-108-E-0	MEDIAN CONCRETE, PCC, 5 IN.	SY	1,535.0	
92	7030-108-F-1	CONCRETE UNIT PAVERS WITH SAND SETTING BED & PCC SUBBASE	SF	12,148.0	
93	7030-108-F-2	HISTORIC PAVERS, TYPE A WITH SAND SETTING BED & PCC SUBBASE (PAVERS FURNISHED BY CITY)	SF	4,689.0	
94	7030-108-F-3	CROSSWALK PAVERS WITH 3/4" ASPHALT SETTING BED	SF	2,321.0	
95	7030-108-G-0	DETECTABLE WARNING	SF	991.0	
96	7030-108-H-1	DRIVEWAY, PAVED, PCC, 7 INCH	SY	2,599.0	
97	7030-108-X-1	CONCRETE BAND, 12" WIDTH	SF	1,226.0	
98	7030-108-X-2	CONCRETE BAND, 18" WIDTH	SF	10,256.0	
SECTION 7040 - PAVEMENT REHABILITATION					
99	7040-108-H-0	PAVEMENT REMOVAL	SY	36,733.0	
SECTION 8010 - TRAFFIC CONTROL					
100	8010-108-A-0	TRAFFIC SIGNAL, IOWA AVENUE INTERSECTION	LS	1.0	
101	8010-108-A-0	TRAFFIC SIGNAL, CEDAR STREET INTERSECTION	LS	1.0	
102	8010-108-A-0	TRAFFIC SIGNAL, OAK STREET INTERSECTION	LS	1.0	
SECTION 8020 - PAVEMENT MARKINGS					
103	8020-108-B-0	PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE	STA	248.0	
104	8020-108-G-0	PAINTED SYMBOLS AND LEGENDS	EA	80.0	
105	8020-108-K-0	PAVEMENT MARKINGS REMOVED	STA	23.0	
SECTION 9010 - SEEDING					
106	9010-108-B-0	SEEDING, FERTILIZING & HYDROMULCHING	AC	4.1	
SECTION 9020 - SODDING					

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MUSCATINE

HDR

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REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.01

107	9020-108-A-0	SOD	SQ	140.0	
SECTION 9030 - PLANT MATERIAL AND PLANTING					
108	9030-108-B-0	DECIDUOUS SHRUBS	EA	250.0	
109	9030-108-B-0	ORNAMENTAL TREE	EA	34.0	
110	9030-108-B-0	PERENNIAL GROUND COVER (1 GAL)	EA	3,655.0	
111	9030-108-B-0	DECIDUOUS TREE	EA	70.0	
112	9030-108-B-0	STRUCTURAL SOIL MIX	CY	290.0	
113	9030-108-X-0	TREE GRATE AND FRAME	EA	8.0	
SECTION 9040 - EROSION AND SEDIMENT CONTROL					
114	9040-108-A-1	SWPPP PREPARATION	LS	1.0	
115	9040-108-A-2	SWPPP MANAGEMENT	LS	1.0	
116	9040-108-D-1	FILTER SOCKS, 20 INCH	LF	2,000.0	
117	9040-108-J-0	RIP RAP, EROSION STONE	TON	100.0	
118	9040-108-N-1	SILT FENCE OR SILT FENCE DITCH CHECK	LF	2,395.0	
119	9040-108-O-1	STABILIZED CONSTRUCTION ENTRANCE	SY	890.0	
120	9040-108-Q-1	EROSION CONTROL MULCHING, HYDROMULCHING	ACRE	5.0	
121	9040-108-T-1	INLET PROTECTION DEVICE, DROP IN PROTECTION	EA	114.0	
SECTION 9071 - SEGMENTAL BLOCK RETAINING WALL					
122	9071-108-A-0	SEGMENTAL BLOCK RETAINING WALL	LS	1.0	
SECTION 9080 - CONCRETE STEPS, HANDRAILS, AND SAFETY RAIL					
123	9080-108-A-0	TYPE A CONCRETE STEPS, PCC	SF	36.0	
124	9080-108-B-0	STEEL HANDRAIL	LF	16.0	
SECTION 11010 - CONSTRUCTION SURVEY					
125	11,010-108-A	CONSTRUCTION SURVEY	LS	1.0	
SECTION 11020 - MOBILIZATION					
126	11,020-108-A	MOBILIZATION	LS	1.0	
SECTION 11050 - CONCRETE WASHOUT					
127	11,050-108-A	CONCRETE WASHOUT	LS	1.0	
SECTION 12010 - SPECIALTY ITEMS					
128	12010-XXX-X-1	OUTCROPPING BOULDER	EA	20.0	
129	12010-XXX-X-2	BOULDER SEATWALLS	LF	150.0	
130	12010-XXX-X-3	INTERSECTION MARKER	EA	4.0	
131	12010-XXX-X-4	DISTRICT MONUMENT	EA	2.0	
132	12010-XXX-X-5	KIOSK	EA	1.0	
133	12010-XXX-X-6	STEEL BENCH	EA	6.0	
134	12010-XXX-X-7	LITTER RECEPTACLE	EA	6.0	
135	12010-XXX-X-8	BIKE RACK	EA	8.0	
136	12010-XXX-X-10	HISTORIC MONUMENT AND PLAQUE SALVAGE AND REPLACE	EA	1.0	
137	12010-XXX-X-9	REMOVE RETAINING WALL	LF	1,519.0	
SECTION 12,020 - SPECIALTY ITEMS, ELECTRICAL, DUCT BANK					
138	12,020-XXX-X-1	DUCT BANK, 3x2 CONFIGURATION	LF	3,325.0	
139	12,020-XXX-X-3	DUCT BANK, 6X1 CONFIGURATION, PAPOOSE CREEK	LF	60.0	
140	12,020-XXX-X-4	DUCT BANK, 3X1 CONFIGURATION	LF	32.0	
141	12,020-XXX-X-5	VAULT, PRECAST, 7'x18'	EA	4.0	
SECTION 12,030 - SPECIALTY ITEMS, ELECTRICAL, DISTRIBUTION					
142	12,030-XXX-X-1	ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 6-INCH	LF	5,763.0	
143	12,030-XXX-X-2	ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 4-INCH	LF	667.0	
144	12,030-XXX-X-3	ELECTRICAL CONDUIT, OPEN CUT, HDPE PVC, 3-INCH	LF	330.0	
145	12,030-XXX-X-4	ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 2-INCH	LF	10,990.0	
146	12,030-XXX-X-5	ELECTRICAL CONDUIT, TRENCHLESS, HDPE, VARIOUS SIZES	LF	54.0	
147	12,030-XXX-X-6	ELECTRICAL CONDUIT, TRENCHLESS, HDPE, VARIOUS SIZES	LF	48.0	
148	12,030-XXX-X-7	CASING PIPE, TRENCHLESS, STEEL, 14"x0.375", RAILROAD CROSSING NO. 1	LF	46.0	
149	12,030-XXX-X-8	SWITCHGEAR PAD	EA	2.0	
150	12,030-XXX-X-9	8'x8' TRANSFORMER PAD	EA	1.0	
151	12,030-XXX-X-10	3'x3' TRANSFORMER PAD	EA	3.0	
152	12,030-XXX-X-11	JUNCTION BOX, ELECTRICAL, 3'x6'	EA	2.0	
153	12,030-XXX-X-12	JUNCTION BOX, ELECTRICAL, 13"x24"	EA	16.0	
154	12,030-XXX-X-13	JUNCTION BOX, ELECTRICAL, 10" DIAMETER	EA	30.0	
155	12,030-XXX-X-14	VAULT, PRECAST, 6'x10'	EA	4.0	
156	12,030-XXX-X-15	FOUNDATION, STREET LIGHT	EA	50.0	
157	12,030-XXX-X-16	GFCI PEDESTAL	EA	15.0	
SECTION 12,040 - SPECIALTY ITEMS, COMMUNICATION					
158	12,040-XXX-X-1	COMMUNICATION CONDUIT, OPEN CUT, HDPE, 2-INCH	LF	4,917.0	
159	12,040-XXX-X-2	COMMUNICATION CONDUIT, OPEN CUT, HDPE, QUAD DUCT (4x1.5-INCH)	LF	2,560.0	
160	12,040-XXX-X-3	COMMUNICATION CONDUIT, OPEN CUT, HDPE, 1-INCH	LF	2,834.0	
161	12,040-XXX-X-4	HAND HOLE, COMMUNICATIONS, 30"x48"	EA	9.0	
162	12,040-XXX-X-5	HAND HOLE, COMMUNICATIONS, 17"x30"	EA	9.0	
163	12,040-XXX-X-6	HAND HOLE, COMMUNICATIONS, 10" DIAMETER	EA	1.0	

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MUSCATINE

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.02

ESTIMATE REFERENCE NOTES

Item No.	Item Code	Description
1	1070-206-A-0	**TRAFFIC CONTROL** A. REFER TO J SHEETS FOR DETAILS. EXISTING SIGNS SHALL BE REMOVED BY THE CITY TO FACILITATE EACH STAGE OF CONSTRUCTION. CONTRACTOR IS TO NOTIFY THE CITY WHEN SIGNS NEED TO BE REMOVED. ITEM INCLUDES INCIDENTAL ITEMS SHOWN ON THE J SHEETS.
2	1070-212-A-1	**RAILROAD FLAGGER** A. THIS ITEM SHALL INCLUDE THE COSTS ASSOCIATED WITH PAYING FOR THE REQUIRED RAILROAD COMPANY PROVIDED FLAGGER DURING WORK WITHIN THE RAILROAD RIGHT OF WAY AS REQUIRED BY THE RAILROAD COMPANY. FLAGGER MAY BE REQUIRED WHEN THERE IS CONSTRUCTION WITHIN THE RIGHT OF WAY, AT THE DISCRETION OF THE RAILROAD. THREE (3) WEEKS ADVANCED NOTICE TO THE RAILROAD IS REQUIRED PRIOR TO WORKING WITHIN THE RIGHT OF WAY. THIS ITEM INCLUDES THE COST FOR THE FLAGGER PER DAY AND INCLUDES ALL NECESSARY COMMUNICATION AND COORDINATION BETWEEN THE CONTRACTOR AND THE RAILROAD. B. BID ITEM INCLUDES ALL FLAGGERS REQUIRED FOR ONE DAY OF WORK. CONTRACTOR SHALL COORDINATE WITH THE RAILROAD FOR NUMBER OF REQUIRED FLAGGERS AND SIZE OF CREW. C. REFER TO CANADIAN PACIFIC FLAGGING AND MINIMUM SAFETY REQUIREMENTS IN THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL COORDINATE WITH THE RAILROAD TO ENSURE ALL REQUIREMENTS ARE MET.
3	1070-302-4	**RAILROAD PROTECTIVE LIABILITY INSURANCE PROVISION** A. CONTRACTOR PROVIDES REQUIRED RAILROAD PROTECTIVE LIABILITY INSURANCE CERTIFICATE AND SIGNS REQUIRED AND CONTRACTOR LICENSE. CONTRACTOR TO PROVIDE INSURANCE AS REQUIRED BY THE RAILROAD, IF DIFFERENT FROM SUDAS. PROOF OF INSURANCE TO BE SUPPLIED TO THE RAILROAD AND JURISDICTION PRIOR TO COMMENCING WORK WITHIN THE RAILROAD RIGHT OF WAY. B. THE CITY OF MUSCATINE SHALL BE NAMED AS ADDITIONAL INSURED. B. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE OF ENTRY PERMIT FROM THE RAILROAD.
4	2010-108-C-0	**CLEARING AND GRUBBING** A. THIS ITEM INCLUDES THE REMOVAL OF ALL TREES, STUMPS, BUSHES, AND ROOTS WITHIN THE EASEMENTS AND CONSTRUCTION LIMITS FOR PROPER INSTALLATION OF PROPOSED ITEMS. REMOVAL SHALL BE TO A DEPTH OF 12" BELOW FINISHED GRADE. ADDITIONAL TREES OR STUMPS THAT NEED TO BE REMOVED WILL REQUIRE PERMISSION FROM THE ENGINEER PRIOR TO COMPLETION OF THE WORK. PROTECT ALL TREES NOT MARKED FOR REMOVAL. STATIONS 35+25 LT. TO 43+00 LT. SHALL BE EXCLUDED FROM THIS ITEM AND SHALL NOT BE DISTURBED. REMOVAL OF TREES AND BRUSH WITHIN THE CONTRACTOR STAGING AREA ARE INCLUDED IN THIS PAY ITEM. THIS IS AN APPROXIMATE 4 ACRE SITE. ALL TRASH AND DEBRIS LOCATED WITHIN THE PROJECT LIMITS SHALL ALSO BE REMOVED, COST INCIDENTAL. CONTRACTOR MAY DISPOSE OF TREES, BRUSH AND ORGANIC DEBRIS AT THE CITY COMPOSE SITE LOCATED OFF OF HOUSER ST. AT MUSSER ST. AT NO CHARGE TO THE CONTRACTOR. SEE J.00 FOR LOCATION OF PROJECT STAGING AREA
5	2010-108-D-3	**TOPSOIL, OFF SITE** A. CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH AND SPREAD TO ALLOW FOR A MINIMUM OF FINISHED DEPTH OF 6" OF TOPSOIL. QUANTITY IS BASED ON 6" OF TOPSOIL LOCATED BETWEEN THE BACK OF CURB AND THE EDGE OF THE PROJECT LIMITS
6	2010-108-D-X	**TOPSOIL, OFF SITE, LOAD & SPREAD** A. CITY SHALL BE RESPONSIBLE TO FURNISH TOPSOIL AND CONTRACTOR SHALL BE RESPONSIBLE TO LOAD, TRANSPORT AND SPREAD TO A MINIMUM FINISHED DEPTH OF 6 INCHES. HAUL DISTANCE SHALL BE NO MORE THAN 3 MILES ROUND TRIP. QUANTITY IS BASED ON 6" OF TOPSOIL LOCATED BETWEEN THE BACK OF CURB AND THE EDGE OF THE PROJECT LIMITS
7	2010-108-E-0	**EXCAVATION, CLASS 13** A. THIS ITEM SHALL INCLUDE THE REMOVAL OF EXISTING SOIL AND AGGREGATE BASE, HAULING AND PLACEMENT OF THE MATERIAL WITHIN THE GRADING LIMITS, HAULING AND PLACEMENT OF EXCESS SOIL(WASTE), AND HAULING AND PLACEMENT OF BORROW MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS AND THESE PLANS. THE CONTRACTOR SHALL DISPOSE OF EXCESS MATERIAL AND MATERIAL THAT IS NOT SUITABLE FOR EMBANKMENT CONSTRUCTION TO LOCATIONS AS DESIGNATED BY THE ENGINEER. ANY BRICKS FOUND DURING EXCAVATION SHALL BE SALVAGES TO THE YARD LOCATE AT PUBLIC WORKS. ITEM DOES NOT INCLUDE ANY UTILTY TRENCH EXCAVATION. B. THE CITY RAVINE SITE LOCATED LESS THAN 3 MILES ROUND TRIP FROM THE PROJECT AREA SHALL BE USED FOR BOTH THE BORROW SITE AND DISPOSAL OF UNSUITABLE OR EXCESS SOIL. REFER TO SHEET C.27 FOR LOCATION OF CITY RAVINE SITE. C. THE FINISHED GRADE SHALL BE OF UNIFORM CROSS-SECTION AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF THE MODIFIED SUBBASE. CONTRACTOR SHALL NOTIFY CITY OF ANY DISPUTE WITH EXCAVATION PLAN PRIOR TO CONSTRUCTION, OTHERWISE PLAN QUANTITY WILL BE USED FOR PAYMENT. CUT = 4,300 CY, FILL + 30% = 8,090 CY
8	2010-108-G-0	**SUBGRADE PREPARATION** A. INCLUDES SUBGRADE PREPARATION FOR ALL ROADWAY PAVEMENT TO A DEPTH OF 12 INCHES. QUANTITY IS BASED ON THE AREA OF 12 INCH SUBGRADE PREPARATION, COMPLETED IN 2 - 6" LIFTS, EXTENDING 2 FOOT BEYOND THE PAVEMENT EDGE. BOTH LIFTS SHALL BE COMPACTED AND PROOFROLLED TO SATISFACTION OF ENGINEER. THE TOP LIFT SHALL BE LEVELED AND SMOOTHED WITH A STEEL DRUM ROLLER AND PROOF ROLLED PRIOR TO STARTING SUBGRADE PREPARATION. B. IN INSTANCES OF CONFLICT WITH UTILITIES, THE DEPTH MAY BE REDUCED AS DIRECTED BY THE ENGINEER. PREPARATION UNDER ENTRANCES, DRIVES AND SIDEWALKS SHALL BE INCIDENTAL TO THOSE ITEMS.
9	2010-108-G-X	**SUBGRADE STABILIZATION, 12-INCH** A. THIS ITEM SHALL BE USED AT THE DISCRETION OF THE ENGINEER/OWNER. CONTRACTOR SHALL OBTAIN APPROVAL OF ENGINEER/OWNER PRIOR TO UTILIZING THIS ITEM. THIS ITEM INVOLVES THE OVEREXCAVATION OF UNSUITABLE SOIL WITHIN THE RIGHT OF WAY. THE CONTRACTOR SHALL OVEREXCAVATION ONE FOOT OF MATERIAL, COMPACT BOTTOM OF OVEREXCAVATION, PLACE GEOTEXILE FABRIC ON BOTTOM OF OVEREXCAVATION (NOT A PART OF THIS BID ITEM) AND REPLACE UNSUITABLE MATERIAL WITH MODIFIED SUBBASE. B. THIS ITEM SHALL INCLUDE EXCAVATION OF UNSUITABLE MATERIAL, HAULING OF UNSUITABLE MATERIAL TO CITY RAVINE SITE, COMPACTION OF OVEREXCAVATED AREA, PLACEMENT OF ONE FOOT OF MODIFIED SUBBASE AND COMPACTION OF MODIFIED SUBBASE.
10	2010-108-H-0	**SUBGRADE TREATMENT, GEOTEXTILE** A. THIS PAY ITEM SHALL BE THE GEOTEXTILE FABRIC USED IN THE SUBGRADE STABILIZATION. THIS ITEM SHALL BE NON-WOVEN PERMEABLE FABRIC MEETING THE REQUIREMENT OF ASTM D-4439. FABRIC SHALL MEET THE REQUIREMENTS OF IOWA DOT 4196 SUBGRADE STABILIZATION MATERIAL.
11	2010-108-I-1	**SUBBASE, SPECIAL BACKFILL, 6-INCH** A. SPECIAL BACKFILL SUBBASE TO BE INSTALLED WHERE NOTED IN THE PLANS INCLUDING BELOW ALL DRIVEWAYS AND SIDEWALKS. THIS MATERIAL SHALL BE RECYCLED ON-SITE MATERIAL, TYPICALLY THIS IS RECYCLED HMA PAVEMENT. B. IT IS ESTIMATED THAT 4,000 TONS OF SPECIAL BACKFILL WILL BE GENERATED FROM RECYCLING THE EXISITNG HMA PAVEMENT. THIS IS ESTIMATED FROM THE GEOTECHNICAL BORINGS. ANY SHORTAGE OF MATERIAL SHALL BE BROUGHT IN FROM OFF SITE.
12	2010-108-I-2	**SUBBASE, MODIFIED SUBBASE, 6-INCH** A. MODIFIED SUBBASE TO BE INSTALLED WHERE NOTED IN THE TYPICAL SECTIONS, INCLUDING THE AREAS UNDER PCC PAVEMENT, HMA PAVEMENT AND EXTEND 2' BEYOND THE BACK OF CURB. B. CONTRACTOR SHALL RECYCLE THE PCC PAVEMENT THAT IS REMOVED AS PART OF THIS PROJECT TO CREATE THE MODIFIED SUBBASE AS LONG THE CRUSHED MATERIAL MEET THE GRADATION OF MODIFIED SUBBASE. RECYCLED MATERIAL FROM THIS PROJECT AND/OR VIRGIN MATERIAL MAY BE USED. C. IT IS ESTIMATED THAT 15,000 TONS OF MODIFIED SUBBASE WILL BE GENERATED FROM REYCLING THE EXISTING PCC PAVEMENT. THIS IS ESTIMATED FROM THE GEOTECHNICAL BORINGS. ANY SHORTAGE OF MATERIAL SHALL BE SUPPLEMENTED WITH VIRGIN MATERIAL.
13	2010-108-X-1	**REMOVAL OF KNOWN DUCT BANK, CONCRETE, 2'-6" WIDTH x 1'-0" HEIGHT** A. REFER TO SHEET F.15 FOR REMOVAL LAYOUT. THIS ITEM INCLUDES EXCAVATION, DEMOLITION, AND REMOVAL OF EXISTING 3x1 CONCRETE DUCT BANK. CONTRACTOR SHALL COORDINATE THIS WORK WITH MUSCATINE POWER AND WATER 4 WEEKS PRIOR TO DEMOLITION. MUSCATINE POWER AND WATER SHALL DEENERGIZE ALL CONDUCTOR IN DUCT BANK PRIOR TO DEMOLITION. CONTRACTOR SHALL SALVAGE CONDUCTOR TO MPW YARD.
14	2010-108-X-2	**REMOVAL, HYDRANT** A. REFER TO SHEETS F.12 THRU F.17 FOR REMOVAL LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM SHALL INCLUDE ANY EXCAVATION, SUITABLE BACKFILL, AND COMPACTION REQUIRED FOR REMOVING THE HYDRANT AND PIPE THREE FEET BELOW FINISH GRADE, REMOVE THE TOP SECTION OF THE VALVE BOX, AND CAPPING THE WATER MAIN.
15	2010-108-X-3	**REMOVAL, TRAFFIC SIGNAL FOUNDATION** A. THIS ITEM INCLUDES THE DEMOLITION OF EXISTING FOUNDATIONS TO 24-INCHES BELOW FINISH GRADE. CONTRACTOR TO COORDINATE REMOVAL OF TRAFFIC SIGNAL POLES WITH MPW. MPW TO REMOVAL ALL TRAFFIC SIGNAL POLES.
16	2010-108-X-4	**REMOVAL, STREET LIGHT POLES** A. REFER TO SHEETS F.12 THRU F.16 FOR REMOVAL LAYOUT. THIS ITEM INCLUDES THE REMOVAL AND DISPOSAL OF ALL STREET LIGHT POLES. THE CONTRACTOR SHALL PROVIDE MPW WITH A TWO WEEK NOTICE OF ANY STREET LIGHT POLE DEMOLITION. MPW SHALL REMOVE ALL OF THE LIGHT FIXTURES FROM THE POLES AND INSTALL TEMPORARY LIGHTING ON THE SOUTH SIDE OF THE ROADWAY PRIOR TO DEMOLITION.
17	2010-108-X-5	**EXPLORATORY EXCAVATION** A. THIS ITEM IS FOR THE INVESTIGATION OF LOCATIONS AND ELEVATIONS OF AN EXISTING UTILITY TO VERIFY THE POTENTIAL FOR CONFLICTS AND/OR CONNECTIONS. CONTRACTOR HAS THE OPTION TO USE OPEN EXCAVATION OR VACUUM TYPE EQUIPMENT TO PERFORM THE EXCAVATION DEPENDING UPON SITE CONDITIONS. PAYMENT INCLUDES THE PROPER BACKFILLING OF THE EXCAVATION AND THE ENGINEER OR THEIR REPRESENTATIVE MUST VERIFY THE CONDITIONS FOUND. QUANTITY IS ESTIMATED TO ESTABLISH A UNIT PRICE, ONLY QUANTITY APPROVED BY ENGINEER PRIOR TO WORK WILL BE PAID. B. ITEM IS NOT INTENDED TO BE USED TO FIND KNOWN UTILITY LOCATIONS
18	3010-108-C-0	**TRENCH FOUNDATION** A. AT THE DISCRETION OF THE ENGINEER THIS ITEM IS TO INCORPORATE TRENCH FOUNDATION WHERE UNSUITABLE MATERIALS ARE FOUND BELOW THE PIPE BEDDING DURING CONSTRUCTION. QUANTITY IS ESTIMATED TO ESTABLISH A UNIT PRICE. THE ACTUAL TRENCH FOUNDATION QUANTITY USED WILL BE PAID. ENGINEER SHALL APPROVE ALL TRENCH FOUNDATION LOCATIONS PRIOR TO CONTRACTOR PERFORMING THIS WORK.
19	3010-108-D-0	**REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL** A. THIS ITEM SHALL BE USED TO BACKFILL PIPE AND CONDUIT TRENCHES WHERE THE PIPE OR CONDUIT IS WITHIN 10 FOOT OF ROADWAY PAVEMENT. PIPE OR CONDUIT TRENCHES NOT WITHIN 10 FEET OF ROADWAY PAVEMENT SHALL HAVE NATIVE SOIL BACKFILL AND SHALL BE INCIDENTAL TO PIPE. EXCAVATED MATERIAL SHALL BE DISPOSED OF AT THE CITY RAVINE SITE. B. REPLACEMENT MATERIAL SHALL BE MANSAND OR GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. C. REPLACEMENT MATERIAL QUANTITY IS CALCULATED AT A WIDTH OF PIPE DIAMETER PLUS 2 FOOT WITH VERTICAL TRENCH WALL TO WITHIN 2 FOOT OF THE BOTTOM OF THE ROCK AND THEN FLARE OUT AT A 1:1 SLOPE TO THE BOTTOM OF ROCK. REPLACEMENT MATERIAL SHALL BE MEASURED FROM TOP OF PIPE BEDDING TO BOTTOM OF SUBBASE MATERIAL.
20	3010-108-D-0	**REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL, COHESIVE BACKFILL** A. THIS ITEM SHALL BE USED AS BACKFILL MATERIAL AROUND THE CONCRETE ELECTRIC DUCT BANK. THIS MATERIAL SHALL BE PLACED UP TO THE EXISTING GRADE OR TO THE ELEVATION OF THE ROADWAY SUBBASE, WHICH EVER IS HIGHER. REFER TO SHEET C.25 FOR TABULATION. REFER TO SUDAS SECTION 2010 FOR SUTIABLE SELECT BACKFILL. THIS MATERIAL SHALL BE A COHESIVE SOIL.
21	3010-108-X-X	**RAVINE FILL AREA EARTHWORK MANAGEMENT** A. UNIT PRICE INCLUDES ALL COSTS OF LABOR AND EQUIPMENT NEEDED TO DO THE GRADING ASSOCIATED WITH WASTING AND BORROWING MATERIAL IN THE CITY OF MUSCATINE'S DESIGNATED RAVINE FILL AREA. WHERE THE MATERIAL IS TO BE BORROWED AND WASTED SHALL BE DEFINED BY THE CITY ENGINEER AND IS TO BE IN COMPLIANCE WITH THE CITY OF MUSCATINE'S RAVINE GRADING PLAN. THE PLAN IS AVAILABLE FOR REVIEW FROM THE CITY. PRICE INCLUDES GRADING AREAS WHERE WASTE EXCAVATION MATERIAL HAS BEEN DUMPED AT THE RAVINE AND REGRADING AREAS WHERE BORROW MATERIAL HAS BEEN EXCAVATED. THIS GRADING IS TO ESTABLISH REQUIRED DRAINAGE FOR THE AREAS CHANGED AND WILL BE DIRECTED BY THE ENGINEER. PAYMENT WILL BE BASED ON CALCULATIONS OF MATERIAL PLACED AS FILL FROM THE PROJECT. NO ADDITIONAL COMPENSATION WILL BE MADE FOR MATERIALS REMOVED FROM THE RAVINE FOR USE ON THE MISSISSIPPI DRIVE CORRIDOR PROJECT. THE RAVINE IS ALSO USED FOR THE OPERATIONS OF THE CITY OF MUSCATINE'S WEST HILL AREA SANITARY AND STORM SEWER SEPARATION PROJECT CONTRACTOR, AS WELL BY CITY FORCES. CONTRACTOR IS REQUIRED TO COORDINATE HIS ACTIVITIES IN THIS RAVINE WITH ALL OTHER CONTRACTORS AND WORK WITH THE OTHER CONTRACTORS TO KEEP THE STREETS USED FOR ACCESS CLEAN AND CLEAR OF ALL MUD, DUST AND DELETERIOUS MATERIAL CREATED FROM THE HAULING OPERATIONS. ACCESS WILL BE FROM THE INTERSECTION OF WEST 6TH AND LOCUST STREETS, UNLESS DIRECTED OTHERWISE BY THE ENGINEER..
22	3010-108-F-0	**TRENCH COMPACTION TESTING** A. TRENCH COMPACTION TESTING IS REQUIRED FOR ALL TRENCHES WHERE PIPE OR CONDUIT IS WITHIN 10 FOOT OF ROADWAY PAVEMENT.
23	4010-108-A-1	**SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 8 INCH** A. REFER TO C-23 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL SANITARY SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION BEFORE SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. ANY VISIBLE LEAKS SHALL BE REPAIRED REGARDLESS OF SEVERITY. CONTRACTOR SHALL RE-VIDEO ANY REQUIRED REPAIRS AND PROVIDE VIDEO TO THE CITY AT NO ADDITIONAL COST. B. PIPE EMBEDMENT DETAIL, TYPE F-3, MODIFIED TO REQUIRE ONLY 6" ABOVE THE TOP OF THE PIPE. FURNISHING AND PLACING ELBOWS AND TEES, PLUGS, CONNECTION TO EXISTING SANITARY SEWER AND BEDDING MATERIALS AS REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. CONNECTION TO EXISTING SANITARY PIPES SHALL BE INCIDENTAL TO THIS ITEM. C. CONTRACTOR SHALL PLUG SEWER AT THE END OF EACH WORKING DAY. DAMAGES RESULTING FROM THE CONTRACTOR'S INABILITY TO KEEP GROUND AND STORM WATER OUT OF THE SANITARY SYSTEM SHALL BE CHARGED TO THE CONTRACTOR.
24	4010-108-A-1	**SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 12 INCH** A. REFER TO C-23 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL SANITARY SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION BEFORE SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. ANY VISIBLE LEAKS SHALL BE REPAIRED REGARDLESS OF SEVERITY. CONTRACTOR SHALL RE-VIDEO ANY REQUIRED REPAIRS AND PROVIDE VIDEO TO THE CITY AT NO ADDITIONAL COST. B. PIPE EMBEDMENT DETAIL, TYPE F-3, MODIFIED TO REQUIRE ONLY 6" ABOVE THE TOP OF THE PIPE. FURNISHING AND PLACING ELBOWS AND TEES, PLUGS, CONNECTION TO EXISTING SANITARY SEWER AND BEDDING MATERIALS AS REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. CONNECTION TO EXISTING SANITARY PIPES SHALL BE INCIDENTAL TO THIS ITEM. C. CONTRACTOR SHALL PLUG SEWER AT THE END OF EACH WORKING DAY. DAMAGES RESULTING FROM THE CONTRACTOR'S INABILITY TO KEEP GROUND AND STORM WATER OUT OF THE SANITARY SYSTEM SHALL BE CHARGED TO THE CONTRACTOR.
25	4010-108-A-1	**SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 18 INCH** A. REFER TO C-23 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL SANITARY SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION BEFORE SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. ANY VISIBLE LEAKS SHALL BE REPAIRED REGARDLESS OF SEVERITY. CONTRACTOR SHALL RE-VIDEO ANY REQUIRED REPAIRS AND PROVIDE VIDEO TO THE CITY AT NO ADDITIONAL COST. B. PIPE EMBEDMENT DETAIL, TYPE F-3, MODIFIED TO REQUIRE ONLY 6" ABOVE THE TOP OF THE PIPE. FURNISHING AND PLACING ELBOWS AND TEES, PLUGS, CONNECTION TO EXISTING SANITARY SEWER AND BEDDING MATERIALS AS REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. CONNECTION TO EXISTING SANITARY PIPES SHALL BE INCIDENTAL TO THIS ITEM. C. CONTRACTOR SHALL PLUG SEWER AT THE END OF EACH WORKING DAY. DAMAGES RESULTING FROM THE CONTRACTOR'S INABILITY TO KEEP GROUND AND STORM WATER OUT OF THE SANITARY SYSTEM SHALL BE CHARGED TO THE CONTRACTOR.

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CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.03

26	4010-108-E-0	**SANITARY SEWER SERVICE STUB, PVC, 6"**
		A. REFER TO C-11 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. SANITARY SERVICE PIPE SHALL BE CONNECTED TO THE EXISTING SERVICE PIPE AT THE RIGHT OF WAY. CONNECTION SHALL BE BY "FERNCO" STYLE RUBBER BOOT CONNECTORS FOR THE TYPES OF EXISTING PIPE. PIPE MATERIAL SHALL BE SDR 23.5 POLYVINYL CHLORIDE PIPE (PVC). FURNISHING AND PLACEMENT OF ELBOWS AND TEES, BEDDING, AND GRANULAR BACKFILL MATERIAL SHALL CONSIDERED INCIDENTAL TO THIS ITEM. ALL SERVICES SHALL BE WATER TIGHT AND CONNECTED TO THE SEWER MAIN WITH A PREFORMED WYE, USE OF SADDLE WYES WILL NOT BE ALLOWED. ALL VISIBLE LEAKS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL PROVIDE AS-CONSTRUCTED LOCATIONS OF ALL SERVICES.
27	4010-108-E-0	**SANITARY SEWER SERVICE STUB, PVC, 8"**
		A. REFER TO C-11 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. SANITARY SERVICE PIPE SHALL BE CONNECTED TO THE EXISTING SERVICE PIPE AT THE RIGHT OF WAY. CONNECTION SHALL BE BY "FERNCO" STYLE RUBBER BOOT CONNECTORS FOR THE TYPES OF EXISTING PIPE. PIPE MATERIAL SHALL BE SDR 23.5 POLYVINYL CHLORIDE PIPE (PVC). FURNISHING AND PLACEMENT OF ELBOWS AND TEES, BEDDING, AND GRANULAR BACKFILL MATERIAL SHALL CONSIDERED INCIDENTAL TO THIS ITEM. ALL SERVICES SHALL BE WATER TIGHT AND CONNECTED TO THE SEWER MAIN WITH A PREFORMED WYE, USE OF SADDLE WYES WILL NOT BE ALLOWED. ALL VISIBLE LEAKS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL PROVIDE AS-CONSTRUCTED LOCATIONS OF ALL SERVICES.
28	4010-108-E-0	**SANITARY SEWER SERVICE STUB, PVC, 12"**
		A. REFER TO C-10 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. SANITARY SERVICE PIPE SHALL BE CONNECTED TO THE EXISTING SERVICE PIPE AT THE RIGHT OF WAY. CONNECTION SHALL BE BY "FERNCO" STYLE RUBBER BOOT CONNECTORS FOR THE TYPES OF EXISTING PIPE. PIPE MATERIAL SHALL BE SDR 23.5 POLYVINYL CHLORIDE PIPE (PVC). FURNISHING AND PLACEMENT OF ELBOWS AND TEES, BEDDING, AND GRANULAR BACKFILL MATERIAL SHALL CONSIDERED INCIDENTAL TO THIS ITEM. ALL SERVICES SHALL BE WATER TIGHT AND CONNECTED TO THE SEWER MAIN WITH A PREFORMED WYE, USE OF SADDLE WYES WILL NOT BE ALLOWED. ALL VISIBLE LEAKS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL PROVIDE AS-CONSTRUCTED LOCATIONS OF ALL SERVICES.
29	4010-108-H-0	**REMOVAL OF SANITARY SEWER, LESS THAN 36"**
		A. REFER TO C-10 & C.11 SHEET FOR TABULATIONS. REFER TO F SHEETS FOR LOCATIONS. EXISTING PIPE TRENCH SHALL BE FILLED WITH GRANULAR MATERIAL AND PAID FOR UNDER "REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL" ITEM. ASSUMED TRENCH WIDTH IS PIPE DIAMETER PLUS TWO FEET AND FILLED TO BOTTOM OF SUBBASE.
30	4020-108-A-0	**STORM SEWER, TRENCHED, PVC, 4 INCH**
		A. REFER TO M.19 SHEET FOR LOCATION. B. BEDDING CLASS SHALL BE R-2 FOR ALL PIPES. TYPE OF PIPE ALLOWED SHALL COMPLY WITH SUDAS SECTION 4020, 2.01, E SPECIFICATIONS. COAT GASKET AND JOINT WITH SOAP-BASED LUBRICANT IMMEDIATELY PRIOR TO CLOSING THE JOINT.
31	4020-108-A-1	**STORM SEWER, TRENCHED, RCP, 12 INCH**
		A. REFER TO C.24 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL STORM SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION AND PRIOR TO SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. B. BEDDING CLASS SHALL BE R-2 FOR ALL PIPES. TYPE OF PIPE ALLOWED SHALL BE RCP, CLASS III. THE JOINTS WILL BE WRAPPED WITH ENGINEERING FABRIC. ANY LOCATION WHERE THE STORM SEWER IS LOCATED WITHIN 18 INCHES VERTICALLY OR OVER A WATERMAIN THE STORM SEWER SHALL PIPE SHALL BE GASKETED WITH THE JOINTS LOCATED AS FAR FROM THE WATER MAIN AS POSSIBLE.
32	4020-108-A-1	**STORM SEWER, TRENCHED, RCP, 15 INCH**
		A. REFER TO C.24 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL STORM SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION AND PRIOR TO SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. B. BEDDING CLASS SHALL BE R-2 FOR ALL PIPES. TYPE OF PIPE ALLOWED SHALL BE RCP, CLASS III. THE JOINTS WILL BE WRAPPED WITH ENGINEERING FABRIC. ANY LOCATION WHERE THE STORM SEWER IS LOCATED WITHIN 18 INCHES VERTICALLY OR OVER A WATERMAIN THE STORM SEWER SHALL PIPE SHALL BE GASKETED WITH THE JOINTS LOCATED AS FAR FROM THE WATER MAIN AS POSSIBLE.
33	4020-108-A-1	**STORM SEWER, TRENCHED, RCP, 18 INCH**
		A. REFER TO C.24 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL STORM SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION AND PRIOR TO SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. B. BEDDING CLASS SHALL BE R-2 FOR ALL PIPES. TYPE OF PIPE ALLOWED SHALL BE RCP, CLASS III. THE JOINTS WILL BE WRAPPED WITH ENGINEERING FABRIC. ANY LOCATION WHERE THE STORM SEWER IS LOCATED WITHIN 18 INCHES VERTICALLY OR OVER A WATERMAIN THE STORM SEWER SHALL PIPE SHALL BE GASKETED WITH THE JOINTS LOCATED AS FAR FROM THE WATER MAIN AS POSSIBLE.
34	4020-108-A-1	**STORM SEWER, TRENCHED, RCP, 24 INCH**
		A. REFER TO C-10 AND C-11 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL STORM SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION AND PRIOR TO SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. B. BEDDING CLASS SHALL BE R-2 FOR ALL PIPES. TYPE OF PIPE ALLOWED SHALL BE RCP, CLASS III. THE JOINTS WILL BE WRAPPED WITH ENGINEERING FABRIC. ANY LOCATION WHERE THE STORM SEWER IS LOCATED WITHIN 18 INCHES VERTICALLY OR OVER A WATERMAIN THE STORM SEWER SHALL PIPE SHALL BE GASKETED WITH THE JOINTS LOCATED AS FAR FROM THE WATER MAIN AS POSSIBLE.
35	4020-108-A-1	**STORM SEWER, TRENCHED, RCP, 36 INCH**
		A. REFER TO C.24 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL STORM SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION AND PRIOR TO SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. B. BEDDING CLASS SHALL BE R-2 FOR ALL PIPES. TYPE OF PIPE ALLOWED SHALL BE RCP, CLASS III. THE JOINTS WILL BE WRAPPED WITH ENGINEERING FABRIC. ANY LOCATION WHERE THE STORM SEWER IS LOCATED WITHIN 18 INCHES VERTICALLY OR OVER A WATERMAIN THE STORM SEWER SHALL PIPE SHALL BE GASKETED WITH THE JOINTS LOCATED AS FAR FROM THE WATER MAIN AS POSSIBLE.
36	4020-108-A-1	**STORM SEWER, TRENCHED, RCP, 48 INCH**
		A. REFER TO C.24 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL STORM SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION AND PRIOR TO SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. B. BEDDING CLASS SHALL BE R-2 FOR ALL PIPES. TYPE OF PIPE ALLOWED SHALL BE RCP, CLASS III. THE JOINTS WILL BE WRAPPED WITH ENGINEERING FABRIC. ANY LOCATION WHERE THE STORM SEWER IS LOCATED WITHIN 18 INCHES VERTICALLY OR OVER A WATERMAIN THE STORM SEWER SHALL PIPE SHALL BE GASKETED WITH THE JOINTS LOCATED AS FAR FROM THE WATER MAIN AS POSSIBLE.
37	4020-108-B-2	**STORM SEWER WITH CASING PIPE, TRENCHLESS, RCP, 48 INCH**
		A. REFER TO C.24 SHEET FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CONTRACTOR SHALL MANDREL TEST AND TELEVISE ALL STORM SEWERS AND TURN OVER DATA TO CITY UPON COMPLETION OF THE TESTING AND INSPECTION AND PRIOR TO SUBGRADE PREPARATION. DATA SUBMITTAL TO BE APPROVED BY ENGINEER. B. CONTRACTOR SHALL POTHOLE UTILITIES IN THE AREA OF THIS INSTALLATION PRIOR TO BEGINNING WORK WITHIN THE RAILROAD RIGHT-OF-WAY. ALL WORK SHALL COMPLY WITH THE CANADIAN PACIFIC RAILWAY PERMIT REQUIRMENTS. C. ALL JOINTS SHALL BE GASKETED MEETING SUDAS 4020, 2.01, A3 SPECIFICATIONS. D. CONTRACTOR SHALL USE A SOAP BASED LUBRICANT IMMEDIATELY AHEAD OF CLOSING THE JOINT.
38	4020-108-C-0	**REMOVAL OF STORM SEWER, LESS THAN 36 INCH**
		A. REFER TO C.10 & C.11 SHEETS FOR TABULATIONS. REFER TO F SHEETS FOR LOCATIONS. EXISTING PIPE TRENCH SHALL BE FILLED WITH GRANULAR MATERIAL AND PAID FOR UNDER "REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL" ITEM. TRENCH WIDTH SHALL BE PIPE DIAMETER PLUS TWO FEET AND FILLED TO BOTTOM OF SUBBASE.
39	4020-108-E-2	**STORM SEWER ABANDONMENT, PLUG**
		A. THIS ITEM INCLUDES CONSTRUCTION OF A SEWER PLUG AND FILLING THE EXISTING 12" STORM SEWER AT APPROXIMATELY STA. 23+75. THE PLUG AND FILL WILL MEET THE REQUIREMENTS OF SUDAS STANDARD SPECIFICATIONS SECTION 4020, 3.07 AND THE FLOWABLE MORTAR OR CLSM WILL COMPLY WITH SUDAS STANDARD SPECIFICATIONS SECTION 3010. THIS ITEM WILL BE MEASURED FOR PAYMENT BY THE LINEAR FOOT OF STORM SEWER PLUGGED AND FILLED IN THE FIELD.
40	4020-201-A-3	**SPECIAL PIPE CONNECTION, TYPE PC-1, CONCRETE COLLAR CONNECTION**
		A. THIS ITEM INCLUDES CONSTRUCTION OF A TYPE PC-1 PIPE TO PIPE CONCRETE COLLAR CONNECTION PER STANDARD ROADWAY PLAN SW-211. THIS ITEM WILL BE MEASURED FOR PAYMENT PER EACH CONNECTION CONSTRUCTED IN THE FIELD. SEE SHEET F.02 FOR DETAILS OF 4" PVC PIPE.
41	4040-108-A-0	**TRENCHDRAIN, HDPE, 6 INCH**
		A. CONSTRUCT TRENCH DRAINS AT LOCATIONS, DEPTHS, AND GRADE SHOWN IN PLANS, OR AS DIRECTED BY THE ENGINEER. FILL THE TRENCH WITH UNCOMPACTED POROUS BACKFILL MATERIAL, OR ACCORDING TO THE MANUFACTURER. B. TRENCH DRAIN TO BE 6" DURASLOT TRENCH DRAIN BY ADS OR APPROVED EQUAL. C. PAYMENT IS FULL COMPENSATION FOR TRENCHING, REMOVAL OF EXCESS EXCAVATED MATERIAL FROM THE PROJECT, FURNISHING AND PLACING POROUS BACKFILL MATERIAL, FURNISHING AND PLACING TRENCH DRAIN AND COVER AND CONNECTING TRENCH DRAIN TO INTAKE.
42	5010-108-A-1	**WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 12"**
		A. REFER TO SHEET M.36 THRU M.39 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES EXCAVATION, HAULING OFF EXCAVATED SOIL TO AN APPROVED LOCATION, INSTALLATION OF PIPE AND APPURTENANCES, AND COMPACTION OF BACKFILL. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS.
43	5010-108-A-1	**WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 10"**
		A. REFER TO SHEETS M.40 AND M.41 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES EXCAVATION, HAULING OFF EXCAVATED SOIL TO AN APPROVED LOCATION, INSTALLATION OF PIPE AND APPURTENANCES, AND COMPACTION OF BACKFILL. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS.
44	5010-108-A-1	**WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 8"**
		A. REFER TO SHEET M.40 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES EXCAVATION, HAULING OFF EXCAVATED SOIL TO AN APPROVED LOCATION, INSTALLATION OF PIPE AND APPURTENANCES, AND COMPACTION OF BACKFILL. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS.
45	5010-108-A-1	**WATER MAIN, TRENCHED, DUCTILE IRON CL. 52, 6"**
		A. REFER TO SHEETS M.38 AND M.41 THRU M.43 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES EXCAVATION, HAULING OFF EXCAVATED SOIL TO AN APPROVED LOCATION, INSTALLATION OF PIPE AND APPURTENANCES, AND COMPACTION OF BACKFILL. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS.
46	5010-108-B-2	**WATER MAIN CASING PIPE, TRENCHLESS, RESTRAINED JOINT DUCTILE IRON CL. 52, 8"**
		A. REFER TO SHEET M.40 FOR LAYOUT. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES EXCAVATION OF BORE PITS, POT HOLING EXISTING UTILITIES, INSTALLING CASING PIPE VIA BORE AND JACK METHOD UNDER RAILROAD TRACKS, COMPLYING WITH CANADIAN PACIFIC RAILWAY PERMIT REQUIREMENTS, INSTALLING CASING SPACERS IN CARRIER PIPE, BACKFILLING AND COMPACTION WITH SELECT MATERIAL IF GREATER THAN 10 FEET FROM A ROADWAY OR COMPACTION WITH APPROVED GRANULAR BACKFILL WITHIN 10 FEET OF THE ROADWAY OR UNDER THE PAVEMENT.
47	5010-108-C-2	**FITTINGS**
		A. REFER TO SHEET M.36 THRU M.43 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM SHALL INCLUDE ALL FITTINGS REQUIRED FOR PROPER INSTALLATION OF THE WATER MAIN, RESTRAINED JOINTS AND THRUST BLOCKS. MEASUREMENT AND PAYMENT SHALL BE IN ACCORDANCE WITH SUDAS STANDARD SPECIFICATIONS DIVISION 5 SECTION 5010 SUBSECTION 1.08.C.2, MEASUREMENT BY WEIGHT.
48	5010-108-D-0	**WATER SERVICE STUB, DIP, 6-INCH**
		A. REFER TO SHEETS M.38 AND M.41 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES THE INSTALLATION OF 6-INCH CLASS 52 DIP WATER PIPE IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS FOR A COMPLETE RECONNECTION OF THE EXISTING SERVICE TO THE NEW WATER MAIN. CONTRACTOR SHALL RESPONSIBLE FOR THE RECOMMISIONING OF ANY FIRE PROTECTION SYSTEMS BY AN APPROVED CONTRACTOR, IF REQUIRED.
49	5010-108-D-0	**WATER SERVICE STUB, COPPER, 1-1/2-INCH**
		A. REFER TO SHEET M.38 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES THE INSTALLATION OF COPPER PIPE, CURB STOP, AND APPURTENANCES IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS FOR A COMPLETE RECONNECTION OF THE EXISTING SERVICE TO THE NEW WATER MAIN.
50	5010-108-D-0	**WATER SERVICE STUB, COPPER, 1-INCH**
		A. REFER TO SHEETS M.37 THRU M.43 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES THE INSTALLATION OF COPPER PIPE, CURB STOP, AND APPURTENANCES IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS FOR A COMPLETE RECONNECTION OF THE EXISTING SERVICE TO THE NEW WATER MAIN.
51	5020-108-A-0	**VALVE, GATE VALVE, MECHANICAL JOINT, 12"**
		A. REFER TO SHEETS M.37 THRU M.39 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES THE INSTALLATION OF THE VALVE WITH RESTRAINING GLANDS IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. THIS ITEM DOES NOT INCLUDE VALVES REQUIRED BY TAPPING SLEEVES.
52	5020-108-A-0	**VALVE, GATE VALVE, MECHANICAL JOINT, 10"**
		A. REFER TO SHEET M.40 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES THE INSTALLATION OF THE VALVE WITH RESTRAINING GLANDS IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. THIS ITEM DOES NOT INCLUDE VALVES REQUIRED BY TAPPING SLEEVES.
53	5020-108-A-0	**VALVE, GATE VALVE, MECHANICAL JOINT, 8"**
		A. REFER TO SHEET M.38 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES THE INSTALLATION OF THE VALVE WITH RESTRAINING GLANDS IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS.
54	5020-108-A-0	**VALVE, GATE VALVE, MECHANICAL JOINT, 6"**
		A. REFER TO SHEETS M.38 AND M.41 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM INCLUDES THE INSTALLATION OF THE VALVE WITH RESTRAINING GLANDS IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. THIS ITEM DOES NOT INCLUDE VALVES REQUIRED BY HYDRANT ASSEMBLY OR TAPPING SLEEVES.
55	5020-108-B-0	**TAPPING SLEEVE, 12"x8"**
		A. REFER TO SHEET M.39 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. MEASUREMENT AND PAYMENT SHALL INCLUDE THE TAPPING SLEEVE, TAPPING VALVE, EXCAVATION, GRANULAR BACKFILL, COMPACTION. CONTRACTOR SHALL MAKE ALL TAPS TO EXISTING MAINS USING APPROVED TAPPING EQUIPMENT FOR WATER MAIN INSTALLATION, APPROVAL SHALL BE PROVIDED BY ENGINEER.
56	5020-108-B-0	**TAPPING SLEEVE, 10"x10"**
		A. REFER TO SHEET M.36 AND M.41 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. MEASUREMENT AND PAYMENT SHALL INCLUDE THE TAPPING SLEEVE, TAPPING VALVE, EXCAVATION, GRANULAR BACKFILL, COMPACTION. CONTRACTOR SHALL MAKE ALL TAPS TO EXISTING MAINS USING APPROVED TAPPING EQUIPMENT FOR WATER MAIN INSTALLATION, APPROVAL SHALL BE PROVIDED BY ENGINEER.

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MUSCATINE

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.04

57	5020-108-B-0	**TAPPING SLEEVE, 8"x6"**
		A. REFER TO SHEET M.43 FOR LAYOUT AND TABULATION. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. MEASUREMENT AND PAYMENT SHALL INCLUDE THE TAPPING SLEEVE, TAPPING VALVE, EXCAVATION, GRANULAR BACKFILL, COMPACTION. CONTRACTOR SHALL MAKE ALL TAPS TO EXISTING MAINS USING APPROVED TAPPING EQUIPMENT FOR WATER MAIN INSTALLATION, APPROVAL SHALL BE PROVIDED BY ENGINEER.
58	5020-108-B-0	**TAPPING SLEEVE, 6"x6"**
		A. REFER TO SHEETS M.41 THUR M.43 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM SHALL BE INSTALLED IN ACCORDANCE WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. MEASUREMENT AND PAYMENT SHALL INCLUDE THE TAPPING SLEEVE, TAPPING VALVE, EXCAVATION, GRANULAR BACKFILL, COMPACTION. CONTRACTOR SHALL MAKE ALL TAPS TO EXISTING MAINS USING APPROVED TAPPING EQUIPMENT FOR WATER MAIN INSTALLATION, APPROVAL SHALL BE PROVIDED BY ENGINEER.
59	5020-108-H-0	**HYDRANT, ASSEMBLY**
		A. REFER TO SHEETS M.37 THRU M.43 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. THIS ITEM SHALL BE INSTALLED AND COMPLY WITH MUSCATINE POWER AND WATER'S STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM IMPROVEMENTS. MEASUREMENT AND PAYMENT SHALL BE IN ACCORDANCE WITH THE FIRE HYDRANT ASSEMBLY IN SUDAS SECTION 5020.
60	6010-108-A-0	**MANHOLE TYPE SW-301, 60 INCH**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. B. ANY VISIBLE LEAKS SHALL BE REPAIRED. MANHOLE CASTINGS SHALL READ "SANITARY SEWER" AND BE AN EAST JORDAN 1045 WITH CONCEALED PICK HOLES OR APPROVED EQUAL. SANITARY MANHOLE SHALL HAVE INTERNAL CHIMNEY SEAL.
61	6010-108-A-0	**MANHOLE TYPE SW-301, 72 INCH**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. B. ANY VISIBLE LEAKS SHALL BE REPAIRED. MANHOLE CASTINGS SHALL READ "SANITARY SEWER" AND BE AN EAST JORDAN 1045 WITH CONCEALED PICK HOLES. C. MANHOLE CONE SHALL BE ROTATED TO ENSURE MANHOLE IS LOCATED BEHIND BACK OF CURB. SANITARY MANHOLE SHALL HAVE INTERNAL CHIMNEY SEAL.
62	6010-108-A-0	**MANHOLE TYPE SW-401, 60 INCH**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. B. MANHOLE CASTINGS SHALL READ "STORM SEWER" AND BE AN EAST JORDAN 1045 WITH CONCEALED PICK HOLES
63	6010-108-A-0	**MANHOLE TYPE SW-401, 72 INCH**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. B. MANHOLE CASTINGS SHALL READ "STORM SEWER" AND BE AN EAST JORDAN 1045 WITH CONCEALED PICK HOLES
64	6010-108-A-0	**MANHOLE TYPE SW-401, 84 INCH**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. B. MANHOLE CASTINGS SHALL READ "STORM SEWER" AND BE AN EAST JORDAN 1045 WITH CONCEALED PICK HOLES
65	6010-108-A-0	**MANHOLE TYPE SW-403**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. B. MANHOLE CASTINGS SHALL READ "STORM SEWER" AND BE AN EAST JORDAN 1045 WITH CONCEALED PICK HOLES
66	6010-108-B-0	**INTAKE TYPE SW-501**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CASTING SHALL READ " NO DUMP, DRAINS TO WATERWAY" OR APPROVED EQUAL.
67	6010-108-B-0	**INTAKE TYPE SW-502, 60 INCH**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CASTING SHALL READ " NO DUMP, DRAINS TO WATERWAY" OR APPROVED EQUAL.
68	6010-108-B-0	**INTAKE TYPE SW-503**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CASTING SHALL READ " NO DUMP, DRAINS TO WATERWAY" OR APPROVED EQUAL.
69	6010-108-B-0	**INTAKE TYPE SW-505**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CASTING SHALL READ " NO DUMP, DRAINS TO WATERWAY" OR APPROVED EQUAL.
70	6010-108-B-0	**INTAKE TYPE SW-506**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CASTING SHALL READ " NO DUMP, DRAINS TO WATERWAY" OR APPROVED EQUAL.
71	6010-108-B-0	**INTAKE TYPE SW-511**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CASTING SHALL READ " NO DUMP, DRAINS TO WATERWAY" OR APPROVED EQUAL.
72	6010-108-B-0	**INTAKE TYPE SW-512, 24 INCH**
		A. REFER TO SHEET C.23 FOR TABULATIONS. REFER TO M SHEETS FOR LOCATIONS. CASTING SHALL READ " NO DUMP, DRAINS TO WATERWAY" OR APPROVED EQUAL.
73	6010-108-C-0	**DROP CONNECTION, SW-307**
		A. THIS ITEM SHALL INCLUDE BUT IS NOT LIMITED TO THE CONNECTIONS TO THE MANHOLE, ALL PIPE, FITTINGS, CONCRETE ENCASEMENT, BACKFILL AND BEDDING MATERIAL REQUIRED. BOTH THE TOP AND BOTTOM PIPES SHALL BE EXTENDED INTO THE MANHOLE 12" WITH THE TOP OF THE PIPE CUT OFF INSIDE THE MANHOLE TO ALLOW FOR EASY CLEANING AND JETTING OF THE DROP STRUCTURE. REFER TO SHEET B.06 FOR DETAIL.
74	6010-108-E-0	**MANHOLE ADJUSTMENT, MINOR**
		A. REFER TO C.11 SHEET FOR TABULATIONS. B. THIS BID ITEM SHALL INCLUDE ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO ADJUST CASTINGS TO FINISHED GRADE. THIS ITEM INCLUDES THE REUSE OF THE EXISTING CASTING.
75	6010-108-F-0	**MANHOLE ADJUSTMENT, MAJOR**
		A. REFER TO C.11 SHEET FOR TABULATIONS. B. THIS BID ITEM SHALL INCLUDE ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO ADJUST CASTINGS TO FINISHED GRADE. ITEM SHALL INCLUDE REMOVING THE EXISTING CASTING, REPLACING CONCRETE ADJUSTING RINGS TO PROPER ELEVATION, INSTALLATION OF EXISTING CASTING AND INSTALLATION OF NEW INTERNAL CHIMNEY SEAL ON SANITARY SEWER MANHOLES.
76	6010-108-G-0	**CONNECTION TO EXISTING MANHOLE**
		A. THIS ITEM SHALL INCLUDE ALL THE LABOR AND MATERIAL NECESSARY TO CONNECT EITHER PROPOSED STORM OR SANITARY SEWER PIPE TO AN EXISTING STRUCTURE, INCLUDING BUT NOT LIMITED TO CORING OR CUTTING INTO THE EXISTING STRUCTURE, PIPE CONNECTIONS, GROUT AND WATERSTOP (WHEN REQUIRED)
77	6010-108-H-0	**REMOVE MANHOLE**
		A. REFER TO C.12 SHEET FOR TABULATIONS. REFER TO F SHEETS FOR LOCATIONS. REMOVED STRUCTURE SHALL BECOME PROPERTY OF THE CONTRACTOR AND PROPERTY DISPOSED OF. CASTING SHALL BECOME PROPERTY OF THE CITY AND DELIEVERED TO THE CITY YARD.
78	6010-108-H-0	**REMOVE INTAKE**
		A. REFER TO C.12 SHEET FOR TABULATIONS. REFER TO F SHEETS FOR LOCATIONS. REMOVED STRUCTURE SHALL BECOME PROPERTY OF THE CONTRACTOR AND PROPERTY DISPOSED OF. CASTING SHALL BECOME PROPERTY OF THE CITY AND DELIEVERED TO THE CITY YARD.
79	6010-108-X-0	**GATEWELL TOP REPLACEMENT**
		REFER TO SHEET B.05 FOR DETAILS.
80	7010-108-A-0	**PAVEMENT, PCC, 8 INCH**
		A. REFER TO SHEETS C.13 - C.16 FOR QUANTITY TAB. REFER TO B SHEETS FOR TYPICAL PAVEMENT SECTIONS. REFER TO D SHEETS FOR LAYOUT. REFER TO L SHEETS FOR JOINT SPACING. ALL JOINTS SHALL BE CUT TO A DEPTH OF T/3 AND SEALED. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. GGBFS (SLAB) IS NOT PERMITTED FOR ANY WORK ON THIS PROJECT. CERTIFIED PLANT INSPECTION SHALL BE REQUIRED BY CONTRACTOR. LOW AIR TOLERANCE LIMIT PER 7010-3.08-B SHALL BE 6%. A MIN OF 6% AIR. BUMP CART SHALL BE USED FOR PAVMENET SMOOTHNESS EVALUATION COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED.. C. THIS ITEM SHALL INCLUDE QUANTITIES FOR CURB GUTTER SECTIONS CONNECTED TO THE PAVEMENT.
81	7010-108-A-0	**PAVEMENT, PCC, 10 INCH**
		A. REFER TO SHEETS C.13 - C.16 FOR QUANTITY TAB. REFER TO B SHEETS FOR TYPICAL PAVEMENT SECTIONS. REFER TO D SHEETS FOR LAYOUT. REFER TO L SHEETS FOR JOINT SPACING. ALL JOINTS SHALL BE CUT TO A DEPTH OF T/3 AND SEALED. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. GGBFS (SLAB) IS NOT PERMITTED FOR ANY WORK ON THIS PROJECT. CERTIFIED PLANT INSPECTION SHALL BE REQUIRED BY CONTRACTOR. LOW AIR TOLERANCE LIMIT PER 7010-3.08-B SHALL BE 6%. A MIN OF 6% AIR. BUMP CART SHALL BE USED FOR PAVMENET SMOOTHNESS EVALUATION. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED.. C. THIS ITEM SHALL INCLUDE QUANTITIES FOR CURB GUTTER SECTIONS CONNECTED TO THE PAVEMENT.
82	7010-108-A-0	**PAVEMENT, PCC, 18 INCH**
		A. REFER TO SHEETS C.13 - C.16 FOR QUANTITY TAB. REFER TO B SHEETS FOR TYPICAL PAVEMENT SECTIONS. REFER TO D SHEETS FOR LAYOUT. REFER TO L SHEETS FOR JOINT SPACING. ALL JOINTS SHALL BE CUT TO A DEPTH OF T/3 AND SEALED. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. GGBFS (SLAB) IS NOT PERMITTED FOR ANY WORK ON THIS PROJECT. CERTIFIED PLANT INSPECTION SHALL BE REQUIRED BY CONTRACTOR. LOW AIR TOLERANCE LIMIT PER 7010-3.08-B SHALL BE 6%. A MIN OF 6% AIR. BUMP CART SHALL BE USED FOR PAVMENET SMOOTHNESS EVALUATION. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED. C. THIS ITEM SHALL INCLUDE ALL THE LABOR AND MATERIALS FOR THE REINFORCING STEEL. E. THIS ITEM SHALL INCLUDE QUANTITIES FOR CURB GUTTER SECTIONS CONNECTED TO THE PAVEMENT.
83	7010-108-E-0	**CURB AND GUTTER, 18 INCH, 6 INCH THICK**
		A. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. GGBFS (SLAB) IS NOT PERMITTED FOR ANY WORK ON THIS PROJECT. CERTIFIED PLANT INSPECTION SHALL BE REQUIRED BY CONTRACTOR. LOW AIR TOLERANCE LIMIT PER 7010-3.08-B SHALL BE 6%. A MIN OF 6% AIR. BUMP CART SHALL BE USED FOR PAVMENET SMOOTHNESS REQUIREMENT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED.
84	7010-108-F-0	**BEAM CURB**
		A. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. GGBFS (SLAB) IS NOT PERMITTED FOR ANY WORK ON THIS PROJECT. CERTIFIED PLANT INSPECTION SHALL BE REQUIRED BY CONTRACTOR. LOW AIR TOLERANCE LIMIT PER 7010-3.08-B SHALL BE 6%. A MIN OF 6% AIR. BUMP CART SHALL BE USED FOR PAVMENET SMOOTHNESS REQUIREMENT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED. B. VARIATION IN DEPTH OF BEAM CURB SHALL BE INCIDENTAL TO THIS ITEM. THIS ITEM SHALL COVER THE BEAM CURB ON E. 2ND AND AT THE CORNER OF WALNUT AND MISSISSIPPI.
85	7010-108-I-0	**PCC PAVEMENT SAMPLES AND TESTING**
		A. THIS ITEM SHALL BE MEASURED AND PAID IN ACCORDANCE WITH SECTION 7010, 1.08 I. THICKNESS AND SMOOTHNESS INCENTIVES ARE NOT IN EFFECT FOR THIS PROJECT.
86	7020-108-B-0	**PAVEMENT OR OVERLAY, HMA, 4 INCH**
		A. INCLUDES ALL EQUIPMENT AND MATERIALS NECESSARY TO PLACE HMA BASE, LEVELING, AND SURFACE LAYERS. ASPHALT BINDER, PG 58-28E, SHALL BE CONSIDERED INCIDENTAL TO THESE ITEMS. CONTRACTOR SHALL PROVIDE QUALITY CONTROL ACCORDING TO SECTION 7020, 3.06, B (SMALL QUANTITIES). PLANT REPORTING SHALL BE REQUIRED.
87	7030-108-A-0	**REMOVAL OF SIDEWALK**
		A. REFER TO SHEET C.09 FOR TABULATIONS. REFER TO F SHEETS FOR LOCATIONS. B. ALL REMOVALS TO BE MARKED AND MEASURED BY THE ENGINEER. FULL DEPTH SAW CUTS ALONG THE REMOVAL LIMITS ARE INCIDENTAL TO THIS ITEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL REMOVAL, EARTHWORK, SUBGRADE PREPARATION, MODIFIED SUBBASE AND PAVING EXPENSES DUE TO DAMAGED EDGES. ADDITIONAL REMOVAL TO BE DETERMINED BY ENGINEER. PAYMENT SHALL BE MADE FOR THE AREA OF PAVEMENT REMOVED, REGARDLESS OF THICKNESS.
88	7030-108-A-0	**REMOVAL OF DRIVEWAY**
		A. REFER TO SHEET C.09 FOR TABULATIONS. REFER TO F SHEETS FOR LOCATIONS. B. ALL REMOVALS TO BE MARKED AND MEASURED BY THE ENGINEER. FULL DEPTH SAW CUTS ALONG THE REMOVAL LIMITS ARE INCIDENTAL TO THIS ITEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL REMOVAL, EARTHWORK, SUBGRADE PREPARATION, MODIFIED SUBBASE AND PAVING EXPENSES DUE TO DAMAGED EDGES. ADDITIONAL REMOVAL TO BE DETERMINED BY ENGINEER. PAYMENT SHALL BE MADE FOR THE AREA OF PAVEMENT REMOVED, REGARDLESS OF THICKNESS.

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REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.05

89	7030-108-E-0	**CONCRETE WALK, PCC, 5 IN.** A. REFER TO SHEET C.17 FOR QUANTITY TAB. REFER TO B SHEETS FOR TYPICAL PAVEMENT SECTIONS. REFER TO T SHEETS FOR LAYOUT AND JOINTING. ITEMS INCLUDES SCORING, DECORATIVE JOINTING AND REINFORCEMENT AS SHOWN ON THE T SHEETS AND DETAILED IN THE U SHEETS. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED. C. THICKENED EDGES SHALL BE INCIDENTAL TO THIS ITEM AND NO ADDITIONAL PAYMENT SHALL BE MADE.
90	7030-108-E-0	**CONCRETE WALK, PCC, 6 IN.** A. REFER TO SHEET C.17 FOR QUANTITY TAB. REFER TO B SHEETS FOR TYPICAL PAVEMENT SECTIONS. REFER TO T SHEETS FOR LAYOUT AND JOINTING. ITEMS INCLUDES SCORING, DECORATIVE JOINTING AND REINFORCEMENT AS SHOWN ON THE T SHEETS AND DETAILED IN THE U SHEETS. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED. C. THICKENED EDGES SHALL BE INCIDENTAL TO THIS ITEM AND NO ADDITIONAL PAYMENT SHALL BE MADE.
91	7030-108-E-0	**MEDIAN CONCRETE, PCC, 5 IN.** A. REFER TO B SHEETS FOR TYPICAL PAVEMENT SECTIONS. REFER TO T SHEETS FOR LAYOUT AND JOINTING. ITEMS INCLUDES SCORING, DECORATIVE JOINTING AND REINFORCEMENT AS SHOWN ON THE T SHEETS AND DETAILED IN THE U SHEETS. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED. C. THICKENED EDGES SHALL BE INCIDENTAL TO THIS ITEM AND NO ADDITIONAL PAYMENT SHALL BE MADE FOR THICKENED EDGES.
92	7030-108-F-1	**CONCRETE UNIT PAVERS WITH SAND SETTING BED & PCC SUBBASE** A. THIS ITEM INCLUDES PAVER TYPES B & C, POLYMERIC SAND FOR JOINTS, SAND SETTING BED, GEOTEXTILE FABRIC, 4 INCH THICK CONCRETE BASE, REBAR, AND AGGREGATE SUBBASE. HISTORIC PAVERS TO BE FURNISHED BY OWNER. B. REFER TO T SHEETS FOR TYPE, LOCATION AND PATTERN. SEE NOTES AND DETAILS ON U SHEETS REGARDING INSTALLATION AND INCIDENTAL ITEMS. C. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.
93	7030-108-F-2	**HISTORIC PAVERS, TYPE A WITH SAND SETTING BED & PCC SUBBASE (PAVERS FURNISHED BY CITY)** A. THIS ITEM INCLUDES POLYMERIC SAND FOR JOINTS, SAND SETTING BED, GEOTEXTILE FABRIC, 4 INCH THICK CONCRETE BASE, REBAR, AND AGGREGATE SUBBASE. HISTORIC PAVERS TO BE FURNISHED BY OWNER. B. REFER TO T SHEETS FOR TYPE, LOCATION AND PATTERN. SEE NOTES AND DETAILS ON U SHEETS REGARDING INSTALLATION AND INCIDENTAL ITEMS.
94	7030-108-F-3	**CROSSWALK PAVERS WITH 3/4" ASPHALT SETTING BED** A. THIS ITEM INCLUDES THE 8 CM THICK CONCRETE UNIT PAVER, POLYMERIC SAND FOR JOINTS, BITUMINOUS SETTING BED, NEOPRENE MASTIC, 6 INCH THICK CONCRETE BASE, AND REBAR. B. REFER TO T SHEETS FOR TYPE, LOCATION AND PATTERN. SEE NOTES AND DETAILS ON U SHEETS REGARDING INSTALLATION AND INCIDENTAL ITEMS. C. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.
95	7030-108-G-0	**DETECTABLE WARNING** A. DETECTABLE WARNING SYSTEMS SHALL BE NEENAH DETECTABLE WARNING PLATES, MODEL 4984-36B OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY TYPE WITH ENGINEER AND CITY PRIOR TO ORDERING MATERIALS.
96	7030-108-H-1	**DRIVEWAY, PAVED, PCC, 7 INCH** A. REFER TO SHEET C.17 FOR QUANTITY TAB. REFER TO L & T SHEETS FOR LAYOUT AND JOINTING. ITEMS INCLUDES SCORING, DECORATIVE JOINTING AND REINFORCEMENT. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED.
97	7030-108-X-1	**CONCRETE BAND, 12" WIDTH** A. THIS ITEM INCLUDES ALL CONCRETE BAND INDICATED AS 12" WIDTH. ALL VARIATIONS IN THICKNESS AND NECESSARY REBAR SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED.
98	7030-108-X-2	**CONCRETE BAND, 18" WIDTH** A. THIS ITEM INCLUDES ALL CONCRETE BAND INDICATED AS 12" WIDTH. ALL VARIATIONS IN THICKNESS AND NECESSARY REBAR SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. B. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. AREAS NOT MEETING THIS REQUIREMENT SHALL BE SUBJECT TO REPAIRS, REPLACEMENT OR REDUCED PAYMENT AS DETERMINED BY THE ENGINEER AND TEST RESULTS WILL REPRESENT ALL CONCRETE PLACED IN THE SAME LOT. COLD WEATHER CONCRETE WILL BE CONSIDERED INCIDENTAL IF REQUIRED. CRACKED PANELS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE UNLESS, IN THE JUDGEMENT OF THE ENGINEER, THE CRACK CAN BE ROUTED AND SEALED.
99	7040-108-H-0	**PAVEMENT REMOVAL** A. THE THICKNESS OF THE EXISTING PVMT IS VARIABLE. SEE BORING LOGS FOR PAVEMENT THICKNESS. PAVEMENT TYPE VARIES FROM PCC TO HMA TO A MIXTURE OF PCC AND HMA. A SMALL SECTION OF THE PAVEMENT IS CONTINUOUSLY REINFORCED PVMT. THIS PVMT IS IN CLOSE PROXIMITY TO THE PAPOOSE CREEK SEWER. PVMT REMOVAL WITHIN 40 FOOT OF THE CENTERLINE OF THE PAPOOSE CREEK SEWER SHALL BE DONE BY FULL DEPTH SAWCUTTING THE PAVEMENT INTO PIECES AND REMOVING THE PIECES. NO IMPACT METHODS THAT CRUSH OR BREAK THE PAVEMENT NOR HAMMERING THE PAVEMENT WITH MECHANICAL EQUIPMENT SUCH AS AN EXCAVATOR SHALL BE ALLOWED IN THIS 80 FOOT STRETCH OF THE PROJECT. THIS IS NECESSARY DUE TO POTENTIAL DAMAGE TO THE PAPOOSE CREEK SEWER. IN ADDITION NO EQUIPMENT SHALL BE ALLOWED TO DRIVE OVER THE SEWER AFTER THE PAVEMENT HAS BEEN REMOVED. IF THE CONTRACTOR PROPOSES MEANS AND METHODS TO ALLOW ACCESS ACROSS THIS AREA IT SHALL BE DESIGNED BY A REGISTERED STRUCTURAL ENGINEER IN IOWA AND THE LIABILITY OF THIS CROSSING SHALL BE SOLELY THE CONTRACTORS. PHOTO DOCUMENTATION BY THE CONTRACTOR OF THE EXISTING CONDITION OF THE INTERIOR OF THE PAPOOSE CREEK SEWER PRIOR TO THE START OF THE WORK, IS STRONGLY ENCOURAGED. SUBGRADE COMPACTION AND SUBBASE COMPACTION SHALL NOT BE ALLOWED IN THE AREA IDENTIFIED IN THE LAND BRIDGE TYPICAL SHOW IN THE PLANS OVER THE PAPOOSE CREEK SEWER. IN AREAS ALONG MISSISSIPPI DRIVE OLDER PAVEMENTS ARE PRESENT BELOW THE EXISTING PAVEMENT, THESE SUBPAVMENTS ARE NOT TO BE REMOVED UNLESS IN THE WAY OF THE UNDERGROUND CONSTRUCTION. THIS SUBPAVMENT REMOVAL SHALL BE INCIDENTAL TO THE COST OF THE UNDERGROUND CONSTRUCTION BEING PERFORMED INCLUDING SAWCUTTING IF NECESSARY.
100	8010-108-A-0	**TRAFFIC SIGNAL, IOWA AVENUE INTERSECTION** A. REFER TO SHEET N.01 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. CONTRACTOR SHALL CONSTRUCT TRAFFIC SIGNAL INFRASTRUCTURE IN ACCORDANCE WITH SUDAS SECTION 8010. THIS ITEM INCLUDES INSTALLATION OF ALL MATERIAL IDENTIFIED ON SHEET N.01. TRAFFIC CONTROL LOOPS SHALL BE EMBEDDED IN THE TOP OF THE ROADWAY SUBBASE. TRAFFIC CONTROL LOOPS AND 1-INCH CONDUIT SHALL BE PROVIDED BY MPW. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
101	8010-108-A-0	**TRAFFIC SIGNAL, CEDAR STREET INTERSECTION** A. REFER TO SHEET N.02 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. CONTRACTOR SHALL CONSTRUCT TRAFFIC SIGNAL INFRASTRUCTURE IN ACCORDANCE WITH SUDAS SECTION 8010. THIS ITEM INCLUDES INSTALLATION OF ALL MATERIAL IDENTIFIED ON SHEET N.02. TRAFFIC CONTROL LOOPS SHALL BE EMBEDDED IN THE TOP OF THE ROADWAY SUBBASE. TRAFFIC CONTROL LOOPS AND 1-INCH CONDUIT SHALL BE PROVIDED BY MPW. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
102	8010-108-A-0	**TRAFFIC SIGNAL, OAK STREET INTERSECTION** A. REFER TO SHEET N.03 FOR LAYOUT. REFER TO SHEET C.26 FOR TABULATION. CONTRACTOR SHALL CONSTRUCT TRAFFIC SIGNAL INFRASTRUCTURE IN ACCORDANCE WITH SUDAS SECTION 8010. THIS ITEM INCLUDES INSTALLATION OF ALL MATERIAL IDENTIFIED ON SHEET N.03. TRAFFIC CONTROL LOOPS SHALL BE EMBEDDED IN THE TOP OF THE ROADWAY SUBBASE. TRAFFIC CONTROL LOOPS AND 1-INCH CONDUIT SHALL BE PROVIDED BY MPW. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
103	8020-108-B-0	**PAINTED PAVEMENT MARKINGS, SOLVENT/WATERBORNE** A. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PART 3.PAVEMENT SHALL BE CLEAN AND FREE OF ALL DEBRIS AND CURE PRIOR TO PAINTING. METHOD OF CLEANING SHALL BE BY HIGH PRESSURE WATER BLASTING. ITEM INCLUDES ENOUGH QUANTITY TO PAINT THE PROJECT TWICE. ONCE AT THE COMPLETION OF EACH PHASE AND ONCE AT THE END OF THE PROJECT.
104	8020-108-G-0	**PAINTED SYMBOLS AND LEGENDS** A. ALL PAVEMENT SYMBOLS AND LEGENDS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PART 3.PAVEMENT SHALL BE CLEAN AND FREE OF ALL DEBRIS AND CURE PRIOR TO PAINTING. METHOD OF CLEANING SHALL BE BY HIGH PRESSURE WATER BLASTING.ITEM INCLUDES ENOUGH QUANTITY TO PAINT THE PROJECT TWICE. ONCE AT THE COMPLETION OF EACH PHASE AND ONCE AT THE END OF THE PROJECT.
105	8020-108-K-0	**PAVEMENT MARKINGS REMOVED** A. PAVEMENT MARKINGS SHALL BE REMOVED USING HIGH PREASURE WATER BLASTING ONLY.
106	9010-108-B-0	**SEEDING, FERTILIZING & HYDROMULCHING** A. SEED, FERTILIZE, AND MULCH ALL AREAS AS WHERE INDICATED ON PLANS. SEEDING SHALL BE TYPE 2. B. THIS ITEM INCLUDES REMOVAL OF ROCK AND OTHER DEBRIS, REPAIRING RILLS AND WASHES, SEEDBED PREPARATION, FURNISHING AND PLACEMENT OF SEED, FURNISHING, PLACEMENT, AND INCORPORATING FERTILIZER AND MULCH, FURNISHING WATER AND OTHER CARE, AND ANY RESEEDING NECESSARY UNTIL FINAL ACCEPTANCE. THE CONTRACTOR IS RESPONSIBLE FOR MOWING AND MAINTAINING SEEDED AREAS UNTIL THE PROJECT IS ACCEPTED BY THE OWNER. SEEDING OF AREAS DISTURBED OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. SEE SHEET T.01 FOR SEEDING NOTES. MULCH SHALL BE BONDED FIBER MATRIX (BFM)
107	9020-108-A-0	**SOD** A. SOD ALL AREAS DISTURBED BY CONSTRUCTION UNLESS INDICATED ON PLANS. COST FOR WATERING SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM. ROCK PICKING, FINISH GRADING, AND REWORK, INCLUDING REGRADING AND ADJUSTING GRADING, ARE CONSIDERED INCIDENTAL TO THIS ITEM. CONTRACTOR RESPONSIBLE FOR PROTECTING ALL SODDED AREAS THRU ESTABLISHMENT AND ACCEPTANCE. CONTRACTOR RESPONSIBLE FOR MOWING AND MAINTAINING SODDED AREAS UNTIL PROJECT IS ACCEPTED BY OWNER. SODDING OF AREAS OUTSIDE OF CONSTRUCTION LIMITS SHALL BE RESPONSIBILITY OF CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
108	9030-108-B-0	**DECIDUOUS SHRUBS** A. THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL DECIDUOUS SHRUBS IN ACCORDANCE WITH SUDAS SECTION 9030 AND AMENDED AS FOLLOWS: PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, AMENDED SOILS DELIVERY, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS. AMENDED PLANTING SOIL IS CONSIDERED INCIDENTAL TO THIS ITEM.
109	9030-108-B-0	**ORNAMENTAL TREE** A. THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL ORNAMENTAL TREE IN ACCORDANCE WITH SUDAS SECTION 9030 AND AMENDED AS FOLLOWS: PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, AMENDED SOILS DELIVERY, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS. AMENDED PLANTING SOIL IS CONSIDERED INCIDENTAL TO THIS ITEM.
110	9030-108-B-0	**PERENNIAL GROUND COVER (1 GAL)** A. THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL PERENNIAL GROUND COVER (1 GAL) IN ACCORDANCE WITH SUDAS SECTION 9030 AND AMENDED AS FOLLOWS: PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, AMENDED SOILS DELIVERY, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS. AMENDED PLANTING SOIL IS CONSIDERED INCIDENTAL TO THIS ITEM.
111	9030-108-B-0	**DECIDUOUS TREE** A. THIS ITEM INCLUDES LABOR, MATERIAL, AND EQUIPMENT TO FURNISH AND INSTALL DECIDUOUS TREE IN ACCORDANCE WITH SUDAS SECTION 9030 AND AMENDED AS FOLLOWS: PLANTINGS SHALL HAVE ONE YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE FOR ALL PLANTINGS IN THE PROJECT. ACCEPTANCE OF PLANT MATERIALS CONSTRUES FULL PAYMENT (MINUS ANY PROJECT RETAINAGE). INCLUDES ALL, BUT NOT LIMITED TO, AMENDED SOILS DELIVERY, EXCAVATION, INSTALLATION, MULCHING, HERBICIDE, MAINTENANCE DURING ESTABLISHMENT PERIOD, AND WARRANTY AND REJECTION REPLACEMENTS. AMENDED PLANTING SOIL IS CONSIDERED INCIDENTAL TO THIS ITEM.

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QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.06

112	9030-108-B-0	**STRUCTURAL SOIL MIX**
		A. INCLUDES EXCAVATION, FURNISHING AND PLACEMENT OF STRUCTURAL SOIL MIX, AND LEVELING. ALL SOIL MIXES SHALL BE MEASURED BY CY INSTALLED. SOIL MIX IS CALLED OUT ON T.01, LOCATIONS ARE SHOWN ON T SHEETS, SEE U SHEETS FOR DETAILS. SOIL MIX MUST BE APPROVED BY ENGINEER. B. SEE SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL INFORMATION.
113	9030-108-X-0	**TREE GRATE AND FRAME**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL TREE GRATE AND FRAME. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH.
114	9040-108-A-1	**SWPPP PREPARATION**
		A. CONTRACTOR TO PREPARE SWPPP IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MUSCATINE, IOWA DNR AND SUDAS.
115	9040-108-A-2	**SWPPP MANAGEMENT**
		A. INSPECTIONS WILL MEET THE REQUIREMENTS AS SET FORTH IN THE NPDES GENERAL PERMIT NO. 2 AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE COPIES OF THE SWPPP PLAN AND ALL INSPECTION REPORTS TO THE CITY AND SHALL BE RESPONSIBLE FOR ALL INSPECTIONS UNTIL THE NOTICE OF DISCONTINUATION. WEEKLY INSPECTIONS SHALL BE REQUIRED AND ALL REPORTS COPIED TO THE CITY.
116	9040-108-D-1	**FILTER SOCKS, 20 INCH**
		A. ITEM IS AN ASSUMED AMOUNT NEEDED FOR EROSION CONTROL. ITEM INCLUDES INSTALLATION, MAINTENANCE AND REMOVAL OF FILTER SOCKS.
117	9040-108-J-0	**RIP RAP, EROSION STONE**
		A. THIS IS AN ASSUMED AMOUNT USED TO DETERMINE A UNIT PRICE. THIS ITEM IS INTENDED FOR USE IN AREAS WHERE UNSUITABLE SOIL IS FOUND AND SUBGRADE STABILIZATION IS NOT ADEQUATE PROVIDE A SOLID SUBGRADE. THIS ITEM INCLUDED CORE OUT OF UNSUITABLE MATERIAL AND INSTALLATION OF EROSION STONE TO PROVIDE A SUITABLE SUBGRADE.
118	9040-108-N-1	**SILT FENCE OR SILT FENCE DITCH CHECK**
		A. ITEM INCLUDES INSTALLATION, MAINTENANCE AND REMOVAL OF SILT FENCE.
119	9040-108-O-1	**STABILIZED CONSTRUCTION ENTRANCE**
		A. ITEM INCLUDED THE INSTALLATION OF THE ROCK AND SUBGRADE STABILIZATION FABRIC.
120	9040-108-Q-1	**EROSION CONTROL MULCHING, HYDROMULCHING**
		A. THIS ITEMS IS INTENDED FOR TEMPORARY MULCHING AND STABILIZATION OF THE PROJECT SITE SHOULD SEEDING NOT BE COMPLETED WITHIN THE SEEDING DATES. THIS ITEM WILL REQUIRE APPROVAL OF THE ENGINEER PRIOR TO APPLICATION. IT IS INTENDED FOR THE PROJECT TO HAVING ALL SEEDING COMPLETED WITHIN THE PROJECT SEEDING DATES. EROSION CONTROL MULCHING SHALL BE BONDED FIBER MATRIX (BFM)
121	9040-108-T-1	**INLET PROTECTION DEVICE, DROP IN PROTECTION**
		A. ALL DEVICES SHALL BE DROP IN STYLE AS PER SUDAS 9040-2.18-A. ADDITIONAL QUANTITY, IF REQUIRED, SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT. REMOVAL OF INLET PROTECTION DEVICE SHALL BE CONSIDERED INCIDENTAL. SILT TRAPPED IN THE DEVICE SHALL BE REMOVED AND DISPOSED OF AT NO ADDITIONAL COST.
122	9071-108-A-0	**SEGMENTAL BLOCK RETAINING WALL**
		A. THIS ITEM INCLUDES REMOVAL, SALVAGE AND REPLACEMENT OF EXISTING SEGMENTAL RETAINING WALL REQUIRED PER PLANS. ANY REPLACEMENT BLOCK, REPAIR TO DRAINAGE BACKFILL, OR AGGREGATE BASE OR ANY ADDITIONAL WORK, MATERIALS AND EQUIPMENT NECESSARY FOR COMPLETE REPAIR AND RECONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO THIS BID ITEM. CONTRACTOR SHALL MATCH EXISTING WALL CONSTRUCTION AND BLOCK COLOR.
123	9080-108-A-0	**TYPE A CONCRETE STEPS, PCC**
		A. SEE D AND T SHEETS FOR LOCATION AND U SHEETS FOR DETAILS. ALL CONCRETE SHALL BE CLASS C AND MEET MINIMUM FLEXURAL STRENGTH REQUIREMENT OF 550 PSI AT 28 DAYS. STEPS SHALL BE FORMED TO HAVE A UNIFORM AND CONSISTENT TREAD DEPTH AND RISER HEIGHT. TREAD SURFACES SHALL HAVE A TEXTURED BROOM FINISH, RISER FACES CAN REMAIN SMOOTH. ANY AREAS OF HONEYCOMBING OR SURFACE IMPERFECTIONS SHALL BE GROUTED TO A UNIFORM FINISH.
124	9080-108-B-0	**STEEL HANDRAIL**
		A. SEE T SHEETS FOR LOCATION AND U SHEETS FOR DETAILS.
125	11,010-108-A	**CONSTRUCTION SURVEY**
		A. THIS ITEM IS FOR ALL SURVEY WORK NECESSARY FOR CONSTRUCTION OF THIS PROJECT AS DETAILED ON THE CONSTRUCTION DOCUMENTS AND APPROVED REVISIONS. ELECRONIC DRAWING ARE AVAILABLE FOR THE CONTRACTORS USE.
126	11,020-108-A	**MOBILIZATION**
		A. THIS ITEM IS FOR ALL PREPATORY WORK AND COSTS INCURRED BEFORE BEGINNING THE WORK ON THE PROJECT AND DURING THE PROJECT. THIS ITEM SHALL ALSO INCLUDE THE COSTS FOR ANY STAGED CONSTRUCTION AND EQUIPMENT SET UP TO COMPLETE THE WORK. NO CHANGE IN CONTRACT PRICE WILL BE MADE FOR ANY COMBINATION OF ADD/ALTERNATES ADDED TO THE CONTRACT. THIS ITEM TO BE PAID PER SUDAS 11,020, 1.08A.
127	11,050-108-A	**CONCRETE WASHOUT**
		A. THIS PAY ITEM INCLUDES FURNISHING AND THE PERIODIC CLEAN OUT AND MAINTENANCE OF THE WASHOUT AREA AS DIRECTED BY THE ENGINEER. CONCRETE WASHOUT SHALL BE NOTED IN THE SWPPP.
128	12010-XXX-X-1	**OUTCROPPING BOULDER**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL OUTCROPPING BOULDERS. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH. B. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
129	12010-XXX-X-2	**BOULDER SEATWALLS**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL BOULDER SEATWALLS. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER LINEAR FOOT OF INSTALLED SEATWALL. B. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
130	12010-XXX-X-3	**INTERSECTION MARKER**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL INTERSECTION MARKER. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH. B. ALL ITEMS NECESSARY FOR COMPLETE FABRICATION AND INSTALLATION ARE CONSIDERED INCIDENTAL TO THIS ITEM. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
131	12010-XXX-X-4	**DISTRICT MONUMENT**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL DISTRICT MONUMENT. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH. B. ALL ITEMS NECESSARY FOR COMPLETE FABRICATION AND INSTALLATION ARE CONSIDERED INCIDENTAL TO THIS ITEM. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
132	12010-XXX-X-5	**KIOSK**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL KIOSK. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH. B. ALL ITEMS NECESSARY FOR COMPLETE FABRICATION AND INSTALLATION ARE CONSIDERED INCIDENTAL TO THIS ITEM. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
133	12010-XXX-X-6	**STEEL BENCH**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL STEEL BENCHES. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH. B. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
134	12010-XXX-X-7	**LITTER RECEPTACLE**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL LITTER RECEPTACLES. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH. B. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
135	12010-XXX-X-8	**BIKE RACK**
		A. THIS ITEM INCLUDES LABOR, MATERIALS AND EQUIPMENT TO FURNISH AND INSTALL BIKE RACKS. SEE T SHEETS FOR LOCATIONS AND U SHEETS FOR DETAILS. ITEM IS TO BE PAID ON A COUNT BASIS PER EACH. B. SEE SUPPLEMENTAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
136	12010-XXX-X-10	**HISTORIC MONUMENT AND PLAQUE SALVAGE AND REPLACE**
		A. THIS ITEM INCLUDES SALVAGING, PROTECTING AND RESETTING HISTORIC MONUMENT STONE AND PLAQUE PER LOCATION IDENTIFIED IN T SHEETS. MONUMENT IS LOCATED AT STATION 57+87, 38'LT AS SHOWN ON SHEET T.15
137	12010-XXX-X-9	**REMOVE RETAINING WALL**
		A. THIS ITEM NCLUDES PARTIAL RETAINING WALL REMOVAL, AS CALLED-OUT AND DETAILED IN THE REMOVAL PLANS. THIS ITEM IS MEASURED AS A PLAN QUANTITY PER LINEAR FOOT AND PAID FOR PER LINEAR FOOT. SEE THE REMOVAL PLANS FOR ADDITIONAL RETAINING WALL REMOVAL DETAILS.
138	12,020-XXX-X-1	**DUCT BANK, 3x2 CONFIGURATION**
		A. REFER TO SHEETS M.46 THRU M.53 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. CONTRACTOR SHALL CONSTRUCT DUCT BANK IN ACCORDANCE TO DETAIL ON SHEET B.10. COHESIVE BACKFILL MATERIAL SHALL BE USED AS SUITABLE BACKFILL MATERIAL TO FILL IN TRENCH. THIS ITEM SHALL INCLUDE EXCAVATION, COMPACTION, CONNECTION TO PRECAST CONCRETE VAULTS, CONSTRUCTION OF DUCT BANK, COLORED CONCRETE, AND MAGNETIC MARKING TAPE. FINAL ACCEPTANCE OF DUCT BANK SHALL BE AFTER THE COMPLETION OF A SUCCESSFUL MANDREL TEST. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
139	12,020-XXX-X-3	**DUCT BANK, 6X1 CONFIGURATION, PAPOOSE CREEK**
		A. REFER TO SHEET M.49 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. CONTRACTOR SHALL CONSTRUCT DUCT BANK IN ACCORDANCE TO DETAIL ON SHEET B.10. COHESIVE BACKFILL MATERIAL SHALL BE USED AS SUITABLE BACKFILL MATERIAL TO FILL IN TRENCH. THIS ITEM SHALL INCLUDE EXCAVATION, CONSTRUCTION OF DUCT BANK, COLORED CONCRETE, MAGNETIC MARKING TAPE, AND TRANSITION BETWEEN 3x2 DUCT BANK CONFIGURATION TO 6x1 DUCT BANK CONFIGURATION. FINAL ACCEPTANCE OF DUCT BANK SHALL BE AFTER THE COMPLETION OF A SUCCESSFUL MANDREL TEST. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
140	12,020-XXX-X-4	**DUCT BANK, 3X1 CONFIGURATION**
		A. REFER TO SHEET M.47 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. CONTRACTOR SHALL CONSTRUCT DUCT BANK IN ACCORDANCE TO DETAIL ON SHEET B.10. COHESIVE BACKFILL MATERIAL SHALL BE USED AS SUITABLE BACKFILL MATERIAL TO FILL IN TRENCH. THIS ITEM SHALL INCLUDE EXCAVATION, CONNECTION TO EXISTING DUCT BANK, CORE DRILL ENTRANCE FOR SIX (6) 6-INCH CONDUITS IN VAULT, CONSTRUCTION OF DUCT BANK, COLORED CONCRETE, AND MAGNETIC MARKING TAPE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
141	12,020-XXX-X-5	**VAULT, PRECAST, 8'x19'**
		A. REFER TO SHEETS M.47, M.48, M.51 AND M.52 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.10 FOR DETAIL. THIS ITEM INCLUDES TRANSPORTATION COSTS, UNLOADING AT JOB SITE, EXCAVATION, INSTALLATION, BACKFILLING, AND ESTABLISHING FINAL GRADE ON MANHOLE COVER. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. TRANSPORTATION, UNLOADING, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
142	12,030-XXX-X-1	**ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 6-INCH**
		A. REFER TO SHEETS M.44 THRU M.51 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. THIS ITEM INCLUDES MATERIAL AND INSTALLATION OF ALL ELECTRICAL CONDUIT MATERIALS INCLUDING SWEEPS INTO ELECTRICAL INFRASTRUCTURE. THIS ITEM INCLUDES TRENCHING, BACKFILL, AND COMPACTION. THE MATERIAL SHALL BE 6-INCH HDPE, SDR 13.5, BLACK WITH A RED STRIPE OR SCHEDULE 40 PVC WITH 1,000 LB MULE TAPE. BOTH ENDS OF CONDUIT SHALL BE SEALED. METHOD OF MEASUREMENT IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. CONDUIT INSTALLATION ACCEPTANCE VIA SUCCESFUL MANDRAL TESTING BY CONTRACTOR. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
143	12,030-XXX-X-2	**ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 4-INCH**
		A. REFER TO SHEET M.44 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES MATERIAL AND INSTALLATION OF ALL ELECTRICAL CONDUIT MATERIALS INCLUDING SWEEPS INTO ELECTRICAL INFRASTRUCTURE. THIS ITEM INCLUDES TRENCHING, BACKFILL, AND COMPACTION. THE MATERIAL SHALL BE 4-INCH HDPE, SDR 13.5, BLACK WITH A RED STRIPE OR SCHEDULE 40 PVC WITH 1,000 LB MULE TAPE. BOTH ENDS OF CONDUIT SHALL BE SEALED. METHOD OF MEASUREMENT IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
144	12,030-XXX-X-3	**ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 3-INCH**
		A. REFER TO SHEETS M.44 AND M.45 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES MATERIAL AND INSTALLATION OF ALL ELECTRICAL CONDUIT MATERIALS INCLUDING SWEEPS INTO ELECTRICAL INFRASTRUCTURE. THIS ITEM INCLUDES TRENCHING, BACKFILL, AND COMPACTION. THE MATERIAL SHALL BE 3-INCH HDPE, SDR 13.5, BLACK WITH A RED STRIPE OR SCHEDULE 40 PVC WITH PULL STRING. BOTH ENDS OF CONDUIT SHALL BE SEALED. METHOD OF MEASUREMENT IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
145	12,030-XXX-X-4	**ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 2-INCH**
		A. REFER TO SHEETS M.44 THRU M.53 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES MATERIAL AND INSTALLATION OF ALL ELECTRICAL CONDUIT MATERIALS INCLUDING SWEEPS INTO ELECTRICAL INFRASTRUCTURE. THIS ITEM INCLUDES TRENCHING, BACKFILL, AND COMPACTION. THE MATERIAL SHALL BE 2-INCH HDPE, SDR 13.5, BLACK WITH A RED STRIPE OR SCHEDULE 40 PVC WITH PULL STRING. BOTH ENDS OF CONDUIT SHALL BE SEALED. METHOD OF MEASUREMENT IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
146	12,030-XXX-X-5	**ELECTRICAL CONDUIT, TRENCHLESS, HDPE, VARIOUS SIZES**
		A. REFER TO SHEET M.40 FOR LAYOUT. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES HORIZONTAL DIRECTIONAL DRILLING CONDUIT INDICATED ON REFERENCE SHEET. CONDUIT MATERIAL SHALL BE THE SAME AS THE CONDUIT IDENTIFIED FOR OPEN CUT INSTALLATION. MEASUREMENT IS BASED ON BACK OF CURB LENGTH PLUS FIVE ADDITIONAL FEET ON EITHER SIDE; ANY ADDITIONAL CONDUIT INSTALLED WITH ROAD CROSSING SHALL BE PAID AT THE OPEN CUT PRICE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
147	12,030-XXX-X-6	**ELECTRICAL CONDUIT, TRENCHLESS, HDPE, VARIOUS SIZES**
		A. REFER TO SHEET M.40 FOR LAYOUT. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES HORIZONTAL DIRECTIONAL DRILLING CONDUIT INDICATED ON REFERENCE SHEET. CONDUIT MATERIAL SHALL BE THE SAME AS THE CONDUIT IDENTIFIED FOR OPEN CUT INSTALLATION. MEASUREMENT IS BASED ON BACK OF CURB LENGTH PLUS FIVE ADDITIONAL FEET ON EITHER SIDE; ANY ADDITIONAL CONDUIT INSTALLED WITH ROAD CROSSING SHALL BE PAID AT THE OPEN CUT PRICE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.

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DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.07

148	12,030-XXX-X-7	**CASING PIPE, TRENCHLESS, STEEL, 14"x0.375", RAILROAD CROSSING NO. 1**
		A. REFER TO SHEET M.47 FOR LAYOUT. REFER TO SHEET B.14 FOR DETAILS. REFER TO SHEET C.25 FOR TABULATION. THIS ITEM INCLUDES EXCAVATION OF BORE PITS, POT HOLING EXISTING UTILITIES, INSTALLING CASING PIPE VIA BORE AND JACK METHOD UNDER RAILROAD TRACKS, COMPLYING WITH CANADIAN PACIFIC RAILWAY PERMIT REQUIREMENTS, INSTALLING CASING SPACERS ON CARRIER PIPE, BACKFILLING AND COMPACTION WITH SELECT MATERIAL IF GREATER THAN 10 FEET FROM A ROADWAY OR COMPACTION WITH APPROVED GRANULAR BACKFILL WITHIN 10 FEET OF THE ROADWAY. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. TRANSPORTATION, UNLOADING, EQUIPMENT COSTS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
149	12,030-XXX-X-8	**SWITCHGEAR PAD**
		A. REFER TO SHEET M.44 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, INSTALLATION OF GRANULAR SUBBASE, COMPACTION, FURNISH AND INSTALLATION FIBERGLASS PAD, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
150	12,030-XXX-X-9	**8'x8' TRANSFORMER PAD**
		A. REFER TO SHEET M.44 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAILS AND SPECIFICATIONS. THIS ITEM INCLUDES EXCAVATION, INSTALLATION OF GRANULAR BASE, COMPACTION, CONCRETE FORMS AND CONCRETE, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
151	12,030-XXX-X-10	**3'x3' TRANSFORMER PAD**
		A. REFER TO SHEETS M.45, M.47, AND M.49 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, GRANULAR BASE, COMPACTION, FURNISH AND INSTALL FIBERGLASS PAD, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
152	12,030-XXX-X-11	**JUNCTION BOX, ELECTRICAL, 3'x6'**
		A. REFER TO SHEET M.46, FOR LAYOUT. REFER TO SHEET C.25 FOR FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, GRANULAR BASE, COMPACTION, FURNISH AND INSTALL 3-PHSAE JUNCTION BOX, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
153	12,030-XXX-X-12	**JUNCTION BOX, ELECTRICAL, 13"x24"**
		A. REFER TO SHEETS M.44 THRU M.53 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, GRANULAR BASE, SUITABLE BACKFILL, AND COMPACTION. FURNISH AND INSTALL JUNCTION BOX AND LID. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
154	12,030-XXX-X-13	**JUNCTION BOX, ELECTRICAL, 10" DIAMETER**
		A. REFER TO SHEETS M.44 THRU M.50 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, GRANULAR BASE, COMPACTION, FURNISH AND INSTALL HAND HOLE BOX AND LID, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
155	12,030-XXX-X-14	**VAULT, PRECAST, 6'x10'**
		A. REFER TO SHEETS M.45, M.47, M.49, AND M.51 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.09 FOR DETAIL. THIS ITEM INCLUDES TRANSPORTATION COSTS, UNLOADING AT JOB SITE, EXCAVATION, INSTALLATION, BACKFILLING, AND ESTABLISHING FINAL GRADE ON MANHOLE COVER. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. TRANSPORTATION, UNLOADING, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
156	12,030-XXX-X-15	**FOUNDATION, STREET LIGHT**
		A. REFER TO SHEETS M.44 THRU M.53 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.12 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM SHALL INCLUDE EXCAVATION FOR FOUNDATION, CONSTRUCTION FORMS, INSTALLATION OF CONDUIT FROM FOUNDATION TO JUNCTION, CONCRETE, GRANULAR BACKFILL AND COMPACTION. MPW TO INSTALL ALL SCREW-IN FOUNDATIONS. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
157	12,030-XXX-X-16	**GFCI PEDESTAL**
		A. THIS ITEM INCLUDES FURNISH AND INSTALL OF GFCI PEDESTALS PER DETAIL 3/SHEET B.12. REFER TO M SHEETS FOR LOCATIONS.
158	12,040-XXX-X-1	**COMMUNICATION CONDUIT, OPEN CUT, HDPE, 2-INCH**
		A. REFER TO SHEETS M.44 THRU M.50 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES MATERIAL AND INSTALLATION OF ALL ELECTRICAL CONDUIT MATERIALS INCLUDING SWEEPS INTO ELECTRICAL INFRASTRUCTURE. THIS ITEM INCLUDES TRENCHING, BACKFILL, AND COMPACTION. THE MATERIAL SHALL BE 2-INCH HDPE, SDR 15.5, TERRA COTA AND ORANGE, WITH PULL STRING. BOTH ENDS OF CONDUIT SHALL BE SEALED. METHOD OF MEASUREMENT IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
159	12,040-XXX-X-2	**COMMUNICATION CONDUIT, OPEN CUT, HDPE, QUAD DUCT (4x1.5-INCH)**
		A. REFER TO SHEETS M.44 THRU M.53 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES MATERIAL AND INSTALLATION OF ALL ELECTRICAL CONDUIT MATERIALS INCLUDING SWEEPS INTO ELECTRICAL INFRASTRUCTURE. THIS ITEM INCLUDES TRENCHING, BACKFILL, AND COMPACTION. THE MATERIAL SHALL BE FOUR (4) 1.50-INCH HDPE, SDR 15.5, COLORS: WHITE, PURPLE, BLACK, ORANGE, WITH PULL STRING. BOTH ENDS OF CONDUIT SHALL BE SEALED. METHOD OF MEASUREMENT IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
160	12,040-XXX-X-3	**COMMUNICATION CONDUIT, OPEN CUT, HDPE, 1-INCH**
		A. REFER TO SHEETS M.46 THRU M.51 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.14 FOR DETAILS. THIS ITEM INCLUDES MATERIAL AND INSTALLATION OF ALL ELECTRICAL CONDUIT MATERIALS INCLUDING SWEEPS INTO ELECTRICAL INFRASTRUCTURE. THIS ITEM INCLUDES TRENCHING, BACKFILL, AND COMPACTION. THE MATERIAL SHALL BE 1-INCH HDPE, SDR 15.5, ORANGE WITH PULL STRING. BOTH ENDS OF CONDUIT SHALL BE SEALED. METHOD OF MEASUREMENT IS FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL AND ANY COST ASSOCIATED WITH THIS MATERIAL (i.e. ADHESIVE, CAPS, ETC.) IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
161	12,040-XXX-X-4	**HAND HOLE, COMMUNICATIONS, 30"x48"**
		A. REFER TO SHEETS M.44 THRU M.51 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, GRANULAR BASE, COMPACTION, FURNISH AND INSTALL HAND HOLE BOX AND LID, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
162	12,040-XXX-X-5	**HAND HOLE, COMMUNICATIONS, 17"x30"**
		A. REFER TO SHEETS M.44 THRU M.52 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, GRANULAR BASE, COMPACTION, FURNISH AND INSTALL HAND HOLE BOX AND LID, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.
163	12,040-XXX-X-6	**HAND HOLE, COMMUNICATIONS, 10" DIAMETER**
		A. REFER TO SHEET M.44 FOR LAYOUT. REFER TO SHEET C.25 FOR TABULATION. REFER TO SHEET B.08 FOR DETAIL AND SPECIFICATION REQUIREMENTS. THIS ITEM INCLUDES EXCAVATION, GRANULAR BASE, COMPACTION, FURNISH AND INSTALL HAND HOLE BOX AND LID, AND BACKFILL. CONTRACTOR SHALL INCLUDE 'USE TAX' ON MATERIAL IN THE UNIT BID COST. NO 'USE TAX' IS REQUIRED ON LABOR.

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REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
QUANTITIES AND ESTIMATE REFERENCE NOTES

SHEET C.08

110-1
04-16-13

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks
20+89.82	21+50.96	RT	CONCRETE	13.4	51.0	HERSHEY AVE.
21+01.59	21+16.59	RT	CONCRETE	43.9	68.0	HERSHEY AVE.
21+12.47	21+67.09	LT	CONCRETE	12.1	59.0	HERSHEY AVE.
21+41.15	23+35.06	BOTH	CONCRETE	287.0	415.0	HERSHEY AVE.
21+98.09	22+86.95	LT	CONCRETE	20.8	93.0	HERSHEY AVE.
23+11.08	24+02.02	RT	CONCRETE	20.0	95.0	HERSHEY AVE.
23+33.07	23+98.62	LT	COMPOSITE	137.8	70.0	HERSHEY AVE.
23+95.23	28+05.08	BOTH	CONCRETE	604.1	844.0	HERSHEY AVE./MISSISSIPPI DR.
23+98.62	26+32.44	LT	COMPOSITE	49.1	226.0	HERSHEY AVE./MISSISSIPPI DR.
26+32.44	28+77.88	LT	CONCRETE	426.4	256.0	MISSISSIPPI DR.
28+49.65	33+73.51	BOTH	CONCRETE	694.0	1072.0	MISSISSIPPI DR.
28+77.88	33+21.88	LT	CONCRETE	390.1	444.0	MISSISSIPPI DR.
33+21.88	31+30.13	LT	CONCRETE	157.9	158.0	MISSISSIPPI DR.
33+98.40	35+55.40	BOTH	CONCRETE	209.3	312.0	MISSISSIPPI DR.
35+09.55	35+24.55	RT	CONCRETE	23.9	44.0	MISSISSIPPI DR.
35+55.40	42+46.93	BOTH	ASPHALT	3162.8	29.0	MISSISSIPPI DR.
42+46.93	49+66.71	BOTH	ASPHALT	4658.2	56.0	MISSISSIPPI DR.
49+66.71	73+24.00	BOTH	COMPOSITE	16439.0	99.0	MISSISSIPPI DR.
3+23.09	3+65.14	BOTH	COMPOSITE	198.8	42.0	PINE ST.
7+03.75	8+59.19	BOTH	COMPOSITE	710.1	74.0	CHESTNUT ST.
11+17.84	12+11.30	BOTH	COMPOSITE	550.4	58.0	IOWA ST.
12+86.12	13+55.45	BOTH	COMPOSITE	427.8	92.0	IOWA ST.
16+23.00	16+67.44	BOTH	COMPOSITE	152.6	35.0	SYCAMORE ST.
19+12.84	19+70.15	BOTH	COMPOSITE	274.5	41.0	CEDAR ST.
20+37.24	21+09.50	BOTH	COMPOSITE	357.4	86.0	CEDAR ST.
25+23.04	25+89.09	BOTH	COMPOSITE	293.9	41.0	WALNUT ST.
84+72.11	95+41.45	BOTH	COMPOSITE	5394.8	97.0	E 2ND ST.
27+31.21	27+73.27	BOTH	COMPOSITE	203.2	43.0	ORANGE ST.
30+29.83	31+39.29	BOTH	COMPOSITE	540.4	31.0	OAK ST.
31+82.48	32+45.69	BOTH	COMPOSITE	255.3	36.0	OAK ST.
					*	SAW CUT LENGTHS DO NOT INCLUDE ANY CUTS REQUIRED
						FOR PHASING OPERATIONS.

110-5
10-20-15

SIDEWALK REMOVAL

* Not a bid item

Begin Station	End Station	Area SY	Saw Cut* LF	Remarks
20+29.82	21+12.47	16.9		HERSHEY AVE.
20+89.82	20+98.25	6.3		HERSHEY AVE.
21+50.96	23+11.08	127.8		HERSHEY AVE.
21+67.09	21+98.09	23.3		HERSHEY AVE.
22+59.15	22+72.99	8.9		HERSHEY AVE.
22+81.52	23+42.37	42.2		HERSHEY AVE.
23+42.37	23+50.36	6.8		HERSHEY AVE.
23+76.07	24+02.65	18.1		HERSHEY AVE.
23+46.09	25+20.45	139.0		HERSHEY AVE.
24+52.56	25+30.81	54.6		HERSHEY AVE.
25+93.94	27+24.89	107.1		MISSISSIPPI DR.
27+78.06	28+01.89	21.7		MISSISSIPPI DR.
28+33.37	28+48.87	14.3		MISSISSIPPI DR.
30+25.02	31+02.15	43.9		MISSISSIPPI DR.
31+46.15	31+83.85	20.8		MISSISSIPPI DR.
31+99.22	32+08.46	6.3		MISSISSIPPI DR.
32+46.84	32+74.25	14.6		MISSISSIPPI DR.
33+23.88	33+83.61	41.7		MISSISSIPPI DR.
38+33.63	45+94.11	370.6		MISSISSIPPI DR.
46+70.11	47+21.42	46.3		MISSISSIPPI DR.
47+65.25	48+37.17	61.3		MISSISSIPPI DR.
48+79.72	49+27.18	40.2		MISSISSIPPI DR.
49+53.52	49+66.71	14.0		MISSISSIPPI DR.
49+66.71	49+78.06	44.6		MISSISSIPPI DR.
50+21.06	53+41.76	420.8		MISSISSIPPI DR.
7+10.74	7+29.30	20.5		CHESTNUT ST.
7+53.32	8+01.98	51.1		CHESTNUT ST.
56+06.35	57+15.58	220.7		MISSISSIPPI DR.
56+92.01	57+11.85	103.4		MISSISSIPPI DR.
57+63.00	57+81.96	117.3		MISSISSIPPI DR.
57+54.86	59+21.23	314.1		MISSISSIPPI DR.
59+36.43	60+97.70	256.7		MISSISSIPPI DR.
61+32.62	61+40.55	15.9		MISSISSIPPI DR.
61+25.29	64+49.07	673.3		MISSISSIPPI DR.
64+33.83	64+48.68	97.0		MISSISSIPPI DR.
64+90.16	65+05.87	95.1		MISSISSIPPI DR.
64+90.56	68+08.70	402.7		MISSISSIPPI DR.
68+50.65	73+23.49	601.7		MISSISSIPPI DR.
71+86.84	73+24.00	149.8		MISSISSIPPI DR.
84+72.11	85+39.98	72.8		E 2ND ST.
84+72.11	89+06.81	411.9		E 2ND ST.
85+82.44	89+02.16	354.2		E 2ND ST.
89+42.10	90+68.28	152.0		E 2ND ST.
89+38.33	95+41.50	502.4		E 2ND ST.
91+06.34	95+41.45	455.0		E 2ND ST.

110-8
08-01-08

REMOVAL OF CONCRETE DRIVES

Location Station	Side	Area SY	Remarks
21+20.40	RT	86.7	HERSHEY AVE.
21+39.80	LT	40.4	HERSHEY AVE.
22+13.59	LT	58.7	HERSHEY AVE.
22+77.14	LT	13.2	HERSHEY AVE.
23+30.86	RT	62.2	HERSHEY AVE.
24+25.28	LT	56.8	HERSHEY AVE.
25+61.89	LT	71.6	HERSHEY AVE.
27+51.11	LT	45.0	MISSISSIPPI DR.
29+26.59	LT	176.7	MISSISSIPPI DR.
31+25.56	LT	43.9	MISSISSIPPI DR.
31+92.73	LT	15.7	MISSISSIPPI DR.
32+29.10	LT	38.3	MISSISSIPPI DR.
32+99.07	LT	49.8	MISSISSIPPI DR.
45+11.82	LT	572.0	MISSISSIPPI DR.
47+43.42	LT	39.9	MISSISSIPPI DR.
48+58.45	LT	35.2	MISSISSIPPI DR.
49+40.35	LT	26.8	MISSISSIPPI DR.
7+41.74	RT	431.0	CHESTNUT ST.
8+15.32	RT	252.0	CHESTNUT ST.
56+26.68	LT	21.2	MISSISSIPPI DR.
59+28.84	LT	22.3	MISSISSIPPI DR.
62+96.56	LT	1258.5	PARKING LOT
85+90.33	LT	400.9	E 2ND ST.
90+83.61	LT	22.3	E 2ND ST.
92+14.78	LT	206.7	E 2ND ST.
94+84.93	LT	112.7	E 2ND ST.

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DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.09

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL

* Not a bid item

Location/Description	Sanitary or Storm Sewer	Abandonment, Plug Only or Abandonment, Plug and Fill or Removal	Length of Pipe		Fill Material*	Remarks
			= 36 inch diameter	> 36 inch diameter	Flowable Mortar or CLSM	
			LF	LF	CY	
STA 42+17.99, 19.6' LT TO STA 43+17.93, 24.0' LT	Sanitary Sewer	Removal	100			MISSISSIPPI DR.
STA 43+17.93, 24.0' LT TO STA 44+26.28, 24.1' LT	Sanitary Sewer	Removal	110			MISSISSIPPI DR.
STA 44+26.01, 49.8' LT TO STA 44+26.28, 24.1' LT	Sanitary Sewer	Removal	26			MISSISSIPPI DR.
STA 44+26.28, 21.1' LT TO STA 49+23.17, 26.2' LT	Sanitary Sewer	Removal	497			MISSISSIPPI DR.
STA 44+69.76, 50.2' LT TO STA 44+94.17, 24.2' LT	Sanitary Sewer	Removal	36			MISSISSIPPI DR.
STA 48+28.72, 51.5' LT TO STA 48+28.89, 25.6' LT	Sanitary Sewer	Removal	26			MISSISSIPPI DR.
STA 49+23.23, 51.4' LT TO STA 49+23.17, 26.2' LT	Sanitary Sewer	Removal	26			MISSISSIPPI DR.
STA 49+23.17, 27.2' LT TO STA 50+31.85, 1.6' LT	Sanitary Sewer	Removal	112			MISSISSIPPI DR.
						MISSISSIPPI DR.
STA 23+58.02, 3.3' RT TO STA 23+82.85, 23.1' LT	Storm Sewer	Abandonment, Plug and Fill	36			MISSISSIPPI DR.
STA 28+24.39, 28.3' LT TO STA 28+44.94, 38.8' LT	Storm Sewer	Removal	26			MISSISSIPPI DR.
STA 31+80.72, 31.0' LT TO STA 31+84.79, 36.4' LT	Storm Sewer	Removal	7			MISSISSIPPI DR.
STA 35+17.80, 3.5' LT TO STA 35+17.05, 18.9' RT	Storm Sewer	Removal	23			MISSISSIPPI DR.
STA 37+68.01, 24.9' LT TO STA 37+67.96, 42.3' RT	Storm Sewer	Removal	68			MISSISSIPPI DR.
STA 37+67.96, 42.3' RT TO STA 37+67.68, 47.3' RT	Storm Sewer	Removal	5			MISSISSIPPI DR.
STA 44+85.57, 31.0' LT TO STA 46+20.53, 34.3' LT	Storm Sewer	Removal	135			MISSISSIPPI DR.
STA 46+20.47, 56.0' LT TO STA 46+22.54, 40.2' RT	Storm Sewer	Removal	96			MISSISSIPPI DR.
STA 46+62.53, 55.6' LT TO STA 46+22.54, 40.2' RT	Storm Sewer	Removal	104			MISSISSIPPI DR.
STA 46+62.30, 21.1' LT TO STA 46+22.54, 40.2' RT	Storm Sewer	Removal	44			MISSISSIPPI DR.
STA. 49+71.59, 8.23' LT TO STA. 50+31.76, 5.38' RT	Sanitary Sewer	Removal	62			MISSISSIPPI DR.
STA. 50+31.76, 5.38' RT	Sanitary Sewer	Removal	16			MISSISSIPPI DR.
STA. 50+31.76, 5.38' RT TO STA. 50+19.75, 17.87' LT	Sanitary Sewer	Removal	25			MISSISSIPPI DR.
STA. 50+19.75, 17.87' LT	Sanitary Sewer	Removal	16			MISSISSIPPI DR.
STA. 50+19.75, 17.87' LT TO STA. 50+18.87, 71.90' LT	Sanitary Sewer	Removal	54			MISSISSIPPI DR.
STA. 50+31.76, 5.38' RT TO STA. 50+50.01, 32.01' RT	Sanitary Sewer	Removal	32			MISSISSIPPI DR.
STA. 50+31.76, 5.38' RT TO STA. 53+62.64, 1.29' LT	Sanitary Sewer	Removal	331			MISSISSIPPI DR.
STA. 53+62.64, 1.29' LT	Sanitary Sewer	Removal	13			MISSISSIPPI DR.
STA. 53+62.64, 1.29' LT TO STA. 53+58.56, 190.32' LT	Sanitary Sewer	Removal	189			MISSISSIPPI DR.
STA. 53+62.64, 1.29' LT TO STA. 54+00.34, 44.16' LT	Sanitary Sewer	Removal	57			MISSISSIPPI DR.
STA. 53+62.64, 1.29' LT TO STA. 54+06.24, 23.0' LT	Sanitary Sewer	Removal	49			MISSISSIPPI DR.
STA. 53+62.64, 1.29' LT TO STA. 57+21.36, 0.68' RT	Sanitary Sewer	Removal	359			MISSISSIPPI DR.
STA. 57+21.36, 0.68' RT TO STA. 57+20.38, 127.16' LT	Sanitary Sewer	Removal	128			MISSISSIPPI DR.
STA. 57+21.36, 0.68' RT TO STA. 58+60.66, 22.53' LT	Sanitary Sewer	Removal	149			MISSISSIPPI DR.
STA. 61+49.45, 1.06' RT TO STA. 64+60.17, 3.19' LT	Sanitary Sewer	Removal	311			MISSISSIPPI DR.
STA. 64+60.17, 3.19' LT	Sanitary Sewer	Removal	15			MISSISSIPPI DR.
STA. 64+60.17, 3.19' LT TO STA. 64+60.20, 82.19' LT	Sanitary Sewer	Removal	79			MISSISSIPPI DR.
STA. 64+60.17, 3.19' LT TO STA. 65+07.38, 18.24' LT	Sanitary Sewer	Removal	50			MISSISSIPPI DR.
STA. 65+07.38, 18.24' LT TO STA. 67+81.61, 5.57' LT	Sanitary Sewer	Removal	273			MISSISSIPPI DR.
STA. 64+60.17, 3.19' LT TO STA. 68+13.67, 10.58' RT	Sanitary Sewer	Removal	353			MISSISSIPPI DR.
STA. 68+13.67, 10.58' RT	Sanitary Sewer	Removal	15			MISSISSIPPI DR.
STA. 68+13.67, 10.58' RT TO STA. 68+10.94, 71.23' LT	Sanitary Sewer	Removal	82			MISSISSIPPI DR.
STA. 67+81.61, 5.57' LT TO STA. 71+27.07, 2.88' RT	Sanitary Sewer	Removal	344			MISSISSIPPI DR.
STA. 68+113.67, 10.58' RT TO STA. 71+67.27, 32.15' RT	Sanitary Sewer	Removal	370			MISSISSIPPI DR.
STA. 71+67.27, 32.15' RT	Sanitary Sewer	Removal	15			MISSISSIPPI DR.
STA. 71+67.27, 32.15' RT	Sanitary Sewer	Removal	15			MISSISSIPPI DR.
STA. 71+67.27, 32.15' RT TO STA. 73+19.00, 10.68' LT	Sanitary Sewer	Removal	168			MISSISSIPPI DR.
STA. 49+93.93, 16.52' LT TO STA. 49+97.01, 47.68' RT	Storm Sewer	Removal	61			MISSISSIPPI DR.
STA. 49+93.93, 16.52' LT TO STA. 49+93.17, 37.84' LT	Storm Sewer	Removal	18			MISSISSIPPI DR.
STA. 49+93.17, 37.84' LT TO STA. 49+81.57, 46.13' LT	Storm Sewer	Removal	12			MISSISSIPPI DR.
STA. 49+93.17, 37.84' LT TO STA. 50+22.04, 45.55' LT	Storm Sewer	Removal	27			MISSISSIPPI DR.
STA. 50+30.78, 30.27' RT TO STA. 50+05.43, 40.07' RT	Storm Sewer	Removal	27			MISSISSIPPI DR.
STA. 53+02.37, 33.56' RT	Storm Sewer	Removal	13			MISSISSIPPI DR.
STA. 53+02.37, 33.56' RT TO STA. 53+43.14, 35.47' RT	Storm Sewer	Removal	38			MISSISSIPPI DR.
STA. 53+43.14, 35.47' RT TO STA. 53+40.34, 45.60' RT	Storm Sewer	Removal	8			MISSISSIPPI DR.
STA. 53+18.49, 4.25' LT TO STA. 53+43.14, 35.47' RT	Storm Sewer	Removal	44			MISSISSIPPI DR.
STA. 53+43.14, 35.47' RT TO STA. 53+44.56, 56.41' LT	Storm Sewer	Removal	89			MISSISSIPPI DR.
STA. 53+43.14, 35.47' RT TO STA. 53+64.62, 32.34' LT	Storm Sewer	Removal	68			MISSISSIPPI DR.
STA. 53+64.42, 32.34' LT TO STA. 53+80.76, 46.79' LT	Storm Sewer	Removal	19			MISSISSIPPI DR.
STA. 56+66.83, 4.16' LT TO STA. 56+68.33, 36.52' RT	Storm Sewer	Removal	38			MISSISSIPPI DR.
STA. 56+68.33, 36.52' RT TO STA. 57+15.77, 39.14' RT	Storm Sewer	Removal	45			MISSISSIPPI DR.
STA. 57+13.32, 8.99' LT TO STA. 57+15.77, 39.14' RT	Storm Sewer	Removal	45			MISSISSIPPI DR.
STA. 57+13.32, 8.99' LT TO STA. 57+11.24, 71.87' LT	Storm Sewer	Removal	60			MISSISSIPPI DR.
STA. 57+15.77, 39.14' RT TO STA. 57+68.09, 45.87' RT	Storm Sewer	Removal	50			MISSISSIPPI DR.
STA. 57+64.21, 69.13' LT TO STA. 57+68.09, 45.87' RT	Storm Sewer	Removal	112			MISSISSIPPI DR.
STA. 60+57.70, 42.62' RT TO STA. 60+65.72, 2.33' RT	Storm Sewer	Removal	38			MISSISSIPPI DR.
STA. 60+57.70, 42.62' RT	Storm Sewer	Removal	11			MISSISSIPPI DR.
STA. 60+65.72, 2.33' RT TO STA. 60+94.31, 34.11' LT	Storm Sewer	Removal	44			MISSISSIPPI DR.
STA. 60+94.31, 34.11' LT TO STA. 60+92.24, 65.30' LT	Storm Sewer	Removal	28			MISSISSIPPI DR.
STA. 61+26.07, 46.47' LT TO STA. 61+39.79, 45.55' LT	Storm Sewer	Removal	11			MISSISSIPPI DR.
STA. 61+39.79, 45.55' LT TO STA. 61+39.26, 64.98' LT	Storm Sewer	Removal	18			MISSISSIPPI DR.
STA. 61+39.79, 45.55' LT TO STA. 61+47.27, 30.74' LT	Storm Sewer	Removal	14			MISSISSIPPI DR.
STA. 61+47.27, 30.74' LT TO STA. 61+58.97, 1.60' RT	Storm Sewer	Removal	32			MISSISSIPPI DR.
STA. 61+58.97, 1.60' RT TO STA. 62+08.75, 41.11' RT	Storm Sewer	Removal	61			MISSISSIPPI DR.
STA. 61+39.67, 45.55' LT TO STA. 61+71.50, 41.22' LT	Storm Sewer	Removal	29			MISSISSIPPI DR.
STA. 61+71.50, 41.22' LT TO STA. 64+42.15, 38.20' LT	Storm Sewer	Removal	268			MISSISSIPPI DR.
STA. 64+42.15, 38.20' LT TO STA. 64+47.20, 43.85' LT	Storm Sewer	Removal	8			MISSISSIPPI DR.
STA. 64+47.20, 43.85' LT TO STA. 64+91.24, 46.65' LT	Storm Sewer	Removal	47			MISSISSIPPI DR.
STA. 64+91.24, 46.65' LT TO STA. 65+36.46, 46.02' LT	Storm Sewer	Removal	45			MISSISSIPPI DR.
STA. 68+02.73, 48.72' LT TO STA. 68+52.10, 46.71' LT	Storm Sewer	Removal	46			MISSISSIPPI DR.

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.10

110-14
04-16-13

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL

* Not a bid item

Location/Description	Sanitary or Storm Sewer	Abandonment, Plug Only or Abandonment, Plug and Fill or Removal	Length of Pipe		Fill Material*	Remarks
			= 36 inch diameter	> 36 inch diameter	Flowable Mortar or CLSM	
			LF	LF	CY	
STA. 68+11.10, 33.15' RT TO STA. 68+52.10, 46.71' LT	Storm Sewer	Removal	87			MISSISSIPPI DR.
STA. 68+52.10, 46.71' LT TO STA. 68+50.78, 71.06' LT	Storm Sewer	Removal	24			MISSISSIPPI DR.
STA. 71+74.63, 26.56' LT TO STA. 71+88.67, 21.21' RT	Storm Sewer	Removal	47			MISSISSIPPI DR.
STA. 71+88.67, 21.21' RT TO STA. 71+77.45, 65.95' RT	Storm Sewer	Removal	47			MISSISSIPPI DR.
STA. 71+88.67, 21.21' RT TO STA. 71+97.27, 32.66' RT	Storm Sewer	Removal	13			MISSISSIPPI DR.
STA. 71+88.67, 21.21' RT TO STA. 73+24.00, 3.10' RT	Storm Sewer	Removal	139			MISSISSIPPI DR.
STA. 84+77.11, 19.89' RT TO STA. 85+50.72, 19.68' RT	Sanitary Sewer	Removal	74			E 2ND ST.
STA. 85+50.72, 19.68' RT	Sanitary Sewer	Removal	16			E 2ND ST.
STA. 85+50.72, 19.68' RT	Sanitary Sewer	Removal	16			E 2ND ST.
STA. 85+50.72, 19.68' RT	Sanitary Sewer	Removal	16			E 2ND ST.
STA. 85+50.72, 19.68' RT TO STA. 85+51.19, 68.22' RT	Sanitary Sewer	Removal	49			E 2ND ST.
STA. 85+50.72, 19.68' RT TO STA. 89+00.00, 19.47' RT	Sanitary Sewer	Removal	349			E 2ND ST.
STA. 89+11.93, 45.10' LT TO STA. 89+32.34, 41.68' LT	Sanitary Sewer	Removal	21			E 2ND ST.
STA. 89+32.34, 41.68' LT TO STA. 89+32.12, 73.73' RT	Sanitary Sewer	Removal	115			E 2ND ST.
STA. 89+32.12, 73.73' RT TO STA. 89+32.29, 90.24' RT	Sanitary Sewer	Removal	17			E 2ND ST.
STA. 85+41.77, 46.50' RT TO STA. 86+03.82, 28.33' RT	Storm Sewer	Removal	62			E 2ND ST.
STA. 85+22.06, 21.65' LT TO STA. 85+88.33, 14.01' LT	Storm Sewer	Removal	65			E 2ND ST.
STA. 85+88.33, 14.01' LT TO STA. 86+03.82, 28.33' RT	Storm Sewer	Removal	42			E 2ND ST.
STA. 86+03.82, 28.33' RT TO STA. 88+81.25, 29.72' RT	Storm Sewer	Removal	275			E 2ND ST.
STA. 88+81.25, 29.72' RT TO STA. 89+12.99, 31.25' RT	Storm Sewer	Removal	30			E 2ND ST.
STA. 88+87.27, 11.53' LT TO STA. 89+62.89, 41.54' LT	Storm Sewer	Removal	47			E 2ND ST.
STA. 89+62.89, 41.54' LT TO STA. 89+80.20, 47.84' LT	Storm Sewer	Removal	19			E 2ND ST.
STA. 89+03.68, 48.43' RT TO STA. 89+12.09, 489.90' RT	Storm Sewer	Removal	6			E 2ND ST.
STA. 89+12.09, 49.90' RT TO STA. 89+37.02, 50.02' RT	Storm Sewer	Removal	22			E 2ND ST.
STA. 89+12.99, 31.25' RT TO STA. 89+12.09, 49.90' RT	Storm Sewer	Removal	18			E 2ND ST.
STA. 92+38.04, 10.90' LT TO STA. 92+38.97, 29.17' RT	Storm Sewer	Removal	37			E 2ND ST.
STA. 92+38.97, 29.17' RT TO STA. 94+50.72, 28.75' RT	Storm Sewer	Removal	209			E 2ND ST.
STA. 94+50.72, 28.75' RT TO STA. 95+17.28, 33.24' RT	Storm Sewer	Removal	64			E 2ND ST.
STA. 94+95.17, 11.17' LT TO STA. 95+31.15, 0.36' RT	Storm Sewer	Removal	35			E 2ND ST.

110-2
04-16-13

REMOVAL OF EXISTING STRUCTURES

Location	Description	Remarks
STA 31+73.76 TO STA 34+89	POURED CONCRETE RETAINING WALL	316 LF
STA 35+90.22 TO STA 39+02	POURED CONCRETE RETAINING WALL	312 LF
STA 37+58.85 TO STA 37+77	POURED CONCRETE HEADWALL	21 LF
STA 37+79.93 TO STA 39+30	TIMBER RETAINING WALL	151 LF
STA 39+23.68 TO STA 45+13	POURED CONCRETE RETAINING WALL	590 LF
STA 42+11.90 TO STA 42+75	TIMBER RETAINING WALL	64 LF
STA 45+34.73 TO STA 45+98	POURED CONCRETE RETAINING WALL	65 LF

104-10
08-01-08

ADJUSTMENT OF FIXTURES

No.	Location Station	Type of Fixture	Adjustment
1	23+63.59	STORM MANHOLE	ADJUST MANHOLE TO GRADE
2	26+10.00	STORM INTAKE	ADJUST INTAKE TO GRADE (MAJOR)
3	26+58.26	STORM MANHOLE	ADJUST MANHOLE TO GRADE
4	28+09.92	STORM MANHOLE	ADJUST MANHOLE TO GRADE
5	31+63.42	STORM MANHOLE	ADJUST MANHOLE TO GRADE (MAJOR)
6	35+17.80	STORM MANHOLE	ADJUST MANHOLE TO GRADE
7	60+92.50	SANITARY MANHOLE	MAJOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
8	85+20.80	STORM INTAKE	MINOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
9	89+15.70	STORM MANHOLE	MINOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
10	93+11.40	SANITARY MANHOLE	MAJOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
11	94+78.30	SANITARY MANHOLE	MAJOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
12	95+17.30	STORM MANHOLE	MINOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
13	95+31.10	SANITARY MANHOLE	MAJOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
14	13+46.00	STORM MANHOLE	MAJOR ADJUSTMENT. ADJUST MANHOLE TO GRADE
15	32+24.20	SANITARY MANHOLE	MINOR ADJUSTMENT. ADJUST MANHOLE TO GRADE

SANITARY MAIN SERVICES

LOCATION STATION	SIDE	LENGTH (LF)
44+26.01	LT	50.0
44+69.76	LT	50.0
48+28.72	LT	52.0
49+23.23	LT	51.0
49+69.74	LT	50.0
50+49.00	RT	25.0
51+16.63	LT	51.0
51+53.93	LT	51.0
53+81.45	LT	20.0
56+95.46	LT	54.0
71.75.98	RT	60.0
72+69.70	RT	32.0

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.11

110-15
04-16-13

REMOVAL OF INTAKES AND UTILITY ACCESSES

No.	Location/Description	Type	Remarks
1	STA 43+17.93, 24.0' LT	Utilities	SANITARY SEWER MANHOLE
2	STA 44+26.28, 24.1' LT	Utilities	SANITARY SEWER MANHOLE
3	STA 46+50.57, 24.5' LT	Utilities	SANITARY SEWER MANHOLE
4	STA 49+23.17, 26.2' LT	Utilities	SANITARY SEWER MANHOLE
5	STA 23+82.85, 23.1' LT	Intakes	STORM SEWER INTAKE
6	STA 28+32.72, 39.0' LT	Intakes	STORM SEWER INTAKE
7	STA 31+84.79, 36.4' LT	Intakes	STORM SEWER INTAKE
8	STA 37+67.96, 42.3' RT	Intakes	STORM SEWER INTAKE
9	STA 46+20.53, 34.3' LT	Intakes	STORM SEWER INTAKE
10	STA 46+20.47, 56.0' LT	Utilities	STORM SEWER MANHOLE
11	STA 46+62.53, 55.6' LT	Utilities	STORM SEWER MANHOLE
12	STA 46+62.30, 21.1' RT	Utilities	STORM SEWER MANHOLE
13	STA 46+22.54, 40.2' RT	Utilities	STORM SEWER MANHOLE
14	STA. 49+81.57, 46.13' LT	Intakes	STORM SEWER INTAKE
15	STA. 49+93.17, 37.84' LT	Utilities	STORM SEWER MANHOLE
16	STA. 49+93.93, 16.52' LT	Utilities	STORM SEWER MANHOLE
17	STA. 49+97.01, 47.68' RT	Utilities	STORM SEWER MANHOLE
18	STA. 50+19.75, 17.87' LT	Utilities	SANITARY SEWER MANHOLE
19	STA. 50+22.04, 45.55' LT	Utilities	STORM SEWER MANHOLE
20	STA. 50+30.78, 30.27' RT	Intakes	STORM SEWER INTAKE
21	STA. 50+31.76, 5.38' RT	Utilities	SANITARY SEWER MANHOLE
22	STA. 51+53.07, 16.37' LT	Utilities	SANITARY SEWER MANHOLE
23	STA. 53+02.37, 33.56' RT	Intakes	STORM SEWER INTAKE
24	STA. 53+18.49, 4.25' LT	Intakes	STORM SEWER INTAKE
25	STA. 53+40.34, 45.60' RT	Utilities	STORM SEWER MANHOLE
26	STA. 53+43.14, 35.47' RT	Utilities	STORM SEWER MANHOLE
27	STA. 53+44.56, 56.41' LT	Intakes	STORM SEWER INTAKE
28	STA. 53+62.64, 1.29' LT	Utilities	SANITARY SEWER MANHOLE
29	STA. 53+64.42, 32.34' LT	Utilities	STORM SEWER MANHOLE
30	STA. 53+80.76, 46.79' LT	Intakes	STORM SEWER INTAKE
31	STA. 56+66.83, 4.16' LT	Intakes	STORM SEWER INTAKE
32	STA. 56+68.33, 36.52' RT	Intakes	STORM SEWER INTAKE
33	STA. 56+81.44, 33.24' LT	Utilities	SANITARY SEWER MANHOLE
34	STA. 57+11.24, 71.87' LT	Intakes	STORM SEWER INTAKE
35	STA. 57+13.32, 8.99' LT	Utilities	STORM SEWER MANHOLE
36	STA. 57+15.77, 39.14' RT	Utilities	STORM SEWER MANHOLE
37	STA. 57+21.36, 0.68' RT	Utilities	SANITARY SEWER MANHOLE
38	STA. 57+64.21, 69.13' LT	Intakes	STORM SEWER INTAKE
39	STA. 57+68.09, 45.87' RT	Utilities	STORM SEWER MANHOLE
40	STA. 60+57.70, 42.62' RT	Intakes	STORM SEWER INTAKE
41	STA. 60+65.72, 2.33' RT	Intakes	STORM SEWER INTAKE
42	STA. 60+94.31, 34.11' LT	Intakes	STORM SEWER INTAKE
43	STA. 60+92.24, 65.30' LT	Intakes	STORM SEWER INTAKE
44	STA. 61+26.07, 46.47' LT	Intakes	STORM SEWER INTAKE
45	STA. 61+39.79, 45.55' LT	Utilities	STORM SEWER MANHOLE
46	STA. 61+47.27, 30.74' LT	Intakes	STORM SEWER INTAKE
47	STA. 61+46.20, 68.17' LT	Intakes	STORM SEWER INTAKE
48	STA. 61+49.45, 1.06' RT	Utilities	SANITARY SEWER MANHOLE
49	STA. 61+71.65, 47.64' LT	Intakes	STORM SEWER INTAKE
50	STA. 61+58.97, 1.60' RT	Intakes	STORM SEWER INTAKE
51	STA. 61+71.50, 41.22' LT	Utilities	STORM SEWER MANHOLE
52	STA. 62+08.75, 41.11' RT	Intakes	STORM SEWER INTAKE
53	STA. 64+42.15, 38.20' LT	Utilities	STORM SEWER MANHOLE
54	STA. 64+47.20, 43.85' LT	Intakes	STORM SEWER INTAKE
55	STA. 64+60.17, 3.19' LT	Utilities	SANITARY SEWER MANHOLE
56	STA. 64+91.24, 46.65' LT	Intakes	STORM SEWER INTAKE
57	STA. 65+07.38, 18.24' LT	Utilities	SANITARY SEWER MANHOLE
58	STA. 67+81.61, 5.57' LT	Utilities	SANITARY SEWER MANHOLE
59	STA. 68+02.73, 48.72' LT	Intakes	STORM SEWER INTAKE
60	STA. 68+11.10, 33.15' RT	Intakes	STORM SEWER INTAKE
61	STA. 68+13.67, 10.58' RT	Utilities	SANITARY SEWER MANHOLE
62	STA. 68+52.10, 46.71' LT	Intakes	STORM SEWER INTAKE
63	STA. 71+27.07, 2.88' RT	Utilities	SANITARY SEWER MANHOLE
64	STA. 71+67.27, 32.15' RT	Utilities	SANITARY SEWER MANHOLE
65	STA. 71+74.63, 26.56' LT	Intakes	STORM SEWER INTAKE
66	STA. 71+88.67, 21.21' RT	Utilities	STORM SEWER MANHOLE
67	STA. 71+97.27, 32.66' RT	Intakes	STORM SEWER INTAKE
68	STA. 85+41.64, 46.54' RT	Intakes	STORM SEWER INTAKE
69	STA. 85+50.72, 19.68' RT	Utilities	SANITARY SEWER MANHOLE
70	STA. 85+88.31, 14.05' LT	Intakes	STORM SEWER INTAKE
71	STA. 86+03.81, 28.33' RT	Utilities	STORM SEWER MANHOLE
72	STA. 88+87.27, 11.53' LT	Intakes	STORM SEWER INTAKE
73	STA. 88+81.24, 29.72' RT	Intakes	STORM SEWER INTAKE
74	STA. 89+00.00, 19.47' RT	Utilities	SANITARY SEWER MANHOLE
75	STA. 89+03.68, 48.43' RT	Intakes	STORM SEWER INTAKE
76	STA. 89+11.93, 45.10' LT	Utilities	SANITARY SEWER MANHOLE
77	STA. 89+32.34, 41.68' LT	Utilities	SANITARY SEWER MANHOLE
78	STA. 89+12.10, 49.90' RT	Utilities	SANITARY SEWER MANHOLE
79	STA. 89+37.02, 50.02' RT	Intakes	STORM SEWER INTAKE
80	STA. 89+62.89, 41.54' LT	Intakes	STORM SEWER INTAKE
81	STA. 92+38.04, 10.90' LT	Intakes	STORM SEWER INTAKE
82	STA. 92+38.97, 29.17' RT	Intakes	STORM SEWER INTAKE
83	STA. 94+50.72, 28.75' RT	Utilities	STORM SEWER MANHOLE
84	STA. 94+95.16, 11.15' LT	Intakes	STORM SEWER INTAKE

190-66
10-21-14

SUMMARY OF TYPE 'A' SIGNS

Sign Number	Quantity	Size	Total Sign Area
	EACH	IN	SF
R4-7	8	24 X 30	40.0
OM-1	8	18 X 18	18.0
R2-1	6	24 X 30	30.0
R8-3	8	24 X 30	40.0
R1-1	5	30 X 30	31.3
R3-4	3	24 X 24	12.0
R6-1	4	36 X 12	12.0
R7-8	6	18 X 24	18.0
M1-4	8	24 X 24	32.0
M1-5	5	24 X 24	20.0
M3-2	2	24 X 12	4.0
M3-4	1	24 X 12	2.0
M4-3	8	24 X 12	16.0
M5-1	1	24 X 24	4.0
M6-3	1	21 X 15	2.2
OM-1	18	18 X 18	40.5
R1-1	5	30 X 30	31.3
R2-1	12	24 X 30	60.0
R3-7	9	30 X 30	56.3
R4-7	18	24 X 30	90.0
R5-1	3	30 X 30	18.8
R6-1	2	36 X 12	6.0
R8-3	12	24 X 30	60.0
W11-2	10	18 X 18	13.5
W1-1L	1	30 X 30	6.3
W1-1R	1	30 X 30	6.3
W12-1	1	24 X 24	4.0
W13-1	2	18 X 18	4.5
W1-6	2	48 X 24	16.0
W4-2	2	36 X 36	18.0
W6-1	3	36 X 36	27.0
W6-3	3	30 X 30	18.8
W9-1	2	30 X 30	12.5
W16-7PL	10	24 X 12	20.0
BIP	6	18 X 24	18.0

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MUSCATINE, IOWA
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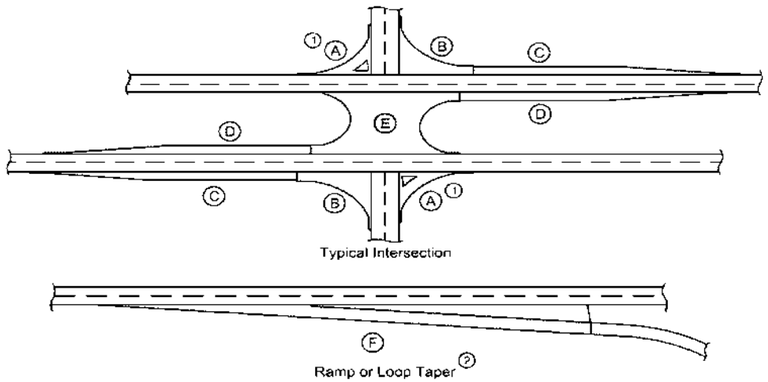
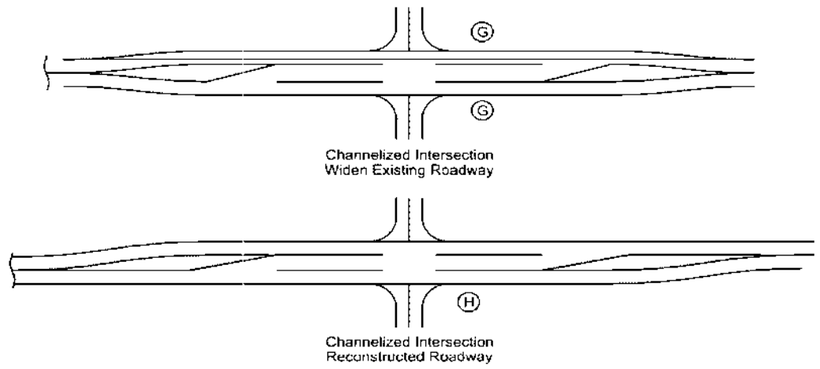
TABULATIONS

SHEET C.12

PCC PAVEMENT





(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(1) Quantity includes Pavement Header.

Location				Mainline			Area (3)								Total Area By Pavement Thickness SY			Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	8 IN	10 IN	18 IN				
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY				TONS	CY	SY	
HERSHEY AVE.	EB	20+89.82	21+50.96	2.0	61.1	13.6										13.6					
HERSHEY AVE.	EB	21+01.51	21+16.51	26.3	15.0	43.8										43.8					
HERSHEY AVE.	WB	21+12.50	21+69.09	2.0	56.6	12.6										12.6					
HERSHEY AVE.	BOTH	21+41.15	23+35.06		193.9									222.9		222.9					
HERSHEY AVE.	WB	21+98.09	22+86.95	2.0	88.9	19.7										19.7					
HERSHEY AVE.	WB	23+33.07	23+53.89		20.8			19.2								19.2					
HERSHEY AVE.	WB	23+76.63	23+98.62		22.0			17.3								17.3					
HERSHEY AVE./MISSISSIPPI DR.	BOTH	23+95.23	28+05.08		409.9									513.7		513.7					
HERSHEY AVE./MISSISSIPPI DR.	WB	23+98.62	27+77.71	2.0	379.1	84.2										84.2					
MISSISSIPPI DR.	WB	27+77.71	28+03.34		25.6			22.5								22.5					
MISSISSIPPI DR.	WB	28+33.59	28+77.88		44.3			36.9								36.9					
MISSISSIPPI DR.	BOTH	28+49.57	33+70.39		520.8									183.6		183.6					
MISSISSIPPI DR.	WB	28+77.88	33+21.81	2.0	443.9	98.7										98.7					
MISSISSIPPI DR.	WB	33+21.81	33+53.46		31.7			23.6								23.6					
MISSISSIPPI DR.	WB	33+53.46	33+83.13	2.0	29.7	6.6										6.6					
MISSISSIPPI DR.	WB	33+83.13	34+30.06		46.9			31.1								31.1					
MISSISSIPPI DR.	BOTH	33+98.40	35+55.40		157.0									55.2		55.2					
MISSISSIPPI DR.	EB	35+09.55	35+24.55		15.0									23.8		23.8					
MISSISSIPPI DR.	WB	35+55.40	36+55.30	15.5	99.9	172.1										172.1					
MISSISSIPPI DR.	WB	36+55.30	42+28.65	15.0	573.3	955.6										955.6					
MISSISSIPPI DR.	WB	42+28.65	43+28.65	14.5	100.0	161.1										161.1					
MISSISSIPPI DR.	WB	43+28.65	49+66.71	14.0	638.1	992.5										992.5					
MISSISSIPPI DR.	EB	35+55.40	36+55.30	14.6	99.9	161.6										161.6					
MISSISSIPPI DR.	EB	36+55.30	49+66.71	13.3	1311.4	1930.7										1930.7					
MISSISSIPPI DR.	BOTH	45+85.64	46+93.31		107.7					90.3						90.3					
MISSISSIPPI DR.	BOTH	49+39.80	49+66.71		26.9					12.7						12.7					
MISSISSIPPI DR.	WB	43+28.65	43+50.69		22.0			22.0								22.0					
MISSISSIPPI DR.	WB	43+50.69	43+66.23	18.0	15.5	31.1										31.1					
MISSISSIPPI DR.	WB	43+66.23	43+87.94		21.7			22.0								22.0					
MISSISSIPPI DR.	WB	44+22.94	44+44.88		21.9			22.0								22.0					
MISSISSIPPI DR.	WB	44+44.88	45+88.03	18.0	143.2	286.3										286.3					
MISSISSIPPI DR.	WB	45+88.03	46+24.97		36.9			27.7								27.7					
MISSISSIPPI DR.	WB	46+54.97	46+69.97		15.0			5.3								5.3					
MISSISSIPPI DR.	WB	47+53.42	47+75.36		21.9			22.0								22.0					
MISSISSIPPI DR.	WB	47+75.36	49+37.43	18.0	162.1	324.1										324.1					
MISSISSIPPI DR.	WB	49+37.43	49+66.71		29.3			22.6								22.6					
MISSISSIPPI DR.	EB	49+60.43	49+66.71		6.3			0.1								0.1					
																0.0					
ELM ST.	BOTH	123+83.59	124+07.17	23.0	23.6	60.3										60.3					
ELM ST.	BOTH	124+07.17	124+20.00	32.0	12.8	45.6										45.6					
																0.0					
ASH ST.	BOTH	128+40.35	128+69.85	30.0	29.5	98.3										98.3					
																0.0					
LINN ST.	BOTH	146+60.19	147+01.05	30.0	40.9	136.2										136.2					
LINN ST.	NB	146+91.25	147+01.05		9.8			5.0								5.0					
LINN ST.	SB	146+91.25	147+01.05		9.8			5.0								5.0					
LINN ST.	BOTH	147+01.05	147+14.78	56.0	13.7	85.4										85.4					
MISSISSIPPI DR.	WB	49+66.71	60+99.71	14.0	1133.0	1762.4										1762.4					
MISSISSIPPI DR.	EB	49+66.71	60+99.71	14.0	1133.0	1762.4										1762.4					
MISSISSIPPI DR.	BOTH	49+66.71	50+57.69		91.0					117.2						117.2					

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MUSCATINE, IOWA
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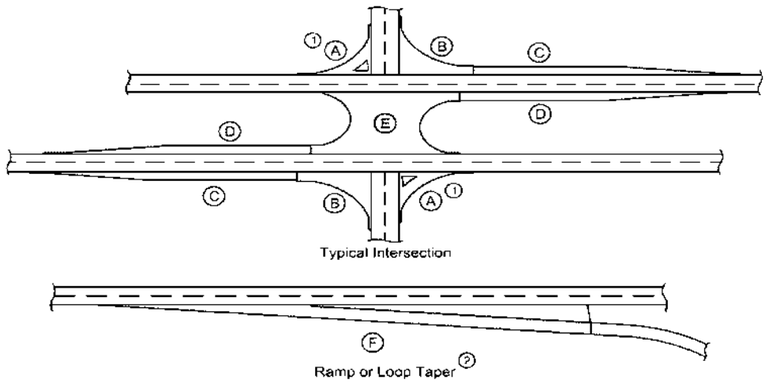
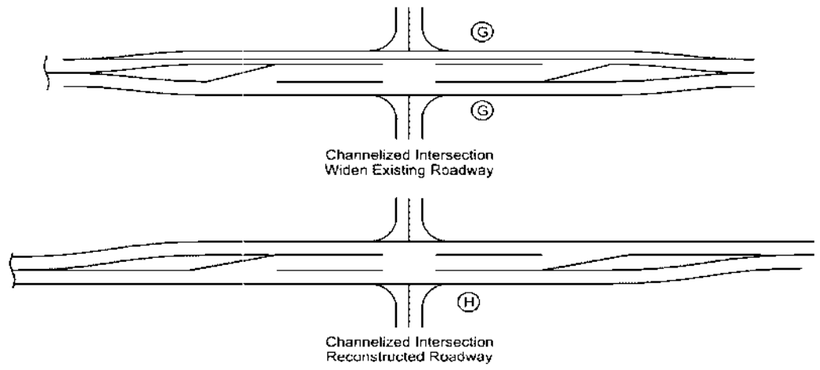
TABULATIONS

SHEET C.13

PCC PAVEMENT





(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(1) Quantity includes Pavement Header.

Location				Mainline			Area (3)								Total Area By Pavement Thickness SY			Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H							
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	8 IN	10 IN	18 IN	TONS	CY	SY	
MISSISSIPPI DR.	WB	50+39.89	51+84.83		144.9				272.1							272.1					
MISSISSIPPI DR.	WB	51+85.88	52+93.08		107.2				174.3							174.3					
MISSISSIPPI DR.	EB	51+82.60	54+00.96		218.4									242.4		242.4					
MISSISSIPPI DR.	BOTH	55+18.31	59+30.06		411.8									502.5		502.5					
MISSISSIPPI DR.	WB	56+05.85	56+82.29		76.4				187.8							187.8					
MISSISSIPPI DR.	WB	56+82.29	57+77.32		95.0			163.8								163.8					
MISSISSIPPI DR.	EB	56+90.82	57+76.82		86.0			91.0								91.0					
MISSISSIPPI DR.	WB	57+83.64	59+14.42		130.8				193.4							193.4					
MISSISSIPPI DR.	WB	59+41.18	60+67.86		126.7				214.4							214.4					
MISSISSIPPI DR.	EB	59+51.81	60+99.71		147.9									166.6		166.6					
MISSISSIPPI DR.	BOTH	60+99.71	61+39.74		40.0									192.4			192.4				
MISSISSIPPI DR.	WB	61+39.74	70+53.60	14.0	913.9	1421.6										1421.6					
MISSISSIPPI DR.	EB	61+39.74	70+53.60	14.0	913.9	1421.6										1421.6					
MISSISSIPPI DR.	BOTH	61+39.74	61+52.40		12.7									2.1		2.1					
MISSISSIPPI DR.	WB	61+61.53	64+22.00		260.5				475.5							475.5					
MISSISSIPPI DR.	BOTH	62+64.49	66+65.69		401.2									459.9		459.9					
MISSISSIPPI DR.	EB	63+19.49	64+32.16		112.7				101.7							101.7					
MISSISSIPPI DR.	EB	64+32.16	65+13.15		81.0			137.3								137.3					
MISSISSIPPI DR.	WB	65+20.30	66+85.07		164.8				285.7							285.7					
MISSISSIPPI DR.	BOTH	67+76.57	68+86.49		109.9					121.2						121.2					
MISSISSIPPI DR.	BOTH	70+40.91	70+53.60		12.7					6.9						6.9					
MISSISSIPPI DR.	SB	70+53.60	73+24.00	12.5	270.4	375.6										375.6					
MISSISSIPPI DR.	NB	70+53.60	73+24.00	12.5	270.4	375.6										375.6					
MISSISSIPPI DR.	WB	70+53.60	72+74.00		220.4			151.0								151.0					
MISSISSIPPI DR.	EB	70+53.60	72+07.43		153.8			383.8								383.8					
MISSISSIPPI DR.	SB	72+74.00	73+24.00		50.0				25.5							25.5					
MISSISSIPPI DR.	NB	72+74.00	73+24.00		50.0				19.9							19.9					
																0.0					
PINE ST.	SB	3+23.09	3+86.57	13.0	63.5	91.7		16.9	7.5						116.1						
PINE ST.	NB	3+23.09	3+86.57	13.0	63.5	91.7		21.1	7.5						120.3						
CHESTNUT ST.	SB	7+03.75	8+87.49	12.5	183.7	255.2		30.8							286.0						
CHESTNUT ST.	NB	7+03.75	8+87.49	12.5	183.7	255.2		21.5							276.7						
CHESTNUT ST.	BOTH	7+03.75	8+81.03		177.3			445.6							445.6						
IOWA ST.	SB	11+17.84	12+17.50	13.0	99.7	144.0		21.5	74.9						240.4						
IOWA ST.	NB	11+17.84	12+17.50	13.0	99.7	144.0			123.1						267.1						
SYCAMORE ST.	SB	16+23.00	16+87.50	13.0	64.5	93.2		21.5	9.3						124.0						
SYCAMORE ST.	NB	16+23.00	16+87.50	13.0	64.5	93.2		21.5							114.7						
CEDAR ST.	SB	19+12.84	19+87.50	13.0	74.7	107.8		21.5	7.4						136.7						
CEDAR ST.	NB	19+12.84	19+87.50	13.0	74.7	107.8		21.5	7.4						136.7						
WALNUT ST.	SB	25+23.05	25+87.49	13.0	64.4	93.1		21.4	7.0						121.5						
WALNUT ST.	NB	25+23.05	25+87.49	13.0	64.4	93.1		21.4	7.0						121.5						
																0.0					
																0.0					
E 2ND ST.	WB	84+72.11	95+41.45	14.0	1069.3	1663.4										1663.4					
E 2ND ST.	EB	84+72.11	95+41.45	14.0	1069.3	1663.4										1663.4					

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MUSCATINE, IOWA
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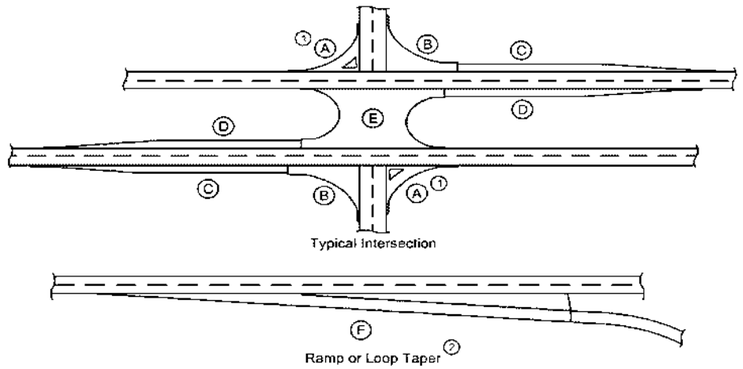
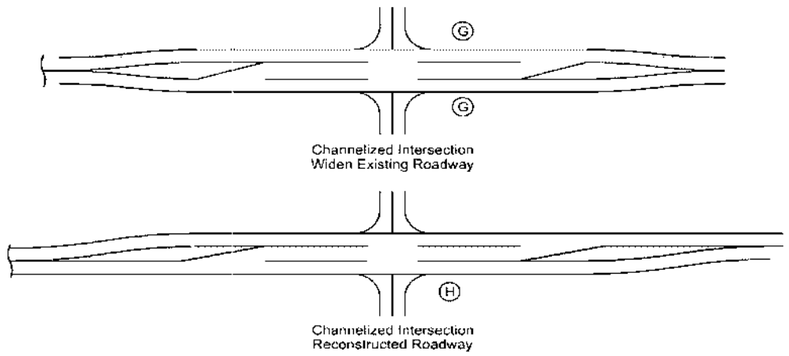
TABULATIONS

SHEET C.14

PCC PAVEMENT





(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

Location				Mainline			Area (3)								Total Area By Pavement Thickness SY			Special Backfill	Modified Subbase	Granular Subbase	Remarks
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	8 IN	10 IN	18 IN	TONS	CY	SY	
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY							
E 2ND ST.	WB	84+72.11	87+06.65		234.5									339.5		339.5					
E 2ND ST.	BOTH	87+60.77	90+76.79		316.0									379.0		379.0					
E 2ND ST.	BOTH	92+33.31	93+13.31		80.0						88.0					88.0					
E 2ND ST.	WB	92+50.31	92+96.31		46.0			24.9								24.9					
E 2ND ST.	WB	94+39.85	94+83.85		44.0			23.3								23.3					
E 2ND ST.	BOTH	94+21.85	95+41.45		119.6						194.3					194.3					
ORANGE ST.	SB	27+32.50	27+73.27	13.0	40.8	58.9		19.8							78.7						
ORANGE ST.	NB	27+32.50	27+73.27	13.0	40.8	58.9		23.5							82.4						
OAK ST.	SB	30+29.83	31+37.50	15.1	107.7	181.1		20.4							201.5						
OAK ST.	NB	30+29.83	31+37.50	15.1	107.7	181.1		162.0							343.1						
OAK ST.	SB	31+82.93	32+45.69	13.0	62.8	90.7		19.0							109.7						
OAK ST.	NB	31+82.93	32+45.69	13.0	62.8	90.7		5.4	6.6						102.7						

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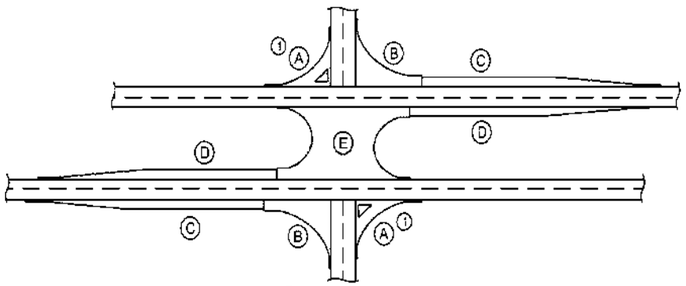
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

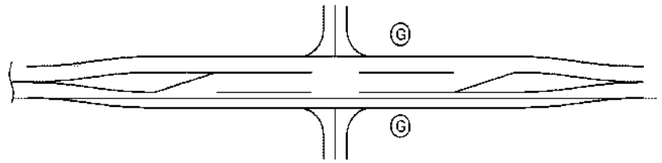
SHEET C.15

HMA PAVEMENT

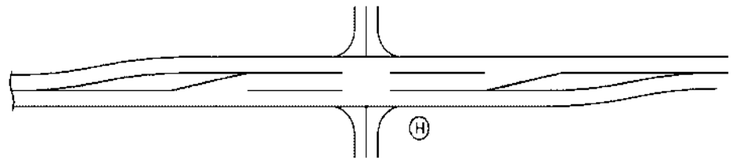


Typical Intersection

Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a base course unit weight (lbs/cf) of 145, and a special backfill unit weight (lbs/cf) of 140.

Location				Mainline			Area (3)								Bid Items												
															Hot Mix Asphalt Pavement						Binder						
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	Surface		Intermediate		Base		Surface	Intermediate	Base	Special Backfill	Modified Subbase	Granular Subbase	Pavement Scarification	Remarks
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	SY	
IOWA ST.	NB	13+10.01	13+55.45	26.0	45.4	131.3		40.2							14.179	171.5			23.309	171.5	0.851		1.399					
MISSISSIPPI DR.		61+47.15	64+32.11		285.0	1217.4									100.661	1217.4			165.486	1217.4	6.040		9.929					
CEDAR ST.	SB	20+67.28	21+09.50	26.0	42.2	122.0		32.6							12.781	154.6			21.012	154.6	0.767		1.261					

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.16

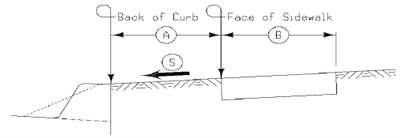
SIDEWALKS

See MI-220 and S Sheets

Road Identification	Station to Station		Side	A	B	S	5" PCC Sidewalk	6" PCC Sidewalk	Detectable Warnings	Remarks
				FT	FT	%	SY	SY	SF	
HERSHEY AVE.	20+89.83	22+01.59	LT	0.00	6.00					
HERSHEY AVE.	20+89.83	21+20.11	RT	0.00	10.00					
HERSHEY AVE.	21+38.11	23+11.08	RT	0.00	10.00					
HERSHEY AVE.	22+25.59	22+72.97	LT	0.00	6.00					
HERSHEY AVE.	22+81.45	23+33.03	LT	0.00	6.00					
HERSHEY AVE.	23+11.08	23+31.08	RT	0.00	10.00			15.6	2	20
HERSHEY AVE.	23+33.03	23+47.91	LT	0.00	6.00			7.1	2	12
HERSHEY AVE.	23+78.73	24+17.03	RT	VAR	6.00					
HERSHEY AVE.	23+81.35	23+95.33	LT	0.00	6.00			6.8	2	10
HERSHEY AVE.	23+92.38	24+11.92	RT	0.00	10.00			14.9	2	18.2
HERSHEY AVE.	23+95.33	24+09.39	LT	0.00	6.00					
HERSHEY AVE.	24+11.92	25+20.68	RT	0.00	10.00					
HERSHEY AVE.	24+41.06	25+40.91	LT	0.00	6.00					
MISSISSIPPI DR.	25+83.18	26+27.01	LT	0.00	6.00					
MISSISSIPPI DR.	26+27.01	27+35.16	LT	VAR	5.00					
MISSISSIPPI DR.	27+51.33	27+91.36	LT	12.50	5.00					
MISSISSIPPI DR.	27+91.36	28+01.85	LT	6.00	5.00			6.1	2	10
MISSISSIPPI DR.	28+34.29	28+43.53	LT	6.00	5.00			5.8	2	10
MISSISSIPPI DR.	28+43.53	28+91.76	LT	6.00	5.00					
MISSISSIPPI DR.	29+07.76	29+45.41	LT	6.00	5.00					
MISSISSIPPI DR.	29+90.41	30+95.26	LT	6.00	5.00					
MISSISSIPPI DR.	31+10.26	31+19.21	LT	0.00	5.00					
MISSISSIPPI DR.	31+44.21	31+85.72	LT	6.00	5.00					
MISSISSIPPI DR.	31+97.72	33+00.41	LT	6.00	5.00					
MISSISSIPPI DR.	33+23.88	33+76.73	LT	6.00	5.00					
MISSISSIPPI DR.	33+76.73	33+88.01	LT	VAR	5.00					
MISSISSIPPI DR.	33+88.01	34+22.11	LT	VAR	VAR					
MISSISSIPPI DR.	34+22.11	34+30.14	LT	0.00	4.00			4.4	2	8
MISSISSIPPI DR.	43+32.42	43+79.66	LT	0.00	VAR					
MISSISSIPPI DR.	43+79.66	43+97.94	LT	VAR	8.00					
MISSISSIPPI DR.	44+12.94	45+28.60	LT	0.00	VAR					
MISSISSIPPI DR.	44+12.94	44+28.48	LT	0.00	VAR			5.0		
MISSISSIPPI DR.	44+25.48	44+38.39	LT	0.00	6.00			9.8	2	12
MISSISSIPPI DR.	45+28.60	46+24.97	LT	0.00	13.00					
MISSISSIPPI DR.	46+16.97	46+24.97	LT	0.00	6.00			8.0	2	12
MISSISSIPPI DR.	46+54.97	46+62.97	LT	0.00	6.00			8.0	2	12
MISSISSIPPI DR.	46+54.97	47+21.42	LT	0.00	13.00					
MISSISSIPPI DR.	47+43.42	48+67.72	LT	0.00	13.00					
MISSISSIPPI DR.	47+50.11	47+70.78	LT	0.00	VAR			8.6		
MISSISSIPPI DR.	47+55.97	47+68.88	LT	0.00	6.00			9.8	2	12
MISSISSIPPI DR.	48+79.72	49+60.51	LT	0.00	13.00					
MISSISSIPPI DR.	49+60.51	49+66.71	LT	7.00	6.00					
ELM ST	123+93.46	123+99.46	LT	VAR	3.50			3.3		
ELM ST	123+99.46	124+04.09	LT	0.00	3.50					
MISSISSIPPI DR.	49+66.71	49+87.14	LT				49.5			
MISSISSIPPI DR.	49+66.71	49+87.14	LT					4.8	12	
MISSISSIPPI DR.	50+13.15	53+34.14	LT				546.6			
MISSISSIPPI DR.	50+13.15	53+34.14	LT					20.2	36	
CHESTNUT ST.	7+54.17	8+01.90	RT				48.8			
CHESTNUT ST.	7+12.93	7+33.05	RT				26.7			
CHESTNUT ST.	8+38.07	8+87.16	LT				16.9			
CHESTNUT ST.	8+38.07	8+87.16	LT					15.6	55	
MISSISSIPPI DR.	53+60.29	53+93.29	RT					18.0	24	
MISSISSIPPI DR.	53+73.85	57+04.75	CL					13.8	48	
MISSISSIPPI DR.	56+34.96	57+21.41	LT				153.7			
MISSISSIPPI DR.	56+34.96	57+21.41	LT					13.3	24	
IOWA ST.	56+87.92	57+20.72	RT					16.3	23	
IOWA ST.	57+46.93	57+80.22	RT					16.6	23	
MISSISSIPPI DR.	57+63.38	60+69.87	CL					4.0	24	
MISSISSIPPI DR.	57+47.32	59+20.05	LT				406.8			
MISSISSIPPI DR.	57+47.32	59+20.05	LT					9.4	24	
MISSISSIPPI DR.	59+35.76	60+99.21	LT				224.5			
MISSISSIPPI DR.	59+35.76	60+99.21	LT					13.9	24	
MISSISSIPPI DR.	61+35.42	61+67.42	RT					47.5	24	
MISSISSIPPI DR.	61+32.43	64+40.74	CL					11.8	48	
MISSISSIPPI DR.	61+25.21	64+57.03	LT				560.3			
MISSISSIPPI DR.	61+25.21	64+57.03	LT					20.6	48	
CEDAR ST.	64+24.04	64+57.17	RT					3.0	23	
CEDAR ST.	64+83.61	65+19.15	RT					24.0	23	
MISSISSIPPI DR.	64+99.44	67+97.96	CL					4.0	24	
MISSISSIPPI DR.	64+83.03	68+16.18	LT				387.0			
MISSISSIPPI DR.	64+83.03	68+16.18	LT					21.9	48	

SIDEWALKS

See MI-220 and S Sheets



Road Identification	Station to Station		Side	A	B	S	5" PCC Sidewalk	6" PCC Sidewalk	Detectable Warnings	Remarks
				FT	FT	%	SY	SY	SF	
MISSISSIPPI DR.	68+42.31	73+24.00	LT				726.4			
MISSISSIPPI DR.	68+42.31	73+24.00	LT					11.0	24	
MISSISSIPPI DR.	71+86.79	73+24.00	RT				130.7			
MISSISSIPPI DR.	71+86.79	73+24.00	RT					7.1	12	
E 2ND ST.	84+72.11	85+47.11	RT				88.6			
E 2ND ST.	84+72.11	85+47.11	RT					7.1	12	
E 2ND ST.	85+73.11	89+07.65	RT				309.7			
E 2ND ST.	85+73.11	89+07.65	RT					33.5	52	
E 2ND ST.	86+03.17	88+77.74	CL					14.0	32	
E 2ND ST.	84+72.11	89+11.82	LT				190.1			
E 2ND ST.	84+72.11	89+11.82	LT					44.9	40	
E 2ND ST.	89+33.67	95+41.45	RT				414.0			
E 2ND ST.	89+33.67	95+41.45	RT					11.9	36	
E 2ND ST.	89+69.83	92+56.57	CL					11.3	24	
E 2ND ST.	89+42.10	92+59.85	LT				265.9			
E 2ND ST.	89+42.10	92+59.85	LT					32.0	32	
E 2ND ST.	92+86.77	94+49.39	LT				117.9			
E 2ND ST.	92+86.77	94+49.39	LT					4.7	12	
E 2ND ST.	92+90.06	94+45.10	CL					11.3	24	
E 2ND ST.	94+74.31	95+41.45	LT				50.2			

ACCESS POINTS AND SAFETY RAMPS

0

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
(1) Refer to MI-210
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

Location		Type	Length of Opening (1)		W	(1) PR	(2) SR	Pipe Culvert (3)					Aprons	Driveway Surface Area		Driveway Surfacing Material	Remarks
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1½" Dropped Curb	3" Dropped Curb				H	Size	Pipe Length	lt.	Rt.		HMA	PCC		
			1 or 2	LF	LF	FT	FT	FT	FT	IN	LF	LF	LF	No.	SY	SY	TON	
21+29.11	RT	B	2	24.0		18.0										40.1		2" DROP CURB. HERSHEY AVE.
22+13.59	LT	B	2	31.0		24.0										48.6		2" DROP CURB. HERSHEY AVE.
22+77.21	LT	B	2	20.0		8.5										15.1		2" DROP CURB. HERSHEY AVE.
23+64.98	RT	B	1	74.0		24.0										166.8		2" DROP CURB. HERSHEY AVE.
24+25.28	LT	B	2	37.0		30.0										39.0		2" DROP CURB. HERSHEY AVE.
25+61.89	LT	B	2	48.0		40.0										39.1		2" DROP CURB. MISSISSIPPI DR.
27+42.88	LT	C	2	22.0		15.0										38.8		2" DROP CURB. MISSISSIPPI DR.
29+00.26	LT	C	2	22.0		15.0										29.2		2" DROP CURB. MISSISSIPPI DR.
29+67.07	LT	C	2	52.0		45.0										87.4		2" DROP CURB. MISSISSIPPI DR.
31+02.15	LT	C	2	23.0		15.0										28.3		2" DROP CURB. MISSISSIPPI DR.
31+31.90	LT	C	2	33.0		25.0										44.1		2" DROP CURB. MISSISSIPPI DR.
31+91.98	LT	C	2	19.0		12.0										20.8		2" DROP CURB. MISSISSIPPI DR.
33+12.14	LT	C	2	27.0		24.0										37.0		2" DROP CURB. MISSISSIPPI DR.
44+04.95	LT	B	1	35.0		15.0	10.0									48.4		2" DROP CURB. MISSISSIPPI DR.
47+32.42	LT	B	1	42.0		22.0	10.0									83.0		2" DROP CURB. MISSISSIPPI DR.
48+73.72	LT	B	2	12.0		12.0										18.7		2" DROP CURB. MISSISSIPPI DR.
7+48.75	RT	A	2	34.0		24.0										382.6		CHESTNUT ST.
8+13.63	RT	A	2	34.0		24.0										195.3		CHESTNUT ST.
56+26.46	LT	A	1	30.0		17.0	10.0									20.4		MISSISSIPPI DR.
59+28.84	LT	A	2	24.0		17.0										68.2		MISSISSIPPI DR.
	LT															69.0		PARKING LOT
85+90.33	LT					236.5										612.4		E 2ND ST. - PARKING LOT
93+31.93	LT					419.0										471.1		E 2ND ST. - PARKING LOT

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DRAWN GAB
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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.17

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 | DCY4: Double Centerline (Yellow) @ 2.00 | NPY4: No Passing Zone Line (Yellow) @ 1.25 | BLW4: Broken Lane Line (White) @ 0.25 | ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00 | SLW2: Stop Line (White) @ 6.00 | SLW4: Solid Lane Line (White) @ 1.00 | CBW6: Crosswalk Bar (White) @ 15.00

Location								Length by Line Type (Unfactored)														Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	SLW2	SLW4	CBW6						
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
HERSHEY AVE.	21+88.25	23+32.06	EB	Waterborne/Solvent Paint			X	1.44														
HERSHEY AVE.	23+47.58	23+82.20	WB	Waterborne/Solvent Paint	X				0.35													
HERSHEY AVE.	23+47.97	23+82.00	EB	Waterborne/Solvent Paint			X		0.56													
HERSHEY AVE.	23+53.60	23+65.48	WB	Waterborne/Solvent Paint	X					0.12												
HERSHEY AVE.	23+64.98	23+76.98	EB	Waterborne/Solvent Paint			X			0.20												
HERSHEY AVE.	23+98.22	25+69.97	WB	Waterborne/Solvent Paint	X			1.72														
MISSISSIPPI	26+13.55	28+02.62	EB	Waterborne/Solvent Paint			X	1.89														
MISSISSIPPI	28+01.56	28+34.39	WB	Waterborne/Solvent Paint	X				0.33													
MISSISSIPPI	28+03.35	28+18.35	WB	Waterborne/Solvent Paint	X						0.15											
MISSISSIPPI	29+16.68	29+38.68	WB	Waterborne/Solvent Paint	X						0.42											
MISSISSIPPI	29+98.83	30+86.83	WB	Waterborne/Solvent Paint	X						1.44											
MISSISSIPPI	31+54.47	31+76.47	WB	Waterborne/Solvent Paint	X						0.42											
MISSISSIPPI	32+06.05	32+72.05	WB	Waterborne/Solvent Paint	X						1.10											
MISSISSIPPI	43+36.49	43+80.42	WB	Waterborne/Solvent Paint	X							0.88										
MISSISSIPPI	43+36.49	43+80.42	WB	Waterborne/Solvent Paint	X						0.72											
MISSISSIPPI	44+30.69	46+02.22	WB	Waterborne/Solvent Paint	X							3.43										
MISSISSIPPI	44+30.69	46+02.22	WB	Waterborne/Solvent Paint	X						3.29											
MISSISSIPPI	46+24.97	46+54.97	WB	Waterborne/Solvent Paint	X				0.30													
MISSISSIPPI	46+25.20	46+41.19	WB	Waterborne/Solvent Paint	X					0.16												
MISSISSIPPI	47+61.17	49+51.69	WB	Waterborne/Solvent Paint	X							3.81										
MISSISSIPPI	47+61.17	49+51.69	WB	Waterborne/Solvent Paint	X						1.75											
LINN ST.	146+96.50	147+14.78	WB	Waterborne/Solvent Paint		X							0.18									
HERSHEY AVE.	21+01.55	21+16.55	BOTH	Waterborne/Solvent Paint	X		X							0.30								
HERSHEY AVE.	21+43.08	21+48.24	BOTH	Waterborne/Solvent Paint		X									0.16							
HERSHEY AVE.	23+32.06	23+33.06	BOTH	Waterborne/Solvent Paint		X									0.03							
MISSISSIPPI	23+97.23	23+98.23	BOTH	Waterborne/Solvent Paint		X									0.03							
MISSISSIPPI	28+02.58	28+03.58	BOTH	Waterborne/Solvent Paint		X									0.03							
MISSISSIPPI	28+51.11	28+66.62	BOTH	Waterborne/Solvent Paint		X									0.34							
MISSISSIPPI	33+53.84	33+68.88	BOTH	Waterborne/Solvent Paint		X									0.33							
MISSISSIPPI	34+00.40	34+04.77	BOTH	Waterborne/Solvent Paint		X									0.14							
MISSISSIPPI	49+61.75	49+40.60	BOTH	Waterborne/Solvent Paint		X									0.46							
MISSISSIPPI	21+41.65	35+55.40	WB	Removal of Paint	X						14.14											
MISSISSIPPI	27+28.42	35+55.40	EB	Removal of Paint			X				8.27											
PINE ST.	49+88.67	50+00.17	SB	Waterborne/Solvent Paint			X							0.12								
CHESTNUT ST.	53+35.64	53+46.70	SB	Waterborne/Solvent Paint			X							0.11								
CHESTNUT ST.	53+46.69	53+57.68	BOTH	Waterborne/Solvent Paint		X		1.40														
MISSISSIPPI	51+91.35	52+85.28	WB	Waterborne/Solvent Paint	X								2.95									
MISSISSIPPI	52+34.68	52+92.38	EB	Waterborne/Solvent Paint		X									0.58							
MISSISSIPPI	55+75.29	56+80.42	EB	Waterborne/Solvent Paint		X									1.05							
MISSISSIPPI	56+83.42	56+83.42	EB	Waterborne/Solvent Paint		X																
IOWA ST.	57+22.38	57+34.38	SB	Waterborne/Solvent Paint			X							0.12								
IOWA ST.	57+23.77	57+43.77	BOTH	Waterborne/Solvent Paint		X										0.20						
IOWA ST.	57+34.38	57+34.38	BOTH	Waterborne/Solvent Paint		X		0.78														
MISSISSIPPI	57+85.72	57+85.72	WB	Waterborne/Solvent Paint		X								0.22								
MISSISSIPPI	57+87.72	58+72.83	WB	Waterborne/Solvent Paint		X									0.85							
MISSISSIPPI	57+91.38	59+07.28	WB	Waterborne/Solvent Paint	X								2.94									
MISSISSIPPI	59+48.03	60+60.11	WB	Waterborne/Solvent Paint	X								3.00									
MISSISSIPPI	60+08.95	60+69.87	EB	Waterborne/Solvent Paint		X									0.61							
MISSISSIPPI	61+69.27	64+14.25	WB	Waterborne/Solvent Paint	X								5.29									
SYCAMORE ST.	61+00.65	61+12.16	SB	Waterborne/Solvent Paint			X							0.12								
SYCAMORE ST.	61+12.16	61+12.16	BOTH	Waterborne/Solvent Paint		X		0.29														
MISSISSIPPI	63+21.47	64+16.54	EB	Waterborne/Solvent Paint	X										0.95							
MISSISSIPPI	63+76.47	64+16.54	EB	Waterborne/Solvent Paint			X								0.40							
MISSISSIPPI	64+19.04	64+19.04	EB	Waterborne/Solvent Paint		X								0.22								
CEDAR ST.	64+58.52	64+70.02	SB	Waterborne/Solvent Paint			X							0.12								
CEDAR ST.	64+60.19	64+80.19	BOTH	Waterborne/Solvent Paint		X										0.20						
CEDAR ST.	64+70.02	64+70.02	BOTH	Waterborne/Solvent Paint		X		0.38														
MISSISSIPPI	65+24.15	65+24.15	WB	Waterborne/Solvent Paint		X								0.22								
MISSISSIPPI	65+26.81	66+08.71	WB	Waterborne/Solvent Paint		X									0.82							
MISSISSIPPI	65+28.05	66+78.03	WB	Waterborne/Solvent Paint	X								3.70									
WALNUT ST.	68+17.39	68+29.68	SB	Waterborne/Solvent Paint			X							0.12								
WALNUT ST.	68+29.70	68+29.70	BOTH	Waterborne/Solvent Paint		X		0.45														
MISSISSIPPI	71+76.01	71+87.91	EB	Waterborne/Solvent Paint			X	0.53														
MISSISSIPPI	72+16.58	73+24.00	NB	Waterborne/Solvent Paint		X		1.07														

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.18

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25
DCY4: Double Centerline (Yellow) @ 2.00
NPY4: No Passing Zone Line (Yellow) @ 1.25
BLW4: Broken Lane Line (White) @ 0.25
ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 6.00
SLW4: Solid Lane Line (White) @ 1.00
CBW6: Crosswalk Bar (White) @ 15.00

Location									Length by Line Type (Unfactored)														Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	SLW2	SLW4	CBW6							
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
E 2ND ST.	83+72.18	85+41.39	BOTH	Waterborne/Solvent Paint		X				1.69													
E 2ND ST.	83+72.18	85+41.39	BOTH	Waterborne/Solvent Paint			X			1.69													
ORANGE ST.	85+46.24	85+74.24	BOTH	Waterborne/Solvent Paint		X										0.28							
ORANGE ST.	85+60.14	85+73.15	NB	Waterborne/Solvent Paint			X							0.13									
ORANGE ST.	85+60.14	85+60.14	BOTH	Waterborne/Solvent Paint		X		0.23															
E 2ND ST.	85+89.68	86+49.68	WB	Waterborne/Solvent Paint	X										0.60								
E 2ND ST.	86+98.29	86+98.29	BOTH	Waterborne/Solvent Paint	X		X									0.16							
E 2ND ST.	88+17.75	88+77.75	EB	Waterborne/Solvent Paint			X								0.60								
E 2ND ST.	88+79.33	88+79.33	EB	Waterborne/Solvent Paint			X							0.22									
E 2ND ST.	88+87.17	88+87.17	BOTH	Waterborne/Solvent Paint	X	X	X									0.40							
OAK ST.	89+10.68	89+30.68	BOTH	Waterborne/Solvent Paint		X								0.20									
OAK ST.	89+20.66	89+32.17	NB	Waterborne/Solvent Paint			X							0.12									
OAK ST.	89+20.66	89+20.66	BOTH	Waterborne/Solvent Paint		X		0.32															
OAK ST.	89+08.24	89+72.24	BOTH	Waterborne/Solvent Paint	X	X	X									0.64							
OAK ST.	89+13.95	89+26.95	SB	Waterborne/Solvent Paint	X									0.13									
OAK ST.	89+26.95	89+26.95	BOTH	Waterborne/Solvent Paint		X		0.90															
MISSISSIPPI	89+71.78	89+71.78	WB	Waterborne/Solvent Paint	X									0.31									
MISSISSIPPI	89+71.78	90+17.83	WB	Waterborne/Solvent Paint	X										0.46								
MISSISSIPPI	91+70.24	91+70.24	BOTH	Waterborne/Solvent Paint	X		X									0.16							
MISSISSIPPI	93+31.49	93+31.49	BOTH	Waterborne/Solvent Paint	X		X									0.16							
				Factored Total: Waterborne/Solvent Paint				1.59	-	4.23	-	-	17.88	14.88	6.92	33.00	-	-	-	-	-	-	
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							78.49												

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location															SCHOOL	XING	STOP AHEAD	ONLY	BIKE LANE	EXIT	Groove Cuts	Remarks
	Station	Side	STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	EACH	
HERSHEY AVE.	21+95.55	RT			1																				
HERSHEY AVE.	23+23.47	RT			1																				
HERSHEY AVE.	24+06.84	LT			1																				
HERSHEY AVE.	25+57.31	LT			1																				
MISSISSIPPI DR.	26+29.19	RT			1																				
MISSISSIPPI DR.	27+94.01	RT			1																				
MISSISSIPPI DR.	44+48.14	LT													1										
MISSISSIPPI DR.	47+78.67	LT													1										
MISSISSIPPI DR.	52+09.82	LT													1										
MISSISSIPPI DR.	52+96.24	LT	1																						
MISSISSIPPI DR.	52+96.24	RT	1		1																				
MISSISSIPPI DR.	56+60.86	RT	1			1																			
MISSISSIPPI DR.	58+07.17	LT	1			1																			
MISSISSIPPI DR.	59+61.96	LT													1										
MISSISSIPPI DR.	60+62.81	RT	1		1																				
MISSISSIPPI DR.	61+68.61	LT				1																			
MISSISSIPPI DR.	61+88.33	LT													1										
MISSISSIPPI DR.	63+97.07	RT	1		1																				
MISSISSIPPI DR.	65+45.99	LT	1			1																			
MISSISSIPPI DR.	65+47.25	LT													1										
E 2ND ST.	85+94.46	LT	1		1																				
E 2ND ST.	88+52.25	RT	1			1																			
E 2ND ST.	89+99.00	LT	1			1																			

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

MATERIALS FOR TYPE 'A' SIGNS

TYPE A SIGNING TYPICALS	SIGN NUMBER	DIR OF TRAVEL	SIGN LOCATION	PERFORATED SQUARE STEEL TUBE						Steel Rect. Tube			TYPE A SIGN MOUNTING BRACKETS						INSTALLATION			REMARKS
				LEG 1	LEG 2	LEG 3	ANCHOR			NO. OF POSTS	POST LENGTH	ANCHORS	ONE POST BRACKET	TWO POST	AUXILIARY	(H)	(F)	(F1)	TYPE	DIM 'X' FT	SEE SIGNING NOTES	
			STATION	FT	FT	FT	CONC	SOIL	SLIPBASE		FT	EACH										
KEEP RIGHT	R4-7	EB	21+47.15							1		1	1						3	4.8		HERSHEY AVE.
TYPE 1 OBJECT MARKER	OM1-2	EB	21+47.15																			HERSHEY AVE.
SPEED LIMIT 25 MPH	R2-1	WB	23+26.86							1		1	1						1	9		HERSHEY AVE.
NO PARKING	R8-3a	WB	23+26.86																			HERSHEY AVE.
KEEP RIGHT	R4-7	WB	23+31.06							1		1	1						3	0.6		HERSHEY AVE.
TYPE 1 OBJECT MARKER	OM1-2	WB	23+31.06																			HERSHEY AVE.
STOP	R1-1	SB	23+49.00							1		1	1						1	3.75		HERSHEY AVE.
STOP	R1-1	NB	23+81.08							1		1	1						1	3.75		HERSHEY AVE.
KEEP RIGHT	R4-7	EB	23+99.23							1		1	1						3	0.6		HERSHEY AVE.
TYPE 1 OBJECT MARKER	OM1-2	EB	23+99.23																			HERSHEY AVE.
SPEED LIMIT 25 MPH	R2-1	EB	24+11.88							1		1	1						1	12.6		HERSHEY AVE.
NO PARKING	R8-3a	EB	24+11.88																			HERSHEY AVE.
NO PARKING	R8-3a	WB	27+23.30							1		1	1						1	3.75		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	WB	27+77.76							1		1	1						1	3.75		MISSISSIPPI DR.
NO PARKING	R8-3a	WB	27+77.76																			MISSISSIPPI DR.
STOP	R1-1	SB	28+00.58							1		1	1						1	3.75		MISSISSIPPI DR.
NO U-TURN	R3-4	WB	28+01.58							1		1	1						3	0.6		MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	28+01.58																			MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	28+01.58																			MISSISSIPPI DR.
KEEP RIGHT	R4-7	EB	28+55.11							1		1	1						3	4		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	28+55.11																			MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	EB	28+59.47							1		1	1						1	3.75		MISSISSIPPI DR.
NO PARKING	R8-3a	EB	28+59.47																			MISSISSIPPI DR.
NO U-TURN	R3-4	WB	33+64.88							1		1	1						3	4		MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	33+64.88																			MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	33+64.88																			MISSISSIPPI DR.
KEEP RIGHT	R4-7	EB	34+04.38							1		1	1						3	4		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	34+04.38																			MISSISSIPPI DR.
NO PARKING	R8-3a	WB	35+01.20							1		1	1						1	3.75		MISSISSIPPI DR.
STOP	R1-1	SB	35+08.41							1		1	1						1	3.75		MISSISSIPPI DR.
ONE WAY RIGHT	R6-1R	SB	35+08.41																			MISSISSIPPI DR.
ONE WAY RIGHT	R6-1R	SB	35+15.72							1		1	1						3	3.75		MISSISSIPPI DR.
NO PARKING	R8-3a	EB	35+55.40							1		1	1						1	3.75		MISSISSIPPI DR.
NO PARKING	R8-3a	WB	43+28.75							1		1	1						1	3.75		MISSISSIPPI DR.
HANDICAPPED PARKING	R7-8	NB	44+54.12							1		1	1						1	3.75		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	WB	46+09.97							1		1	1						1	3.75		MISSISSIPPI DR.
STOP	R1-1	SB	46+19.32							1		1	1						1	3.75		MISSISSIPPI DR.
ONE WAY RIGHT	R6-1R	SB	46+19.32																			MISSISSIPPI DR.
ONE WAY RIGHT	R6-1R	SB	46+40.69							1		1	1						3	3.75		MISSISSIPPI DR.
HANDICAPPED PARKING	R7-8	NB	47+84.65							1		1	1						1	3.75		MISSISSIPPI DR.
NO U-TURN	R3-4	WB	49+57.75							1		1	1						3	4		MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	49+57.75																			MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	49+57.75																			MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	WB	49+60.30							1		1	1						1	3.75		MISSISSIPPI DR.
STOP	R1-1	SB	49+82.92							1		1	1						1	5		PINE ST.
KEEP RIGHT	R4-7	EB	50+37.93							1		1	1						1	7		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	50+37.93							1		1	1						1	7		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	EB	50+83.54																1	3.75	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
NO PARKING	R8-3a	EB	50+83.54																1	3.75	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
HANDICAP PARKING	R7-8	WB	52+15.65							1		1	1						1	1.4		MISSISSIPPI DR.
BACK IN PARKING	BIP	WB	52+35.95																1	6	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
LEFT LANE MUST TURN LEFT	R3-7	EB	52+41.92							1		1	1						1	3.75		MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	53+00.69																			
TYPE 1 OBJECT MARKER	OM1-2	WB	53+00.69																			
STOP	R1-1	SB	53+32.88							1		1	1						1	2		CHESTNUT ST.
DO NOT ENTER	R5-1	SB	53+86.37							1		1	1						1	2.4		MERRILL HOTEL EXIT
KEEP RIGHT	R4-7	EB	53+77.39							1		1	1						1	8.8		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	53+77.39							1		1	1						1	8.8		MISSISSIPPI DR.
PEDESTRIAN	W11-2	EB	53+79.44							1		1	1						1	2		MISSISSIPPI DR.
DIAGONAL DOWNWARD AROW	W16-7P	EB	53+79.44							1		1	1						1	2		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	EB	53+97.57																1	3.75	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
NO PARKING	R8-3a	EB	53+97.57																1	3.75	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
PEDESTRIAN	W11-2	WB	53+98.27							1		1	1						1	2		MISSISSIPPI DR.
DIAGONAL DOWNWARD AROW	W16-7P	WB	53+98.27							1		1	1						1	2		MISSISSIPPI DR.
LEFT LANE MUST TURN LEFT	R3-7	EB	55+93.56							1		1	1						1	3.6		MISSISSIPPI DR.
BUSINESS	M4-3	WB	56+02.52							1		1	1						1	3.5		MISSISSIPPI DR.
US HIGHWAY 61	M1-4	WB	56+02.52							1		1	1						1	3.5		MISSISSIPPI DR.
WEST	M3-4m	WB	56+02.52							1		1	1						1	3.5		MISSISSIPPI DR.
STATE HIGHWAY 92	M1-5	WB	56+02.52							1		1	1						1	3.5		MISSISSIPPI DR.
ONE WAY RIGHT	R6-1R	WB	56+26.44							1		1	1						1	1.7		MISSISSIPPI DR.
DO NOT ENTER	R5-1	EB	56+42.49							1		1	1						1	3.75		MERRILL HOTEL
DOUBLE ARROW	W12-1	WB	56+84.29							1		1	1						1	3.5		MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	57+03.98							1		1	1						1	3.75		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	57+03.98							1		1	1						1	3.75		MISSISSIPPI DR.
KEEP RIGHT	R4-7	EB	57+64.25							1		1	1						1	3.3		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	57+64.25							1		1	1						1	3.3		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	EB	57+76.78																1	8	FASTEN TO LIGHT POLE	MISSISSIPPI DR.

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.20

MATERIALS FOR TYPE 'A' SIGNS

TYPE A SIGNING TYPICALS	SIGN NUMBER	DIR OF TRAVEL	SIGN LOCATION	PERFORATED SQUARE STEEL TUBE						Steel Rect. Tube			TYPE A SIGN MOUNTING BRACKETS						INSTALLATION			REMARKS
							ANCHOR			NO. OF POSTS	POST LENGTH	ANCHORS	ONE POST BRACKET	TWO POST	AUXILIARY	(H)	(F)	(F1)	TYPE	DIM 'X' FT	SEE SIGNING NOTES	
			STATION	LEG 1 FT	LEG 2 FT	LEG 3 FT	CONC	SOIL	SLIPBASE		FT	EACH										
NO PARKING	R8-3a	EB	57+76.78																1	8	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
HANDICAP PARKING	R7-8	WB	58+15.80							1		1	1						1	0.75		MISSISSIPPI DR.
LEFT LANE MUST TURN LEFT	R3-7	WB	58+53.56							1		1	1						1	3.75		MISSISSIPPI DR.
BACK IN PARKING	BIP	WB	58+56.26							1		1	1						1	0.4		MISSISSIPPI DR.
ONE WAY RIGHT	R6-1R	WB	59+28.07							1		1	1						1	4		MISSISSIPPI DR.
DO NOT ENTER	R5-1	WB	59+52.89							1		1	1						1	4.7		MISSISSIPPI DR.
BACK IN PARKING	BIP	WB	60+21.12																1	3.5		MISSISSIPPI DR.
LEFT LANE MUST TURN LEFT	R3-7	EB	60+24.37							1		1	1						1	4.7		MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	60+69.04							1		1	1						1	4.3		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	60+69.04							1		1	1						1	4.3		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	WB	60+84.34							1		1	1						1	15		MISSISSIPPI DR.
NO PARKING	R8-3a	WB	60+84.34							1		1	1						1	15		MISSISSIPPI DR.
STOP	R1-1	SB	60+94.90							1		1	1						1	5		SYCAMORE ST.
PEDESTRIAN	W11-2	EB	61+28.15							1		1	1						1	2		MISSISSIPPI DR.
DIAGONAL DOWNWARD AROW	W16-7P	EB	61+28.15							1		1	1						1	2		MISSISSIPPI DR.
KEEP RIGHT	R4-7	EB	61+33.45							1		1	1						1	9		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	61+33.45							1		1	1						1	9		MISSISSIPPI DR.
PEDESTRIAN	W11-2	WB	61+53.41							1		1	1						1	2		MISSISSIPPI DR.
DIAGONAL DOWNWARD AROW	W16-7P	WB	61+53.41							1		1	1						1	2		MISSISSIPPI DR.
HANDICAP PARKING	R7-8	WB	61+93.76							1		1	1						1	0.58		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	EB	62+14.12																1	3.7	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
NO PARKING	R8-3a	EB	62+14.12																1	3.7	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
BACK IN PARKING	BIP	EB	62+21.76																1	3.5	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
EAST	M3-2m	EB	62+43.75							1		1	1						1	3.9		MISSISSIPPI DR.
STATE HIGHWAY 92	M1-5	EB	62+43.75							1		1	1						1	3.9		MISSISSIPPI DR.
BUSINESS	M4-3	EB	63+23.83																1	4	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
US HIGHWAY 61	M1-4	EB	63+23.83																1	4	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
STATE HIGHWAY 92	M1-5	EB	63+23.83																1	4	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
BACK IN PARKING	BIP	WB	63+26.76																1	3.5	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
LEFT LANE MUST TURN LEFT	R3-7	EB	63+56.50							1		1	1						1	3.6		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	WB	64+34.19							1		1	1						1	9.5		MISSISSIPPI DR.
NO PARKING	R8-3a	WB	64+34.19							1		1	1						1	9.5		MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	64+39.97							1		1	1						1	3.7		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	64+39.97							1		1	1						1	3.7		MISSISSIPPI DR.
KEEP RIGHT	R4-7	EB	65+00.24							1		1	1						1	3.8		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	65+00.24							1		1	1						1	3.8		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	EB	65+15.65																1	8.3	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
NO PARKING	R8-3a	EB	65+15.65																1	8.3	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
HANDICAP PARKING	R7-8	WB	65+52.44							1		1	1						1	1.17		MISSISSIPPI DR.
LEFT LANE MUST TURN LEFT	R3-7	WB	65+78.35							1		1	1						1	3.8		MISSISSIPPI DR.
BACK IN PARKING	BIP	WB	66+03.10																1	3.5	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
BUSINESS	M4-3	EB	66+79.85							1		1	1						1	4		MISSISSIPPI DR.
US HIGHWAY 61	M1-4	EB	66+79.85							1		1	1						1	4		MISSISSIPPI DR.
EAST	M3-2m	EB	66+79.85							1		1	1						1	4		MISSISSIPPI DR.
STATE HIGHWAY 92	M1-5	EB	66+79.85							1		1	1						1	4		MISSISSIPPI DR.
BUSINESS	M4-3	WB	67+37.40							1		1	1						1	7		MISSISSIPPI DR.
US HIGHWAY 61	M1-4	WB	67+37.40							1		1	1						1	7		MISSISSIPPI DR.
STATE HIGHWAY 92	M1-5	WB	67+37.40							1		1	1						1	7		MISSISSIPPI DR.
STRAIGHT ARROW	M6-3	WB	67+37.40							1		1	1						1	7		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	WB	67+92.23																1	7	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
NO PARKING	R8-3a	WB	67+92.23																1	7	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	67+95.26							1		1	1						1	7.8		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	67+95.26							1		1	1						1	7.8		MISSISSIPPI DR.
STOP	R1-1	SB	68+11.66							1		1	1						1	3.7		WALNUT ST.
KEEP RIGHT	R4-7	EB	68+76.09							1		1	1						1	7		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	EB	68+76.09							1		1	1						1	7		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	EB	68+82.04																1	3.75	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
NO PARKING	R8-3a	EB	68+82.04																1	3.75	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
TWO WAY TRAFFIC	W6-3	EB	70+02.81																1	3.7	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
KEEP RIGHT	R4-7	WB	70+42.24							1		1	1						1	3.9		MISSISSIPPI DR.
TYPE 1 OBJECT MARKER	OM1-2	WB	70+42.24							1		1	1						1	3.9		MISSISSIPPI DR.
SPEED LIMIT 25 MPH	R2-1	WB	70+60.18																1	5.25	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
NO PARKING	R8-3a	WB	70+60.18																1	5.25	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
DIVIDED HIGHWAY	W6-1	WB	71+02.14							1		1	1						1	2.25		MISSISSIPPI DR.
BUSINESS	M4-3	EB	71+11.80																1	3.8	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
US HIGHWAY 61	M1-4	EB	71+11.80																1	3.8	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
LEFT TURN	W1-1L	EB	71+11.80																1	3.8	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
SPEED LIMIT 15 MPH	W13-1	EB	71+11.80																1	3.8	FASTEN TO LIGHT POLE	MISSISSIPPI DR.
RIGHT WARNING ARROW	W1-6R	SB	71+66.66							1		1	1						1	2.6		MISSISSIPPI DR.
BUSINESS	M4-3	EB	71+90.08							1		1	1						1	3.5		MISSISSIPPI DR.
US HIGHWAY 61	M1-4	EB	71+90.08							1		1	1						1	3.5		MISSISSIPPI DR.
LEFT WARNING ARROW	W1-6L	EB	71+90.08							1		1	1						1	3.5		MISSISSIPPI DR.
BUSINESS	M4-3	NB	72+85.33							1		1	1						1	4		MISSISSIPPI DR.
US HIGHWAY 61	M1-4	NB	72+85.33							1		1	1						1	4		MISSISSIPPI DR.
ADVANCE TURN ARROW RIGHT	M5-1R	NB	72+85.33							1		1	1						1	4		MISSISSIPPI DR.
BUSINESS	M4-3	SB	72+86.84							1		1	1						1	4		MISSISSIPPI DR.

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.21

MATERIALS FOR TYPE 'A' SIGNS

TYPE A SIGNING TYPICALS	SIGN NUMBER	DIR OF TRAVEL	SIGN LOCATION	PERFORATED SQUARE STEEL TUBE						Steel Rect. Tube			TYPE A SIGN MOUNTING BRACKETS						INSTALLATION			REMARKS
			STATION	LEG 1	LEG 2	LEG 3	ANCHOR			NO. OF POSTS	POST LENGTH	ANCHORS	ONE POST BRACKET	TWO POST	AUXILIARY	H	F	F1	TYPE	DIM 'X' FT	SEE SIGNING NOTES	
				FT	FT	FT	CONC	SOIL	SLIPBASE		FT	EACH										
US HIGHWAY 61	M1-4	SB	72+86.84							1		1	1						1	4		MISSISSIPPI DR.
SPEED LIMIT 15 MPH	W13-1	SB	72+72.63																1	3	FASTEN TO LIGHT POLE	MULBERRY AVE
RIGHT TURN	W1-1R	SB	72+72.63																1	3	FASTEN TO LIGHT POLE	MULBERRY AVE
LEFT LANE ENDS	W9-1L	EB	84+00.34							1		1	1						1	1.5		E 2ND ST.
LANE ENDS (LEFT)	W4-2L	EB	85+15.32																1	2.5	FASTEN TO LIGHT POLE	E 2ND ST.
DIVIDED HIGHWAY	W6-1	EB	85+15.32																1	2.5	FASTEN TO LIGHT POLE	E 2ND ST.
STOP	R1-1	NB	85+75.19							1		1	1						1	2		ORANGE ST.
KEEP RIGHT	R4-7	EB	86+04.99							1		1	1						1	2.7		E 2ND ST.
TYPE 1 OBJECT MARKER	OM1-2	EB	86+04.99							1		1	1						1	2.7		E 2ND ST.
LEFT LANE MUST TURN LEFT	R3-7	WB	86+45.62							1		1	1						1	3.6		E 2ND ST.
PEDESTRIAN	W11-2	EB	86+89.27							1		1	1						1	2		E 2ND ST.
DIAGONAL DOWNWARD ARROW	W16-7P	EB	86+89.27							1		1	1						1	2		E 2ND ST.
PEDESTRIAN	W11-2	WB	87+08.03							1		1	1						1	2		E 2ND ST.
DIAGONAL DOWNWARD ARROW	W16-7P	WB	87+08.03							1		1	1						1	2		E 2ND ST.
TWO WAY TRAFFIC	W6-3	WB	87+64.04							1		1	1						1	2.4		E 2ND ST.
SPEED LIMIT 25 MPH	R2-1	WB	88+22.35																1	2.7	FASTEN TO LIGHT POLE	E 2ND ST.
NO PARKING	R8-3a	WB	88+22.35																1	2.7	FASTEN TO LIGHT POLE	E 2ND ST.
LEFT LANE MUST TURN LEFT	R3-7	EB	88+26.24							1		1	1						1	4.6		E 2ND ST.
KEEP RIGHT	R4-7	WB	88+76.84							1		1	1						1	5.5		E 2ND ST.
TYPE 1 OBJECT MARKER	OM1-2	WB	88+76.84							1		1	1						1	5.5		E 2ND ST.
SPEED LIMIT 25 MPH	R2-1	EB	89+68.47							1		1	1						1	1.75		E 2ND ST.
NO PARKING	R8-3a	EB	89+68.47							1		1	1						1	1.75		E 2ND ST.
KEEP RIGHT	R4-7	EB	89+71.07							1		1	1						1	2.6		E 2ND ST.
TYPE 1 OBJECT MARKER	OM1-2	EB	89+71.07							1		1	1						1	2.6		E 2ND ST.
LEFT LANE MUST TURN LEFT	R3-7	WB	90+13.16							1		1	1						1	3.8		E 2ND ST.
PEDESTRIAN	W11-2	EB	91+60.09							1		1	1						1	2		E 2ND ST.
DIAGONAL DOWNWARD ARROW	W16-7P	EB	91+60.09							1		1	1						1	2		E 2ND ST.
PEDESTRIAN	W11-2	WB	91+79.01							1		1	1						1	2		E 2ND ST.
DIAGONAL DOWNWARD ARROW	W16-7P	WB	91+79.01							1		1	1						1	2		E 2ND ST.
KEEP RIGHT	R4-7	WB	92+52.39							1		1	1						1	4		E 2ND ST.
TYPE 1 OBJECT MARKER	OM1-2	WB	92+52.39							1		1	1						1	4		E 2ND ST.
KEEP RIGHT	R4-7	EB	92+94.22							1		1	1						1	4		E 2ND ST.
TYPE 1 OBJECT MARKER	OM1-2	EB	92+94.22							1		1	1						1	4		E 2ND ST.
PEDESTRIAN	W11-2	EB	93+20.44							1		1	1						1	2		E 2ND ST.
DIAGONAL DOWNWARD ARROW	W16-7P	EB	93+20.44							1		1	1						1	2		E 2ND ST.
PEDESTRIAN	W11-2	WB	93+39.36							1		1	1						1	2		E 2ND ST.
DIAGONAL DOWNWARD ARROW	W16-7P	WB	93+39.36							1		1	1						1	2		E 2ND ST.
TWO WAY TRAFFIC	W6-3	EB	94+03.24							1		1	1						1	2.6		E 2ND ST.
KEEP RIGHT	R4-7	WB	94+41.61							1		1	1						1	10		E 2ND ST.
TYPE 1 OBJECT MARKER	OM1-2	WB	94+41.61							1		1	1						1	10		E 2ND ST.
DIVIDED HIGHWAY	W6-1	WB	95+40.44							1		1	1						1	3		E 2ND ST.
LANE ENDS (LEFT)	W4-2L	WB	95+76.29							1		1	1						1	5.8		E 2ND ST.
LEFT LANE ENDS	W9-1L	WB	96+45.30												1				1	5	MOUNT TO BRIDGE RAIL	E 2ND ST.

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.22

STORM SEWER PIPE TABLE

FROM STRUCTURE	TO STRUCTURE	PIPE DIA. (IN)	LENGTH	SLOPE	START INVERT	END INVERT
	6	4"	14.2'	1.0%	554.44'	554.30'
	32	15" RCP	32.5'	1.0%	550.94'	550.61'
	35	15" RCP	17.2'	1.5%	550.76'	550.50'
	101	15" RCP	23.1'	1.0%	546.27'	546.04'
	88	15" RCP	17.7'	3.9%	549.64'	548.94'
	54	24" RCP	130.3'	4.0%	558.00'	552.79'
1	2	15" RCP	19.1'	1.0%	551.09'	550.90'
3	E1	15" RCP	14.9'	1.0%	553.96'	553.81'
6	5	12" RCP	20.7'	1.0%	553.45'	553.25'
8	E5	15" RCP	22.4'	1.0%	560.40'	560.18'
9	9a	24" RCP	31.6'	20.0%	558.01'	551.70'
10	11	15" RCP	36.3'	1.0%	564.00'	563.64'
11	13	15" RCP	106.3'	1.0%	563.14'	562.11'
12	13	15" RCP	36.3'	1.0%	562.77'	562.41'
13	15	15" RCP	108.2'	1.5%	561.91'	560.34'
14	15	15" RCP	35.3'	0.8%	560.62'	560.34'
15	17	24" RCP	93.9'	1.0%	558.34'	557.37'
16	17	15" RCP	38.1'	4.5%	559.64'	557.92'
17	19	24" RCP	106.5'	1.7%	557.17'	555.33'
18	19	15" RCP	38.2'	4.5%	557.50'	555.78'
19	21	24" RCP	100.6'	2.0%	555.03'	553.06'
20	21	15" RCP	38.3'	4.5%	555.33'	553.61'
21	25	24" RCP	86.4'	1.8%	552.86'	551.31'
22	27	15" RCP	37.2'	3.0%	554.26'	553.14'
23	24	15" RCP	37.9'	2.8%	555.17'	554.10'
24	25	15" RCP	38.2'	4.5%	553.58'	551.86'
25	26	24" RCP	24.9'	0.5%	551.11'	550.99'
27	28	15" RCP	40.1'	2.7%	552.94'	551.84'
28	26	15" RCP	45.5'	2.5%	551.64'	550.49'
29	30	15" RCP	38.2'	1.1%	551.67'	551.24'
30	33	15" RCP	68.0'	1.5%	550.74'	549.72'
32	33	15" RCP	38.2'	1.0%	550.41'	550.02'
33	37	15" RCP	51.3'	1.3%	549.52'	548.83'
35	36	15" RCP	18.0'	1.1%	550.00'	549.81'
36	37	18" RCP	38.2'	1.1%	549.00'	548.58'
37		24" RCP	73.6'	2.3%	548.08'	546.42'
41	42	18" RCP	39.0'	0.5%	550.10'	549.91'
42	43	36" RCP	38.4'	0.5%	545.85'	545.66'
43		36" RCP	17.8'	1.0%	545.56'	545.38'
44	41	18" RCP	44.6'	0.5%	550.42'	550.20'
45	44	15" RCP	25.0'	0.5%	550.75'	550.62'
46	44	15" RCP	14.7'	4.0%	551.78'	551.19'
47	43	18" RCP	40.1'	0.5%	545.86'	545.66'
48	47	15" RCP	18.9'	1.0%	546.15'	545.96'
49	47	18" RCP	41.7'	0.5%	546.17'	545.96'
50	49	15" RCP	31.6'	1.0%	546.59'	546.27'
51		36" RCP	13.1'	0.8%	546.97'	546.86'
52	51	24" RCP	67.0'	1.0%	547.74'	547.07'
53	52	15" RCP	18.1'	1.0%	550.00'	549.82'
54	52	24" RCP	43.2'	1.0%	550.00'	549.57'

STORM SEWER PIPE TABLE

FROM STRUCTURE	TO STRUCTURE	PIPE DIA. (IN)	LENGTH	SLOPE	START INVERT	END INVERT
55	54	15" RCP	25.0'	1.0%	552.00'	551.75'
56	54	15" RCP	23.0'	0.5%	550.32'	550.20'
57	61	18" RCP	59.0'	0.5%	545.35'	545.06'
58	57	15" RCP	26.7'	1.0%	545.71'	545.45'
59	57	15" RCP	58.8'	0.5%	545.74'	545.45'
60	59	15" RCP	6.0'	1.0%	545.90'	545.84'
61		36" RCP	11.9'	0.5%	544.96'	544.90'
62	61	24" RCP	48.7'	0.5%	545.30'	545.06'
63	62	18" RCP	70.3'	1.0%	546.10'	545.40'
64	63	18" RCP	56.5'	4.0%	549.60'	547.34'
65	E8	18" RCP	22.9'	0.5%	543.31'	543.20'
66	65	18" RCP	35.0'	0.5%	543.58'	543.41'
67	66	18" RCP	47.7'	0.5%	543.92'	543.68'
68	67	15" RCP	9.3'	1.0%	544.11'	544.02'
69	66	15" RCP	33.6'	1.0%	546.55'	546.21'
70	E8	15" RCP	13.3'	1.0%	548.63'	548.50'
71	E9	24" RCP	22.0'	0.5%	545.37'	545.26'
72	71	15" RCP	30.0'	2.0%	547.34'	546.74'
73	72	15" RCP	28.1'	2.0%	548.00'	547.44'
74	71	15" RCP	19.0'	0.5%	548.70'	548.61'
75	71	24" RCP	38.0'	1.0%	545.84'	545.47'
76	75	18" RCP	45.0'	0.5%	546.17'	545.94'
77	75	18" RCP	31.5'	0.5%	545.92'	545.76'
78	77	18" RCP	110.0'	0.5%	546.57'	546.02'
79	78	18" RCP	56.1'	0.5%	546.95'	546.67'
80	78	18" RCP	136.7'	0.5%	547.35'	546.67'
81	80	15" RCP	42.4'	1.0%	547.87'	547.45'
82	81	15" RCP	26.0'	1.0%	548.23'	547.97'
84	83	18" RCP	23.1'	0.5%	545.62'	545.50'
85	84	15" RCP	40.3'	0.5%	545.92'	545.72'
86	83	18" RCP	69.7'	0.5%	545.83'	545.50'
87	86	18" RCP	39.7'	0.5%	546.13'	545.93'
88	87	18" RCP	30.2'	0.5%	546.37'	546.23'
89	88	18" RCP	26.0'	0.4%	546.57'	546.47'
90	89	15" RCP	26.0'	1.0%	546.93'	546.67'
91	92	18" RCP	59.7'	0.5%	545.78'	545.48'
92	93	15" RCP	53.4'	0.5%	545.38'	545.11'
93		18" RCP	63.9'	0.5%	545.01'	544.69'
94	93	18" RCP	52.2'	4.9%	547.68'	545.11'
95	94	15" RCP	24.4'	0.5%	547.90'	547.78'
96	94	18" RCP	68.4'	1.5%	549.88'	548.86'
98	97	24" RCP	49.2'	1.0%	540.47'	539.98'
99	98	24" RCP	182.9'	0.7%	541.94'	540.57'
100	99	24" RCP	82.2'	0.8%	542.70'	542.04'
101	100	15" RCP	43.2'	1.0%	545.43'	545.00'
102	100	24" RCP	45.5'	0.5%	543.01'	542.80'
103	99	15" RCP	45.0'	1.0%	542.49'	542.04'
104		48" RCP	6.1'	0.6%	539.54'	539.50'
105	104	15" RCP	8.1'	0.4%	543.43'	543.40'
106	104	15" RCP	20.8'	0.5%	542.25'	542.15'

STORM SEWER PIPE TABLE

FROM STRUCTURE	TO STRUCTURE	PIPE DIA. (IN)	LENGTH	SLOPE	START INVERT	END INVERT
107	E13	18" RCP	24.5'	1.0%	544.13'	543.88'
108	E13	18" RCP	47.6'	1.0%	544.03'	543.55'
109	97	48" RCP	227.9'	0.5%	541.10'	539.96'
110	109	48" RCP	39.2'	0.5%	541.40'	541.20'
111	109	18" RCP	95.9'	0.5%	544.19'	543.71'
112	111	15" RCP	19.4'	1.0%	544.48'	544.29'
113	111	15" RCP	29.4'	1.0%	544.58'	544.29'
114	111	18" RCP	192.4'	0.5%	545.25'	544.29'
115	114	15" RCP	18.5'	1.0%	545.54'	545.35'
116	114	15" RCP	26.5'	1.0%	545.61'	545.35'
E6	9	24" RCP	41.4'	10.0%	564.15'	560.01'
E7	60	15" RCP	60.5'	1.0%	550.50'	549.90'
E10	82	12" RCP	52.4'	4.0%	551.78'	549.69'
E12	102	24" RCP	67.8'	0.8%	546.50'	545.93'
E14	108	15" RCP	24.5'	11.1%	546.85'	544.13'

SANITARY SEWER STRUCTURE TABLE

Structure Name	STATION	OFFSET	TYPE	RIM/FG	FL INFO
A	44+16.74	0.00'	SW-301 N 60	562.62'	FL: 551.20 (Out) NE
D	45+66.74	0.00'	SW-301 N 60	559.20'	FL: 549.70 (In) SW FL: 549.50 (Out) NE
E	47+16.74	0.00'	SW-301 N 60	557.44'	FL: 547.93 (In) SW FL: 547.73 (Out) NE
G	48+66.74	0.00'	SW-301 N 60	556.69'	FL: 546.23 (In) SW FL: 546.03 (Out) NE
I	50+20.12	4.99' R	SW-301 N 60	556.00'	FL: 542.50 (In) SW FL: 542.40 (Out) NE FL: 550.12 (In) NW
J	53+46.36	2.87' R	SW-301 N 60	556.46'	FL: 541.10 (In) SW FL: 541.00 (Out) NE FL: 547.00 (In) NW
K	57+21.36	0.68' R	SW-301 N 60	554.61'	FL: 537.50 (In) SW FL: 536.88 (Out) NE FL: 541.87 (In) NW
L	61+49.45	1.06' R	SW-301 N 72	552.73'	FL: 537.01 (Out) SW FL: 537.76 (In) NE
M	64+60.15	0.00'	SW-301 N 60	554.66'	FL: 539.10 (In) NE FL: 539.00 (Out) SW FL: 542.50 (In) NW
N	68+13.67	10.58' R	SW-301 N 60	551.63'	FL: 540.61 (In) NE FL: 540.51 (Out) SW FL: 544.11 (In) NW
O	71+52.69	19.53' R	SW-301 N 60	552.18'	FL: 542.10 (In) N FL: 542.00 (Out) SW
P	72+06.47	0.00'	SW-301 N 60	553.42'	FL: 542.35 (Out) S FL: 542.45 (In) NW
Q	73+20.56	-10.69' L	SW-301 N 60	555.16'	FL: 545.49 (Out) SE FL: 545.59 (In) NW
R	53+58.58	-189.24' L	SW-301 N 60	563.21'	FL: 555.82 (Out) SE FL: 555.92 (In) NW
S	84+82.11	19.94' R	SW-301 N 60	552.27'	FL: 543.03 (Out) NE FL: 543.13 (In) SW
T	85+50.65	11.79' R	SW-301 N 60	550.87'	FL: 540.72 (In) SW FL: 540.10 (In) NE FL: 540.02 (Out) SE
U	88+74.30	12.13' R	SW-301 N 60	548.80'	FL: 541.72 (Out) SW
V	89+04.07	10.81' R	SW-301 N 60	548.75'	FL: 538.04 (In) NW FL: 537.94 (Out) SE

SANITARY SEWER PIPE TABLE

FROM STRUCTURE	TO STRUCTURE	PIPE DIA. (IN)	LENGTH	SLOPE	START INVERT	END INVERT
	S	8" RCP	190.8'	3.5%	549.75'	543.13'
	V	12" RCP	56.5'	0.4%	538.25'	538.04'
		8" RCP	127.2'	6.5%	563.43'	555.20'
	I	8" RCP	78.5'	6.5%	555.20'	550.12'
	N	12" RCP	83.8'	4.3%	547.73'	544.11'
	M	12" RCP	84.4'	4.0%	545.88'	542.50'
	K	18" RCP	129.0'	6.0%	549.61'	541.87'
A	B	8" RCP	9.3'	1.1%	551.20'	551.10'
B	C	8" RCP	43.7'	1.0%	551.10'	550.67'
C	D	8" RCP	97.0'	1.0%	550.67'	549.70'
D	E	8" RCP	150.0'	1.0%	549.50'	547.93'
E	F	8" RCP	112.0'	1.0%	547.73'	546.61'
EA	B	6" RCP	49.8'	1.0%	551.60'	551.10'
EB	C	6" RCP	50.2'	1.0%	551.17'	550.67'
EC	F	6" RCP	51.6'	1.0%	547.13'	546.61'
ED	H	6" RCP	51.4'	2.5%	545.99'	544.73'
EX SSWR MH 2		12" RCP	17.6'	0.3%	537.60'	537.55'
F	G	8" RCP	38.0'	1.0%	546.61'	546.23'
G	H	8" RCP	56.5'	2.3%	546.03'	544.73'
H	I	8" RCP	96.9'	2.3%	544.73'	542.50'
I	J	12" RCP	326.1'	0.4%	542.40'	541.10'
J	K	12" RCP	375.0'	0.9%	541.00'	537.50'
K	EX SSWR MH 1	12" RCP	370.9'	0.1%	536.88'	536.36'
M	L	12" RCP	310.7'	0.4%	539.00'	537.76'
N	M	12" RCP	353.3'	0.4%	540.51'	539.10'
O	N	12" RCP	346.6'	0.4%	542.00'	540.61'
P	O	12" RCP	62.5'	0.4%	542.35'	542.10'
Q	P	12" RCP	113.5'	2.7%	545.49'	542.45'
R	J	12" RCP	192.5'	4.6%	555.82'	547.00'
S	T	8" RCP	69.0'	3.3%	543.03'	540.72'
T		18" RCP	55.5'	0.2%	540.02'	539.93'
U	T	12" RCP	323.7'	0.5%	541.72'	540.10'
V	EX SSWR MH 2	12" RCP	68.9'	0.4%	537.94'	537.70'

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.23

STORM SEWER STRUCTURE TABLE

Structure Name	STATION	OFFSET	TYPE	RIM/FG	FL INFO
1	21+09.01	21.60' R	SW-501 N	556.07'	FL: 551.09 (Out) N
2	21+09.06	2.55' R	SW-401 N 60	555.97'	FL: 550.90 (In) S FL: 547.92 (Out) W FL: 547.92 (In) E
3	23+78.10	-34.99' L	SW-501 N	557.87'	FL: 553.96 (Out) W
4	25+96.44	-1.49' L	SW-501 N	555.48'	FL: 551.38 (Out) S FL: 551.38 (In) N
5	28+24.39	-28.34' L	SW-401 N 60	557.08'	FL: 553.25 (In) NE FL: 553.25 (Out) S
6	28+44.76	-24.60' L	SW-501 N	558.01'	FL: 553.45 (Out) SW FL: 554.30 (In) NW
7	31+80.72	-31.00' L	SW-501 N	562.32'	FL: 557.96 (Out) S
8	35+17.05	18.93' R	SW-501 N	565.91'	FL: 560.40 (Out) NW
9	37+67.98	15.75' R	SW-503 N	567.69'	FL: 560.01 (In) NW FL: 558.01 (Out) SE
9a	37+67.68	47.30' R	SW-511 N	555.79'	FL: 550.67 (Out) SE FL: 551.70 (In) NW
10	40+08.05	-20.50' L	SW-501 N	568.15'	FL: 564.00 (Out) SE
11	40+07.88	15.75' R	SW-501 N	567.93'	FL: 563.64 (In) NW FL: 563.14 (Out) NE
12	41+14.20	-20.50' L	SW-501 N	567.18'	FL: 562.77 (Out) SE
13	41+14.22	15.75' R	SW-501 N	566.96'	FL: 562.41 (In) NW FL: 562.11 (In) SW FL: 561.91 (Out) NE
14	42+22.58	-20.50' L	SW-501 N	566.20'	FL: 560.62 (Out) SE
15	42+22.40	15.75' R	SW-503 N	565.97'	FL: 560.34 (In) SW FL: 560.34 (In) NW FL: 558.34 (Out) NE
17	43+16.25	18.38' R	SW-503 N	564.58'	FL: 557.37 (In) SW FL: 557.17 (Out) NE FL: 557.92 (In) NW
18	44+22.94	-19.50' L	SW-501 N	562.65'	FL: 557.50 (Out) SE
19	44+22.94	18.75' R	SW-503 N	562.18'	FL: 555.33 (In) SW FL: 555.78 (In) NW FL: 555.03 (Out) NE
20	45+23.25	-19.50' L	SW-501 N	559.72'	FL: 555.33 (Out) SE
21	45+23.58	18.75' R	SW-503 N	559.76'	FL: 553.06 (In) SW FL: 552.86 (Out) NE FL: 553.61 (In) NW
22	46+63.56	-58.59' L	SW-501 N	559.97'	FL: 554.26 (Out) SE
23	46+20.47	-55.96' L	SW-501 N	560.08'	FL: 555.17 (Out) S
24	46+09.97	-19.50' L	SW-501 N	558.25'	FL: 553.58 (Out) SE FL: 554.10 (In) N
25	46+09.97	18.75' R	SW-503 N	557.83'	FL: 551.31 (In) SW FL: 551.86 (In) NW FL: 551.11 (Out) E
26	46+22.54	40.22' R	SW-401 N 60	555.57'	FL: 550.99 (In) W FL: 550.49 (In) NE
27	46+62.67	-21.40' L	SW-501 N	558.04'	FL: 552.94 (Out) SE FL: 553.14 (In) NW
28	46+62.67	18.75' R	SW-501 N	557.23'	FL: 551.84 (In) NW FL: 551.64 (Out) SW
29	47+70.42	-19.50' L	SW-501 N	556.64'	FL: 551.67 (Out) SE

STORM SEWER STRUCTURE TABLE

Structure Name	STATION	OFFSET	TYPE	RIM/FG	FL INFO
30	47+70.42	18.75' R	SW-501 N	556.68'	FL: 551.24 (In) NW FL: 550.74 (Out) NE
32	48+38.38	-19.50' L	SW-501 N	556.29'	FL: 550.41 (Out) SE FL: 550.61 (In) NW
33	48+38.38	18.75' R	SW-501 N	556.34'	FL: 550.02 (In) NW FL: 549.52 (Out) NE FL: 549.72 (In) SW
35	48+89.72	-37.50' L	SW-501 N	557.14'	FL: 550.50 (In) W FL: 550.00 (Out) SE
36	48+89.72	-19.50' L	SW-501 N	556.03'	FL: 549.81 (In) NW FL: 549.00 (Out) SE
37	48+89.72	18.75' R	SW-503 N	556.09'	FL: 548.83 (In) SW FL: 548.08 (Out) NE FL: 548.58 (In) NW
41	49+63.33	-13.14' L	SW-505 N	555.54'	FL: 550.20 (In) N FL: 550.10 (Out) SE
42	49+63.33	25.87' R	SW-506 N	555.39'	FL: 549.91 (In) NW FL: 545.85 (Out) NE
43	49+99.80	30.06' R	SW-401 N 60	555.84'	FL: 545.66 (In) SW FL: 545.66 (In) NE FL: 545.56 (Out) SE
44	49+87.18	-52.28' L	SW-505 N	557.13'	FL: 551.19 (In) N FL: 550.42 (Out) S FL: 550.62 (In) NE
45	50+13.18	-52.19' L	SW-505 N	557.13'	FL: 550.75 (Out) SW
46	49+92.14	-67.92' L	SW-401 N 60	558.37'	FL: 551.78 (Out) S FL: 551.88 (In) NW
47	50+39.89	28.98' R	SW-505 N	555.65'	FL: 545.96 (In) NW FL: 545.86 (Out) SW FL: 545.96 (In) SE
48	50+39.12	47.87' R	SW-512 N - 24	552.82'	FL: 546.15 (Out) NW
49	50+39.89	-12.68' L	SW-505 N	555.98'	FL: 546.17 (Out) SE FL: 546.27 (In) NE
50	50+74.79	-12.54' L	SW-501 N	556.13'	FL: 546.59 (Out) SW
51	53+40.41	32.50' R	SW-505 N	555.91'	FL: 547.07 (In) N FL: 546.97 (Out) SE
52	53+82.64	-19.38' L	SW-505 N	556.04'	FL: 547.74 (Out) S FL: 549.82 (In) E FL: 549.57 (In) W
53	54+00.59	-12.50' L	SW-505 N	556.01'	FL: 550.00 (Out) W
54	53+59.25	-58.87' L	SW-503 N	557.30'	FL: 550.20 (In) NE FL: 551.75 (In) SW FL: 552.79 (In) NW FL: 550.00 (Out) E
55	53+34.25	-59.04' L	SW-505 N	557.40'	FL: 552.00 (Out) NE
56	53+84.26	-58.70' L	SW-501 N	557.00'	FL: 550.32 (Out) SW
57	57+08.90	38.56' R	SW-501 N	554.04'	FL: 545.45 (In) W FL: 545.35 (Out) NE FL: 545.45 (In) SW
58	56+82.61	43.50' R	SW-512 N - 24	552.28'	FL: 545.71 (Out) NE
59	56+79.79	-12.50' L	SW-501 N	554.57'	FL: 545.84 (In) NW FL: 545.74 (Out) E
60	56+79.79	-18.50' L	SW-501 N	554.75'	FL: 549.90 (In) SW FL: 545.90 (Out) SE
61	57+67.68	33.92' R	SW-502 N - 60	554.04'	FL: 545.06 (In) SW FL: 545.06 (In) NW FL: 544.96 (Out) SE
62	57+66.04	-14.70' L	SW-501 N	553.99'	FL: 545.30 (Out) SE FL: 545.40 (In) NW
63	57+66.41	-84.96' L	SW-505 N	556.07'	FL: 546.10 (Out) SE FL: 547.34 (In) SW

STORM SEWER STRUCTURE TABLE

Structure Name	STATION	OFFSET	TYPE	RIM/FG	FL INFO
64	57+09.91	-85.23' L	SW-505 N	556.03'	FL: 549.60 (Out) NE
65	60+92.36	-30.90' L	SW-401 N 60	552.09'	FL: 543.41 (In) SW FL: 543.31 (Out) NW
66	60+61.13	-15.10' L	SW-505 N	551.39'	FL: 543.68 (In) SE FL: 543.58 (Out) NE FL: 546.21 (In) SW
67	60+58.47	32.50' R	SW-505 N	551.37'	FL: 543.92 (Out) NW FL: 544.02 (In) SE
68	60+58.39	41.77' R	SW-512 N - 24	551.43'	FL: 544.11 (Out) NW
69	60+27.68	-12.50' L	SW-501 N	551.52'	FL: 546.55 (Out) NE
70	60+94.93	-66.81' L	SW-505 N	552.05'	FL: 548.63 (Out) SE
71	61+39.26	-45.30' L	SW-401 N 72	552.37'	FL: 545.47 (In) E FL: 545.37 (Out) NW FL: 548.61 (In) S FL: 546.74 (In) NE
72	61+69.14	-47.66' L	SW-501 N	553.02'	FL: 547.44 (In) W FL: 547.34 (Out) SW
73	61+47.96	-66.06' L	SW-501 N	552.79'	FL: 548.00 (Out) E
74	61+28.67	-28.51' L	SW-505 N	551.62'	FL: 548.70 (Out) N
75	61+58.37	-12.51' L	SW-505 N	552.03'	FL: 545.94 (In) SE FL: 545.84 (Out) W FL: 545.76 (In) NE
76	61+58.37	32.50' R	SW-505 N	552.00'	FL: 546.17 (Out) NW
77	61+89.82	-12.50' L	SW-501 N	552.30'	FL: 546.02 (In) NE FL: 545.92 (Out) SW
78	62+99.82	-12.50' L	SW-501 N	553.21'	FL: 546.67 (In) NE FL: 546.57 (Out) SW FL: 546.67 (In) SE
79	63+05.06	43.40' R	SW-512 N - 24	551.72'	FL: 546.95 (Out) NW
80	64+37.54	-14.40' L	SW-501 N	554.17'	FL: 547.35 (Out) SW FL: 547.45 (In) N
81	64+57.01	-52.02' L	SW-505 N	554.86'	FL: 547.97 (In) NE FL: 547.87 (Out) S
82	64+83.01	-52.05' L	SW-505 N	554.86'	FL: 548.23 (Out) SW FL: 549.69 (In) NE
83	68+11.10	33.15' R	SW-401 N 60	551.41'	FL: 545.50 (In) SW FL: 545.50 (In) NE FL: 545.40 (Out) SE
84	67+87.92	30.77' R	SW-506 N	551.54'	FL: 545.72 (In) NW FL: 545.62 (Out) NE
85	67+86.21	-12.50' L	SW-505 N	551.54'	FL: 545.92 (Out) SE
86	68+80.52	27.11' R	SW-506 N	550.87'	FL: 545.83 (Out) SW FL: 545.93 (In) NW
87	68+77.50	-12.50' L	SW-505 N	550.88'	FL: 546.23 (In) W FL: 546.13 (Out) SE
88	68+52.22	-28.99' L	SW-401 N 84	551.98'	FL: 546.37 (Out) E FL: 546.47 (In) NW FL: 548.94 (In) NW
89	68+41.82	-52.86' L	SW-505 N	552.78'	FL: 546.67 (In) SW FL: 546.57 (Out) SE
90	68+15.84	-51.77' L	SW-505 N	552.78'	FL: 549.40 (In) SW FL: 546.93 (Out) NE
91	71+41.46	25.59' R	SW-501 N	552.44'	FL: 545.78 (Out) NW
92	71+76.12	-27.20' L	SW-505 N	552.36'	FL: 549.00 (In) W FL: 545.38 (Out) NE FL: 545.48 (In) SE

STORM SEWER STRUCTURE TABLE

Structure Name	STATION	OFFSET	TYPE	RIM/FG	FL INFO
93	72+06.10	19.36' R	SW-506 N	553.04'	FL: 545.11 (In) NW FL: 545.01 (Out) SE FL: 545.11 (In) SW
94	72+50.87	12.50' R	SW-503 N	553.97'	FL: 548.86 (In) NW FL: 547.68 (Out) SE FL: 547.78 (In) SW
95	72+50.87	-13.84' L	SW-505 N	553.94'	FL: 547.90 (Out) NE
96	73+18.59	3.09' R	SW-401 N 60	555.33'	FL: 549.88 (Out) SE FL: 550.23 (In) NW
97	89+13.82	14.00' R	SW-403 N	548.74'	FL: 539.93 (In) NW FL: 539.96 (In) NE FL: 539.83 (Out) SE FL: 539.98 (In) SW
98	88+68.18	32.50' R	SW-506 N	548.44'	FL: 540.57 (In) SW FL: 540.47 (Out) NE
99	86+85.49	32.50' R	SW-503 N	549.66'	FL: 542.04 (In) NW FL: 542.04 (In) SW FL: 541.94 (Out) NE
100	86+03.31	32.50' R	SW-503 N	550.10'	FL: 542.80 (In) NW FL: 542.70 (Out) NE FL: 545.00 (In) SW
101	85+60.13	32.75' R	SW-401 N 60	550.41'	FL: 546.04 (In) S FL: 545.43 (Out) NE
102	85+88.31	-12.50' L	SW-503 N	550.17'	FL: 545.93 (In) SW FL: 543.01 (Out) SE
103	86+85.49	-12.50' L	SW-501 N	549.68'	FL: 542.49 (Out) SE
104	89+12.39	43.78' R	SW-403 N	548.33'	FL: 543.40 (In) S FL: 542.15 (In) NE FL: 539.64 (In) NW FL: 539.54 (Out) SE
105	89+06.09	48.85' R	SW-505 N	548.22'	FL: 543.43 (Out) N
106	89+33.63	48.70' R	SW-505 N	548.15'	FL: 542.25 (Out) SW
107	88+94.84	-12.78' L	SW-505 N	547.87'	FL: 544.13 (Out) N
108	89+56.77	-49.65' L	SW-505 N	548.28'	FL: 544.03 (Out) S FL: 544.13 (In) NE
109	91+41.73	14.00' R	SW-403 N	550.17'	FL: 541.20 (In) NW FL: 541.10 (Out) SW FL: 543.71 (In) NE
110	91+47.89	-24.69' L	SW-401 N 84	549.98'	FL: 541.40 (Out) SE
111	92+37.58	14.00' R	SW-401 N 60	549.52'	FL: 544.29 (In) N FL: 544.29 (In) SE FL: 544.19 (Out) SW FL: 544.29 (In) NE
112	92+43.54	32.50' R	SW-505 N	548.75'	FL: 544.48 (Out) NW
113	92+50.31	-12.50' L	SW-505 N	548.77'	FL: 544.58 (Out) S
114	94+30.02	14.00' R	SW-401 N 60	550.61'	FL: 545.35 (In) NW FL: 545.25 (Out) SW FL: 545.35 (In) SE
115	94+30.02	32.50' R	SW-505 N	549.84'	FL: 545.54 (Out) NW
116	94+30.02	-12.50' L	SW-505 N	549.81'	FL: 545.61 (Out) SE

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CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
TABULATIONS

SHEET C.24

6'x10' VAULTS

LOCATION	SIZE	FLOOR ELEVATION	6 DUCT TERMINATORS A	B	C	D
STA. 36+41.9, 20.9' RT	6'x10'		X		X	
STA. 53+24.1, 36.8' LT	6'x10'			X		X
STA. 64+39.7, 58.1' LT	6'x10'			X		
STA. 71+85.6, 60.7' RT	6'x10'		X		X	X

7'x18' VAULTS

LOCATION	SIZE	FLOOR ELEVATION	6" DUCT TERMINATORS A	B	C	D	E	F
STA. 213+99.0, 1.3' RT	7'x18'	546.9'					X	
STA. 223+14.0, 1.3' LT	7'x18'	549.3'	X					X
STA. 235+71.6, 1.3' LT	7'x18'	544.4'	X			X		
STA. 242+46.8, 1.3' RT	7'x18'	543.4'	X					X

JUNCTION BOXES

LOCATION	SIZE
STA. 23+49.1, 35.9' LT	13"x24"
STA. 25+99.2, 33.4' RT	13"x24"
STA. 30+29.1, 2.7' LT	13"x24"
STA. 32+99.7	13"x24"
STA. 42+68.1, 1.7' RT	8"x18"
STA. 43+52.3, 1.7' RT	13"x24"
STA. 45+90.9, 23.6' RT	13"x24"
STA. 46+45.6, 24.8' RT	3'x6'
STA. 46+60.3, 31.6' LT	3'x6'
STA. 46+74.0, 36.9' LT	13"x24"
STA. 47+64.4, 30.7' RT	13"x24"
STA. 48+72.7, 30.6' RT	13"x24"
STA. 50+88.4, 35.0' RT	13"x24"
STA. 53+15.5, 39.7' RT	13"x24"
STA. 54+47.9, 37.8' RT	13"x24"
STA. 59+40.0, 39.0' RT	13"x24"
STA. 62+13.2, 35.6' RT	13"x24"
STA. 67+43.6, 37.4' RT	13"x24"
STA. 90+88.2, 17.4' RT	13"x24"

GFCI PEDESTALS

LOCATION
STA. 29+19.9, 02.7' LT
STA. 32+59.7, 01.4' LT
STA. 43+54.3, 01.7' RT
STA. 49+93.0, 01.7' RT
STA. 48+85.8, 01.4' RT
STA. 51+04.0, 11.2' RT
STA. 54+47.9, 11.7' RT
STA. 59+41.5, 12.7' RT
STA. 62+15.1, 11.8' RT
STA. 86+90.7, 22.5' LT
STA. 67+27.7, 11.9' RT
STA. 72+39.0, 16.6' RT
STA. 87+45.8, 11.5' RT
STA. 91+59.3, 11.5' RT
STA. 93+42.1, 12.1' RT

TRANSFORMER AND SWITCHGEAR PADS

LOCATOIN	TYPE
STA. 26+09.4, 41.7' RT	SWITCHGEAR PAD
STA. 26+20.1, 38.2' RT	SWITCHGEAR PAD
STA. 26+30.9, 35.0' RT	TRANSFORMER PAD
STA. 30+29.2, 33.9' LT	TRANSFORMER PAD
STA. 53+97.2, 84.5' RT	TRANSFORMER PAD
STA. 64+33.0, 67.8' LT	TRANSFORMER PAD

TRANSMISSION - 69kV DUCT BANK

LOCATION	LENGTH	LOCATION	COMMENTS
200+00	485	204+85	3 x 2' CONFIGURATION
213+74	16	213+90	3 x 1' CONFIGURATION
213+81, 9.9' RT	16	STA. 213+90, 2.7' RT	3 x 1' CONFIGURATION
214+09	896	223+05	3 x 2' CONFIGURATION
223+73	163	224+86	3 x 2' CONFIGURATION
224+86	60	225+46	PAPOOSE CREEK CONFIGURATION
225+46	1016	235+62	3 x 2' CONFIGURATION
235+81	171	237+52	3 x 2' CONFIGURATION
240+08	229	242+37	3 x 2' CONFIGURATION
242+56	365	246+21	3 x 2' CONFIGURATION

PRIMARY DISTRIBUTION - 13.8kV 3-PHASE, 6-INCH CONDUIT

LOCATION	LENGTH	LOCATION	COMMENTS
STA. 20+40.0, 26.4' RT	62	STA. 20+94.7, 29.8' RT	FUTURE USE - REMAINS EMPTY
STA. 20+94.7, 29.8' RT	534	STA. 26+09.4, 41.7' RT	RISER POLE TO SWITCHGEAR
STA. 26+09.4, 41.7' RT	100	STA. 25+21.4, 45.3' RT	SWITCHGEAR TO RISER POLE
STA. 26+09.4, 41.7' RT	11	STA. 26+20.1, 38.2' RT	SWITCHGEAR TO SWITCHGEAR
STA. 26+20.1, 38.2' RT	1035	STA. 36+41.9, 20.9' RT	SWITCHGEAR TO 6'x10' VAULT
STA. 36+41.9, 20.9' RT	1004	STA. 46+45.6, 24.8' RT	6'x10' VAULT TO 3'x6' JUNCTION BOX
STA. 46+45.6, 24.8' RT	107	STA. 46+57.4, 24.1' LT	3'x6' JUNCTION BOX TO #1 ALLEY
STA. 46+57.9, 74.1' LT	41	STA. 46+60.3, 31.6' LT	#1 ALLEY TO 3'x6' JUNCTION BOX
STA. 46+60.3, 31.6' LT	653	STA. 53+14.7, 27.6' LT	3'x6' JUNCTION BOX TO 6'x10' VAULT
STA. 53+14.7, 27.6' LT	110	STA. 53+13.4, 85.0' RT	6'x10' VAULT TO LIMIT OF WORK (EMPTY)
STA. 53+14.7, 27.6' LT	1174	STA. 64+39.7, 58.1' LT	6'x10' VAULT TO 6'x10' VAULT
STA. 64+39.7, 58.1' LT	192	STA. 63+34.7, 44.9' RT	6'x10' VAULT TO RISER POLE
STA. 64+39.7, 58.1' LT	810	STA. 71+85.4, 60.7' RT	6'x10' VAULT TO 6'x10' VAULT
STA. 71+85.4, 60.7' RT	18	STA. 71+93.8, 47.2' RT	6'x10' VAULT TO RISER POLE

PRIMARY DISTRIBUTION - 1-PHASE, 2-INCH ELECTRIC CONDUIT

LOCATION	LENGTH	LOCATION	COMMENTS
STA. 23+40.5', 42.5' LT	350	STA. 26+09.4, 41.7' RT	TRANSFORMER TO SWITCHGEAR
STA. 26+20.1, 38.2' RT	480	STA. 30+29.2, 33.9' LT	SWITCHGEAR TO TRANSFORMER
STA. 53+14.7, 27.6' LT	211	STA. 53+97.2, 84.5' RT	6'x10' VAULT TO TRANSFORMER
STA. 53+97.2, 84.5' RT	10	STA. 53+97.5, 92.1' RT	TRANSFORMER TO EXISTING JUNCTION BOX
STA. 64+33.0, 67.8' LT	200	STA. 63+34.7, 44.9' RT	TRANSFORMER TO RISER POLE
STA. 64+33.0, 67.8' LT	12	STA. 64+39.7, 58.1' LT	TRANSFORMER TO 6'x10' VAULT
STA. 71+85.6, 60.7' RT	15	STA. 71+93.8, 47.2' RT	6'x10' VAULT TO RISER POLE

SECONDARY DISTRIBUTION - 1-PHASE, 4-INCH ELECTRIC CONDUIT

LOCATION	LENGTH	LOCATION	COMMENTS
STA. 20+40.0, 26.9' RT	190	STA. 22+26.7, 31.2' RT	FUTURE SWITCHGEAR (EMPTY) TO MCKEE BUTTON
STA. 22+27.7, 31.2' RT	188	STA. 23+41.0, 42.5' LT	MCKEE BUTTON TO FIM ST. WAREHOUSE
STA. 26+20.1, 38.2' RT	11	STA. 26+30.9, 35.0' RT	SWITCHGEAR TO TRANSFORMER
STA. 26+30.9, 35.0' RT	278	STA. 28+28.9, 52.0' LT	TRANSFORMER TO TRANSFORMER

SECONDARY DISTRIBUTION - 1-PHASE, 3-INCH ELECTRIC CONDUIT

LOCATION	LENGTH	LOCATION	COMMENTS
STA. 23+40.0, 42.5' LT	90	STA. 22+67.0, 24.0' LT	TRANSFORMER TO SERVICE POLE
STA. 30+29.2, 33.9' LT	240	STA. 32+63.9, 43.5' LT	TRANSFORMER TO SERVICE POLE

PRIMARY DISTRIBUTION - 1-PHASE, 2-INCH LIGHT FEED CONDUIT

LOCATION	LENGTH	LOCATION	COMMENTS
STA. 20+43.5, 23.4' LT	303	STA. 23+39.1, 35.9' LT	LIGHT NO. 1 TO JUNCTION BOX
STA. 23+39.1, 35.9' LT	495	STA. 28+43.5, 44.9' LT	JUNCTION BOX TO LIGHT NO. 14
STA. 23+39.1, 35.9' LT	88	STA. 23+18.3, 24.3' RT	JUNCTION BOX TO LIGHT NO. 6
STA. 23+18.3, 24.3' RT	220	STA. 20+98.3, 24.6' RT	LIGHT NO. 6 TO LIGHT NO. 2
STA. 20+98.3, 24.6' RT	7	STA. 20+94.7, 29.8' RT	LIGHT NO. 2 TO SECURITY LIGHT FEED
STA. 23+18.3, 24.3' RT	220	STA. 28+54.0, 19.5' RT	LIGHT NO. 6 TO LIGHT NO. 15
STA. 25+99.2, 33.4' RT	37	STA. 25+64.5, 24.3' RT	JUNCTION BOX TO LIGHT NO. 10
STA. 29+19.9, 02.7' LT	914	STA. 38+36.7, 01.3' LT	GFCI PEDESTAL TO LIGHT NO. 22
STA. 30+29.2, 33.9' LT	31	STA. 30+29.1, 02.7' LT	TRANSFORMER TO JUNCTION BOX
STA. 39+82.5, 01.1' LT	725	STA. 46+74.0, 36.9' LT	LIGHT NO. 23 TO JUNCTION BOX
STA. 46+74.0, 36.9' LT	53	STA. 46+55.9, 74.1' LT	JUNCTION BOX TO TRANSFORMER
STA. 46+74.0, 46.9' LT	800	STA. 44+29.8, 22.5' RT	JUNCTION BOX TO LIGHT NO. 27
STA. 45+90.9, 23.6' RT	22	STA. 45+93.0, 01.7' LT	JUNCTION BOX TO GFCI PEDESTAL
STA. 46+74.0, 36.9' LT	640	STA. 53+12.5, 36.2' LT	JUNCTION BOX TO LIGHT NO. 44
STA. 46+60.1, 22.5' RT	779	STA. 53+97.2, 84.5' RT	LIGHT NO. 31 TO TRANSFORMER
STA. 47+64.4, 30.7' RT	23	STA. 47+63.8, 00.0' RT	JUNCTION BOX TO MONUMENT
STA. 48+72.7, 30.6' RT	33	STA. 48+85.8, 01.4' RT	JUNCTION BOX TO GFCI PEDESTAL
STA. 50+88.4, 35.0' RT	37	STA. 54+04.0, 11.2' RT	JUNCTION BOX TO LIGHT NO. 47
STA. 53+12.5, 33.7' RT	8	STA. 53+06.6, 28.7' RT	LIGHT NO. 44 TO LANDSCAPE
STA. 53+15.5, 39.7' RT	282	STA. 55+99.0, 35.5' RT	JUNCTION BOX TO LIGHT NO. 47
STA. 54+47.9, 37.8' RT	26	STA. 54+47.9, 11.7' RT	JUNCTION BOX TO GFCI PEDESTAL
STA. 56+43.5, 43.2' LT	53	STA. 56+96.2, 42.3' LT	LIGHT NO. 48 TO JUNCTION BOX
STA. 57+70.4, 21.8' LT	14	STA. 57+70.1, 37.2' LT	JUNCTION BOX TO LANDSCAPING
STA. 57+70.4, 21.8' LT	38	STA. 57+87.0, 37.7' LT	JUNCTION BOX TO LANDSCAPING
STA. 59+06.2, 31.2' LT	565	STA. 64+33.0, 67.8' LT	LIGHT NO. 54 TO TRANSFORMER
STA. 58+55.5, 35.5' RT	528	STA. 63+25.8, 36.4' RT	LIGHT NO. 53 TO JUNCTION BOX
STA. 59+40.0, 39.0' RT	27	STA. 59+41.5, 12.7' RT	JUNCTION BOX TO GFCI PEDESTAL
STA. 62+13.2, 35.6' RT	25	STA. 62+15.1, 11.8' RT	JUNCTION BOX TO GFCI PEDESTAL
STA. 64+93.3, 36.9' LT	789	STA. 72+70.6, 16.2' LT	JUNCTION BOX TO LIGHT NO. 80
STA. 65+02.8, 34.3' RT	590	STA. 71+13.7, 24.5' RT	JUNCTION BOX TO LIGHT NO. 78
STA. 67+43.6, 37.4' RT	40	STA. 67+27.7, 11.9' RT	JUNCTION BOX TO GFCI PEDESTAL
STA. 67+08.8, 21.8' LT	18	STA. 66+90.6, 22.5' LT	LIGHT NO. 70 TO GFCI PEDESTAL
STA. 63+53.2, 16.9' LT	27	STA. 63+45.1, 05.9' LT	JUNCTOIN BOX TO LANDSCAPING
STA. 72+70.6, 16.2' LT	61	STA. 72+39.0, 16.6' RT	LIGHT NO. 80 TO GFCI PEDESTAL
STA. 85+17.3, 34.4' RT	380	STA. 88+89.6, 45.7' RT	LIGHT NO. 81 TO JUNCTION BOX
STA. 86+75.3, 14.4' LT	226	STA. 88+93.0, 23.9' LT	LIGHT NO. 83 TO JUNCTION BOX
STA. 87+47.8, 34.4' RT	25	STA. 87+45.8, 11.5' RT	LIGHT NO. 84 TO GFCI PEDESTAL
STA. 89+55.1, 82.0' LT	61	STA. 89+84.1, 30.1' LT	LIGHT NO. 88 TO JUNCTION BOX
STA. 89+38.8, 46.0' RT	578	STA. 94+86.2, 14.4' LT	JUNCTOIN BOX TO LIGHT NO. 97
STA. 90+88.2, 17.4' RT	357	STA. 94+23.6, 41.5' RT	JUNCTION BOX TO LIGHT NO. 96
STA. 91+48.6, 14.4' LT	36	STA. 91+59.3, 11.5' RT	LIGHT NO. 91 TO GFCI PEDESTAL
STA. 93+56.6, 14.4' LT	40	STA. 93+42.1, 12.1' RT	LIGHT NO. 95 TO GFCI PEDESTAL

POWER POLE REMOVAL

LOCATION
STA. 23+88.0, 25.2' LT
STA. 28+41.4, 40.1' LT
STA. 23+03.7, 37.4' LT

COMMUNICATIONS

LOCATION	CONDUIT TYPE	LENGTH	LOCATION
STA. 20+40.0, 28.1' RT	QUAD DUCT	62	STA. 21+01.4, 28.0' RT
STA. 20+94.7, 29.8' RT	QUAD DUCT	7	STA. 21+01.4, 28.0' RT
STA. 21+01.4, 28.0' RT	QUAD DUCT	222	STA. 23+23.1, 29.3' RT
STA. 23+23.1, 29.3' RT	QUAD DUCT	86	STA. 23+42.8, 40.3' LT
STA. 23+42.8, 40.3' LT	2-INCH	66	STA. 23+87.9, 35.7' LT
STA. 23+42.8, 40.3' LT	QUAD DUCT	95	STA. 22+59.4, 28.9' LT
STA. 23+23.1, 29.3' RT	QUAD DUCT	207	STA. 25+18.3, 42.8' RT
STA. 25+18.3, 42.8' RT	2-INCH	6	STA. 25+20.9, 45.2' RT
STA. 25+18.3, 42.8' RT	QUAD DUCT	342	STA. 28+32.3, 26.0' RT
STA. 28+32.3, 26.0' RT	QUAD DUCT	74	STA. 28+29.7, 52.0' LT
STA. 28+30.4, 52.0' LT	2-INCH	211	STA. 30+25.2, 32.4' LT
STA. 30+25.2, 32.4' LT	2-INCH	736	STA. 32+61.8, 32.2' LT
STA. 25+18.3, 42.8' RT	2-INCH	601	STA. 34+37.3, 22.9' RT
STA. 34+37.3, 22.9' RT	2-INCH	630	STA. 40+66.2, 23.4' RT
STA. 40+66.2, 23.4' RT	2-INCH	591	STA. 46+59.9, 26.9' RT
STA. 46+59.9, 26.9' RT	QUAD DUCT	101	STA. 46+56.4, 74.1' LT
STA. 46+56.9, 74.1' LT	2-INCH	331	STA. 49+53.0, 34.6' LT
STA. 49+53.0, 34.6' LT	2-INCH	372	STA. 53+24.1, 36.8' LT
STA. 53+24.1, 36.8' LT	2-INCH	147	STA. 53+14.8, 84.6' RT
STA. 53+24.1, 36.8' LT	2-INCH	568	STA. 58+44.8, 43.8' LT
STA. 58+44.8, 43.8' LT	2-INCH	607	STA. 64+43.7, 51.7' LT
STA. 64+43.7, 51.7' LT	2-INCH	112	STA. 64+21.3, 51.7' RT
STA. 64+43.7, 51.7' LT	2-INCH	433	STA. 68+64.6, 15.4' LT
STA. 68+64.6, 15.4' LT	QUAD DUCT	374	STA. 71+89.7, 47.0' RT
STA. 71+89.7, 47.0' RT	QUAD DUCT	20	STA. 71+83.0, 68.9' RT
STA. 71+89.7, 47.0' RT	QUAD DUCT	202	STA. 72+71.0, 03.3' LT
STA. 84+75.1, 06.4' RT	QUAD DUCT	376	STA. 88+00.7, 07.9' RT
STA. 88+00.7, 07.9' RT	QUAD DUCT	152	STA. 88+93.8, 63.3' RT
STA. 88+00.7, 07.9' RT	QUAD DUCT	290	STA. 90+83.2, 19.5' LT

COMMUNICATIONS - RIVERFRONT WIFI SYSTEM

LOCATION	CONDUIT TYPE	LENGTH	LOCATION
STA. 44+29.8, 22.5' RT	1-INCH	230	STA. 46+59.9, 26.9' RT
STA. 46+59.9, 26.9' RT	1-INCH	313	STA. 49+73.8, 29.0' RT
STA. 49+73.8, 29.0' RT	1-INCH	530	STA. 54+99.3, 35.5 RT
STA. 54+99.3, 35.5 RT	1-INCH	509	STA. 60+04.1, 35.5 RT
STA. 60+04.1, 35.5 RT	1 INCH	615	STA. 66+14.0, 35.5 RT
STA. 66+14.0, 35.5 RT	1-INCH	500	STA. 71+13.7, 24.5 RT
STA. 71+13.7, 24.5 RT	1-INCH	137	STA. 72+89.7, 47.0' RT

COMMUNICATIONS - HAND HOLES

LOCATOIN	SIZE	LOCATOIN	SIZE
STA. 21+01.4, 28.0' RT	17'x30"	STA. 40+66.2, 23.4' RT	17'x30'
STA. 22+59.4', 28.9' LT	17'x30"	STA. 46+59.9, 26.9' RT	30'x48'
STA. 23+23.1, 29.3' RT	30'x48"	STA. 49+53.0, 34.6' LT	17'x30'
STA. 23+42.8, 40.3 LT	30'x48"	STA. 53+24.1, 36.8 LT	30'x48'
STA. 23+87.9, 35.7' LT	10	STA. 58+44.8, 43.8' LT	17'x30
STA. 25+18.3, 42.8' RT	30'x48"	STA. 64+43.7, 51.7' LT	30'x48'
STA. 28+32.3, 26.0' RT	30'x48"	STA. 68+64.6, 15.4' LT	17'x30
STA. 30+25.2, 32.4' LT	17'x30"	STA. 71+89.7, 47.0' RT	30'x48'
STA. 32+61.8, 32.2 LT	17'x30"	STA. 88+00.7, 07.9 RT	17'x30'
STA. 34+37.3, 22.9' RT	30'x48"		

Foundation Type Options		Junction Box Options	
1	Concrete	8"x18"	
2	Screw-in	10	13"x24"
3	Traffic Signal	13"x24	24"x30"

LIGHT NO.	LOCATION	FOUNDATION TYPE	JUNCTION BOX TYPE
1	STA. 20+43.5, 23.4 LT	1	8"x18"
2	STA. 20+98.3, 24.6 RT	1	8"x18"
3	STA. 21+53.5, 23.4 LT	1	8"x18"
4	STA. 22+08.3, 24.3 RT	1	8"x18"
5	STA. 22+63.5, 23.5 LT	1	8"x18"
6	STA. 23+18.3, 24.3 RT	1	8"x18"
7	STA. 24+02.6, 23.6 LT	1	8"x18"
8	STA. 24+51.8, 24.5 RT	1	8"x18"
9	STA. 25+08.6, 23.4 LT	1	8"x18"
10	STA. 25+64.5, 24.3 RT	1	8"x18"
11	STA. 26+22.5, 24.6 LT	1	8"x18"
12	STA. 27+05.0, 21.8 RT	2	10"
13	STA. 27+82.0, 32.6 LT	2	10"
14	STA. 28+43.5, 44.9 LT	2	10"
15	STA. 28+54.0, 19.5 RT	2	10"
16	STA. 29+71.7, 03.7 LT	2	10"
17	STA. 31+12.7, 03.2 LT	2	10"
18	STA. 32+51.3, 02.6 LT	2	10"
19	STA. 34+09.2, 01.9 LT	2	10"
20	STA. 35+50.2, 01.3 LT	2	10"
21	STA. 36+92.3, 01.5 LT	2	10"
22	STA. 38+36.9, 01.3 LT	2	10"
23	STA. 39+82.5, 01.1 LT	2	10"
24	STA. 41+75.8, 00.9 LT	2	10"
25	STA. 42+68.2, 00.8 LT	2	13"x24"

LIGHT NO.	LOCATION	FOUNDATION TYPE	JUNCTION BOX TYPE
26	STA. 43+58.5, 41.0 LT	1	8"x18"
27	STA. 44+29.8, 22.5 RT	2	10
28	STA. 44+97.1, 41.0 LT	1	8"x18"
29	STA. 45+42.3, 22.5 RT	2	10
30	STA. 46+04.2, 40.5 LT	1	8"x18"
31	STA. 46+60.1, 22.5 RT	2	10
32	STA. 47+00.4, 41.0 LT	1	8"x18"
33	STA. 47+67.2, 22.5 RT	2	10
34	STA. 48+07.2, 41.0 LT	1	8"x18"
35	STA. 48+69.8, 22.5 RT	2	13"x24
36	STA. 49+20.1, 41.0 LT	1	8"x18"
37	STA. 49+73.8, 29.5 RT	2	10
38	STA. 50+31.6, 33.9 LT	1	8"x18"
39	STA. 50+85.5, 33.8 RT	2	13"x24
40	STA. 51+25.2, 34.0 LT	1	8"x18"
41	STA. 51+98.9, 35.5 RT	2	10
42	STA. 52+35.9, 36.6 LT	1	8"x18"
43	STA. 53+10.2, 35.5 RT	2	10
44	STA. 53+12.5, 36.2 LT	1	8"x18"
45	STA. 53+99.5, 35.5 RT	2	10
46	STA. 54+99.3, 35.5 RT	2	10
47	STA. 55+99.0, 35.5 RT	2	10
48	STA. 56+43.5, 43.2 LT	1	8"x18"
49	STA. 56+86.4, 42.5 RT	3	24"x30
50	STA. 56+86.4, 39.5 LT	3	24"x30

LIGHT NO.	LOCATION	FOUNDATION TYPE	JUNCTION BOX TYPE
51	STA. 57+57.1, 52.2 LT	3	24"x30"
52	STA. 57+81.7, 39.5 RT	3	24"x30"
53	STA. 58+55.5, 35.5 RT	2	10"
54	STA. 59+06.2, 31.2 LT	1	8"x18"
55	STA. 60+04.1, 35.5 RT	2	10"
56	STA. 60.21+1, 34.0 LT	1	8"x18"
57	STA. 60+81.6, 35.0 LT	1	8"x18"
58	STA. 61+11.1, 35.5 RT	2	10"
59	STA. 61+48.4, 35.4 LT	1	8"x18"
60	STA. 62+16.1, 35.5 RT	1	13"x24"
61	STA. 62+21.8, 34.0 LT	1	8"x18"
62	STA. 63+26.8, 34.0 LT	1	8"x18"
63	STA. 63+25.8, 36.4 RT	2	10"
64	STA. 64+32.2, 21.4 LT	3	24"x30"
65	STA. 64+22.5, 50.2 RT	3	24"x30"
66	STA. 64+93.2, 46.6 LT	3	24"x30"
67	STA. 65+20.7, 39.5 RT	3	13"x24"
68	STA. 66+03.1, 34.0 LT	1	8"x18"
69	STA. 66+14.0, 35.5 RT	2	10"
70	STA. 67+08.8, 24.1 LT	1	8"x18"
71	STA. 67+46.6, 35.3 RT	2	13"x24"
72	STA. 67+90.2, 18.7 LT	1	8"x18"
73	STA. 68+48.3, 42.8 LT	1	8"x18"
74	STA. 68+83.9, 30.0 RT	2	10"
75	STA. 69+53.2, 16.9 LT	1	8"x18"

LIGHT NO.	LOCATION	FOUNDATION TYPE	JUNCTION BOX TYPE
76	STA. 70+04.7, 25.2 RT	2	10"
77	STA. 70+58.2, 17.0 LT	1	8"x18"
78	STA. 71+13.7, 24.5 RT	2	10"
79	STA. 71+96.5, 28.3 LT	1	8"x18"
80	STA. 72+70.6, 16.2 LT	1	8"x18"
81	STA. 85+17.3, 34.4 RT	1	8"x18"
82	STA. 86+02.2, 34.4 RT	1	8"x18"
83	STA. 86+75.3, 14.4 LT	1	8"x18"
84	STA. 87+47.8, 34.4 RT	1	8"x18"
85	STA. 88+20.3, 14.4 LT	1	8"x18"
86	STA. 88+99.0, 23.1 LT	3	24"x30"
87	STA. 89+42.1, 45.9 RT	3	24"x30"
88	STA. 89+55.1, 82.0 LT	1	8"x18"
89	STA. 89+88.4, 27.6 LT	3	24"x30"
90	STA. 90+88.2, 42.2 RT	1	8"x18"
91	STA. 91+48.6, 14.4 LT	1	8"x18"
92	STA. 92+03.6, 41.8 RT	1	8"x18"
93	STA. 92+46.6, 14.4 LT	1	8"x18"
94	STA. 93+12.3, 41.4 RT	1	8"x18"
95	STA. 93+56.6, 14.4 LT	1	8"x18"
96	STA. 94+23.6, 41.5 RT	1	8"x18"
97	STA. 94+86.2, 14.4 LT	1	8"x18"

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 01/19/2017
DESIGNED BY: — DATE:
CHECKED BY: — DATE:
APPROVED BY: — DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR ELECTRICAL AND COMMUNICATION TABULATIONS (SHEET 1 OF 2)

REF No. | SCALE: NOTED | FILE No. 59 | DRAWING No. DUG0096K | REV. No. 0

SHEET No. C.25

WATER FITTINGS*			
LOCATOIN	SIZE	TYPE	COMMENTS
STA. 100+00.0	12"x10"	Reducer	
STA. 100+05.0	12"	90°	
STA. 107+07.0	12"x6"	Tee	Hycrant Tee
STA. 110+14.8	12"x6"	Tee	Hydrant Tee
STA. 110+14.8, 20.0' LT	6"	22 1/2°	Hycrant Leg, Vertical Bend
STA. 112+31.0	12"x6"	Tee	Service Stub
STA. 112+47.6	12"	11-1/4°	Vertical Bend
STA. 113+60.0	12"	11-1/4°	Vertical Bend
STA. 113+54.6	12"x6"	Tee	Hydrant Tee
STA. 113+94.4	12"	11-1/4°	Vertical Bend
STA. 114+01.0	12"	11-1/4°	Vertical Bend
STA. 114+09.0	12"x6"	Tee	Pine St.
STA. 114+09.0, 22.0' LT	6"	45°	Pine St.
STA. 114+11.6, 24.5' LT	6"	45°	Pine St.
STA. 114+11.6, 29.5' LT	6"	Sleeve	Pine St
STA. 116+20.6	12"x8"	Tee	
STA. 116+93.8	12"x6"	Tee	Hydrant Tee
STA. 117+73.3	12"x10"	Tee	Chestnut St.
STA. 119+38.3	12"x8"	Tee	Hotel Connection
STA. 119+38.3, 5' LT	8"	Sleeve	Hotel Connection
STA. 120+14.2	12"	45°	
STA. 120+39.4	12"	45°	
STA. 120+92.7	12"x6"	Tee	Hycrant Tee
STA. 121+48.1	12"	Tee	Iowa Ave.
STA. 130+42.4	8"	45°	Vertical Bend
STA. 130+46.6	8"	45°	Vertical Bend
STA. 133+54.9	8"	90°	
STA. 133+12.1, 26.6' LT	12"	Cap	Oversized Cast Iron
STA. 140+00.0	10"	Sleeve	
STA. 140+07.1	10"	45°	
STA. 140+05.6	10"	45°	
STA. 150+00.0	10"	Cap	Iowa Ave.
STA. 150+00.0	10"	Cap	Iowa Ave.
STA. 150+13.5	10"	90°	Iowa Ave.
STA. 151+15.2	12"x10"	Reducer	Iowa Ave.
STA. 151+15.2	12"x6"	Reducer	Iowa Ave.
STA. 151+70.0	6"	90°	Iowa Ave.
STA. 160+00.0	6"	Cap	Cedar St.
STA. 160+00.0	6"	Cap	Cedar St.
STA. 162+95.2	6"	Tee	Hycrant Tee
STA. 166+80.0	6"	Tee	Service Stub
STA. 166+80.0	6"	Sleeve	Service Stub
STA. 167+10.0	6"	Tee	
STA. 167+20.0, 3.0 RT	6"	90°	
STA. 167+33.0	6"	90°	Mulberry Ave.
STA. 168+25.0	6"	Tee	Hycrant Tee
STA. 168+29.0	6"	Plug	Mulberry Ave.
STA. 89+30.4, 5.3' LT	8"	Cap	E. 2nd St.
STA. 89+53.9, 25.6 LT	6"	45°	Hycrant Leg, E. 2nd St.
STA. 95+32.8	8"	Cap	E. 2nd St.

*All fittings shall be MJ x MJ and restrained with Megalugs. Megalugs shall be incidental to the unit weight fitting cost.

WATER TAPPING SLEEVES	
LOCATOIN	SIZE
STA. 100+00.0	10"x10"
STA. 131+62.8	12"x8"
STA. 150+00.0	10"x10"
STA. 151+82.0	6"x6"
STA. 160+00.0	6"x6"
STA. 167+15.3, 5.0 RT	6"x6"
STA. 89+25.2, 25.9 LT	6"x6"
STA. 92+27.0, 25.4 RT	8"x6"

WATER FIRE HYDRANTS
LOCATOIN
STA. 107+07.0, 16.5 LT
STA. 110+14.8, 38.9 LT
STA. 113+54.6, 16.3 LT
STA. 116+93.8, 09.8 LT
STA. 120+92.7, 13.6 LT
STA. 162+95.2, 04.1' RT
STA. 168+29.0, 05.8 LT
STA. 92+21.4, 14.4' LT

REMOVAL OF FIRE HYDRANTS	
LOCATION	COMMENTS
STA. 107+13.4, 25.4 LT	
STA. 110+13.5, 39.2 LT	LINN ST.
STA. 113+69.5, 29.5' LT	PINE ST.
STA. 120+97.4, 13.4 LT	IOWA ST.
STA. 164+00.7, 07.0 LT	WALNUT ST.
STA. 92+69.5, 15.3' LT	E. 2ND ST

SERVICE CONNECTIONS	
LOCATION	COMMENTS
STA. 108+15.0	1" SERV CE
STA. 108+63.6	1" SERV CF
STA. 110+4.9	1" SERV CE
STA. 112+28.0	6" SERV CE
STA. 112+30.6	1" SERV CE
STA. 113+21.3	1" SERV CE
STA. 113+67.5	1" SERV CF
STA. 115+06.9	1-1/2" SERVICE
STA. 115+28.5	6" SERV CE
STA. 115+76.5	1-1/2" SERVICE
STA. 120+49.0	1" SERV CE
STA. 141+78.2	1" SERV CF
STA. 150+26.4	1" SERV CE
STA. 150+83.7	1" SERV CF
STA. 163+07.0	1" SERV CE
STA. 166+80.8	6" SERV CE
STA. 92+91, 24.3 RT	1" SERV CF

WATER GATE VALVES*		
LOCATOIN	SIZE	COMMENTS
STA. 100+00.0	10"	Tapping Sleeve***
STA. 106+87.0	12"	Line
STA. 107+07.0, 3.0' LT	6"	Hydrant Valve**
STA. 110+00.0	12"	Line
STA. 110+14.8, 3.0' LT	6"	Hydrant Valve**
STA. 113+54.6, 3.0' LT	6"	Hydrant Valve**
STA. 114+09.0	12"	Line
STA. 114+09.0, 22.0' LT	6"	Line, Pine St.
STA. 116+20.6	8"	Line, Railroad Crossing
STA. 116+93.8, 6.0' LT	6"	Hydrant Valve**
STA. 117+73.3	12"	Line
STA. 119+38.3	12"	Line
STA. 120+97.7	12"	Line
STA. 120+92.7, 3.0' LT	6"	Hydrant Valve**
STA. 131+62.8	8"	Tapping Sleeve***
STA. 140+03.8	10"	Line
STA. 150+00.0	10"	Tapping Sleeve***
STA. 151+15.7	6"	Line
STA. 151+82.0	6"	Tapping Sleeve***
STA. 160+00.0	6"	Tapping Sleeve***
STA. 162+95.2	6"	Hydrant Valve**
STA. 166+80.0	6"	Line
STA. 166+80.0	6"	Service Line
STA. 167+15.3, 5.0' RT	6"	Tapping Sleeve***
STA. 168+29.0	6"	Line
STA. 168+29.0, 3.0' LT	6"	Hydrant Valve**
STA. 89+25.2, 25.9' LT	6"	Tapping Sleeve***
STA. 92+27.0, 25.4' RT	6"	Tapping Sleeve***

*All valves shall be restrained with Megalugs except when directly connected to a tapping sleeve.
**Included in fire hydrant assembly unit cost
***Included in tapping sleeve assembly unit cost

WATER MAIN, CLASS 52 DIP		
LOCATOIN	SIZE	LOCATOIN
STA. 100+00	12"	121+48
STA. 130+00	8"	131+63
STA. 140+00	10"	141+78
STA. 150+00	10"	151+15
STA. 151+15	6"	151+82
STA. 160+00	6"	168+29

IOWA INTERSECTION	UNIT	QUANTITY
ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 4-INCH	LF	10
ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 2-INCH	LF	722
JUNCTION BOX, ELECTRICAL, 40"x58"	EA	1
JUNCTION BOX, ELECTRICAL, 24"x36"	EA	4
JUNCTION BOX, ELECTRICAL, 13"x24"	EA	7
TRAFFIC LOOPS	EA	8
FOUNDATION, TRAFFIC SIGNAL, TYPE A	EA	2
FOUNDATION, TRAFFIC SIGNAL, TYPE B	EA	1
FOUNDATION, TRAFFIC SIGNAL, TYPE C	EA	1
FOUNDATION, TRAFFIC SIGNAL, PEDESTAL POLE	EA	2

CEDAR INTERSECTION	UNIT	QUANTITY
ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 4-INCH	LF	52
ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 2-INCH	LF	694
JUNCTION BOX, ELECTRICAL, 40"x58"	EA	1
JUNCTION BOX, ELECTRICAL, 24"x36"	EA	4
JUNCTION BOX, ELECTRICAL, 13"x24"	EA	9
TRAFFIC LOOPS	EA	8
FOUNDATION, TRAFFIC SIGNAL, TYPE A	EA	3
FOUNDATION, TRAFFIC SIGNAL, TYPE B	EA	1
FOUNDATION, TRAFFIC SIGNAL, TYPE C	EA	0
FOUNDATION, TRAFFIC SIGNAL, PEDESTAL POLE	EA	2

OAK INTERSECTION	UNIT	QUANTITY
ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 4-INCH	LF	26
ELECTRICAL CONDUIT, OPEN CUT, HDPE OR PVC, 2-INCH	LF	687
JUNCTION BOX, ELECTRICAL, 40"x58"	EA	1
JUNCTION BOX, ELECTRICAL, 24"x36"	EA	4
JUNCTION BOX, ELECTRICAL, 13"x24"	EA	6
TRAFFIC LOOPS	EA	10
FOUNDATION, TRAFFIC SIGNAL, TYPE A	EA	3
FOUNDATION, TRAFFIC SIGNAL, TYPE B	EA	0
FOUNDATION, TRAFFIC SIGNAL, TYPE C	EA	1
FOUNDATION, TRAFFIC SIGNAL, PEDESTAL POLE	EA	2

TRAFFIC LOOPS		
NO.	LOCATION	INSTERSECTION
1	STA. 55+81.9, 28.5' RT	IOWA
2	STA. 56+51.9, 17.5' RT	IOWA
3	STA. 56+72.8, 17.5' RT	IOWA
4	STA. 57+85.2, 08.5' RT	IOWA
5	STA. 58+16.2, 08.5' RT	IOWA
6	STA. 58+86.4, 0.93' LT	IOWA
7	STA. 57+25.3, 65.0' LT	IOWA
8	STA. 57+25.3, 86.0' LT	IOWA
9	STA. 63+18.0, 28.5' RT	CEDAR
10	STA. 63+88.0, 11.5' RT	CEDAR
11	STA. 64+09.3, 11.5' RT	CEDAR
12	STA. 65+34.2, 08.5' RT	CEDAR
13	STA. 65+55.2, 08.5' RT	CEDAR
14	STA. 63+25.2, 02.5' LT	CEDAR
15	STA. 64+61.2, 60.6' LT	CEDAR
16	STA. 64+61.2, 81.2' LT	CEDAR
17	STA. 87+78.3, 28.3' RT	OAK
18	STA. 88+48.3, 17.4' RT	OAK
19	STA. 88+69.3, 17.5' RT	OAK
20	STA. 88+81.3, 09.0' RT	OAK
21	STA. 89+02.3, 09.1' RT	OAK
22	STA. 90+59.3, 01.8' LT	OAK
23	STA. 89+18.5, 41.3' LT	OAK
24	STA. 89+18.5, 62.3' LT	OAK
25	STA. 89+29.4, 61.3' RT	OAK
26	STA. 89+29.3, 82.3' RT	OAK

TRAFFIC SIGNAL POLE DIMENSIONS						
INTERSECTION	LOCATION	TRAFFIC POLE ID#	POLE TYPE[1]	HEIGHT OF MAST ARM ATTACHMENT	MAST ARM LENGTH	FOUDNATION TYPE[2]
IOWA AVENUE	STA. 56+86.4, 39.5' RT	PL01	4	20'	45'	B
	STA. 57+81.7, 39.5' RT	PL02	4	20'	30'	A
	STA. 57+81.9, 20.6' LT	PL03	1A	8'	--	--
	STA. 57+57.1, 52.2' LT	PL04	4	20'	20'	A
	STA. 56+86.4, 42.5' LT	PL05	4	8'	--	--
	STA. 57+10.8, 50.5' LT	PL06	1A	20'	50'	C
CEDAR STREET	STA. 64+32.2, 2.4' LT	PL07	4	20'	30'	A
	STA. 64+48.8, 46.2' LT	PL08	1A	8'	--	--
	STA. 64+63.2, 46.6' LT	PL09	4	20'	20'	A
	STA. 65+20.1, 20.5' LT	PL10	1A	8'	--	--
	STA. 65+20.7, 39.5' RT	PL11	4	20'	30'	A
	STA. 64+22.5, 50.2' RT	PL12	4	20'	45'	B
OAK STREET	STA. 89+04.6, 50.5' RT	PL13	1B	5'-6'	--	--
	STA. 88+89.6, 45.7' RT	PL14	4	20'	25'	A
	STA. 88+95.0, 23.1' LT	PL15	4	20'	30'	A
	STA. 89+88.5, 27.6' LT	PL16	4	20'	55'	C
	STA. 89+42.7, 45.9' RT	PL17	4	20'	35'	A
	STA. 89+34.7, 50.8' RT	PL18	1B	5'-6'	--	--

1. REFER TO SHEET E.13 FOR DETAILS
2. REFER TO SHEET E.12 FOR DETAILS FOR

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 01/19/2017
DESIGNED BY: — DATE:
CHECKED BY: — DATE:
APPROVED BY: — DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
WATER AND INTERSECTION
TABULATIONS (SHEET 2 OF 2)

REF No.
SCALE: NOTED — FILE No. 59
DRAWING No. DUG0096L — REV. No. 0
SHEET No. C.26

HORIZ. 0 400 800
SCALE FEET

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MUSCATINE

HDR

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Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
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REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CITY RAVINE SITE

SHEET C.27

HORIZ. SCALE 0 20 40 FEET

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HDR

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REV	ISSUED FOR	DATE

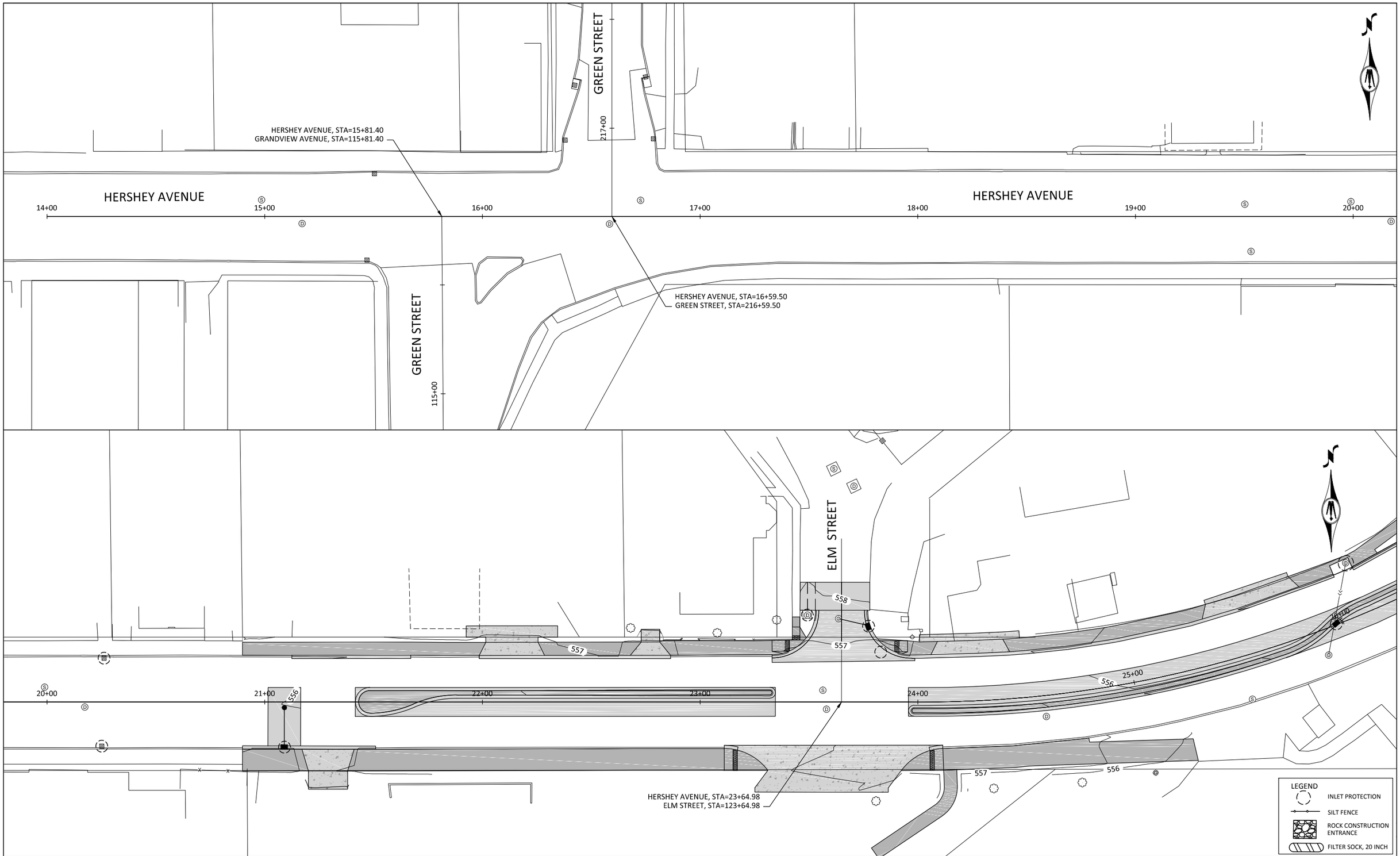
DESIGNED	AMP
DRAWN	AMP
CHECKED	KDM

MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

CONTRACTOR STAGING AREA DETAIL

SHEET C.28



HORIZ. SCALE 0 20 40 FEET

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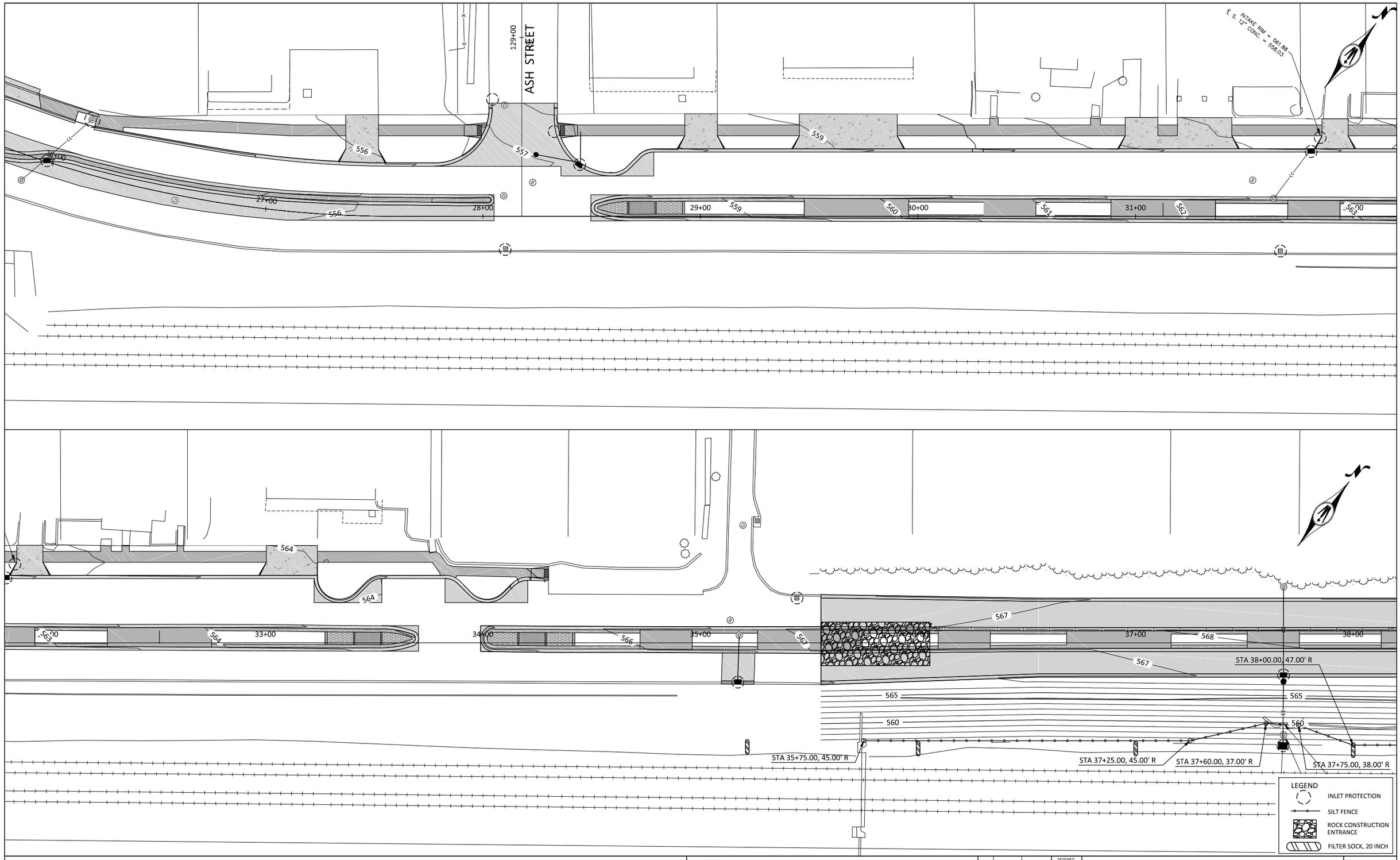
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.29



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REV	ISSUED FOR	DATE

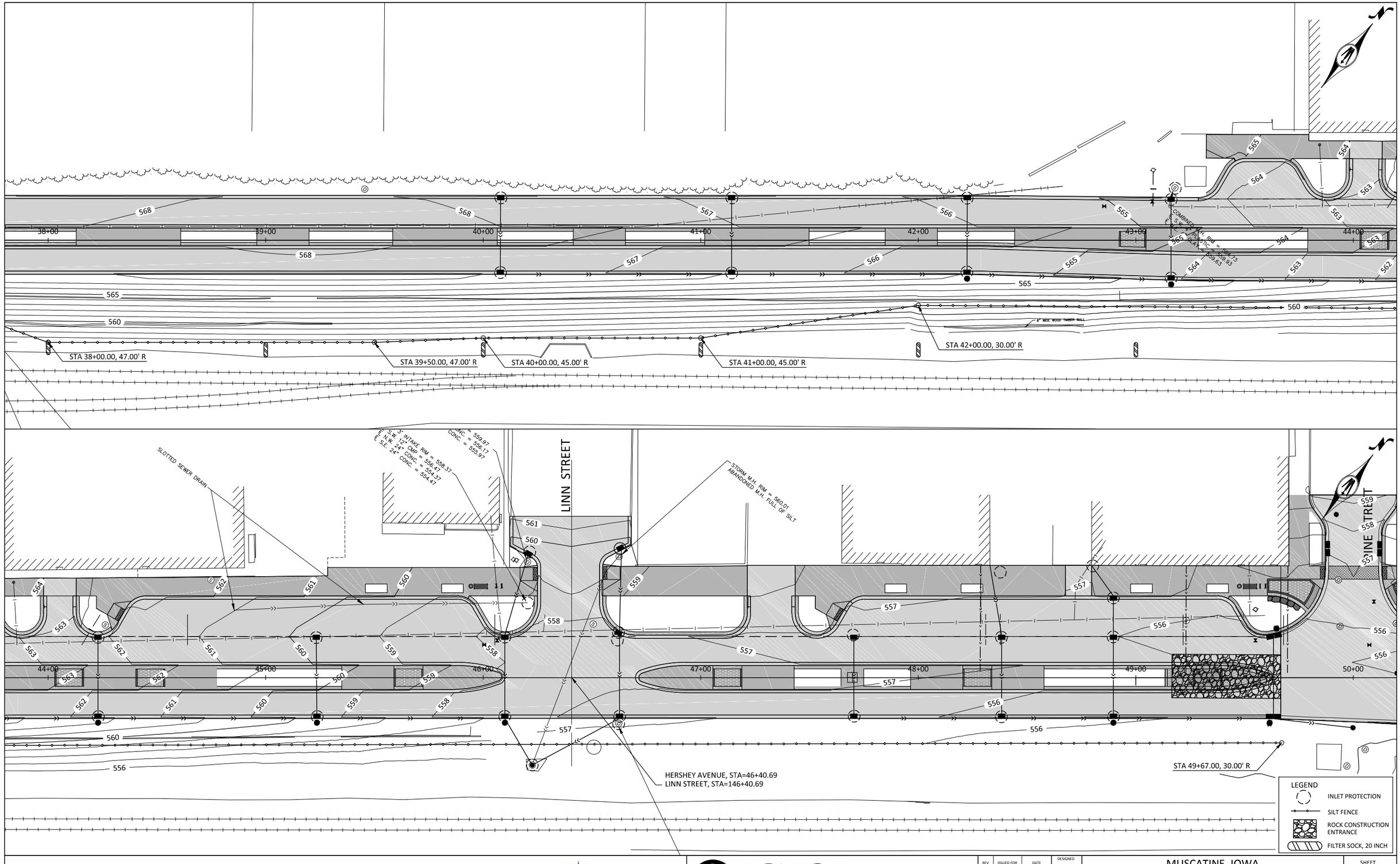
DESIGNED AMP
DRAWN AMP
CHECKED KDM

MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

EROSION CONTROL

SHEET C.30



HORIZ. SCALE 0 20 40 FEET

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DRAWN AMP
CHECKED KDM

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.31

PINE STREET

MISSISSIPPI DRIVE

PHASE B1
USE HERSHEY AVENUE ALIGNMENT

PHASE A1
USE MISSISSIPPI DRIVE ALIGNMENT

PC 51+06.34

48+00 49+00 50+00 51+00

559.0 558.5 558.0 557.5 557.0 556.5 556.0 555.5 555.0 554.5 554.0 553.5 553.0

LEGEND

- INLET PROTECTION
- SILT FENCE
- ROCK CONSTRUCTION ENTRANCE

HORIZ. SCALE 0 10 20 FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.32

CHESTNUT STREET

MISSISSIPPI DRIVE

PC 51+06.94

PT 51+47.55

PC 52+92.23

PT 53+01.35

51+00

52+00

53+00

54+00

559.5 559.0 559.0 558.5 558.5 558.0 558.0 557.5 557.5 557.0 557.0 557.0 557.0 556.5 556.5 556.0 556.0 555.5 555.5 555.0 554.5 554.0

LEGEND

- INLET PROTECTION
- SILT FENCE
- ROCK CONSTRUCTION ENTRANCE

HORIZ: 0 10 20
SCALE FEET

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MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.33

MERRILL HOTEL
WORK BY OTHERS

CHESTNUT STREET

MISSISSIPPI DRIVE

54+00

53+00

PT 53+07.15

PC 52+92.23

LEGEND

- INLET PROTECTION
- SILT FENCE
- ROCK CONSTRUCTION ENTRANCE

HORIZ: 0 10 20
SCALE FEET

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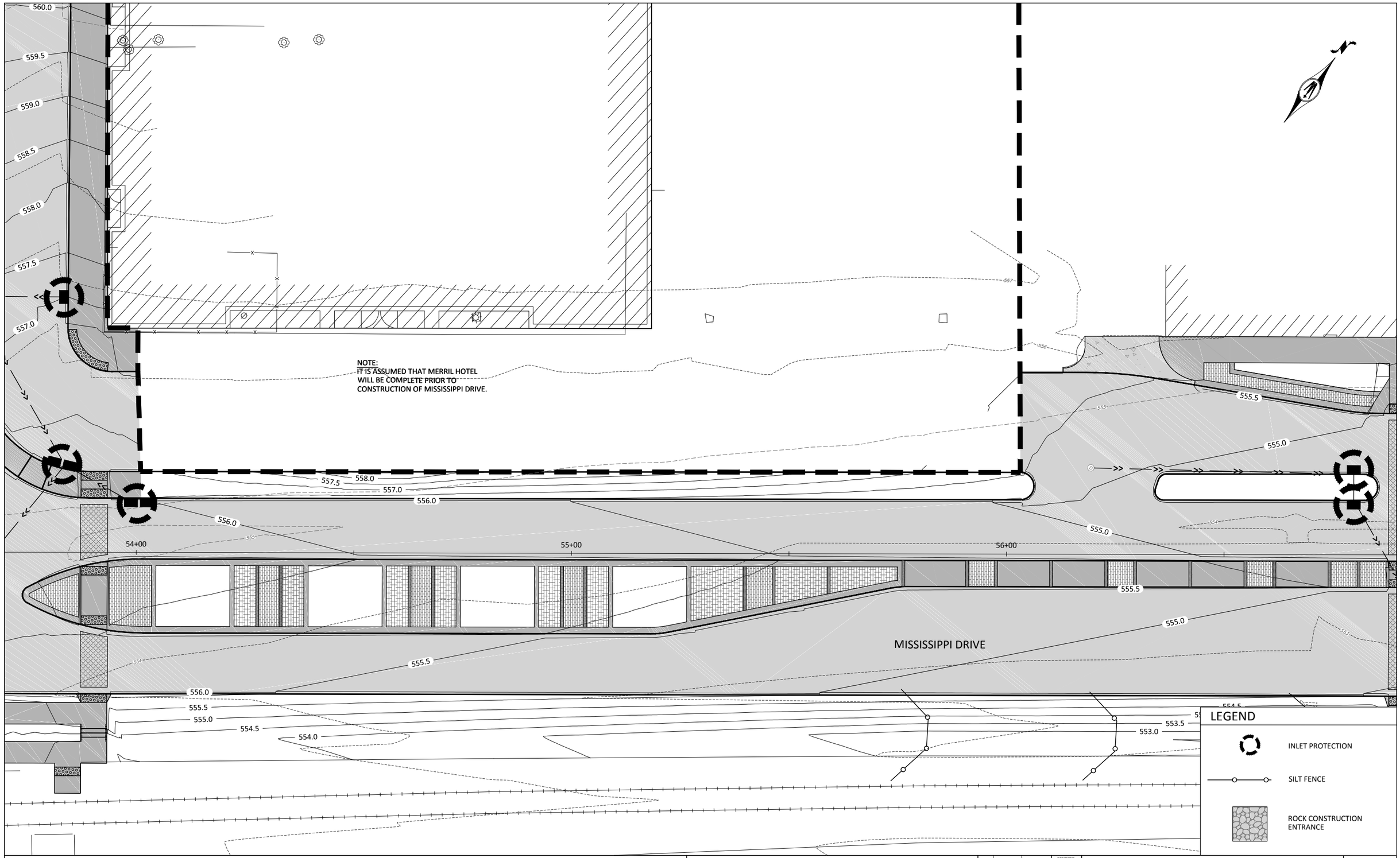
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.34



HORIZ: 0 10 20
SCALE FEET

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MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.35

IOWA AVENUE

MISSISSIPPI DRIVE

557.0
556.5
556.0
555.5
555.5
555.0
554.5
554.0
553.5
553.0
552.5
552.0

57+00
58+00
59+00

PC 52.36
PT 58+89.17
PC 59+21.58
PT 59+59.89

LEGEND

- INLET PROTECTION
- SILT FENCE
- ROCK CONSTRUCTION ENTRANCE

HORIZ. SCALE 0 10 20 FEET

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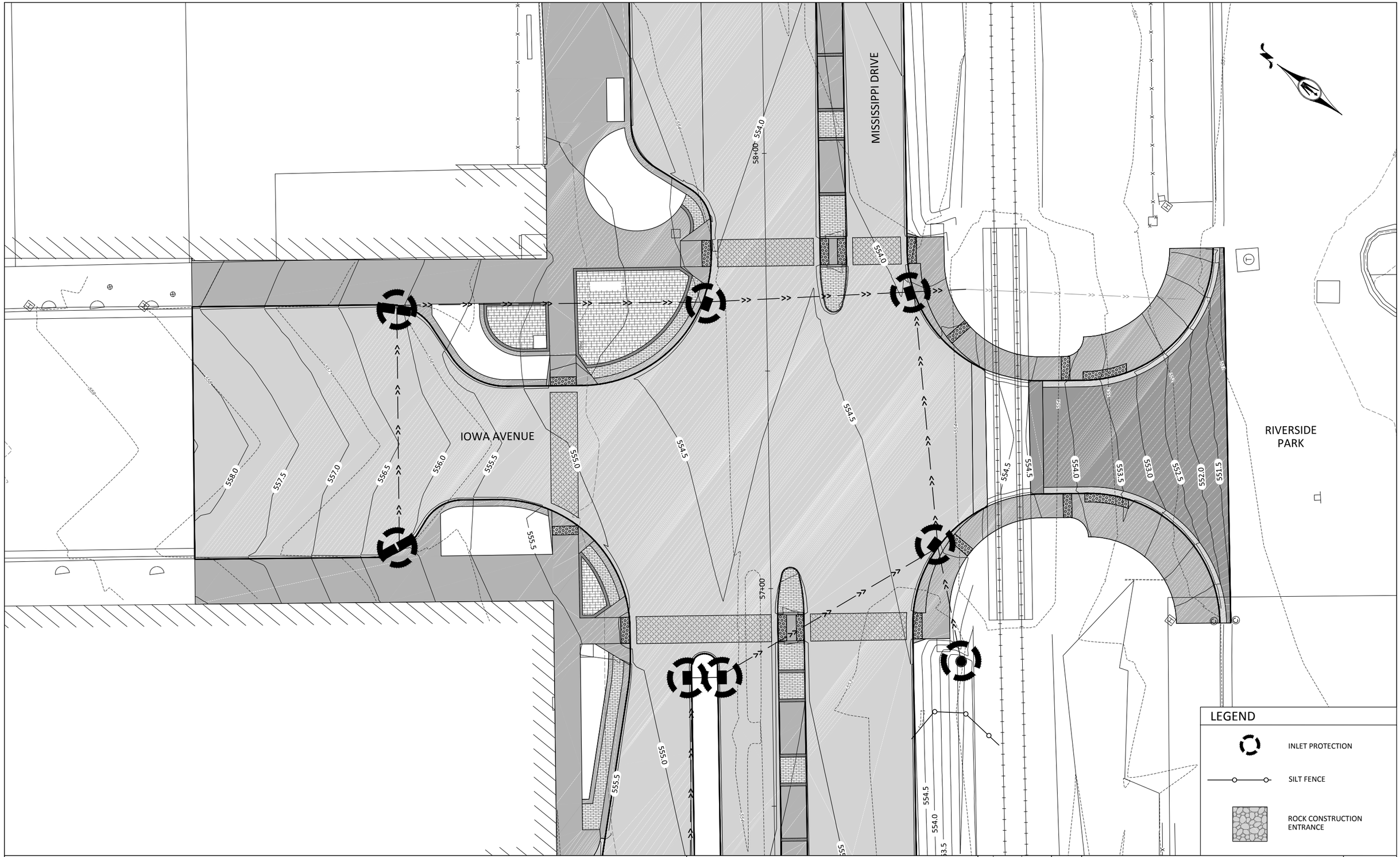
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.36



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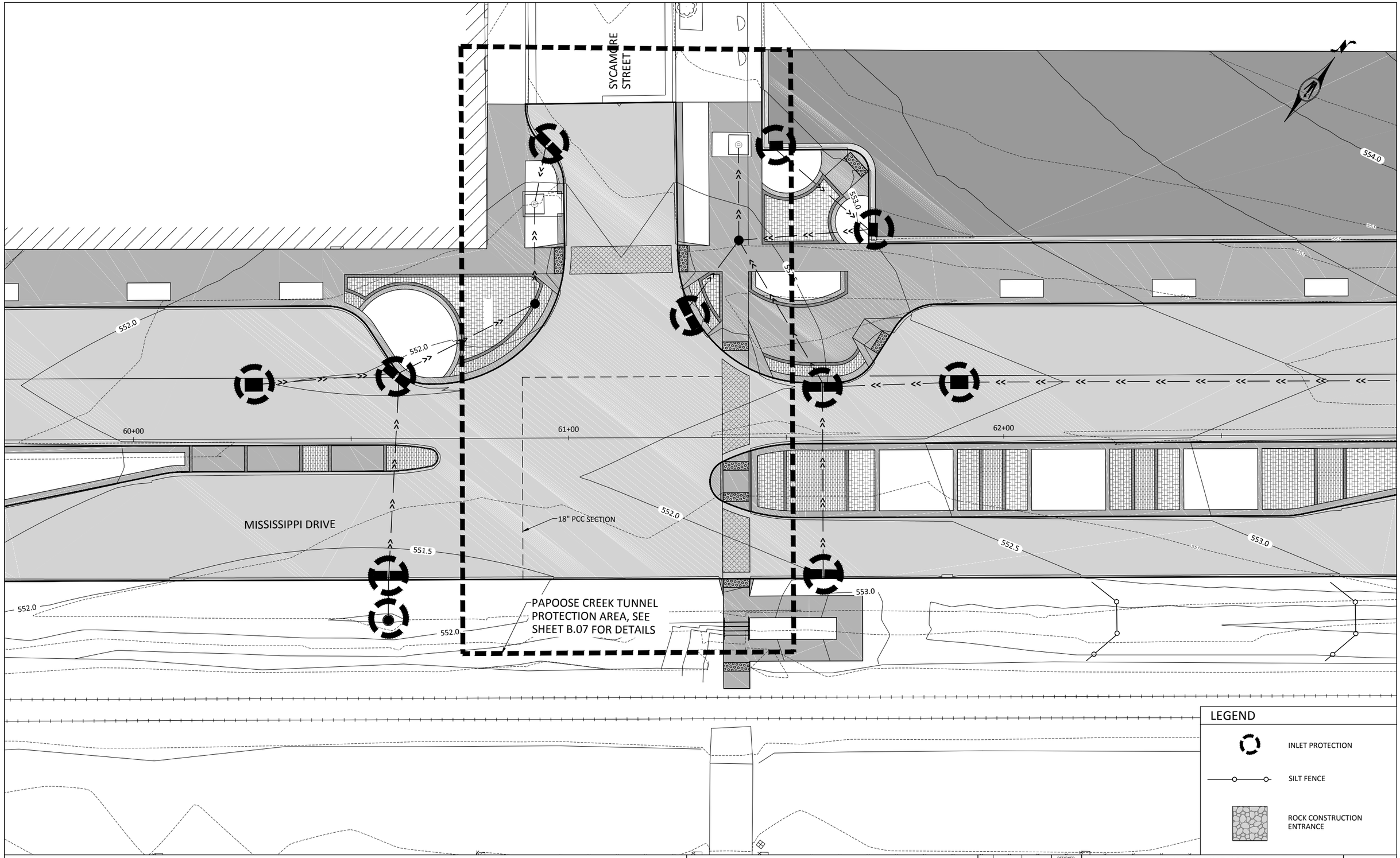
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.37



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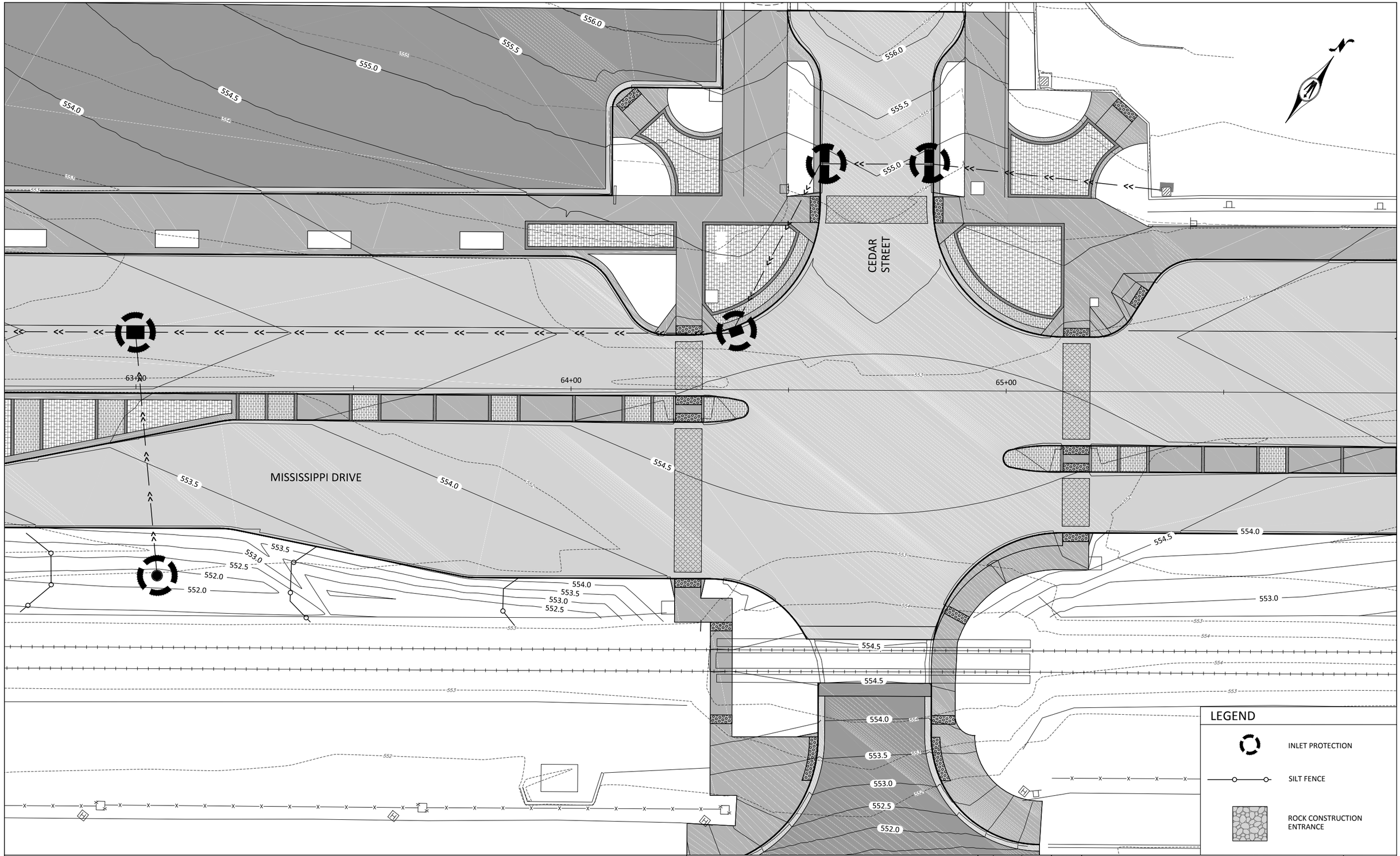
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.38



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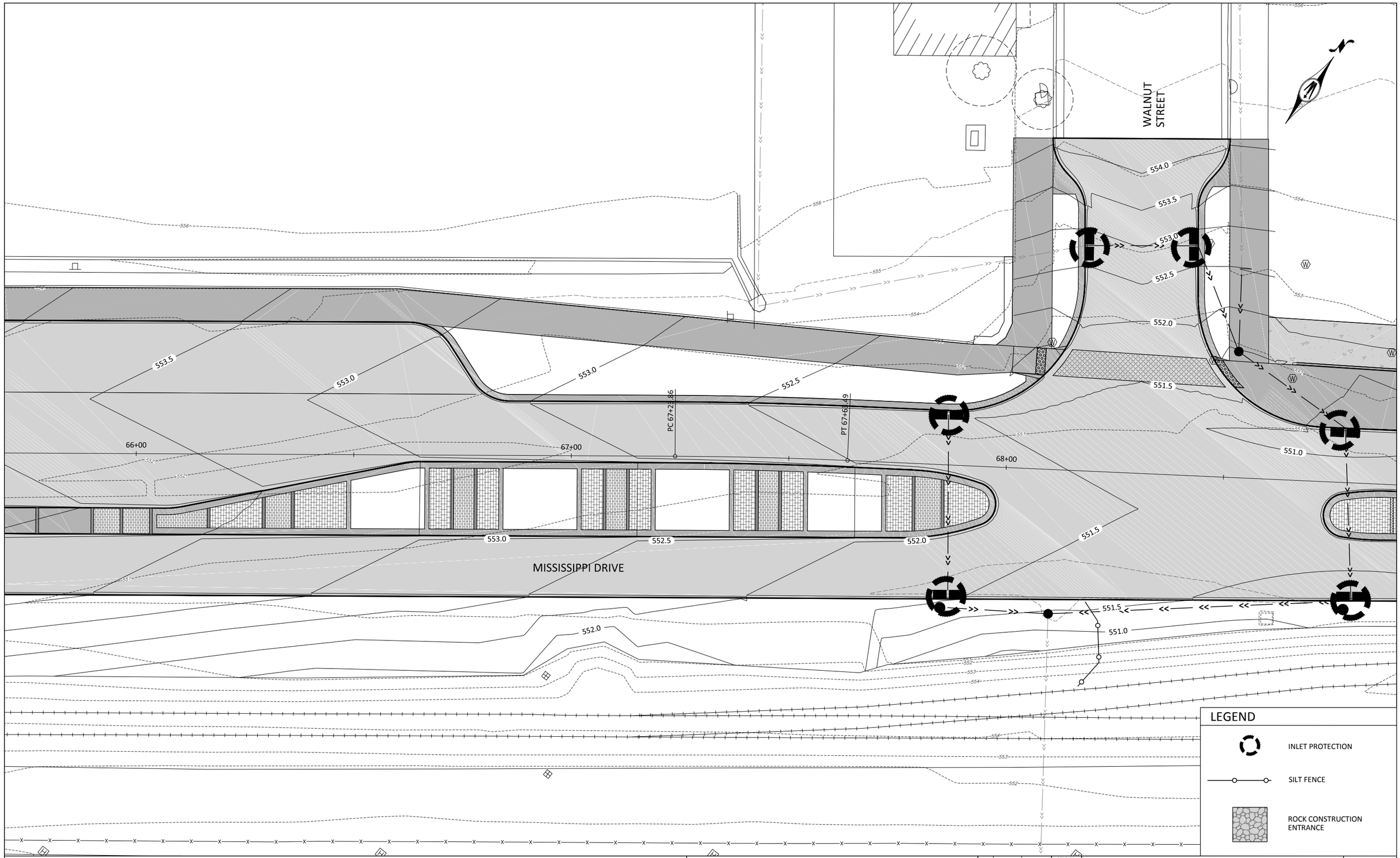
EROSION CONTROL

SHEET C.39



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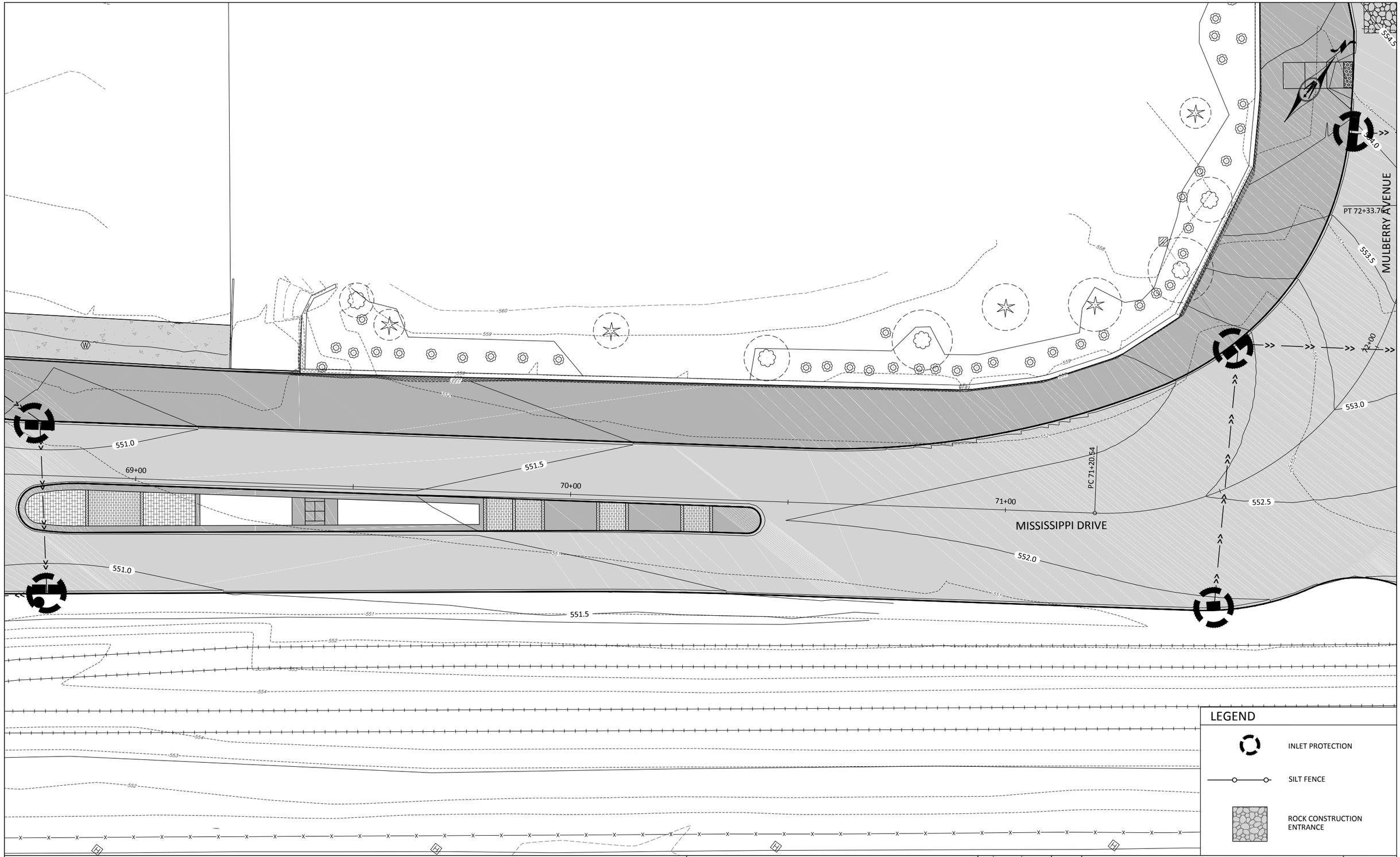
EROSION CONTROL

SHEET C.40



LEGEND

- INLET PROTECTION
- SILT FENCE
- ROCK CONSTRUCTION ENTRANCE

HORIZ: 0 10 20
SCALE FEET

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MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.41

MULBERRY AVENUE

MISSISSIPPI DRIVE

71+00

72+00

PC 71+20.54

PT 72+33.77

554.5

554.0

553.5

553.0

552.5

552.0

LEGEND

- INLET PROTECTION
- SILT FENCE
- ROCK CONSTRUCTION ENTRANCE

HORIZ. SCALE 0 10 20 FEET

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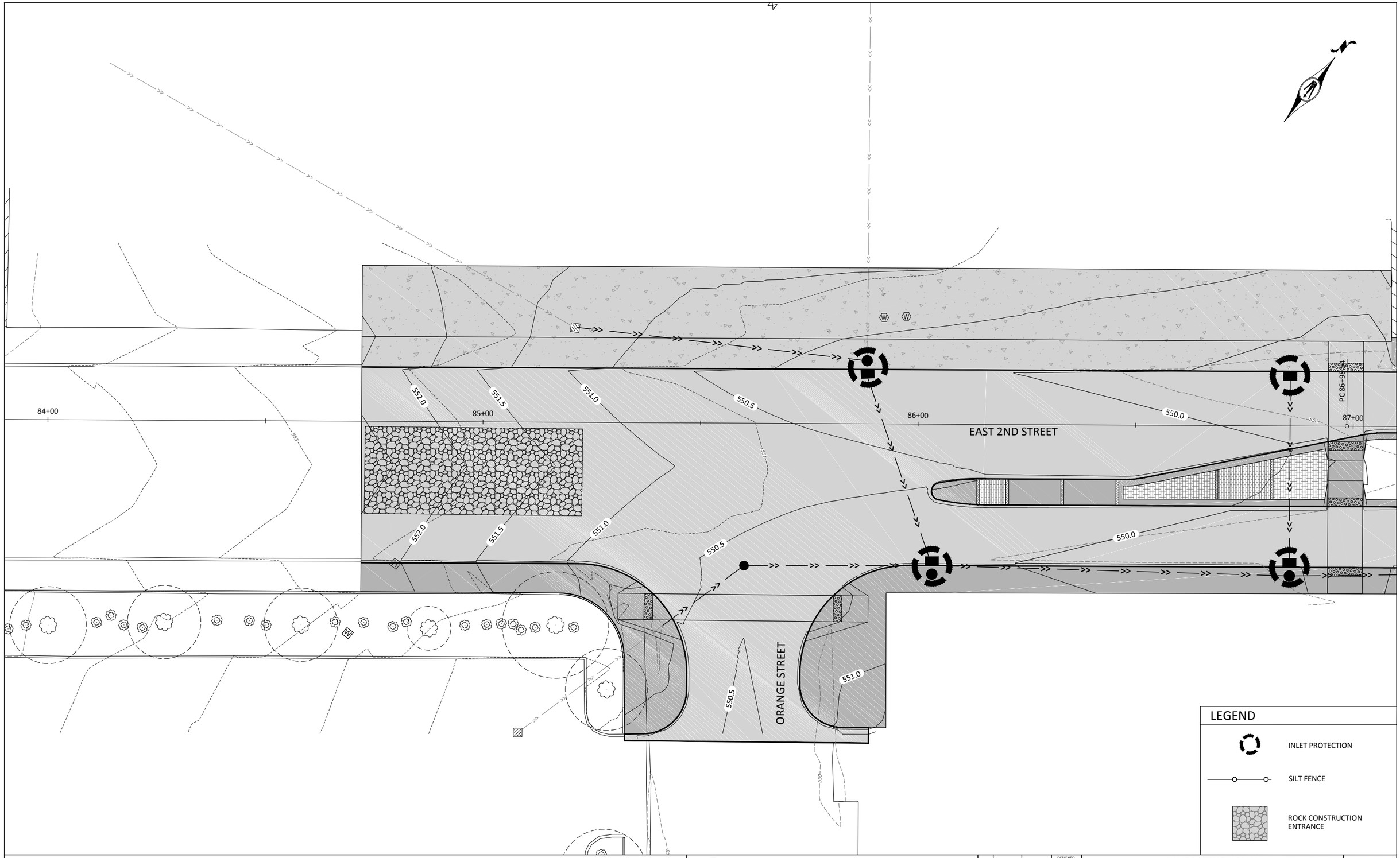
MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

EROSION CONTROL

SHEET C.42



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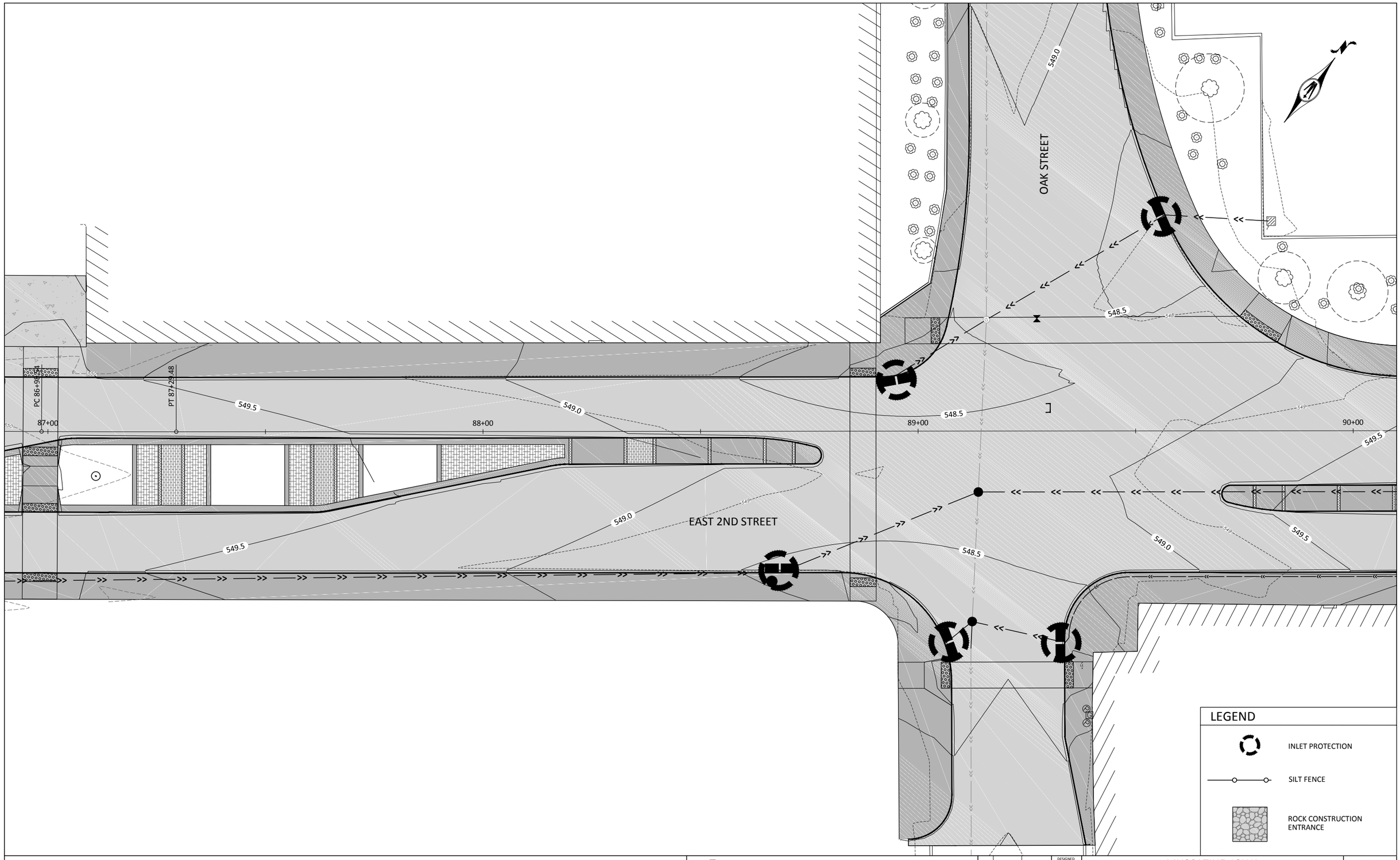
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.43



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HORIZ. SCALE FEET

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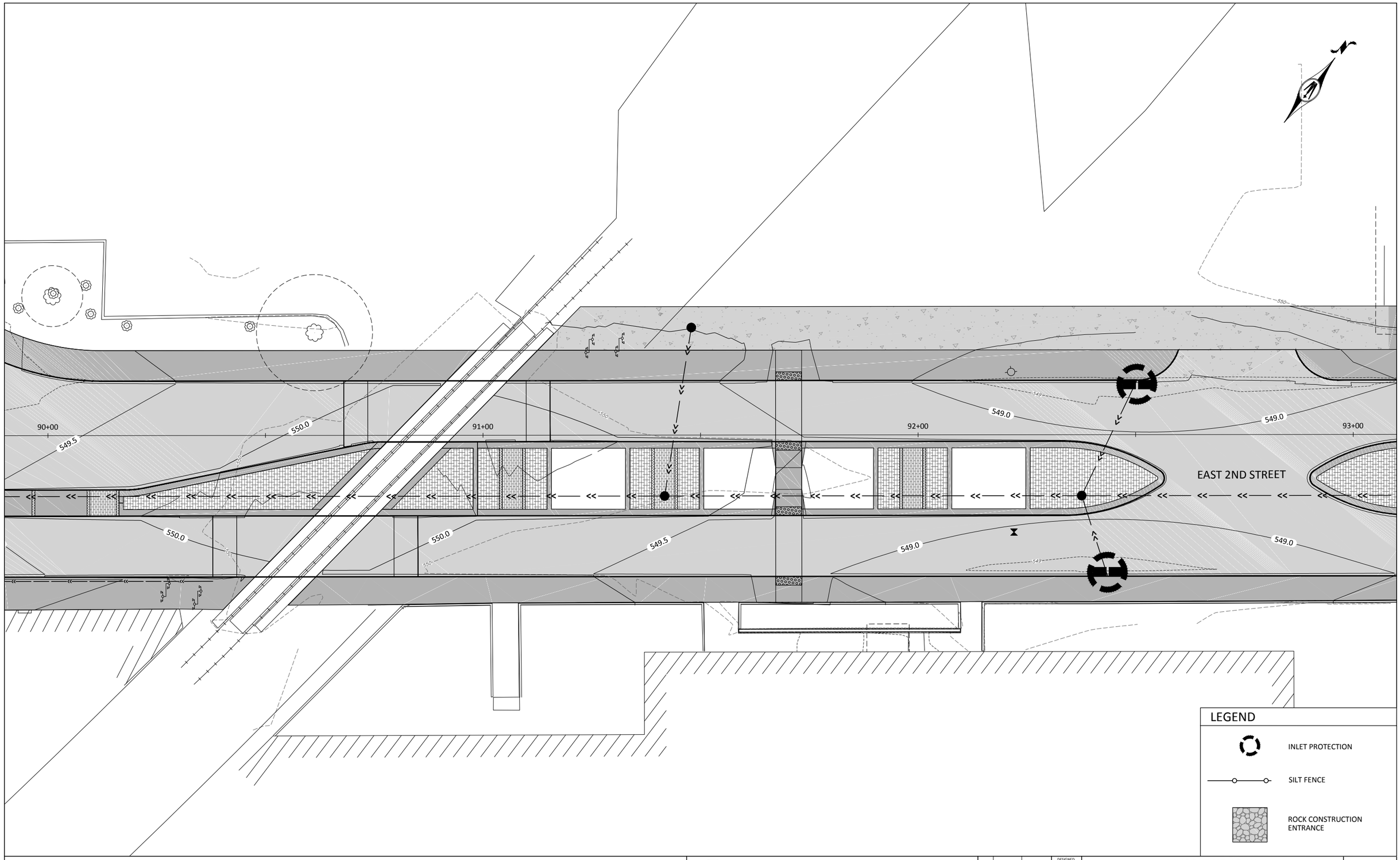
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EROSION CONTROL

SHEET C.44



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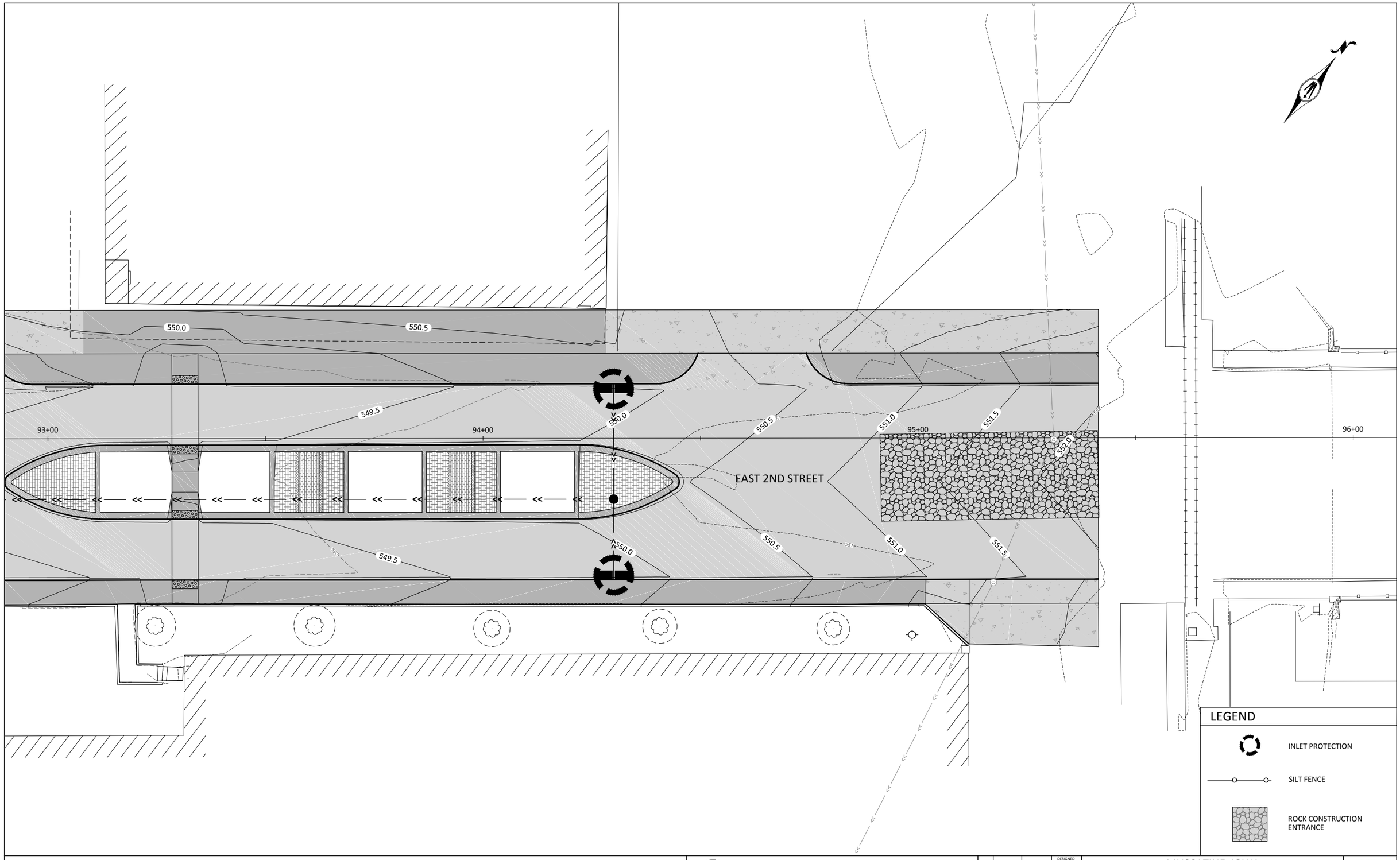
EROSION CONTROL

SHEET C.45



LEGEND

- INLET PROTECTION
- SILT FENCE
- ROCK CONSTRUCTION ENTRANCE

HORIZ: 0 10 20
SCALE FEET

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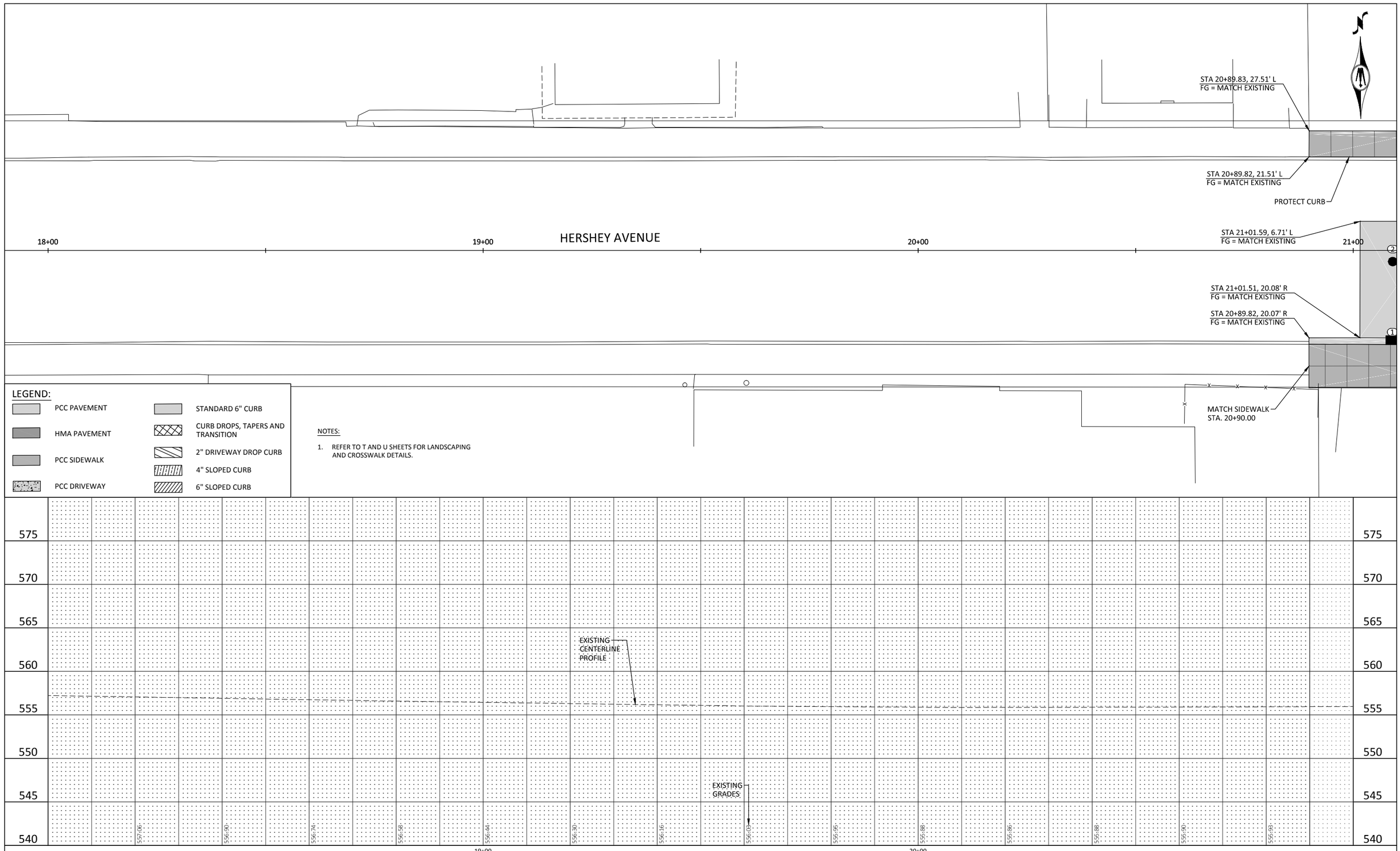
EROSION CONTROL

SHEET C.46



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VERT. SCALE 0 5 10 FEET

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CHECKED KDM

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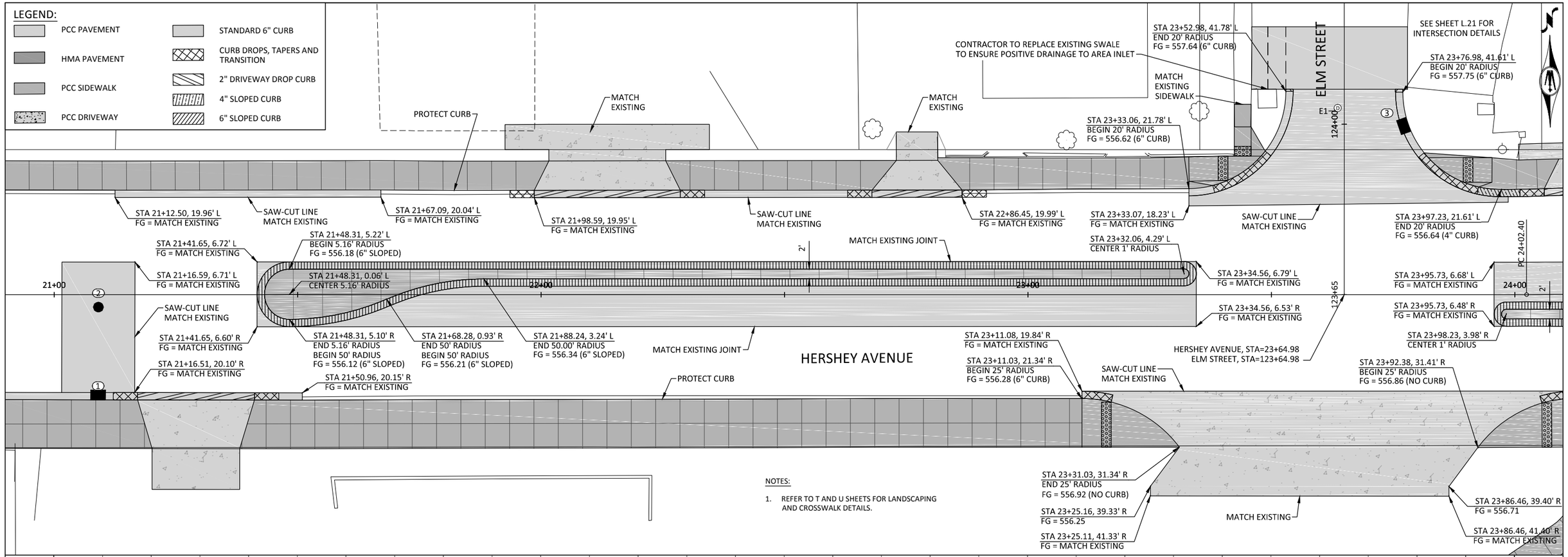
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - HERSHEY AVENUE

SHEET D.01

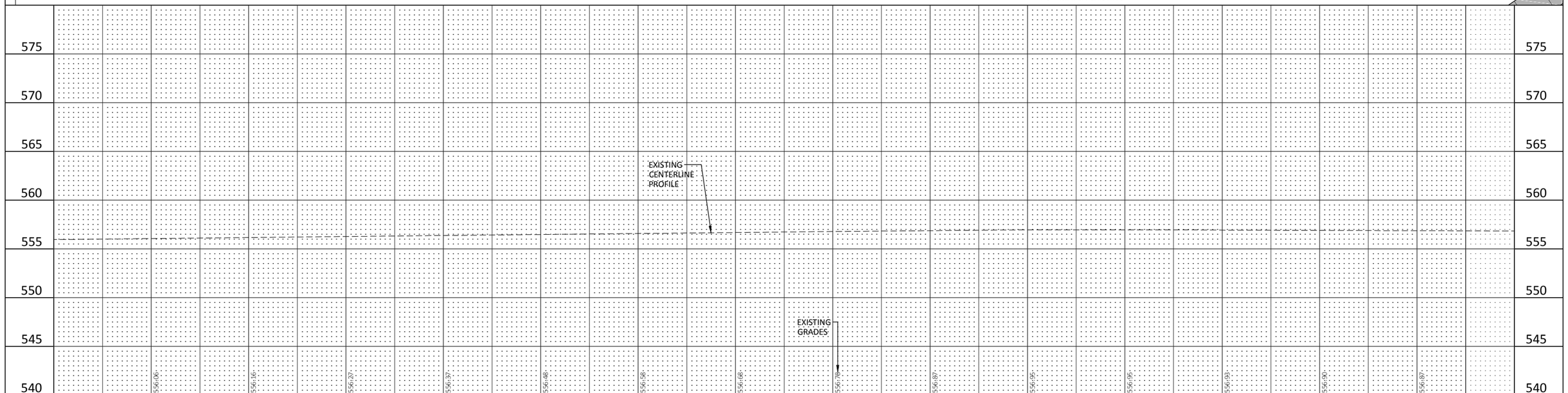
LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB



NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



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VERT. 0 5 10 SCALE FEET

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CHECKED KDM

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - HERSHEY AVENUE

SHEET D.02

NOTE:
CONTRACTOR SHALL FIELD-VERIFY EXISTING GRADES ALONG THE NORTH CONSTRUCTION LIMIT OF HERSHEY AVENUE TO MAINTAIN POSITIVE DRAINAGE OF SURFACE FLOW TO THE GUTTER. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONTRACT.

MATCH EXISTING

STA 23+98.61, 20.12' L
FG = MATCH EXISTING

STA 23+98.62, 19.02' L
FG = MATCH EXISTING

PC 24+02.40

24+00

2%

MATCH EXISTING JOINT

25+00

2%

MATCH EXISTING JOINT

STA 24+11.18, 19.88' R
FG = MATCH EXISTING

STA 24+11.16, 21.38' R
END 25' RADIUS
FG = 557.01 (6" CURB)

PROTECT CURB

STA 24+75.77, 21.75' R
FG = MATCH EXISTING

HERSHEY AVENUE

CONTRACTOR TO CONSTRUCT SIDEWALK TO CONNECT EXISTING SIDEWALK AT BUILDING TO PROPOSED TRAIL AT HERSHEY AVENUE.

EXACT LOCATION MAY VARY, BUT SHOULD BE CONSTRUCTED TO AVOID CONFLICT WITH THE PROPOSED DRIVEWAY AND CURB RAMPS.

STA 25+20.58, 30.85' R
FG = MATCH EXISTING

MATCH EXISTING SIDEWALK

STA 25+20.68, 41.06' R
FG = MATCH EXISTING

MATCH EXISTING

ADJUST INLET TO GRADE

E3
ⓓ

GRASS

STA 26+27.43, 23.03' L
FG = MATCH EXISTING

SAW-CUT LINE MATCH EXISTING

STA 25+92.14, 1.92' L
END 50' RADIUS
BEGIN 50' RADIUS
FG = 555.25 (6" SLOPED)

STA 25+70.09, 2.96' R
BEGIN 50' RADIUS
FG = 555.45 (6" SLOPED)

STA 26+13.37, 5.97' L
END 50' RADIUS
FG = 555.12 (6" SLOPED)

MATCH EXISTING JOINT

26+00

27+00

4

E2
ⓓ

STA 25+70.11, 4.96' R
BEGIN 52' RADIUS
FG = 555.49 (6" SLOPED)

STA 25+92.97, 0.10' L
END 52' RADIUS
BEGIN 48' RADIUS
FG = 555.04 (6" SLOPED)

STA 26+13.39, 3.97' L
END 48' RADIUS
FG = 555.06 (6" SLOPED)

MATCH EXISTING JOINT

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

EXISTING CENTERLINE PROFILE

EXISTING GRADES

575 570 565 560 555 550 545 540

556.75 556.60 556.39 556.14 556.02 555.73 555.58 555.46 555.35 555.32 555.37 555.27 555.46 555.53

25+00 26+00

HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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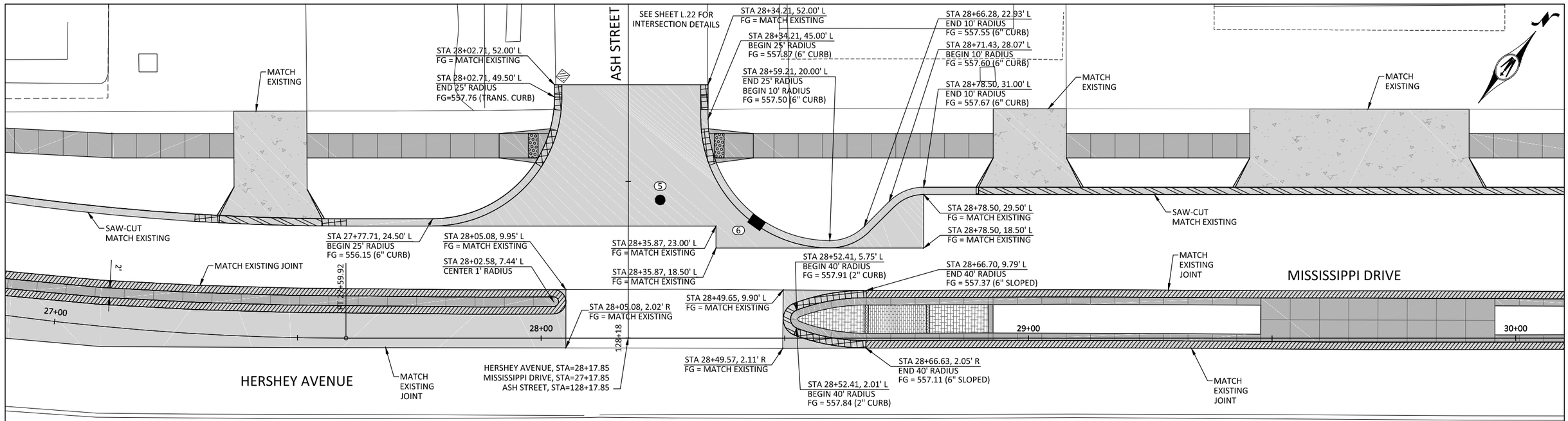
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - HERSHEY AVENUE

SHEET D.03

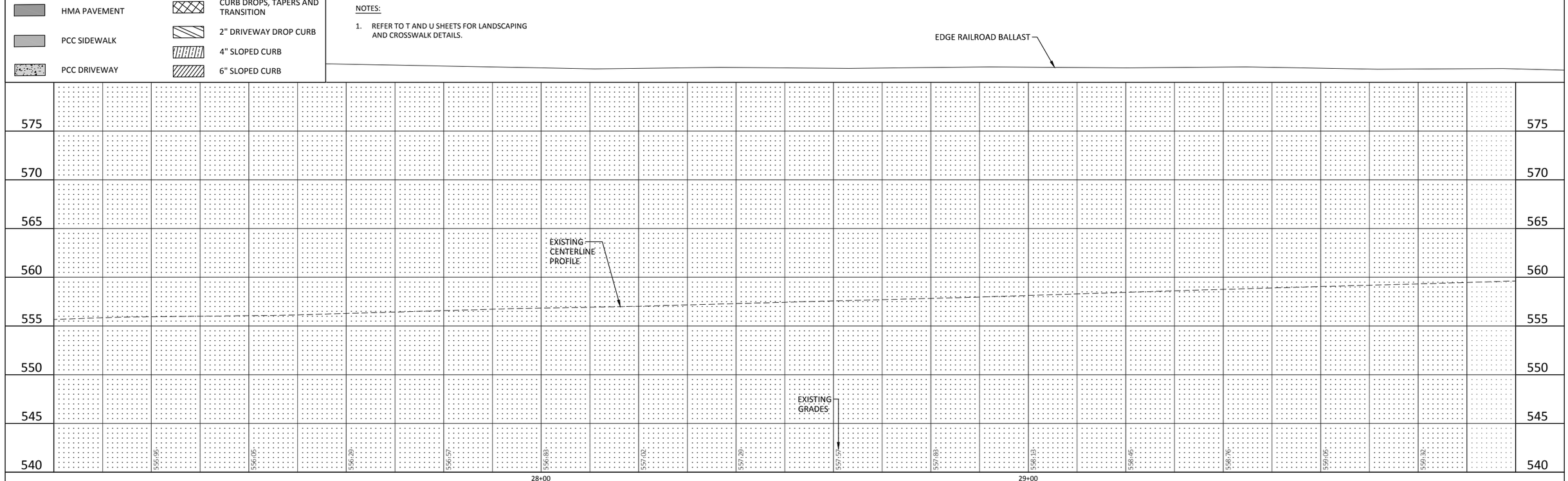


LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

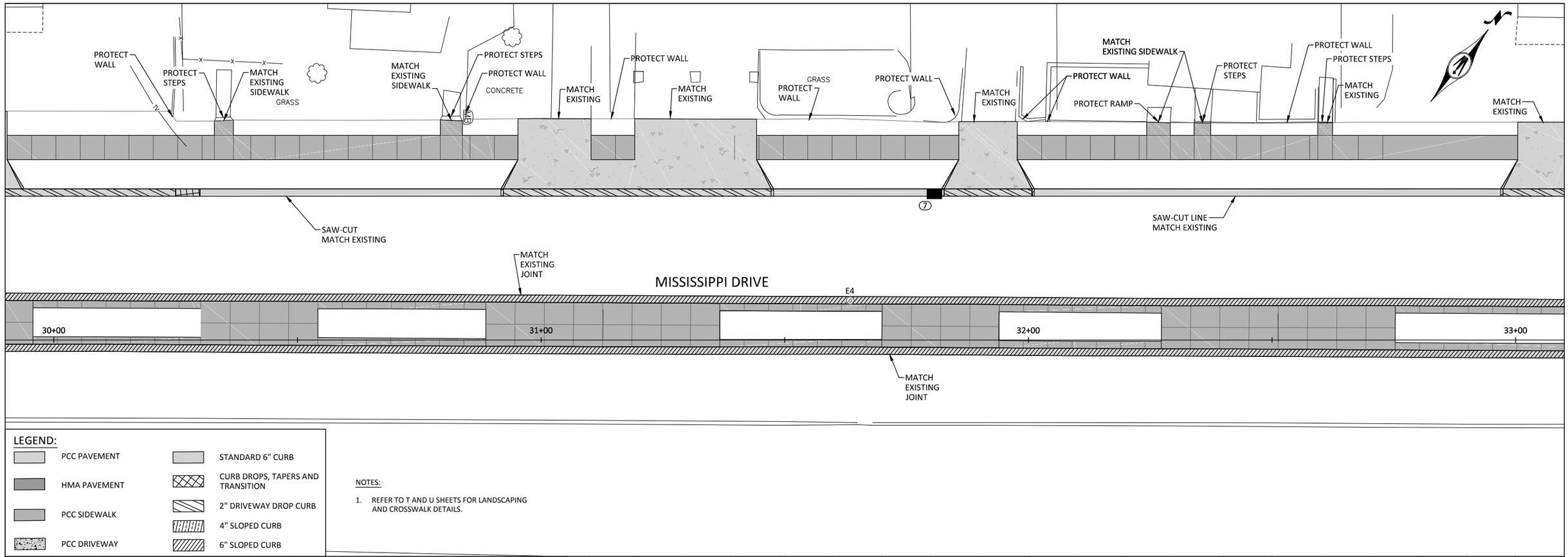
DESIGNED TJB
DRAWN TJB
CHECKED KDM

MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

PLAN AND PROFILE - HERSHEY AVENUE

SHEET D.04

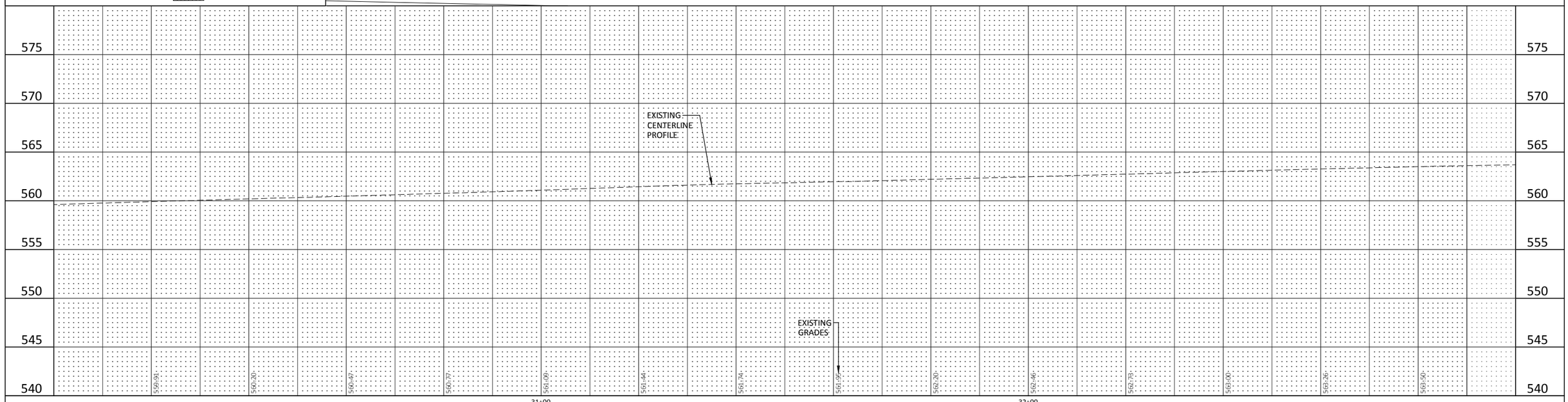


LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



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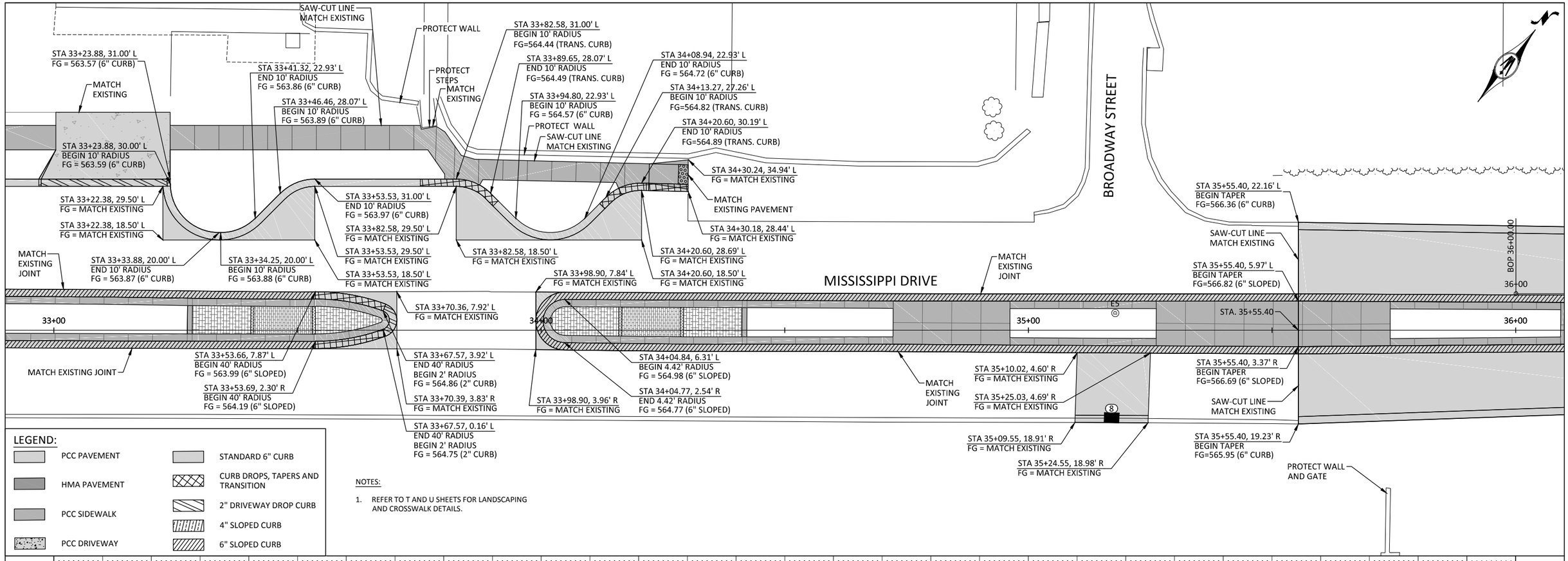
MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

PLAN AND PROFILE - MISSISSIPPI DRIVE

SHEET D.05



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VERT. 0 5 10 SCALE FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - MISSISSIPPI DRIVE

SHEET D.06

STA 36+55.40, 20.50' L
END TAPER
FG=566.91 (6" CURB)

STA 36+55.40, 5.50' L
END TAPER
FG=567.21 (6" SLOPED)

BOP 36+00.00

36+00 37+00 MISSISSIPPI DRIVE 38+00 39+00

15'

8'

13.25'

STA 36+55.40, 2.50' R
END TAPER
FG=566.89 (6" SLOPED)

STA 36+55.40, 15.75' R
END TAPER
FG=566.63 (6" CURB)

E6

9

9a

EDGE RAILROAD BALLAST

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

585 580 575 570 565 560 555 550

EXISTING CENTERLINE PROFILE

PROPOSED CENTERLINE PROFILE

0.50%

VPI 39+40.00
ELEV 568.63
CURVE LEN=140.00'
E=0.25'

VPC 38+70.00
ELEV 568.28

PROPOSED GRADES

EXISTING GRADES

567.03 567.06 567.13 567.18 567.23 567.34 567.33 567.43 567.43 567.59 567.53 567.64 567.63 567.70 567.73 567.75 567.83 567.92 567.93 567.98 568.03 568.09 568.13 568.16 568.23 568.26 568.33 568.35

37+00 38+00

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - MISSISSIPPI DRIVE

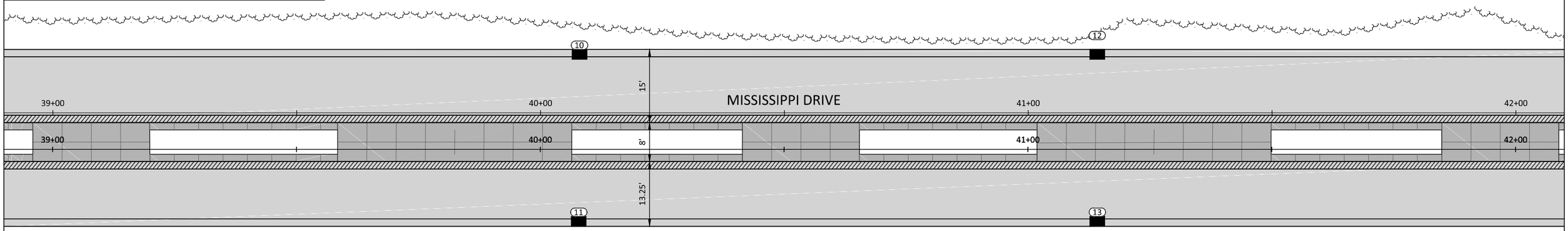
SHEET D.07

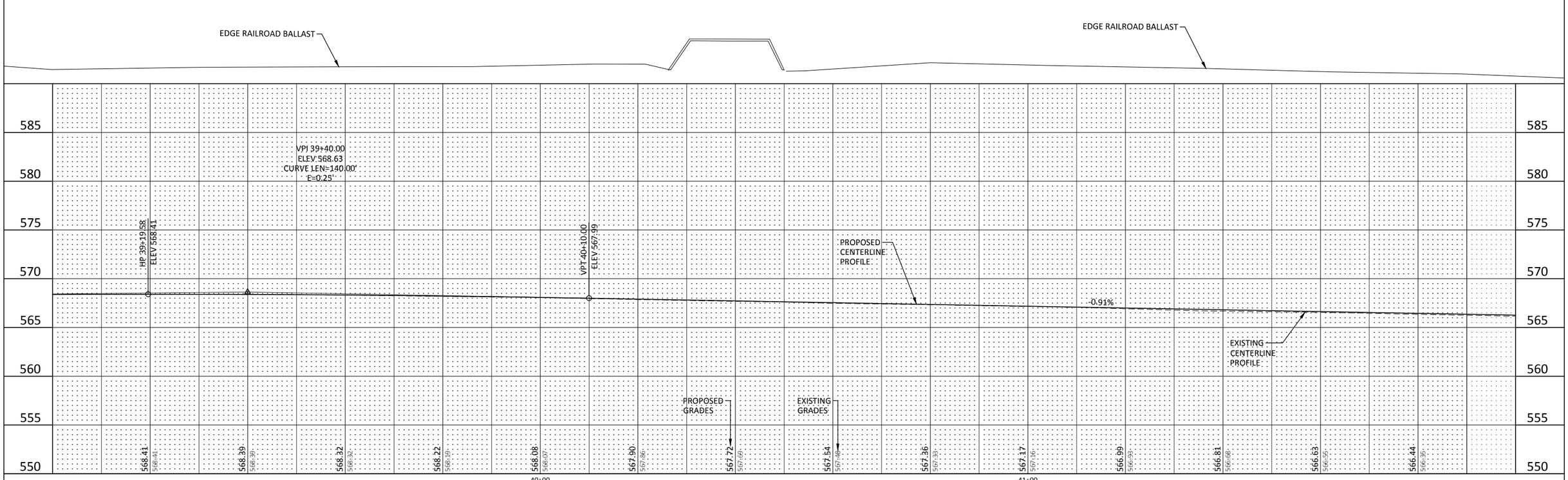
LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.





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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - MISSISSIPPI DRIVE

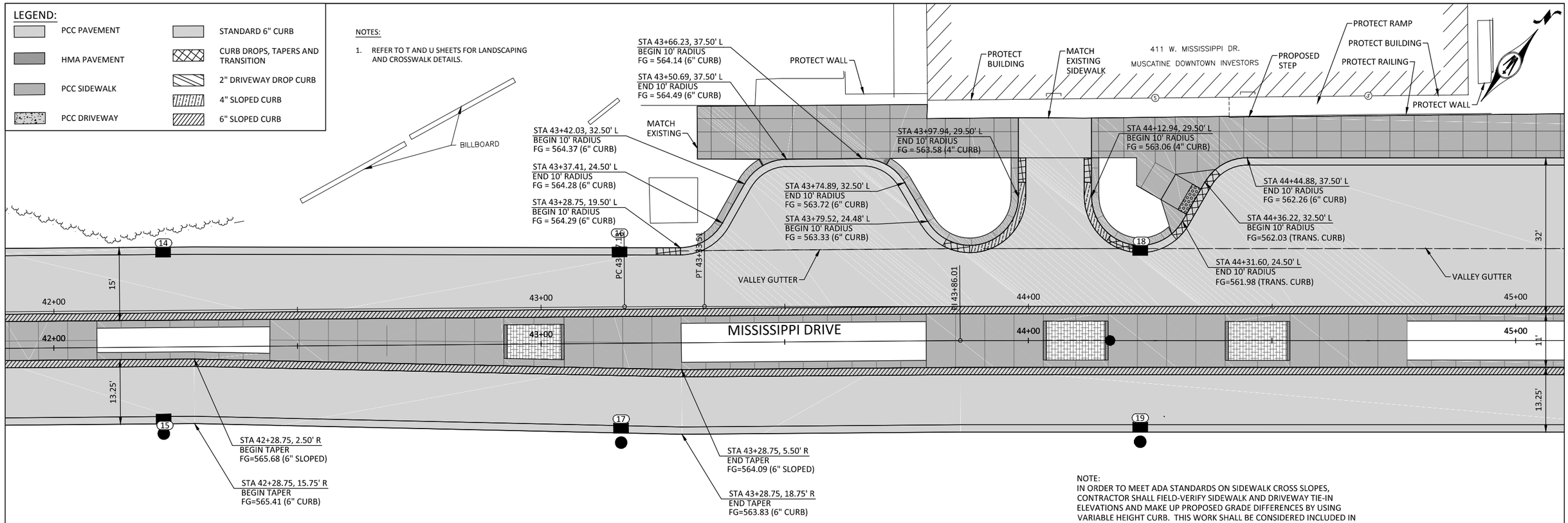
SHEET D.08

LEGEND:

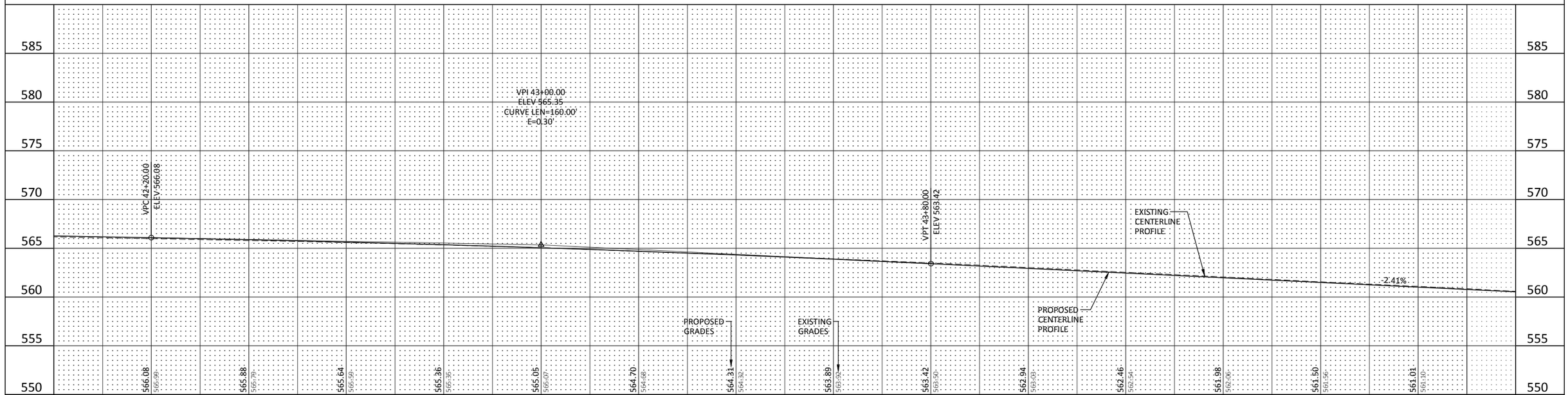
- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



NOTE:
IN ORDER TO MEET ADA STANDARDS ON SIDEWALK CROSS SLOPES, CONTRACTOR SHALL FIELD-VERIFY SIDEWALK AND DRIVEWAY TIE-IN ELEVATIONS AND MAKE UP PROPOSED GRADE DIFFERENCES BY USING VARIABLE HEIGHT CURB. THIS WORK SHALL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE FOR PAVEMENT, PCC, 10 INCH.



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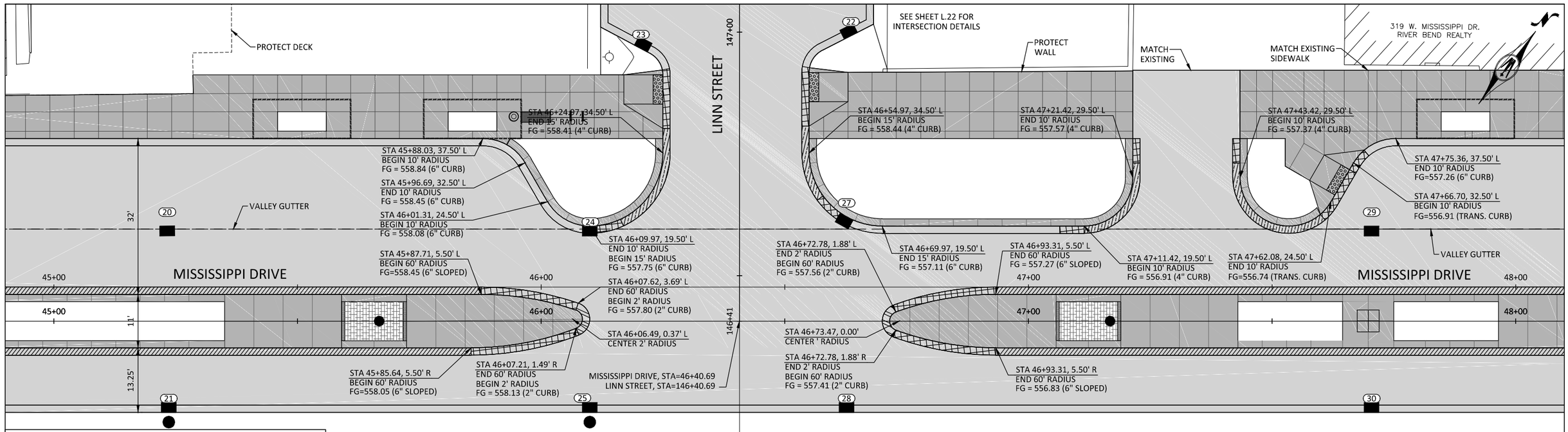
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - MISSISSIPPI DRIVE

SHEET D.09



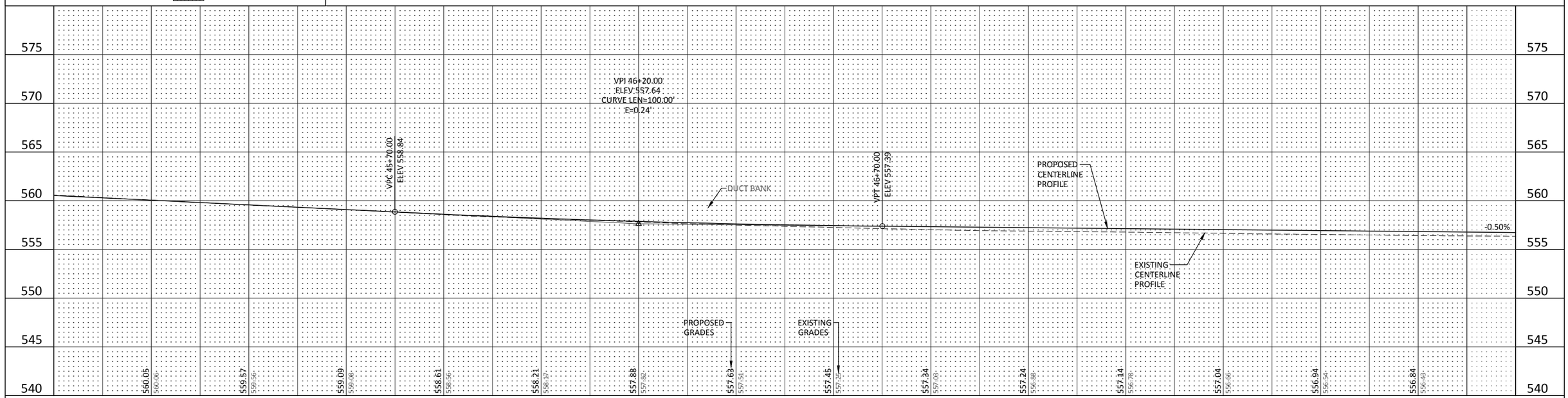
LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

NOTE:
IN ORDER TO MEET ADA STANDARDS ON SIDEWALK CROSS SLOPES, CONTRACTOR SHALL FIELD-VERIFY SIDEWALK AND DRIVEWAY TIE-IN ELEVATIONS AND MAKE UP PROPOSED GRADE DIFFERENCES BY USING VARIABLE HEIGHT CURB. THIS WORK SHALL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE FOR PAVEMENT, PCC, 10 INCH.



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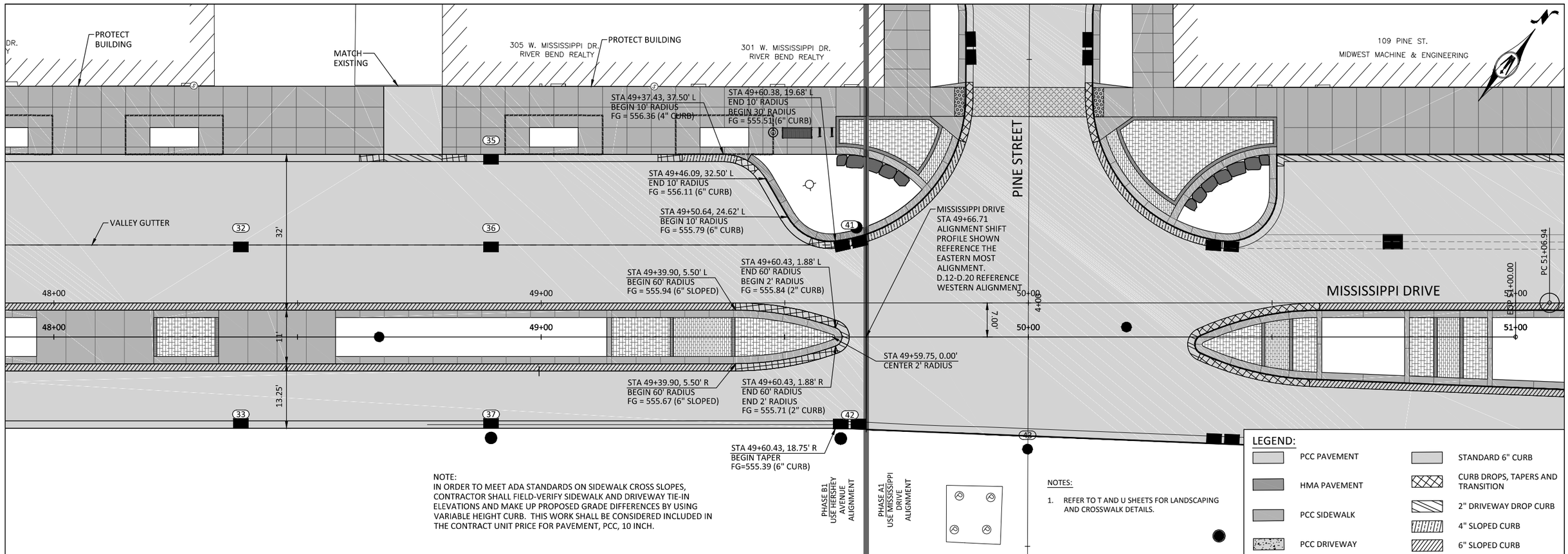
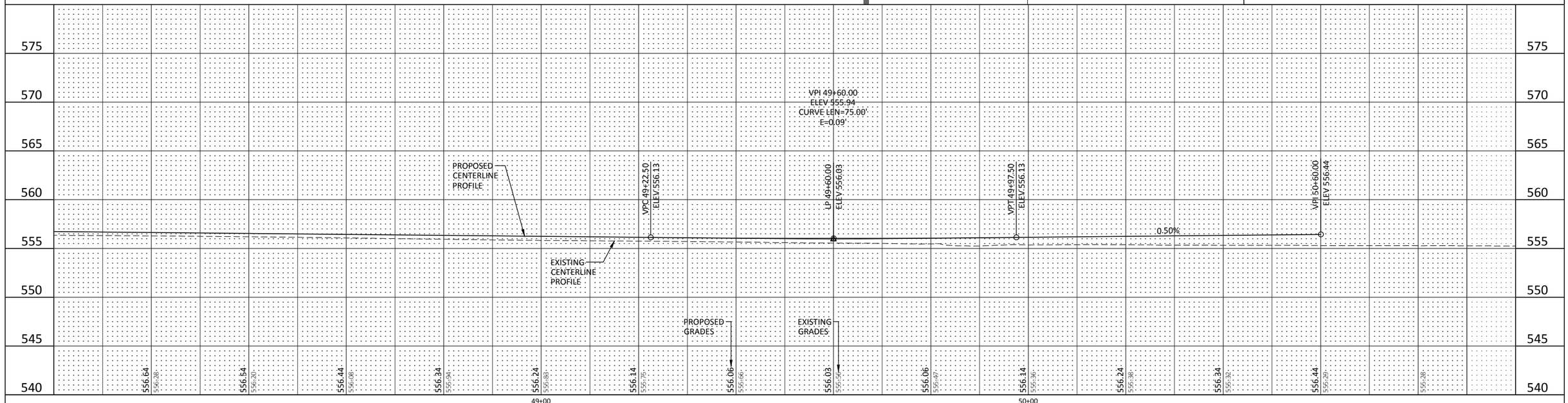
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - MISSISSIPPI DRIVE

SHEET D.10





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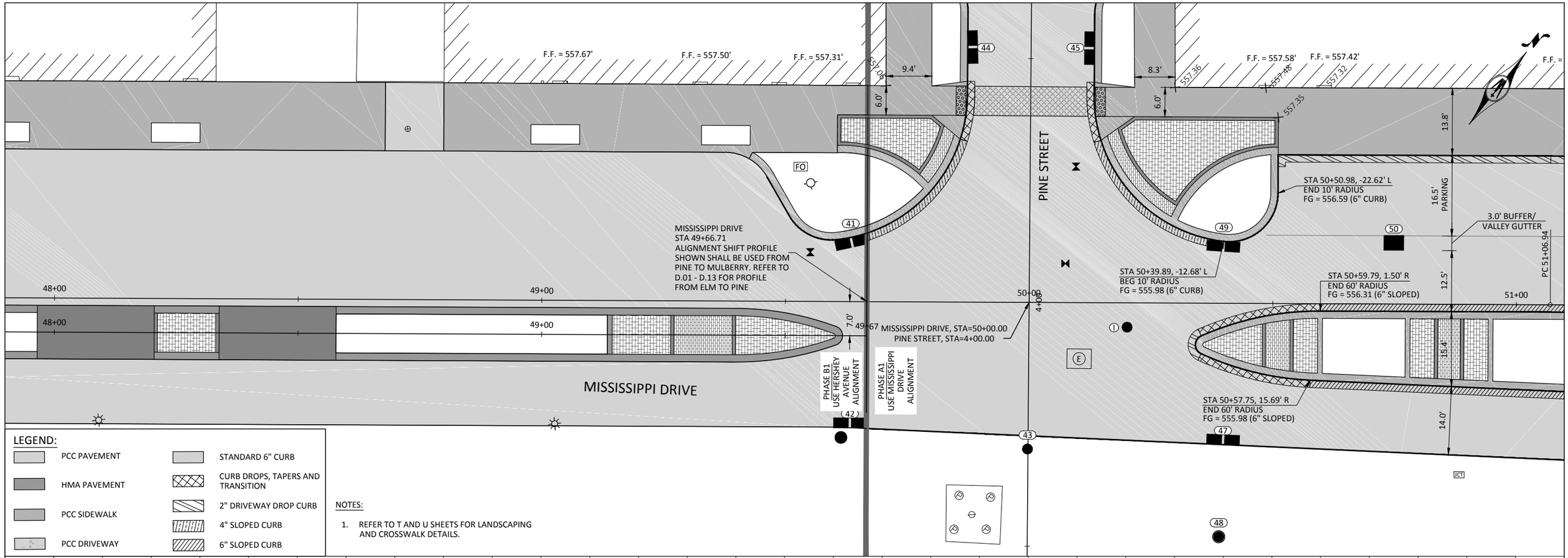
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - MISSISSIPPI DRIVE

SHEET D.11

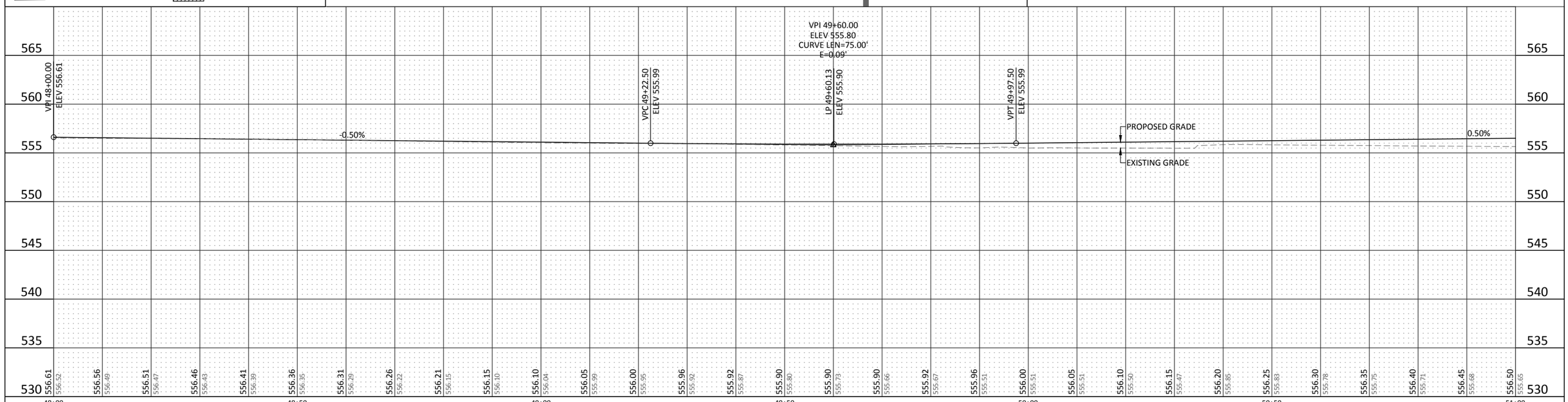


LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI PLAN & PROFILE

SHEET D.12

F.F. = 557.26' F.F. = 557.54' F.F. = 557.44' F.F. = 557.03'

557.16 557.44 557.34 557.00 557.03 557.90 557.89 557.83 557.71 557.59

DO NOT DISTURB EXISTING BLOCK WALL

STA 51+06.94, -30.50' L
BEGIN 130.5' RADIUS
FG = 556.80 (2" CURB)

STA 51+47.55, -30.50' L
END 130.5' RADIUS
FG = 556.93 (2" CURB)

STA 51+79.83, -30.50' L
END 2" SLOPED CURB
BEGIN 6' CURB
FG = 556.73

STA 52+24.98, -30.50' L
HIGH POINT
FG = 557.13 (6" CURB)

STA 52+06.43, -30.50' L
END 11.5' RADIUS
FG = 557.11 (6" CURB)

STA 52+70.56, -30.50' L
BEGIN 10' RADIUS
FG = 557.00 (6" CURB)

3.0' BUFFER/
VALLEY GUTTER

STA 51+79.83, -19.00' L
BEGIN 5' RADIUS
FG = 556.69 (6" CURB)

STA 51+96.75, -25.20' L
BEGIN 11.5' RADIUS
FG = 556.97

STA 52+78.98, -25.89' L
END 10' RADIUS
FG = 556.83 (6" CURB)

STA 51+91.05, -16.30' L
END 5' RADIUS
FG = 556.78

STA 51+84.83, -12.50' L
END 5' RADIUS
FG = 556.69 (6" CURB)

STA 52+84.61, -17.10' L
BEGIN 10' RADIUS
FG = 556.64 (6" CURB)

STA 51+85.88, -12.50' L
BEGIN 5' RADIUS
FG = 556.70 (6" CURB)

STA 52+93.08, -12.50' L
END 10' RADIUS
FG = 556.56 (6" CURB)

CHESTNUT
STREET

FO

PC 51+06.94

PT 51+47.55

PC 52+92.23

PT 53+07.15

51+00 52+00 53+00 54+00

16.5'

12.5'

17.0'

6.0'

12.5'

12.5'

14.0'

17.0'

14.0'

STA 51+06.94, 1.50' R
BEGIN 998.5' RADIUS
FG = 556.55 (6" SLOPED)

STA 51+47.55, 1.50' R
END 998.5' RADIUS
FG = 556.75 (6" SLOPED)

STA 52+88.32, 1.50' R
BEGIN 60' RADIUS
FG = 556.82 (6" SLOPED)

STA 53+03.74, -12.50' L
BEGIN 30' RADIUS
BEGIN 4" SLOPED CURB
FG = 556.49 (4" CURB)

MISSISSIPPI DRIVE, STA=53+46.35
CHESTNUT STREET, STA=9+00.00

STA 54+00.96, 1.50' R
END 55' RADIUS
FG = 556.26 (6" SLOPED)

MISSISSIPPI DRIVE

STA 51+82.60, 18.50' R
BEGIN 20' RADIUS
FG = 556.52 (6" SLOPED)

STA 51+87.11, 17.98' R
END 20' RADIUS
FG = 556.55 (6" SLOPED)

STA 52+30.17, 8.02' R
BEGIN 18.5' RADIUS
FG = 556.83 (6" SLOPED)

STA 52+34.68, 7.50' R
END 18.5' RADIUS
FG = 556.83 (6" SLOPED)

STA 52+89.22, 7.50' R
BEGIN 60' RADIUS
FG = 556.62 (6" SLOPED)

STA 54+01.60, 18.50' R
END 55' RADIUS
FG = 555.87 (6" SLOPED)

STA 52+92.23, 32.50' R
BEGIN 400' RADIUS
FG = 556.14 (6" CURB)

STA 53+07.15, 32.50' R
END 400' RADIUS
FG = 556.07 (6" CURB)

PEDESTRIAN RAMP
SEE SHEET D.28
FOR DETAILS

52 53 51 J

9+00

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

VPI 52+25.00
ELEV 557.13
CURVE LEN=75.00'
E=0.09'

VPC 51+87.50
ELEV 556.94

HP 52+24.98
ELEV 557.03

VPT 52+62.50
ELEV 556.94

VPI 53+99.85
ELEV 556.25

PROPOSED GRADE

-0.50%

EXISTING GRADE

565 560 555 550 545 540 535 530

556.50 555.65 | 556.55 555.64 | 556.60 555.68 | 556.65 555.77 | 556.70 555.78 | 556.75 555.75 | 556.80 555.72 | 556.85 555.68 | 556.90 555.64 | 556.95 555.61 | 556.99 555.57 | 557.02 555.53 | 557.03 555.49 | 557.03 555.44 | 557.02 555.40 | 556.99 555.35 | 556.95 555.30 | 556.90 555.24 | 556.85 555.19 | 556.80 555.17 | 556.75 555.15 | 556.70 555.16 | 556.65 555.20 | 556.60 555.24 | 556.55 554.60 | 556.50 554.66 | 556.45 554.69 | 556.40 554.65 | 556.35 554.55 | 556.30 555.07 | 556.25 555.05

51+00 51+50 52+00 52+50 53+00 53+50 54+00

HORZ. 0 10 20 SCALE FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI PLAN & PROFILE

SHEET D.13

NOTE:
IT IS ASSUMED THAT MERRIL HOTEL
WILL BE COMPLETE PRIOR TO
CONSTRUCTION OF MISSISSIPPI DRIVE.

TYPE A DRIVEWAY ENTRANCE
SEE D.27 FOR DETAILS

F.F. = 557.00'

556.00

555.71

556.25

STA 56+77.32, -33.20' L
BEGIN 50' RADIUS
FG = 555.10 (6" CURB)

STA 56+36.79, -18.50' L
END 2' RADIUS
FG = 554.97 (6" CURB)

STA 56+36.10, -12.50' L
END 2' RADIUS
FG = 554.80 (6" CURB)

52 53 59 60

14.0' 17.0' 14.0' 12.5' 12.5' 10.9

54+00 55+00 56+00

STA 55+77.28, 7.50' R
END 20' RADIUS
FG = 555.39 (6" SLOPED)

STA 55+73.35, 7.89' R
BEGIN 20' RADIUS
FG = 555.39 (6" SLOPED)

STA 55+18.31, 18.50' R
BEGIN 20' RADIUS
FG = 555.40 (6" SLOPED)

STA 55+22.24, 18.11' R
END 20' RADIUS
FG = 555.39 (6" SLOPED)

MISSISSIPPI DRIVE

JCT JCT JCT 58

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

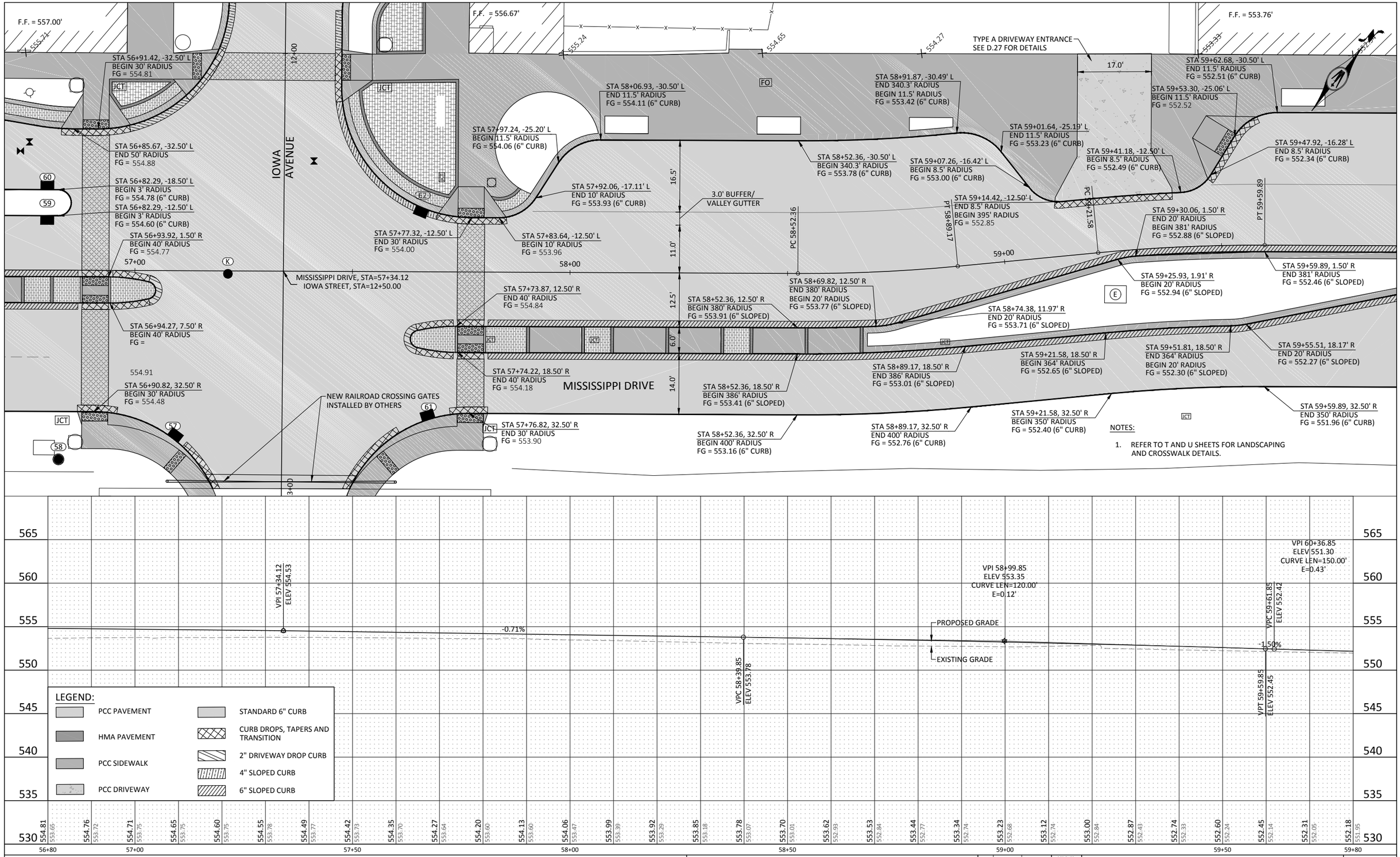
LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

VPI 53+99.85
ELEV 556.25

PROPOSED GRADE
-0.52%
EXISTING GRADE

| | | |



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CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI PLAN & PROFILE

SHEET D.15

F.F. = 553.19'

INSTALL STEP TO MATCH FINISH FLOOR ELEVATION

552.84 552.65 552.34 552.32 552.81

4" ASPHALT
SEE SHEET D.28 FOR DETAILS

STA 60+44.57, -30.50' L
BEGIN 11.5' RADIUS
FG = 551.81 (6" CURB)

STA 60+59.44, -17.11' L
BEGIN 10' RADIUS
FG = 551.50 (6" CURB)

STA 60+54.25, -25.20' L
END 11.5' RADIUS
FG = 551.71 (6" CURB)

.92, -16.28' L
ADIUS
4 (6" CURB)

3.0' BUFFER/
VALLEY GUTTER

16.5'

12.5'

STA 60+67.86, -12.50' L
END 10' RADIUS
FG = 551.47 (4" CURB)

STA 60+69.21, -12.50' L
BEGIN 30' RADIUS
FG = 551.47 (4" CURB)

SYCAMORE STREET

STA 60+58.10, 1.50' R
BEGIN 55' RADIUS
FG = 551.71 (6" SLOPED)

60+00

61+00

17+00

6.0'

MISSISSIPPI DRIVE, STA=61+12.59
SYCAMORE STREET, STA=17+00.00

STA 60+10.94, 7.50' R
END 20' RADIUS
FG = 551.95 (6" SLOPED)

STA 60+57.16, 7.50' R
BEGIN 55' RADIUS
FG = 551.83 (6" SLOPED)

STA 60+07.00, 7.89' R
BEGIN 20' RADIUS
FG = 551.97 (6" SLOPED)

18" PAVEMENT SECTION

STA 61+84.82, -30.50' L
BEGIN 11.5' RADIUS
FG = 552.61 (6" CURB)

STA 61+61.53, -12.51' L
BEGIN 10' RADIUS
FG = 552.06 (6" CURB)

STA 61+75.13, -25.20' L
BEGIN 11.5' RADIUS
FG = 552.43

STA 61+69.96, -17.12' L
END 10' RADIUS
FG = 552.23

STA 61+55.21, -12.50' L
END 30' RADIUS
FG = 552.04 (4" CURB)

3.0' BUFFER/
VALLEY GUTTER

16.5'

12.5'

62+00

STA 61+52.97, 1.50' R
END 40' RADIUS
FG = 552.26 (6" SLOPED CURB)

17.0'

STA 61+52.40, 18.50' R
END 40' RADIUS
FG = 552.20 (6" SLOPED)

MISSISSIPPI DRIVE

14.0'

STA 62+64.49, 18.50' R
BEGIN 20' RADIUS
FG = 553.14 (6" SLOPED)

STA 62+68.41, 18.11' R
END 20' RADIUS
FG = 553.18 (6" SLOPED)

PAPOOSE CREEK TUNNEL PROTECTION AREA, SEE SHEET B.07 FOR DETAILS

PEDESTRIAN RAMP
SEE SHEET D.28
FOR DETAILS

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

VPI 60+36.85
ELEV 551.30
CURVE LEN=150.00'
E=0.43'

LP 60+58.77
ELEV 551.70

VPT 61+11.85
ELEV 551.92

PROPOSED GRADE

EXISTING GRADE

0.82%

565 560 555 550 545 540 535 530

552.18 551.95 | 552.06 551.86 | 551.96 551.76 | 551.88 551.64 | 551.81 551.53 | 551.76 551.42 | 551.72 551.38 | 551.70 551.34 | 551.70 551.30 | 551.71 551.25 | 551.73 551.17 | 551.77 551.14 | 551.83 551.21 | 551.90 551.24 | 551.98 551.25 | 552.06 551.05 | 552.15 551.48 | 552.23 551.52 | 552.31 551.60 | 552.39 551.67 | 552.47 551.72 | 552.56 551.80 | 552.64 551.88 | 552.72 551.95 | 552.80 552.00 | 552.88 552.04 | 552.97 552.04 | 553.05 552.03 | 553.13 552.04 | 553.21 552.08 | 553.29 552.11

59+80 60+00 60+50 61+00 61+50 62+00 62+50 62+80

HORZ. 0 10 20 SCALE FEET

VERT. 0 5 10 SCALE FEET

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MISSISSIPPI PLAN & PROFILE

SHEET D.16

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

4" ASPHALT
SEE SHEET D.28 FOR DETAILS

555.09 555.23 554.91 555.08 555.15 555.14 555.14 555.13 555.01 555.00

JCT FO (E) 78 79 80 81 82 M

16.5' 12.5' 6.0' 11.0' 14.0'

STA 63+98.71, -30.50' L
BEGIN 11.5' RADIUS
FG = 554.36 (6" CURB)

STA 64+27.03, -12.50' L
BEGIN 30' RADIUS
FG = 554.28

STA 64+08.39, -25.20' L
END 11.5' RADIUS
FG = 554.31 (6" CURB)

3.0' BUFFER/
VALLEY GUTTER

STA 64+13.58, -17.11' L
BEGIN 10' RADIUS
FG = 554.19 (6" CURB)

STA 64+30.13, 1.50' R
END 40' RADIUS
FG = 554.52

STA 64+22.00, -12.50' L
END 10' RADIUS
FG = 554.24

63+00 64+00 65+00 20+00

CEDAR STREET

MISSISSIPPI DRIVE, STA=64+70.08
CEDAR STREET, STA=20+00.00

STA 65+43.59, -30.50' L
END 11.5' RADIUS
FG = 554.26 (6" CURB)

STA 65+33.91, -25.20' L
BEGIN 11.5' RADIUS
FG = 554.28

3.0' BUFFER/
VALLEY GUTTER

STA 65+28.72, -17.11' L
END 10' RADIUS
FG = 554.18

STA 65+20.30, -12.50' L
BEGIN 10' RADIUS
FG = 554.22

STA 65+13.03, -12.50' L
END 30' RADIUS
FG = 554.28

STA 65+10.14, 12.50' R
END 40' RADIUS
FG = 554.74

STA 65+10.05, 18.50' R
END 40' RADIUS
FG = 554.52

STA 65+13.15, 32.50' R
END 30' RADIUS
FG = 554.28

STA 63+23.45, 7.50' R
END 20' RADIUS
FG = 553.86 (6" SLOPED)

STA 63+19.53, 7.89' R
BEGIN 20' RADIUS
FG = 553.81 (6" SLOPED)

STA 64+30.04, 7.50' R
END 40' RADIUS
FG = 554.74

MISSISSIPPI DRIVE

STA 63+23.41, 32.89' R
END 20' RADIUS
FG = 553.38 (6" CURB)

STA 63+19.49, 32.50' R
BEGIN 20' RADIUS
FG = 553.36 (6" CURB)

STA 63+78.45, 43.50' R
END 20' RADIUS
FG = 553.63 (6" CURB)

STA 64+32.16, 43.50' R
BEG 25' RADIUS
FG = 554.25

STA 63+74.53, 43.11' R
BEGIN 20' RADIUS
FG = 553.60 (6" CURB)

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

VPC 64+25.00
ELEV 554.48

VPI 64+75.00
ELEV 554.89
CURVE LEN=100.00'
E=0.23'

HP 64+70.05
ELEV 554.67

VPT 65+25.00
ELEV 554.39

PROPOSED GRADE

EXISTING GRADE

565 560 555 550 545 540 535 530

553.29 552.11 | 553.38 552.15 | 553.46 552.19 | 553.54 552.23 | 553.62 552.26 | 553.70 552.33 | 553.79 552.41 | 553.87 552.49 | 553.95 552.58 | 554.03 552.66 | 554.11 552.73 | 554.20 552.81 | 554.28 552.85 | 554.36 552.86 | 554.44 552.84 | 554.52 552.80 | 554.59 552.61 | 554.63 552.82 | 554.66 552.76 | 554.67 552.89 | 554.66 552.89 | 554.63 552.87 | 554.59 552.76 | 554.52 552.65 | 554.44 552.57 | 554.34 552.51 | 554.24 552.45 | 554.14 552.39 | 554.04 552.32 | 553.94 552.26 | 553.84 552.19

62+80 63+00 63+50 64+00 64+50 65+00 65+50 65+80

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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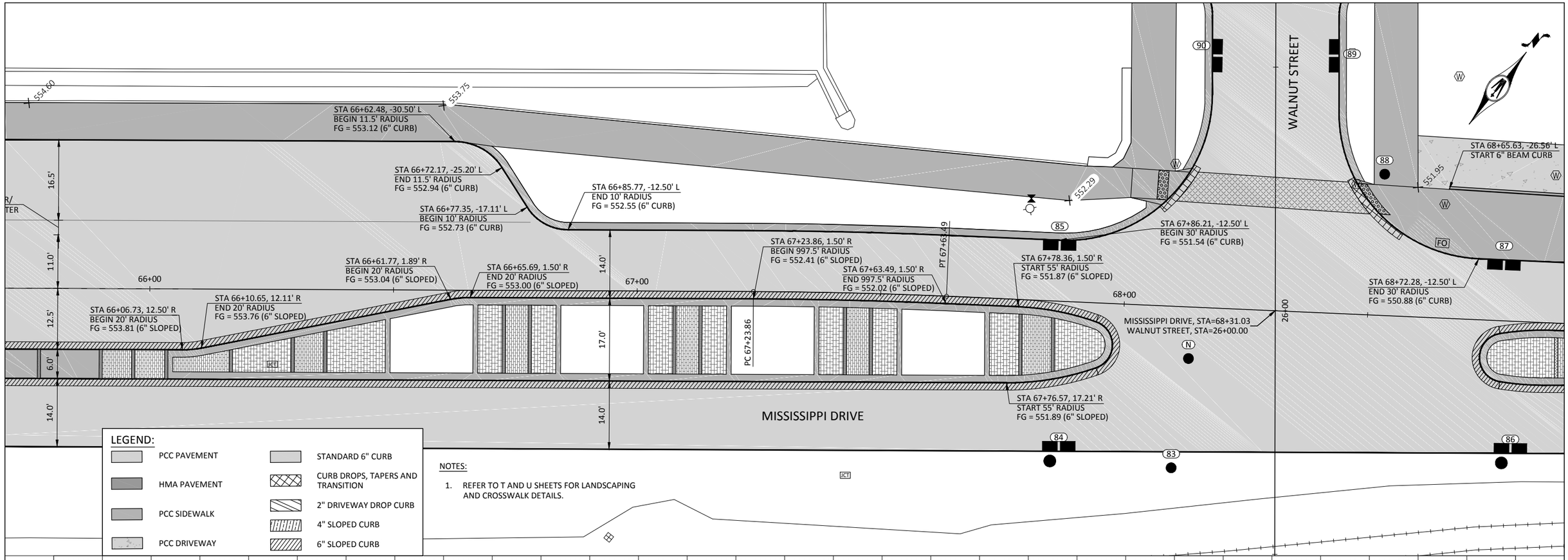
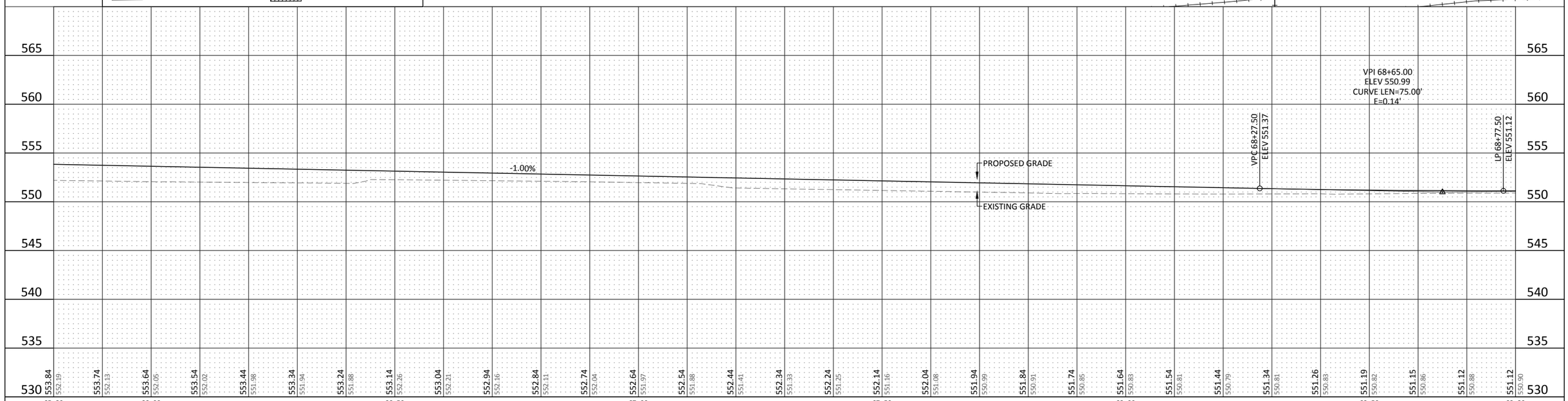
MISSISSIPPI PLAN & PROFILE

SHEET D.17



NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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MISSISSIPPI PLAN & PROFILE

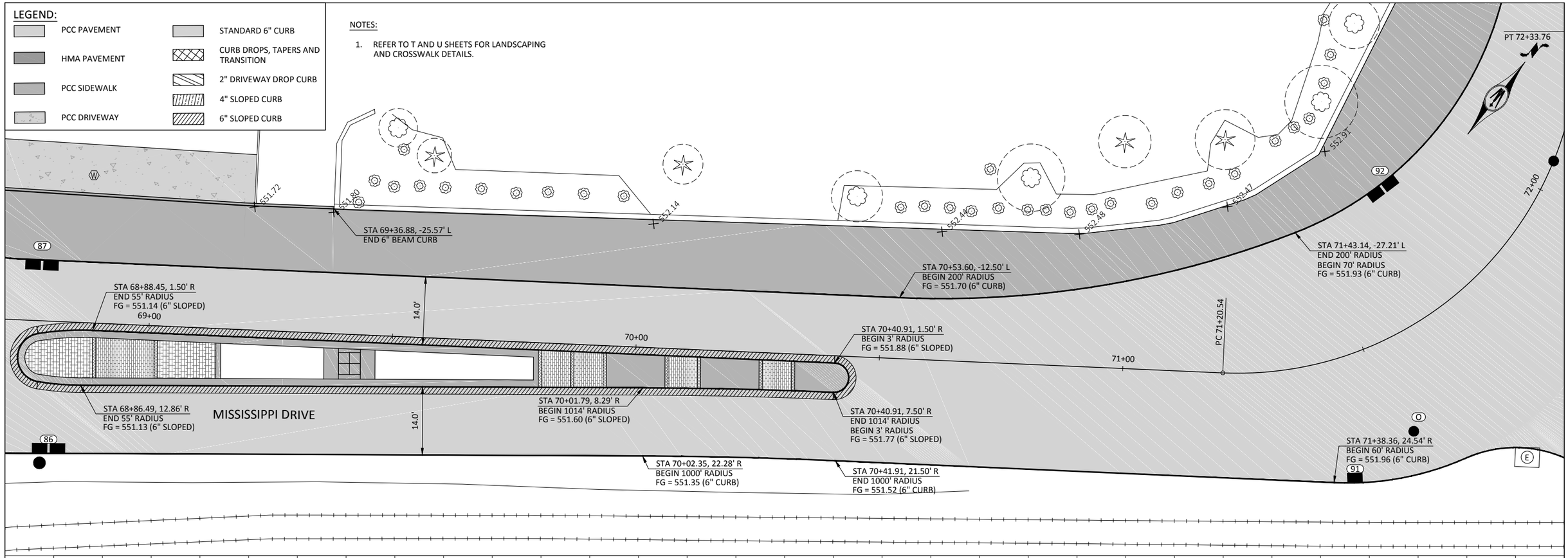
SHEET D.18

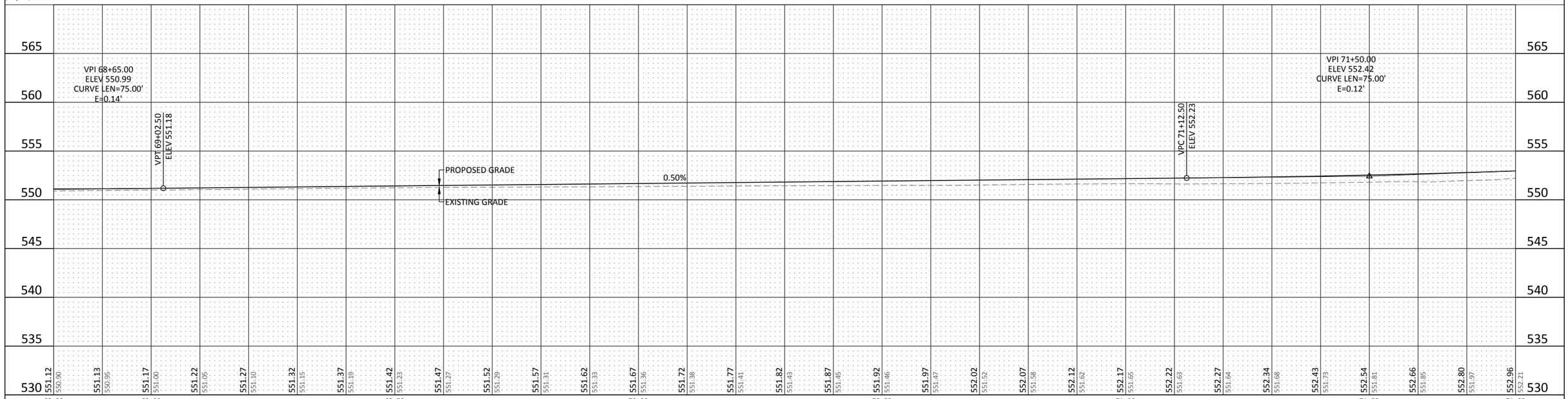
LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.





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VERT. SCALE 0 5 10 FEET

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MISSISSIPPI PLAN & PROFILE

SHEET D.19

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

PCC PAVEMENT
HMA PAVEMENT
PCC SIDEWALK
PCC DRIVEWAY
STANDARD 6" CURB
CURB DROPS, TAPERS AND TRANSITION
2" DRIVEWAY DROP CURB
4" SLOPED CURB
6" SLOPED CURB

STA 71+58.09, 29.17' R
BEGIN 25' RADIUS
FG = 552.06 (6" CURB)

STA 71+70.73, 45.28' R
END 25' RADIUS
BEGIN 25' RADIUS
FG = 551.83 (6" CURB)

STA 71+77.29, 66.00' R
END 25' RADIUS
FG = 551.61 (6" CURB)

STA 71+88.19, 58.16' R
BEGIN 25' RADIUS
FG = 552.31 (6" CURB)

STA 71+84.39, 81.14' R
FG = MATCH EXISTING

STA 71+96.94, 23.39' R
END 25' RADIUS
FG = 552.79 (6" CURB)

STA 71+95.92, 62.07' R
END 25' RADIUS
FG = 552.32 (6" CURB)

STA 71+99.53, 58.47' R
FG = MATCH EXISTING

STA 72+00.14, 60.70' R
FG = MATCH EXISTING

STA 72+07.43, 18.70' R
END 60' RADIUS
FG = 553.08 (6" CURB)

STA 72+49.25, -14.04' L
END 70' RADIUS
BEGIN 200' RADIUS
FG = 553.91 (6" CURB)

STA 72+74.00, -12.50' L
BEGIN TAPER
FG = 554.38 (6" CURB)

STA 72+74.00, 12.50' R
BEGIN TAPER
FG = 554.38 (6" CURB)

STA 73+24.00, -21.68' L
END TAPER
FG = MATCH EXISTING

STA 73+24.00, 19.65' R
END TAPER
FG = MATCH EXISTING

MULBERRY AVENUE
TRANSITION
12.5'
12.5'
PT 72+33.76
72+00
73+00

EXISTING POLE ANCHOR TO REMAIN THROUGH CONSTRUCTION. RELOCATION BY OTHERS AFTER COMPLETION OF PROJECT.

CONTRACTOR SHALL POUR NEW SLAB ON TOP OF EXISTING SIDEWALK, OF THE MATCHING ELEVATIONS FROM THE TOP OF THE FIRST STEP

553.27 553.43 553.93 554.39 554.81 555.17 555.47

554.55 554.98

VPC 71+12.50
ELEV 552.23

VPI 71+50.00
ELEV 552.42
CURVE LEN=75.00'
E=0.12'

VPT 71+87.50
ELEV 553.08

PROPOSED GRADE
EXISTING GRADE
1.78%

VPI 73+24.10
ELEV 555.51

565	560	555	550	545	540	535	530
551.87	551.45						
551.92	551.46						
551.97	551.47						
552.02	551.52						
552.07	551.58						
552.12	551.62						
552.17	551.66						
552.22	551.63						
552.27	551.64						
552.34	551.68						
552.43	551.73						
552.54	551.81						
552.66	551.85						
552.80	551.97						
552.96	552.21						
553.13	552.51						
553.31	552.79						
553.48	553.02						
553.66	553.26						
553.84	553.54						
554.02	553.76						
554.19	553.97						
554.37	554.19						
554.55	554.40						
554.73	554.60						
554.91	554.82						
555.08	555.04						
555.26	555.23						
555.44	555.43						
	555.63						555.85

70+40 70+50 71+00 71+50 72+00 72+50 73+00 73+40

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VERT. SCALE 0 5 10 FEET

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MISSISSIPPI PLAN & PROFILE

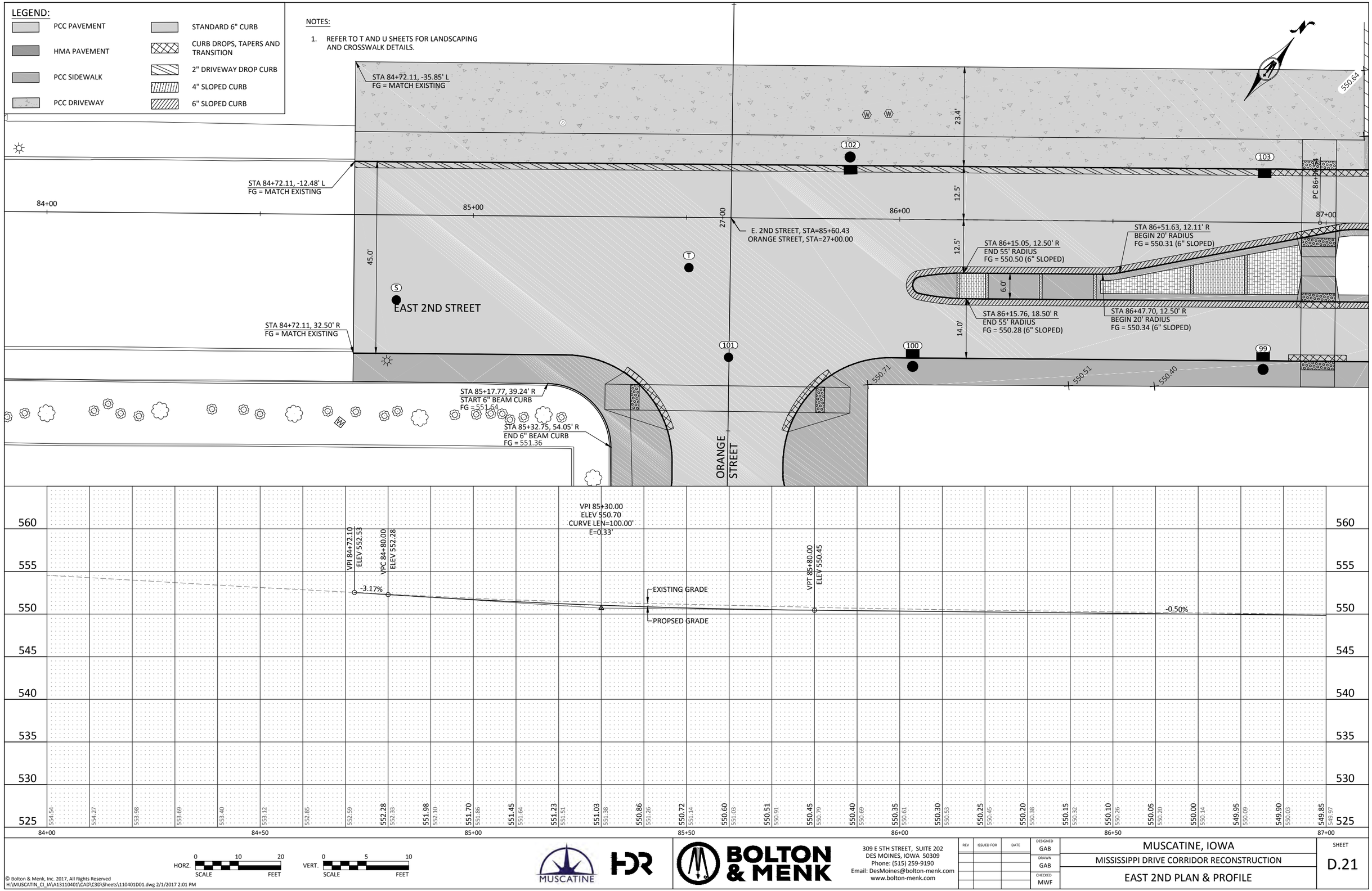
SHEET D.20

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



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EAST 2ND PLAN & PROFILE

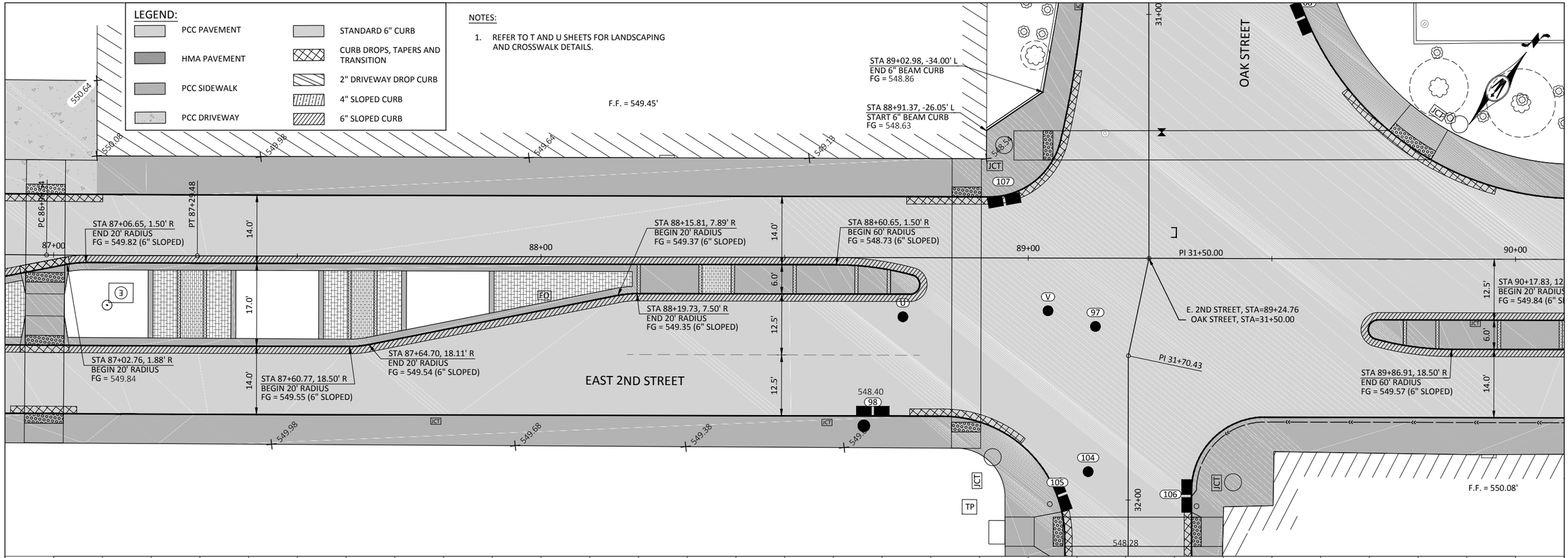
SHEET D.21

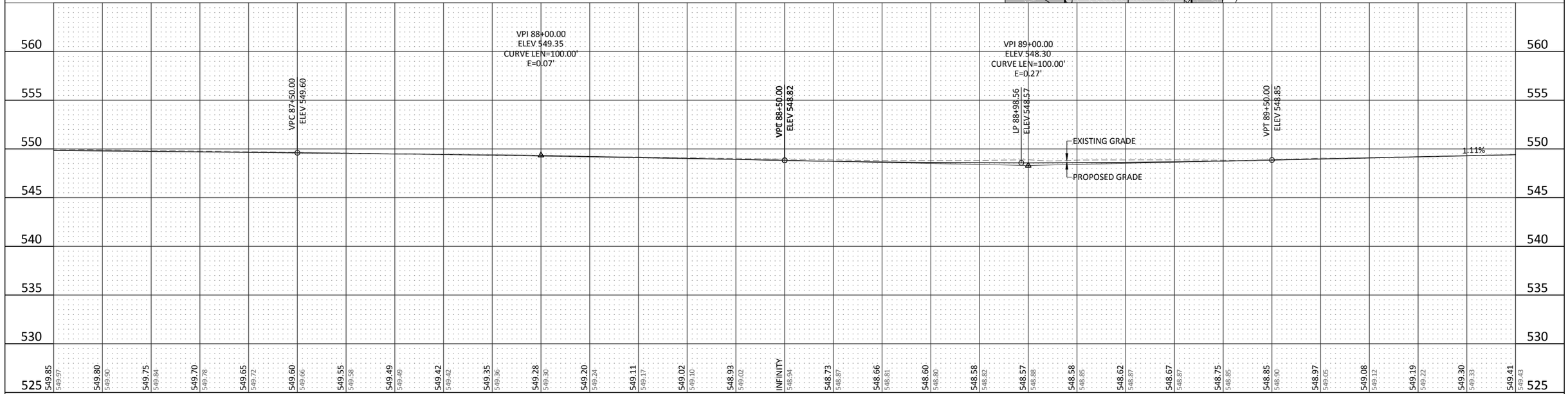
LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.





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EAST 2ND PLAN & PROFILE

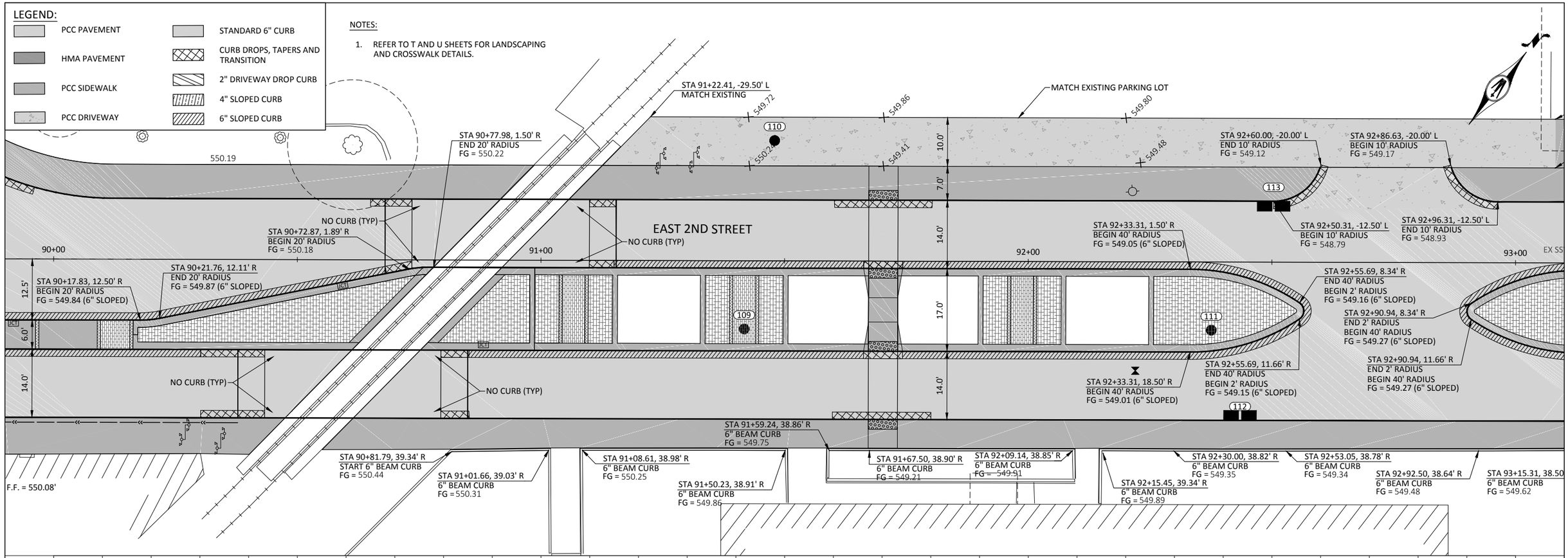
SHEET D.22

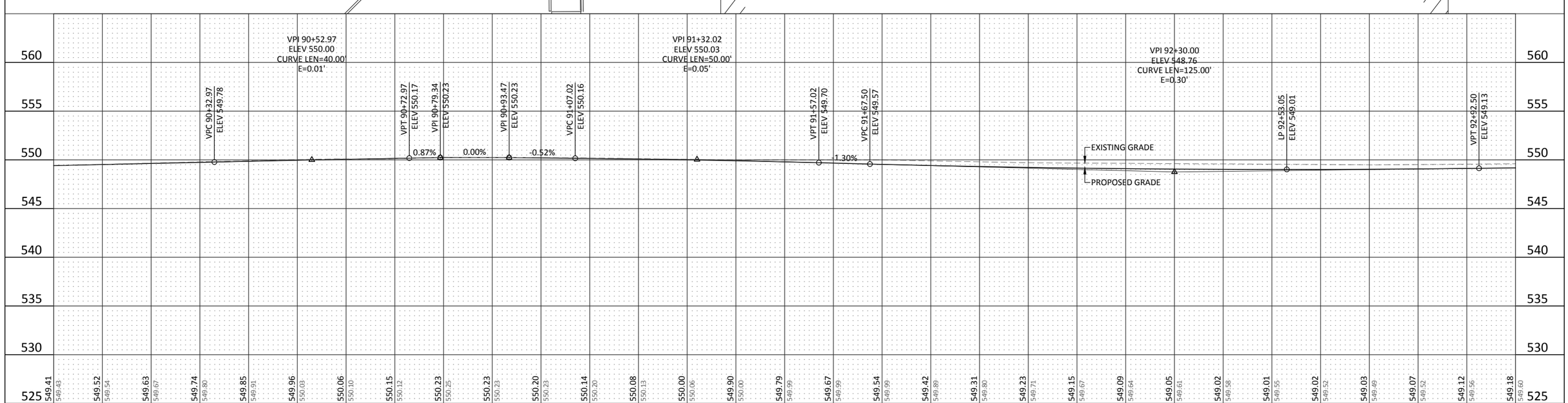
LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.





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VERT. SCALE 0 5 10 FEET

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EAST 2ND PLAN & PROFILE

SHEET D.23

F.F. = 550.74'
STA 93+08.14, -29.50' L
FG = 550.38

F.F. = 550.98'
STA 94+28.58, -29.50' L
FG = 550.75

STA 95+41.45, -29.50' L
MATCH EXISTING

STA 93+08.14, -19.50' L
FG = 549.59

STA 94+28.21, -19.50' L
FG = 550.40

STA 94+49.53, -20.00' L
END 10' RADIUS
FG = 550.44

STA 94+74.17, -20.00' L
BEGIN 10' RADIUS
FG = 550.80

10.0'
VARIES
7.0'
1.5% (TYP)
14.0'
17.0'
14.0'

116

STA 94+39.85, -12.50' L
BEGIN 10' RADIUS
FG = 549.98

STA 94+83.85, -12.50' L
END 10' RADIUS
FG = 550.68

STA 95+41.45, -12.50' L
FG = MATCH EXISTING

STA 93+13.31, 1.50' R
END 40' RADIUS
FG = 549.27 (6" SLOPED)

STA 94+21.85, 1.50' R
BEGIN 40' RADIUS
FG = 549.99 (6" SLOPED)

93+00
EX SSWR MH 4
94+00
EX SSWR MH 3
95+00
E16
96+00

STA 94+44.22, 8.34' R
END 40' RADIUS
BEGIN 2' RADIUS
FG = 550.42 (6" SLOPED)

114

STA 94+44.22, 11.66' R
END 40' RADIUS
BEGIN 2' RADIUS
FG = 550.42 (6" SLOPED)

EF JOINT TO GO BACK IN EXISTING LOCATION AS VERIFIED BY CONTRACTOR PRIOR TO REMOVALS

STA 95+41.45, 32.50' R
FG = MATCH EXISTING

STA 93+13.31, 18.50' R
END 40' RADIUS
FG = 549.27 (6" SLOPED)

EAST 2ND STREET

STA 94+21.85, 18.50' R
BEGIN 40' RADIUS
FG = 550.00 (6" SLOPED)

115

STA 95+01.49, 32.50' R
FG = 551.01

E15

STA 95+01.33, 38.58' R
END 6" BEAM CURB
FG = 551.54

551.49
552.15
551.90
552.13

STA 93+15.31, 38.50' R
6" BEAM CURB
FG = 549.62

STA 93+20.49, 38.44' R
6" BEAM CURB
FG = 549.61

STA 93+87.50, 38.55' R
6" BEAM CURB
FG = 550.05

STA 94+50.00, 38.62' R
6" BEAM CURB
FG = 550.68

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

VPI 94+50.00
ELEV 550.08
CURVE LEN=125.00'
E=0.26'

VPC 93+87.50
ELEV 549.70

VPT 95+12.50
ELEV 551.49

VPI 95+41.45
ELEV 552.15

EXISTING GRADE
PROPOSED GRADE

0.60%
2.26%

560 555 550 545 540 535 530 525

549.18 549.60 | 549.24 549.63 | 549.30 549.68 | 549.36 549.73 | 549.42 549.78 | 549.48 549.86 | 549.54 549.92 | 549.60 549.97 | 549.66 550.04 | 549.72 550.21 | 549.79 550.39 | 549.87 550.56 | 549.97 550.71 | 550.08 550.81 | 550.20 550.92 | 550.34 551.04 | 550.49 551.10 | 550.65 551.13 | 550.82 551.15 | 551.01 551.18 | 551.22 551.34 | 551.43 551.52 | 551.66 551.52 | 551.89 551.74 | 552.11 551.98 | 552.15 | 552.47 | 552.74 | 552.80 | 552.85 | 553.23

93+00 93+50 94+00 94+50 95+00 95+50 96+00

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EAST 2ND PLAN & PROFILE

SHEET D.24

7+00

PC 7+32.55

PT 7+75.09

8+00

CHESTNUT ST.

562.46 562.20 561.71 561.22 560.92

REINSTALL RETAINING WALL AND RAILING

558.26 558.59 557.90

562.34 561.82 561.31

BOTTOM WALL = 561.39'
TOP WALL = 561.49'

BOTTOM WALL = 560.92'
TOP WALL = 563.64'

BOTTOM WALL = 558.02'
TOP WALL = 558.64'

BOTTOM WALL = 557.55'
TOP WALL = 559.61'

563.91 563.24 562.60 562.11 561.35

5.0'

560.74 560.01 559.19 558.67 558.23

559.29 558.85 558.40

562.73 563.68 561.60

BOTTOM WALL = 561.06'
TOP WALL = 562.06'

558.99 559.59

EXISTING RETAINING WALL
(DO NOT DISTURB)

564.32 563.73 563.14 562.77 562.39 563.46 564.26

560.90 560.12 559.65 559.35 559.02 559.45 559.86

EXISTING RETAINING WALL
(DO NOT DISTURB)

2 JOINTS @ 11' = 22'

564.71 564.19 563.66 563.41 563.15 564.12 564.60

560.47 560.14 560.00 559.74 559.65 559.85 560.06

5 JOINTS @ 9.4' = 47'

565.05 564.63 564.19 564.05 563.92 564.46 564.93

2 JOINTS @ 10.75' = 21.5'

2 JOINTS @ 12' = 24'

2 JOINTS @ 9.4' = 18.8

6" CURB & GUTTER

6" CURB & GUTTER

565.32 565.03 564.71 564.70 564.68 564.79 565.27

565.49 565.37 565.23 565.33 565.45 565.56 565.64

2 JOINTS @ 10.3 = 20.6'

2 JOINTS @ 12' = 24'

2 JOINTS @ 10.25' = 10.5'

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

HORZ. SCALE 0 5 10 FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
BUTTON FACTORY PARKING LOT

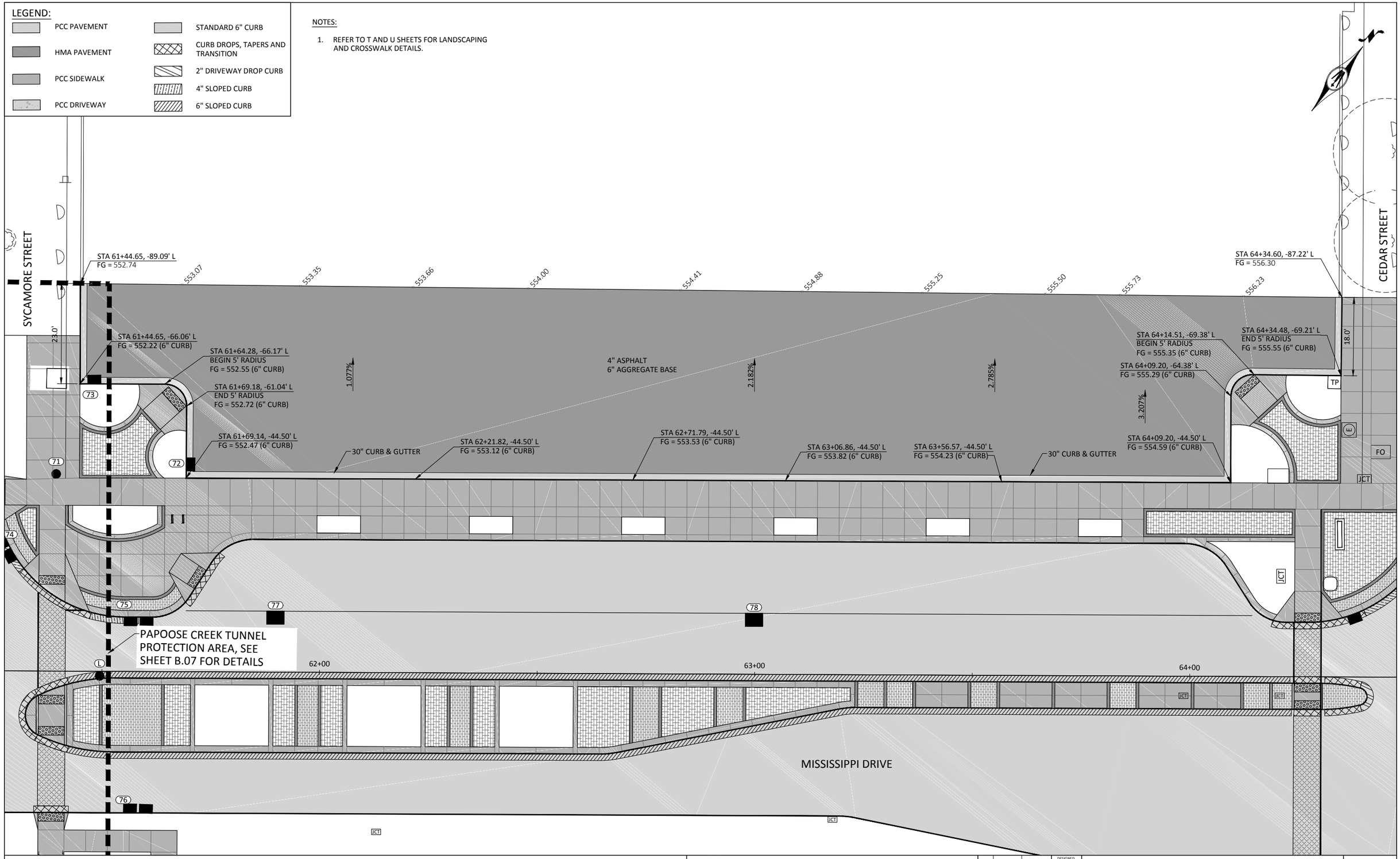
SHEET D.25

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.



HORZ. SCALE 0 10 20 FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CITY OF MUSCATINE PARKING LOT

SHEET D.26

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

MERRILL HOTEL

REFER TO SHEET D.14 FOR LOCATION OF DRIVEWAY

556.00 8.5' 8.5' 556.00

555.94 555.92 6.8' 4.4' 555.94 7.2' 555.96

555.70 4.0' 4.4' 5.1' 555.96

555.67 555.61 555.56 555.50 555.47 555.42

MISSISSIPPI DRIVE

56+00

REFER TO SHEET D.15 FOR LOCATION OF DRIVEWAY

553.76 8.5' 553.59 8.5' 553.43

553.64 8.5' 553.48 8.5' 553.32 7.6'

553.52 8.6' 553.34 8.4' 553.18 8.0'

553.27 8.6' 553.12 6.9' 553.01 553.00 8.0'

553.03 9.2' 552.86 552.69

MISSISSIPPI DRIVE

PT 58+89.17

59+00

PC 59+21.58

PT 59+59.89

E

JCT

0 5 10
HORZ. SCALE FEET

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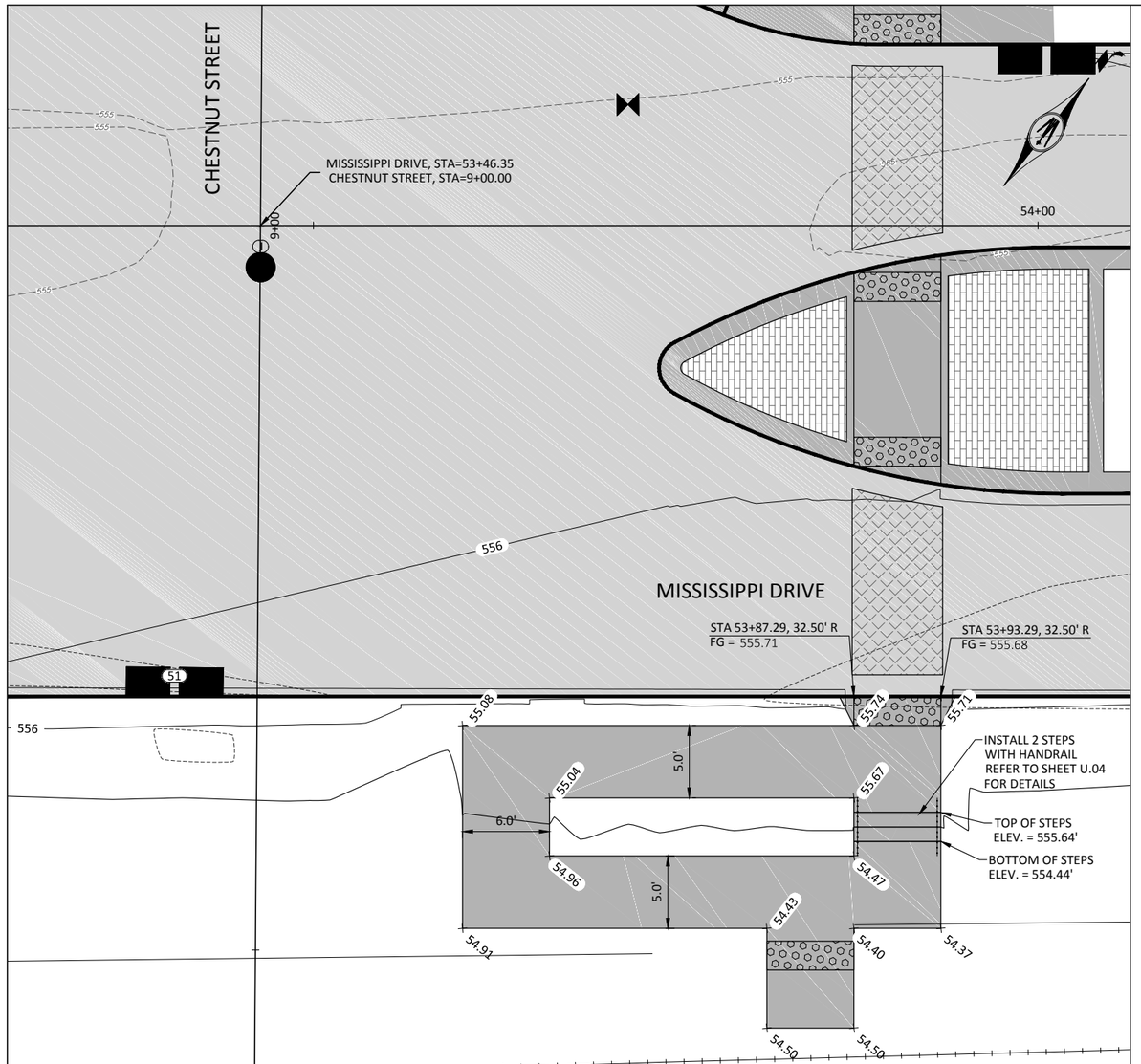
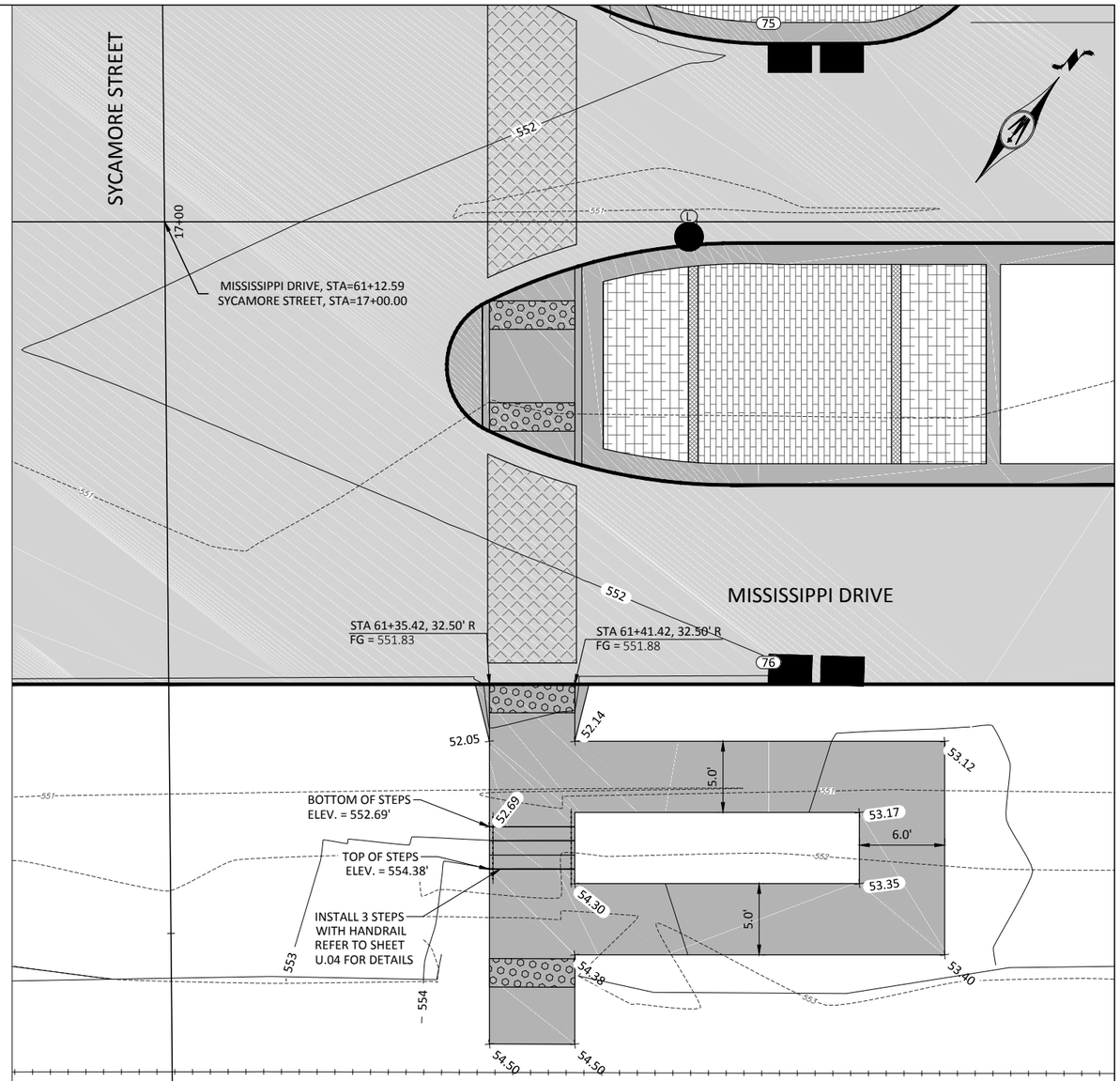
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI DRIVE - DRIVEWAY DETAILS

SHEET D.27





LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

0 5 10
SCALE FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CHESTNUT & SYCAMORE SWITCHBACKS

SHEET D.28

HERSHEY AVENUE

ELM STREET

SEE SHEET L.21 FOR
INTERSECTION DETAILS

HERSHEY AVENUE, STA=23+64.98
ELM STREET, STA=123+64.98

BOP STA
123+83.59

SAW-CUT LINE
MATCH EXISTING

MATCH
EXISTING SIDEWALK

STA 124+07.17, 19.07' L
FG = MATCH EXISTING

STA 124+07.17, 15.71' L
FG = MATCH EXISTING

STA 124+06.76, 12.00' L
END 20' RADIUS
FG = 557.64 (6" CURB)

STA 124+20.00, 19.00' L
FG = MATCH EXISTING

STA 124+20.00, 15.71' L
FG = MATCH EXISTING

STA 124+20.00, 12.00' L
FG = MATCH EXISTING

STA 124+07.17, 12.00' L
FG = 557.65

SAW-CUT LINE
MATCH EXISTING

STA 124+20.00, 13.00' R
FG = MATCH EXISTING

STA 124+07.17, 13.00' R
FG = 557.81

STA 124+06.59, 12.00' R
BEGIN 20' RADIUS
FG = 557.75 (6" CURB)

NOTES:

1. REFER TO T AND U SHEETS FOR LANDSCAPING AND CROSSWALK DETAILS.

LEGEND:

- PCC PAVEMENT
- HMA PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY
- STANDARD 6" CURB
- CURB DROPS, TAPERS AND TRANSITION
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

VPI 123+98.08
ELEV 557.11
CURVE LEN=10.00'
E=0.06'

VPI 123+83.59
ELEV 556.63

VPI 123+88.08
ELEV 556.96

VPC 123+93.08
ELEV 557.03

VPI 124+03.08
ELEV 557.42

VPI 124+20.00
ELEV 558.48

7.38%

1.50%

6.27%

EXISTING
CENTERLINE
PROFILE

PROPOSED
CENTERLINE
PROFILE

PROPOSED
GRADES

EXISTING
GRADES

556.70

557.25

557.40

558.48

558.40

575 570 565 560 555 550 545 540

123+00 124+00 125+00

HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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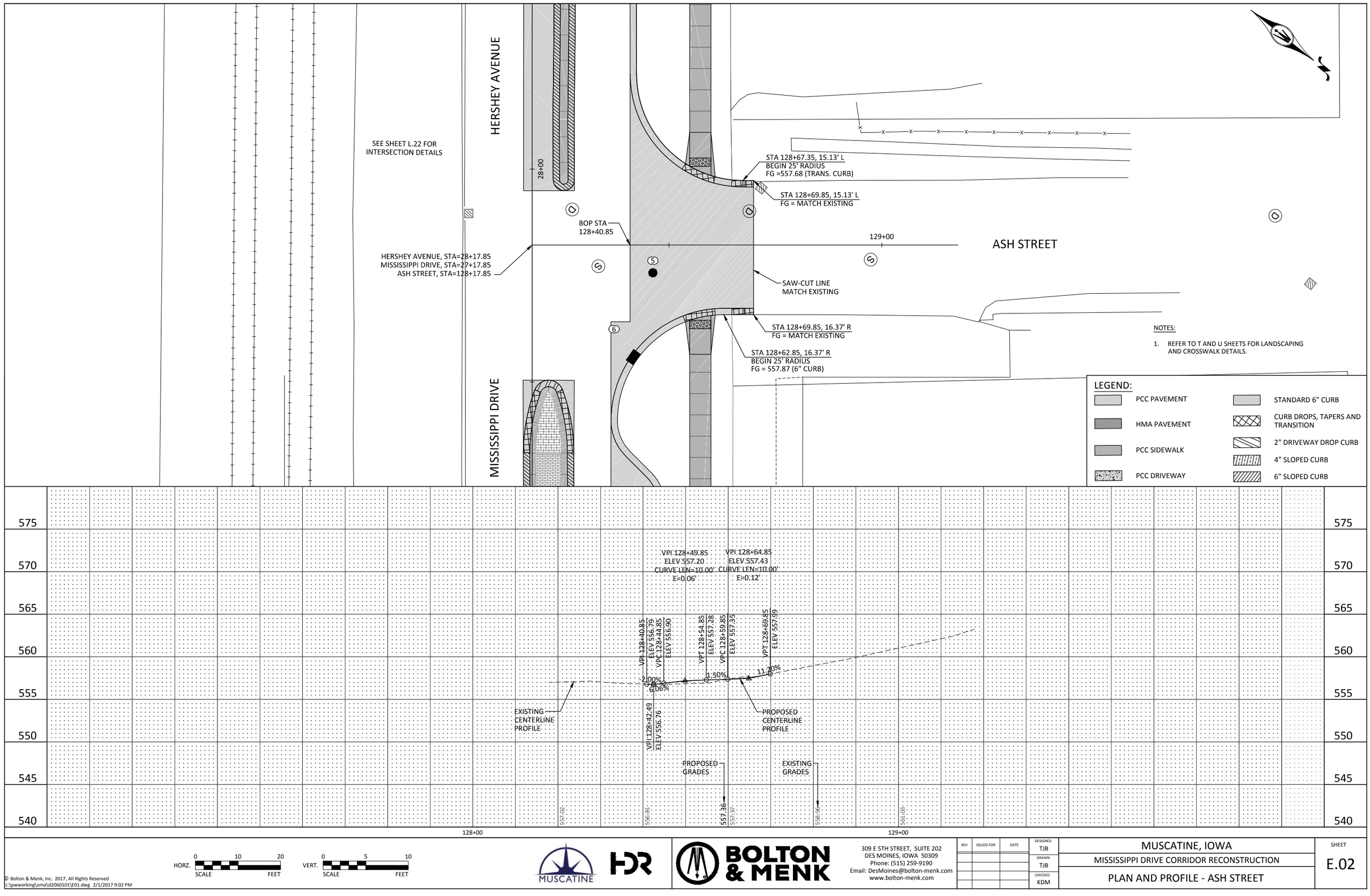
PLAN AND PROFILE - ELM STREET

SHEET E.01



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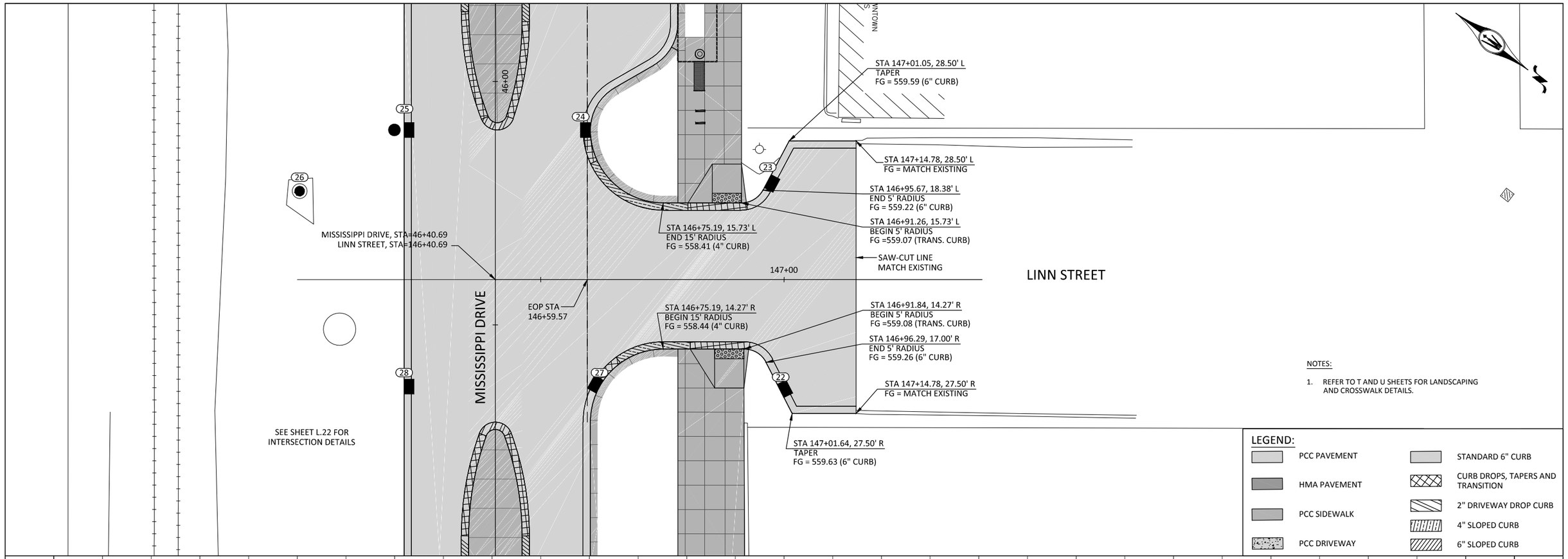
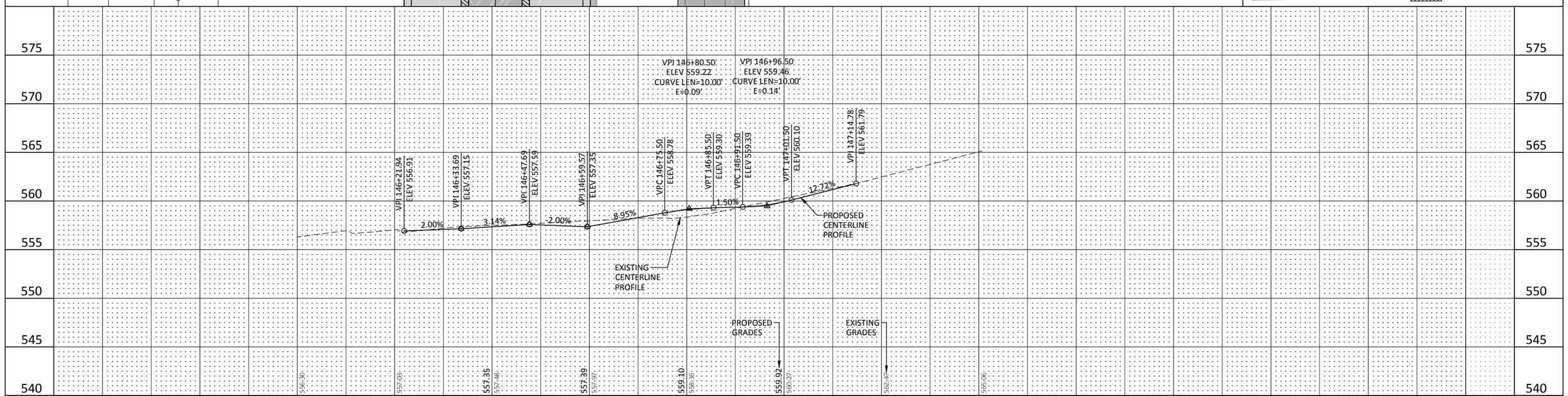
PLAN AND PROFILE - ASH STREET

SHEET E.02





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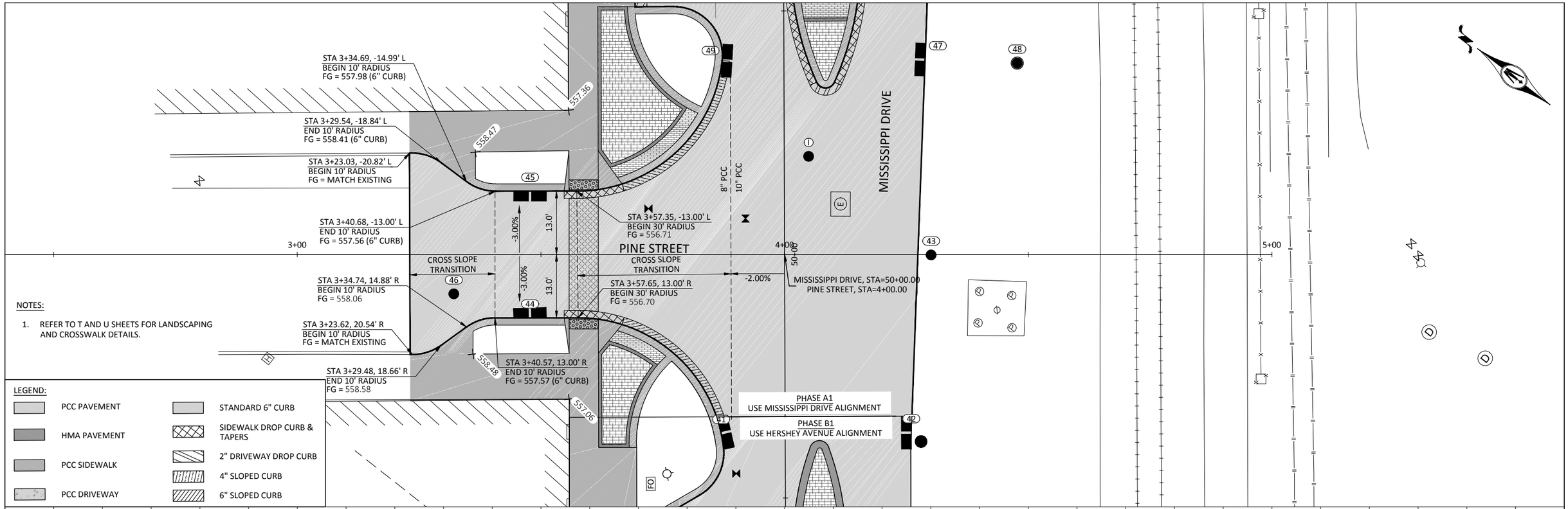
PLAN AND PROFILE - LINN STREET

SHEET E.03



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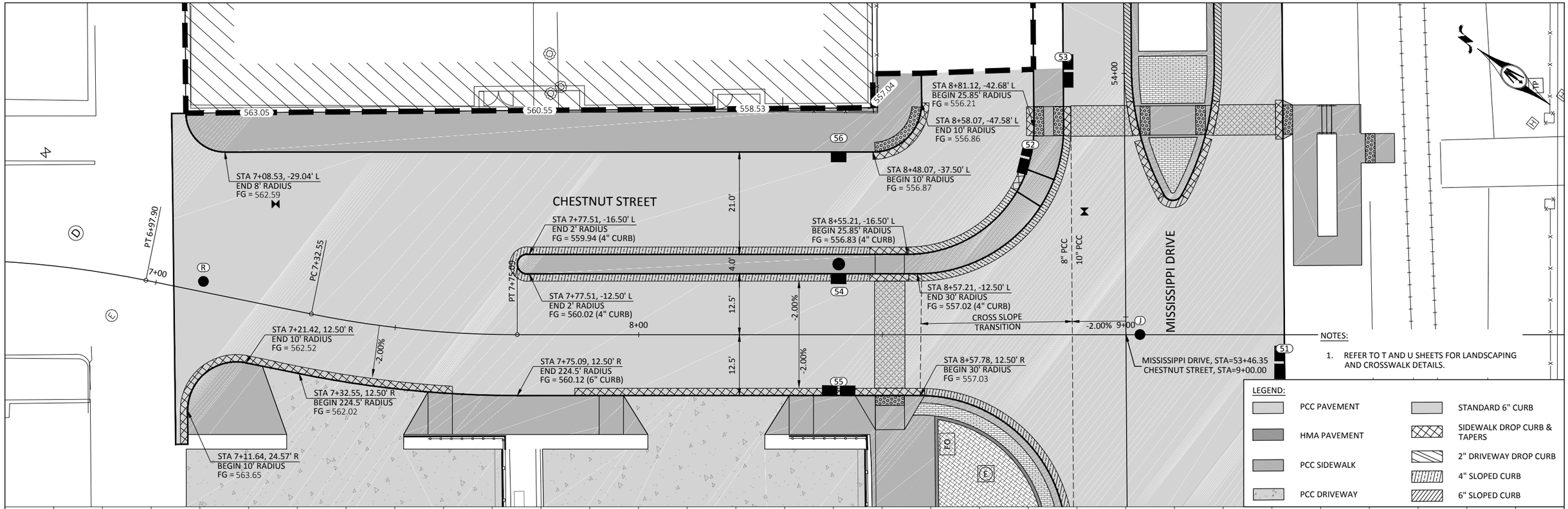
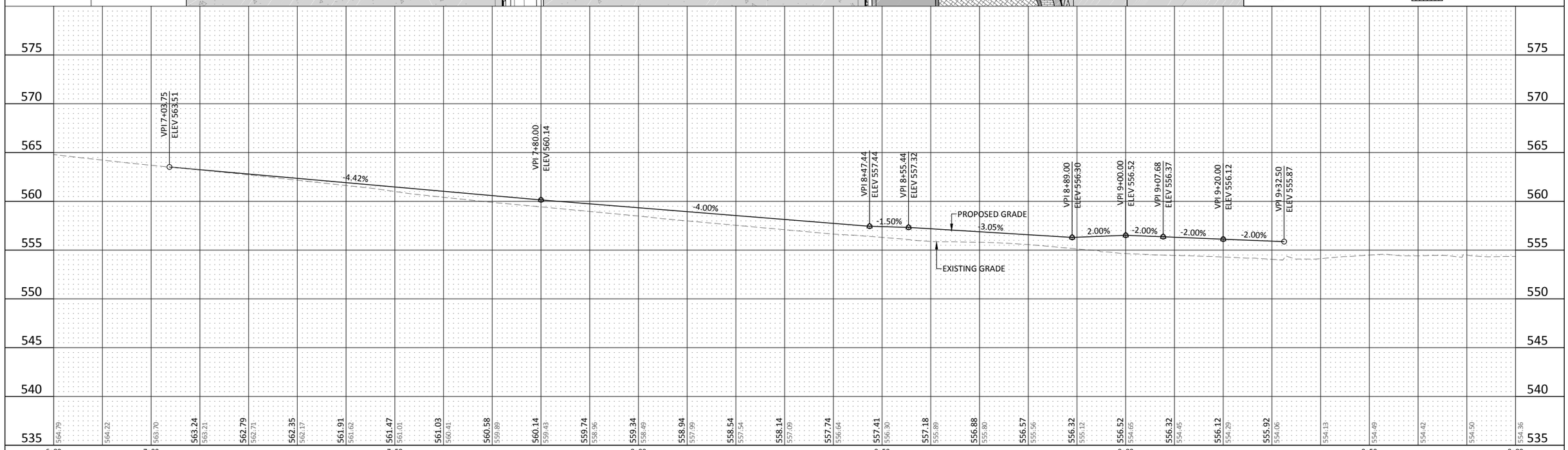
PLAN AND PROFILE - PINE STREET

SHEET E.04





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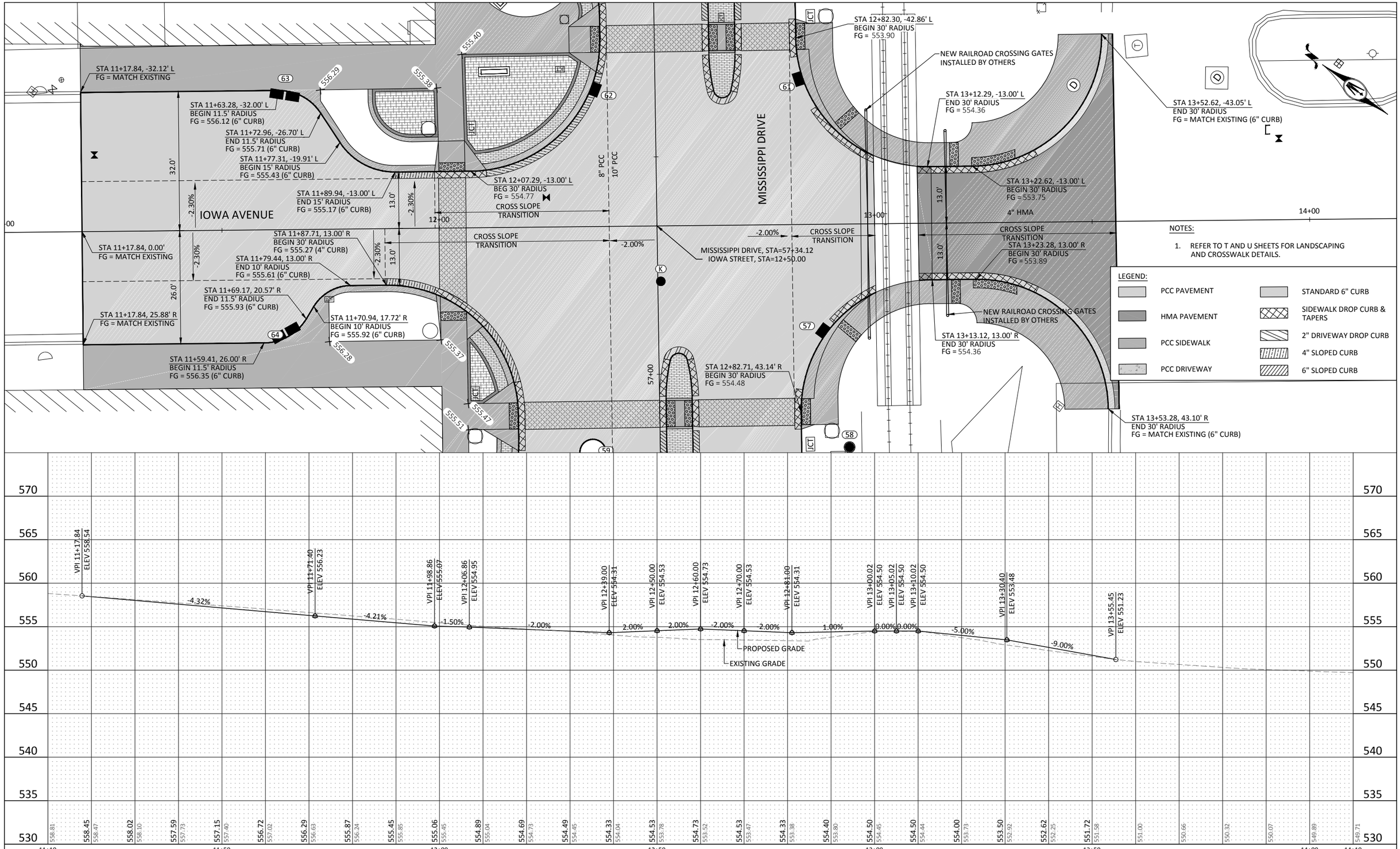
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - CHESTNUT STREET

SHEET E.05



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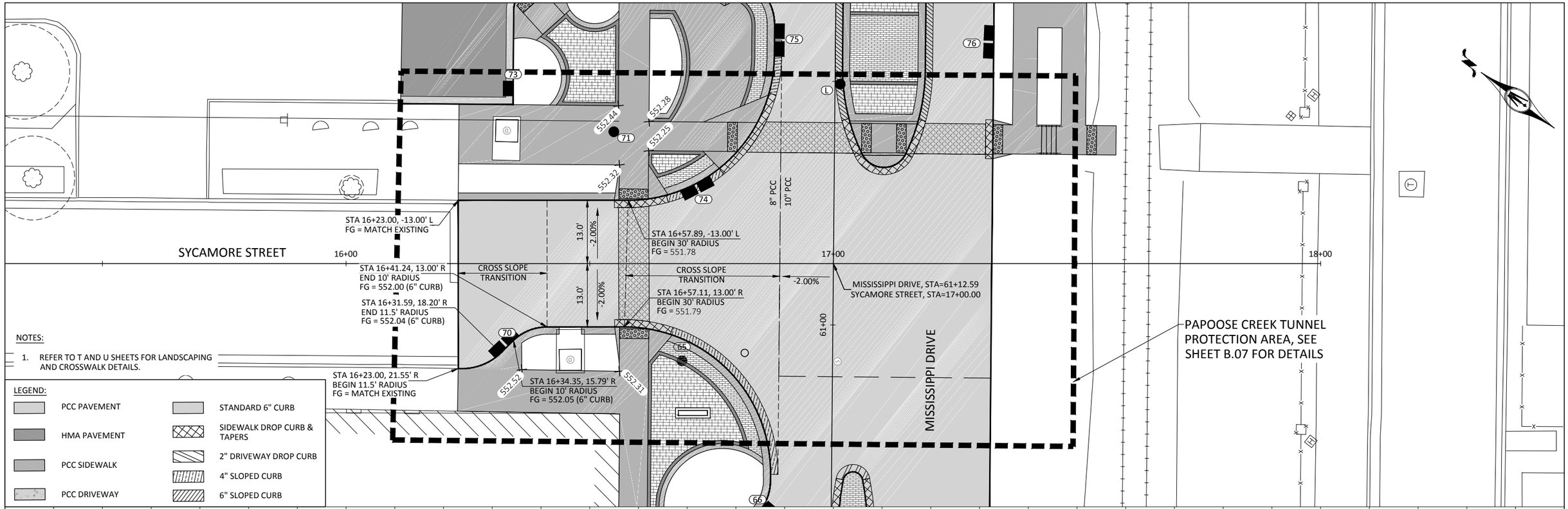
PLAN AND PROFILE - IOWA AVENUE

SHEET E.06



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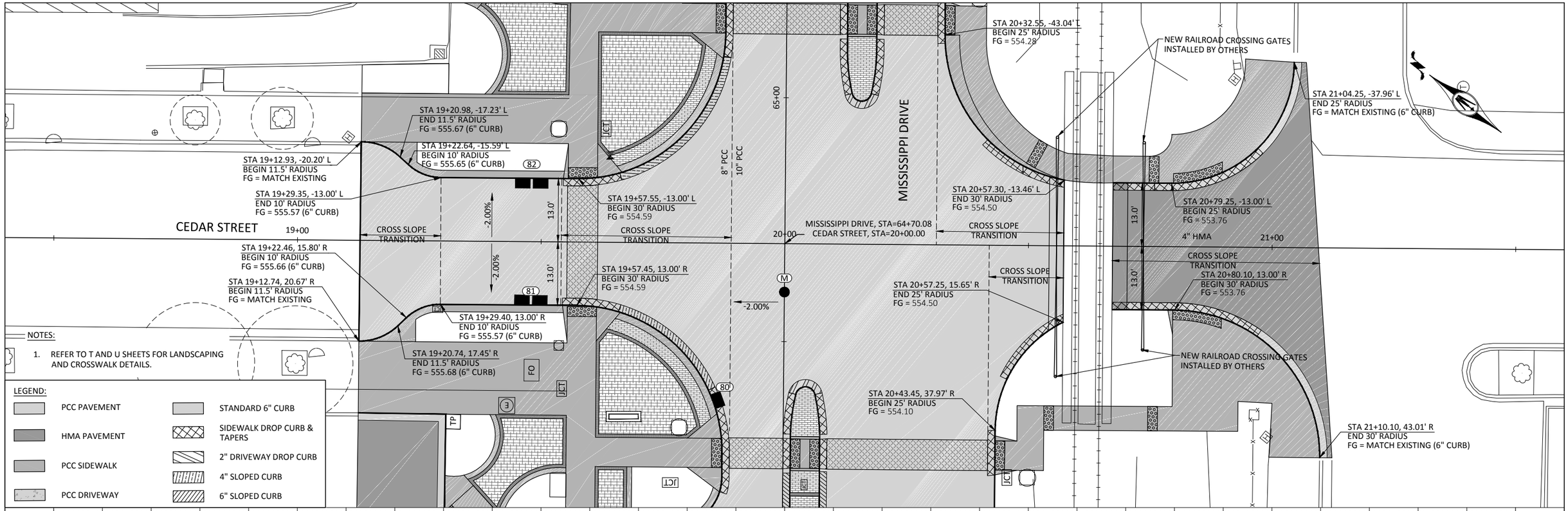
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - SYCAMORE STREET

SHEET E.07



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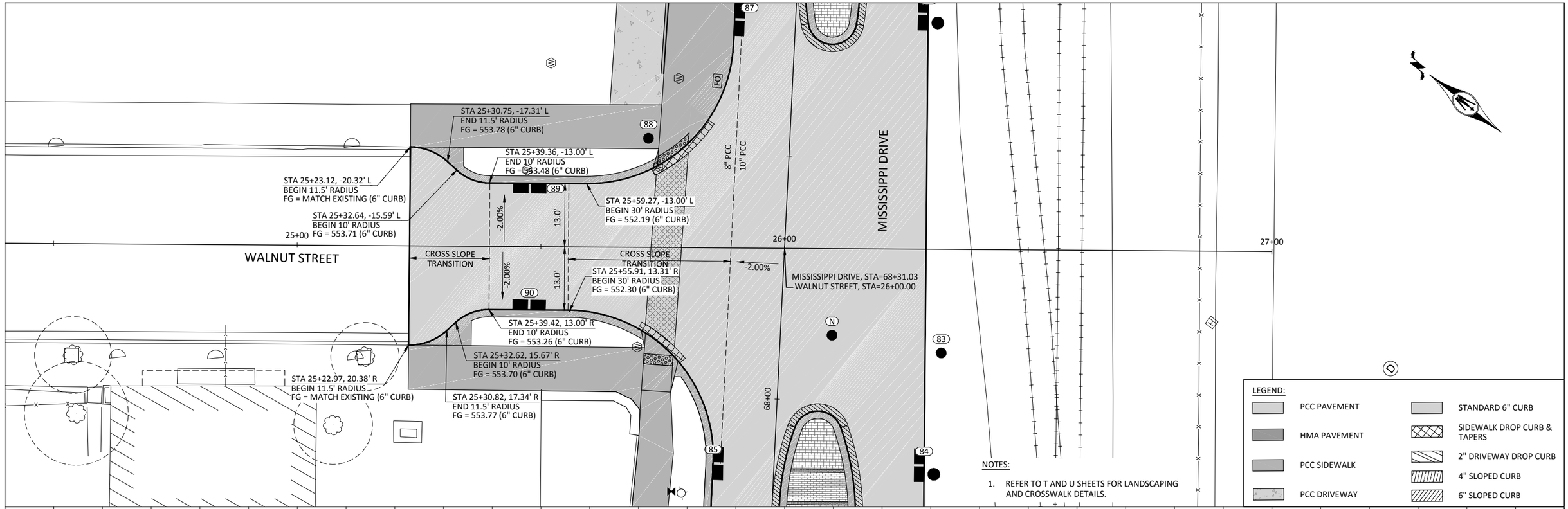
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - CEDAR STREET

SHEET E.08



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VERT. SCALE 0 5 10 FEET

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DRAWN GAB
CHECKED MWF

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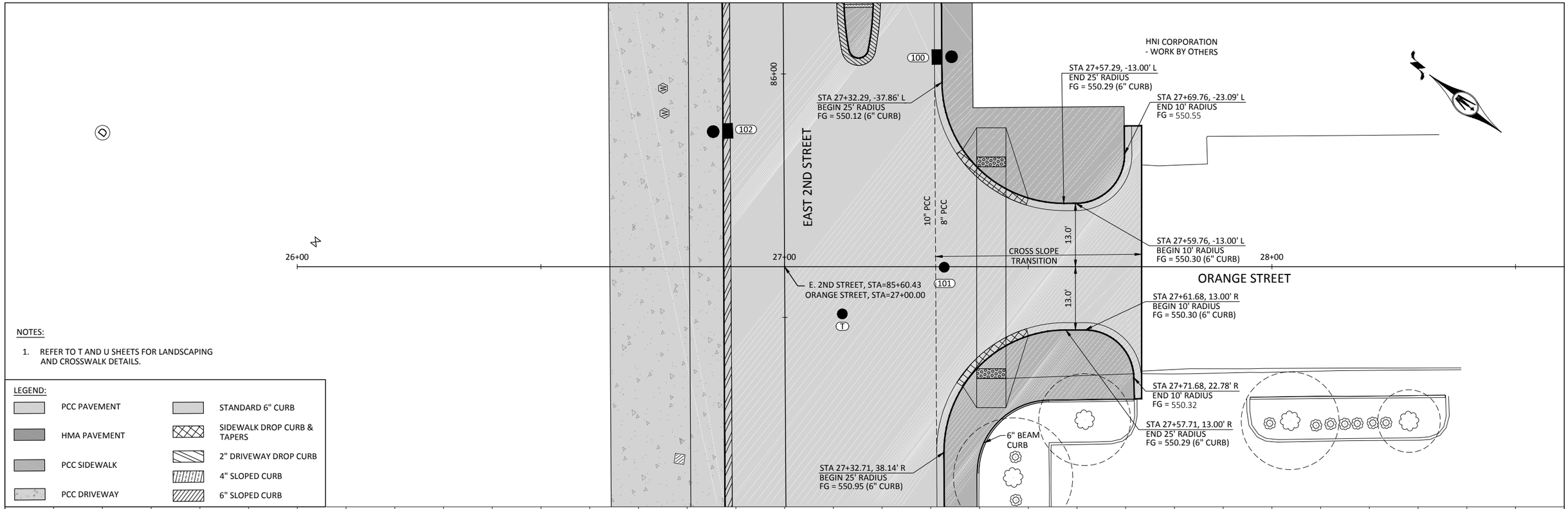
PLAN AND PROFILE - WALNUT STREET

SHEET E.09



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Email: DesMoines@bolton-menk.com
www.bolton-menk.com

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DESIGNED GAB
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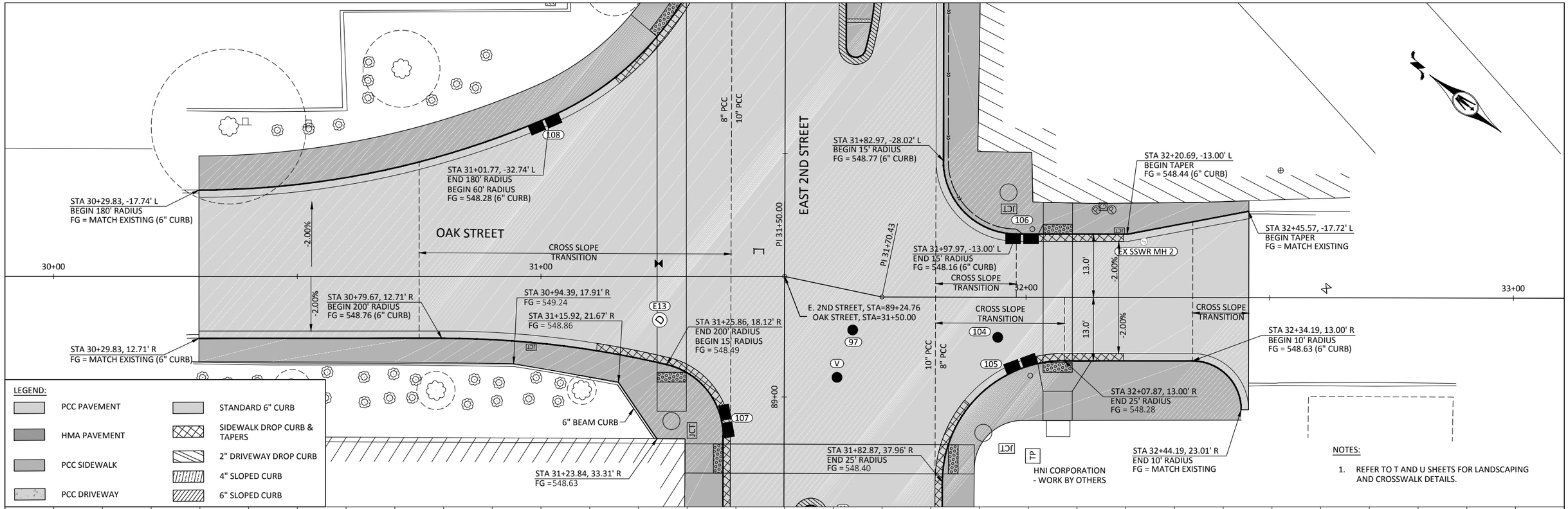
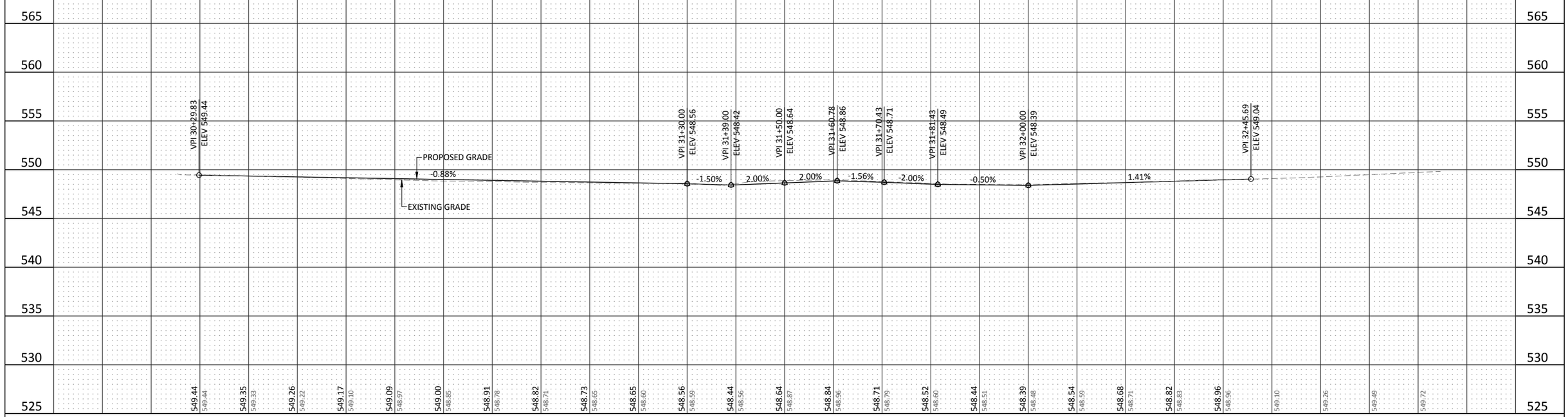
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - ORANGE STREET

SHEET E.10





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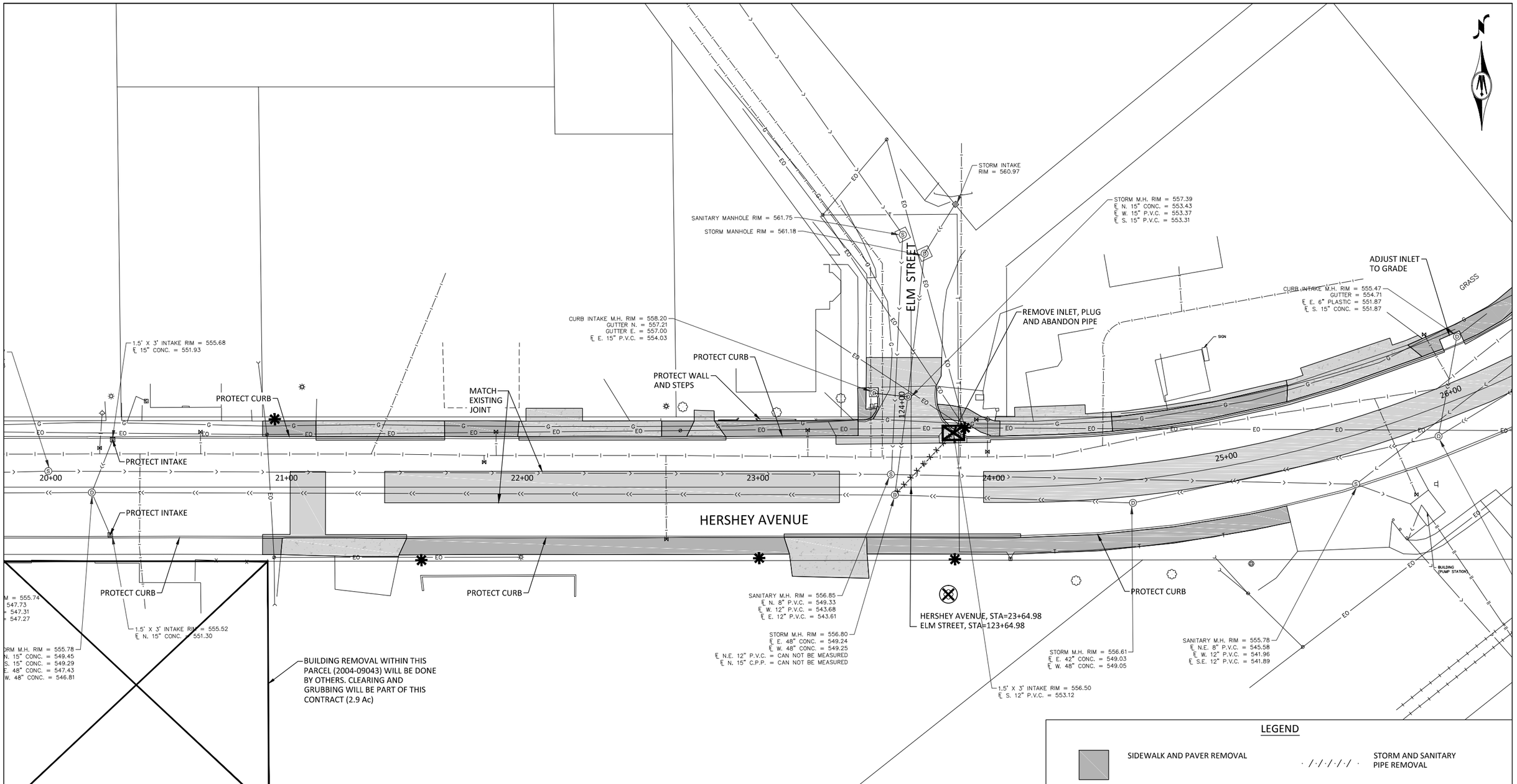
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PLAN AND PROFILE - OAK STREET

SHEET E.11



NOTE:

REMOVALS AS MARKED IN FIELD BY OWNER OR ENGINEER.
PROTECT ALL ITEMS NOT SCHEDULED FOR REMOVAL; ANY
DAMAGED ITEMS TO BE REPLACED AT CONTRACTORS EXPENSE.

ALL SERVICES NEED TO BE VERIFITED BY CONTRACTOR TO
ENSURE ALL ACTIVE SERVICES ARE RECONNECTED.

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REMOVAL OF ALL PIPES ON THE SAME ALIGNMENT SHALL
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REFER TO MUSCATINE POWER AND WATER REMOVAL SHEETS FOR THE REMOVAL
OF THE ELECTRICAL, WATER AND COMMUNICATION UTILITIES.

LEGEND

- SIDEWALK AND PAVER REMOVAL
- CONCRETE AND BITUMINOUS PAVEMENT AND CURB REMOVAL
- DRIVEWAY REMOVAL
- STORM AND SANITARY PIPE ABANDONMENT
- STORM AND SANITARY PIPE REMOVAL
- SIGN, POLE, LIGHT, AND PARKING METER REMOVAL
- TREE REMOVAL
- HYDRANT AND STRUCTURE REMOVAL
- WALL REMOVAL

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
REMOVALS

SHEET F.01

ASH STREET

HERSHEY AVENUE

MISSISSIPPI DRIVE

ADJUST INLET TO GRADE

REMOVE AND RE-ROUTE 26 LF 4" PVC PIPE TO PROPOSED INLET

MATCH EXISTING JOINT

PROTECT STEPS

PROTECT WALL

PROTECT DRIVEWAY

PROTECT INTAKE

PARTIAL WALL REMOVAL SEE DETAIL ON SHEET B.02

EDGE RAILROAD BALLAST

HERSHEY AVENUE, STA=28+17.85
MISSISSIPPI DRIVE, STA=28+17.85
ASH STREET, STA=128+17.85

INTAKE M.H. RIM = 555.47
E. 6" GUTTER = 554.71
E. 15" PLASTIC = 551.87
S. 15" CONC. = 551.67

SANITARY M.H. RIM = 560.86
E. N.W. 8" P.V.C. = 553.76
E. S.E. 8" P.V.C. = 552.16

INTAKE RIM = 557.24
E. N.E. 4" PLASTIC = 555.14
E. S. 12" CONC. = 554.04

INTAKE RIM = 561.86
E. S. 12" CONC. = 558.03

STORM M.H. RIM = 555.50
E. N.W. 42" CONC. = 550.40
E. S.W. 42" CONC. = 550.30

STORM M.H. RIM = 557.00
E. N.W. 6" CMP = 553.00
E. N.E. 12" CONC. = 551.96
E. S.E. 24" CONC. = 551.60
E. S.W. 12" CONC. = 551.95
S.W. 42" CONC. = 550.20

CURB INTAKE RIM = 556.50
E. S.W. 6" CMP = 553.50
E. N.E. 6" CMP = 553.20
E. N.W. 12" CONC. = 552.30

SANITARY M.H. RIM = 556.99
E. N.W. 8" P.V.C. = 548.91
E. S.E. 8" P.V.C. = 548.71
S.W. 8" P.V.C. = 548.69

ASPHALT WALK

EDGE OF RAILROAD BALLAST

RAILROAD TRACK

RIM = 555.63
C. = 551.10
C. = 550.02

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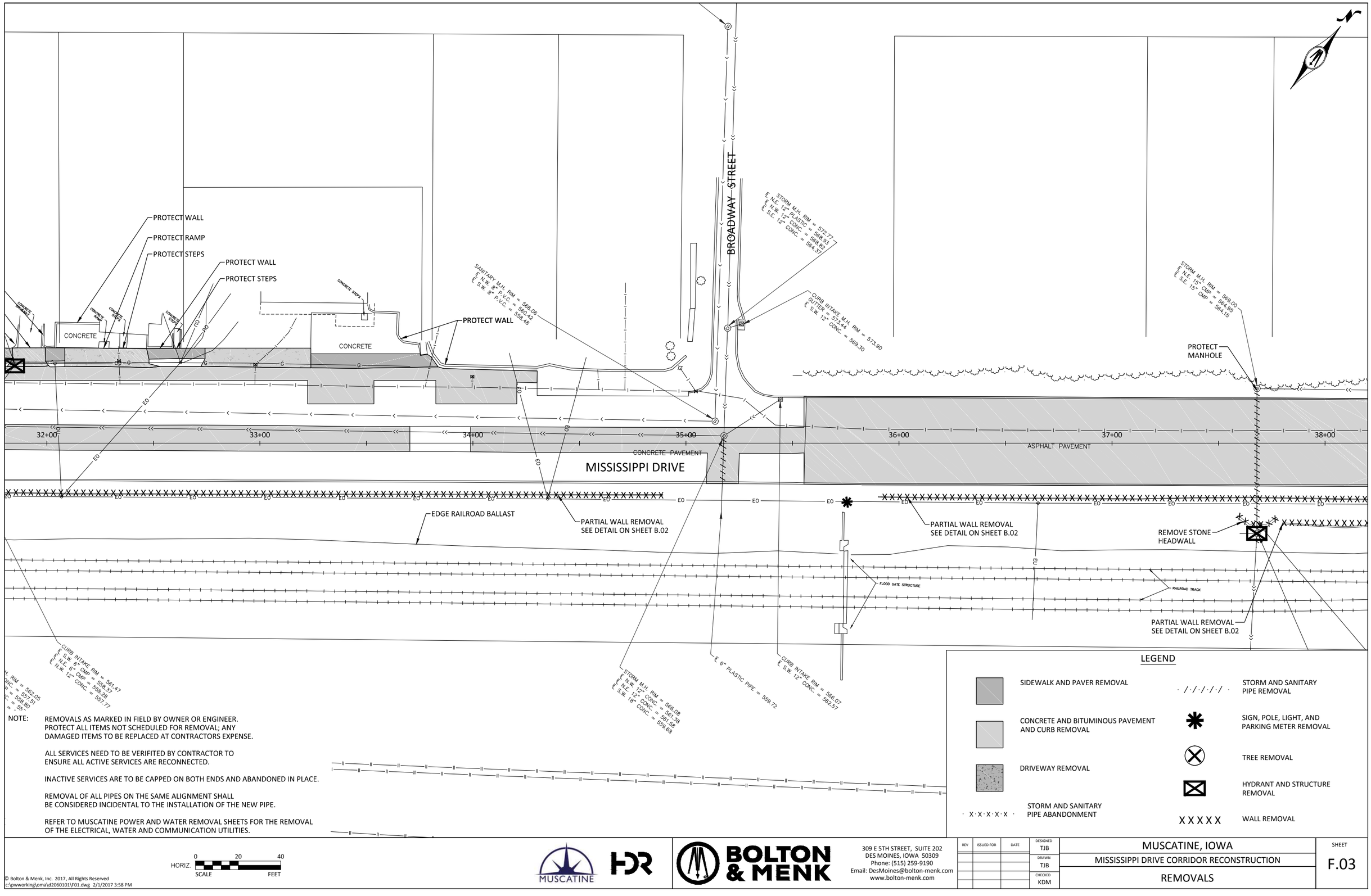
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
REMOVALS

SHEET F.02



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- X X X X X WALL REMOVAL

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MUSCATINE, IOWA
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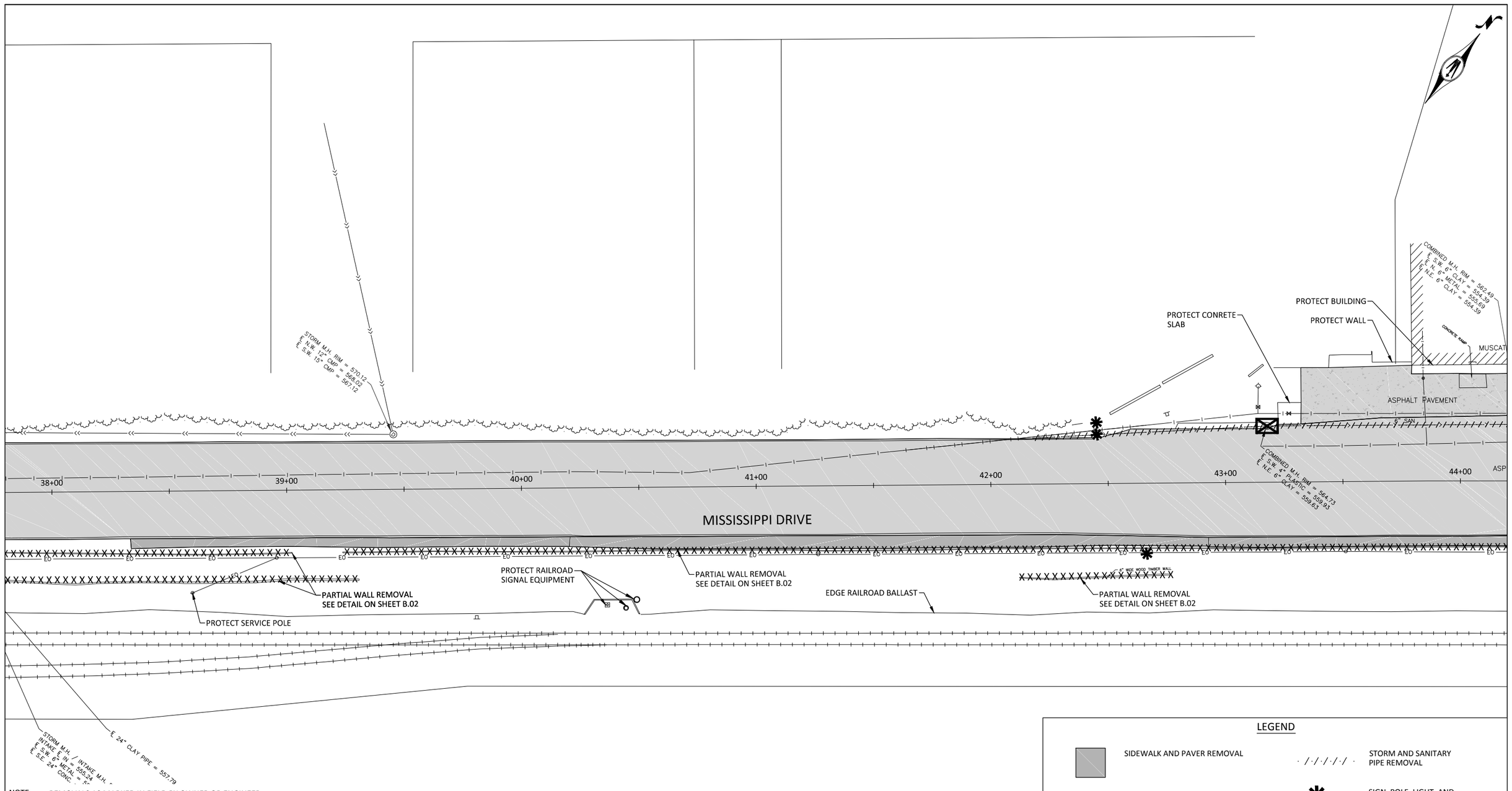
REMOVALS

SHEET F.03



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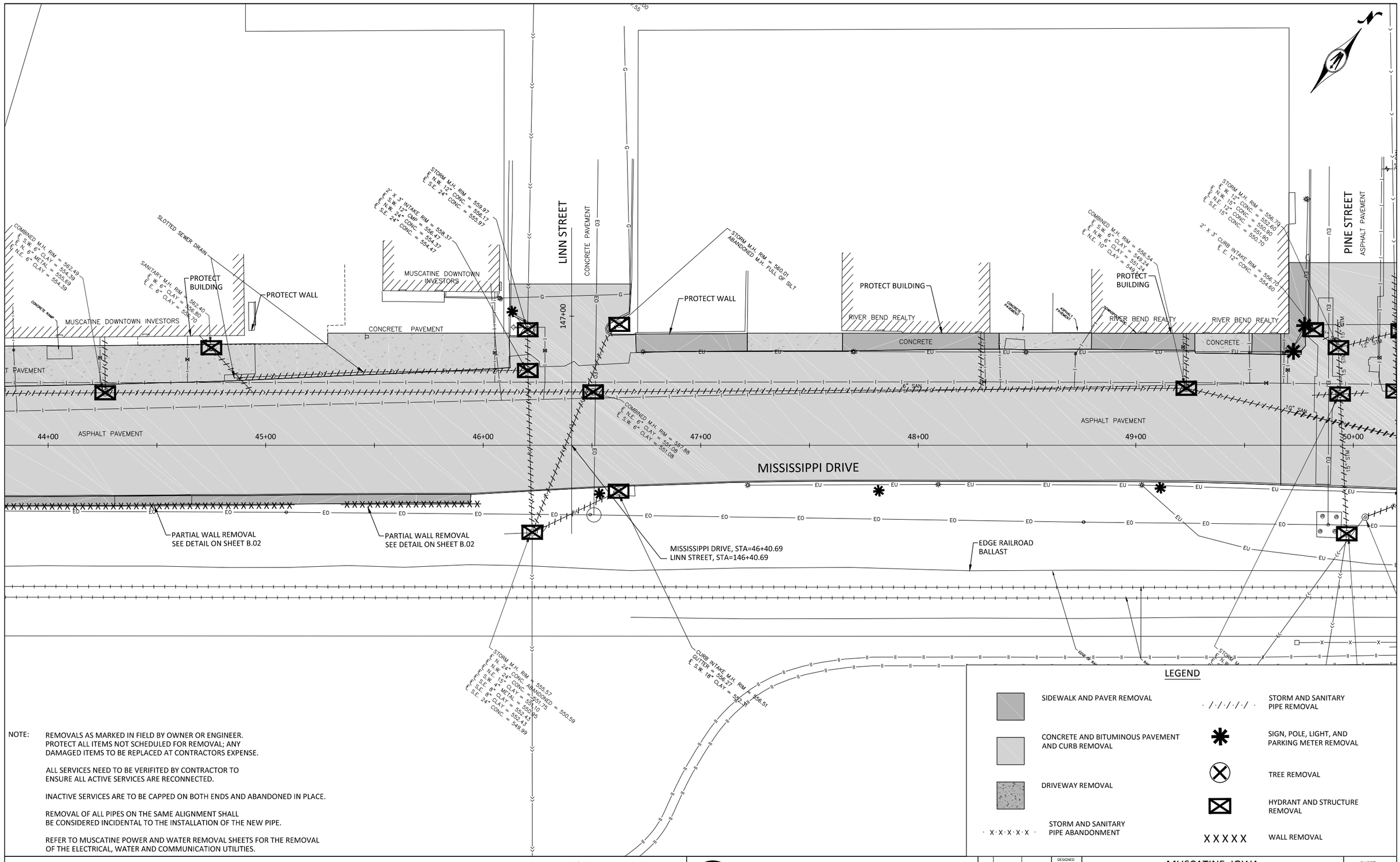
REMOVALS

SHEET F.04



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- STORM AND SANITARY PIPE REMOVAL
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- TREE REMOVAL
- HYDRANT AND STRUCTURE REMOVAL
- WALL REMOVAL

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MUSCATINE, IOWA
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REMOVALS

SHEET F.05

PINE STREET

STORM M.H. RIM = 556.70
℄ W. 12" CONC. = 552.60
℄ N.W. 15" CONC. = 550.90
℄ N.E. 12" CONC. = 551.90
℄ S.E. 15" CONC. = 550.70

X 3' CURB INTAKE RIM = 556.70
℄ E. 12" CONC. = 554.60

BENCHMARK "I"

CURB INTAKE M.H. RIM = 557.24
GUTTER = 556.66
℄ 12" CONC. = 554.34

SANITARY M.H. RIM = 556.20
℄ N.W. 10" METAL = 551.60
℄ N.E. 8" CLAY = 549.75
℄ S.E. 12" CLAY = 549.70

REMOVE AND SALVAGE FOR REINSTALLATION OF RETAINING WALL BLOCKS AND HANDRAIL

EXISTING RETAINING WALL DO NOT DISTURB

CONCRETE

STORM M.H. RIM = 555.73
℄ N. 12" CLAY = 552.53
℄ N.W. 24" CLAY = 551.83
℄ S.E. 24" CLAY = 551.63

CURB INTAKE M.H. RIM = 556.46
GUTTER = 556.21
℄ S.E. 18" CONC. = 550.26

CHESTNUT STREET

ASPHALT PAVEMENT

HOTEL CONSTRUCTION LIMITS

CURB INTAKE RIM = 555.82
℄ S. 12" CLAY = 553.57

MERRILL HOTEL

BENCHMARK "J"

PC 51+06.94

PT 51+47.55

ASPHALT PAVEMENT

50+00

51+00

52+00

53+00

54+00

55+00

PC 52+92.23

PT 53+07.15

CURB INTAKE M.H. RIM = 555.21
GUTTER = 554.96
℄ S. 12" CONC. = 549.76

CONCRETE ISLAND

CONCRETE ISLAND

STORM M.H. RIM = 556.07
℄ N.W. 15" CLAY = 548.54
℄ S.W. 8" CLAY = 548.07
℄ N.E. 8" CLAY = 548.07
℄ S.E. 15" CLAY = 547.73

STORM M.H. RIM = 555.40
℄ N.E. 18" CONC. = 549.20
BOTTOM = 536.70
NO OTHER PIPES VISIBLE

COMBINED M.H. RIM = 555.37
℄ W. 8" CLAY = 544.77
℄ N.W. 12" CLAY = 549.17
℄ N.E. 10" CLAY = 544.17
℄ S.W. 12" CLAY = 545.07
℄ TOP OF 4" METAL = 546.27
BOTTOM OF M.H. = 536.67
NO OTHER PIPES VISIBLE

MISSISSIPPI DRIVE

SANITARY M.H. RIM = 555.86
℄ N.W. 8" METAL = 550.86
℄ N.E. 10" CLAY = 545.96
℄ S.W. 10" CLAY = 545.96

STORM M.H. RIM = 554.42
℄ N.W. 36" CONC. = 548.07
℄ S.E. 36" CONC. = 546.86

CURB INTAKE M.H. RIM = 554.10
GUTTER = 553.52
℄ S. 8" CMP = 551.80
℄ N.E. 15" CONC. = 548.15

SANITARY M.H. RIM = 554.76
℄ N.W. 12" CLAY = 549.16
℄ N. 8" CLAY = 548.56
℄ S.E. 3" METAL = 549.86
BOTTOM = 537.16
NO OTHER PIPES VISIBLE

SANITARY M.H. RIM = 555.17
℄ N. 6" PLASTIC = 550.87
℄ S.W. 8" CLAY = 543.87
℄ N.E. 6" CLAY = 543.87

MISSISSIPPI DRIVE

ASPHALT PAVEMENT

SANITARY M.H. RIM = 554.70
℄ N. 6" CLAY = 548.60
℄ S.W. 6" CLAY = 544.90

STORM M.H. RIM = 555.63
℄ N.W. 15" CLAY = 545.78
℄ S.E. 36" CONC. = 545.38

CAP/PLUG PIPE RUNNING NORTH

CURB INTAKE M.H. RIM = 554.81
GUTTER = 554.31
℄ S.W. 18" CONC. = 549.81

STORM M.H. RIM = 553.94
℄ S.W. 15" CONCI = 548.14
℄ W. 12" CONC. = 548.18
℄ N.W. 18" CONC. = 548.01
℄ N. 24" CONC. = 550.00
℄ S.E. 36" CONC. = 548.09

STORM M
℄ N.W.

STORM MANHOLE

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HORIZ. SCALE: 0 20 40 FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
REMOVALS

SHEET F.06

HOTEL CONSTRUCTION LIMITS

CURB INTAKE M.H. RIM = 556.06
GUTTER = 555.32
℄ S.E. 12" CONC. = 553.06

STORM M.H. APPROXIMATE LOCATION COULD NOT BE LOCATED BY THE CITY OF MUSCATINE.

REMOVE SIGNAL POLE

BENCHMARK "K"

SANITARY M.H. RIM = 554.90
℄ N.W. 12" CLAY = 544.60
℄ S.E. 12" CLAY = 544.10

BEEHIVE INTAKE RIM = 553.50
℄ S.E. 15" CONC. = 549.85
BOTTOM = 549.30

ANITARY M.H. RIM = 554.70
N. 6" CLAY = 548.60
S.W. 6" CLAY = 544.90

MISSISSIPPI DRIVE

CURB INTAKE M.H. RIM = 552.60
GUTTER = 551.92
℄ S. 8" CMP = 550.57
℄ N.W. 15" CONC. = 547.93
℄ N.E. 18" CONC. = 547.20

SANITARY M.H. RIM = 553.78
℄ N.W. 18" CLAY = 541.88
℄ W. 12" CLAY = 543.28
BOTTOM = 536.88
NO OTHER PIPES VISIBLE

REMOVE SIGNAL POLE

RAILROAD CROSSING GATE

GRAVEL

STORM M.H. RIM = 552.52
℄ S.W. 18" CONC. = 546.62
℄ N.W. 30" CONC. = 546.32
℄ N.E. 18" CLAY = 546.12

IOWA AVENUE

CURB INTAKE M.H. RIM = 556.06
GUTTER = 555.61
℄ N.E. 2" PLASTIC = 554.86
℄ S.E. 12" CONC. = 553.16

REMOVE SIGNAL POLE

CONTRACTOR SHALL REMOVE, PRESERVE, AND RELOCATE HISTORICAL MONUMENT & PLAQUE, REFER TO SHEET U.07 FOR RELOCATION DETAILS

ASPHALT PAVEMENT

PC 58+52.36

PT 58+89.17

PC 59+21.38

PT 59+59.89

PREVIOUSLY ABANDONED WATER LINE

STORM M.H. RIM = 553.20
℄ N.W. 12" CONC. = 545.40
℄ S.E. 8" CMP = 550.80
℄ S.W. 18" CLAY = 544.90
℄ S.E. 36" CONC. = 544.90

REMOVE SIGNAL POLE

RAILROAD CROSSING GATE

REMOVE SIGNAL POLE

STORM M.H. RIM = 551.27
℄ N.W. 36" CONC. = 542.67

SANITARY M.H. RIM = 551.31

STORM MANHOLE RIM = 549.95'

CURB INTAKE M.H. RIM = 552.23
GUTTER = 551.20
℄ S.E. 15" CONC. = 548.88

STORM SEWER GATE WELL
TOP = 552.00
℄ N.W. 15" CONC. = 548.50
℄ S.E. 18" PIPE = 543.20
BOTTOM = 541.44

2' X 3' INTAKE RIM = 551.03
℄ S.W. 18" PIPE = 543.73
℄ N.W. 18" PIPE = 543.73

REMOVE EXISTING CASTING ON GATE WELL, SEE SHEET B.05 FOR DETAILS

SYCAMORE STREET

2.4' X 3' INTAKE RIM = 551.10
℄ S.E. 12" CONC. = 546.50
℄ N. 18" PIPE = 546.35

PROTECT EXISTING SANITARY SEWER MANHOLE

MISSISSIPPI DRIVE

ASPHALT PAVEMENT

SANITARY M.H. RIM = 551.11
BOTTOM = 536.36
NO PIPES VISIBLE

COMBINED M.H. RIM = 5
BOTTOM = 4
NO PIPES V

CURB INTAKE M.H. RIM = 550.91
GUTTER = 550.22
℄ S.E. 6" CMP = 549.91
℄ N.W. 12" CONC. = 546.71

PAPOOSE CREEK TUNNEL PROTECTION AREA, SEE SHEET B.07 FOR DETAILS

56+00 57+00 58+00 59+00 60+00 61+00

LEGEND

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- TREE REMOVAL
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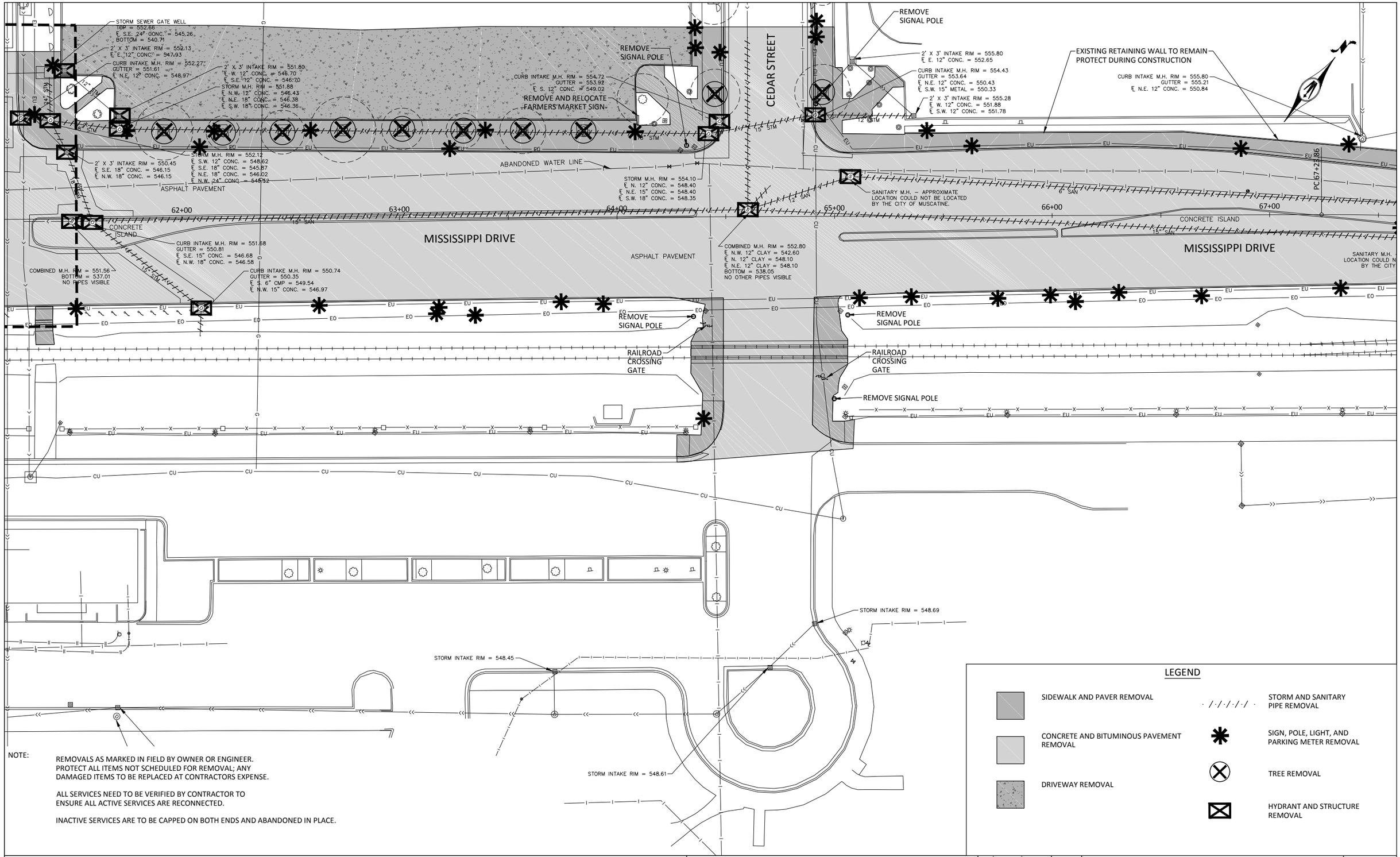
REMOVALS

SHEET F.07



NOTE:

REMOVALS AS MARKED IN FIELD BY OWNER OR ENGINEER.
PROTECT ALL ITEMS NOT SCHEDULED FOR REMOVAL; ANY DAMAGED ITEMS TO BE REPLACED AT CONTRACTORS EXPENSE.

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INACTIVE SERVICES ARE TO BE CAPPED ON BOTH ENDS AND ABANDONED IN PLACE.

LEGEND

- SIDEWALK AND PAVER REMOVAL
- CONCRETE AND BITUMINOUS PAVEMENT REMOVAL
- DRIVEWAY REMOVAL
- STORM AND SANITARY PIPE REMOVAL
- SIGN, POLE, LIGHT, AND PARKING METER REMOVAL
- TREE REMOVAL
- HYDRANT AND STRUCTURE REMOVAL

HORIZ. SCALE: 0 20 40 FEET

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MUSCATINE

HDR

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Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

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DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
REMOVALS

SHEET F.08

WALNUT STREET

MISSISSIPPI DRIVE

MULBERRY AVENUE

CONCRETE PAVEMENT

ASPHALT PAVEMENT

SANITARY M.H. RIM = 560.04
℄ S.W. 8" CLAY = 552.04

INTAKE RIM = 556.87
BOTTOM = 551.77
NO PIPES VISIBLE

PROTECT WALL

INTAKE RIM = 557.69
℄ E. 12" PLASTIC = 549.45

PT 72+33.76

PROTECT WALL

STORM M.H. RIM = 552.28
℄ W. 15" CLAY = 548.38
℄ N.W. 18" CLAY = 547.68
℄ N.E. 15" CLAY = 548.38
℄ S.E. 18" CLAY = 547.58

DOUBLE 2' X 3' INTAKE RIM = 552.20
℄ S.W. 15" CLAY = 549.05

PROTECT WALL

COMBINED M.H. RIM = 551.89
℄ N.W. 12" CLAY = 546.99
℄ N.N.W. 12" CLAY = 541.09
℄ N.E. 12" CLAY = 542.19
℄ S.W. 15" CLAY = 538.19

STONE HISTORICAL MARKER

EXISTING RETAINING WALL TO REMAIN. PROTECT DURING CONSTRUCTION

REMOVE & REINSTALL SIGN

CURB INTAKE M.H. RIM = 553.30
GUTTER = 552.53
℄ S.W. 3" PLASTIC = 551.00
℄ S.W. 12" CONC. = 549.65
℄ S.W. 12" CONC. = 547.45
℄ N.E. 12" CONC. = 547.30

CURB INTAKE M.H. RIM = 553.00
GUTTER = 552.30
℄ N.W. 12" CONC. = 549.64
℄ S.W. 12" CONC. = 547.90
℄ S. 18" CONC. = 547.80

BENCHMARK "M"

PROTECT MONITORING WELLS

REMOVE BEAM CURB

PROTECT WALL

PROTECT WALL

DOUBLE CURB INTAKE
RIM NORTH = 551.50
℄ N.W. 12" PLASTIC = 549.00
RIM SOUTH = 551.40
℄ E. 15" PLASTIC = 548.90

PC 67+21.86

PT 67+63.49

PC 72+20.54

68+00

69+00

70+00

71+00

72+00

73+00

SANITARY M.H. – APPROXIMATE LOCATION COULD NOT BE LOCATED BY THE CITY OF MUSCATINE.

COMBINED M.H. RIM = 550.45
℄ 10" VERTICAL PLASTIC = 540.05
BOTTOM = 538.05
NO OTHER PIPES VISIBLE

SANITARY M.H. RIM = 551.48
FULL OF DIRT

CURB INTAKE M.H. RIM = 550.00
GUTTER = 549.49
℄ N. 18" CONC. = 545.35
℄ S.E. 30" CONC. = 545.40

STORM M.H. RIM = 549.93
℄ N.W. 30" CONC. = 544.13

NOTE:

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LEGEND

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- CONCRETE AND BITUMINOUS PAVEMENT REMOVAL
- DRIVEWAY REMOVAL
- STORM AND SANITARY PIPE REMOVAL
- SIGN, POLE, LIGHT, AND PARKING METER REMOVAL
- TREE REMOVAL
- HYDRANT AND STRUCTURE REMOVAL

HORIZ. SCALE 0 20 40 FEET

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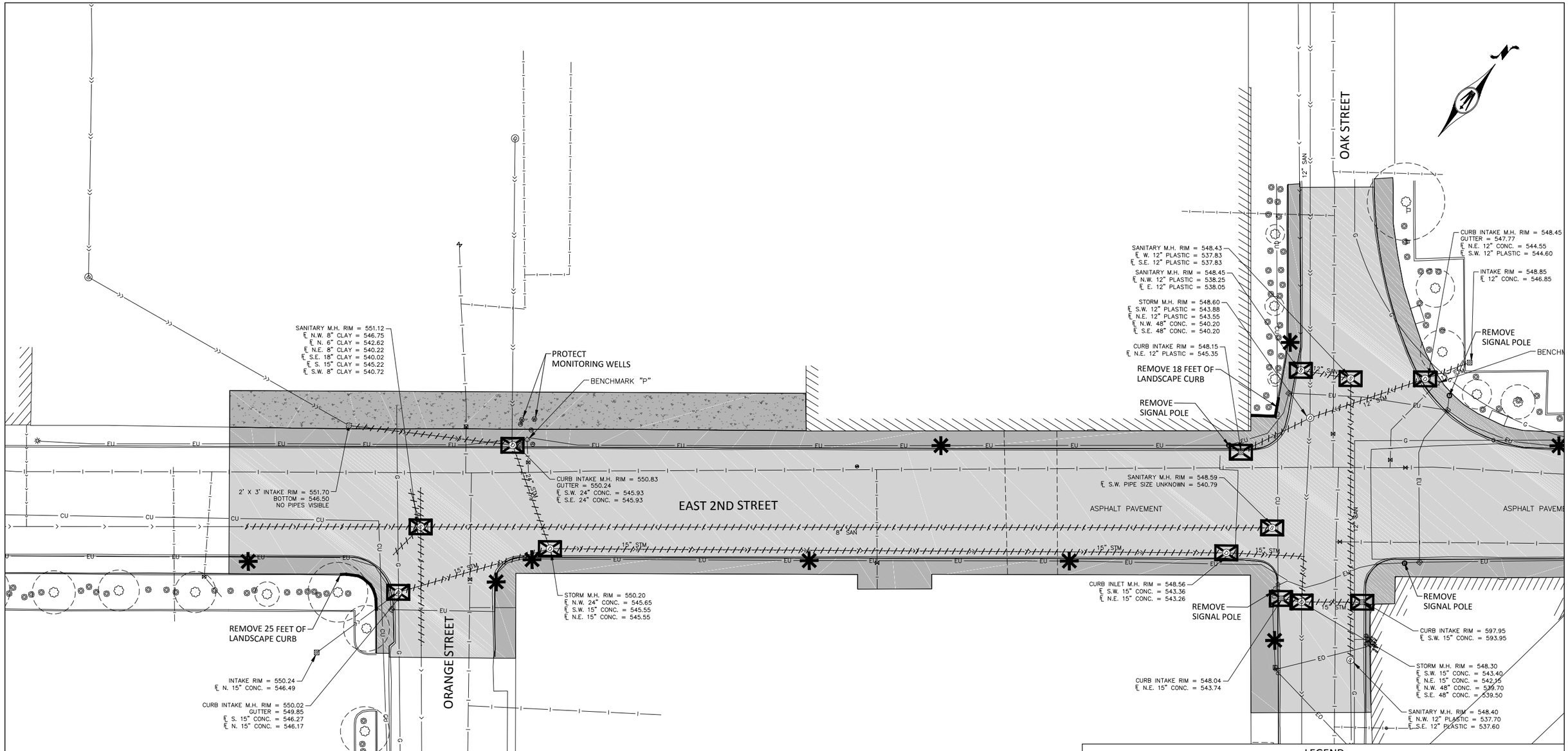
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
REMOVALS

SHEET F.09



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LEGEND

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- CONCRETE AND BITUMINOUS PAVEMENT REMOVAL
- DRIVEWAY REMOVAL
- STORM AND SANITARY PIPE REMOVAL
- SIGN, POLE, LIGHT, AND PARKING METER REMOVAL
- TREE REMOVAL
- HYDRANT AND STRUCTURE REMOVAL

HORIZ. SCALE: 0 20 40 FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
REMOVALS

SHEET F.10

RB INTAKE M.H. RIM = 548.45
TTER = 547.77
N.E. 12" CONC. = 544.55
S.W. 12" PLASTIC = 544.60

INTAKE RIM = 548.85
℄ 12" CONC. = 546.85

REMOVE
SIGNAL POLE

BENCHMARK "Q"

RAILROAD
CROSSING
GATE

ASPHALT PAVEMENT

CURB INTAKE M.H. RIM = 548.77
GUTTER = 548.43
℄ S.E. 15" CONC. = 545.47

BENCHMARK "R"

SANITARY M.H. RIM = 549.22
℄ S.E. 12" CLAY = 545.02
℄ N.W. 12" CONC. = 544.62
℄ N.W. 6" CLAY = 543.87
℄ S.W. 12" CLAY = 543.22
℄ N.E. 12" CLAY = 543.12

EAST 2ND STREET

SANITARY M.H. RIM = 550.83
℄ N.W. 12" CLAY = 546.63 ABANDONED
℄ S.W. 12" CLAY = 545.63 ABANDONED
℄ S.W. 12" CLAY = 541.73
℄ N.E. 12" CLAY = 541.63

STORM M.H. RIM = 551.74
℄ S.W. 18" CONC. = 544.44
℄ W. 12" CONC. = 541.31
BOTTOM = 537.54
2 PIPES NOT VISIBLE
WATER IN MANHOLE

12" SAN

12" STM

STORM M.H. RIM = 550.14
℄ S.W. 15" CONC. = 543.54
℄ N.E. 15" CONC. = 543.24

ASPHALT PAVEMENT

CURB INLET M.H. RIM = 550.68
GUTTER = 550.43
℄ E. 12" CONC. = 545.38

30" STM

15" STM

x553.08

x553.23

E

M = 597.95
C. = 593.95

= 548.30
. = 543.40
. = 542.15
. = 539.70
. = 539.50

= 548.40
= 537.70
= 537.60

RAILROAD
CROSSING
GATE

CURB INLET M.H. RIM = 548.80
GUTTER = 548.53
℄ E. 6" PLASTIC = 545.10
℄ N.W. 15" CONC. = 545.20
℄ N.E. 15" CONC. = 544.80

STORM M.H. RIM = 551.55
℄ S.E. 12" PIPE = 547.55
℄ W. 15" CONC. = 543.25
℄ N. 30" CONC. = 537.35
℄ S. 30" CONC. = 537.25

STORM M.H. RIM = 552.6
℄ N.W. 6" CLAY = 547.9
℄ N.E. 6" CLAY = 547.9

REMOVE LANDSCAPE CURB
PROTECT EXISTING PLANTINGS AND
RESTORE TO ORIGINAL CONDITIONS

LEGEND

- SIDEWALK AND PAVER REMOVAL
- CONCRETE AND BITUMINOUS PAVEMENT REMOVAL
- DRIVEWAY REMOVAL
- STORM AND SANITARY PIPE REMOVAL
- SIGN, POLE, LIGHT, AND PARKING METER REMOVAL
- TREE REMOVAL
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HORIZ. SCALE 0 20 40 FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
REMOVALS

SHEET F.11

POWER POLE RELOCATED

POWER POLE REMOVAL

POWER POLE RELOCATED

POWER POLE REMOVAL

POWER POLE REMOVAL

ASH ST.

W. 2ND ST.

ELM ST.

W. MISSISSIPPI DR.

HERSHEY AVE.

NORTH

LEGEND:

OVERHEAD OR UNDERGROUND ELECTRIC REMOVAL

WATER PIPE ABANDONMENT

POLE AND LIGHT REMOVAL

HYDRANT REMOVAL

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

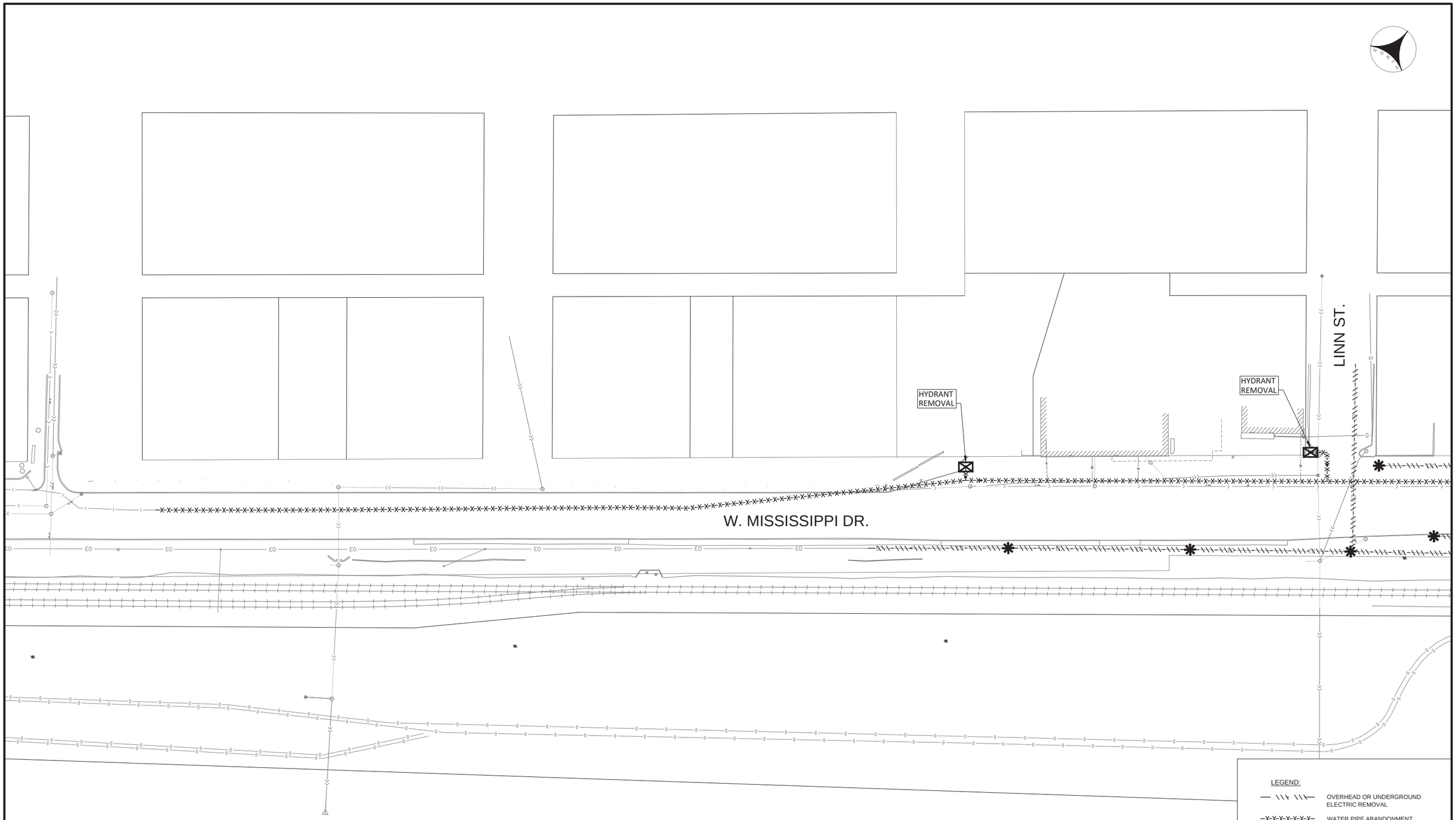
DRAWN BY: DAMION SHANNON	DATE: 01/24/17
DESIGNED BY: RICHARD H. TEED	DATE: 01/24/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
HERSHEY AVE. & MISSISSIPPI DR.
REMOVALS

REF No.		FILE No.	59	SHEET No.
SCALE:	1"=40'			F.12
DRAWING No.	DUG0097A	REV. No.	0	



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON	DATE: 01/24/17	
DESIGNED BY: RICHARD H. TEED	DATE: 01/24/17	
CHECKED BY:	DATE:	
APPROVED BY:	DATE:	

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
W. MISSISSIPPI DR.
REMOVALS

REF No.		SHEET No.
SCALE: 1"=40'	FILE No. 59	F.13
DRAWING No. DUG0097B	REV. No. 0	

PINE ST.

CHESTNUT ST.

IOWA AVE.

W. MISSISSIPPI DR.

E. MISSISSIPPI DR.

HYDRANT REMOVAL

DUCT BANK REMOVAL

LEGEND:

- OVERHEAD OR UNDERGROUND ELECTRIC REMOVAL
- WATER PIPE ABANDONMENT
- POLE AND LIGHT REMOVAL
- HYDRANT REMOVAL

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

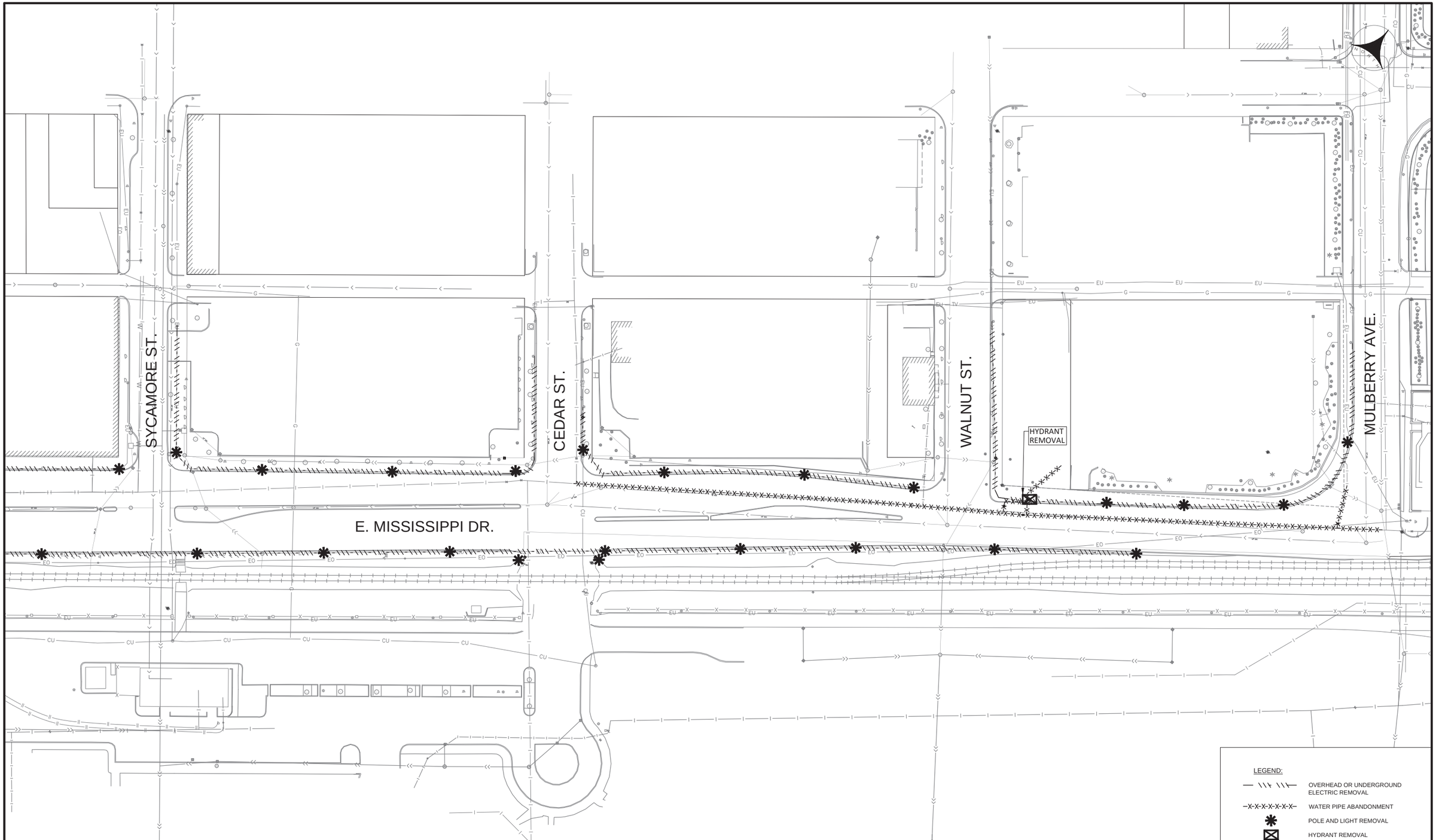
DRAWN BY:	DAMION SHANNON	DATE: 01/24/17
DESIGNED BY:	RICHARD H. TEED	DATE: 01/24/17
CHECKED BY:		DATE:
APPROVED BY:		DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
W. MISSISSIPPI DR.
REMOVALS

REF No.			SHEET No.
SCALE: 1"=40'	FILE No. 59		F.14
DRAWING No. DUG0097C	REV. No. 0		



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

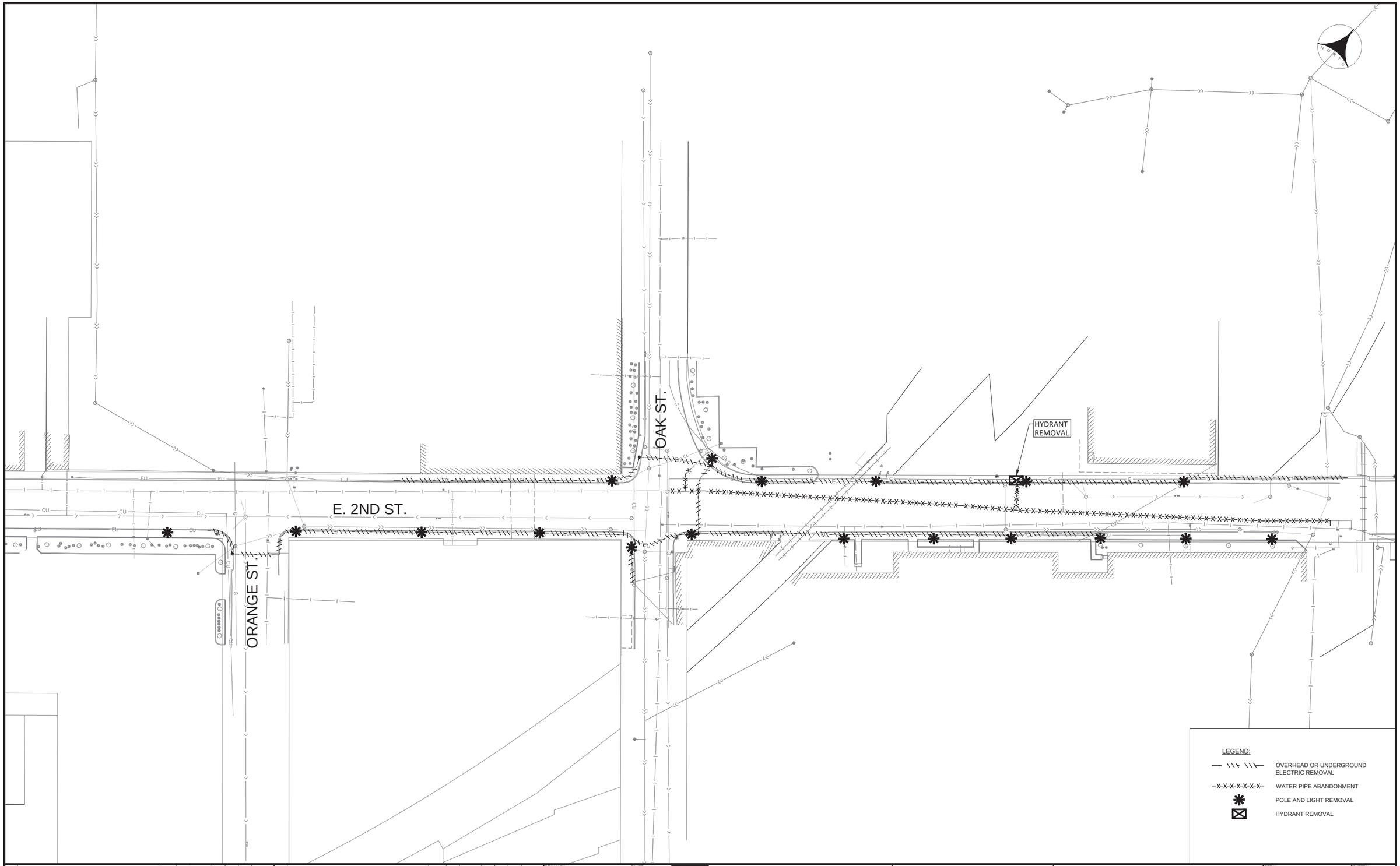
DRAWN BY: DAMION SHANNON	DATE: 01/24/17	
DESIGNED BY: RICHARD H. TEED	DATE: 01/24/17	
CHECKED BY:	DATE:	
APPROVED BY:	DATE:	

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
CEDAR ST.
REMOVALS

REF No.			SHEET No.
SCALE: 1"=40'	FILE No. 59		F.15
DRAWING No. DUG0097D	REV. No. 0		



REV.	DESCRIPTION	WORK ORDER	REV BY	DATE	CHK'D BY	APP'V BY	APP'V BY	DATE

REV.	DESCRIPTION	WORK ORDER	REV BY	DATE	CHK'D BY	APP'V BY	APP'V BY	DATE

DRAWN BY:	DAMION SHANNON	DATE: 01/24/17
DESIGNED BY:	RICHARD H. TEED	DATE:
CHECKED BY:		DATE:
APPROVED BY:		DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
EAST 2ND STREET
REMOVALS

REF No.			SHEET No.
SCALE: 1"=40'	FILE No. 59		F.16
DRAWING No. DUG0097E	REV. No. 0		

HERSHEY AVENUE																
NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L1				14+00.00	525065.58	2310002.97	1002.401	24+02.40	525059.09	2311005.35	S89° 37' 43.90"E					
C1	25+88.40	525057.89	2311191.35	24+02.40	525059.09	2311005.35	357.519	27+59.92	525174.05	2311336.63	N70° 51' 44.03"E	525.000	39°01'04"	10°54'49"	186.00	31.98
L2				27+59.92	525174.05	2311336.63	1626.085	43+86.01	526189.56	2312606.62	N51° 21' 11.96"E					
L3				43+86.01	526189.56	2312606.62	713.995	51+00.00	526630.85	2313167.91	N51° 49' 32.28"E					

HORIZ. SCALE: 0 100 200 FEET

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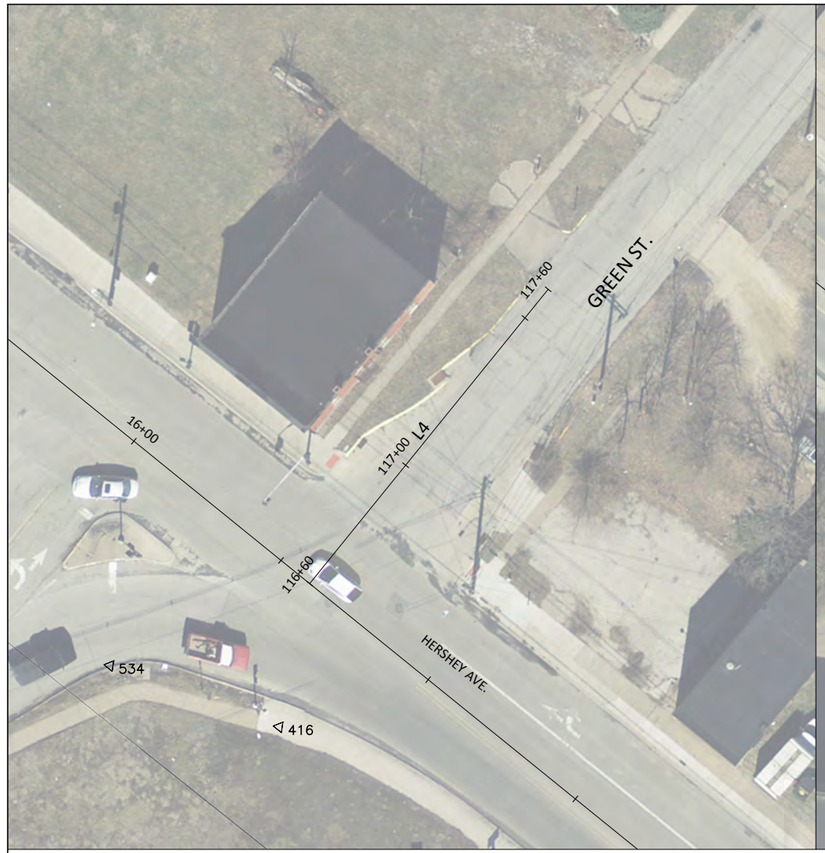
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
ALIGNMENT & BENCHMARK INFORMATION

SHEET G.01



GREEN STREET																
NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L4				116+59.75	525063.90	2310262.72	100.000	117+59.75	525163.90	2310263.36	N0° 22' 16.10"E					

ELM STREET																
NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L5				123+64.98	525059.33	2310967.93	75.000	124+39.98	525134.33	2310968.42	N0° 22' 16.10"E					

LINN STREET																
NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L6				146+40.69	526346.98	2312806.84	100.000	147+40.69	526425.59	2312745.03	N38° 10' 27.72"W					

HORIZ. SCALE 0 20 40 FEET

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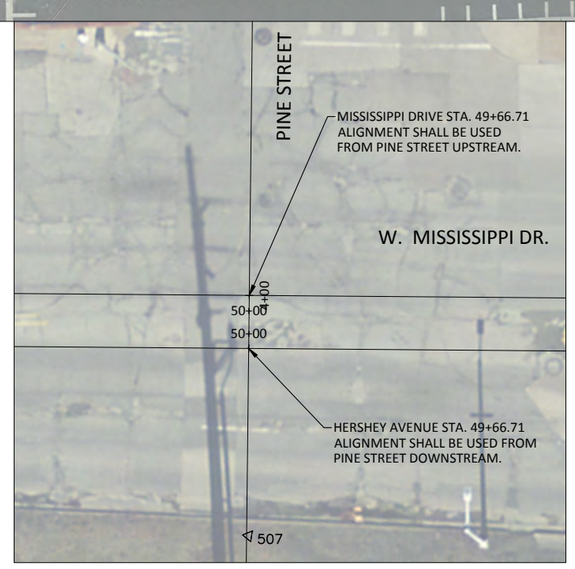
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
ALIGNMENT & BENCHMARK INFORMATION

SHEET G.02

MISSISSIPPI DRIVE

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L7				43+33.51	526162.62	2312561.03	773.430	51+06.94	526640.65	2313169.04	N51° 49' 32.28"E					
C2	51+27.25	526653.20	2313185.01	51+06.94	526640.65	2313169.04	40.603	51+47.55	526665.09	2313201.46	N52° 59' 19.73"E	1000.000	2°19'35"	5°43'46"	20.30	0.21
L8				51+47.55	526665.09	2313201.46	144.684	52+92.23	526749.82	2313318.74	N54° 09' 07.18"E					
C3	52+99.69	526754.19	2313324.79	52+92.23	526749.82	2313318.74	14.922	53+07.15	526758.80	2313330.66	N52° 59' 19.70"E	367.505	2°19'35"	15°35'26"	7.46	0.08
L9				53+07.15	526758.80	2313330.66	545.212	58+52.36	527095.77	2313759.27	N51° 49' 32.28"E					
C4	58+70.78	527107.16	2313773.75	58+52.36	527095.77	2313759.27	36.812	58+89.17	527119.94	2313787.02	N48° 57' 21.77"E	367.500	5°44'21"	15°35'26"	18.42	0.46
L10				58+89.17	527119.94	2313787.02	32.406	59+21.58	527142.41	2313810.36	N46° 05' 11.26"E					
C5	59+40.75	527155.71	2313824.17	59+21.58	527142.41	2313810.36	38.314	59+59.89	527167.56	2313839.25	N48° 57' 21.77"E	382.500	5°44'21"	14°58'45"	19.17	0.48
L11				59+59.89	527167.56	2313839.25	763.960	67+23.86	527639.73	2314439.82	N51° 49' 32.28"E					
C6	67+43.67	527651.98	2314455.40	67+23.86	527639.73	2314439.82	39.634	67+63.49	527663.60	2314471.46	N52° 57' 33.75"E	1001.500	2°16'03"	5°43'16"	19.82	0.20
L12				67+63.49	527663.60	2314471.46	357.054	71+20.54	527873.00	2314760.66	N54° 05' 35.22"E					
C7	71+93.88	527916.01	2314820.06	71+20.54	527873.00	2314760.66	113.213	72+33.76	527973.35	2314774.33	N7° 45' 36.13"E	70.000	92°39'58"	81°51'04"	73.34	31.38
L13				72+33.76	527973.35	2314774.33	564.633	77+98.39	528414.79	2314422.28	N38° 34' 22.96"W					



1 G.03 ALIGNMENT SHIFT DETAIL
NOT TO SCALE

HORIZ. SCALE 0 100 200 FEET

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Email: DesMoines@bolton-menk.com
www.bolton-menk.com

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
ALIGNMENT & BENCHMARK INFORMATION

SHEET G.03

PINE STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L14				2+00.00	526732.20	2312961.90	300.000	5+00.00	526495.73	2313146.51	S37° 58' 41.75"E					

CHESTNUT STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L15				5+74.15	527049.07	2313174.87	81.499	6+55.64	526984.59	2313224.72	S37° 42' 21.71"E					
C8	6+76.84	526967.82	2313237.68	6+55.64	526984.59	2313224.72	42.258	6+97.90	526948.82	2313247.07	S31° 59' 44.27"E	212.000	11°25'15"	27°01'35"	21.20	1.06
L16				6+97.90	526948.82	2313247.07	34.645	7+32.55	526917.75	2313262.41	S26° 17' 06.84"E					
C9	7+53.89	526898.62	2313271.86	7+32.55	526917.75	2313262.41	42.542	7+75.09	526881.75	2313284.94	S32° 02' 02.37"E	212.000	11°29'51"	27°01'35"	21.34	1.07
L17				7+75.09	526881.75	2313284.94	224.910	10+00.00	526703.99	2313422.74	S37° 46' 57.90"E					

IOWA STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L18				10+00.00	527219.96	2313512.74	500.000	15+00.00	526825.42	2313819.88	S37° 53' 59.40"E					

SYCAMORE STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L19				15+00.00	527418.04	2313834.26	300.000	18+00.00	527183.88	2314021.80	S38° 41' 31.13"E					

CEDAR STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L20				17+87.91	527649.45	2314109.03	518.196	23+06.10	527242.48	2314429.80	S38° 14' 40.67"E					

WALNUT STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L21				23+00.00	527938.60	2314340.18	400.000	27+00.00	527624.75	2314588.16	S38° 18' 47.25"E					

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SHEET G.04

E. 2ND STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L22				80+14.22	528119.90	2314419.84	684.318	86+98.54	528540.66	2314959.52	N52° 03' 27.96"E					
C10	87+14.01	528550.17	2314971.72	86+98.54	528540.66	2314959.52	30.945	87+29.48	528559.76	2314983.87	N51° 53' 10.67"E	5170.000	0°20'35"	1°06'30"	15.47	0.02
L23				87+29.48	528559.76	2314983.87	1070.519	98+00.00	529223.03	2315824.16	N51° 42' 53.38"E					

OAK STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L24				29+27.36	528855.05	2314998.63	222.638	31+50.00	528680.75	2315137.15	S38° 28' 30.20"E					
L25				31+50.00	528680.75	2315137.15	20.431	31+70.43	528662.47	2315146.27	S26° 29' 58.30"E					
L26				31+70.43	528662.47	2315146.27	214.094	33+84.52	528494.62	2315279.17	S38° 22' 25.28"E					

ORANGE STREET

NUMBER	PI STATION	PI NORTHING	PI EASTING	START STATION	START NORTHING	START EASTING	LENGTH	END STATION	END NORTHING	END EASTING	LINE / CHORD DIRECTION	R	Δ	D	T	E
L27				26+00.00	528534.94	2314789.55	300.000	29+00.00	528297.34	2314972.70	S37° 37' 27.76"E					

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CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
401	525071.89	2311390.89	559.37	FOUND ½" REBAR AT TOP OF FIRST SLOPE ABOVE TRAIN TRACKS, 50.0'± NORTHEAST OF BEND IN TRAIL
414	524517.36	2310209.56	547.76	FOUND ½" REBAR AT BACK OF CONCRETE SIDEWALK ON THE EAST SIDE OF GRANDVIEW AVE., 75.5'± SOUTH OF BRICK BUILDING
422	525542.59	2311991.18	563.09	FOUND ½" REBAR AT TOP OF FIRST SLOPE ABOVE TRAIN TRACKS, 72.0'± SOUTHWEST OF FLOOD WALL
500	524198.22	2310046.88	545.68	SET ½" REBAR AT BACK OF CONCRETE SIDEWALK ON THE EAST SIDE OF GRANDVIEW AVE., 19.0'± SOUTHWEST OF ASPHALT DRIVE
501	524866.26	2310214.58	555.56	SET ½" REBAR 2.0'± EAST OF CONCRETE SIDEWALK AT BUSINESS 61 ROAD SIGN AND ON THE EAST SIDE OF GRANDVIEW AVENUE
502	525090.30	2310710.03	557.20	SET ½" REBAR 2.0'± NORTH OF CONCRETE SIDEWALK, 5.0'± WEST OF PARKING LOT AND ALONG NORTH SIDE OF HERSHEY AVENUE
503	525032.17	2311128.03	555.10	SET ½" REBAR 7.0'± SOUTH OF CONCRETE SIDEWALK, 4.0'± WEST OF CONCRETE SIDEWALK AT MCKEE BUTTON ENTRANCE
504	525810.75	2312314.38	555.22	SET ½" REBAR 7.0'± SOUTH OF BIKE PATH AT THIRD BRICK PILLAR FROM WEST END
505	526047.28	2312605.62	555.19	SET ½" REBAR 7.0'± SOUTH OF BIKE PATH AT EIGHTH BRICK PILLAR FROM WEST END
506	526351.90	2312873.63	556.25	SET ½" REBAR 20.0'± SOUTH OF BACK OF CURB, 45.0'± EAST OF METAL POWER POLE, EAST OF THE INTERSECTION OF LINN STREET AND MISSISSIPPI DRIVE
507	526549.73	2313104.69	555.12	SET ½" REBAR 5.0'± SOUTH OF BACK OF CURB, AT THE INTERSECTION OF PINE STREET AND MISSISSIPPI DRIVE
508	526735.92	2313370.88	554.55	SET ½" REBAR 10.0'± SOUTH OF BACK OF CURB, WEST OF THE INTERSECTION OF CHESTNUT STREET AND MISSISSIPPI DRIVE
509	526937.25	2313691.11	552.74	SET ½" REBAR AT BACK OF CONCRETE SIDEWALK, WEST OF THE INTERSECTION OF IOWA AVENUE AND MISSISSIPPI DRIVE, SOUTH OF RAILROAD TRACKS
510	527199.46	2314024.78	552.14	SET ½" REBAR 6.5'± WEST OF CONCRETE SIDEWALK, AT THE INTERSECTION OF SYCAMORE STREET AND MISSISSIPPI DRIVE, SOUTH OF RAILROAD TRACKS
511	527463.44	2314293.26	552.31	SET ½" REBAR 1.0'± EAST OF ASPHALT PAVEMENT, AT THE INTERSECTION OF CEDAR STREET AND MISSISSIPPI DRIVE, SOUTH OF MISSISSIPPI DRIVE AND NORTH OF RAILROAD TRACKS
512	527742.14	2314534.59	552.01	FOUND P.K. NAIL W/WASHER #10316 AT THE NORTHWEST CORNER OF THE INTERSECTION OF WALNUT STREET AND MISSISSIPPI DRIVE, SOUTHWEST CORNER OF LOT 1 IN BLOCK 15
514	528094.98	2314715.62	556.33	FOUND P.K. NAIL W/WASHER #10316 ALONG THE EAST SIDE OF MULBERRY AVENUE, NORTHWEST CORNER OF LOT 1 IN BLOCK 16
519	528267.01	2314575.62	559.72	SET P.K. NAIL IN JOINT OF CONCRETE SIDEWALK, 4.0'± WEST OF FIRE HYDRANT, AT THE NORTHEAST CORNER OF MULBERRY AVENUE AND 2ND STREET
520	528405.67	2314844.48	551.02	SET P.K. NAIL IN JOINT OF CONCRETE SIDEWALK, 3.0'± SOUTH OF BACK OF CURB, AT THE SOUTHWEST CORNER OF ORANGE AND 2ND STREETS
521	528661.35	2315172.65	548.54	FOUND P.K. NAIL IN JOINT OF CONCRETE SIDEWALK AND BACK OF CURB, AT THE SOUTHEAST CORNER OF OAK AND 2ND STREETS
522	528885.22	2315365.34	549.69	SET P.K. NAIL IN JOINT OF CONCRETE SIDEWALK AND ASPHALT PARKING LOT OF FAMILY DOLLAR STORE, 18.0'± WEST OF FIRE HYDRANT
523	529108.78	2315647.85	553.24	SET ½" REBAR AT THE BACK OF CONCRETE SIDEWALK ALONG THE NORTH SIDE OF 2ND STREET AND 4.0'± WEST OF WING WALL OF MAD CREEK BRIDGE
524	529311.56	2316012.30	568.41	SET ½" REBAR AT THE BACK OF CONCRETE SIDEWALK AND AT THE SOUTHWEST CORNER OF 2ND STREET AND IOWA HIGHWAY 92
525	525263.86	2311377.56	558.05	SET P.K. NAIL IN JOINT OF CONCRETE PAVEMENT, 12.0'± SOUTH OF DECK AT 813 MISSISSIPPI DRIVE, 8.0'± NORTHEAST OF POWER POLE, AT THE INTERSECTION OF ASH STREET AND MISSISSIPPI DRIVE
526	525530.15	2311717.73	563.54	SET P.K. NAIL IN JOINT OF CONCRETE PAVEMENT, 18.0'± NORTHEAST OF POWER POLE, BETWEEN PROPERTIES AT 711 AND 717 MISSISSIPPI DRIVE
527	527530.00	2313763.77	557.96	SET ⅜" X 12" SPIKE IN JOINT OF CONCRETE SIDEWALK AND BACK OF CURB, 10.0'± SOUTH OF STOP SIGN, AT THE SOUTHEAST CORNER OF 2ND AND SYCAMORE STREETS
528	527984.52	2314336.86	566.97	SET P.K. NAIL IN JOINT OF CONCRETE SIDEWALK, 5.5'± EAST OF BACK OF CURB, 4.5'± SOUTHEAST OF STOP SIGN AND AT THE SOUTHEAST CORNER OF 2ND AND WALNUT STREETS
529	527910.65	2314700.20	559.22	SET ⅜" X 12" SPIKE IN GREEN SPACE AREA AND BEING A PART OF BLOCK 15, AT THE NORTHWEST CORNER OF MULBERRY AVENUE AND MISSISSIPPI DRIVE
533	527929.00	2314836.74	552.17	SET P.K. NAIL IN JOINT OF CONCRETE PAVEMENT AT THE SOUTHEAST CORNER OF MULBERRY AVENUE AND MISSISSIPPI DRIVE
534	525014.14	2310235.04	559.07	SET P.K. NAIL IN JOINT OF CONCRETE SIDEWALK AT THE SOUTHEAST CORNER OF HERSHEY AVENUE AND GREEN STREET.

NOTES:

1. CONTROL POINTS PROVIDED BY MARTIN WHITACRE. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF CONTROL POINTS PRIOR TO CONSTRUCTION.

2. CITY OF MUSCATINE SHALL BE RESPONSIBLE FOR MONUMENT RESTORATION. THE CONTRACTOR SHALL NOTIFY THE CITY IF ANY EXISTING MONUMENTS OR PROPERTY CORNERS ARE DISCOVERED AND WILL BE DISTURBED. CITY SHALL WORK WITH LICENSED SURVEY TO DOCUMENT MONUMENT BEFORE IT IS DISTURBED SO IT CAN BE RESTORED AFTER CONSTRUCTION IS COMPLETED.

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SHEET G.06

LINDA C. HINMAN, TR.
LOT 33 ISLAND VIEW ADD.
FILE NO. 2001–05132

ROBERT P & ROSEMARY BRYANT
BOOK 316 PAGE 941

DAVID L. & AMY C. STANBRO
LOT 7 BLOCK 43
BOOK 368 PAGE 165

TIMOTHY R. KELLY LOTS
1–3 & 11 BLOCK 3
FILE NO. 2009–01467

ELM STREET

124+40

124+00

123+65

PC 24+02.44

20+00

21+00

22+00

23+00

24+00

25+00

26+00

MISSISSIPPI DRIVE

ESTATE INC
03

MCKEE BUTTON CO.

HORIZ. SCALE 0 20 40 FEET

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RIGHT-OF-WAY INFORMATION

SHEET H.01

TIMOTHY R. KELLY LOTS 1–3 & 11 BLOCK 3 FILE NO. 2009–01467

DONALD E. & EVELYN L. LEWIS LOTS 4–5 BLOCK 3 FILE NO. 2010–02590

DONALD E. & EVELYN L. LEWIS LOT 1 BLOCK 4 FILE NO. 2004–04479

DELMAR D. & THEDA I. LEWIS LOTS 2–3 BLOCK 4 FILE NO. 2005–06927

MARIA & JUAN GAUCIN FILE NO. 1997–5431

ALBERT C. & BARB MCCULLOUGH FILE NO. 2010–04

ASH STREET

129+18

129+00

128+18

PT 27+59.92

26+00

27+00

28+00

29+00

30+00

31+00

MISSISSIPPI DRIVE

IOWA CHICAGO & EASTERN RAILROAD CORPORATION FILE NO. 2002–06639

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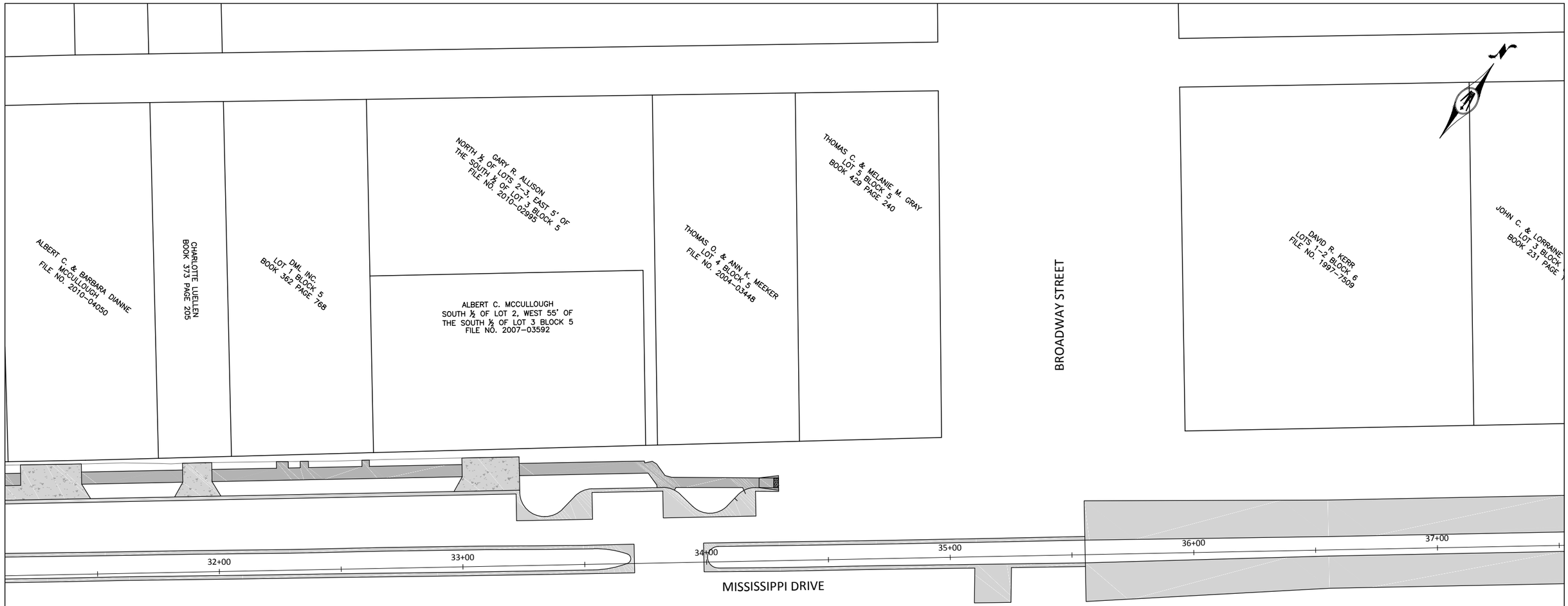

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SHEET H.03

JOHN C. & LORRAINE W. STEVENS
LOT 3 BLOCK 6
BOOK 231 PAGE 14

GARY P. BOCHE
LOTS 4-5 BLOCK 6
BOOK 418 PAGE 204

JUDD E. ANDERSON & LAURA L. OFFERMAN
LOTS 1-2 BLOCK 7
BOOK 247 PAGE 4

LAWRENCE G. & SUSAN L. KOEHRSEN
BOOK 285 PAGE 268

OTIS L., JR. & CONSTANCE L. ARMSTRONG
LOTS 4-5 & EASTERLY 23' OF LOT 3 BLOCK 7
BOOK 341 PAGE 509

DAVID J. & RUTHANNE MELOY
FILE NO. 2005-04345

38+00
39+00
40+00
41+00
42+00
43+00

MISSISSIPPI DRIVE

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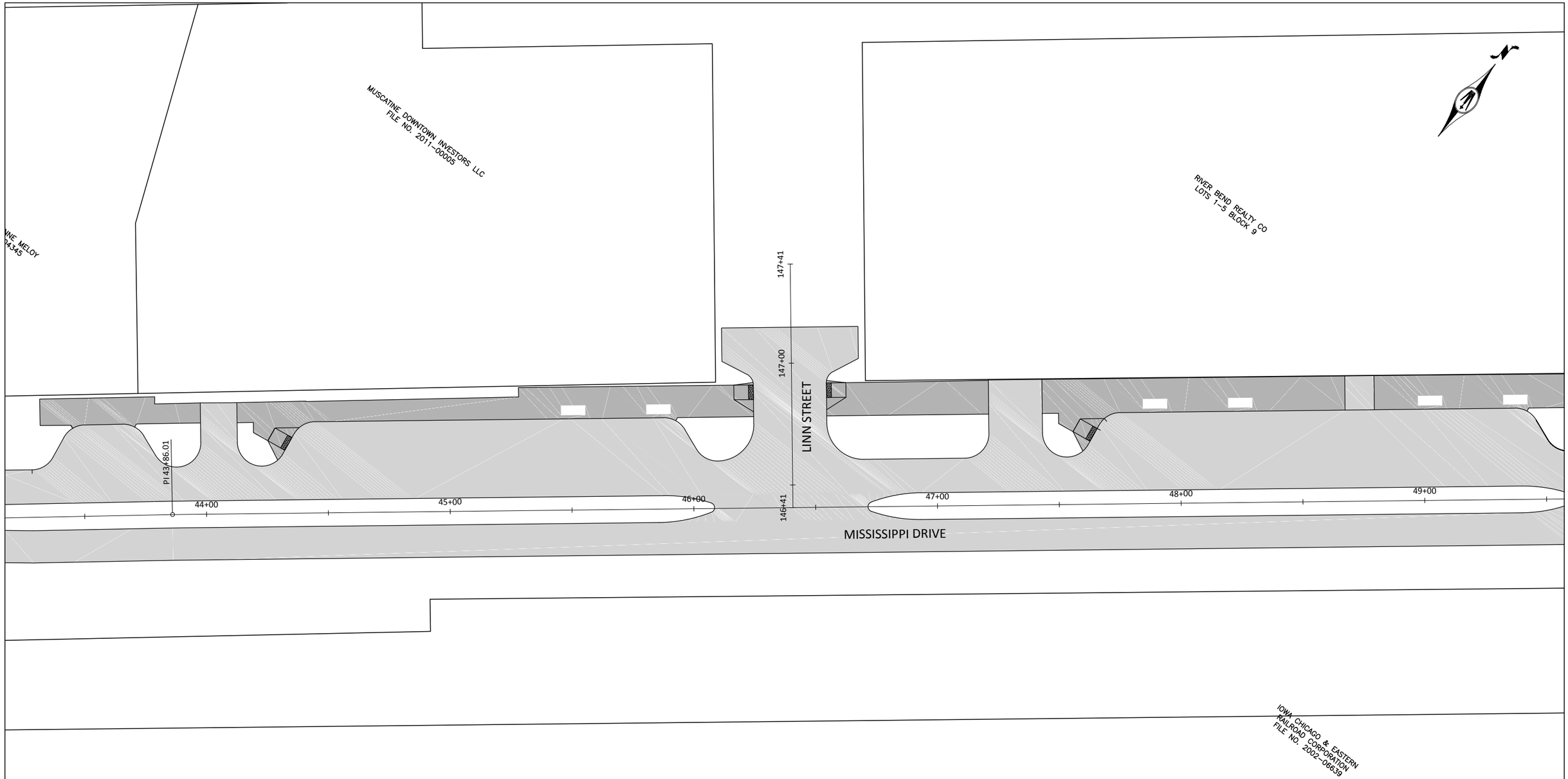

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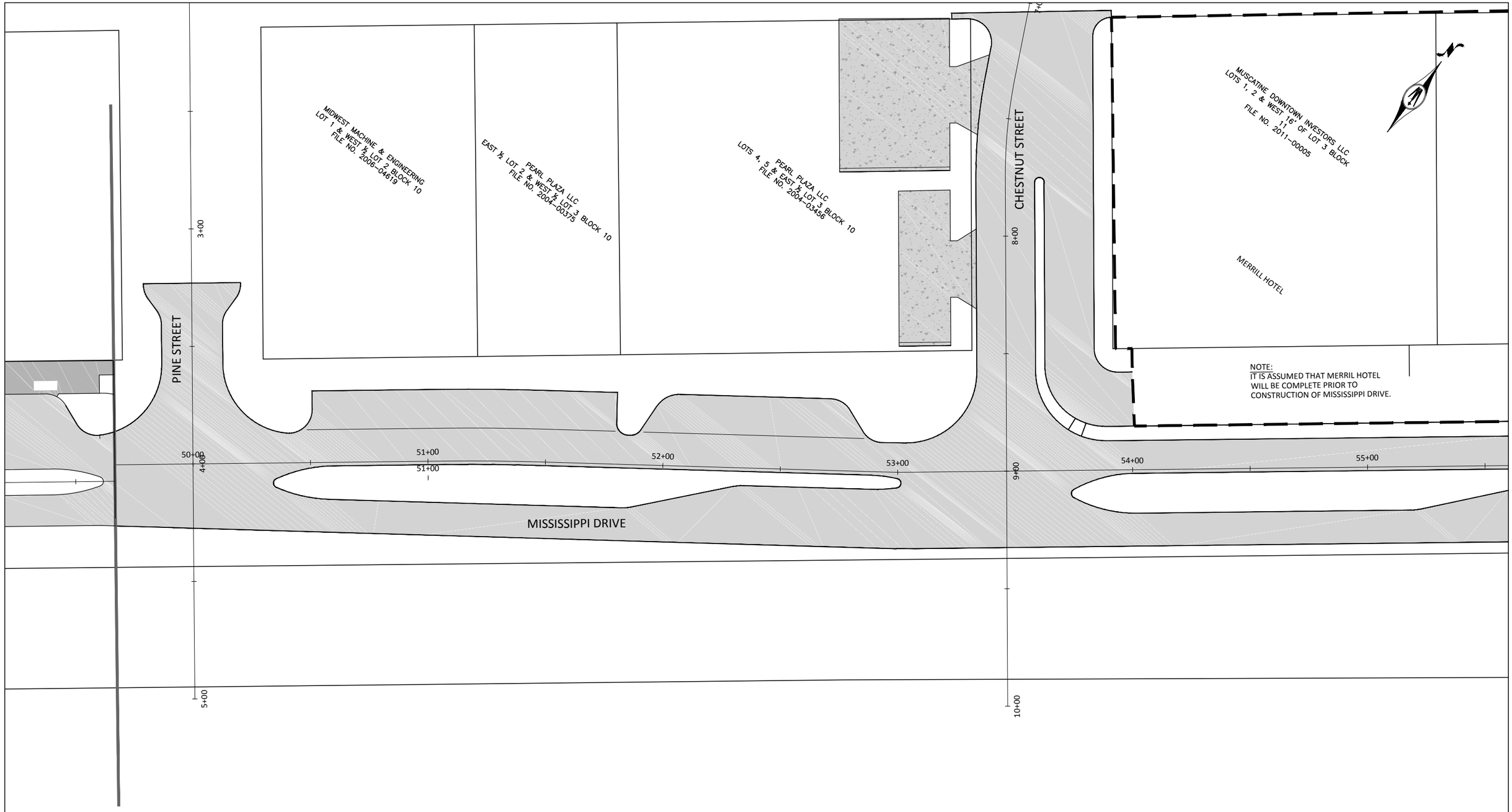
H.05



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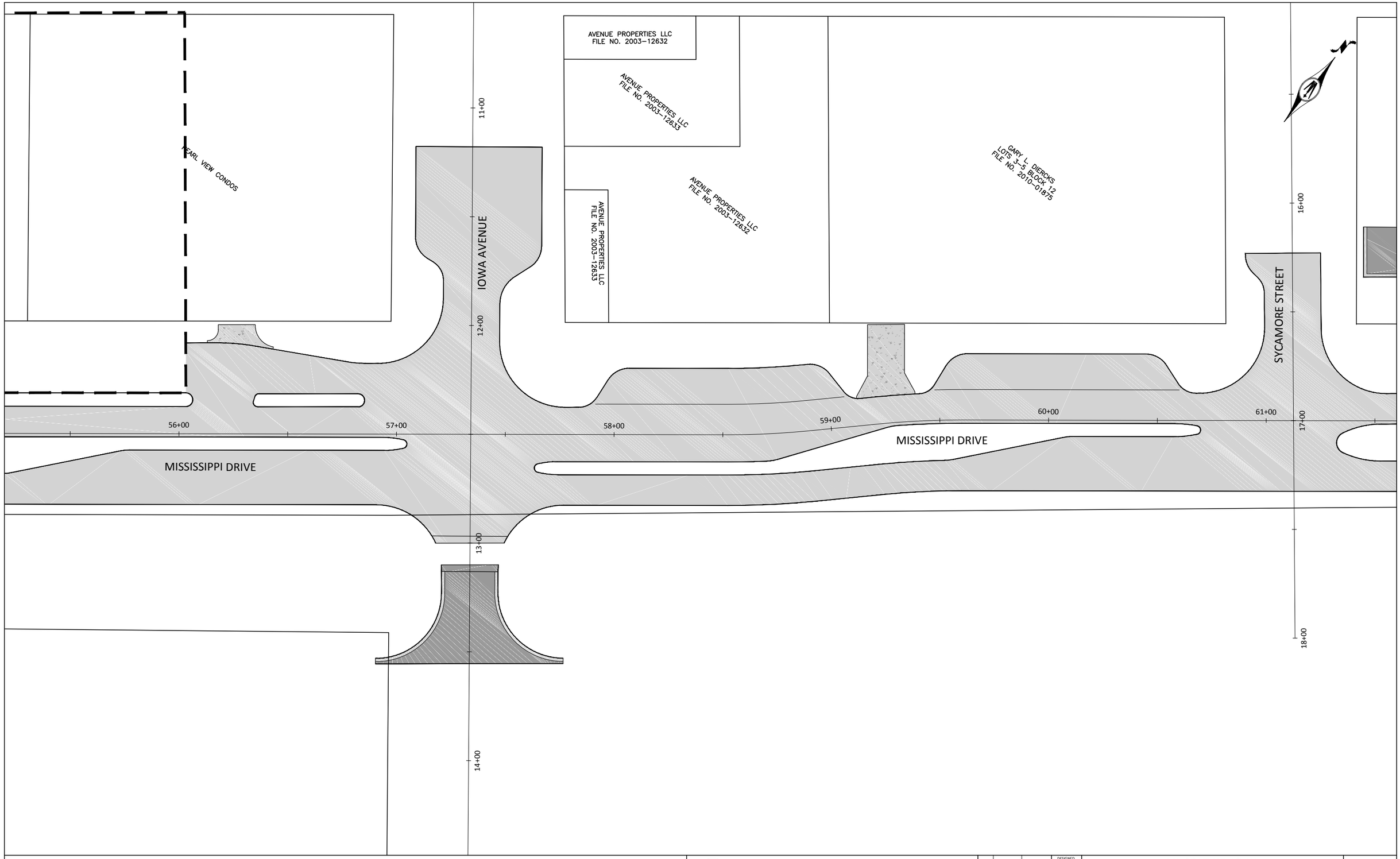

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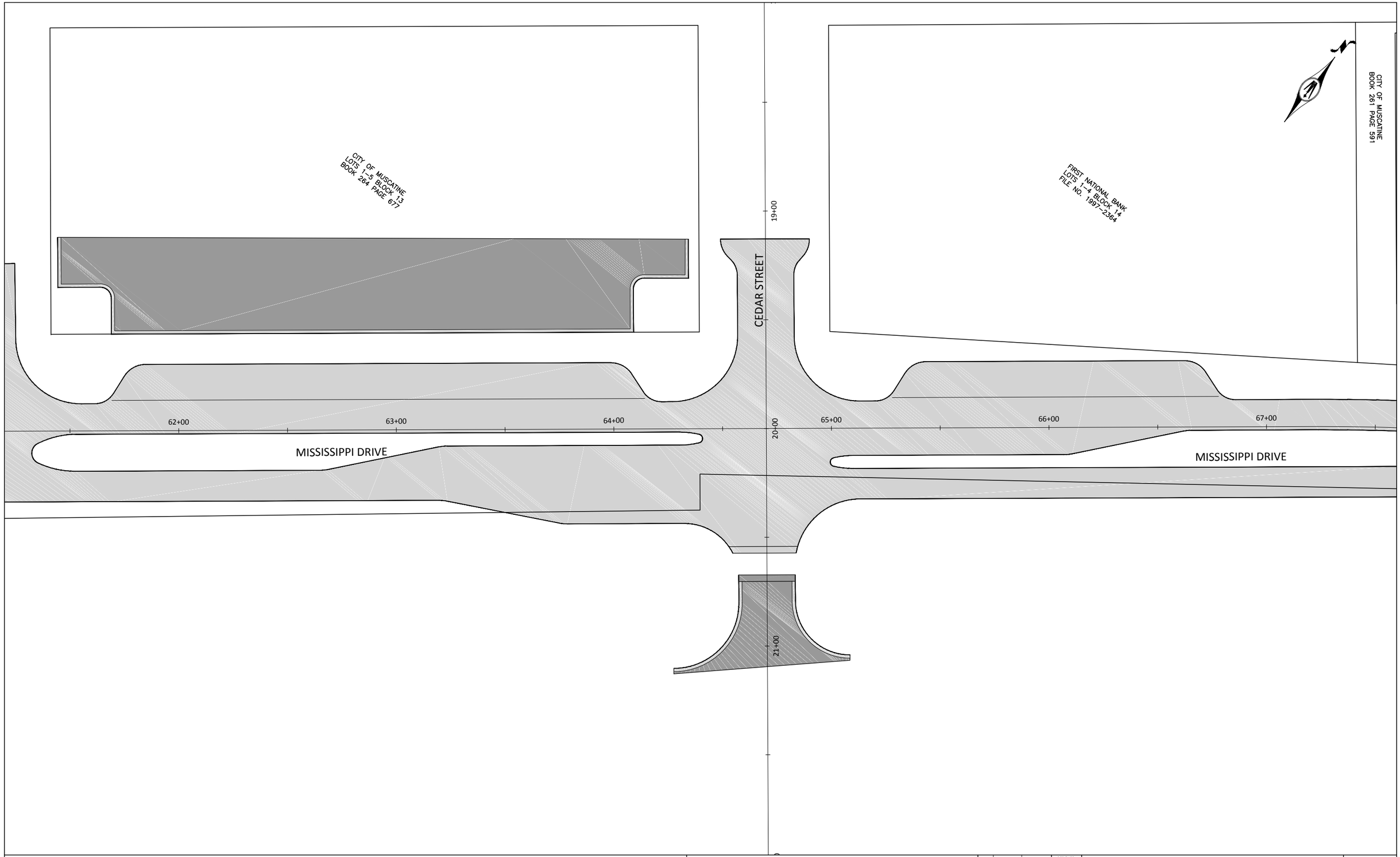

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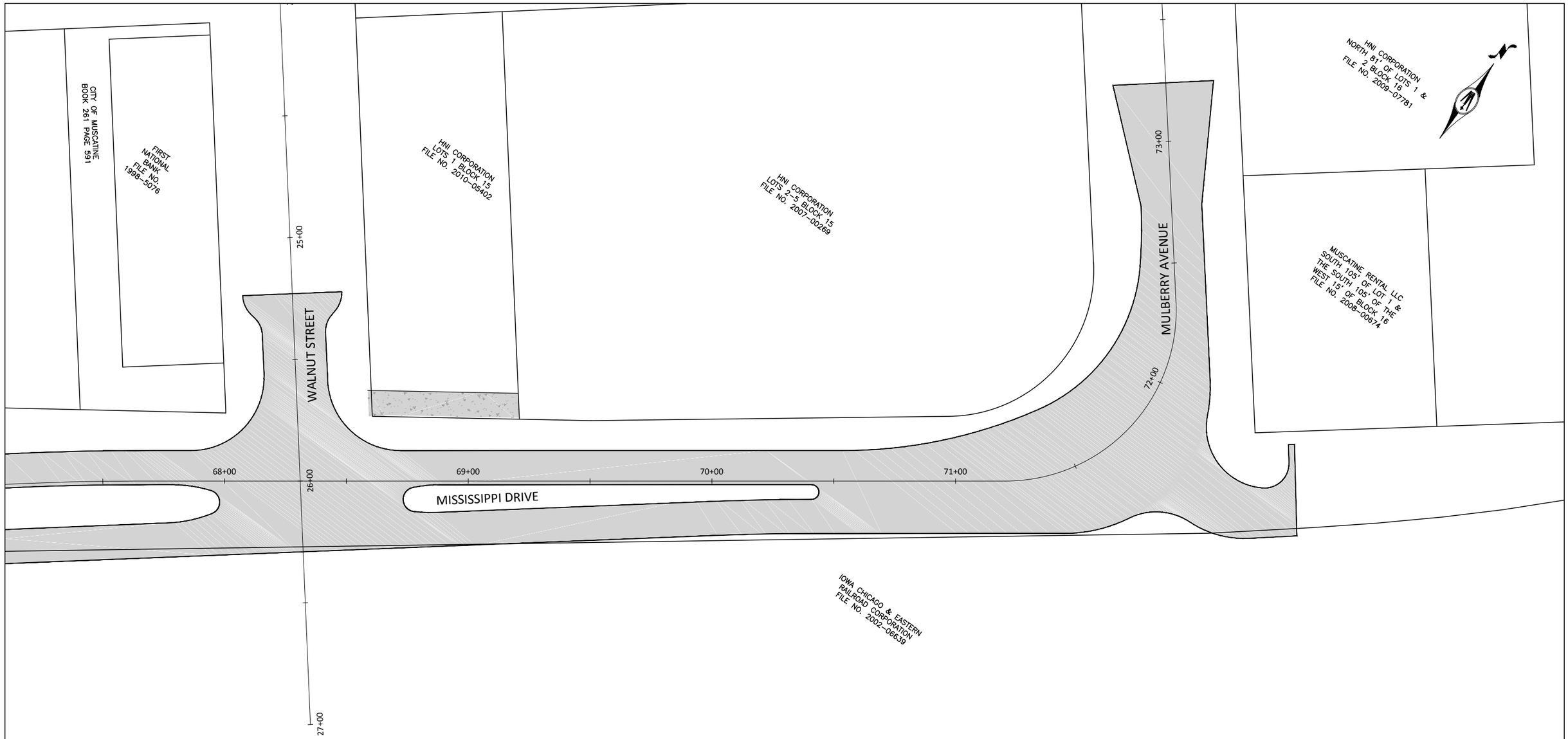

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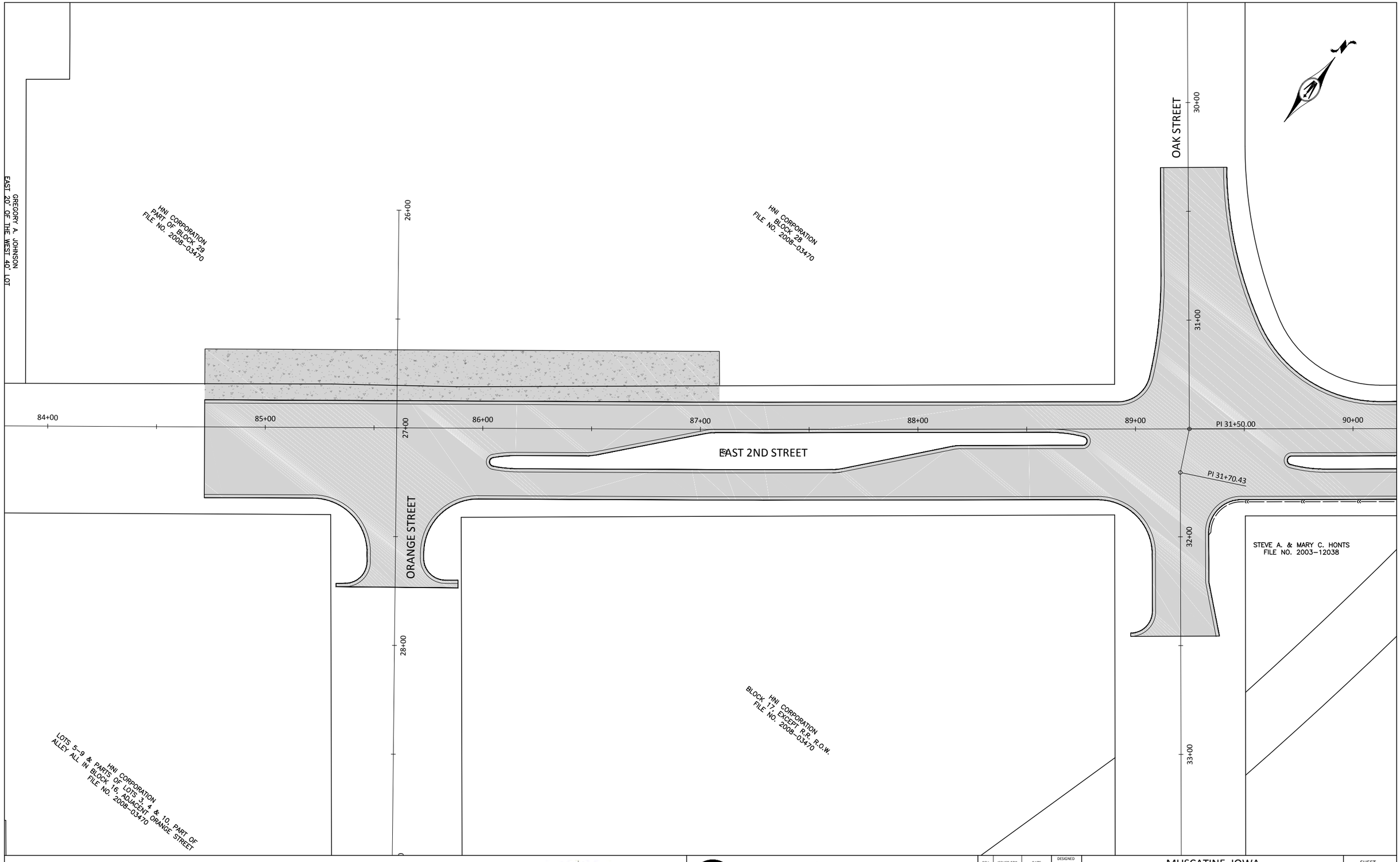
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
RIGHT-OF-WAY INFORMATION

SHEET H.09



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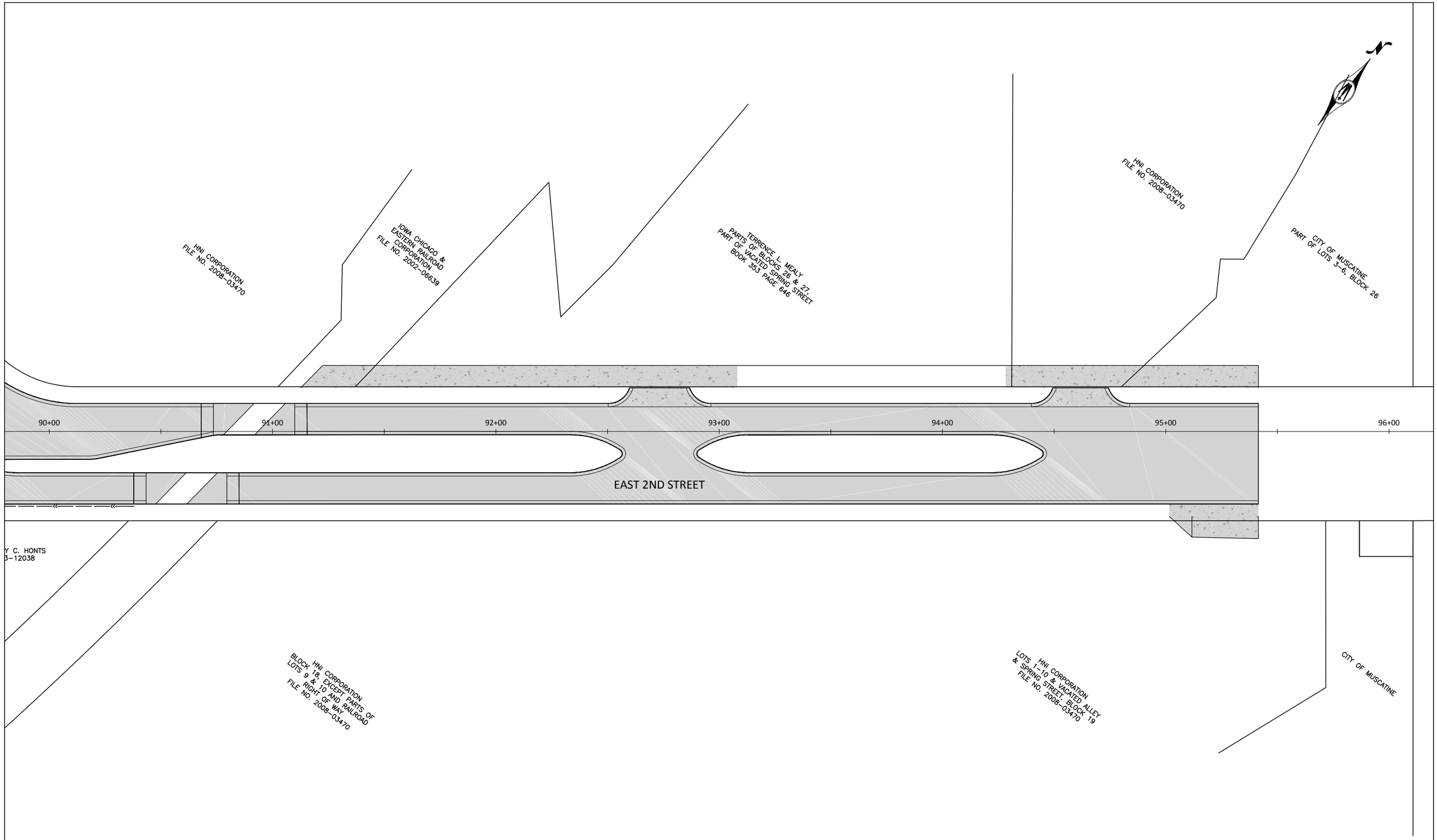
SHEET H.10



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GENERAL STAGING NOTES:

1. ALL PROJECT TRAFFIC CONTROL SHALL BE INSTALLED ACCORDING TO THE CURRENT VERSION OF THE MUTCD. SUBMIT TRAFFIC CONTROL PLAN PRIOR TO COMMENCEMENT OF WORK.
2. THE ITEM "TRAFFIC CONTROL" COVERS ALL DEVICES SHOWN ON THE PLAN SHEETS AND OTHER SETUPS REQUIRED BY THE CONTRACTORS OPERATIONS.
3. CHANGES TO THE TRAFFIC CONTROL AND STAGING PLAN SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION. (48 HOUR ADVANCED NOTICE IS REQUIRED, STREET CLOSURES MUST BE APPROVED BY CITY COUNCIL IF DIFFERENT THAN SHOWN.
4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION.
5. PRIOR TO A STAGE OPENING TO TRAFFIC, THE CONTRACTOR SHALL BE SUBSTANTIALLY COMPLETE FOR THE STAGE. FINAL SIGNING AND PAVEMENT MARKINGS ARE REQUIRED TO BE INSTALLED TO OPEN TO TRAFFIC.
6. A STAGE MUST BE SUBSTANTIALLY COMPLETE PRIOR TO THE NEXT STAGE STARTING
7. ACCESS TO RIVERSIDE PARK TO BE MAINTAINED EITHER FROM IOWA AVENUE OR CEDAR STREET. COORDINATE WITH CANADIAN NATIONAL RAILROAD FOR QUIET ZONE WORK TO KEEP ONE ACCESS OPEN.
8. STAGE SUBSTANTIAL COMPLETIONS
   - STAGE A1: END DATE 06/2017 (PINE ST TO IOWA ST)
   - STAGE A2: TO BE CONSTRUCTED IN THE 2017 CONSTRUCTION SEASON. (IOWA ST TO MULBERRY ST)
   - STAGE B1: STAGE MAY START IN THE 2017 CONSTRUCTION SEASON, BUT MUST BE SUBSTANTIALLY COMPLETE PRIOR TO THE END OF CONSTRUCTION SEASON IF STARTED. (BROADWAY ST TO PINE ST)
   - STAGE B2: STAGE MAY START IN THE 2017 CONSTRUCTION SEASON, BUT MUST BE SUBSTANTIALLY COMPLETE PRIOR TO THE END OF CONSTRUCTION SEASON IF STARTED. (GREEN ST TO BROADWAY ST)
   - STAGE C1: TO BE CONSTRUCTED IN THE 2018 CONSTRUCTION SEASON (MULBERRY ST TO HNI LOADING DOCKS)
   - STAGE C2: TO BE CONSTRUCTED IN THE 2018 CONSTRUCTION SEASON (HNI LOADING DOCKS TO OAK ST)
   - STAGE C3: TO BE CONSTRUCTED IN THE 2018 CONSTRUCTION SEASON (OAK ST TO MAD CREEK BRIDGE)
9. LIQUIDATED DAMAGES TO START AT WINTER SHUT DOWN FOR 2017 AND 2018 CONSTRUCTION SEASONS AS DETERMINED BY THE ENGINEER. LIQUIDATED DAMAGES TO BE:
   - $1500/DAY FOR STAGE A
   - $1000/DAY FOR STAGE B AND C

INCIDENTAL TO TRAFFIC CONTROL

1. TEMPORARY ACCESS TO BUSINESSES AND RESIDENTS AS NOTED IN THE STAGING PLANS.
2. SIGNAGE DIRECTING TRAFFIC TO OPEN BUSINESSES. INCLUDES MAIN SIGN STATING "BUSINESSES OPEN" WITH ADDITIONAL SIGNS STATING BUSINESSES NAMES.
3. SIGN MAINTENANCE AND REPAIR TO BE INCIDENTAL TO TRAFFIC CONTROL.

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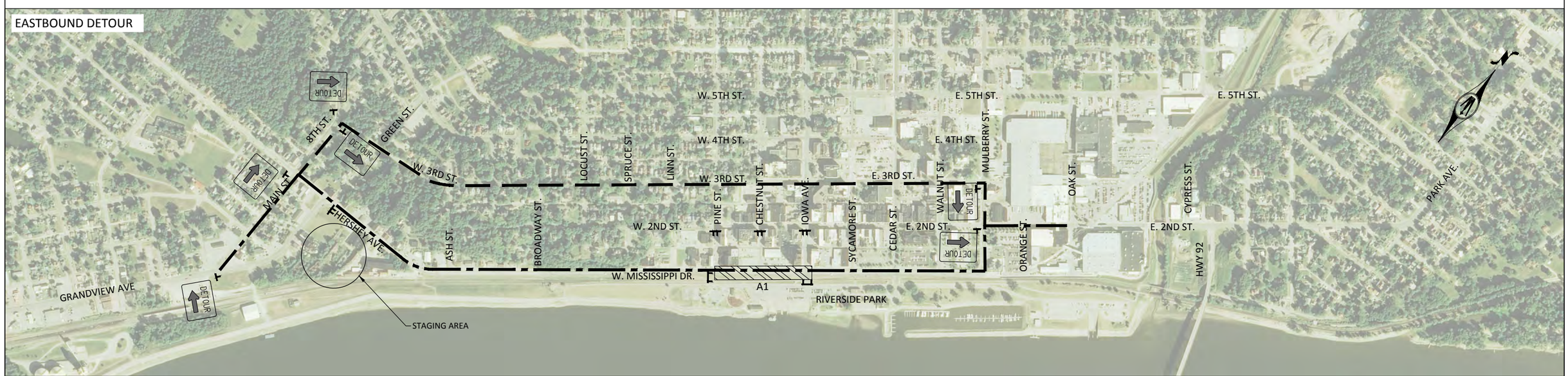
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
OVERALL STAGING AND TRAFFIC CONTROL

SHEET J.01

WESTBOUND DETOUR

EASTBOUND DETOUR



STAGE A1 NOTES:

1. STAGE A1 INCLUDES THE INTERSECTIONS OF PINE ST AND IOWA AVE.
2. PHASE A1 TO BE CONSTRUCTED ONE SIDE AT A TIME.
3. EASTBOUND TRAFFIC TO BE MAINTAINED WHILE NORTH SIDE IS UNDER CONSTRUCTION; WESTBOUND TRAFFIC IS TO BE DETOURED.
4. WESTBOUND TRAFFIC TO BE MAINTAINED WHILE SOUTH SIDE IS UNDER CONSTRUCTION; EASTBOUND TRAFFIC IS TO BE DETOURED.
5. MINIMUM LANE WIDTH THROUGH CONSTRUCTION TO BE 12'.
6. PROVIDE TEMPORARY CONSTRUCTION ACCESS AS REQUIRED TO SOUTH ACCESS TO UNDERGROUND PARKING FOR PEARLVIEW CONDOS AND BUSINESSES. TEMPORARY ACCESS MATERIAL TO BE INCIDENTAL TO PROJECT.

LEGEND:

- DETOUR ROUTE
- THROUGH TRAFFIC ROUTE
- TYPE A SIGN
- TYPE 3 BARRICADE WITH ROAD CLOSED TO THRU TRAFFIC SIGN
- ROAD CLOSURE WITH ROAD CLOSED SIGN

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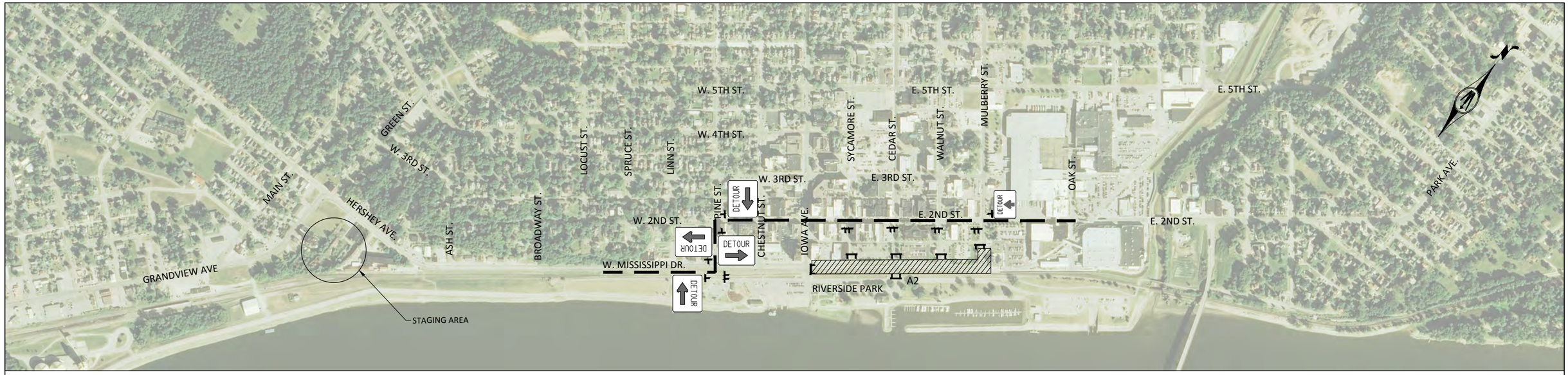
STAGING AND TRAFFIC CONTROL

SHEET J.02



STAGE A2 NOTES:

1. STAGE A2 EXTENDS FROM STAGE A1 TO END OF WORK ON MULBERRY ST.
2. PHASE A2 TO BE CONSTRUCTED FULL WIDTH AT A TIME.
3. TRAFFIC TO BE DETOURED ON STREETS SHOWN AS CONSTRUCTION IS UNDERWAY.
4. CONTRACTOR TO MAINTAIN ACCESS TO AFFECTED BUILDINGS THROUGH ALLEY. BUSINESSES OPEN AND BUSINESS NAME SIGNS REQUIRED.

LEGEND:

- DETOUR ROUTE
- THROUGH TRAFFIC ROUTE
- TYPE A SIGN
- TYPE 3 BARRICADE WITH ROAD CLOSED TO THRU TRAFFIC SIGN
- ROAD CLOSURE WITH ROAD CLOSED SIGN

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STAGING AND TRAFFIC CONTROL

SHEET J.03

WESTBOUND DETOUR

EASTBOUND DETOUR

STAGE B1 NOTES:

1. STAGE B1 EXTENDS FROM PINE ST TO BROADWAY ST.
2. PHASE B1 TO BE CONSTRUCTED ONE SIDE AT A TIME.
3. EASTBOUND TRAFFIC TO BE MAINTAINED WHILE NORTH SIDE IS UNDER CONSTRUCTION; WESTBOUND TRAFFIC IS TO BE DETOURED.
4. WESTBOUND TRAFFIC TO BE MAINTAINED WHILE SOUTH SIDE IS UNDER CONSTRUCTION; EASTBOUND TRAFFIC IS TO BE DETOURED.
5. MINIMUM LANE WIDTH THROUGH CONSTRUCTION TO BE 12'.
6. ACCESS TO PUBLIC PARKING LOT FOR BREWERY AND SHOPS TO BE MAINTAINED FROM LINN ST.

LEGEND:

- DETOUR ROUTE
- THROUGH TRAFFIC ROUTE
- TYPE A SIGN
- TYPE 3 BARRICADE WITH ROAD CLOSED TO THRU TRAFFIC SIGN
- ROAD CLOSURE WITH ROAD CLOSED SIGN

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MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

STAGING AND TRAFFIC CONTROL

SHEET J.04

WESTBOUND DETOUR

EASTBOUND DETOUR

STAGE B2 NOTES:

1. STAGE B2 EXTENDS FROM STAGE B1 TO WEST LIMITS.
2. PHASE B2 TO BE CONSTRUCTED ONE SIDE AT A TIME.
3. EASTBOUND TRAFFIC TO BE MAINTAINED WHILE NORTH SIDE IS UNDER CONSTRUCTION; WESTBOUND TRAFFIC IS TO BE DETOURED.
4. WESTBOUND TRAFFIC TO BE MAINTAINED WHILE SOUTH SIDE IS UNDER CONSTRUCTION; EASTBOUND TRAFFIC IS TO BE DETOURED.
5. MINIMUM LANE WIDTH THROUGH CONSTRUCTION TO BE 12'.
6. CONTRACTOR TO MAINTAIN ACCESS TO BUSINESSES AND RESIDENTS.

LEGEND:

- DETOUR ROUTE
- THROUGH TRAFFIC ROUTE
- TYPE A SIGN
- TYPE 3 BARRICADE WITH ROAD CLOSED TO THRU TRAFFIC SIGN
- ROAD CLOSURE WITH ROAD CLOSED SIGN

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STAGING AND TRAFFIC CONTROL

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STAGE C1 NOTES:
1. CONTRACTOR TO MAINTAIN ACCESS TO 1/2 OF LOADING DOCKS TO NORTH OF CONSTRUCTION.
2. CONTRACTOR TO DETOUR ALL TRAFFIC AND CONSTRUCT FULL WIDTH.

STAGE C2 NOTES:
1. CONTRACTOR TO MAINTAIN ACCESS TO 1/2 OF LOADING DOCKS TO NORTH OF CONSTRUCTION.
2. CONTRACTOR TO DETOUR ALL TRAFFIC AND CONSTRUCT FULL WIDTH.

STAGE C3 NOTES:
1. CONTRACTOR TO MAINTAIN ACCESS TO 1/2 OF LOADING DOCKS TO NORTH OF CONSTRUCTION.
2. CONTRACTOR TO DETOUR ALL TRAFFIC AND CONSTRUCT FULL WIDTH.
3. CONTRACTOR TO PLACE SIGNING FOR ACCESS OF OAK ST SOUTH OF 2ND ST FROM ORANGE ST AND MISSISSIPPI DR.
4. CONTRACTOR TO MAINTAIN ACCESS TO DOLLAR GENERAL PARKING LOT AT ALL TIMES. GRANULAR SURFACING ACCEPTABLE FOR THIS ACCESS. INCIDENTAL TO TRAFFIC CONTROL.

LEGEND:

- DETOUR ROUTE
- THROUGH TRAFFIC ROUTE
- TYPE A SIGN
- TYPE 3 BARRICADE WITH ROAD CLOSED TO THRU TRAFFIC SIGN
- ROAD CLOSURE WITH ROAD CLOSED SIGN

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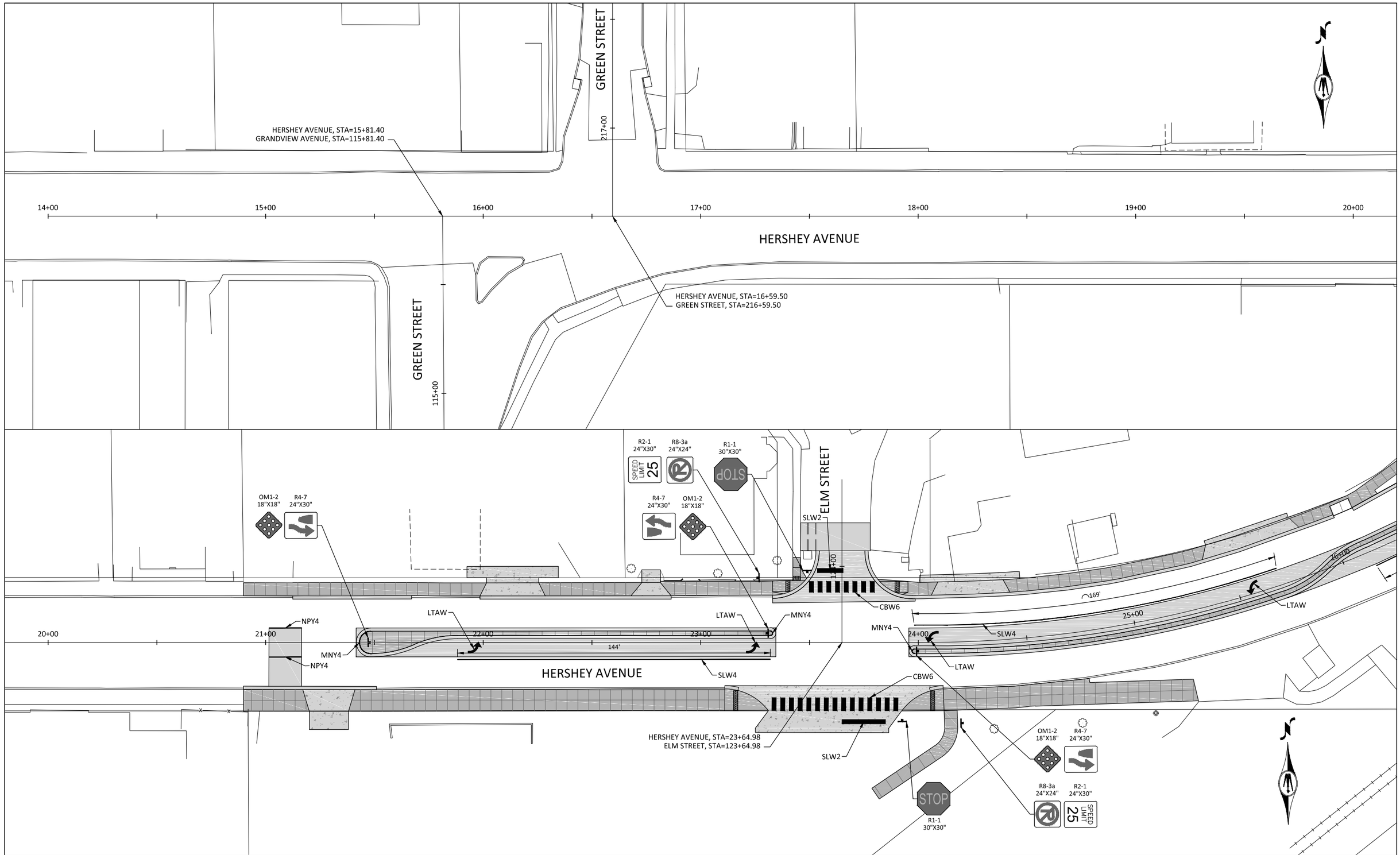
SHEET J.06



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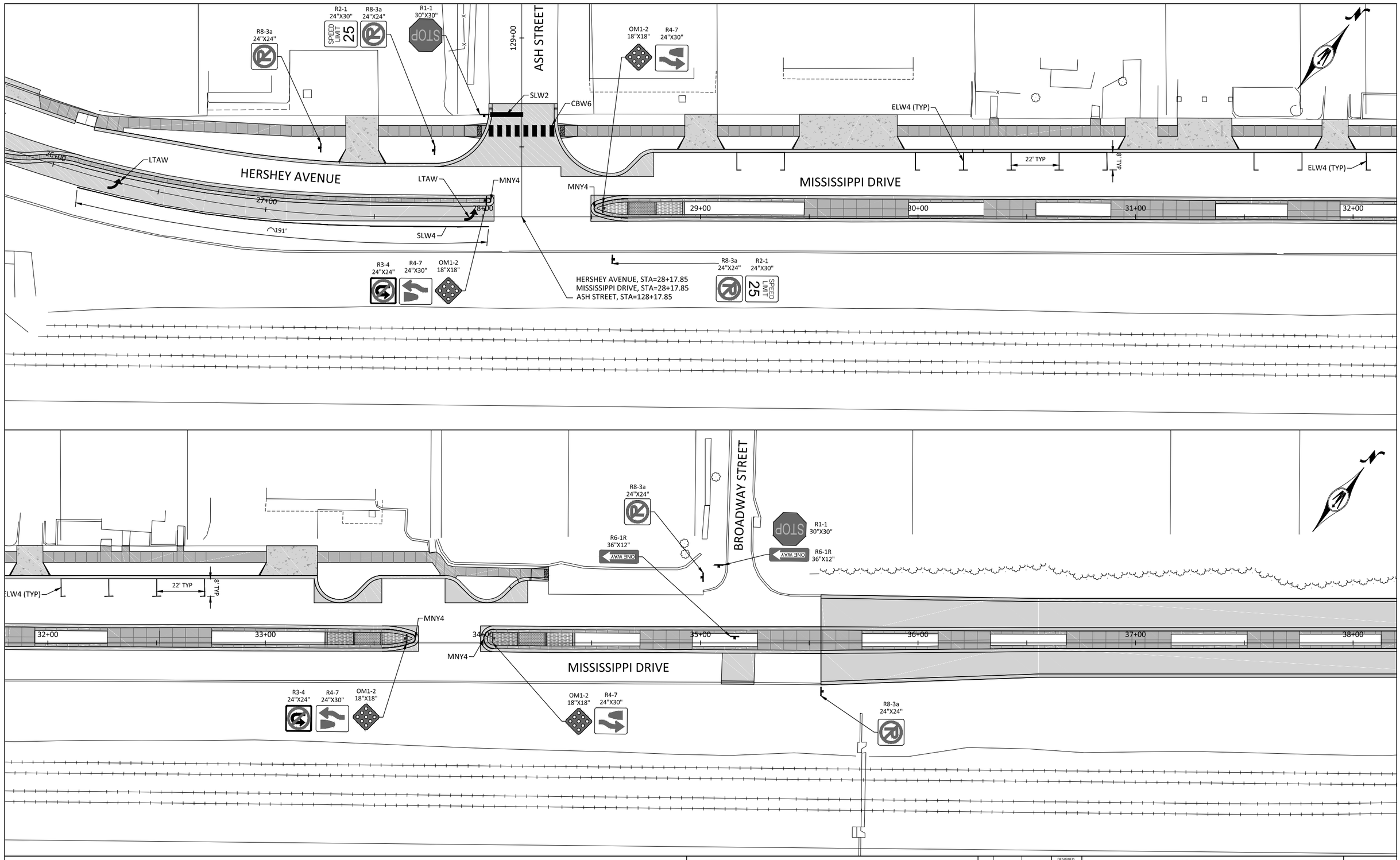
SIGNING & PAVEMENT MARKINGS

SHEET K.01



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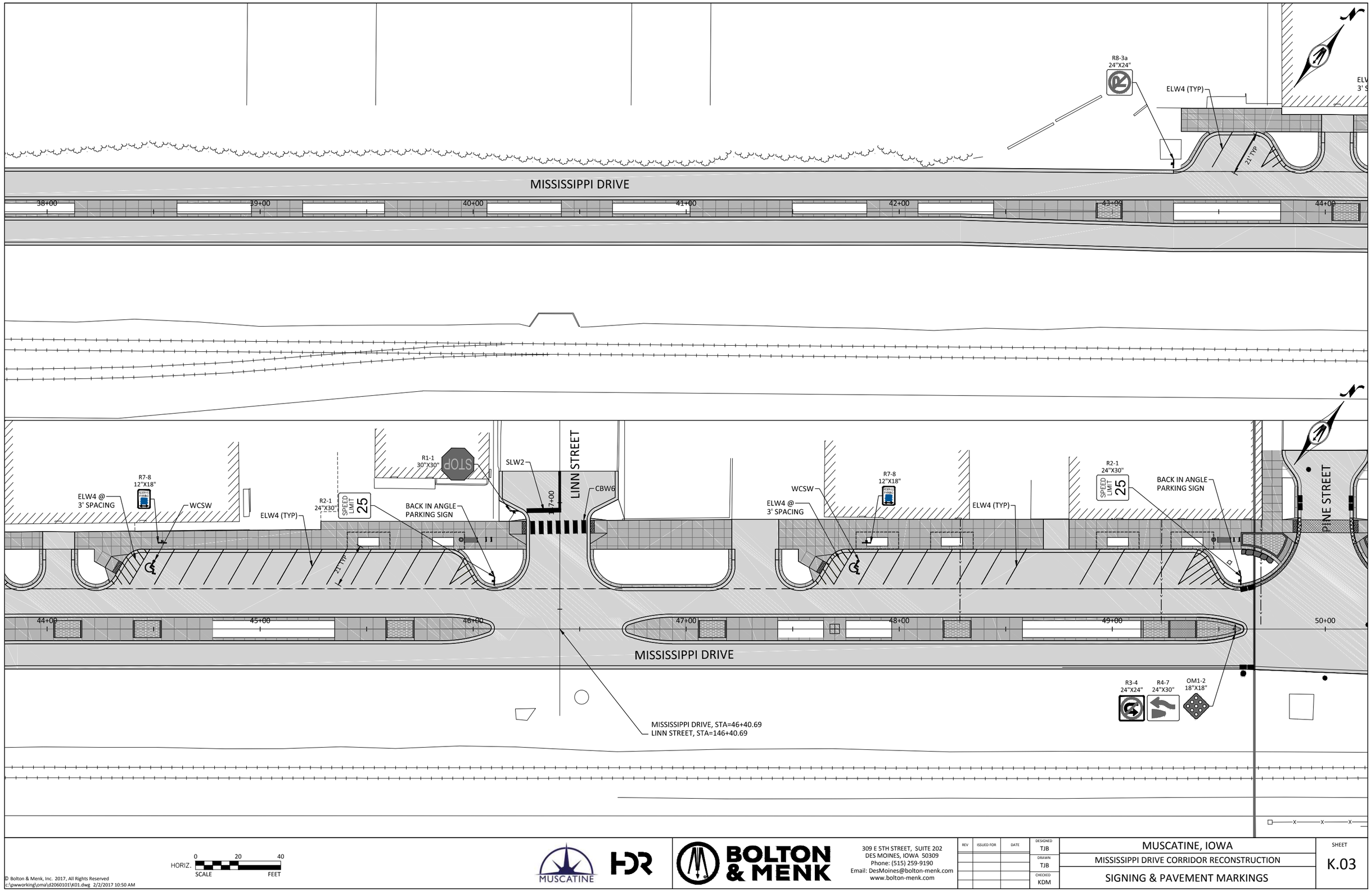

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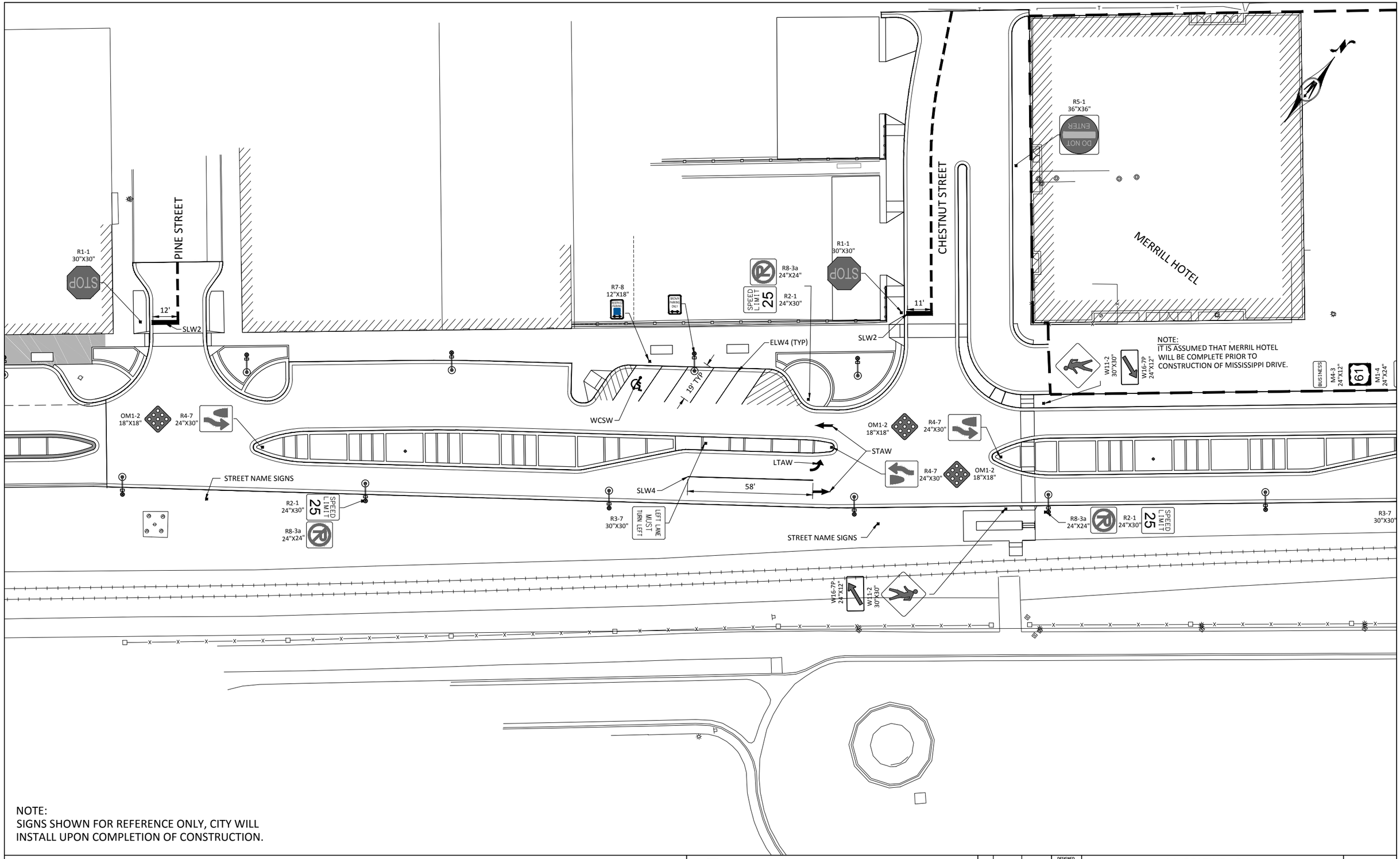
SHEET K.03



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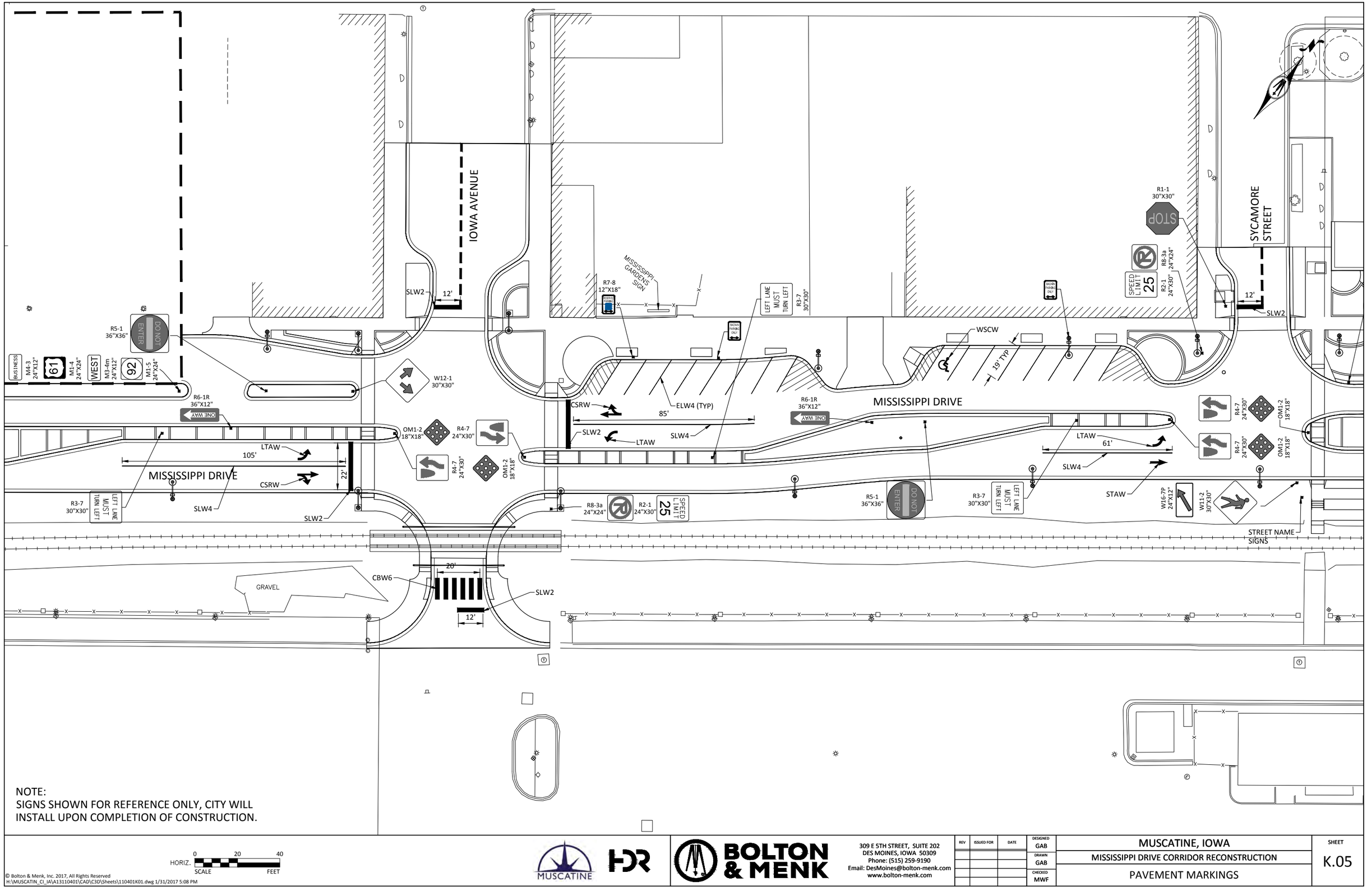
PAVEMENT MARKINGS

SHEET K.04



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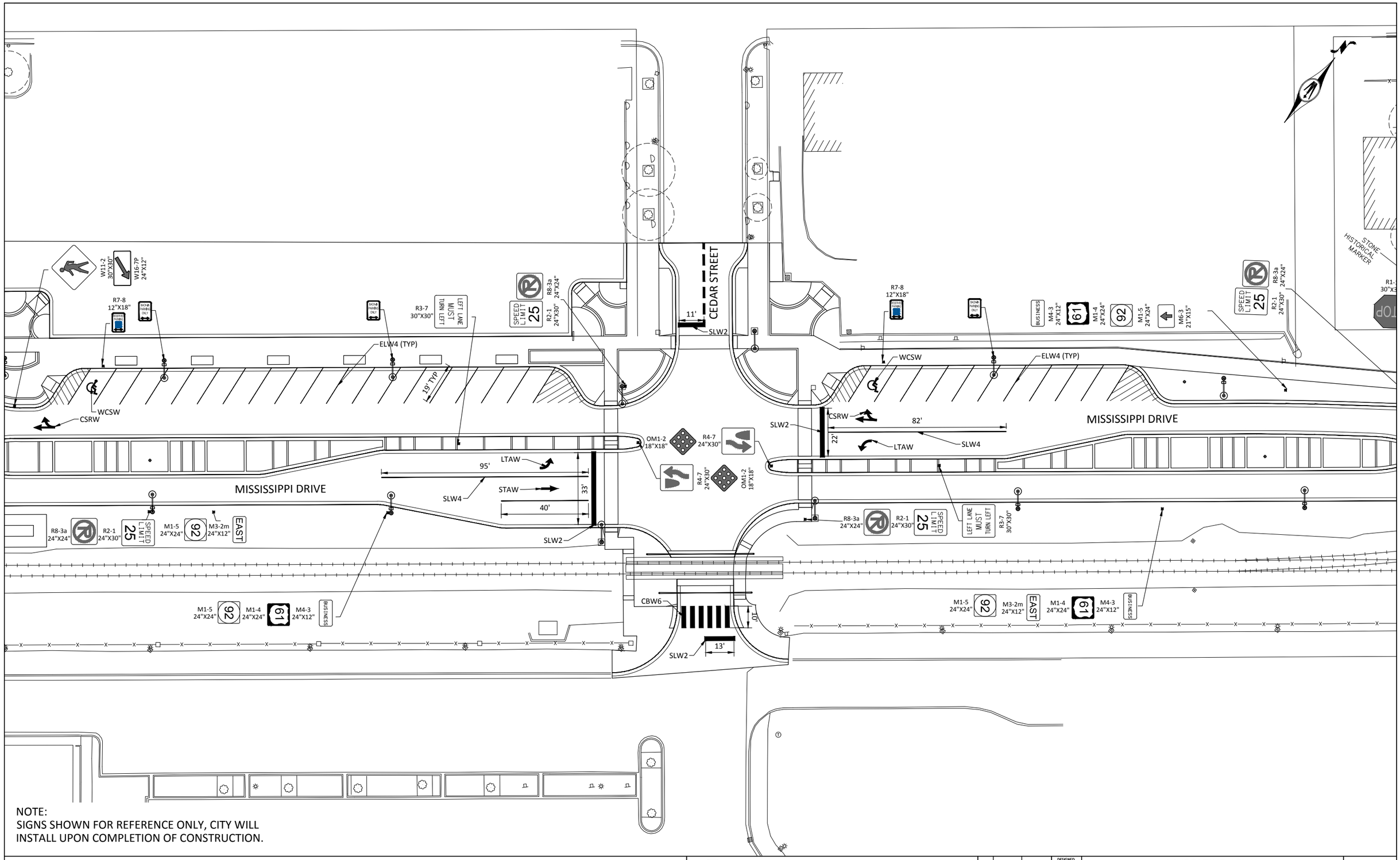

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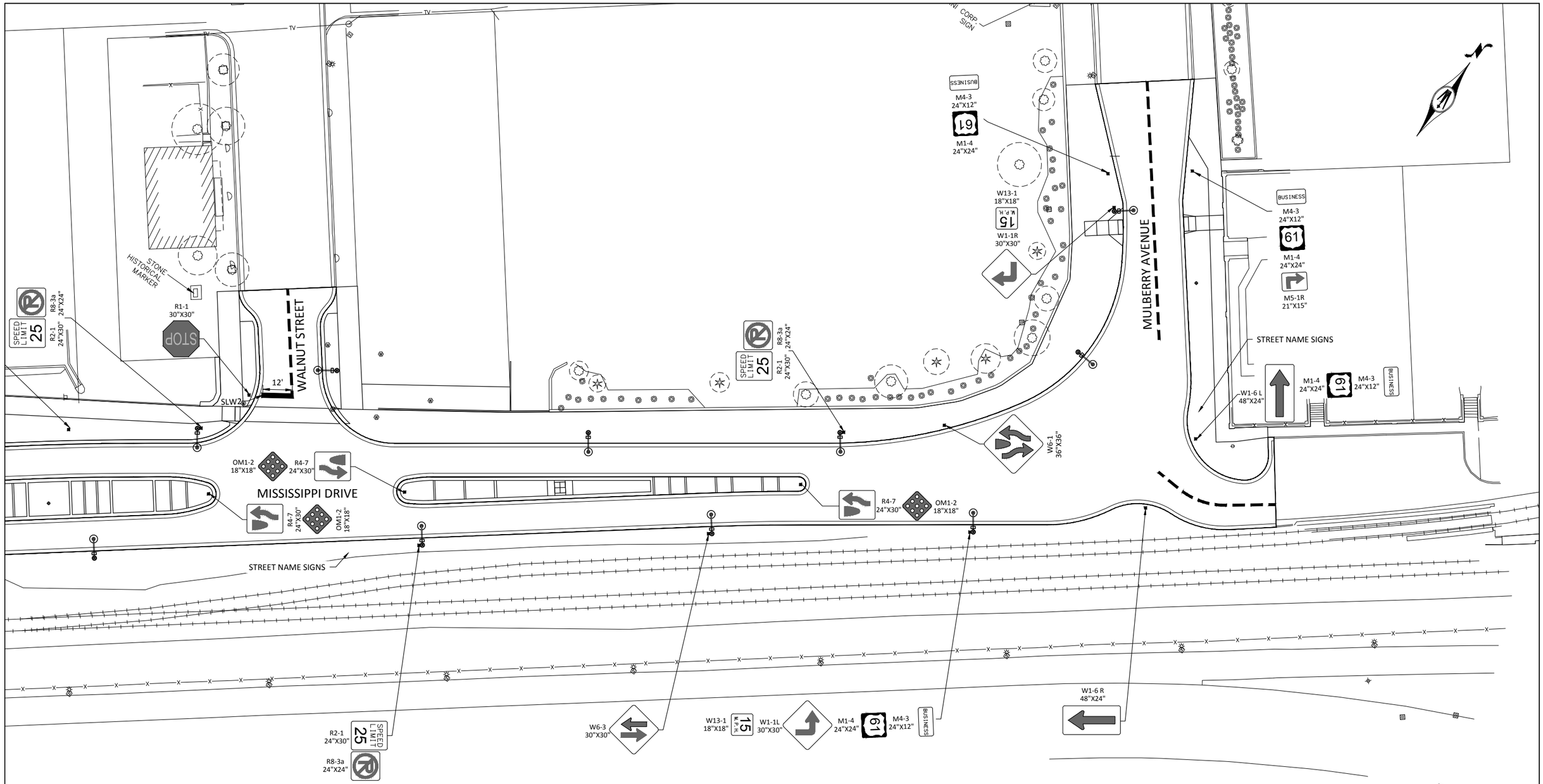

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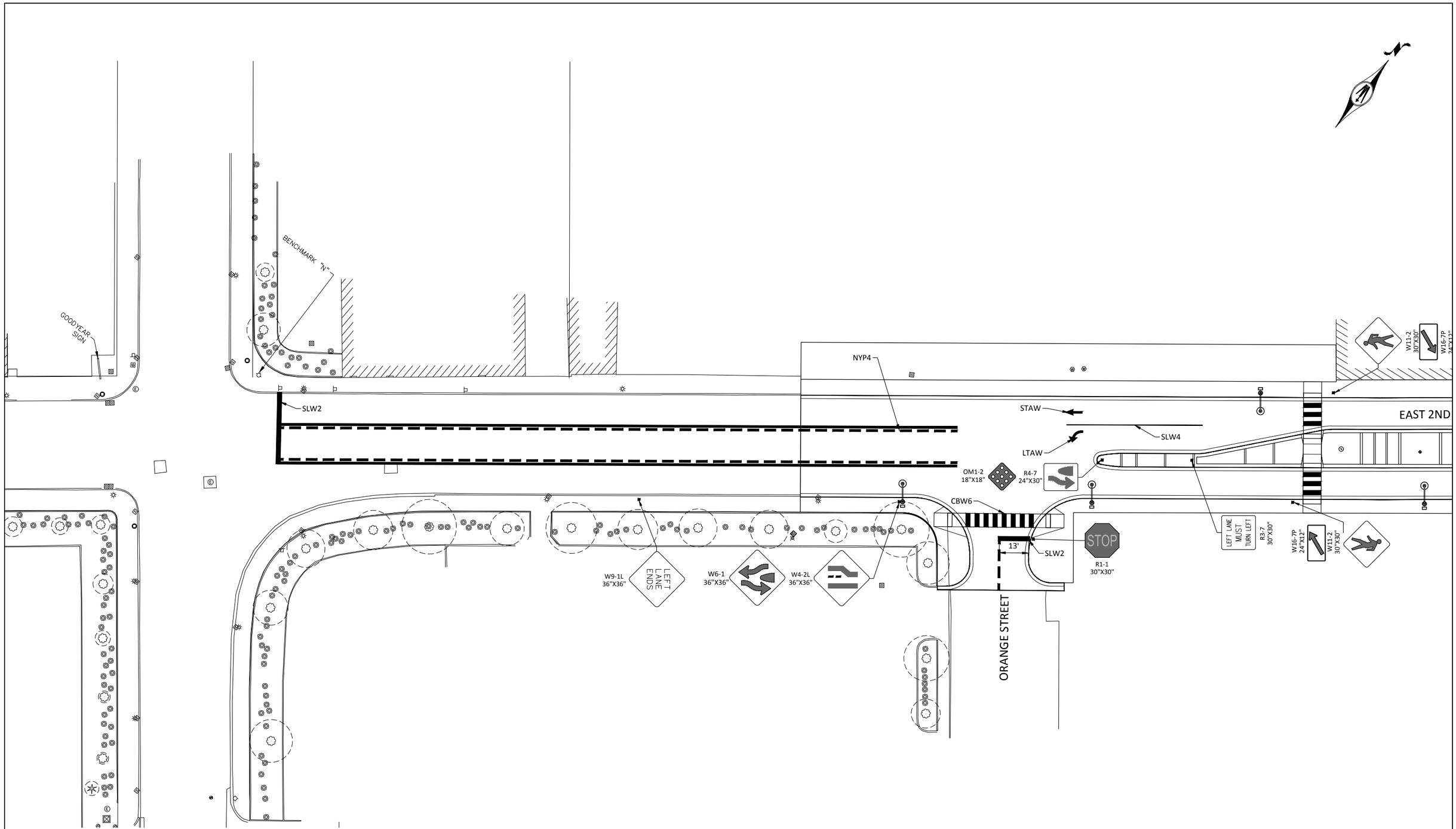
SHEET K.07



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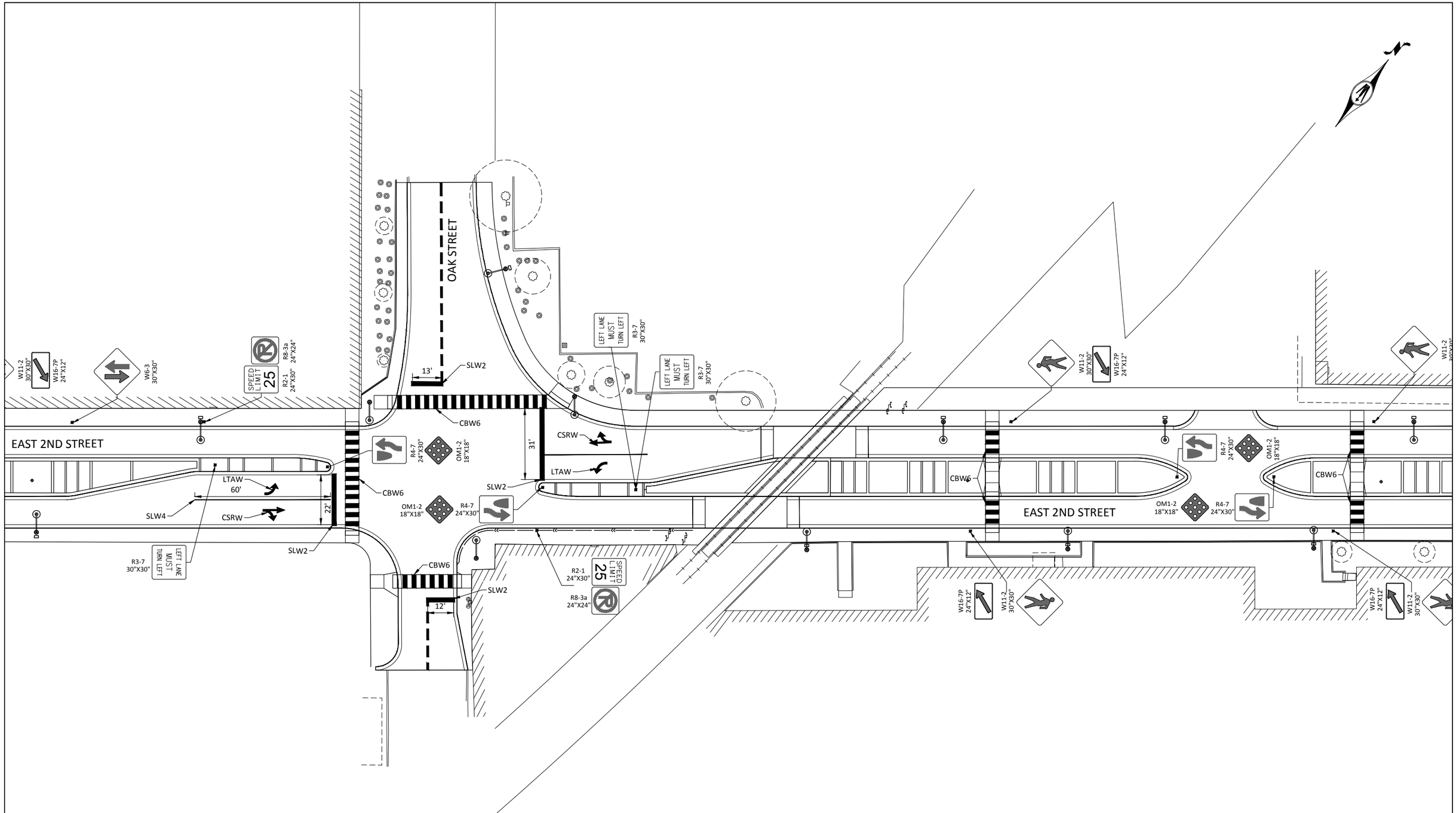
SHEET K.08



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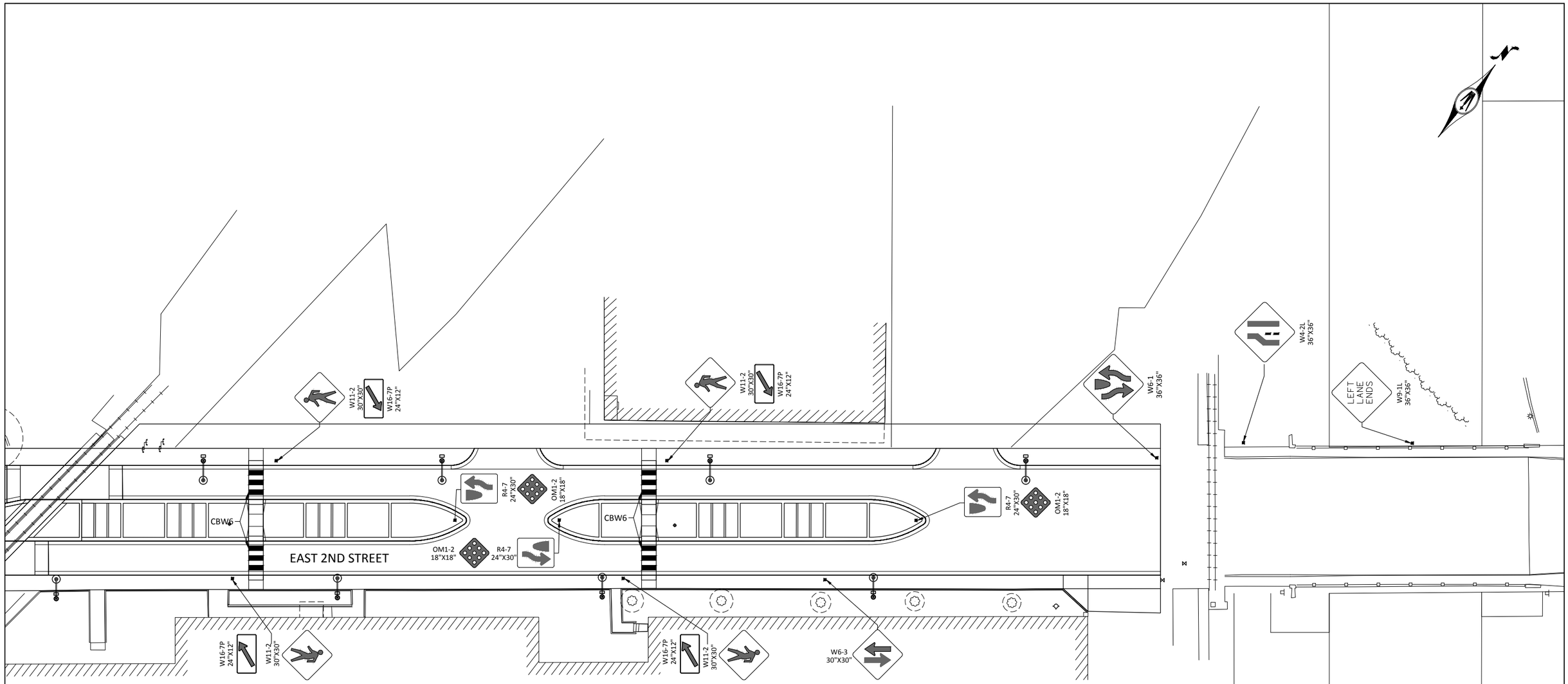
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PAVEMENT MARKINGS

SHEET K.09



NOTE:
SIGNS SHOWN FOR REFERENCE ONLY, CITY WILL
INSTALL UPON COMPLETION OF CONSTRUCTION.

HORIZ. SCALE 0 20 40 FEET

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PAVEMENT MARKINGS

SHEET K.10

HERSHEY AVENUE, STA=15+81.40
GRANDVIEW AVENUE, STA=115+81.40

GREEN STREET
217+00

14+00 15+00 16+00 17+00 18+00 19+00 20+00

HERSHEY AVENUE

HERSHEY AVENUE, STA=16+59.50
GREEN STREET, STA=216+59.50

GREEN STREET
115+00

ELM STREET

PROPOSED TRANSVERSE JOINTS SHOULD BE MODIFIED AS NEEDED TO MATCH EXISTING JOINTS (TYP)

20+00 21+00 22+00 23+00 24+00 25+00

HERSHEY AVENUE

HERSHEY AVENUE, STA=23+64.98
ELM STREET, STA=123+64.98

SEE SHEET L.21 FOR INTERSECTION DETAILS

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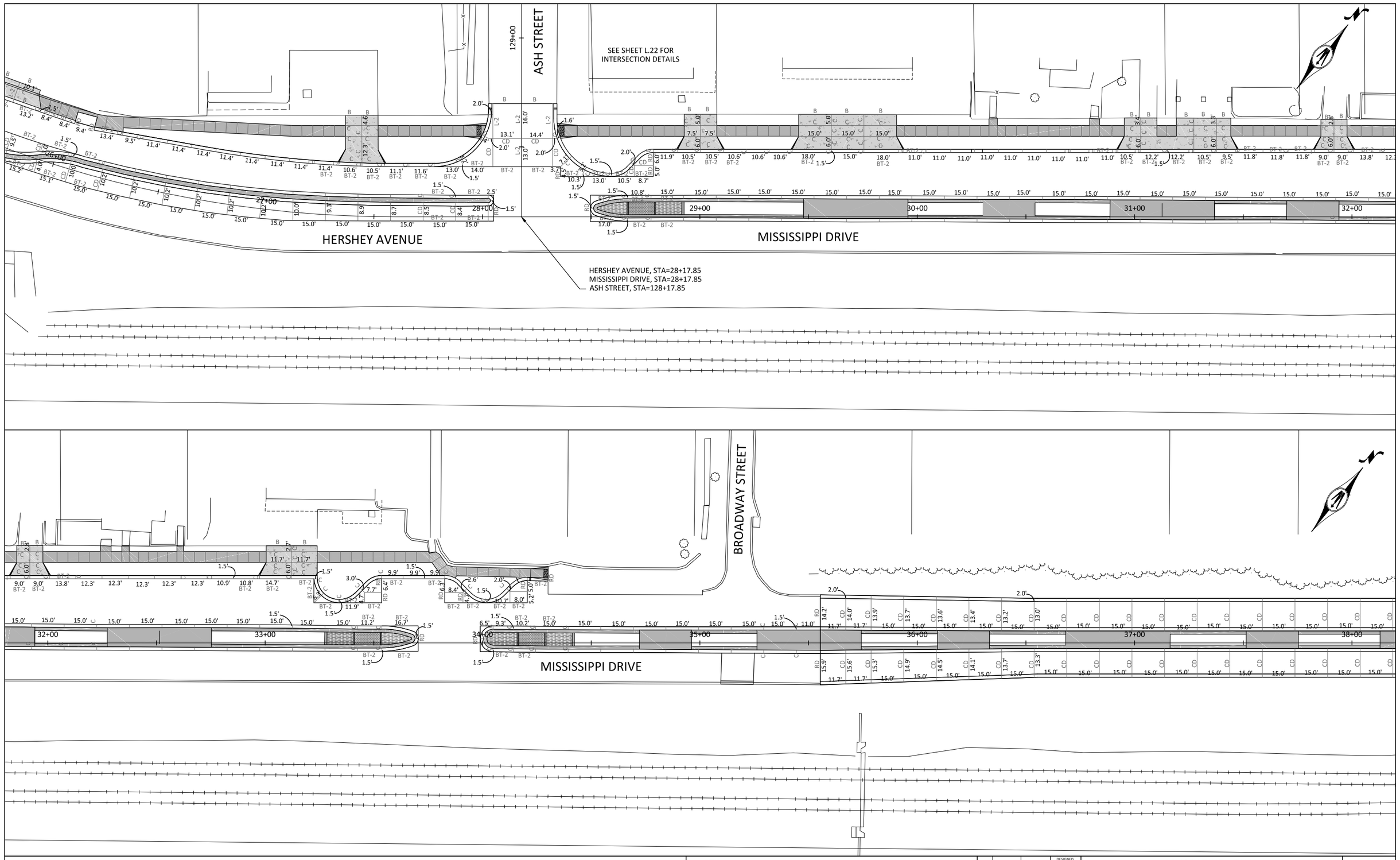
SHEET L.01



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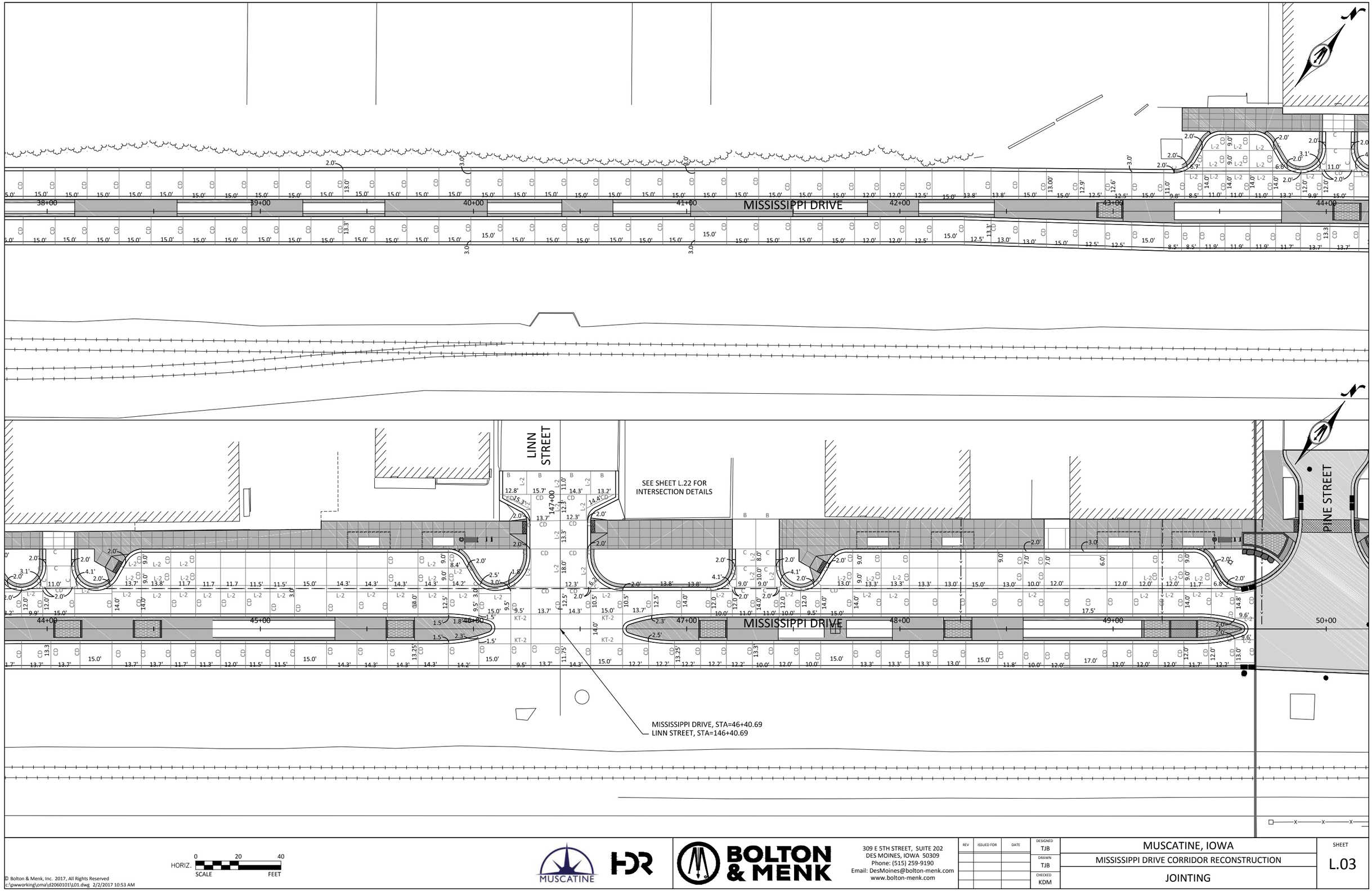
SHEET L.02



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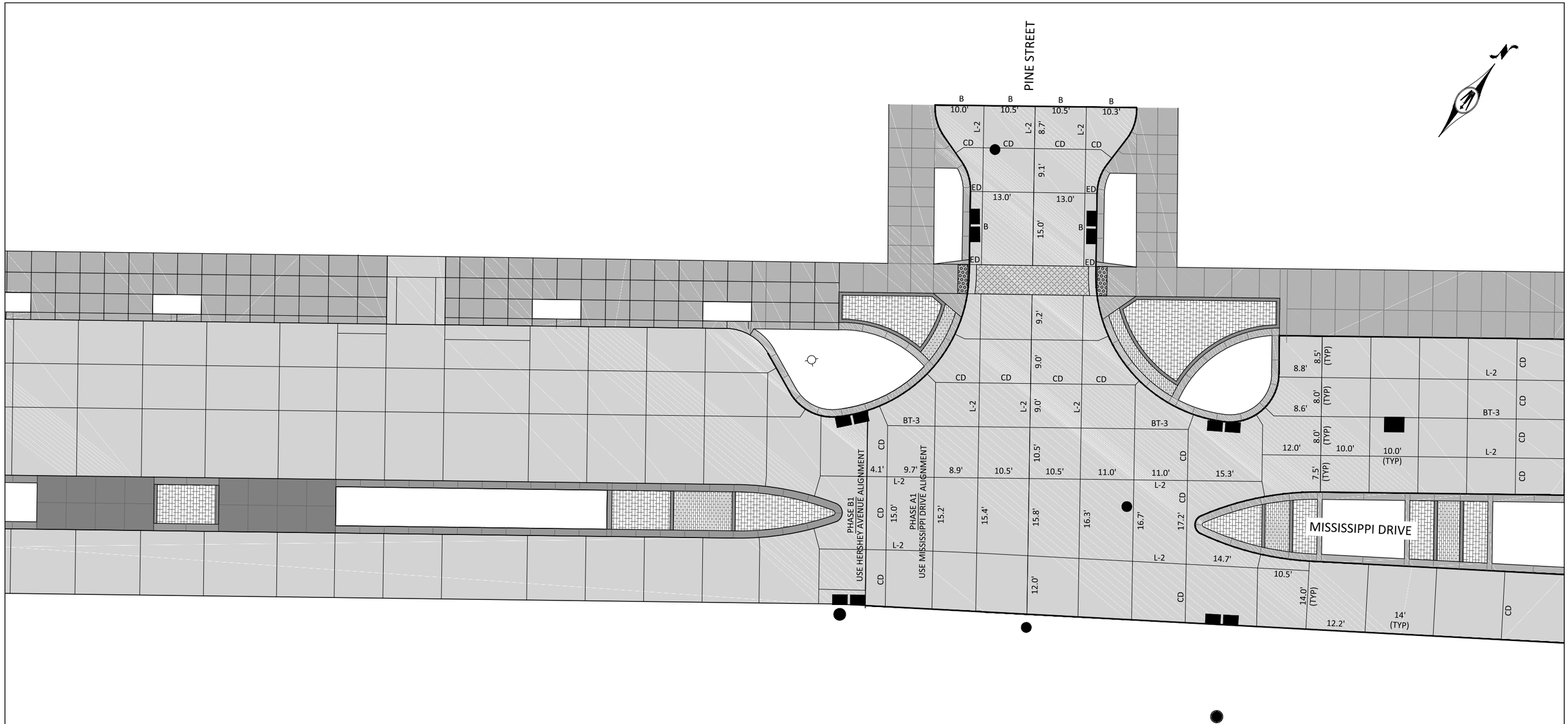
SHEET L.03



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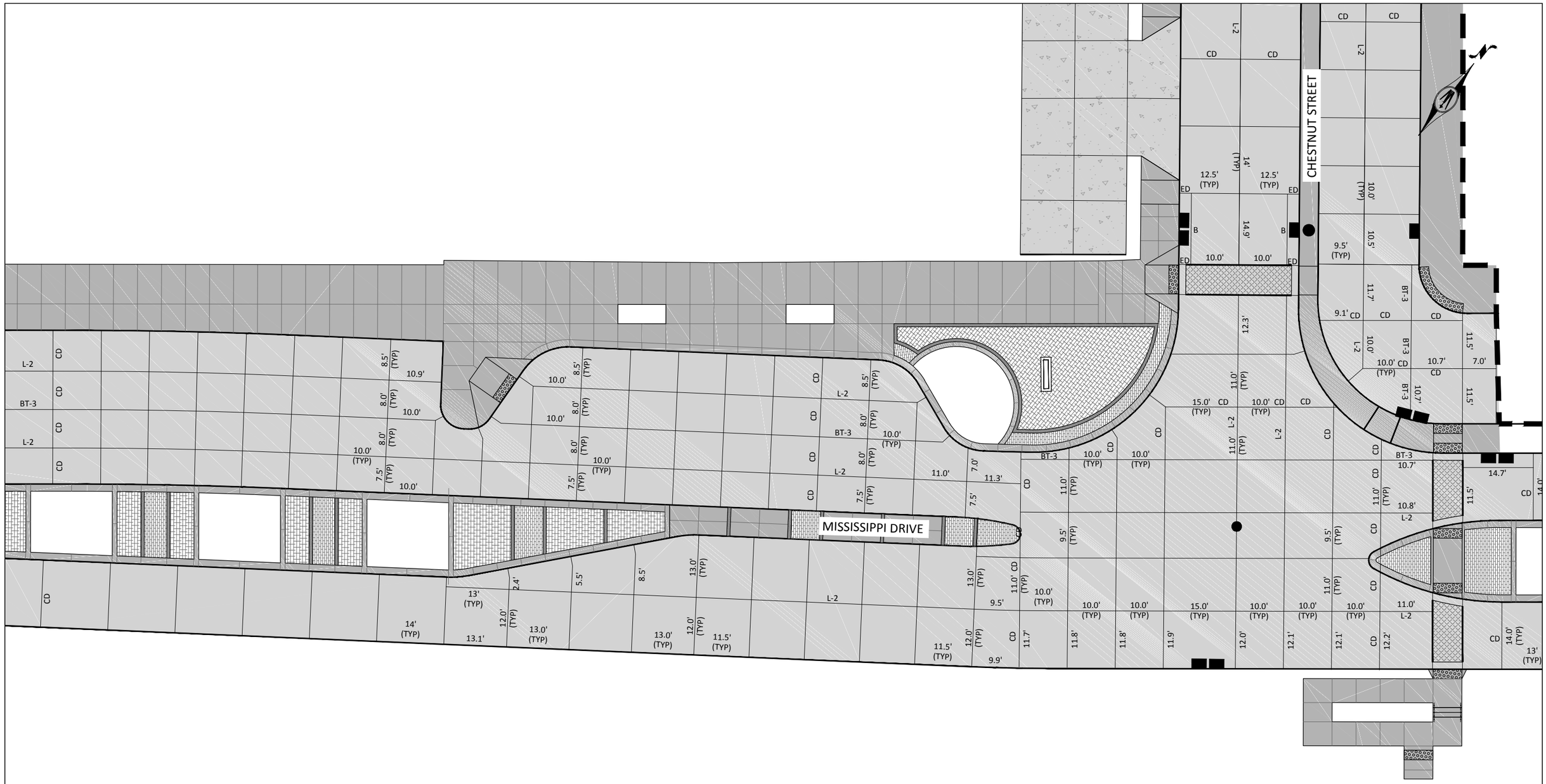
SHEET L.04



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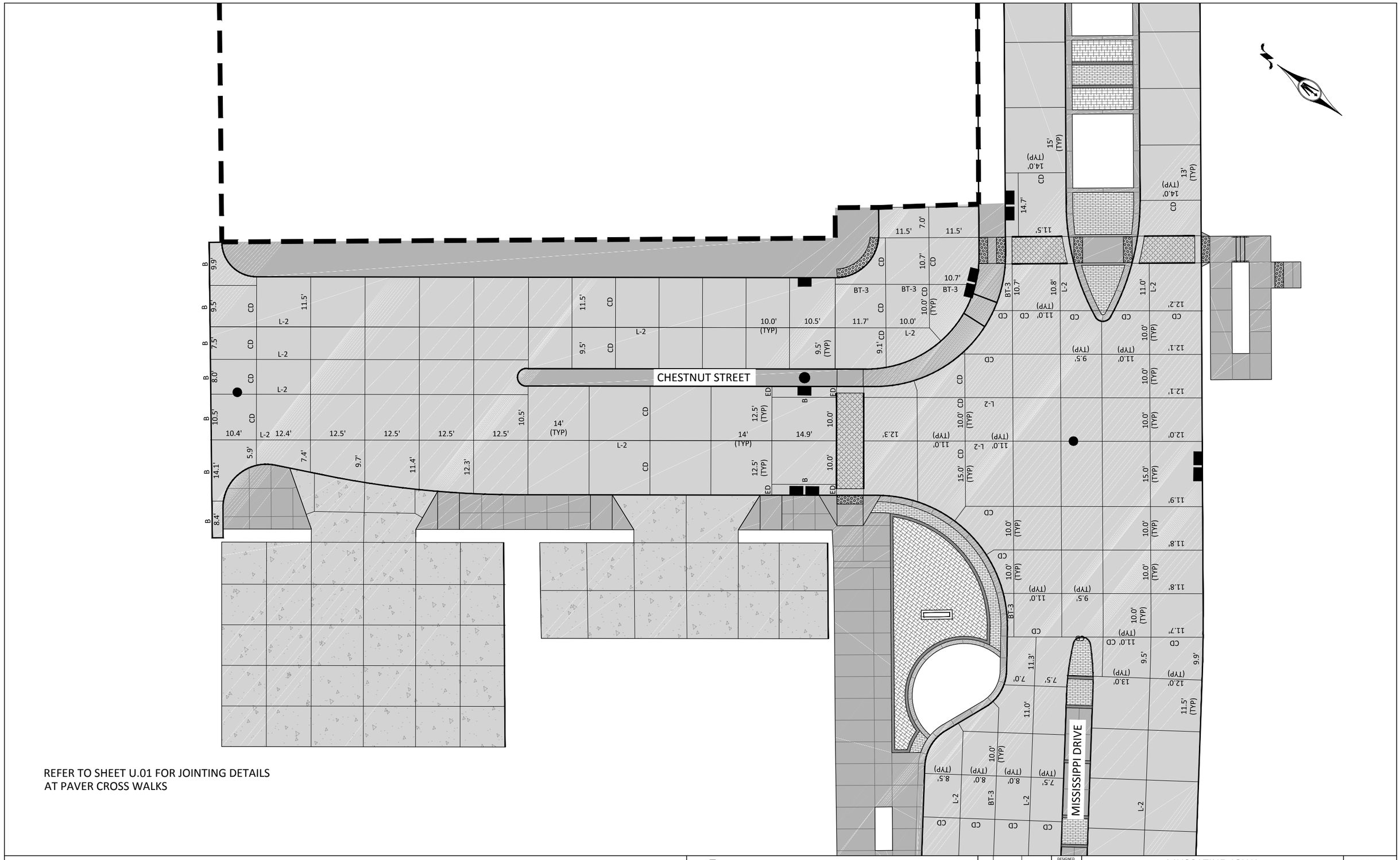
JOINTING PLAN

SHEET L.05



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SHEET L.06

NOTE:
IT IS ASSUMED THAT MERRIL HOTEL
WILL BE COMPLETE PRIOR TO
CONSTRUCTION OF MISSISSIPPI DRIVE.

MISSISSIPPI DRIVE

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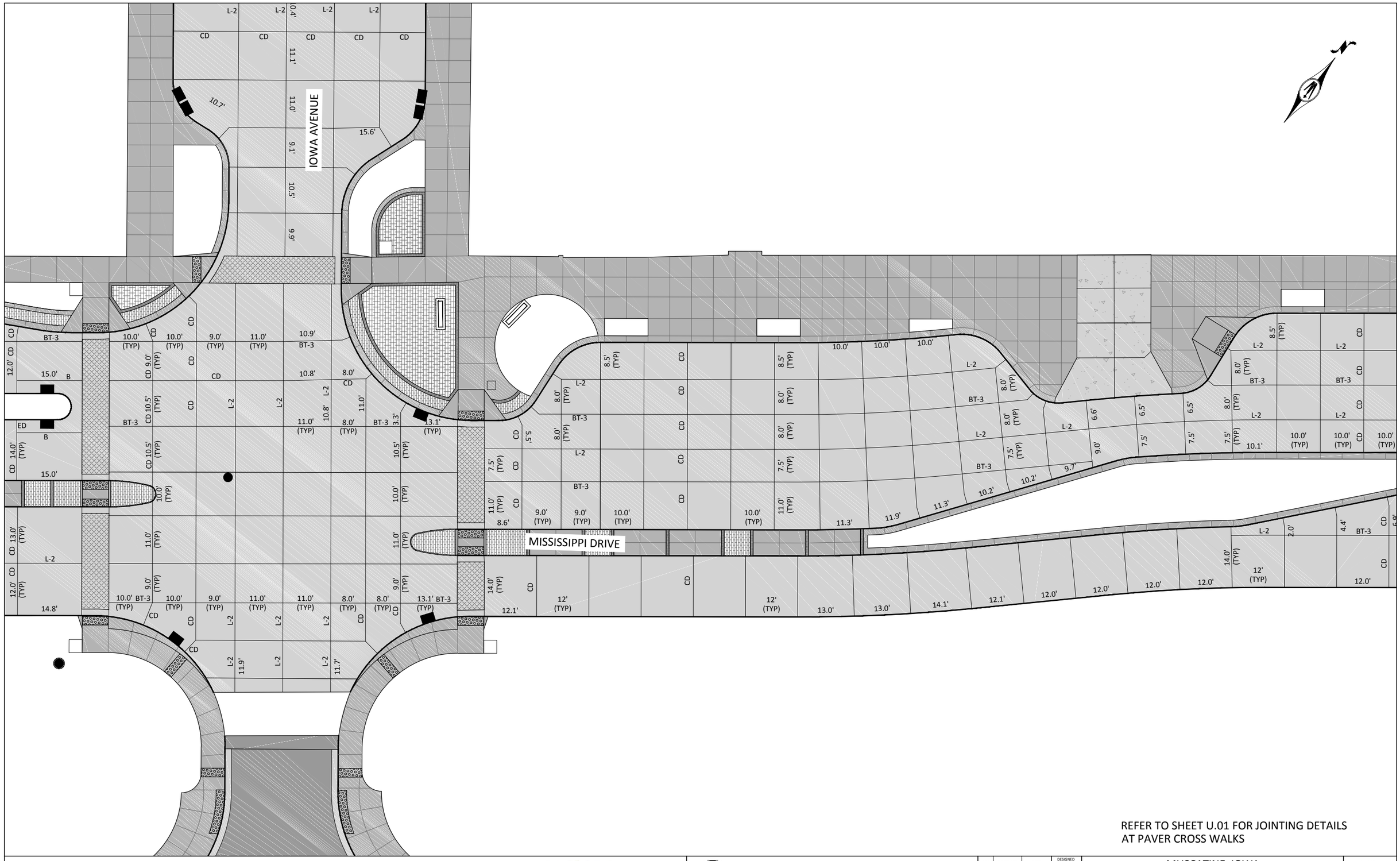
SHEET L.07



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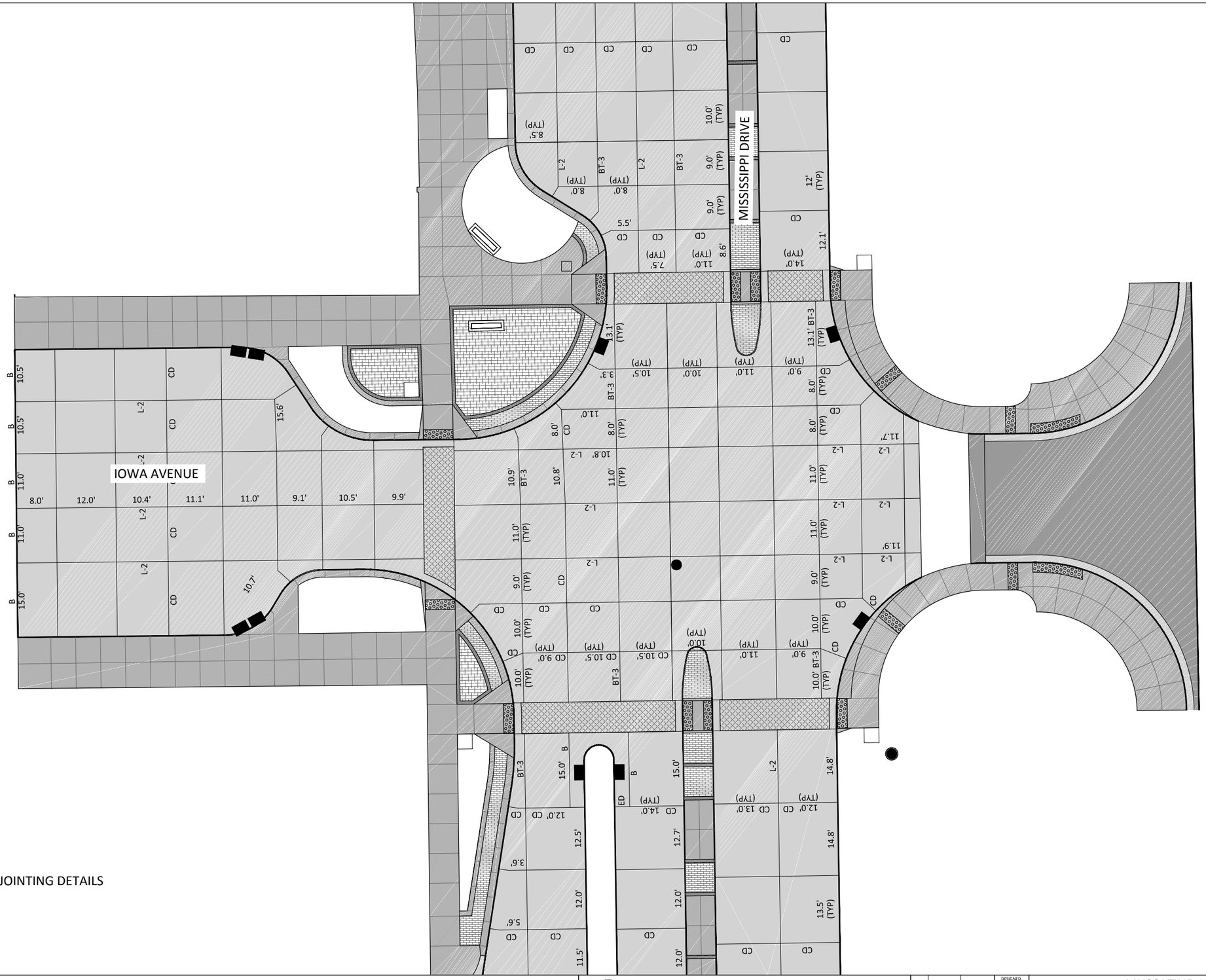
SHEET L.08



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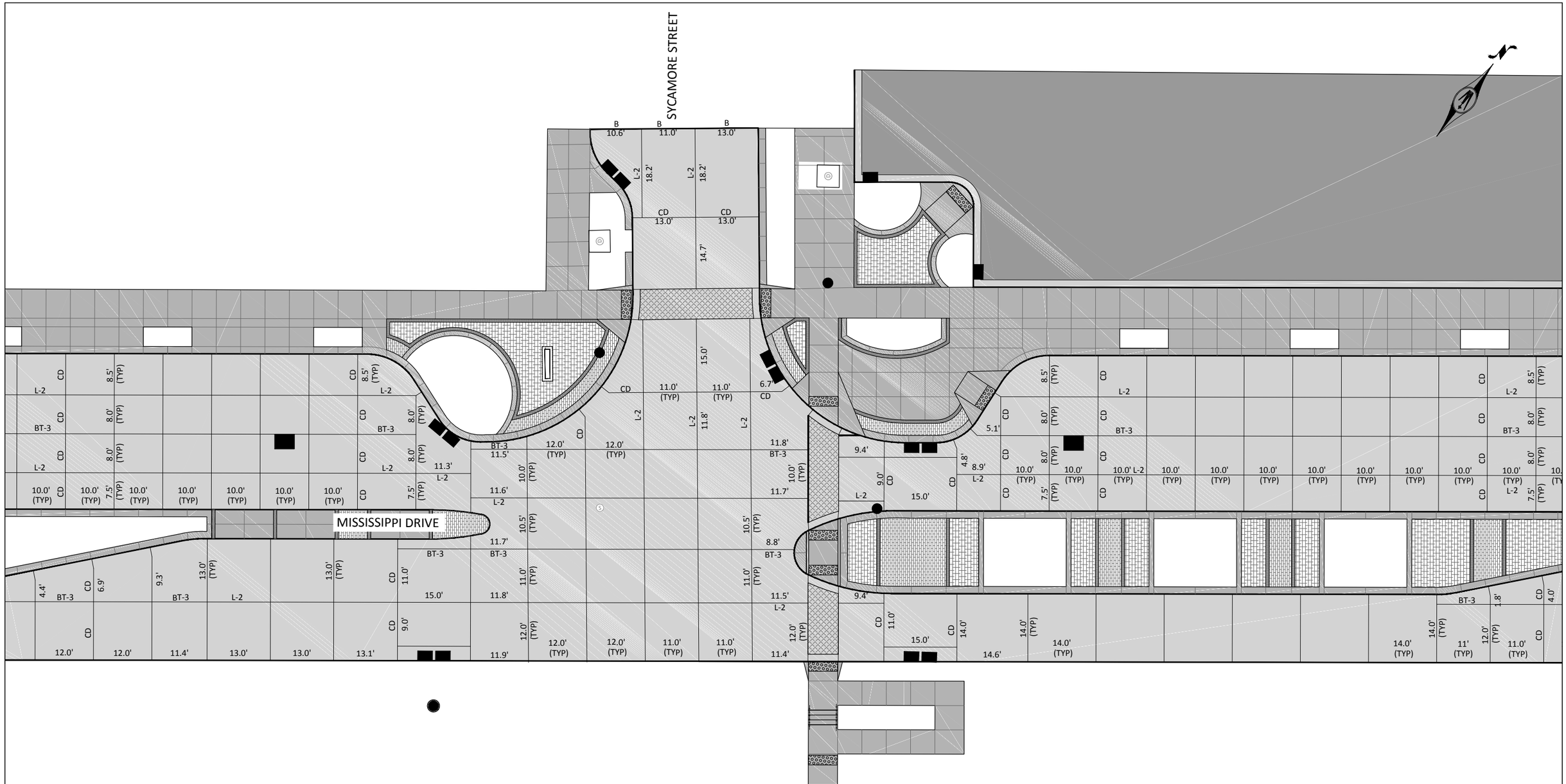
SHEET L.09



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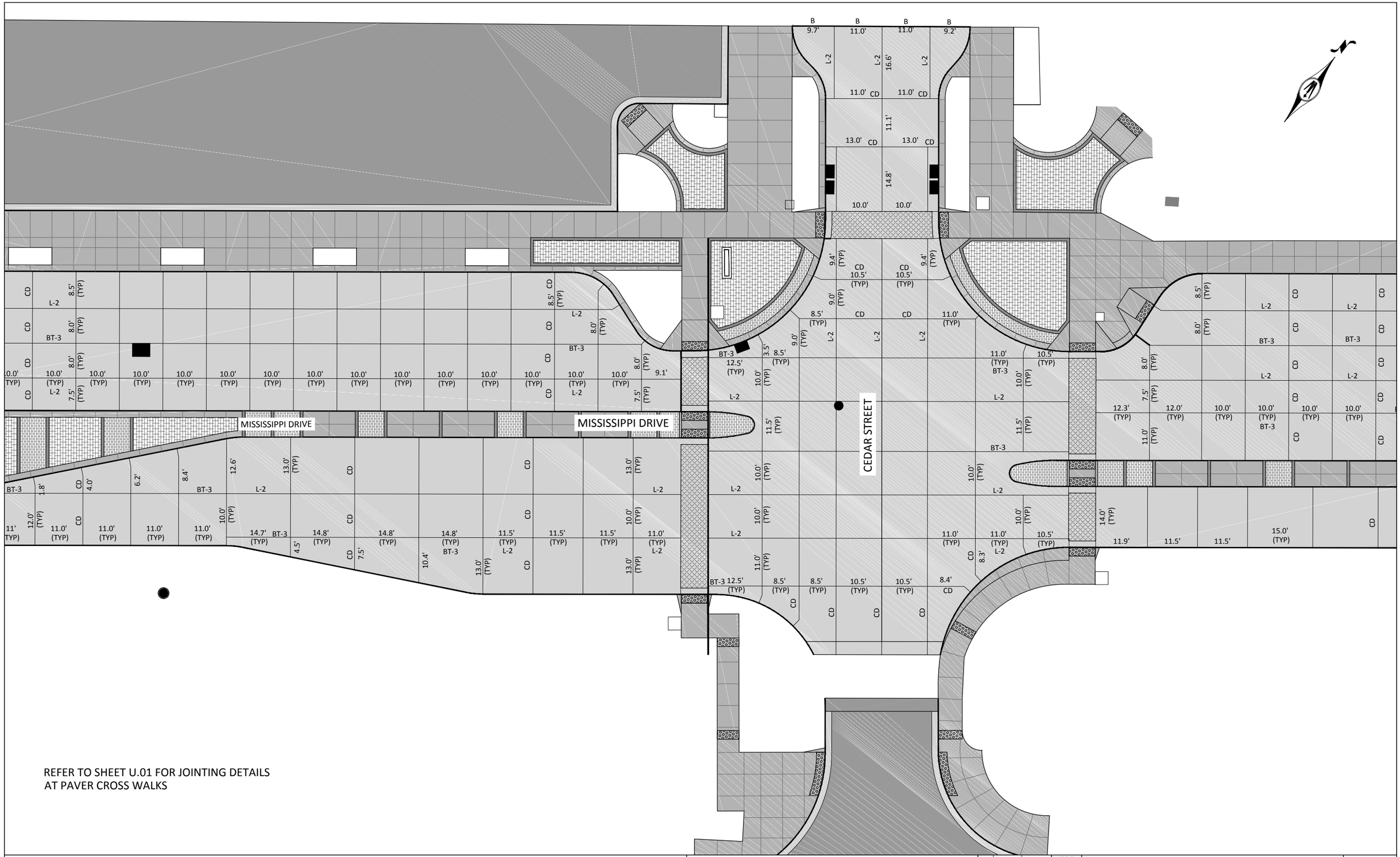
SHEET L.10



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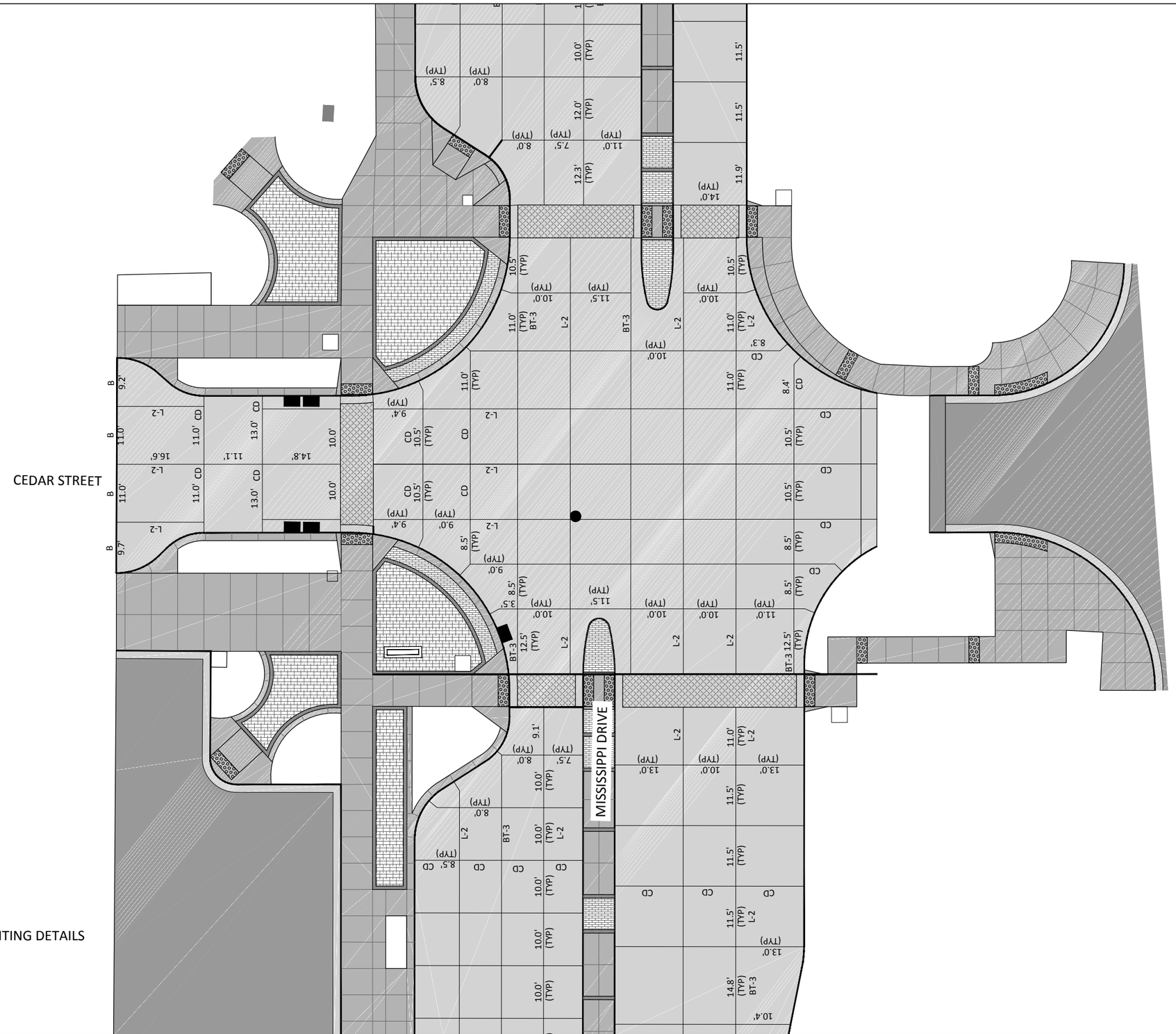
SHEET L.11



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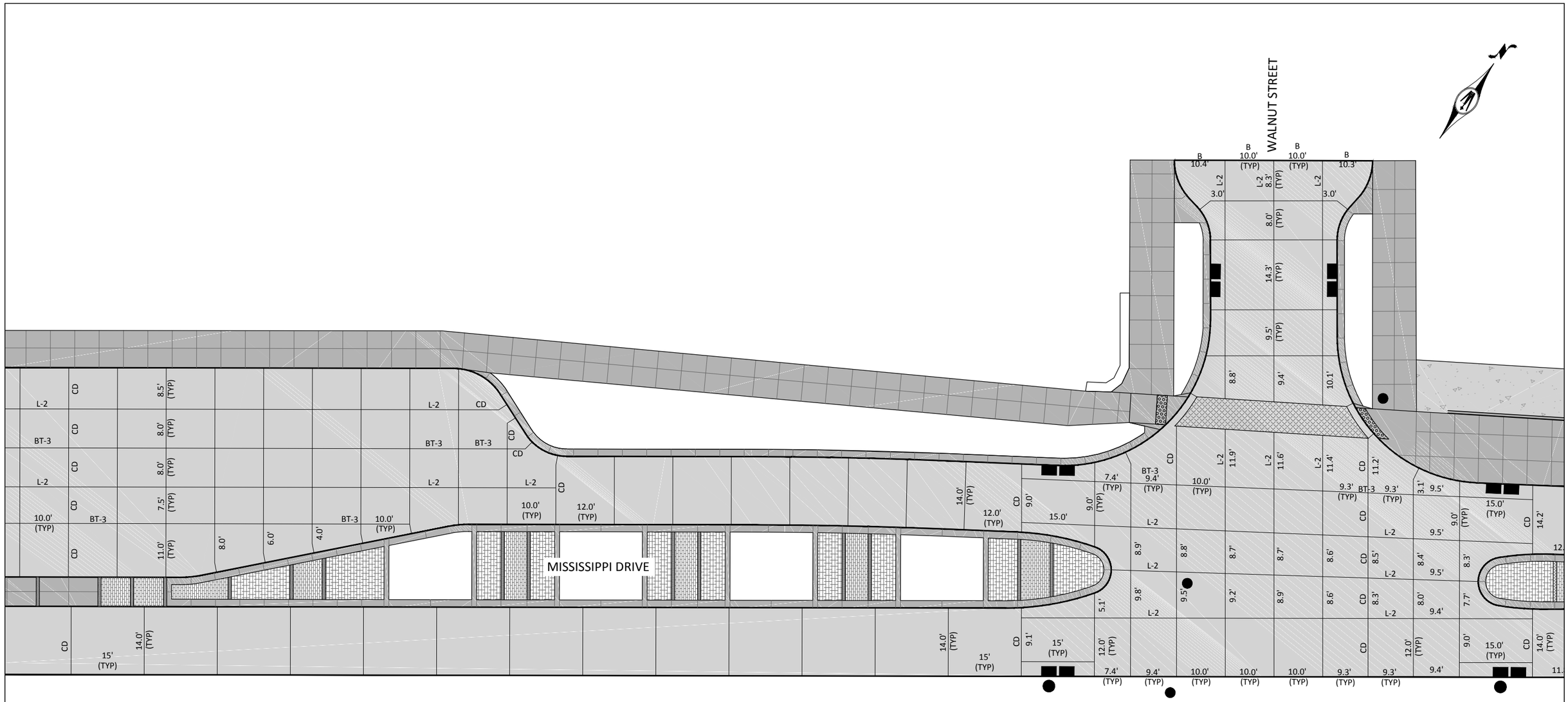
SHEET L.12



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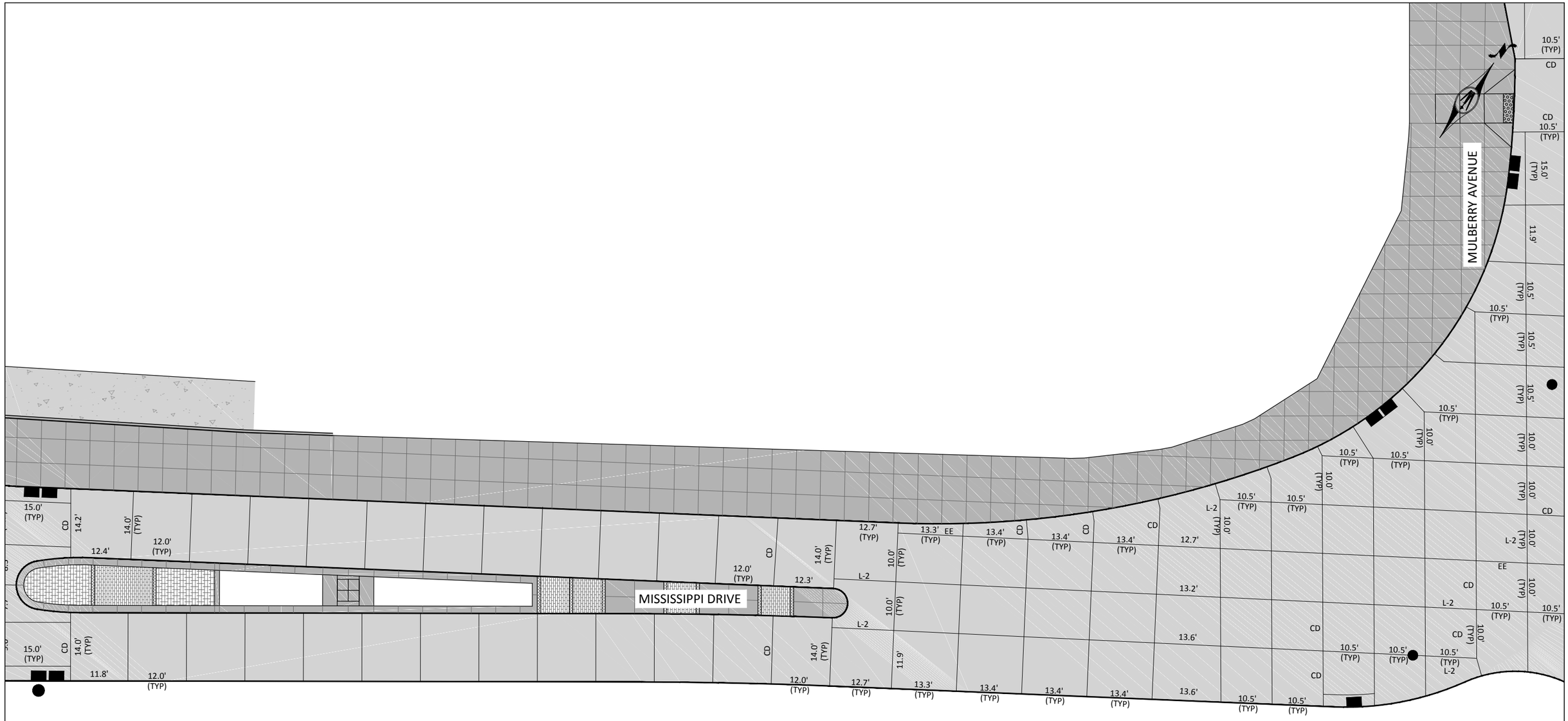
SHEET L.13



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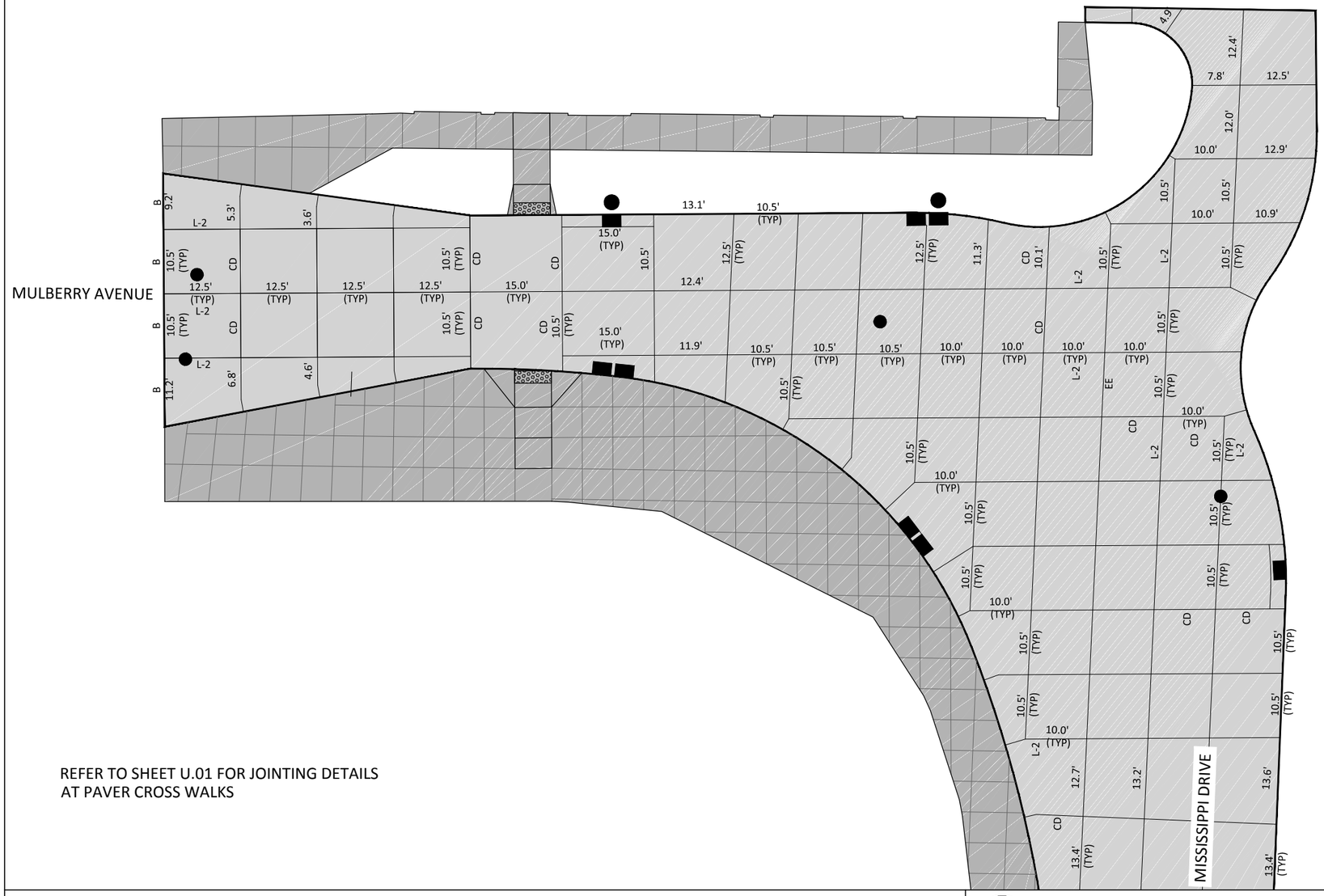
SHEET L.14



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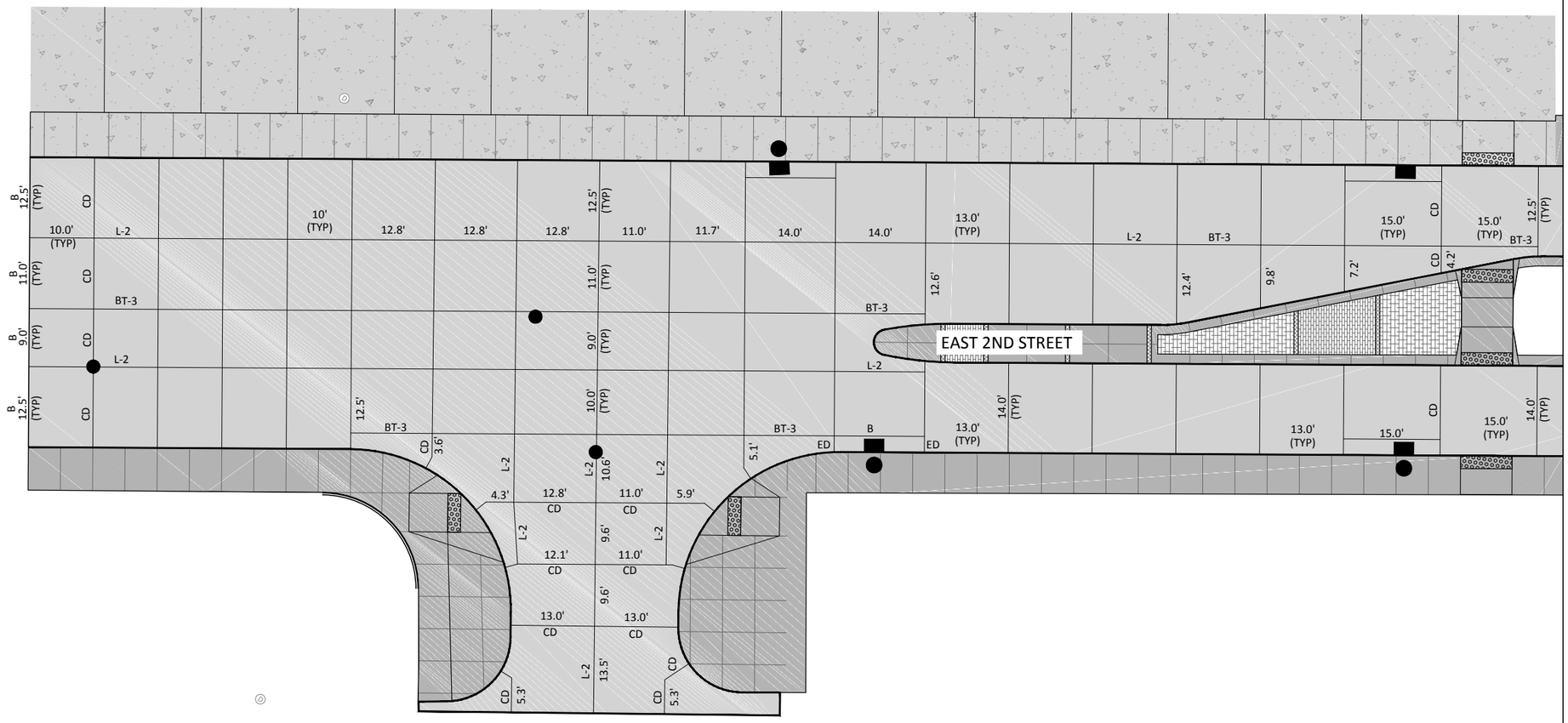
SHEET L.15



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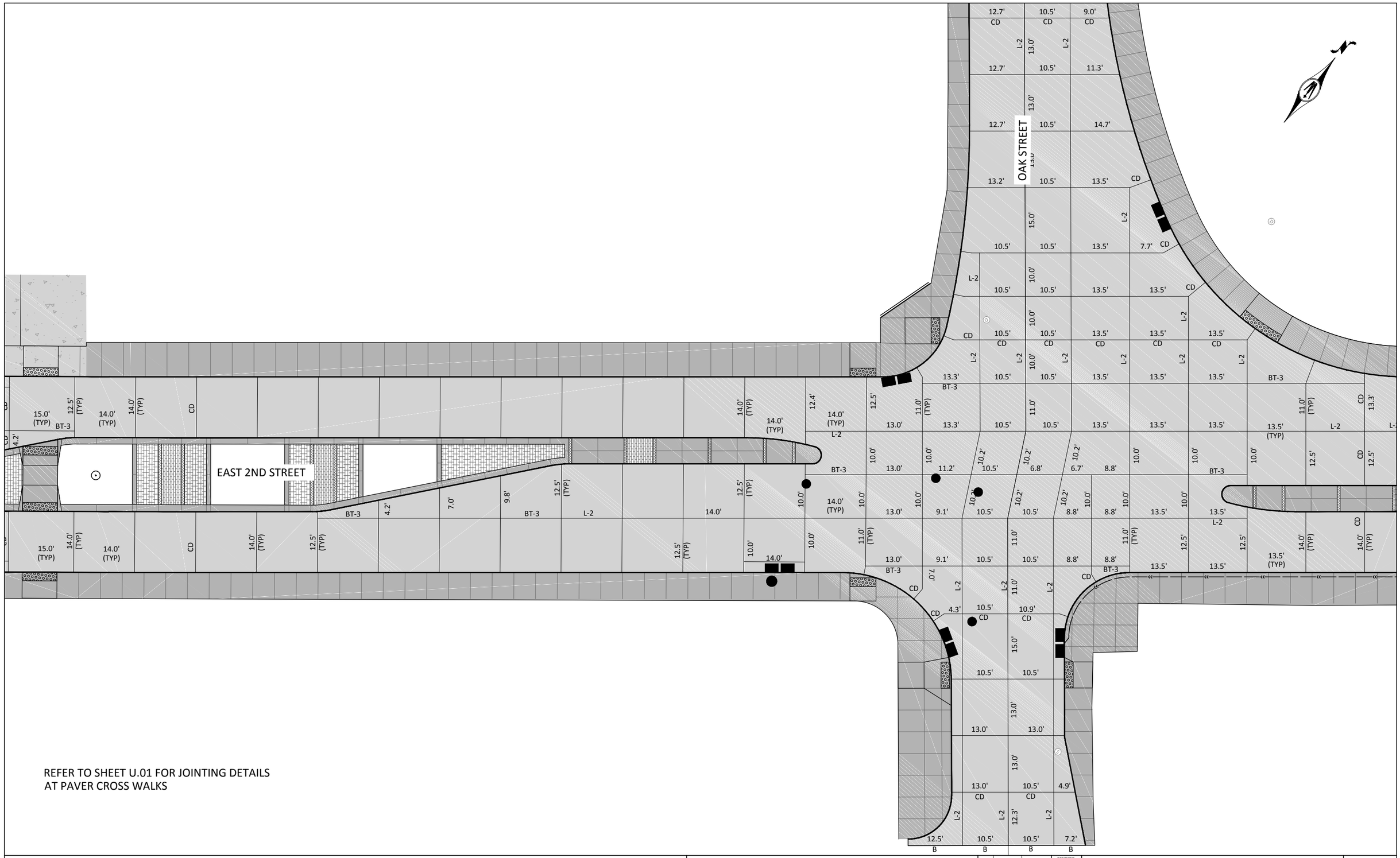
SHEET L.16



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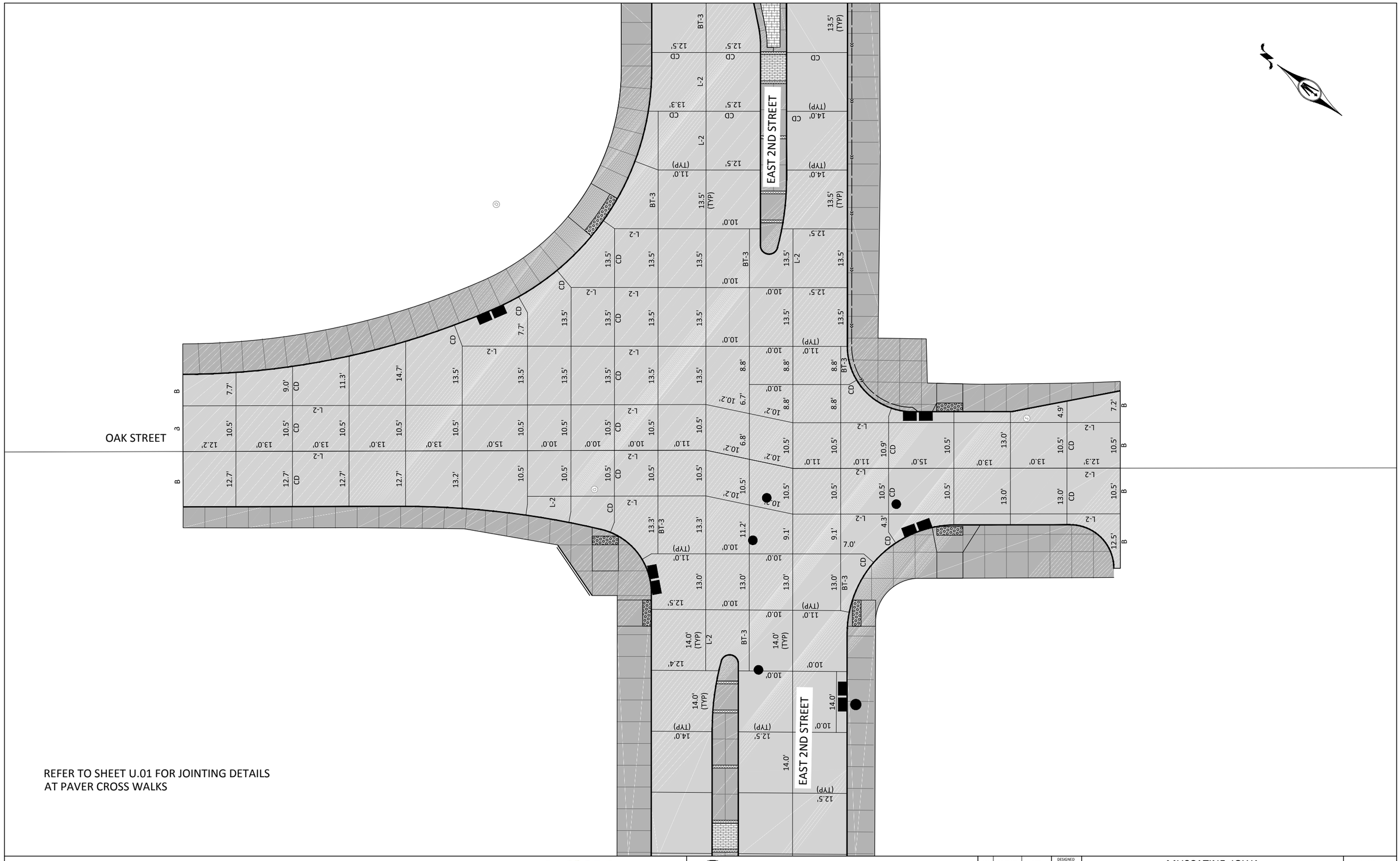

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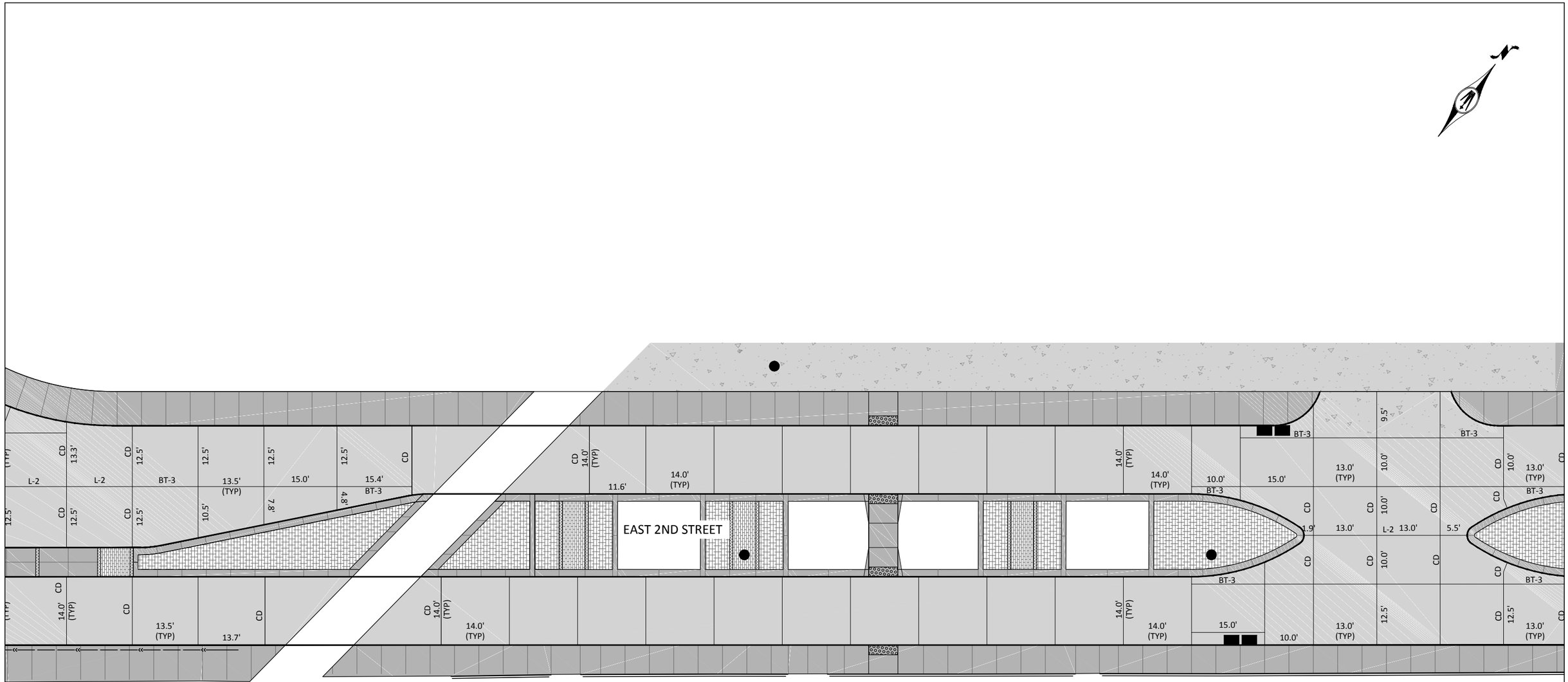
SHEET L.18



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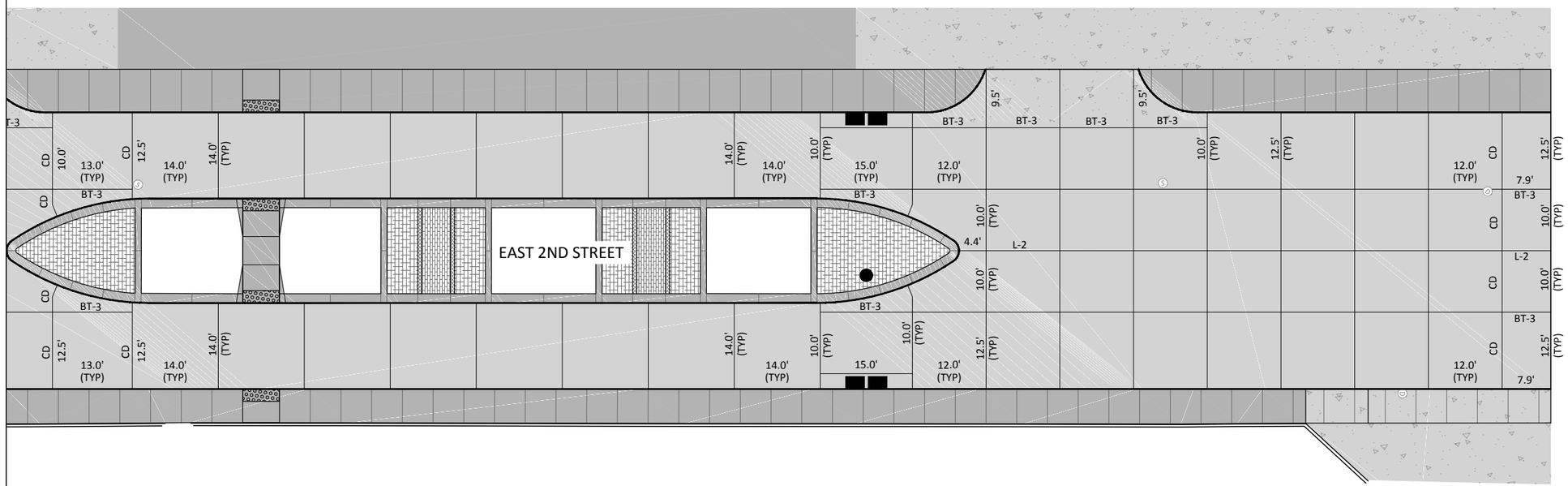
SHEET L.19



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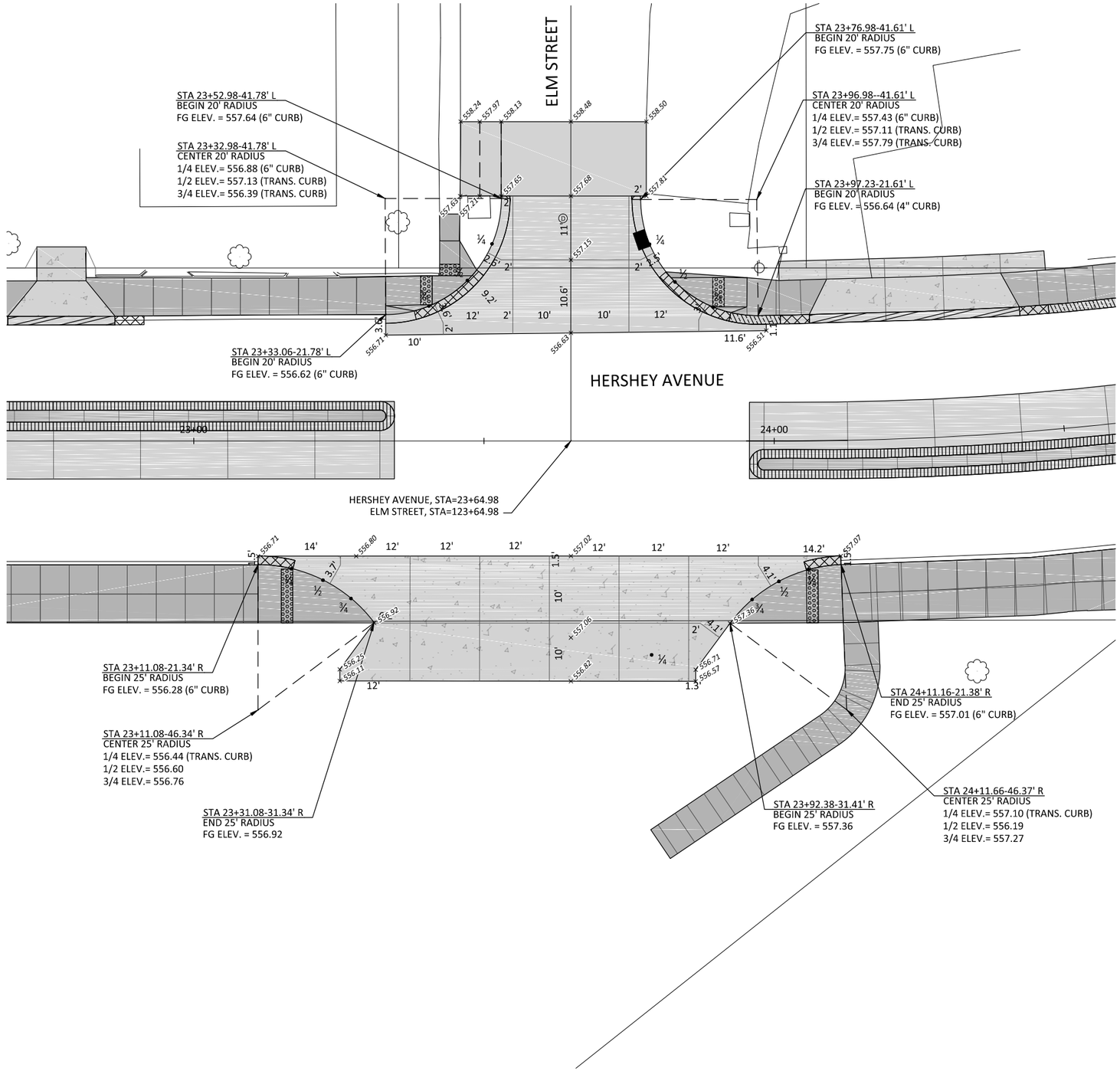
JOINTING PLAN

SHEET L.20



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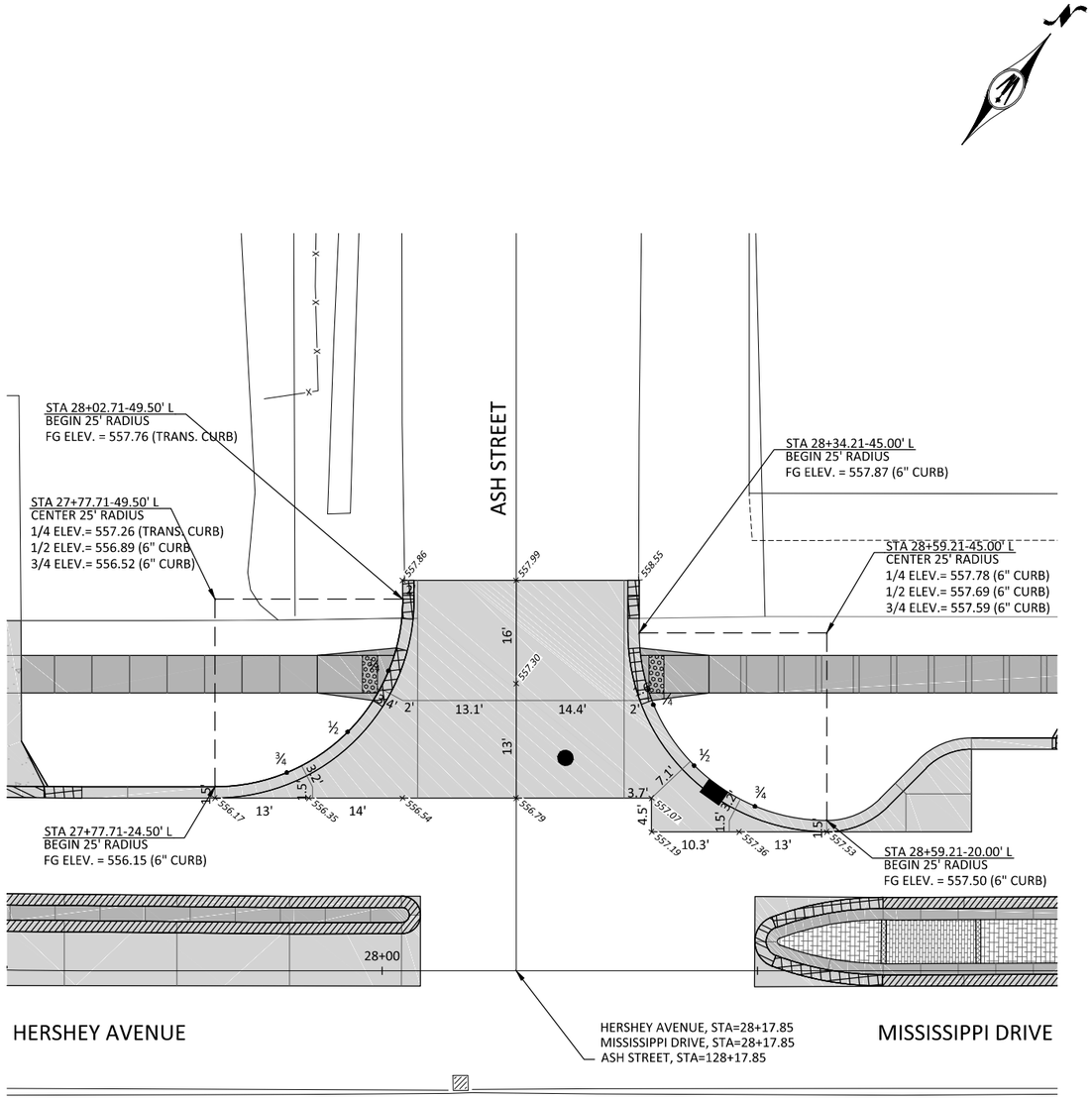
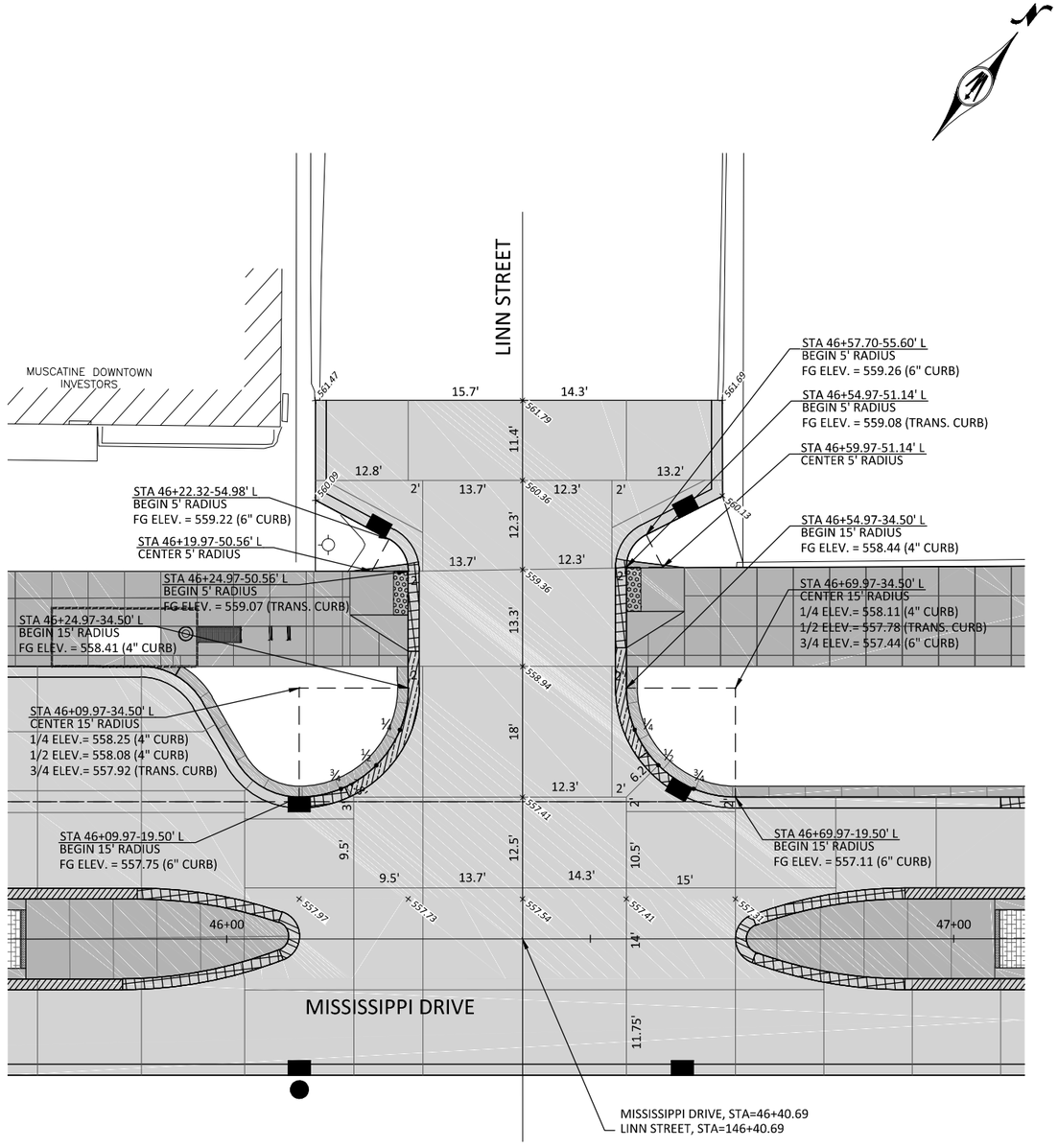
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
INTERSECTION DETAILS - HERSHEY AVENUE

SHEET
L.21





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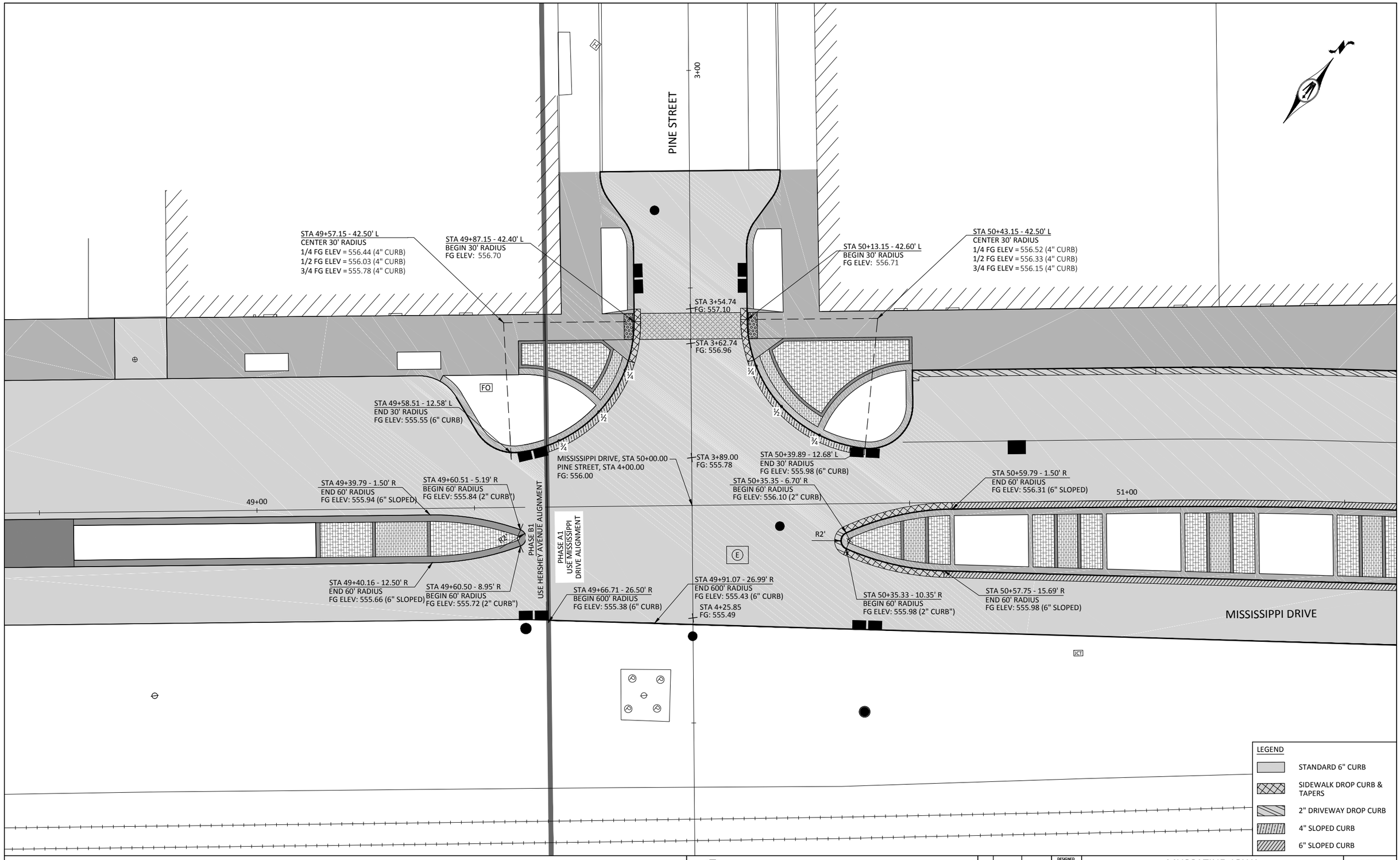
INTERSECTION DETAILS - HERSHEY AVENUE

SHEET L.22



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MUSCATINE, IOWA

MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

INTERSECTION DETAILS

SHEET L.23

STA 53+94.21 - 41.60' L
END 10' RADIUS
FG ELEV: 556.86

STA 53+89.14 - 42.50' L
CENTER 30' RADIUS
B 1/4 FG ELEV = 556.77 (4" CURB)
B 1/2 FG ELEV = 556.54 (4" CURB)
B 3/4 FG ELEV = 556.32 (6" CURB)

STA 53+94.20 - 51.60' L
CENTER 10' RADIUS
FG ELEV: 557.03

STA 54+00.96 - 1.50' R
END 55' RADIUS
FG ELEV: 556.26 (6" SLOPED)

STA 53+89.15 - 18.59' L
END 25.9' RADIUS
FG ELEV: 556.21

MISSISSIPPI DRIVE

STA 54+01.60 - 18.50' R
END 55' RADIUS
FG ELEV: 555.87 (6" SLOPED)

STA 53+89.00 - 44.44' L
CENTER 25.9' RADIUS
A 1/4 FG ELEV = 556.65 (4" CURB)
A 1/2 FG ELEV = 556.39 (4" CURB)
A 3/4 FG ELEV = 556.08 (6" CURB)

STA 53+84.20 - 51.67' L
BEGIN 10' RADIUS
FG ELEV: 556.87

STA 53+89.14 - 12.50' L
END 30' RADIUS
FG ELEV: 556.09

STA 53+63.15 - 44.68' L
BEGIN 25.9' RADIUS
FG ELEV: 557.00

STA 53+74.90 - 8.06' R
BEGIN 55' RADIUS
FG ELEV: 556.25 (2" CURB)

STA 53+74.88 - 11.57' R
BEGIN 55' RADIUS
FG ELEV: 556.14 (2" CURB"

CHESTNUT STREET

STA 53+59.14 - 42.71' L
BEGIN 30' RADIUS
FG ELEV: 556.41

SEE SHEET D.28
FOR DETAILS

MISSISSIPPI DRIVE, STA 53+46.35
CHESTNUT STREET, STA 9+00.00
FG: 556.52

STA 9+31.00
FG: 555.90

STA 8+47.44
FG: 557.44

STA 8+55.44
FG: 557.32

STA 8+89.00
FG: 556.30

STA 52+99.81 - 2.70' R
BEGIN 60' RADIUS
FG ELEV: 556.73 (2" CURB)

STA 52+99.71 - 6.63' R
BEGIN 60' RADIUS
FG ELEV: 556.64 (2" CURB")

STA 53+34.14 - 42.31' L
BEGIN 30' RADIUS
FG ELEV: 557.03

STA 53+03.74 - 42.50' L
CENTER 30' RADIUS
1/4 FG ELEV = 556.86 (4" CURB)
1/2 FG ELEV = 556.74 (4" CURB)
3/4 FG ELEV = 556.62 (4" CURB)

STA 53+07.15 - 32.50' R
BEGIN 400' RADIUS
FG ELEV: 556.07 (6" CURB)

STA 53+03.74 - 12.50' L
END 30' RADIUS
FG ELEV: 556.49 (4" CURB)

SEE SHEET D.27 FOR DETAILS

STA 52+92.23 - 32.50' R
END 400' RADIUS
FG ELEV: 556.14 (6" CURB)

STA 52+88.75 - 1.52' R
END 60' RADIUS
FG ELEV: 556.82 (6" SLOPED

STA 52+89.22 - 7.50' R
END 60' RADIUS
FG ELEV: 556.62 (6" SLOPED)

LEGEND
- STANDARD 6" CURB
- SIDEWALK DROP CURB & TAPERS
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
INTERSECTION DETAILS

SHEET L.24

MISSISSIPPI GARDENS SIGN

STA 57+77.32 - 42.50' L
CENTER 30' RADIUS
1/4 FG ELEV = 554.51 (4" CURB)
1/2 FG ELEV = 554.33 (4" CURB)
3/4 FG ELEV = 554.16 (4" CURB)

STA 57+74.22 - 18.50' R
END 40' RADIUS
FG ELEV: 554.15

STA 57+76.82 - 62.50' R
CENTER 30' RADIUS
1/4 FG ELEV =554.09 (6" CURB)
1/2 FG ELEV =554.19
3/4 FG ELEV =554.37

STA 57+76.77 - 72.82' R
CENTER 30' RADIUS
1/4 FG ELEV = 553.01
1/2 FG ELEV = 552.26 (6" CURB)
3/4 FG ELEV = 551.53 (6" CURB)

58+00

STA 57+74.22 - 12.50' R
END 40' RADIUS
FG ELEV: 554.46

STA 57+76.82 - 32.50' R
BEGIN 30' RADIUS
FG ELEV: 553.90

JCT

STA 57+77.32 - 12.50' L
END 30' RADIUS
FG ELEV: 554.00

STA 57+64.94 - 13.51' R
BEGIN 40' RADIUS
FG ELEV: 554.46 (2" CURB)

R2'

STA 57+64.92 - 17.40' R
BEGIN 40' RADIUS
FG ELEV: 554.30 (2" CURB")

STA 13+52.62 - 43.12' L
END 30' RADIUS
FG ELEV: MATCH EXISTING
(6" CURB)

STA 57+46.81 - 63.18' R
END 30' RADIUS
FG ELEV: 554.31

STA 57+47.32 - 42.64' L
BEGIN 30' RADIUS
FG ELEV: 554.68

STA 13+22.62 - 13.00' L
BEGIN 30' RADIUS
FG ELEV: 553.75

IOWA AVENUE

11+00

12+00

13+00

STA 11+71.40
FG: 556.23

STA 11+98.86
FG: 555.07

STA 12+06.86
FG: 554.95

STA 12+39.00
FG: 554.31

STA 12+60.00
FG: 554.73

STA 12+81.00
FG: 554.31

STA 13+00.02
FG: 554.49

STA 13+10.02
FG: 554.47

STA 13+30.40
FG: 553.47

STA 13+55.45
FG: MATCH EXISTING

STA 57+21.41 - 62.36' L
BEGIN 30' RADIUS
FG ELEV: 555.27 (4" CURB)

MISSISSIPPI DRIVE, STA 57+34.12
IOWA STREET, STA 12+50.00
FG: 554.53

STA 57+20.82 - 62.64' R
END 30' RADIUS
FG ELEV: 554.38

STA 13+23.28 - 13.00' R
BEGIN 30' RADIUS
FG ELEV: 553.89

STA 57+03.22 - 2.60' R
BEGIN 40' RADIUS
FG ELEV: 554.76 (2" CURB)

R2'

STA 57+03.20 - 6.49' R
BEGIN 40' RADIUS
FG ELEV: 554.84 (2" CURB")

STA 56+91.42 - 32.50' L
END 30' RADIUS
FG ELEV: 554.83

57+00

STA 56+93.92 - 1.50' R
END 40' RADIUS
FG ELEV: 554.74

STA 56+94.27 - 7.50' R
END 40' RADIUS
FG ELEV: 554.91

STA 13+53.28 - 43.10' R
END 30' RADIUS
FG ELEV: MATCH EXISTING
(6" CURB)

STA 56+90.82 - 32.50' R
BEGIN 30' RADIUS
FG ELEV: 554.48

R3'

STA 56+91.42 - 62.50' L
CENTER 30' RADIUS
1/4 FG ELEV = 555.14 (4" CURB)
1/2 FG ELEV = 555.30
3/4 FG ELEV = 554.92 (4" CURB)

STA 56+90.82 - 62.50' R
CENTER 30' RADIUS
1/4 FG ELEV = 554.28 (6" CURB)
1/2 FG ELEV = 554.26
3/4 FG ELEV = 554.50

STA 13+23.28 - 43.00' R
CENTER 30' RADIUS
1/4 FG ELEV = 553.31
1/2 FG ELEV = 552.72 (6" CURB)
3/4 FG ELEV = 552.14 (6" CURB)

MISSISSIPPI DRIVE

GRAVEL

LEGEND

- STANDARD 6" CURB
- SIDEWALK DROP CURB & TAPERS
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

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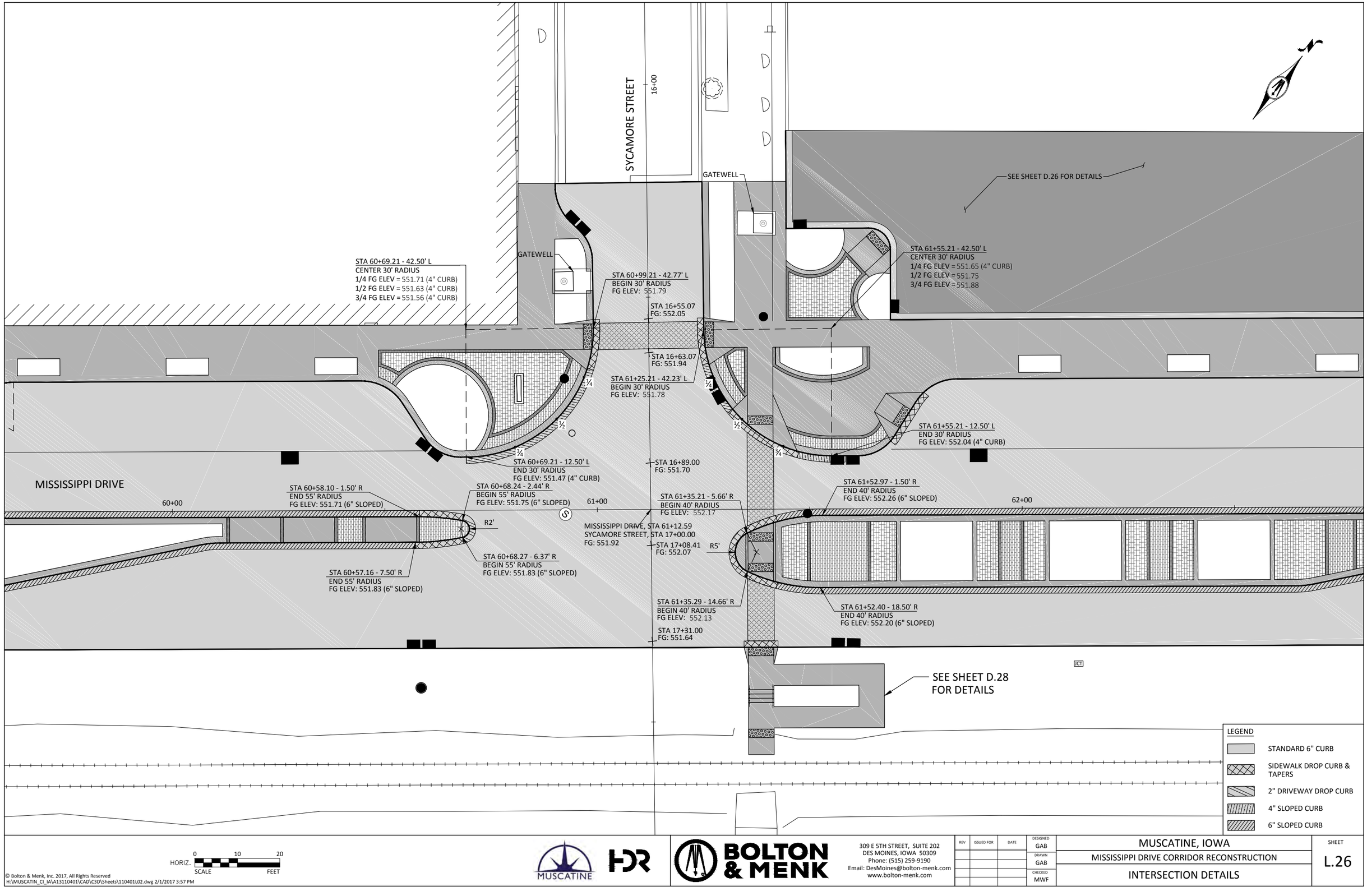
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
INTERSECTION DETAILS

SHEET L.25



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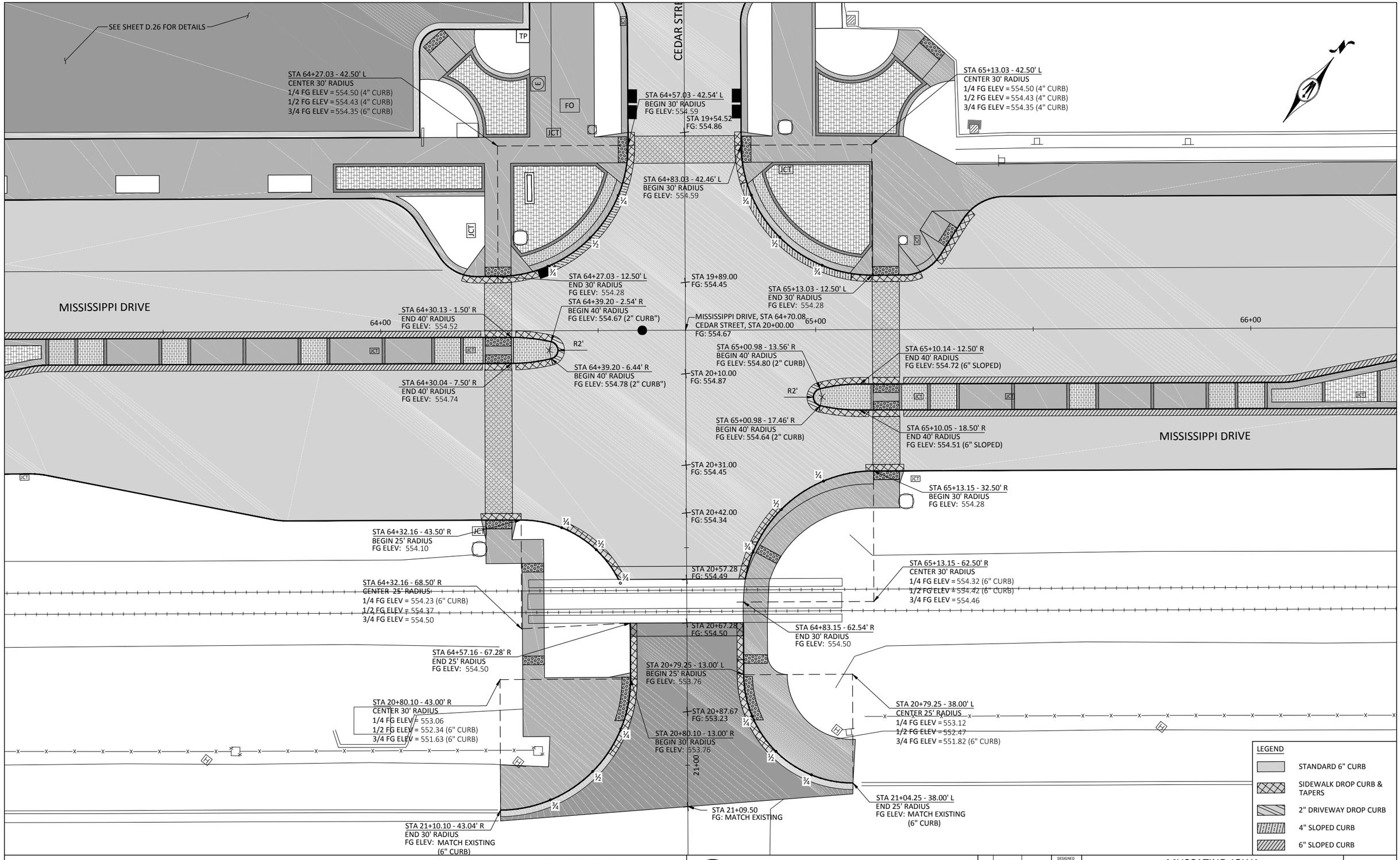
SHEET L.26



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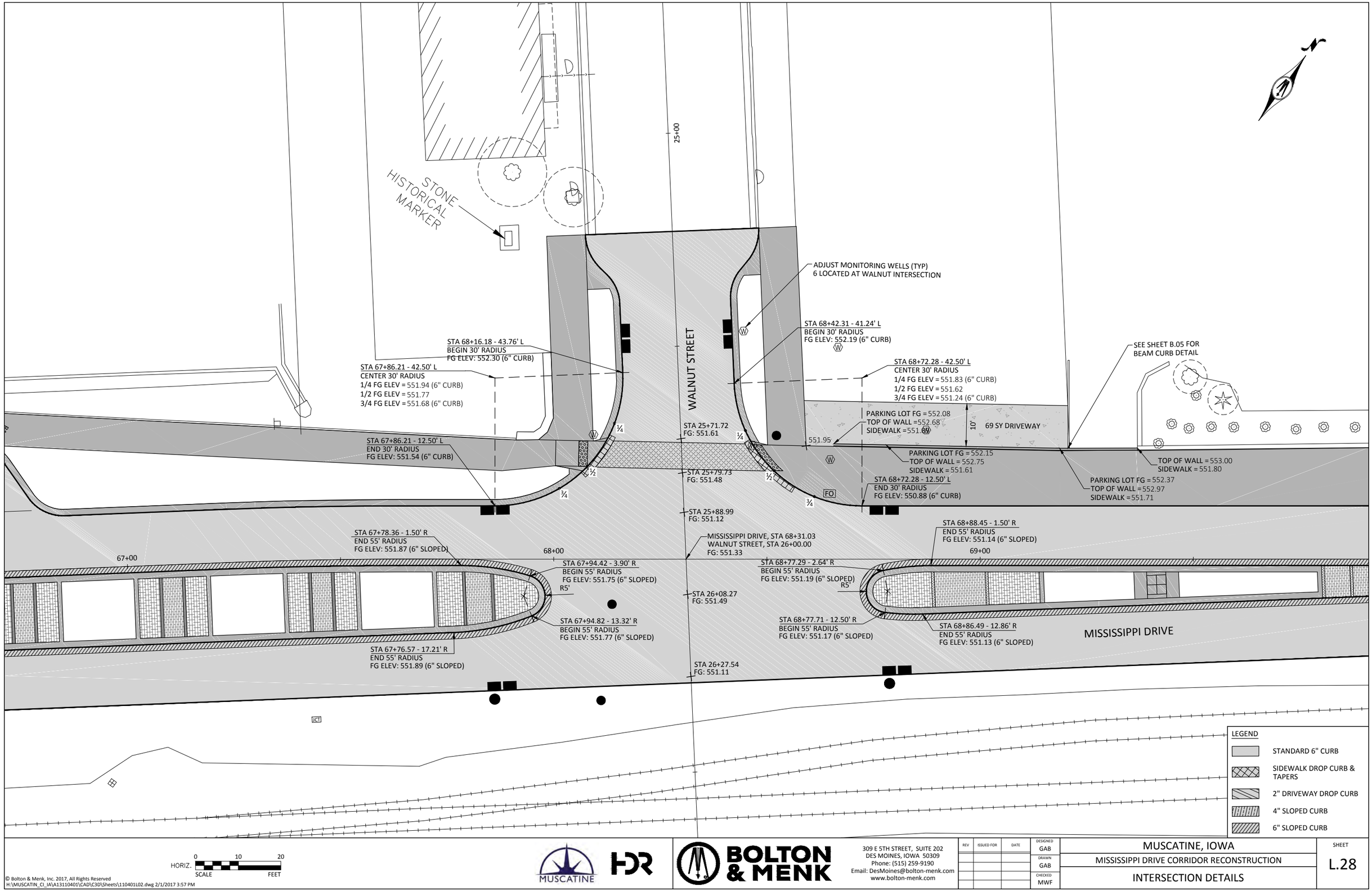
INTERSECTION DETAILS

SHEET L.27



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INTERSECTION DETAILS

SHEET L.28

STA 72+57.91 - 83.50' L
CENTER 70' RADIUS
1/4 FG ELEV = 553.48 (6" CURB)
1/2 FG ELEV = 552.90 (6" CURB)
3/4 FG ELEV = 552.33 (6" CURB)

STA 72+49.25 - 14.04' L
BEGIN 70' RADIUS
FG ELEV: 553.93

MULBERRY AVENUE

STA 72+07.43 - 18.70' R
BEGIN 60' RADIUS
FG ELEV: 553.08 (6" CURB)

STA 71+96.94 - 23.39' R
BEGIN 25' RADIUS
FG ELEV: 552.79 (6" CURB)

STA 72+01.13 - 47.59' R
CENTER 25' RADIUS
1/4 FG ELEV = 552.67 (6" CURB)
1/2 FG ELEV = 552.55 (6" CURB)
3/4 FG ELEV = 552.43 (6" CURB)

STA 71+66.11 - 30.40' L
CENTER 60' RADIUS
1/4 FG ELEV = 552.64
1/2 FG ELEV = 552.28
3/4 FG ELEV = 552.06

STA 71+43.14 - 27.21' L
END 70' RADIUS
FG ELEV: 551.93 (6" CURB)

STA 71+92.50 - 40.34' R
SIDEWALK CORNER
FG ELEV: 553.27

STA 72+00.14 - 60.70' R
MATCH EXISTING

STA 71+95.92 - 62.07' R
END 10' RADIUS
FG ELEV: 552.32 (6" CURB)

MISSISSIPPI DRIVE

70+00

71+00

72+00

STA 71+58.09 - 29.17' R
BEGIN 25' RADIUS
FG ELEV: 552.06 (6" CURB)

STA 71+88.19 - 58.16' R
END 25' RADIUS
FG ELEV: 552.31 (6" CURB)

STA 71+70.71 - 45.16' R
END 25' RADIUS
FG ELEV: 551.93 (6" CURB)

STA 71+38.50 - 24.55' R
END 60' RADIUS
FG ELEV: 551.94 (6" CURB)

STA 71+84.39 - 81.14' R
MATCH EXISTING

STA 71+57.02 - 54.11' R
CENTER 25' RADIUS
1/4 FG ELEV = 551.70 (6" CURB)
1/2 FG ELEV = 551.88 (6" CURB)
3/4 FG ELEV = ??? (6" CURB)

STA 71+77.42 - 66.00' R
END 40' RADIUS
FG ELEV: 551.82 (6" CURB)

LEGEND
- STANDARD 6" CURB
- SIDEWALK DROP CURB & TAPERS
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

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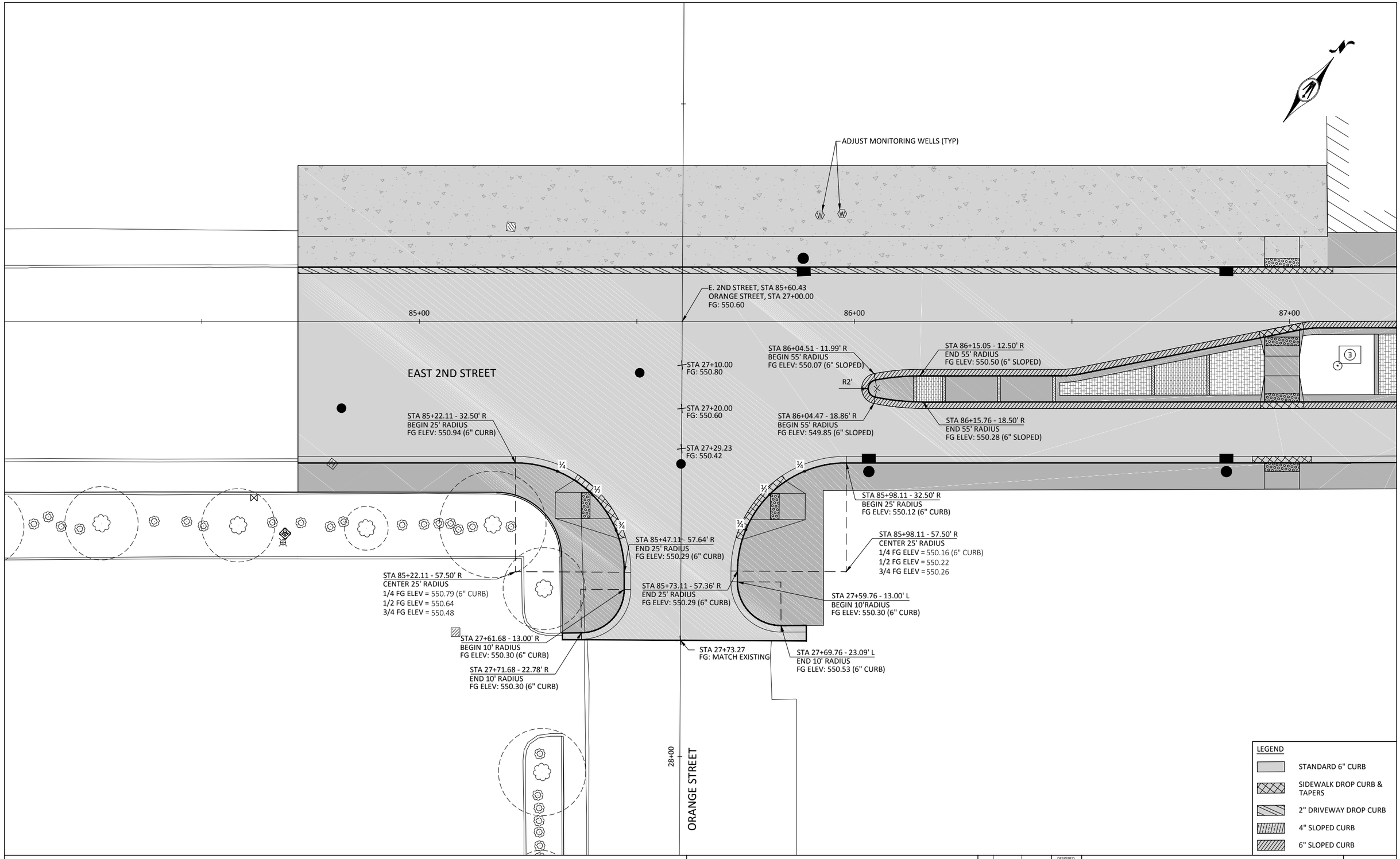
SHEET L.29



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INTERSECTION DETAILS

SHEET L.30

STA 91+34.76 - 116.62' L
CENTER 60' RADIUS
1/4 FG ELEV = 548.93
1/2 FG ELEV = 548.71
3/4 FG ELEV = 548.46

STA 90+12.26 - 72.50' L
CENTER 60' RADIUS
1/4 FG ELEV = 548.51
1/2 FG ELEV = 548.85
3/4 FG ELEV = 549.10

STA 90+12.26 - 12.50' L
END 60' RADIUS
FG ELEV: 549.31 (6" CURB)

STA 89+71.81 - 12.50' R
BEGIN 60' RADIUS
FG ELEV: 549.33 (6" SLOPED)

STA 89+57.34 - 48.34' L
BEGIN 60' RADIUS
FG ELEV: 548.28 (6" CURB)

STA 30+29.83 - 17.74' L
BEGIN 180' RADIUS
FG ELEV: MATCH EXISTING (6" CURB)

OAK STREET

90+00

STA 90+30.24 - 32.50' R
ROAD FG: 549.84
TOP OF CURB: 550.33
SIDEWALK FG: 549.57

549.67

STA 90+13.47 - 32.51' R
ROAD FG: 549.69
TOP OF CURB: 550.17
SIDEWALK FG: 549.49

549.58

STA 89+90.68 - 32.51' R
ROAD FG: 549.40
TOP OF CURB: 549.88
SIDEWALK FG: 549.37

549.47

STA 89+86.91 - 18.50' R
END 60' RADIUS
FG ELEV: 549.57 (6" SLOPED)

STA 89+73.11 - 32.51' R
ROAD FG: 549.14
TOP OF CURB: 549.62
SIDEWALK FG: 549.31

549.38

STA 89+71.29 - 16.43' R
BEGIN 60' RADIUS
FG ELEV: 549.37 (6" SLOPED)

R2'

STA 89+50.42 - 32.51' R
ROAD FG: 548.81
TOP OF CURB: 549.30
SIDEWALK FG: 549.22

549.26

STA 89+48.63 - 32.50' R
BEGIN 15' RADIUS
FG ELEV: 548.77 (6" CURB)

STA 89+48.63 - 47.50' R
CENTER 15' RADIUS
1/4 FG ELEV = 547.97 (6" CURB)
1/2 FG ELEV = 547.88 (6" CURB)
3/4 FG ELEV = 547.81 (6" CURB)

549.12
548.97
548.81

E. 2ND STREET, STA 89+24.76
OAK STREET, STA 31+50.00
FG: 548.64

STA 89+33.63 - 47.52' R
END 15' RADIUS
FG ELEV: 548.16 (6" CURB)

30+00 | 31+00 | 32+00 | 33+00

STA 31+30.00 FG: 548.56
STA 31+39.00 FG: 548.42
STA 31+60.78 FG: 548.82
STA 31+70.43 FG: 548.71
STA 31+81.43 FG: 548.49
STA 32+00.00 FG: 548.39

STA 89+06.57 - 24.08' L
BEGIN 15' RADIUS
FG ELEV: 547.98 (6" CURB)

STA 30+79.67 - 12.71' R
BEGIN 200' RADIUS
FG ELEV: 548.76 (6" CURB)
1/4 FG ELEV = 549.19
1/2 FG ELEV = 549.12
3/4 FG ELEV = 548.92

89+00

STA 88+91.96 - 12.50' L
END 15' RADIUS
FG ELEV: 548.35

STA 88+91.96 - 27.50' L
CENTER 15' RADIUS
1/4 FG ELEV = 548.46
1/2 FG ELEV = 548.42
3/4 FG ELEV = 548.39

STA 88+76.27 - 3.57' R
BEGIN 60' RADIUS
FG ELEV: 548.67 (6" SLOPED)

R2'

EAST 2ND STREET

STA 89+07.65 - 57.46' R
END 25' RADIUS
FG ELEV: 548.28

STA 88+82.65 - 32.50' R
BEGIN 25' RADIUS
FG ELEV: 548.40

STA 88+82.65 - 57.50' R
CENTER 25' RADIUS
1/4 FG ELEV = 548.35
1/2 FG ELEV = 548.28 (6" CURB)
3/4 FG ELEV = 548.23 (6" CURB)

LEGEND
- STANDARD 6" CURB
- SIDEWALK DROP CURB & TAPERS
- 2" DRIVEWAY DROP CURB
- 4" SLOPED CURB
- 6" SLOPED CURB

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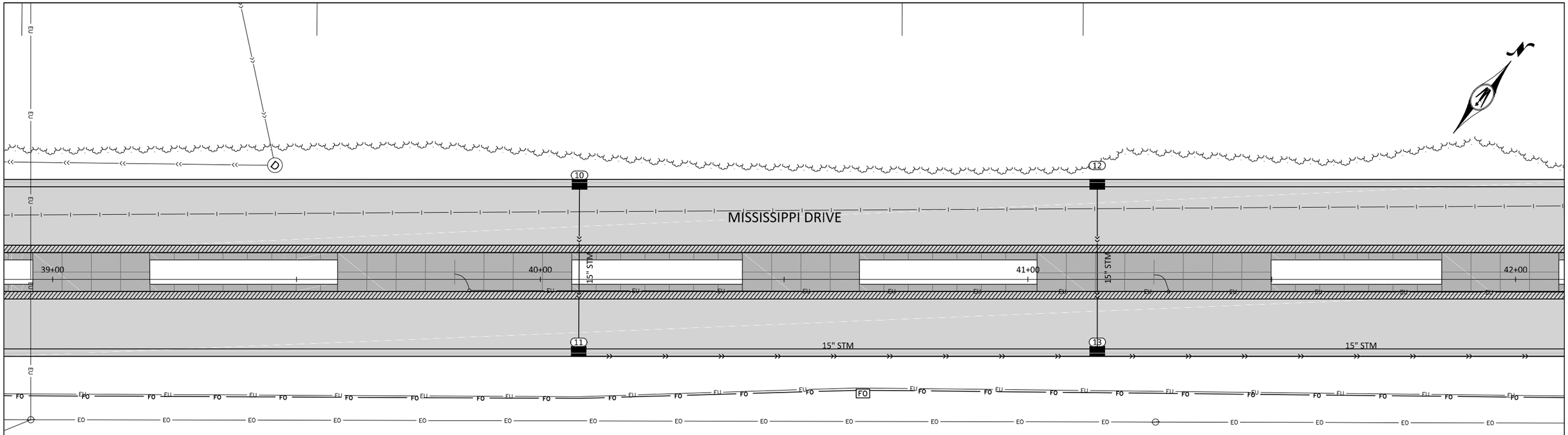
DRAWN GAB
CHECKED MWF

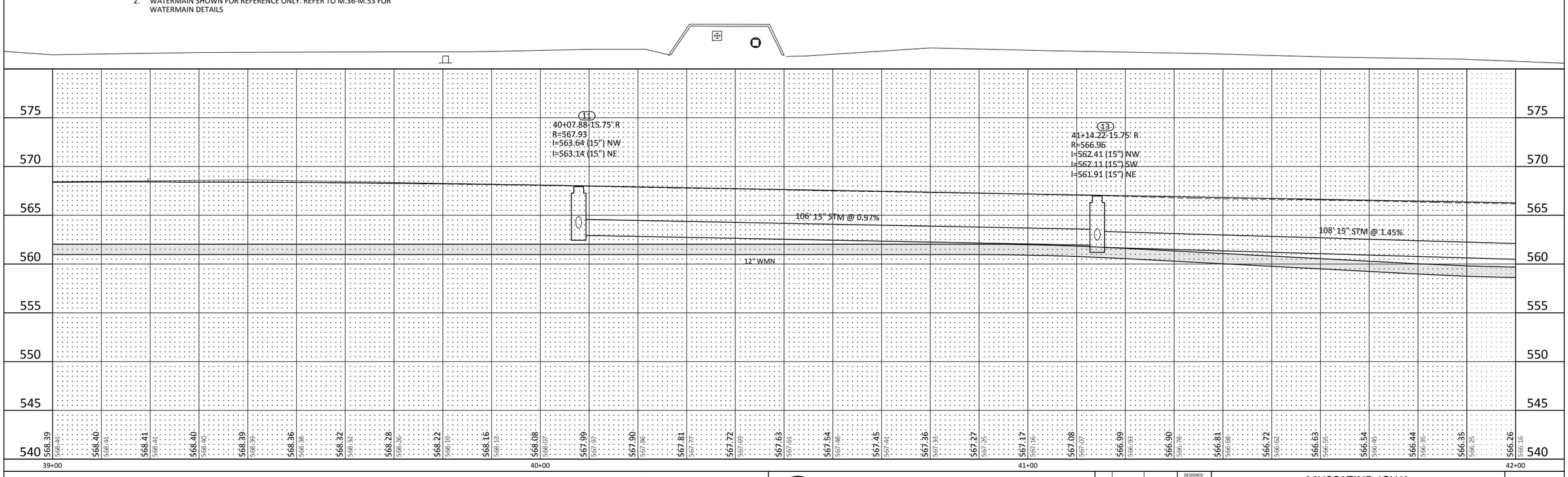
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
INTERSECTION DETAILS

SHEET L.31



NOTES:

1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.20
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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CHECKED KDM

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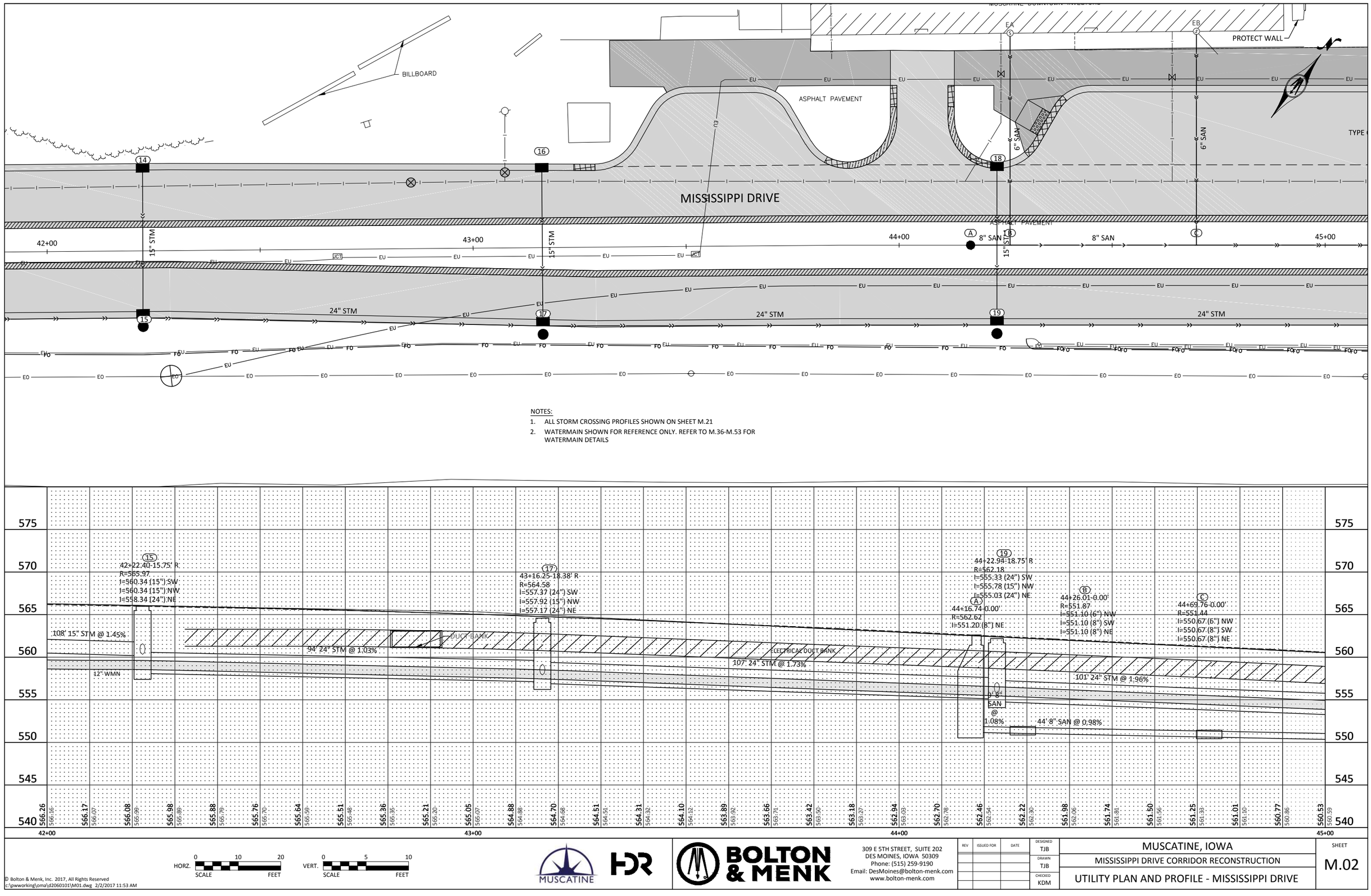
UTILITY PLAN AND PROFILE - MISSISSIPPI DRIVE

SHEET M.01



NOTES:

1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.21
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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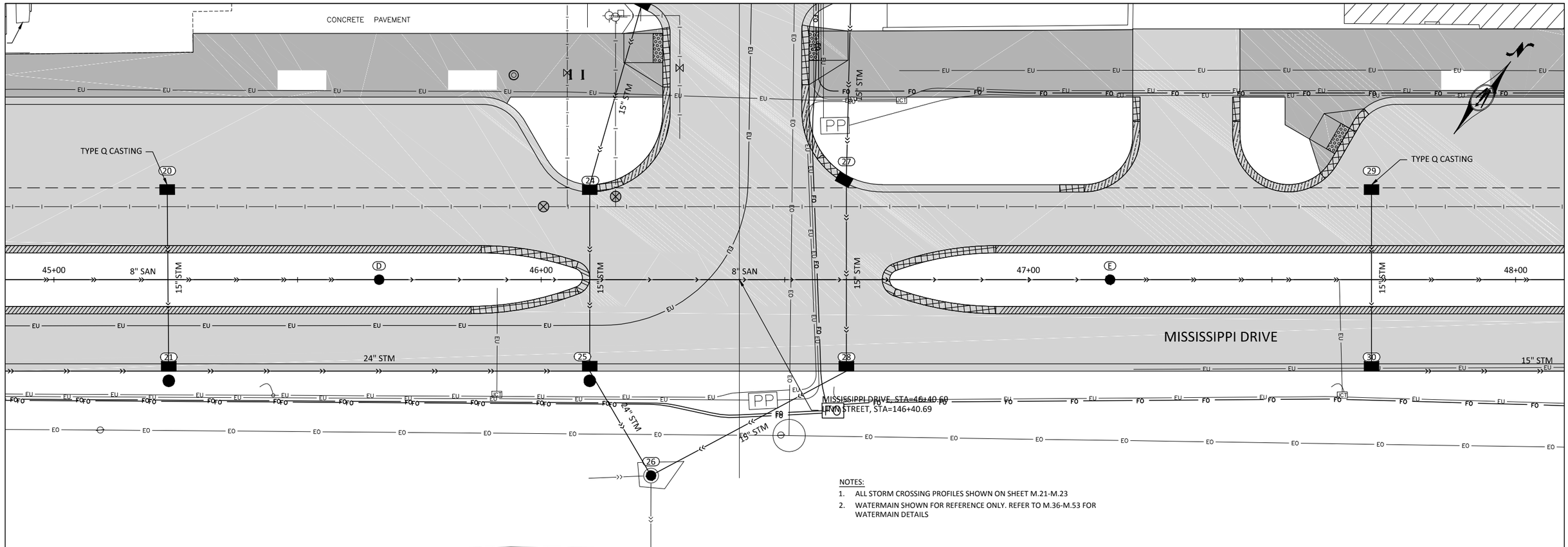
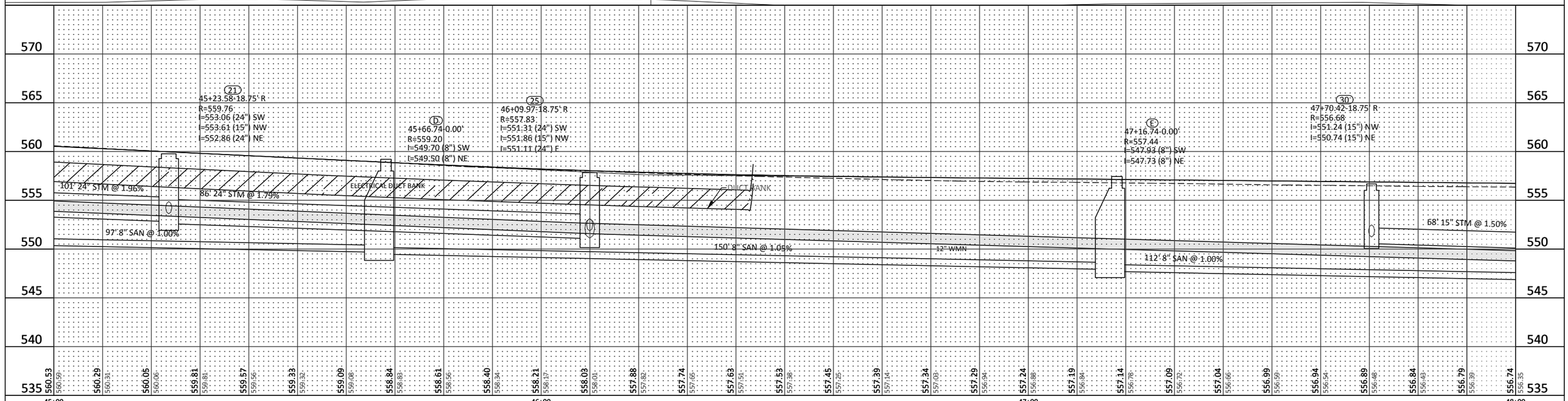
SHEET M.02



NOTES:

1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.21-M.23
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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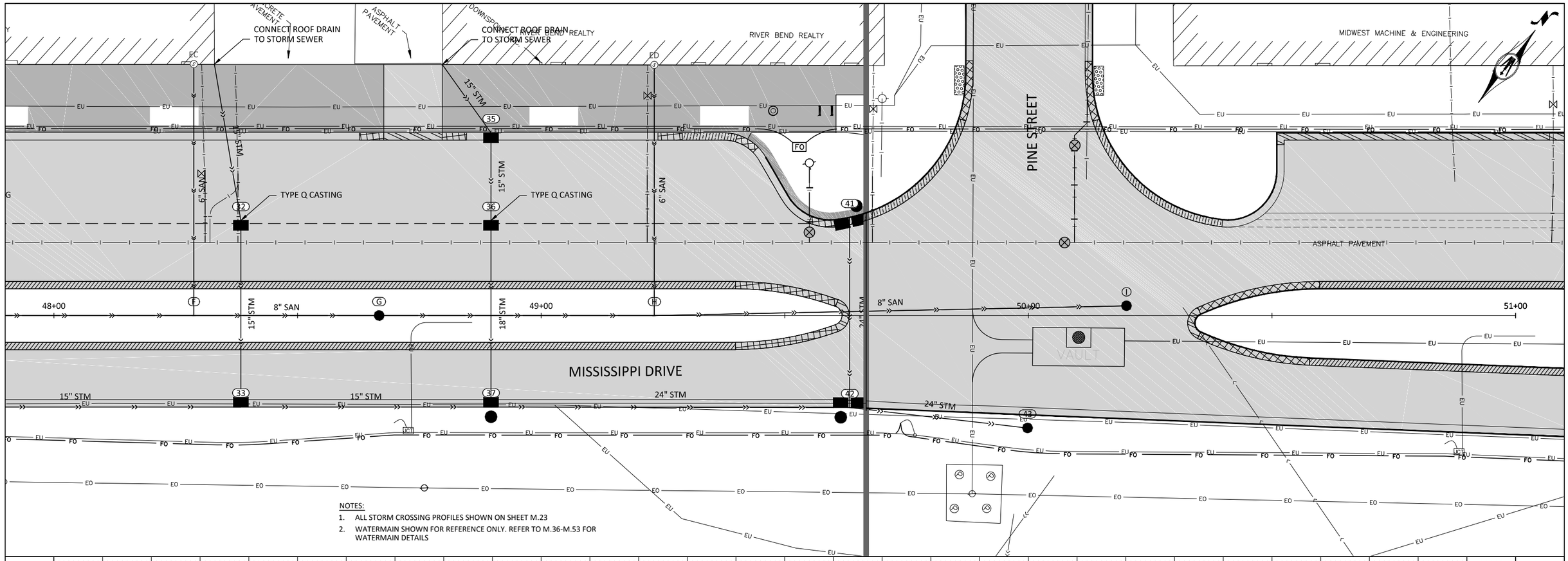
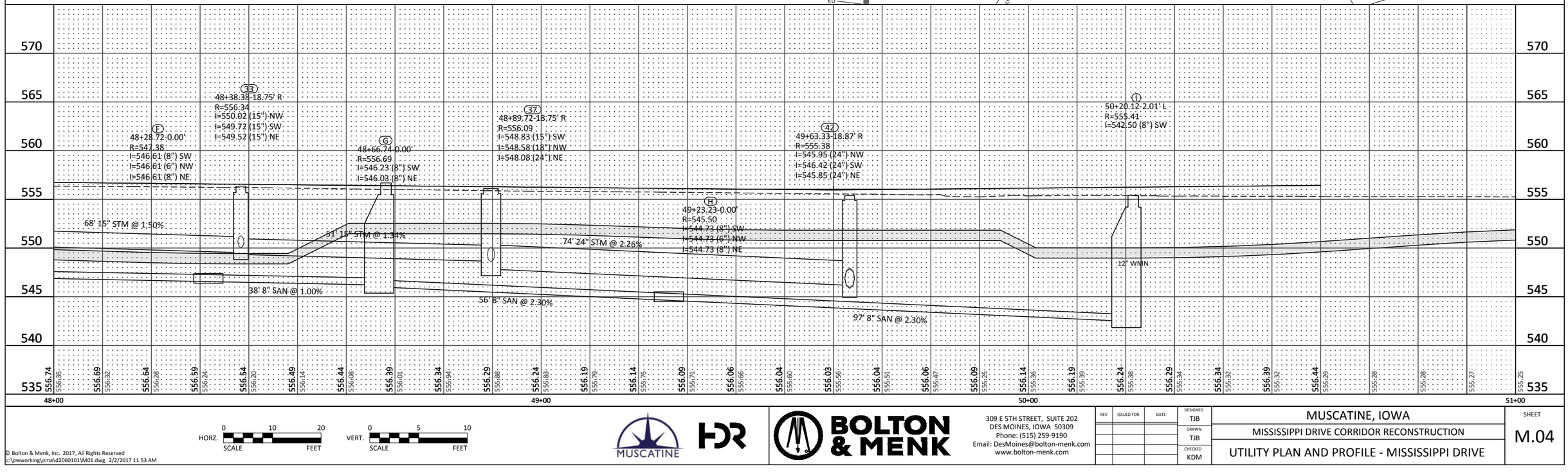
SHEET M.03





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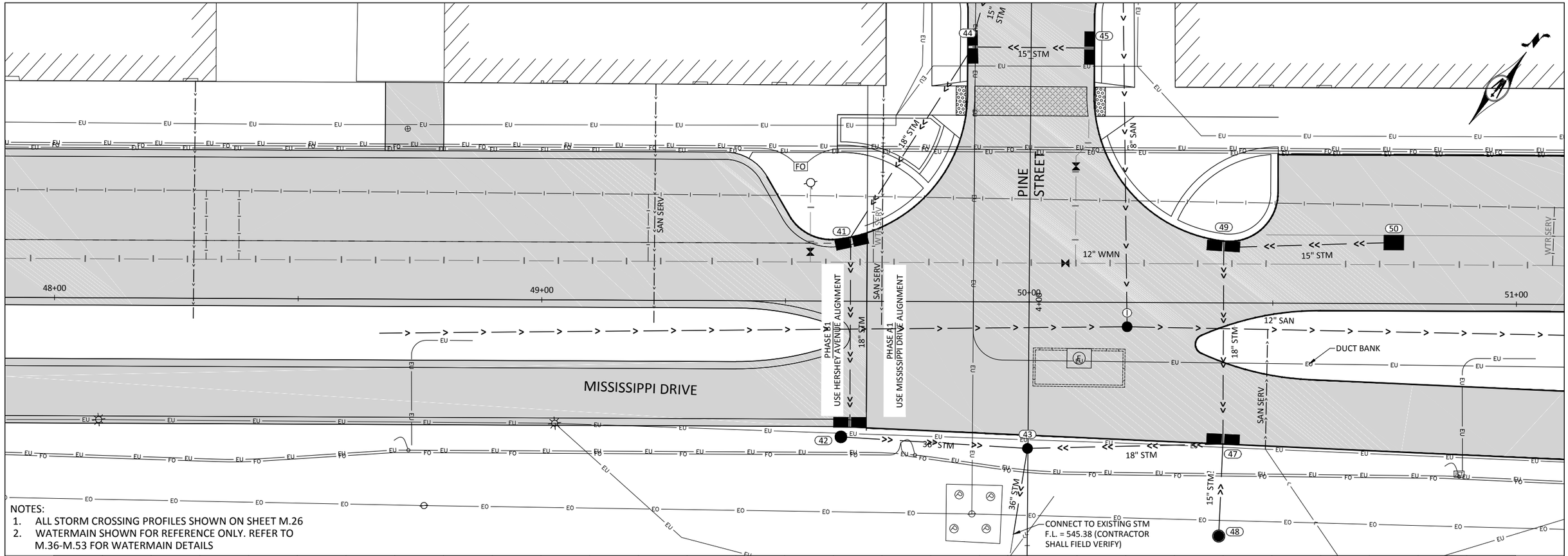
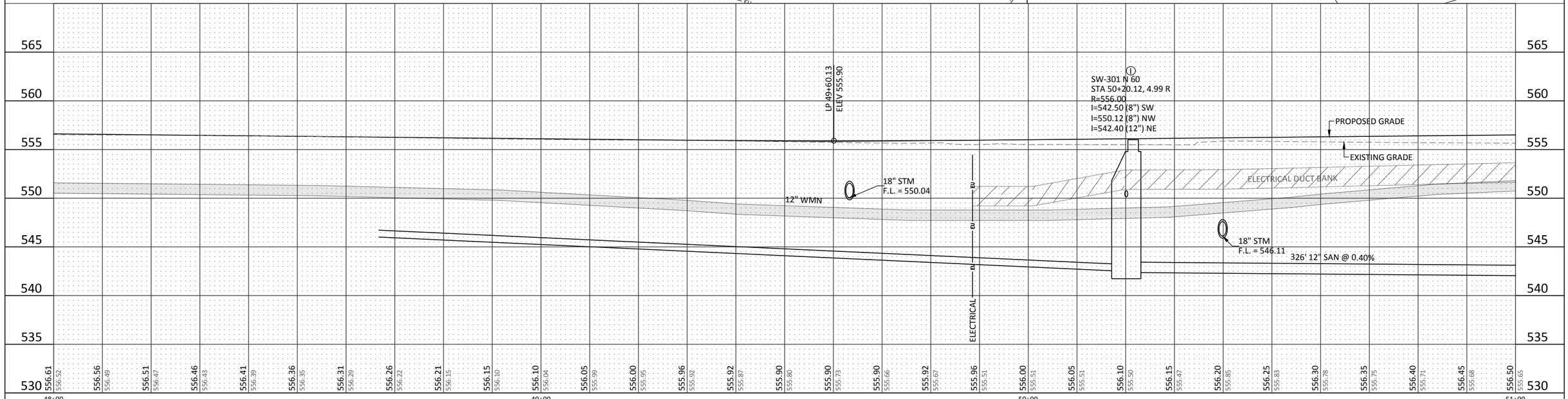
SHEET M.04



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.26
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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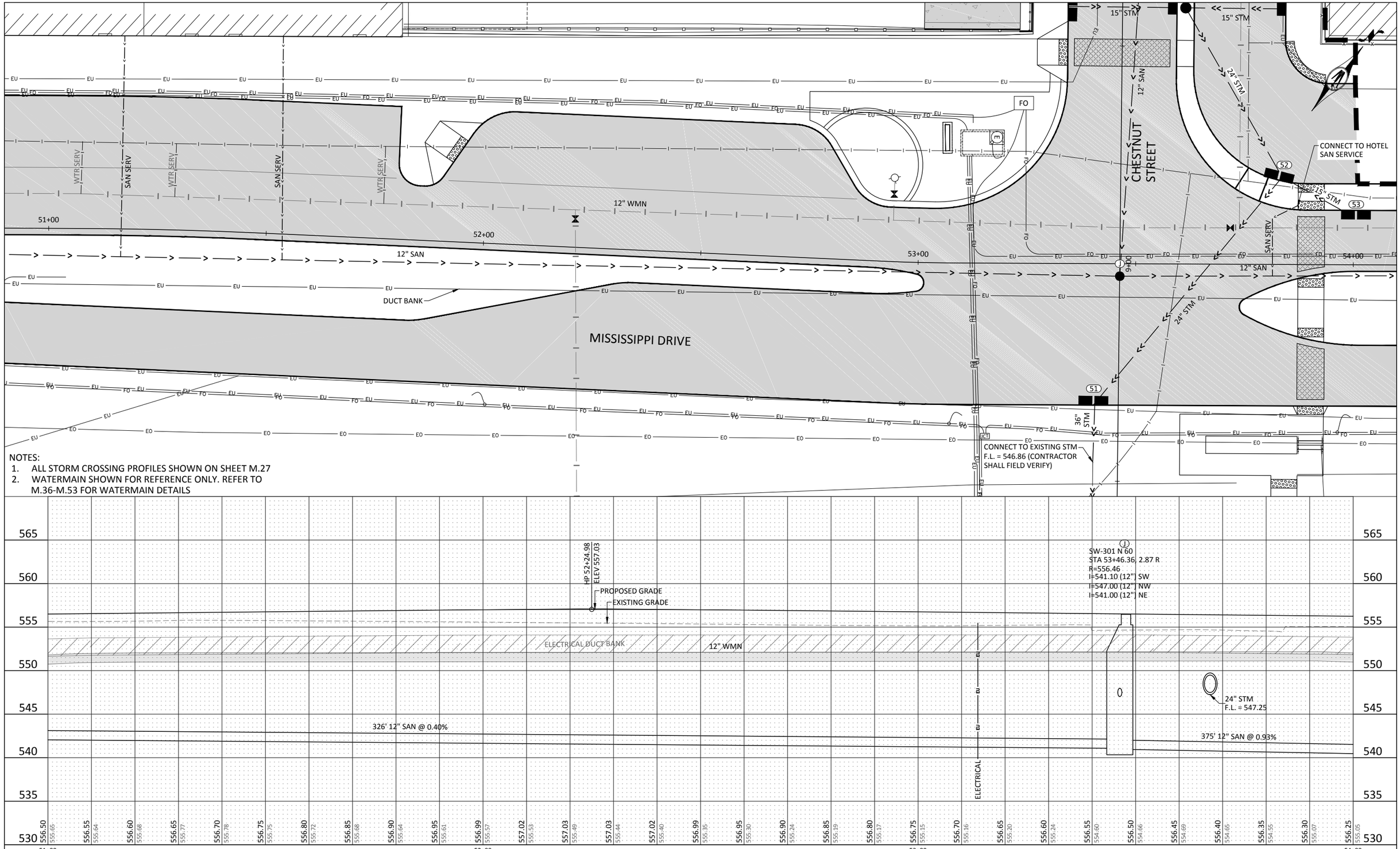
SHEET M.05

NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.27
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. SCALE 0 10 20 FEET
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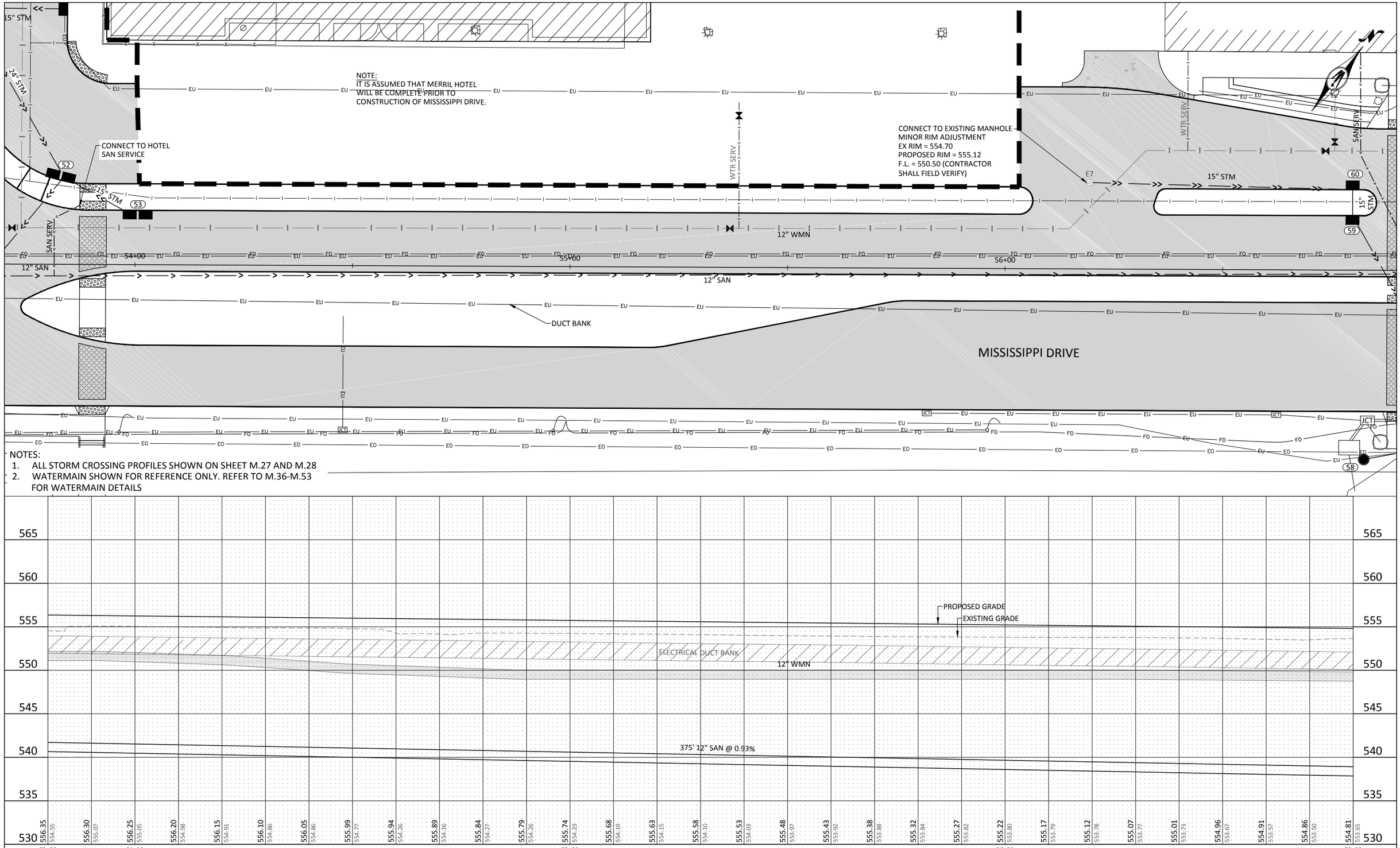
SHEET M.06



NOTES:

1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.27 AND M.28
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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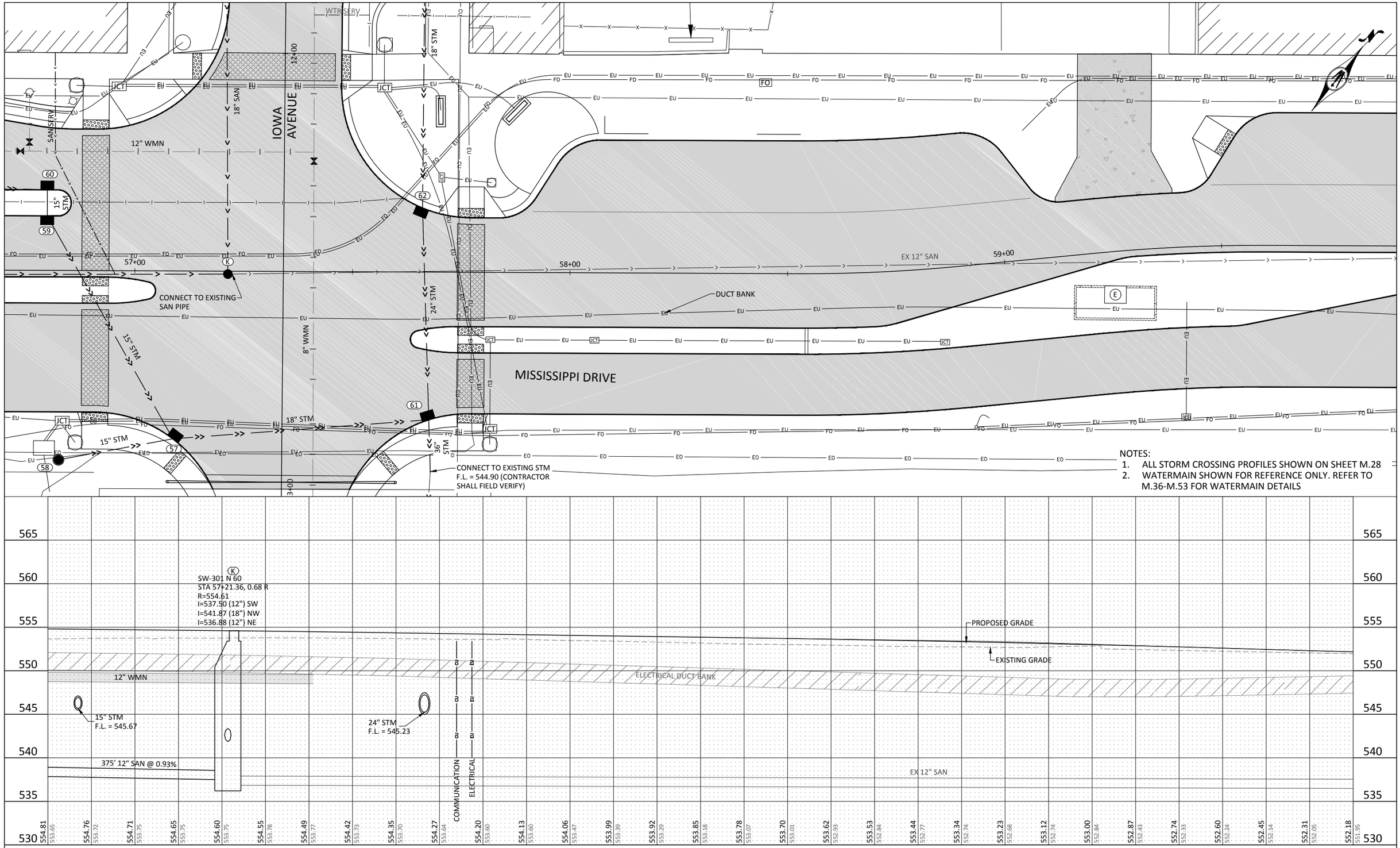
UTILITY PLAN & PROFILE - MISSISSIPPI DRIVE

SHEET M.07



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.28
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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UTILITY PLAN & PROFILE - MISSISSIPPI DRIVE

SHEET M.08

SYCAMORE STREET

MISSISSIPPI DRIVE

18" PCC PAVEMENT

PAPOOSE CREEK TUNNEL PROTECTION AREA, SEE SHEET B.07 FOR DETAILS

DUCT BANK

MAJOR MANHOLE ADJUSTMENT
EX RIM = 551.11
PROP RIM = 551.80

CONNECT EXISTING SAN

ROTATE CONE SO MANHOLE IS BEHIND BACK OF CURB

NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.29
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

EX SSWR MH 1
STA 60+92.51
EXISTING R=551.11
PROPOSED R=551.80
I=536.36 12" SW
I=536.36 12" NE

LP 60+58.77
ELEV 551.70

SW-301 N 72
STA 61+49.45, 1.06 R
R=552.73
I=537.76 (12") NE
I=537.01 (12") SW

SW-505 N 75
STA 61+58.37, -12.51' L
FG=552.03
I=545.94 (18") SE
I=545.76 (18") NE
I=545.84 (24") W

SW-501 N 77
STA 61+89.82, -12.50' L
R=552.30
I=546.02 (18") NE
I=545.92 (18") SW

PROPOSED GRADE
EXISTING GRADE

31' 18" STM @ 0.50%

110' 18" STM @ 0.50%

311' 12" SAN @ 0.40%

ELECTRICAL DUCT BANK

18" STM
F.L. = 543.76

EX 12" SAN

PAPOOSE CREEK

EX 12" SAN

GAS

560	555	550	545	540	535	530	525
552.18	551.95						
552.06	551.86						
551.96	551.76						
551.88	551.64						
551.81	551.53						
551.76	551.42						
551.72	551.38						
551.70	551.34						
551.70	551.30						
551.71	551.25						
551.73	551.17						
551.77	551.14						
551.83	551.21						
551.90	551.24						
551.98	551.25						
552.06	551.05						
552.15	551.48						
552.23	551.52						
552.31	551.60						
552.39	551.67						
552.47	551.72						
552.56	551.80						
552.64	551.88						
552.72	551.95						
552.80	552.00						
552.88	552.04						
552.97	552.04						
553.05	552.03						
553.13	552.04						
553.21	552.08						
553.29	552.11						

59+80 60+00 61+00 62+00 62+80

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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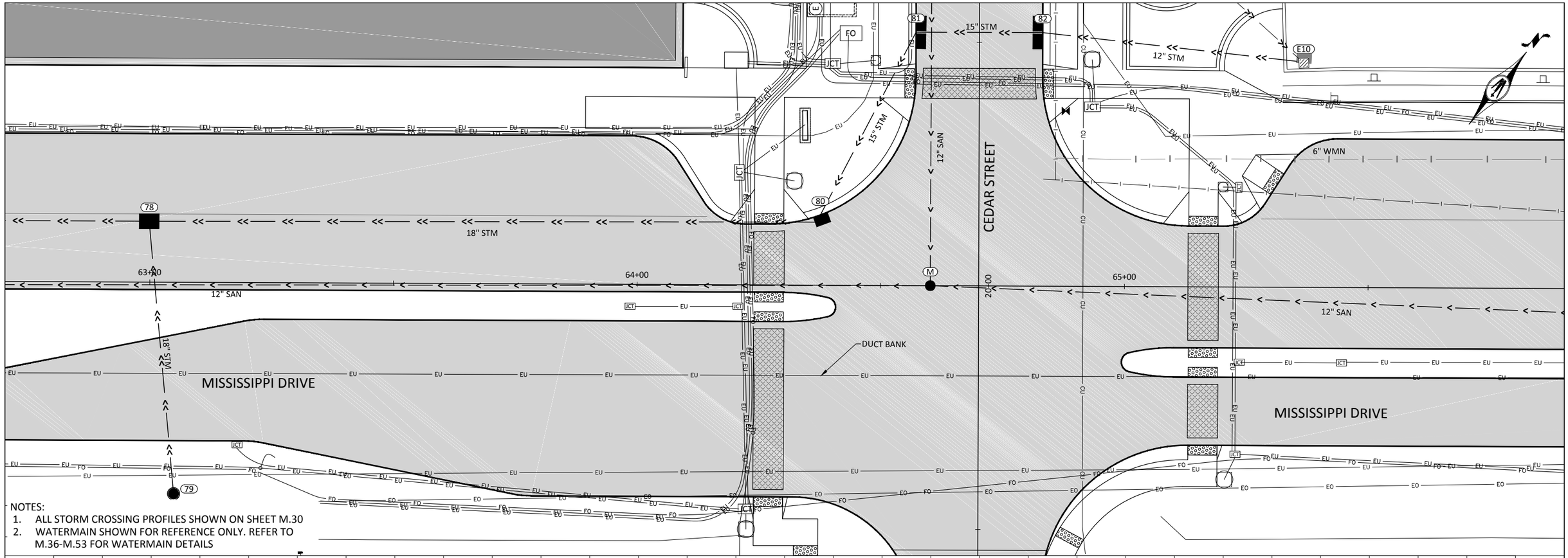
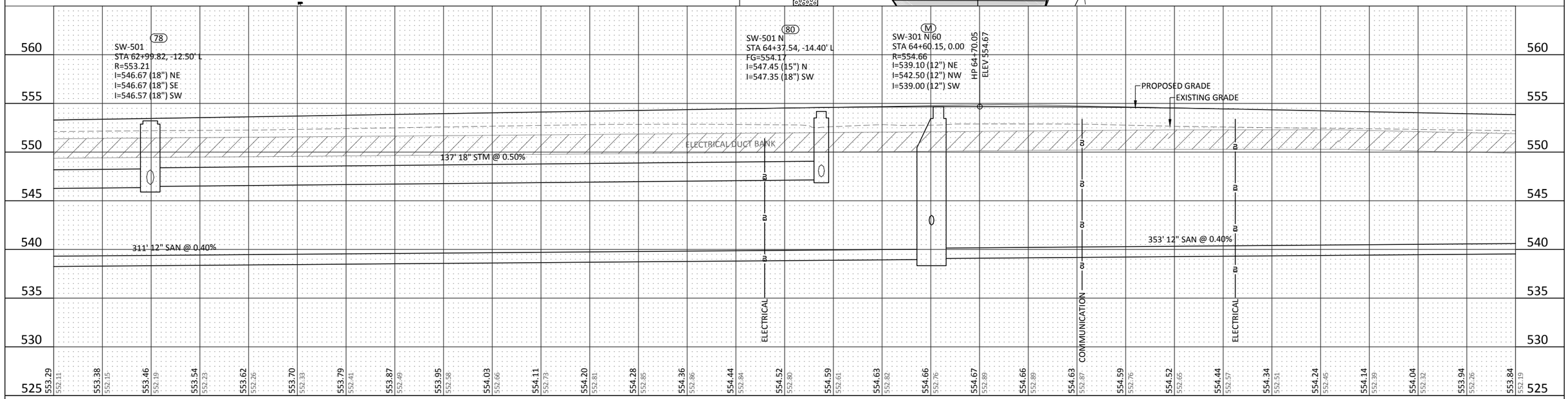
SHEET M.09



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.30
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. 0 10 20 SCALE FEET
VERT. 0 5 10 SCALE FEET

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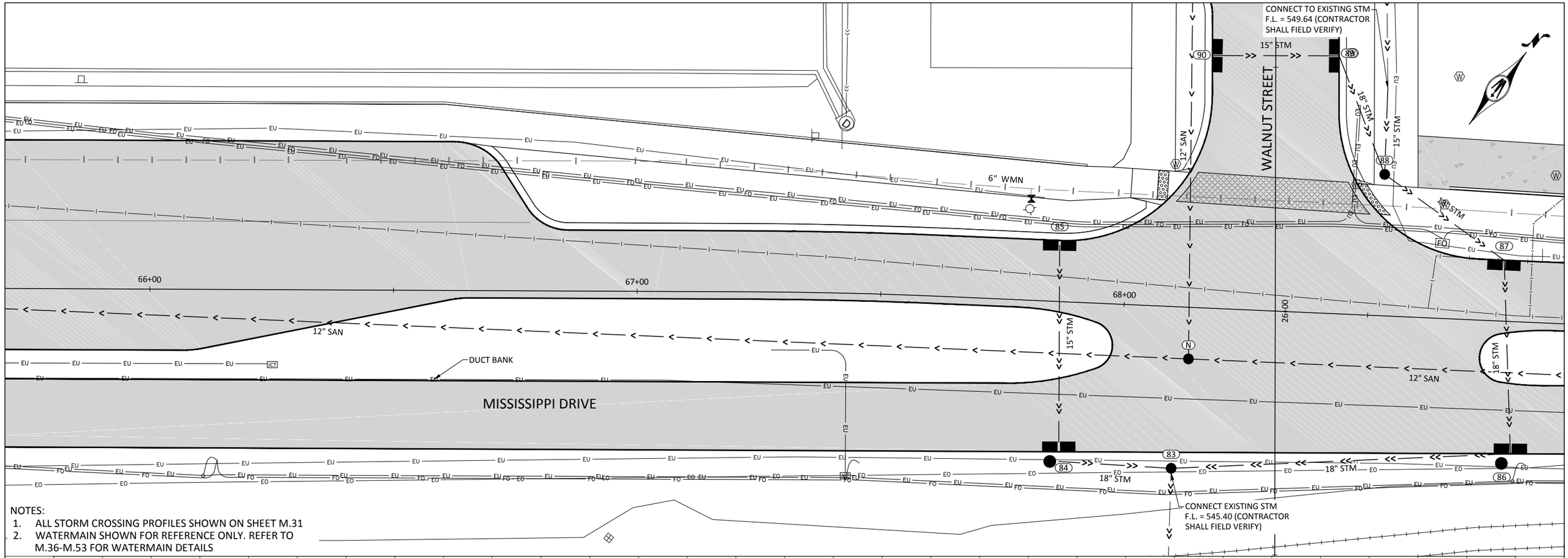
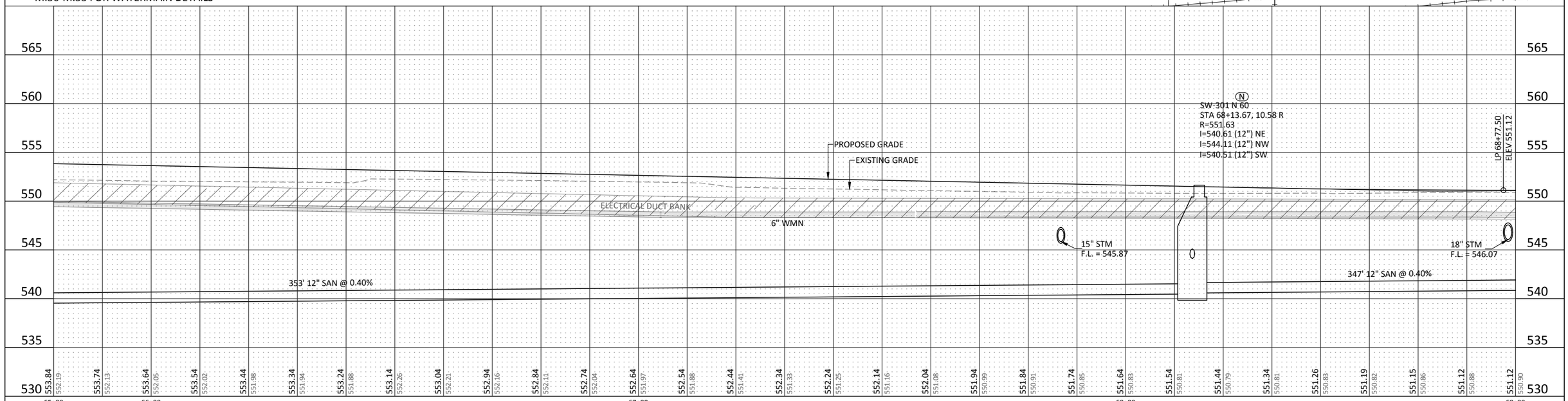
UTILITY PLAN & PROFILE - MISSISSIPPI DRIVE

SHEET M.10



NOTES:

1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.31
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



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VERT. SCALE 0 5 10 FEET

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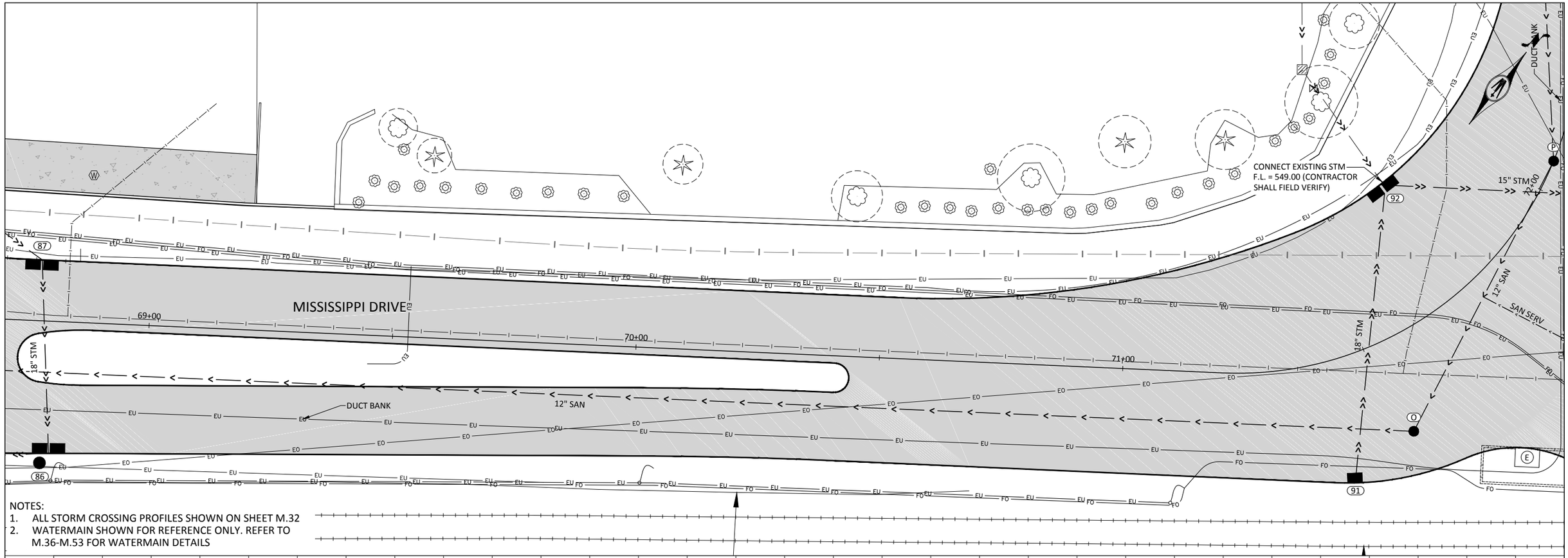
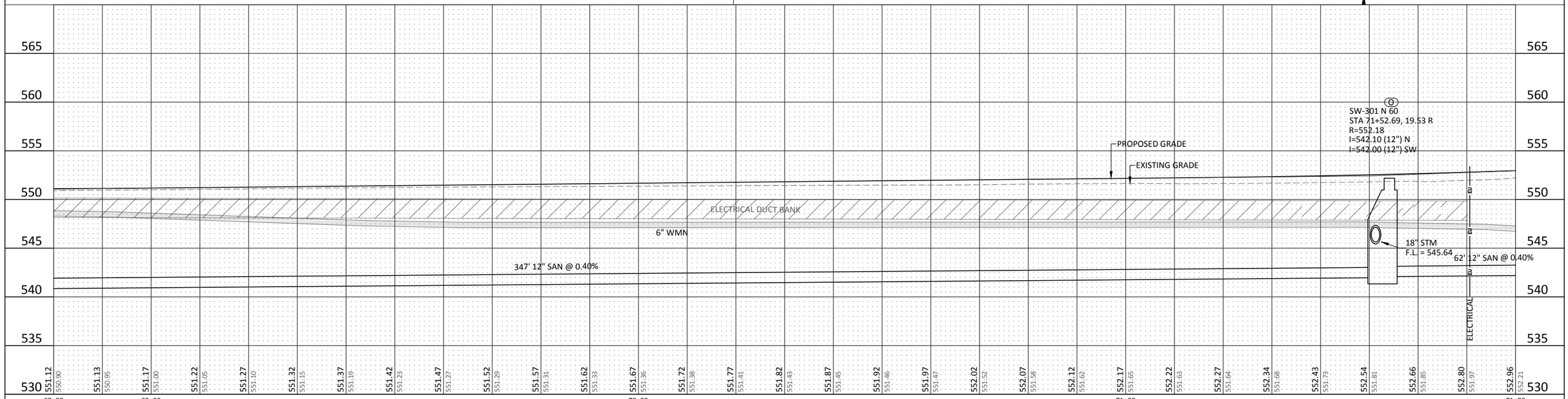
UTILITY PLAN & PROFILE - MISSISSIPPI DRIVE

SHEET M.11



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.32
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



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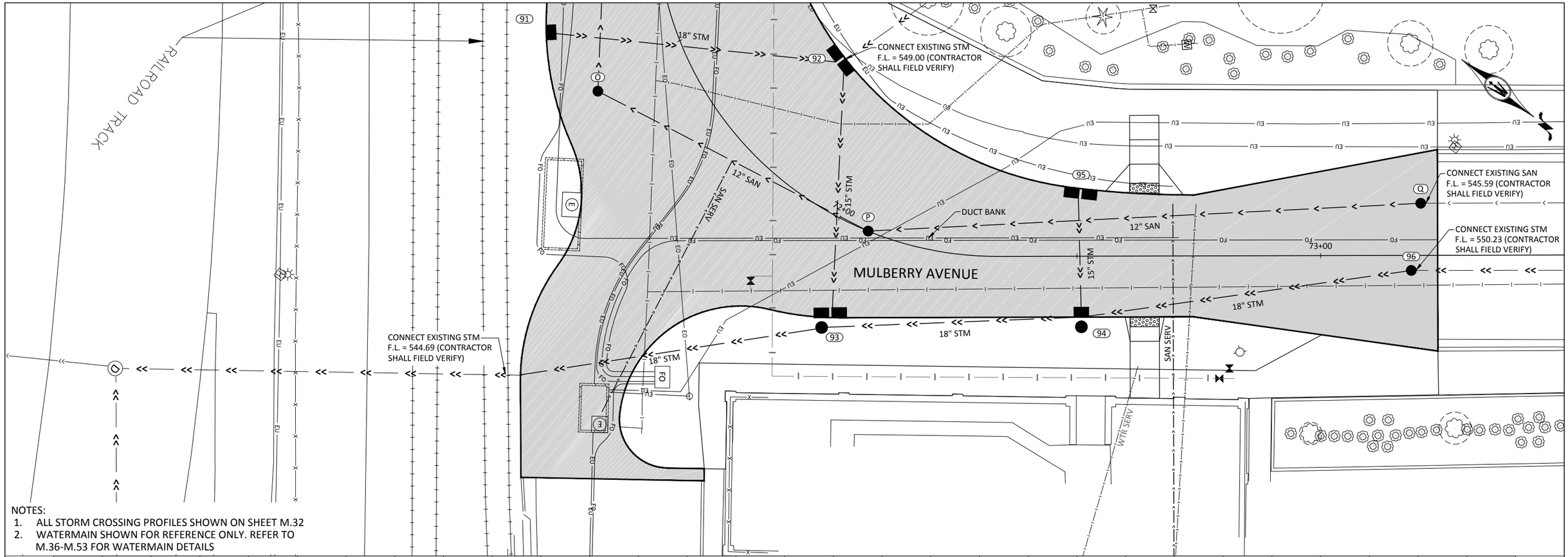
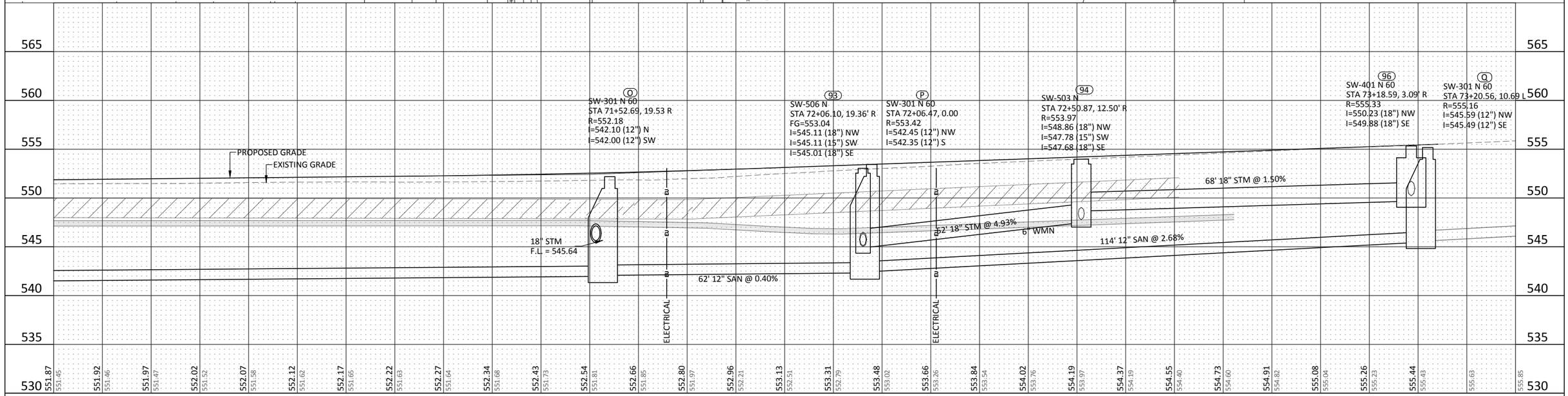
SHEET M.12



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.32
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



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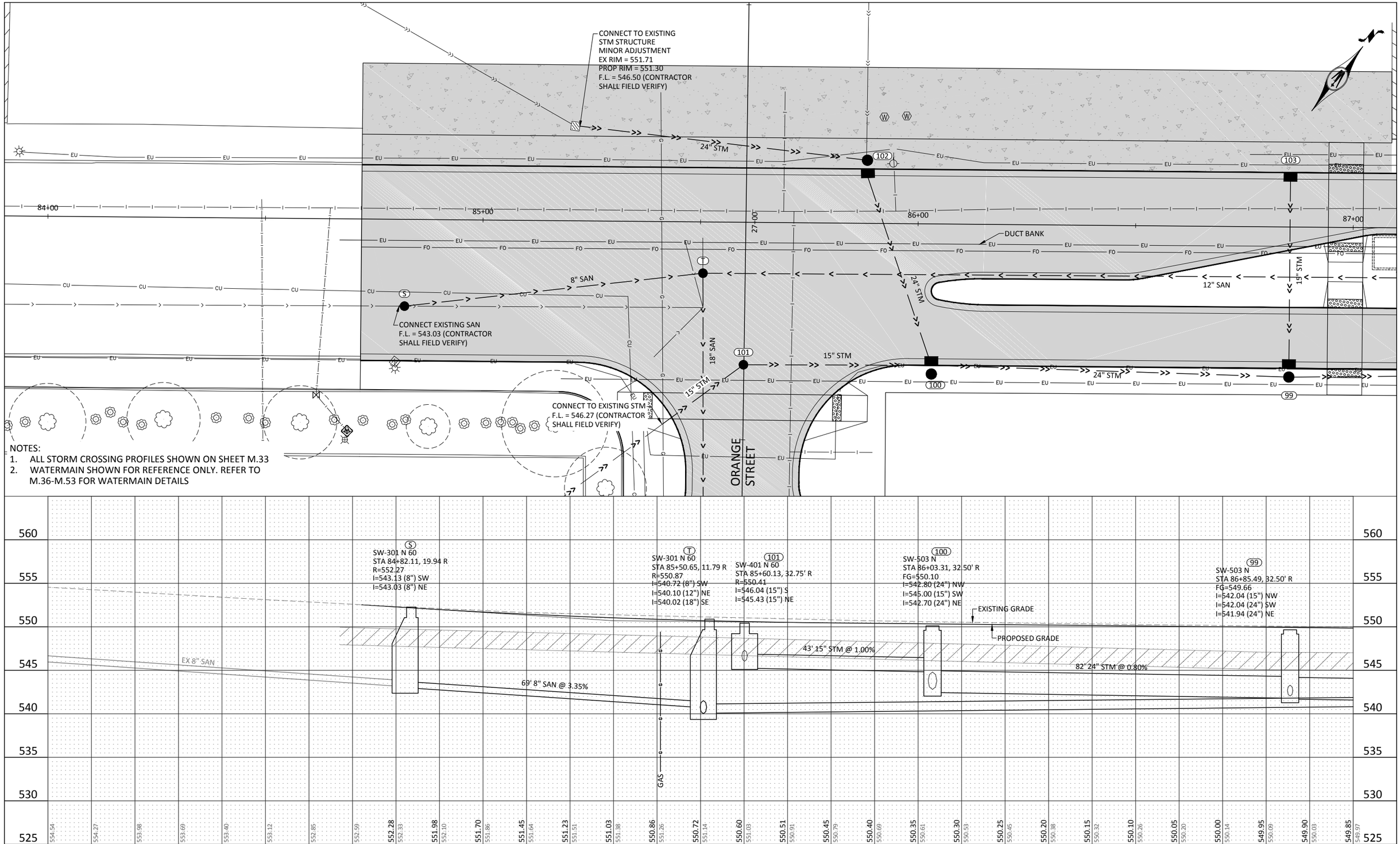
SHEET M.13



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.33
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HORZ. 0 10 20 SCALE FEET

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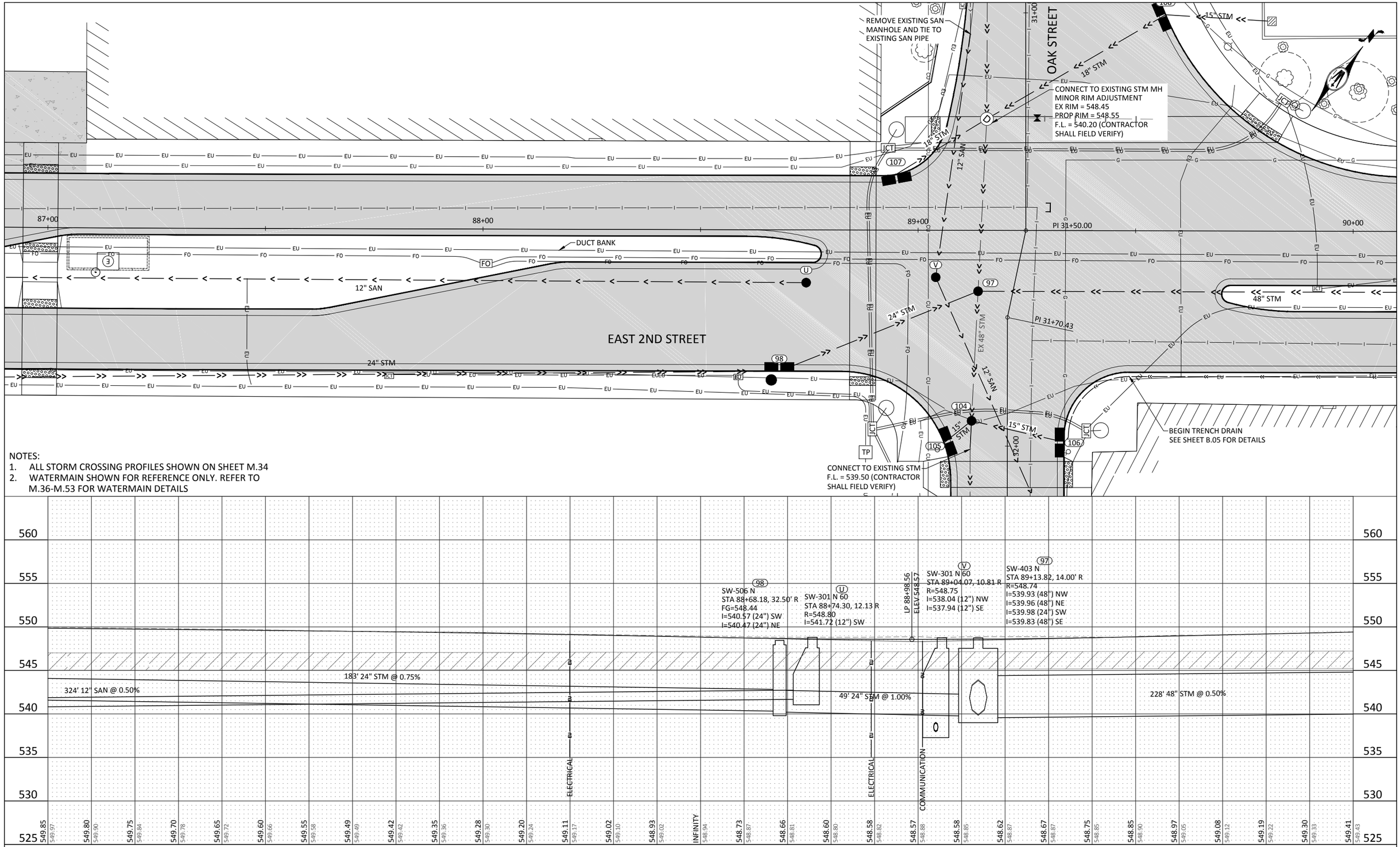
UTILITY PLAN & PROFILE - E 2ND STREET

SHEET M.14



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.34
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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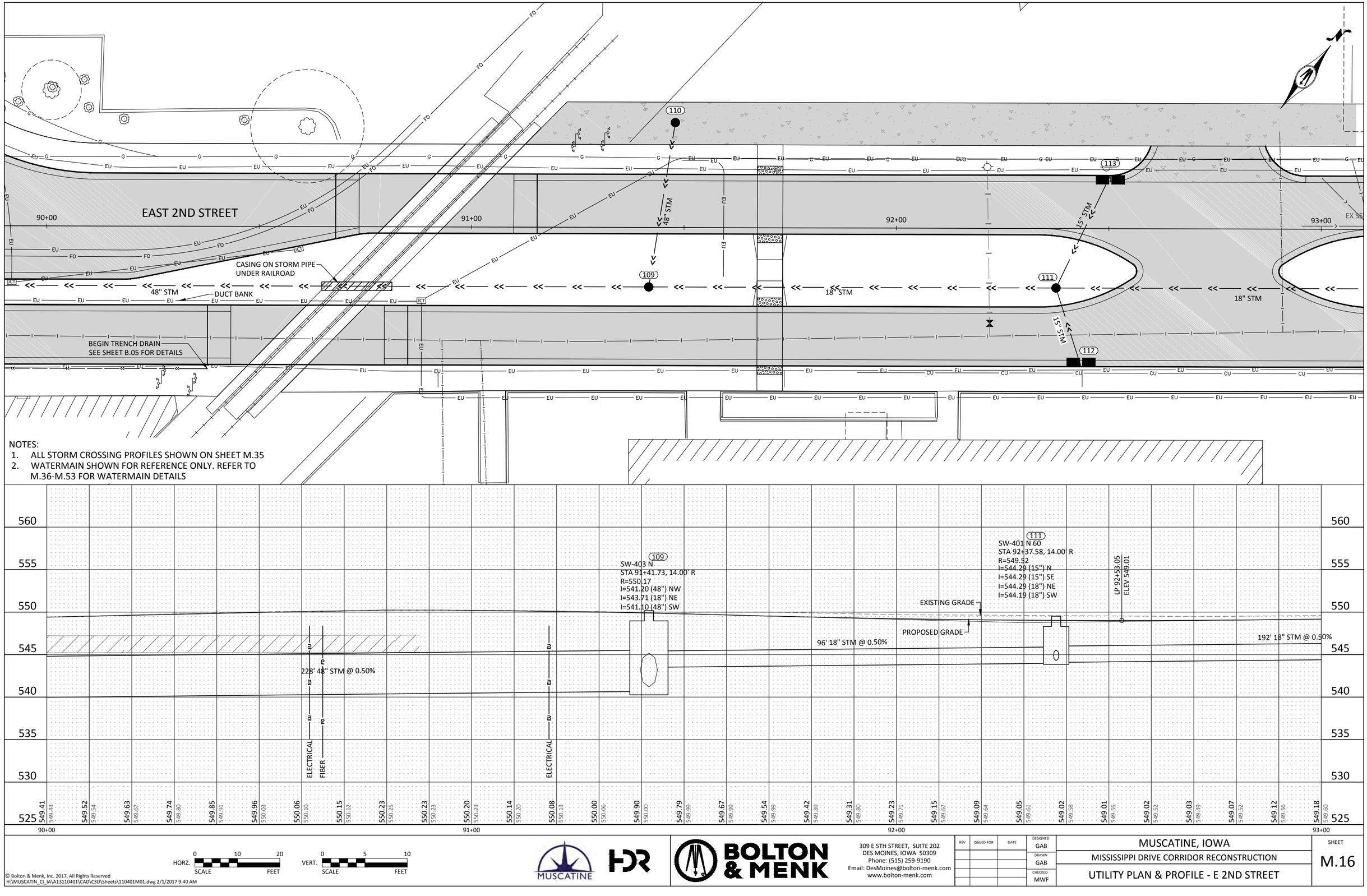
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY PLAN & PROFILE - E 2ND STREET

SHEET M.15



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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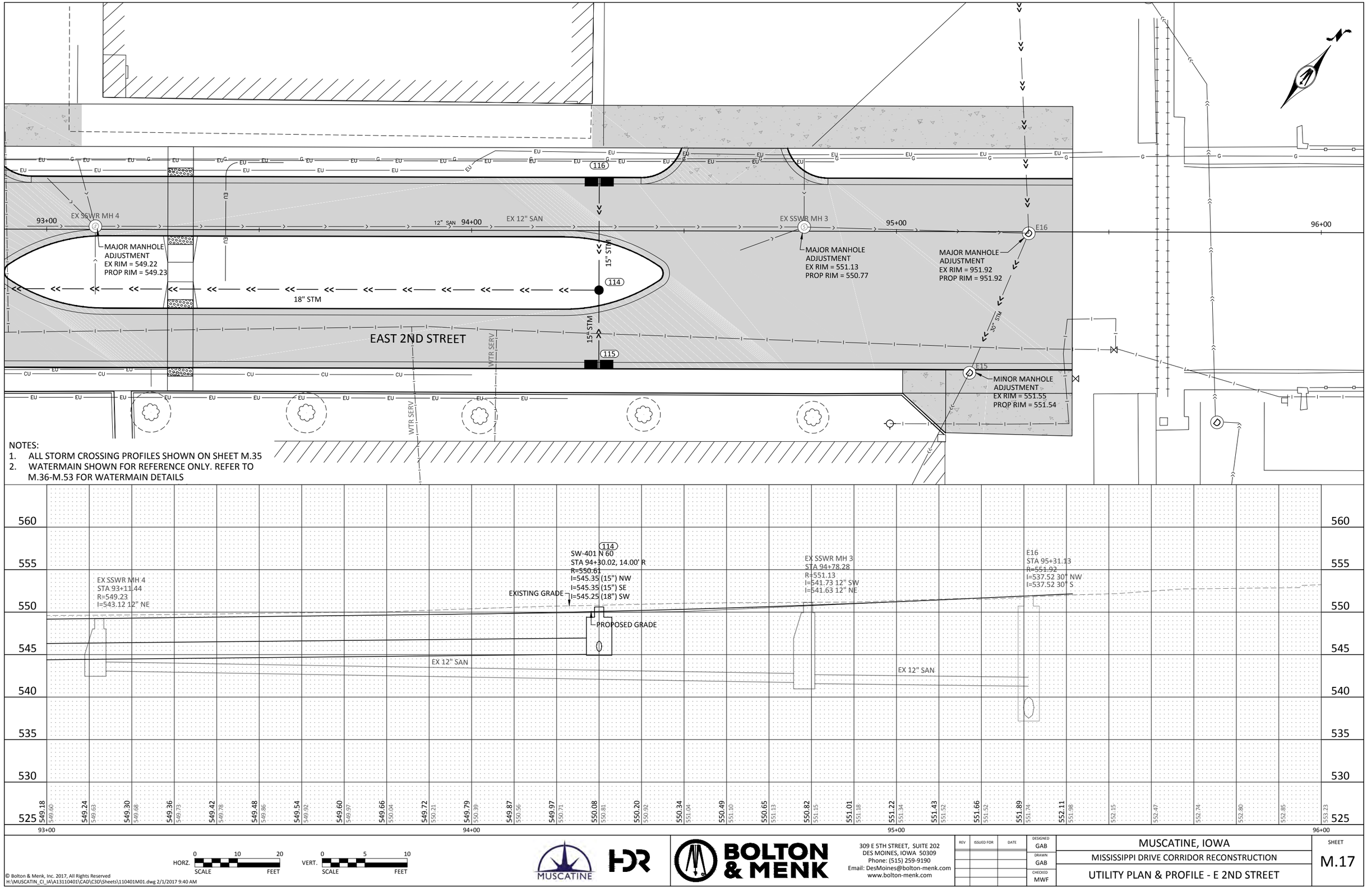
UTILITY PLAN & PROFILE - E 2ND STREET

SHEET M.16



NOTES:
1. ALL STORM CROSSING PROFILES SHOWN ON SHEET M.35
2. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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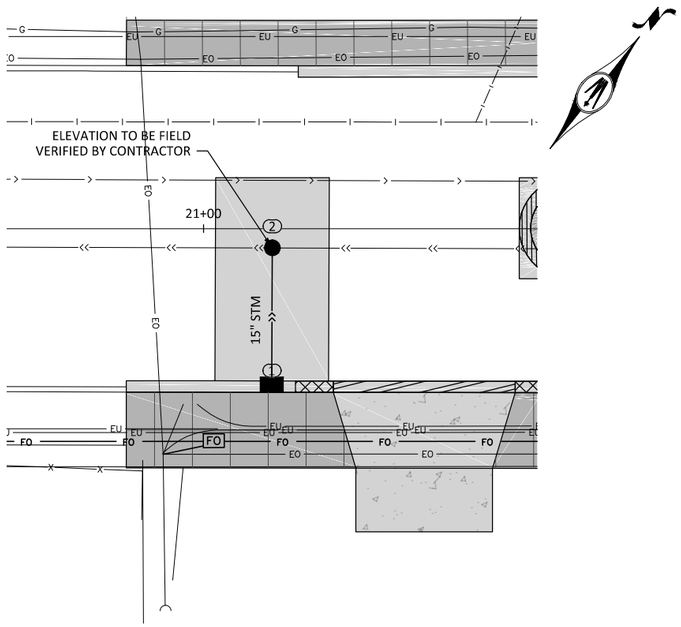
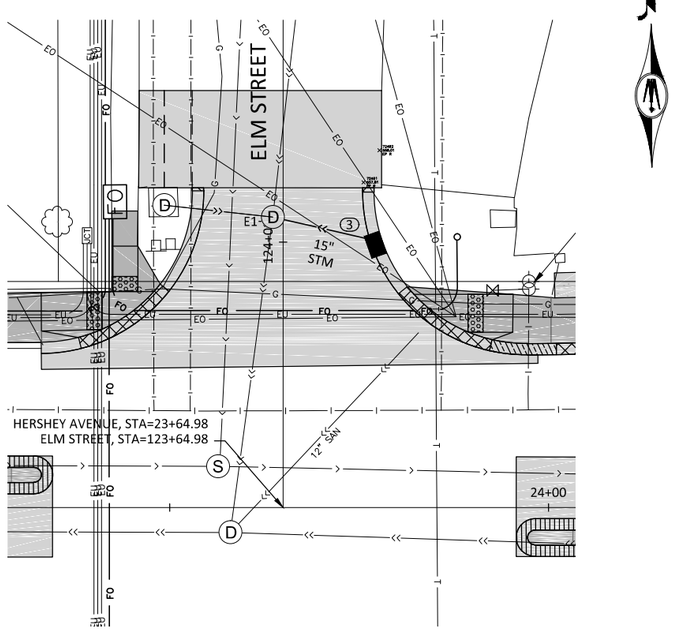
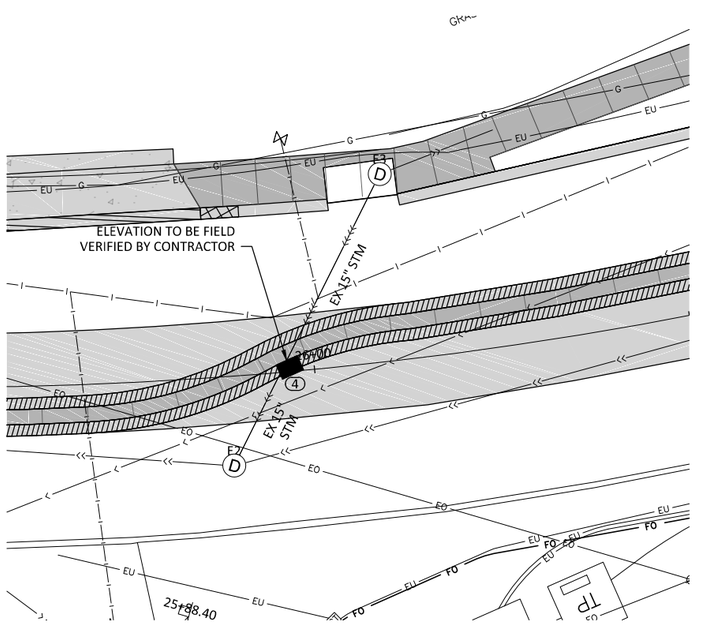
UTILITY PLAN & PROFILE - E 2ND STREET

SHEET M.17

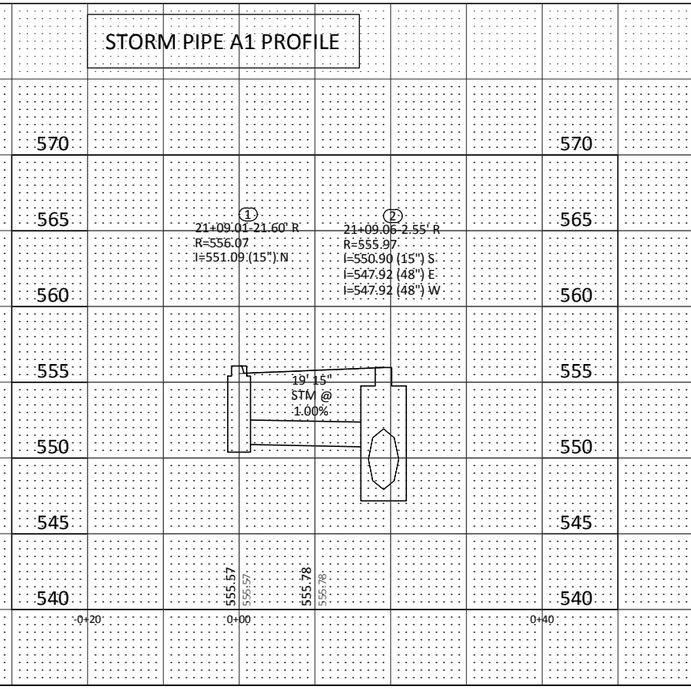




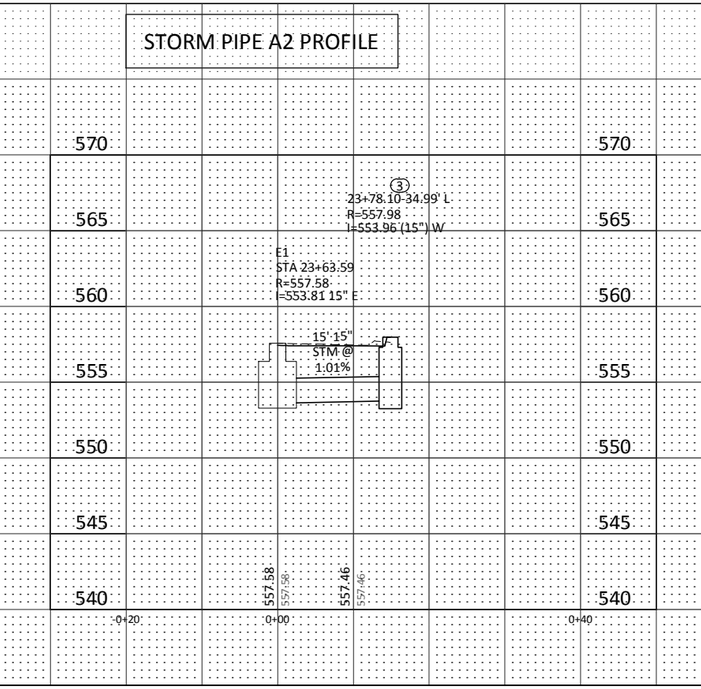
NOTE:
1. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



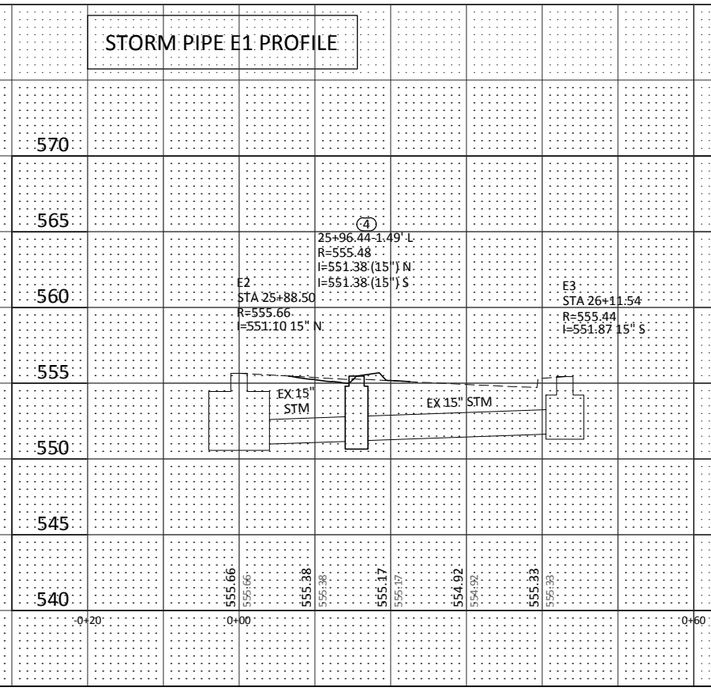
STORM PIPE A1 PROFILE

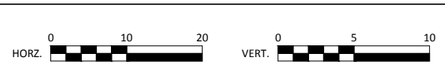


STORM PIPE A2 PROFILE



STORM PIPE E1 PROFILE





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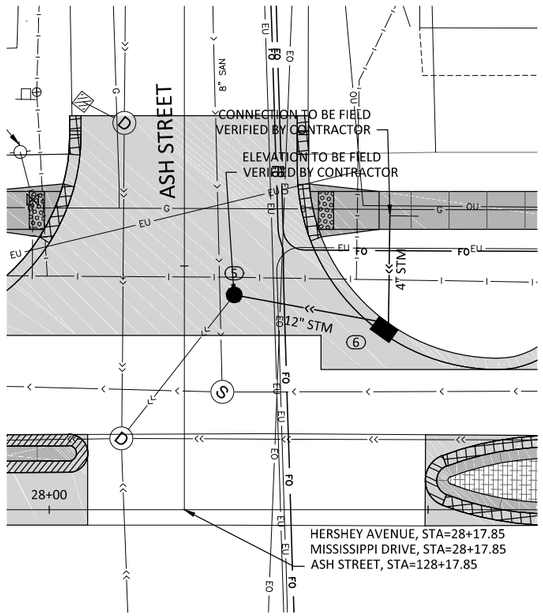
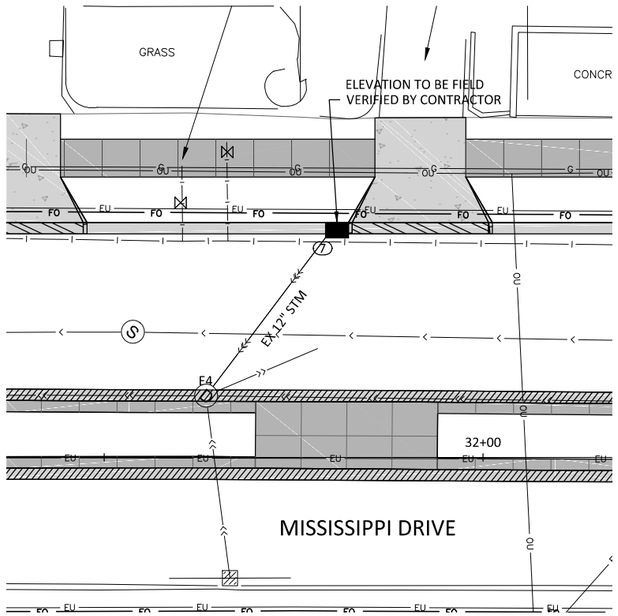
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - HERSHEY AVENUE

SHEET M.18

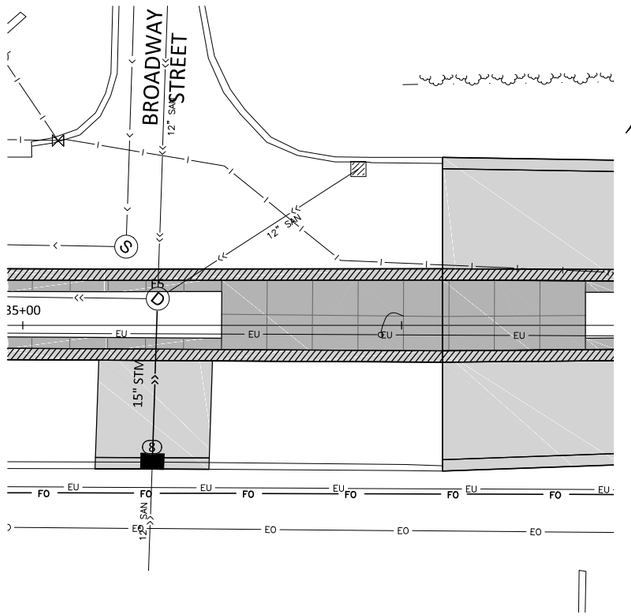


HORZ. SCALE 0 10 20 FEET



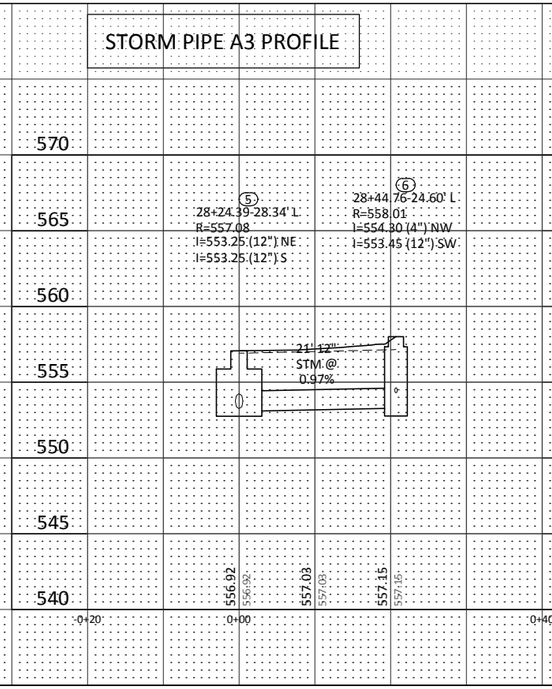
NOTE:
1. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET

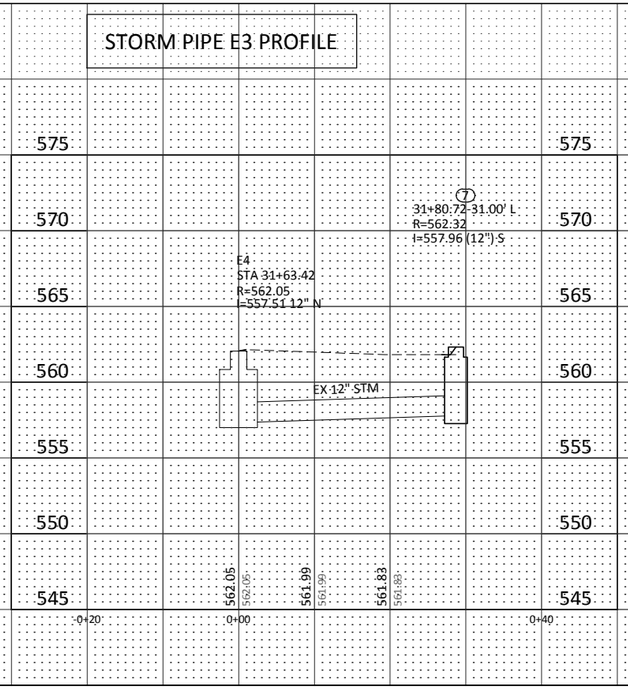


HORZ. SCALE 0 10 20 FEET

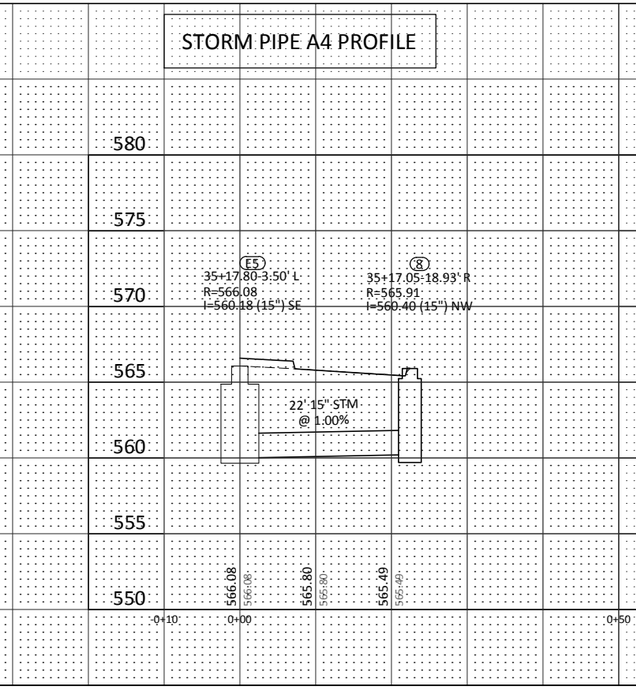
STORM PIPE A3 PROFILE



STORM PIPE E3 PROFILE



STORM PIPE A4 PROFILE



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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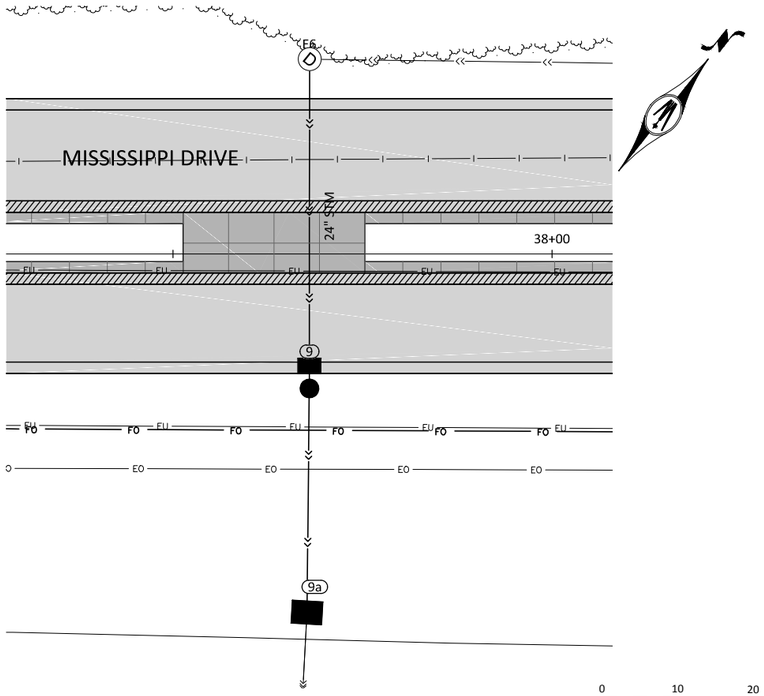
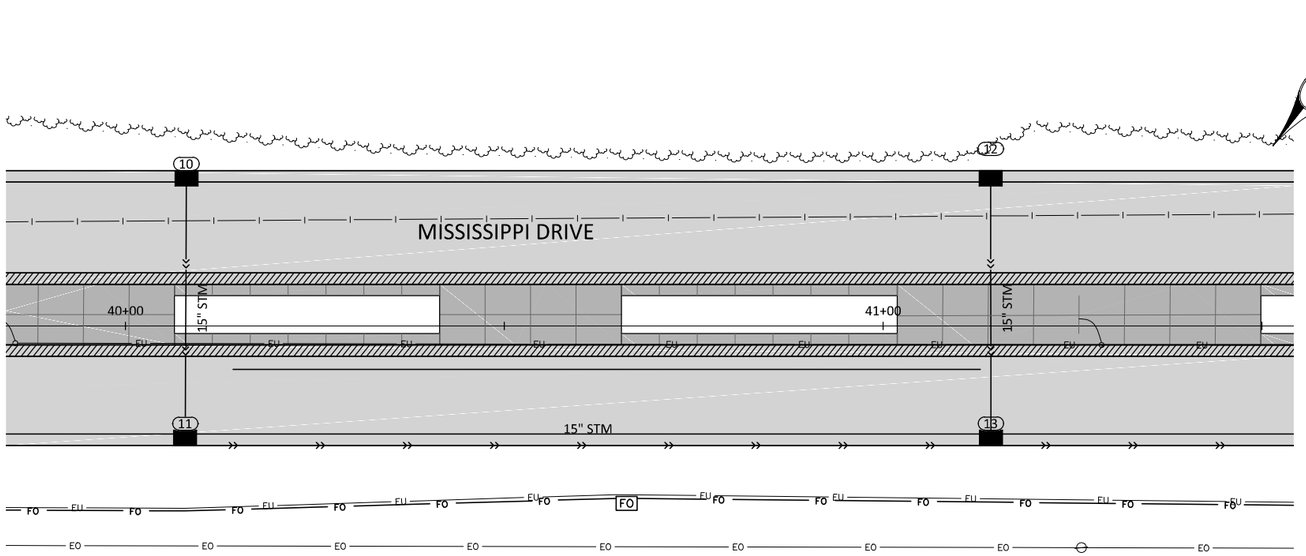
UTILITY CROSS RUNS - HERSHEY AVENUE

SHEET M.19



HORZ. SCALE 0 10 20 FEET

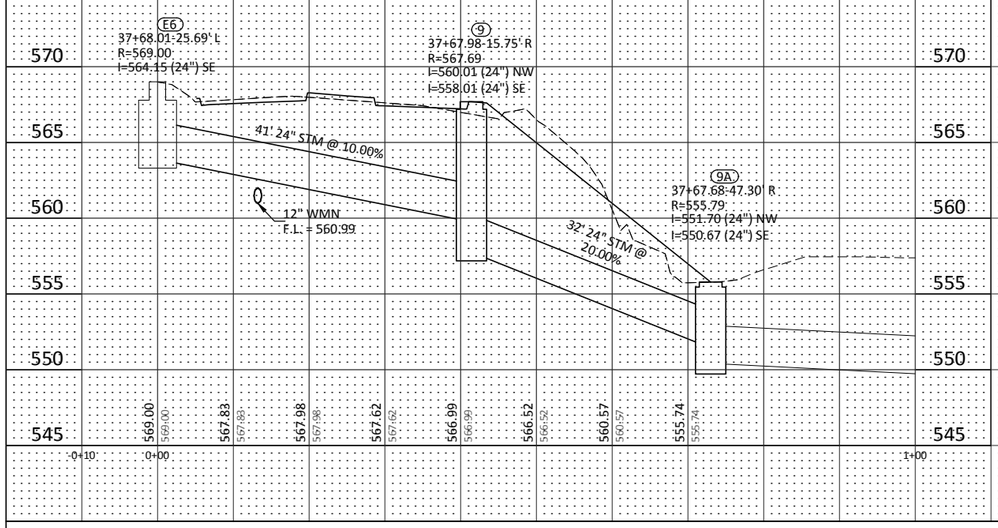


NOTE:

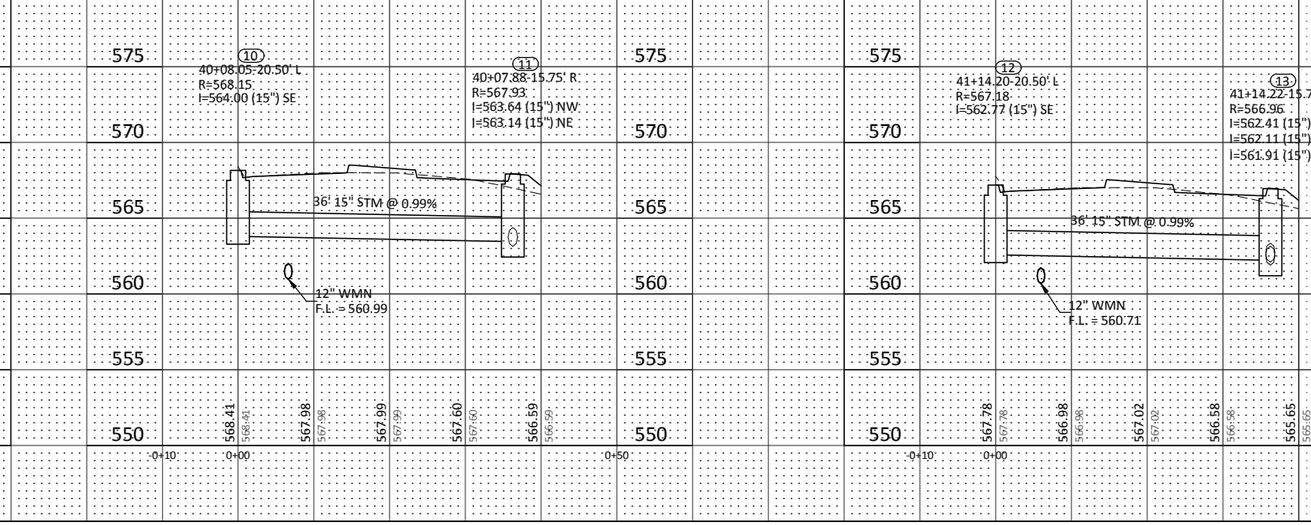
1. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET

STORM PIPE A5 PROFILE



STORM PIPE B1 PROFILE



STORM PIPE B3 PROFILE

HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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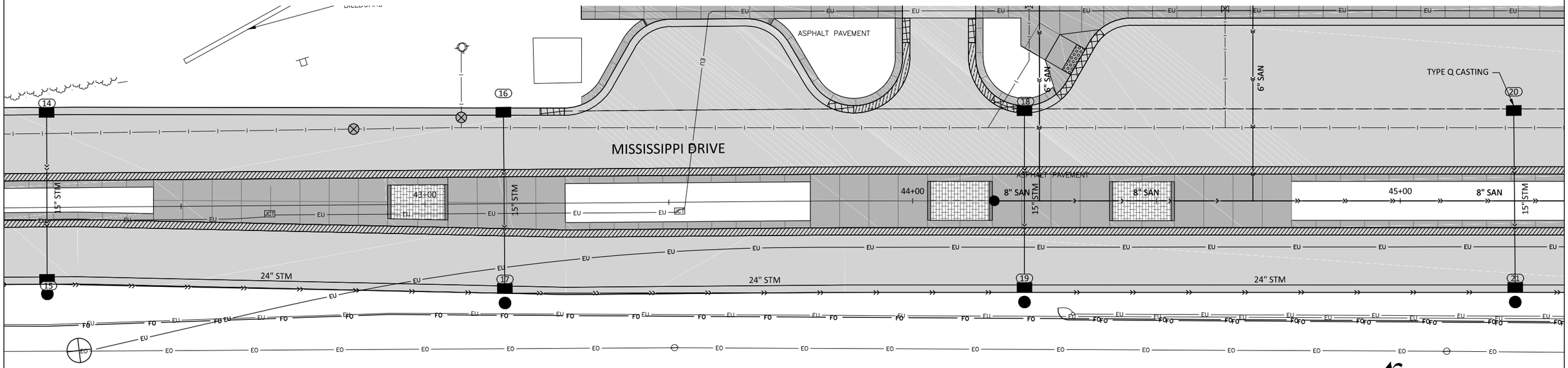
UTILITY CROSS RUNS - MISSISSIPPI DRIVE

SHEET M.20

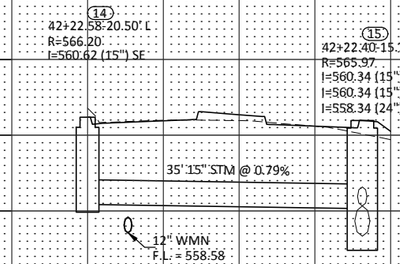


NOTE:

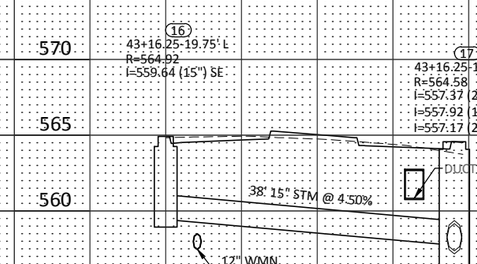
1. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET

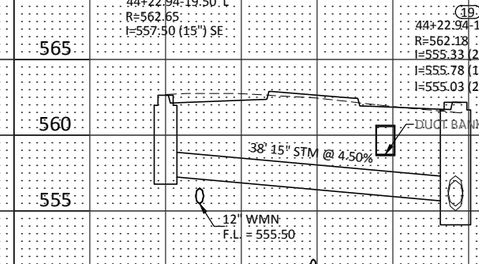
STORM PIPE B5 PROFILE



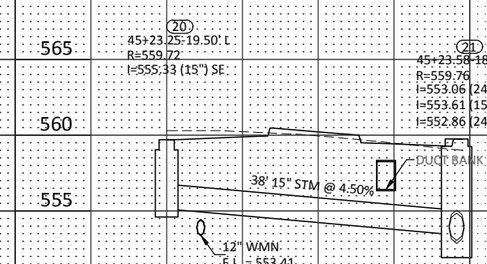
STORM PIPE B7 PROFILE



STORM PIPE B9 PROFILE



STORM PIPE B11 PROFILE



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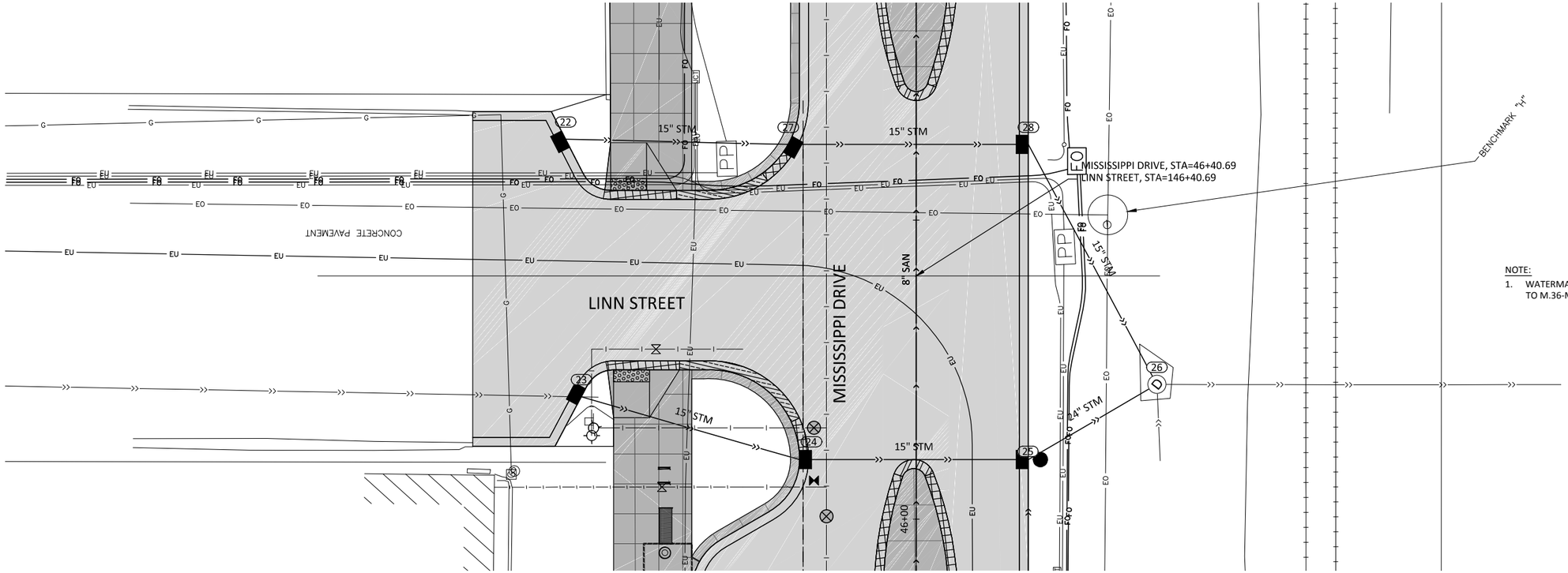
UTILITY CROSS RUNS - MISSISSIPPI DRIVE

SHEET M.21

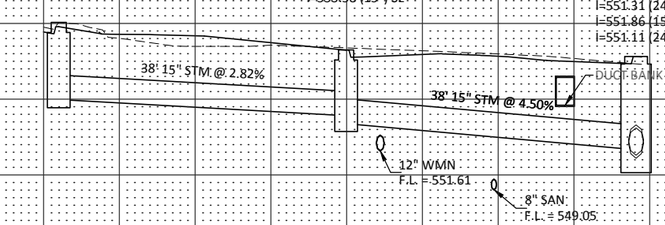


NOTE:

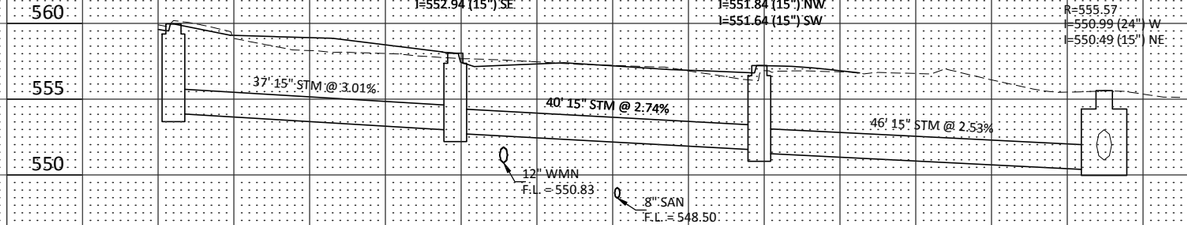
1. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET

STORM PIPE B15-13 PROFILE



STORM PIPE C1 PROFILE



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VERT. SCALE 0 5 10 FEET

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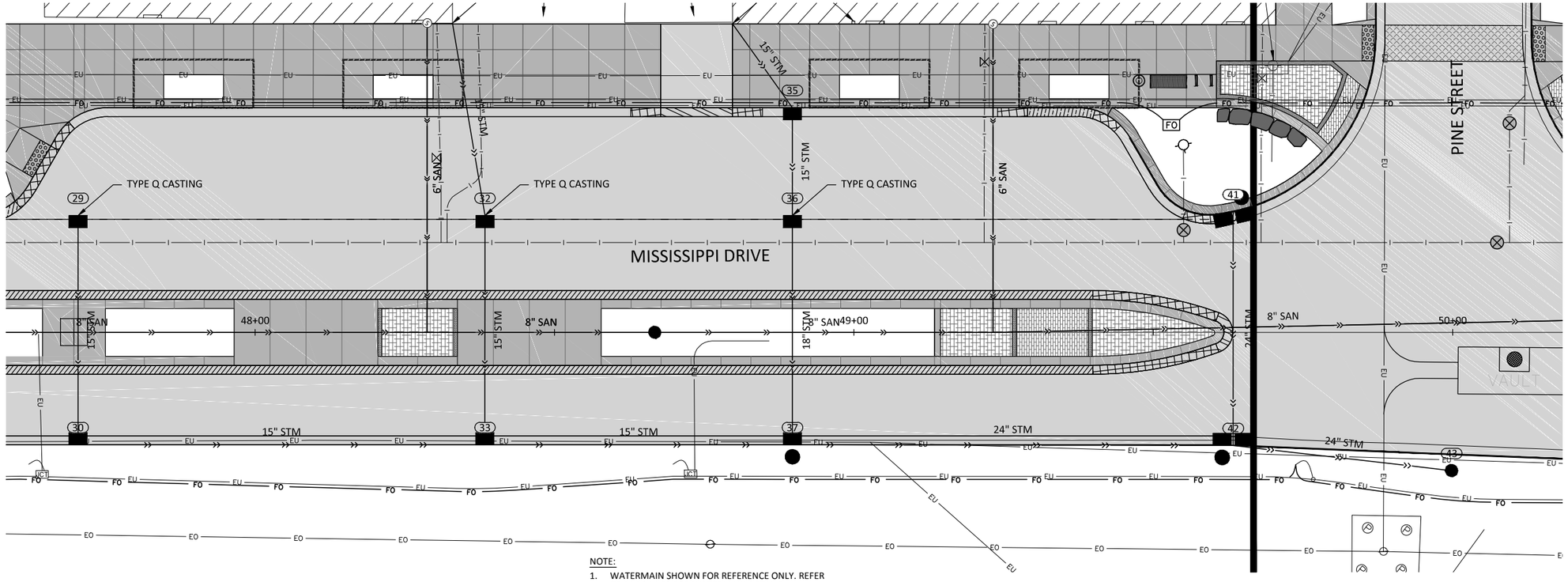
UTILITY CROSS RUNS - MISSISSIPPI DRIVE

SHEET M.22



NOTE:

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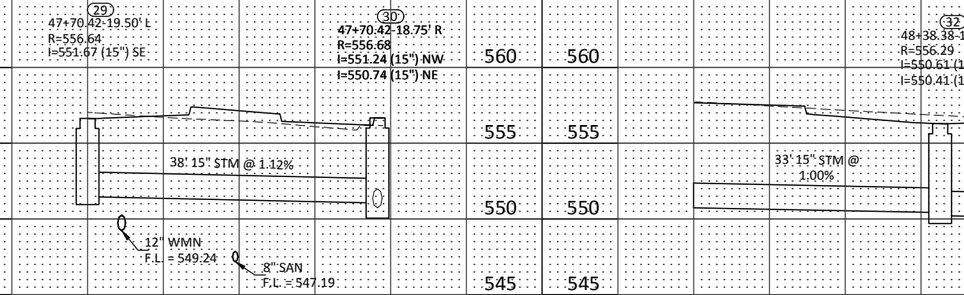
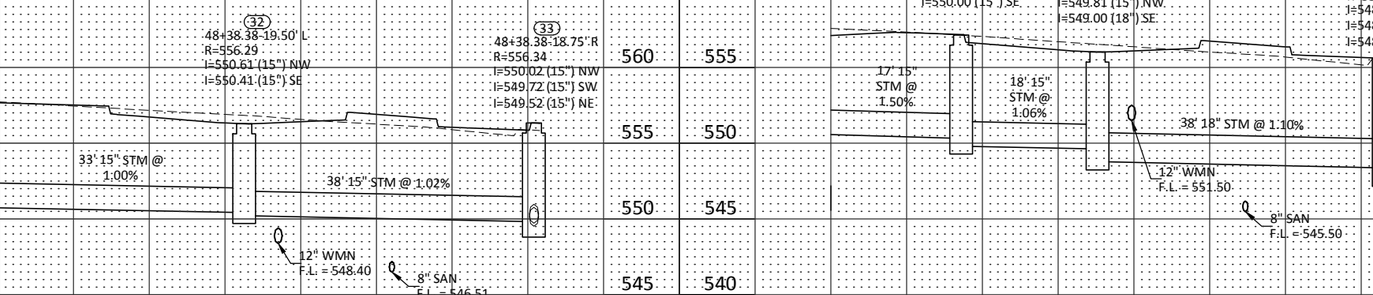
HORZ. SCALE 0 10 20 FEET

STORM PIPE C3 PROFILE



STORM PIPE C5-6 PROFILE



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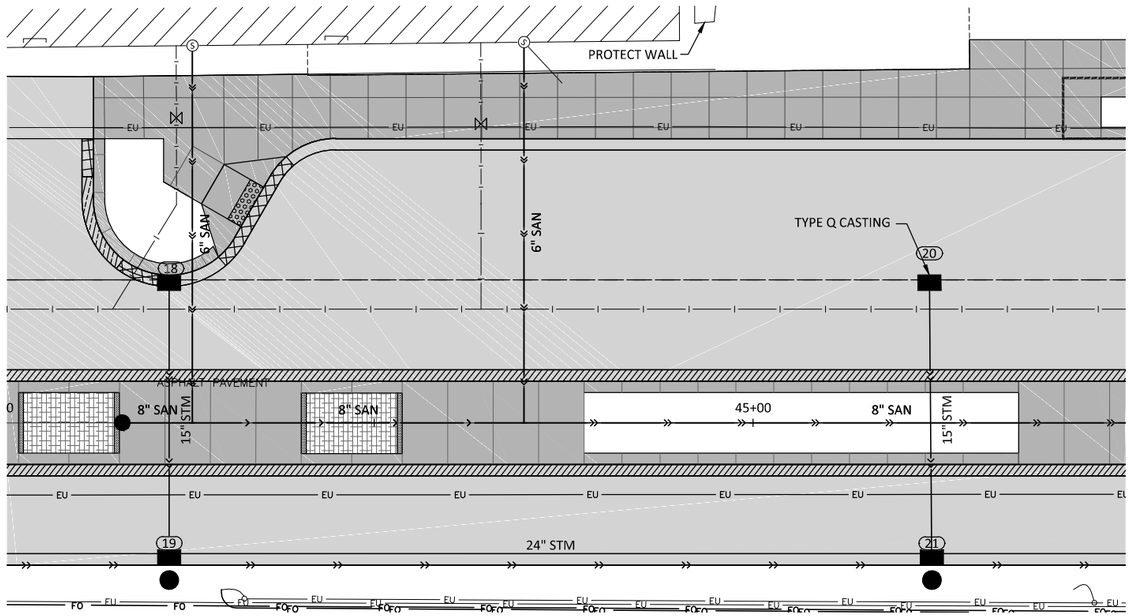
UTILITY CROSS RUNS - MISSISSIPPI DRIVE

SHEET M.23



NOTE:

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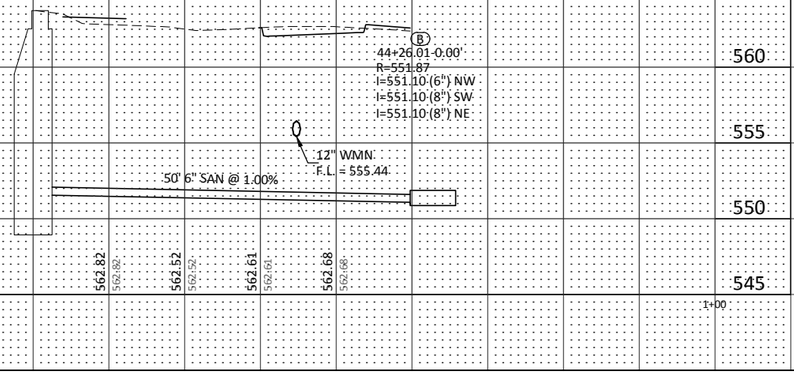
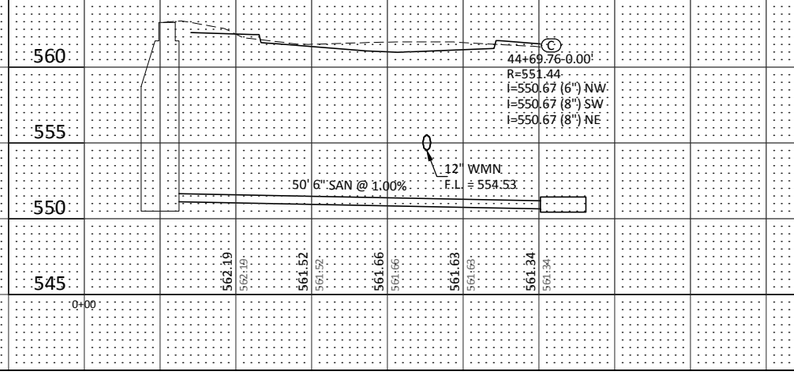
HORZ. SCALE 0 10 20 FEET

SANITARY PIPE S1 PROFILE



SANITARY PIPE S2 PROFILE



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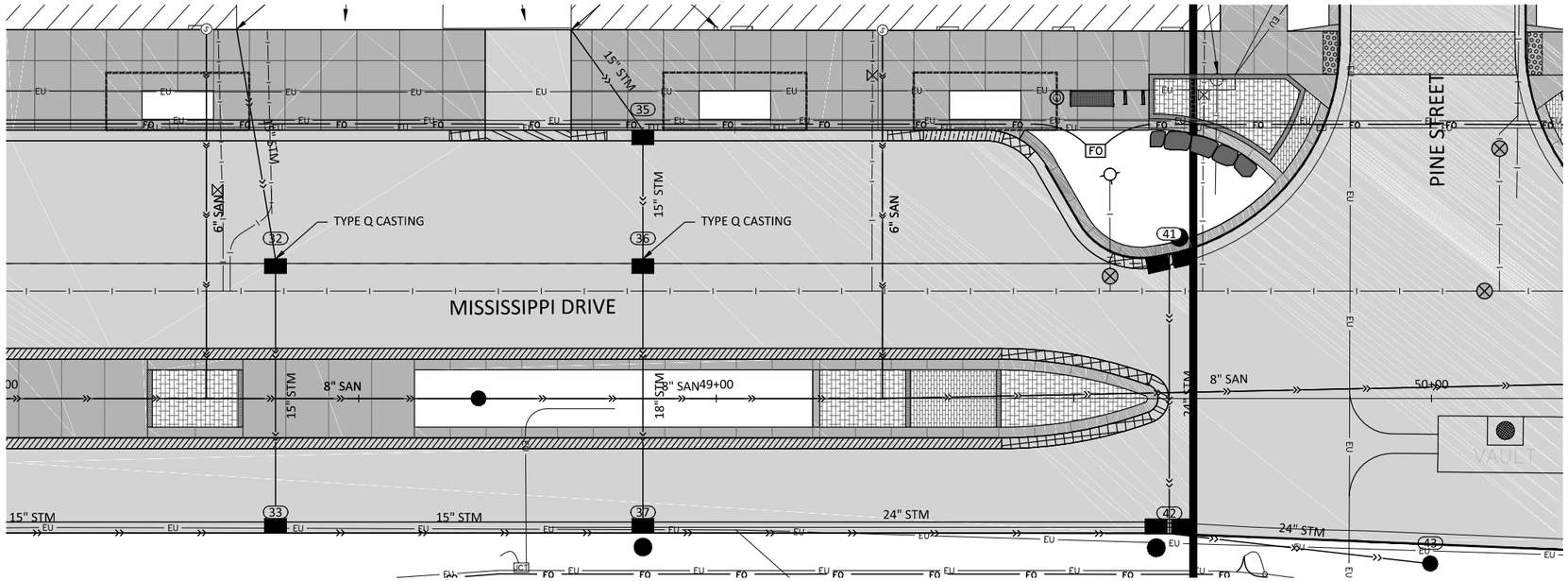
UTILITY CROSS RUNS - MISSISSIPPI DRIVE

SHEET M.24

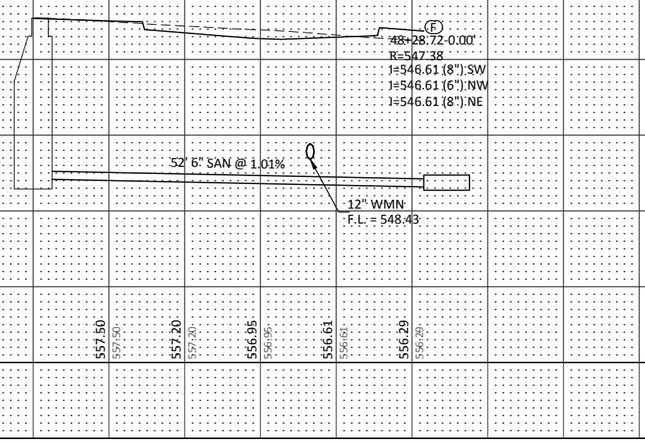


NOTE:

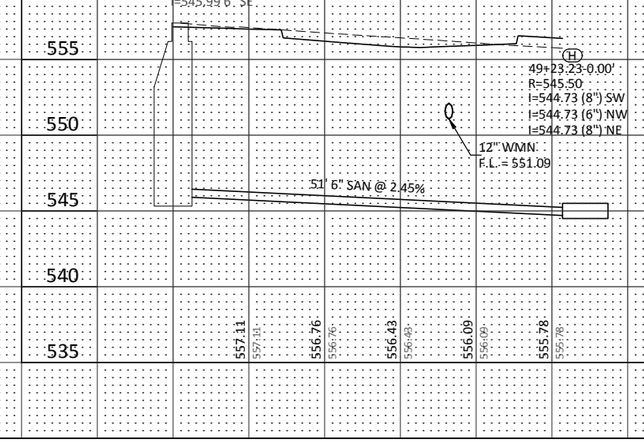
1. WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET

SANITARY PIPE S3 PROFILE



SANITARY PIPE S4 PROFILE



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VERT. SCALE 0 5 10 FEET

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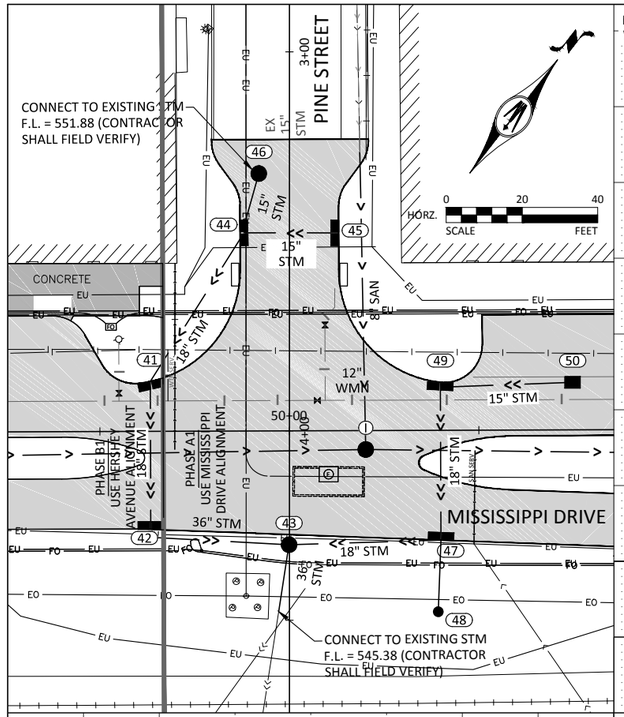
REV	ISSUED FOR	DATE

DESIGNED TJB
DRAWN TJB
CHECKED KDM

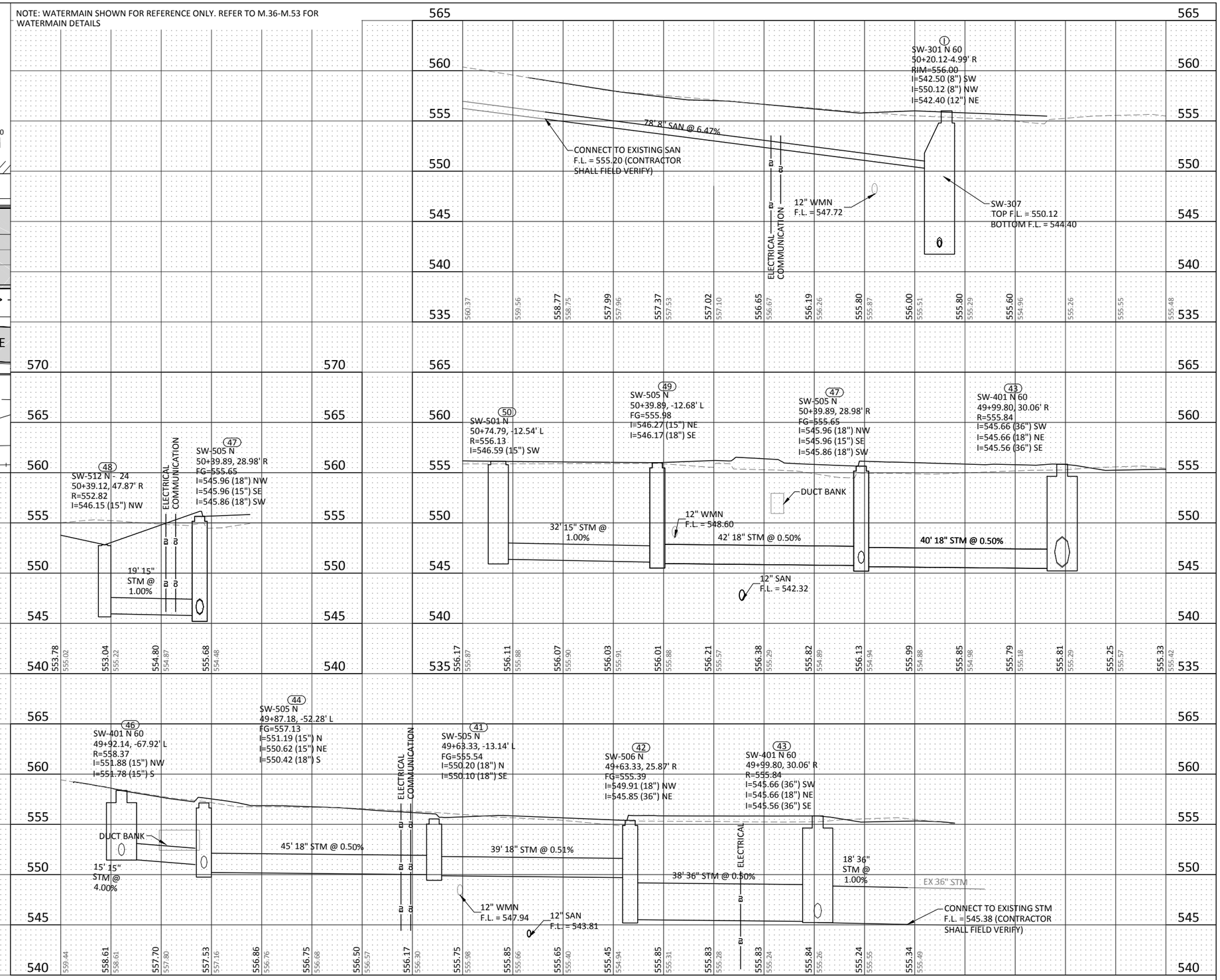
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - MISSISSIPPI DRIVE

SHEET M.25



PINE STREEET STORM SEWER

NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. 0 10 20 SCALE FEET
VERT. 0 5 10 SCALE FEET

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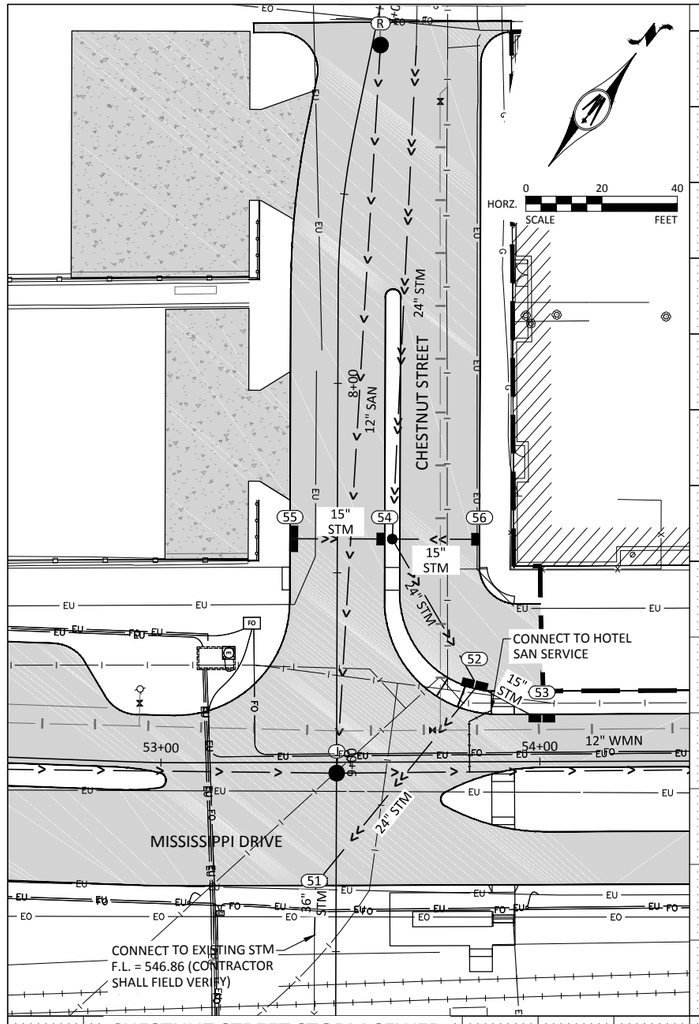
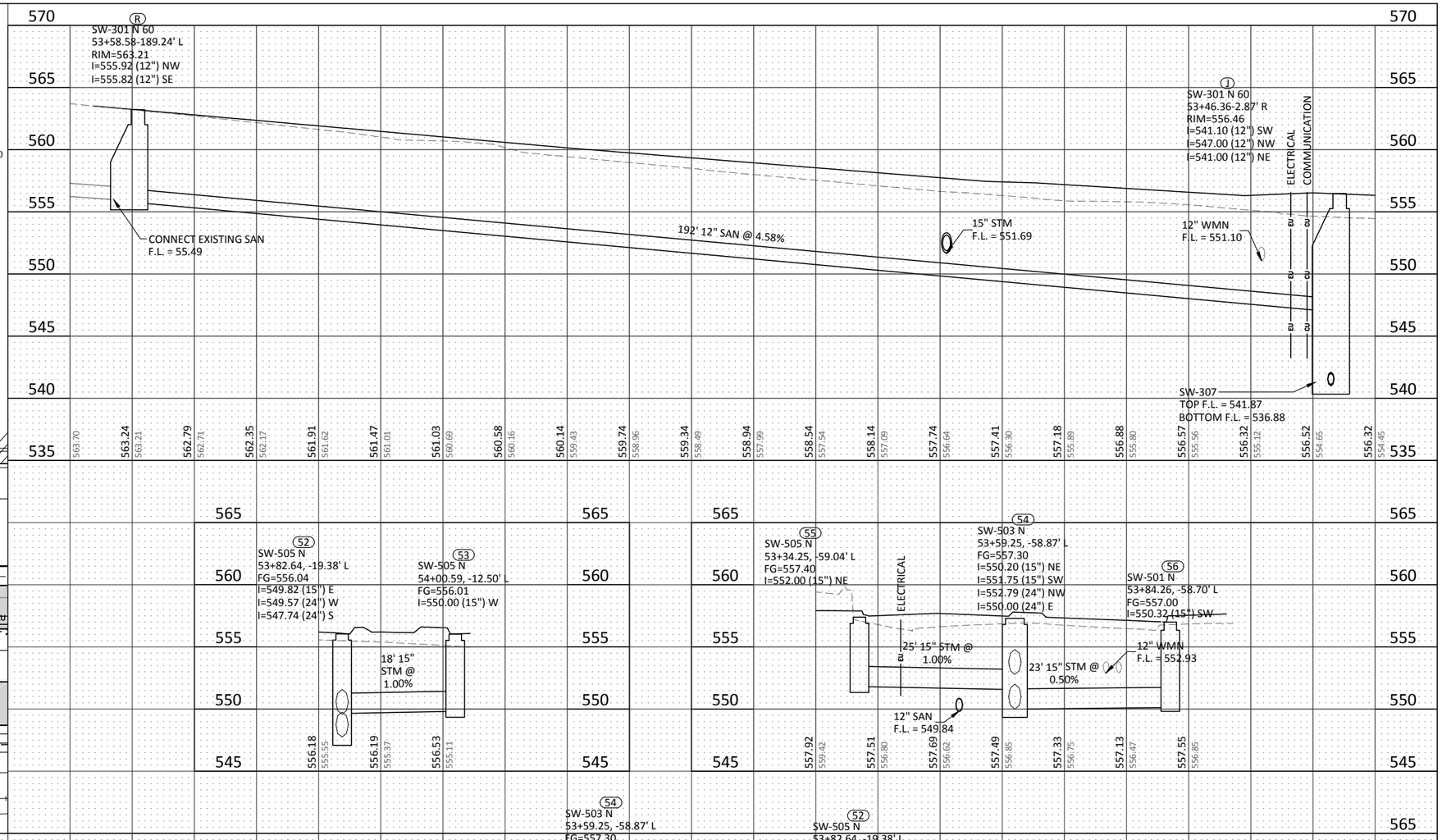
REV	ISSUED FOR	DATE

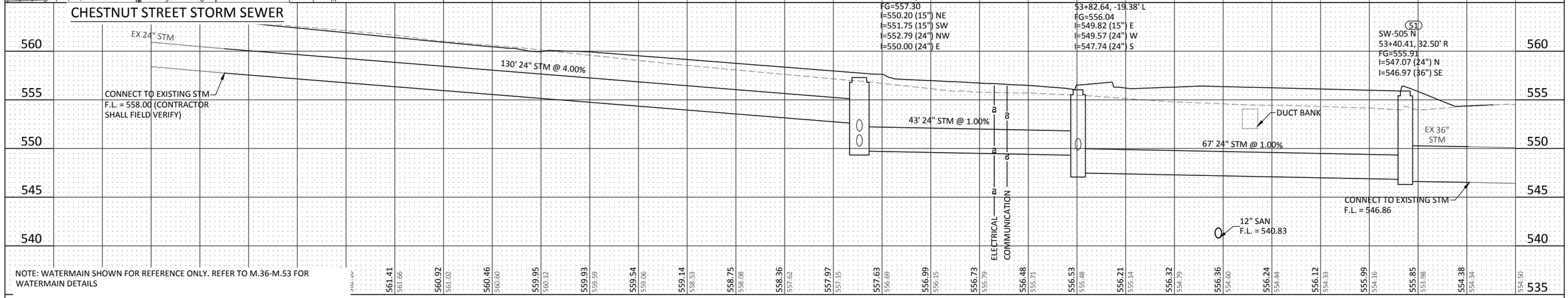
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - PINE STREET

SHEET M.26







NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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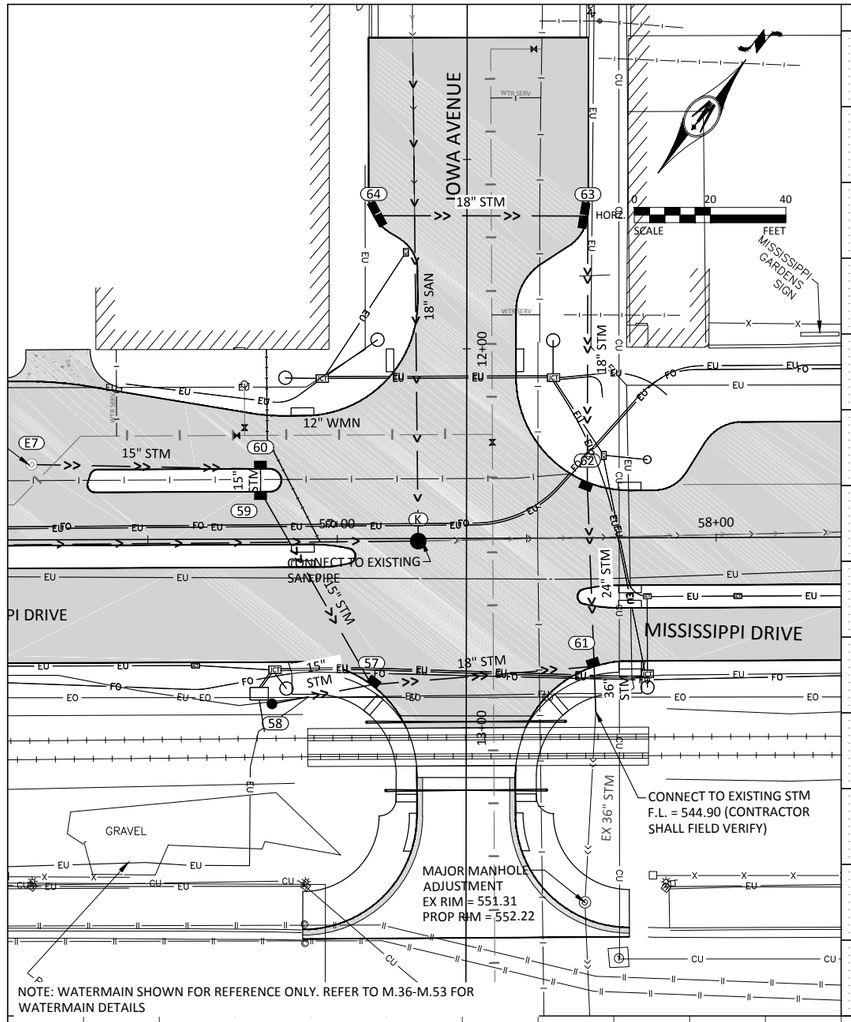
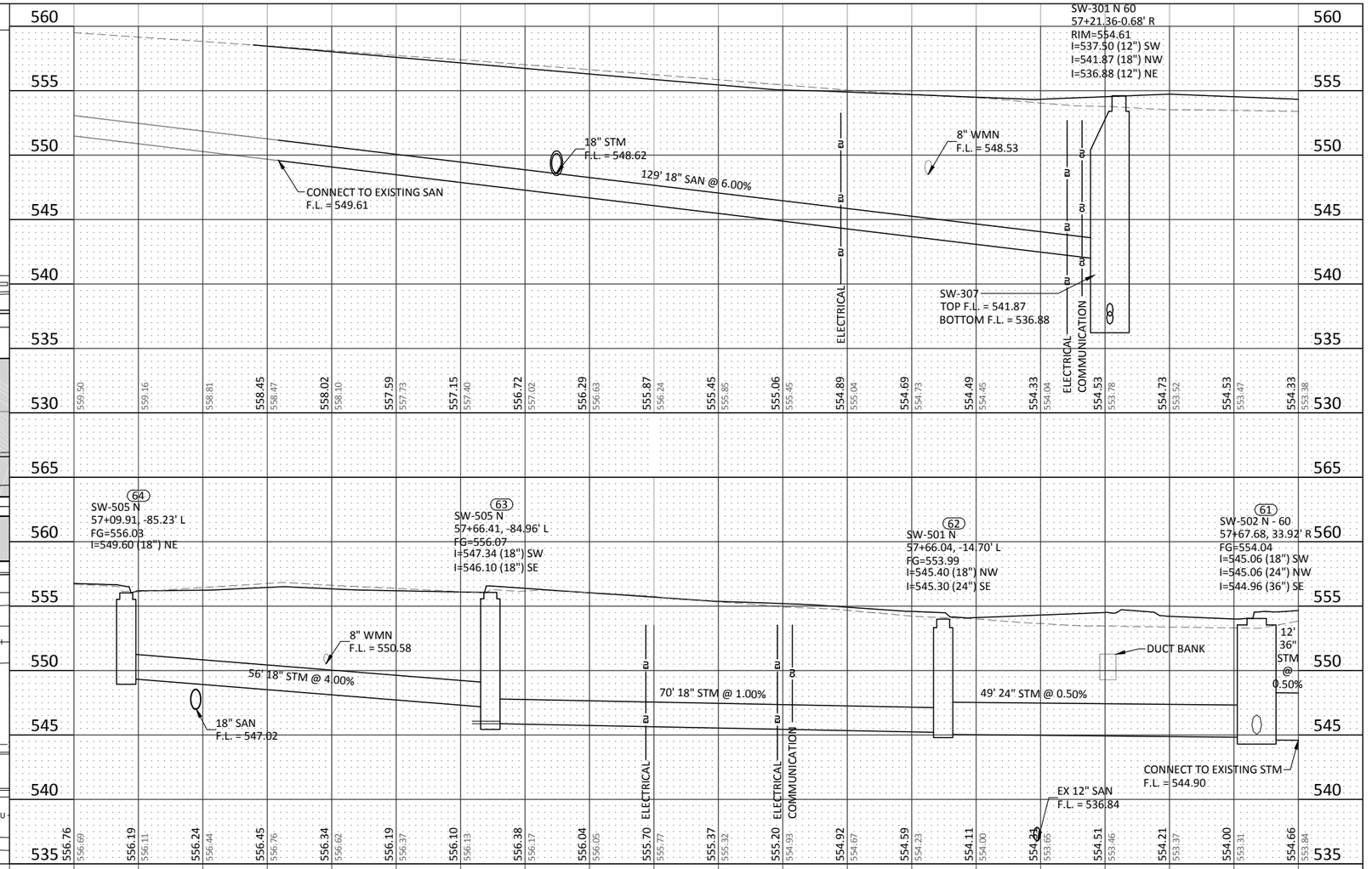
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - CHESTNUT STREET

SHEET M.27





IOWA AVE STORM SEWER

HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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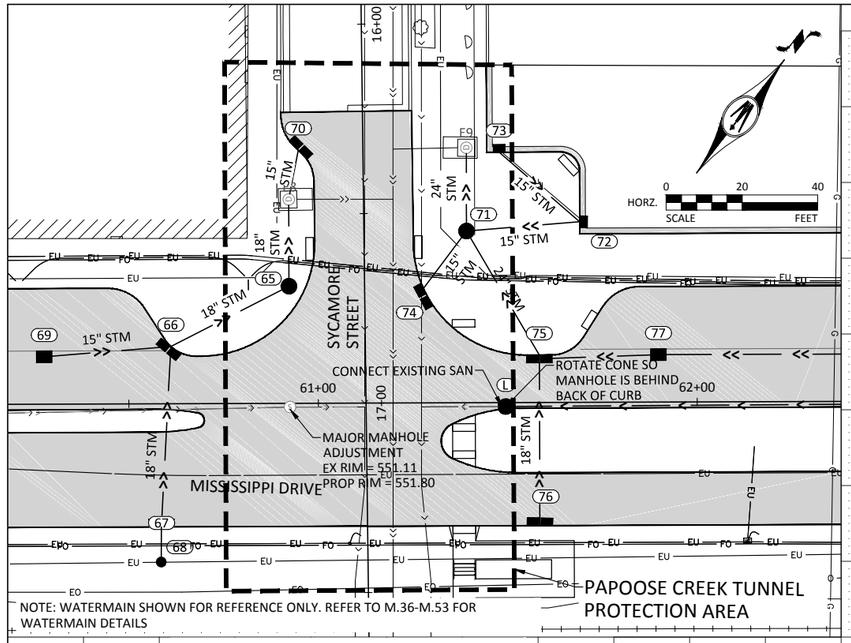
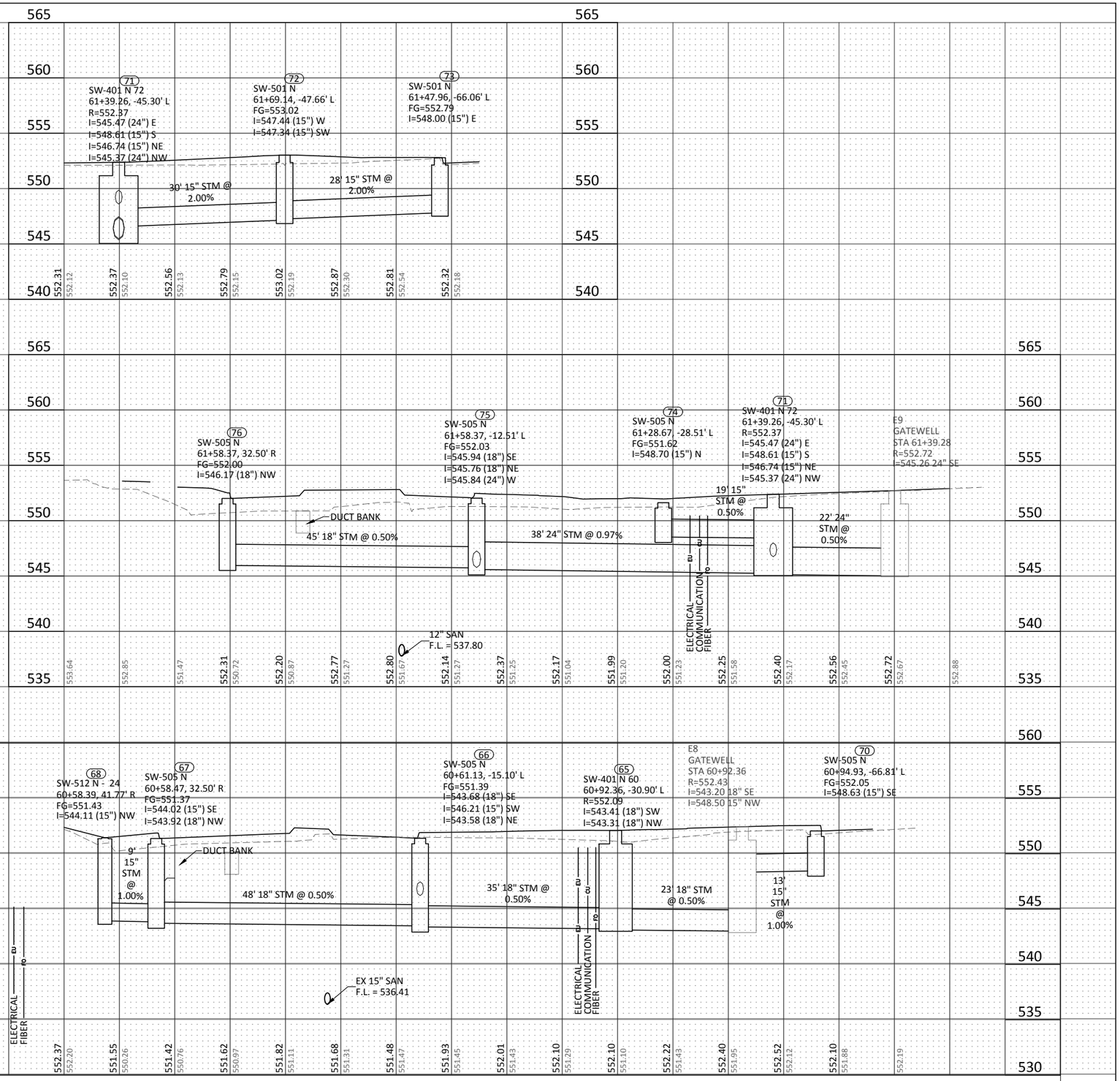
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - IOWA AVENUE

SHEET M.28



SYCAMORE STREET STORM SEWER



HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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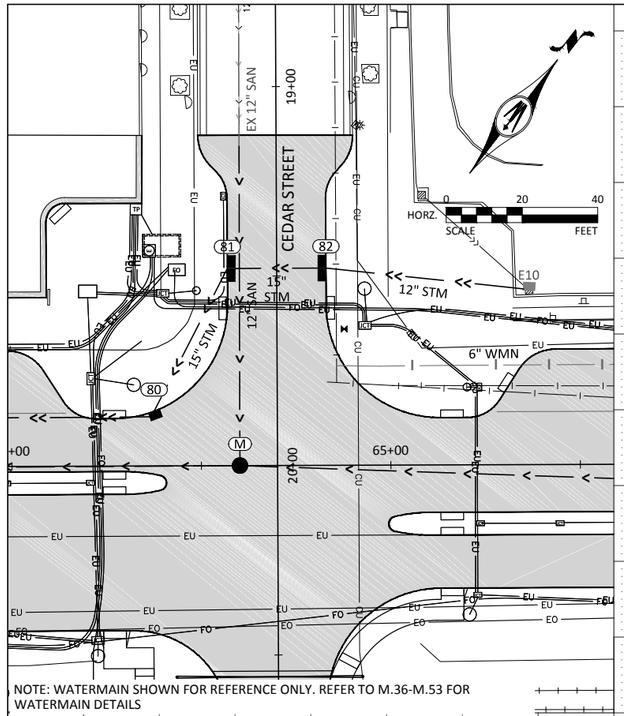
DRAWN GAB
CHECKED MWF

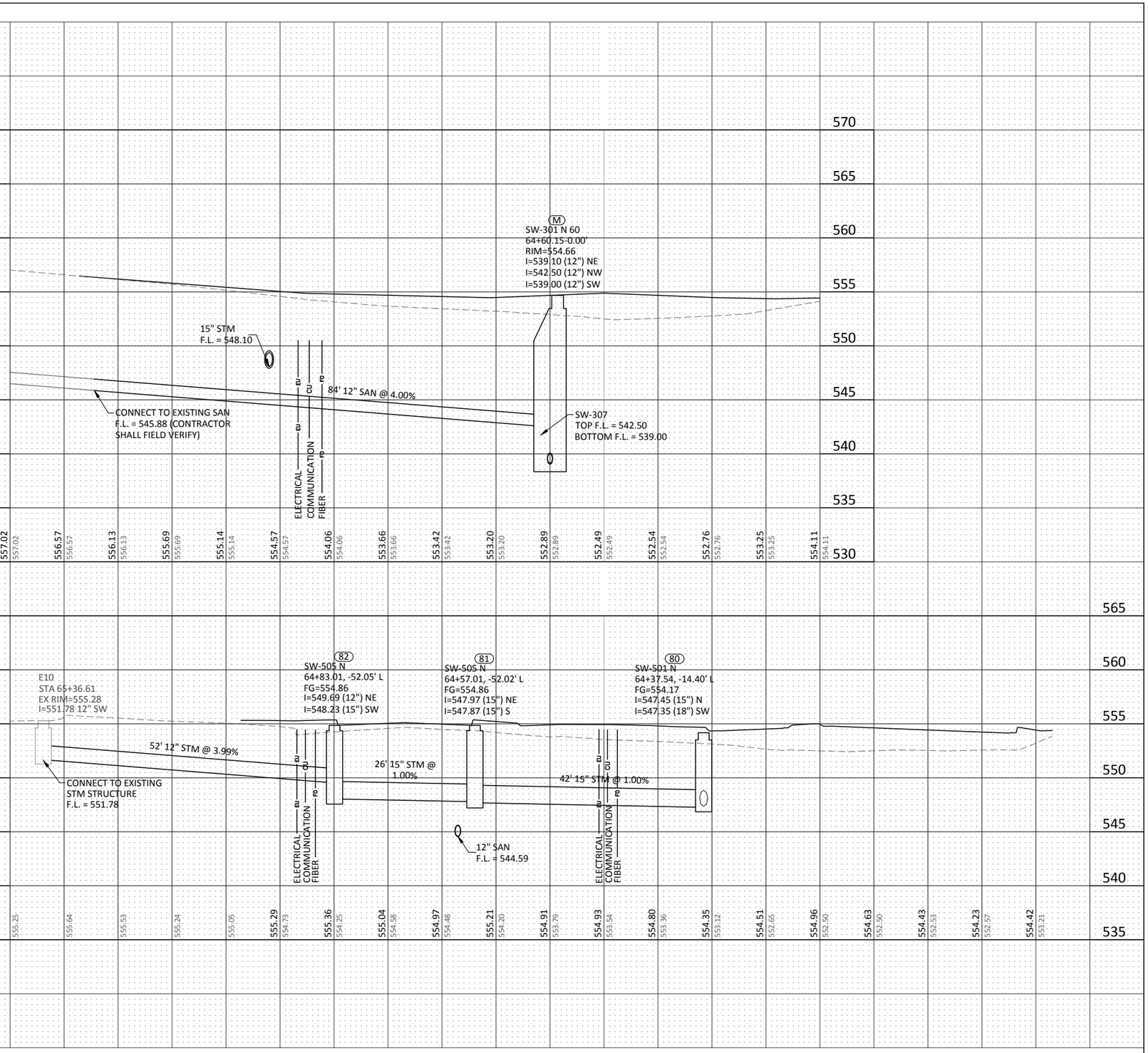
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - SYCAMORE STREET

SHEET M.29



NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS

CEDAR STREET STORM SEWER



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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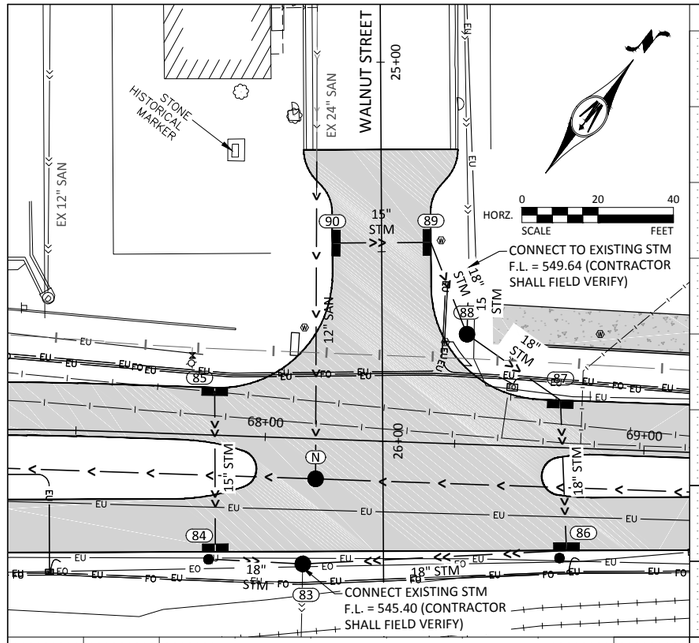
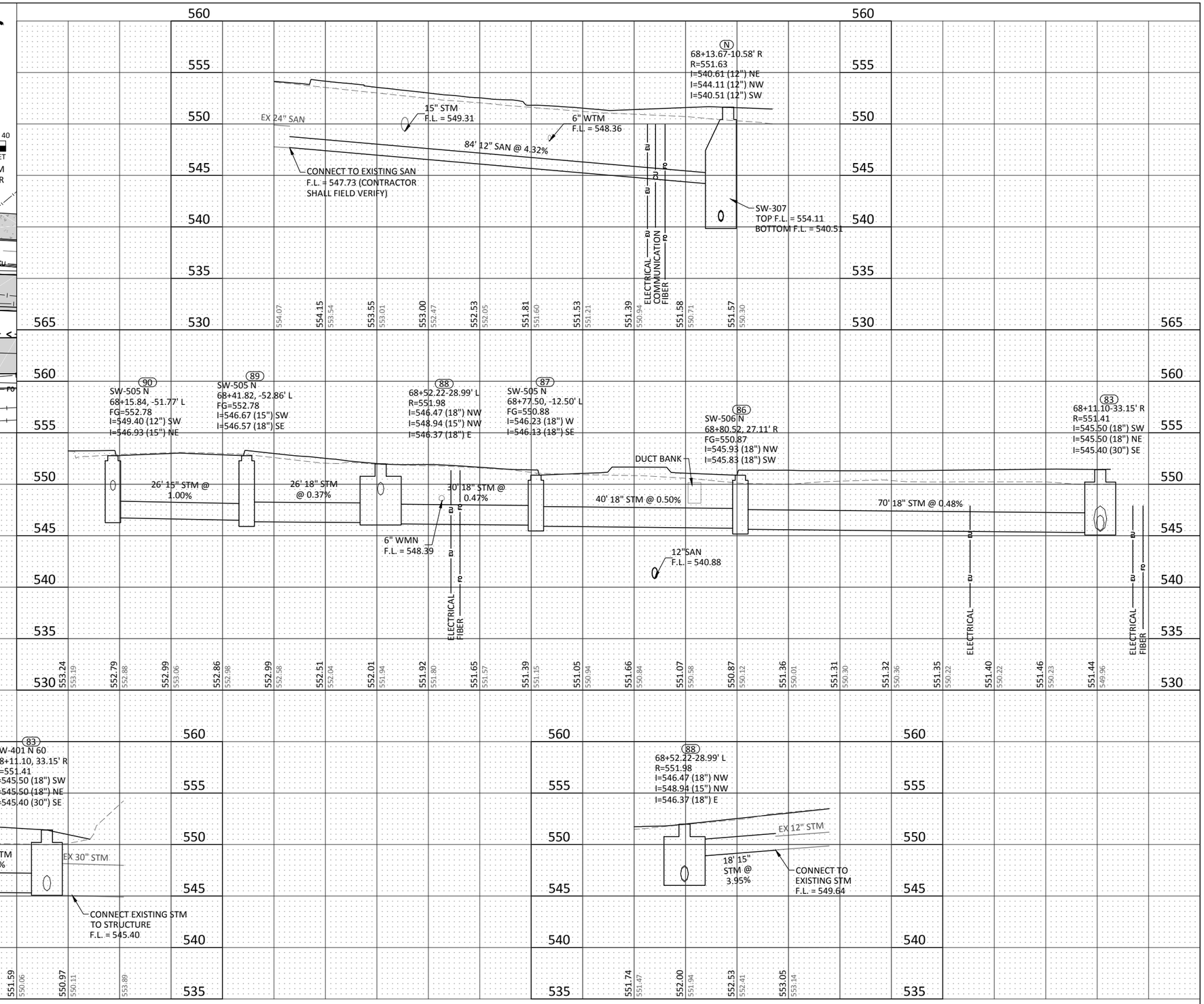
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - CEDAR STREET

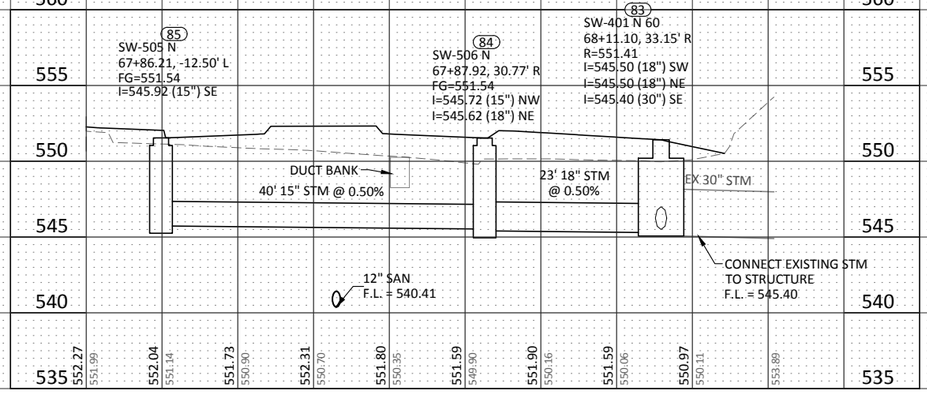
SHEET M.30



WALNUT STREET STORM SEWER

NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS





HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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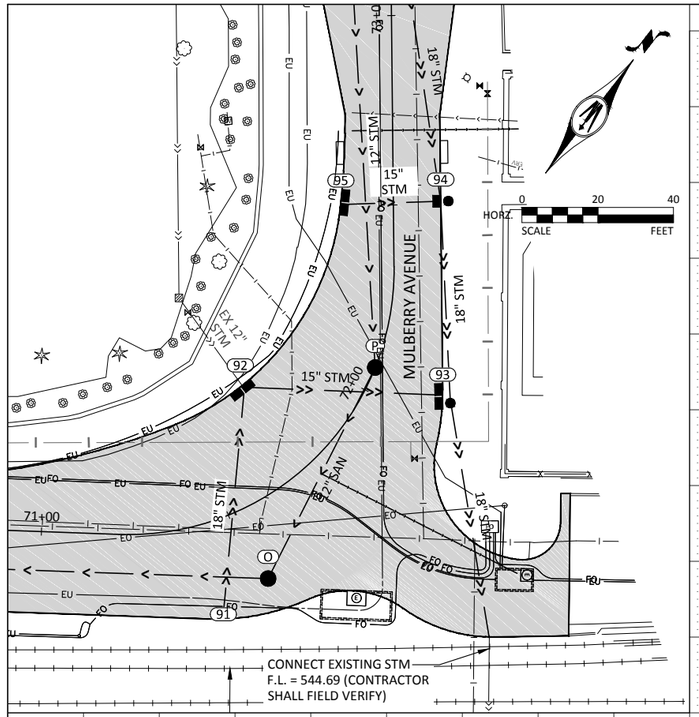
CHECKED MWF

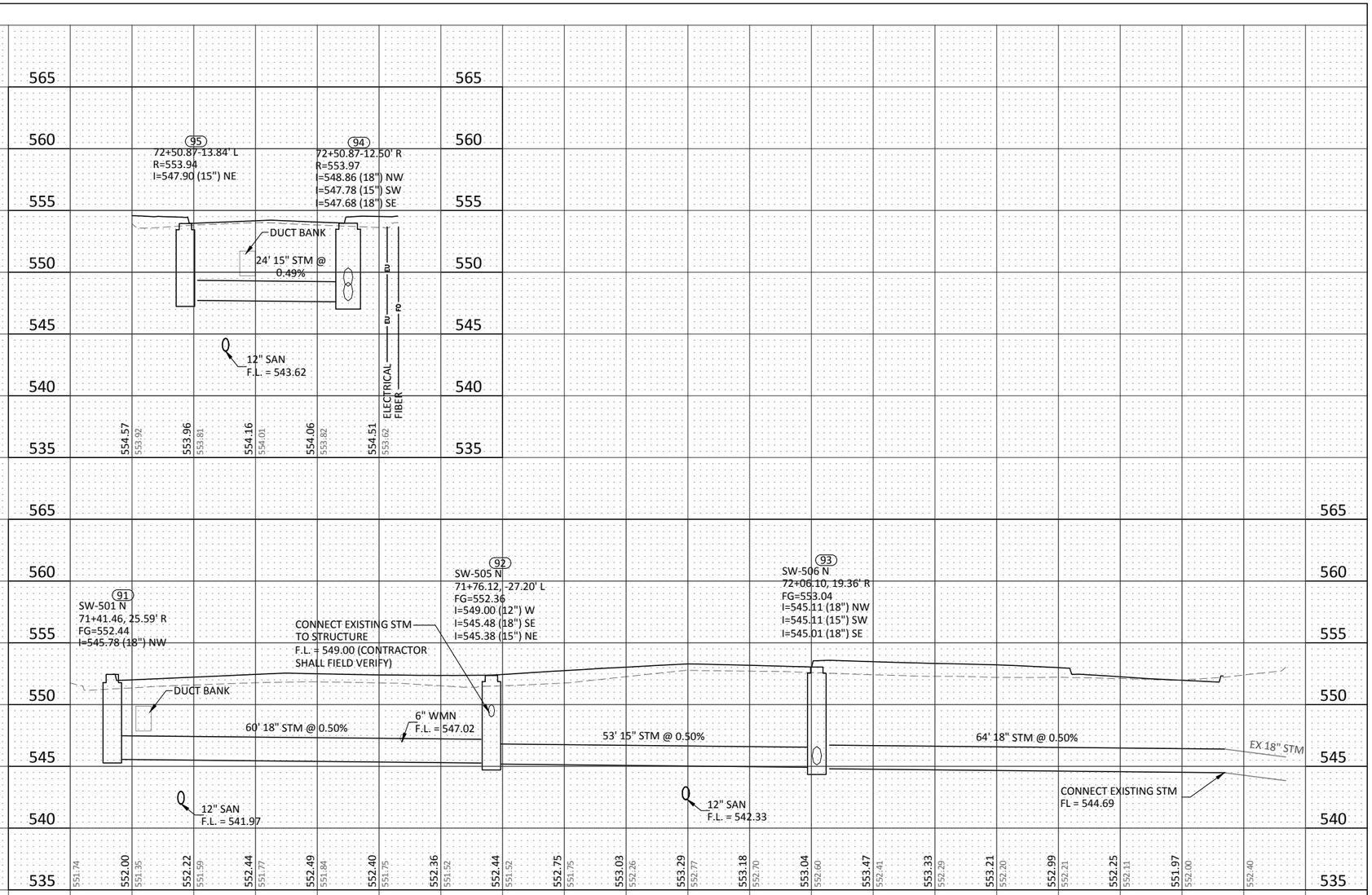
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - WALNUT STREET

SHEET M.31



MULBERRY AVE STORM SEWER

NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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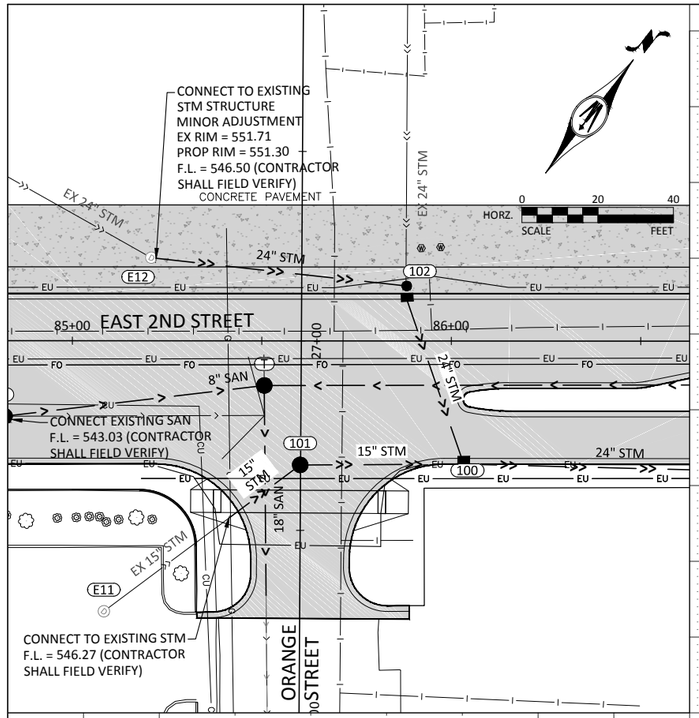
CHECKED MWF

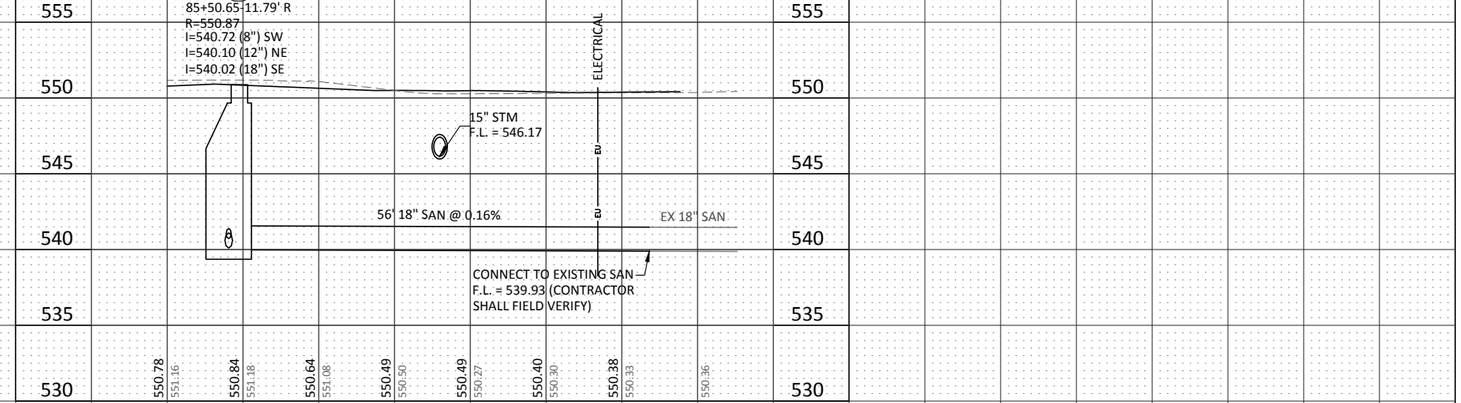
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - MULBERRY AVENUE

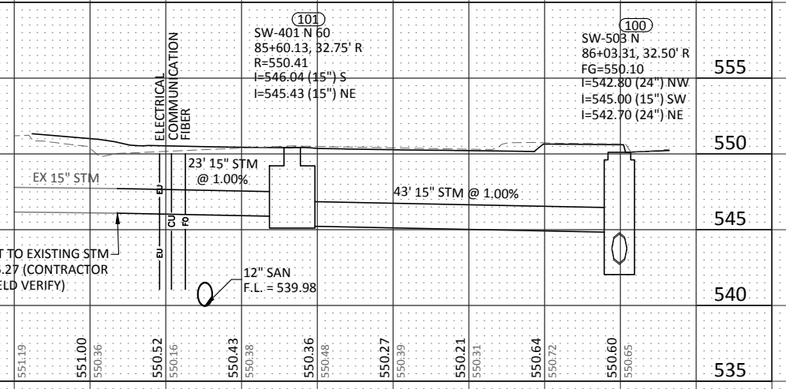
SHEET M.32

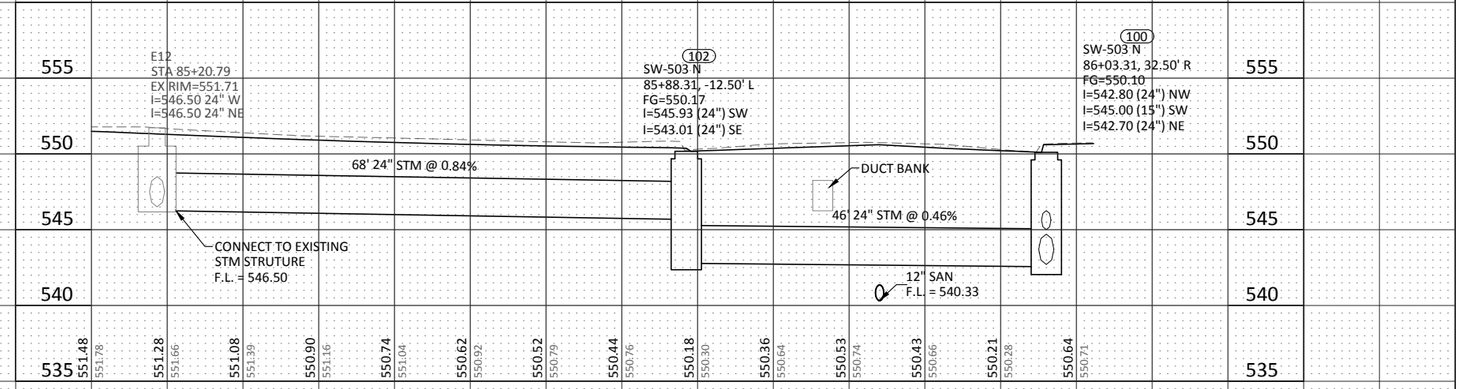


ORANGE STREET STORM SEWER

NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS







HORZ. SCALE 0 10 20 FEET
VERT. SCALE 0 5 10 FEET

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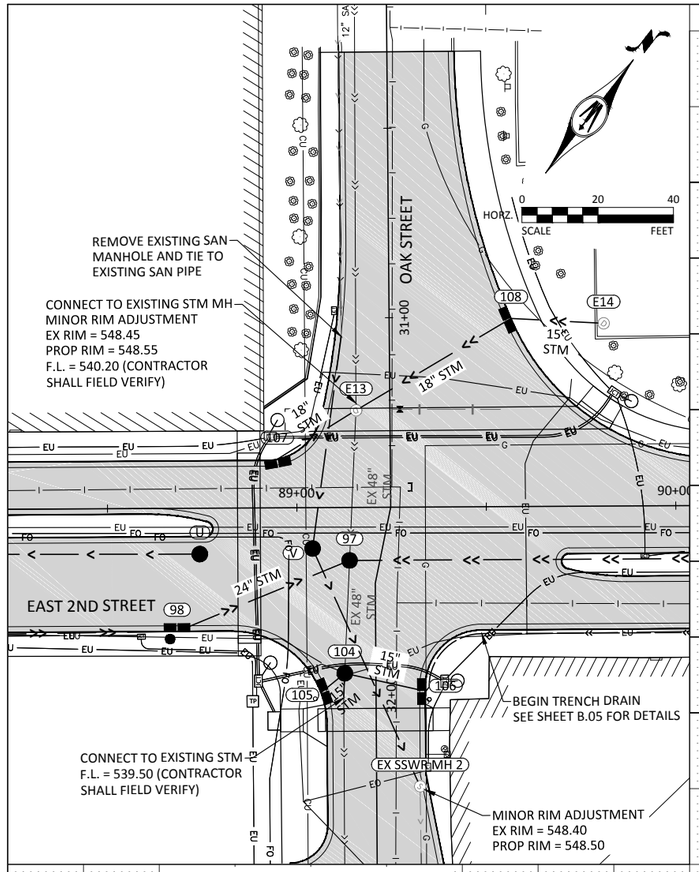
DESIGNED GAB
DRAWN GAB
CHECKED MWF

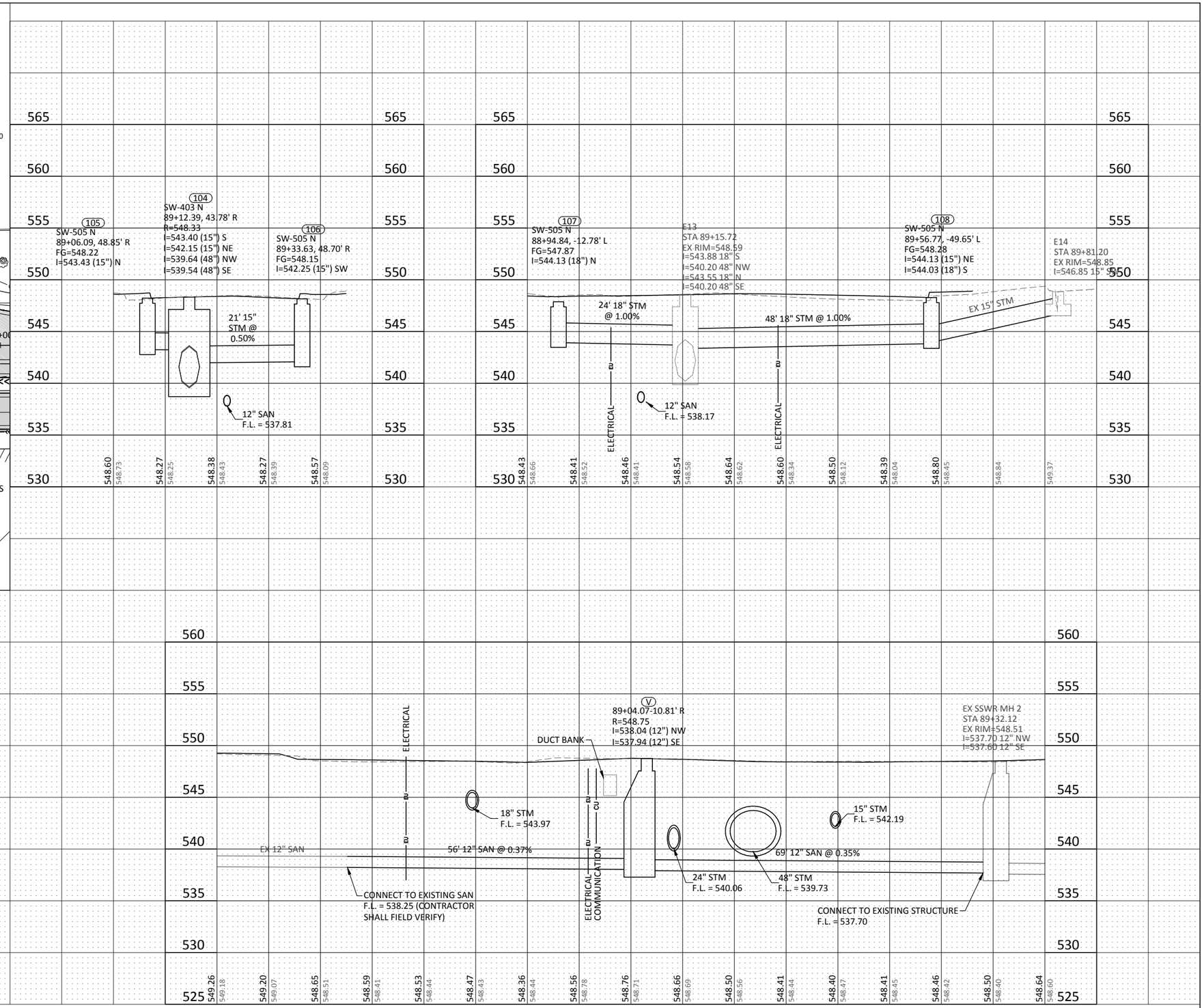
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - ORANGE STREET

SHEET M.33



OAK STREET STORM SEWER

NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. 0 10 20 SCALE FEET

VERT. 0 5 10 SCALE FEET

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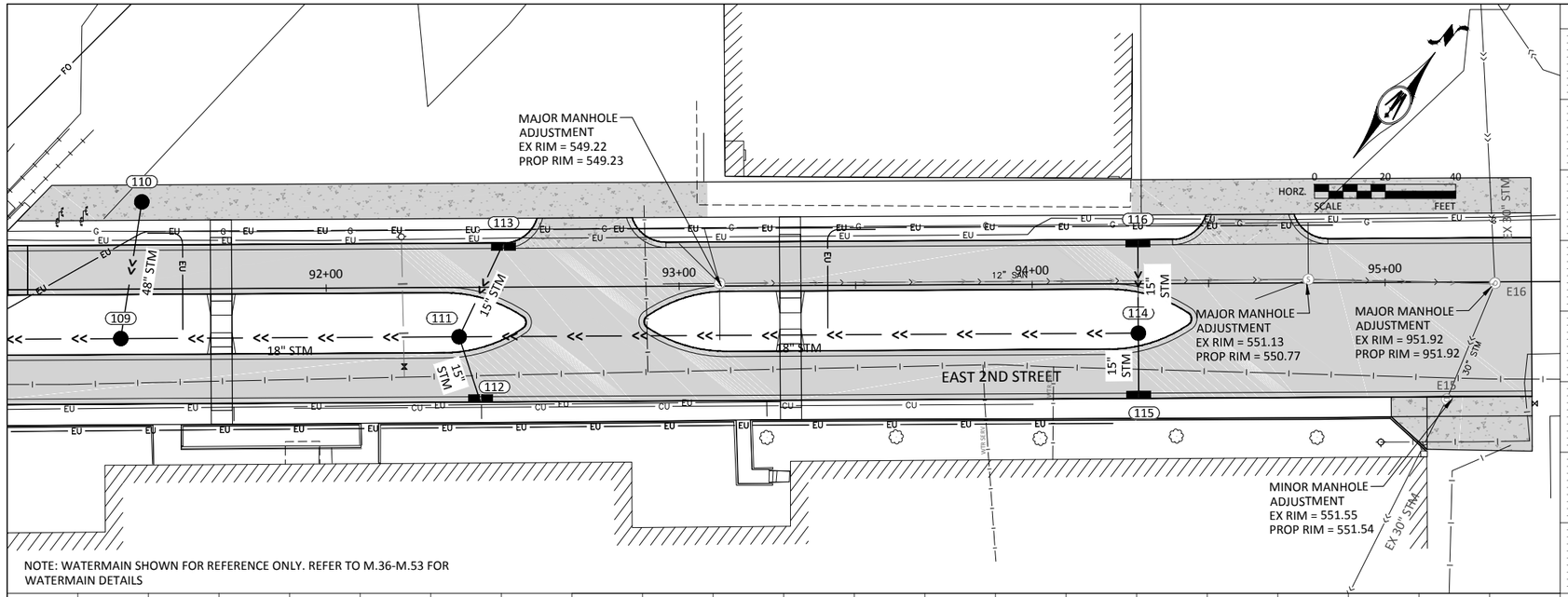
REV	ISSUED FOR	DATE

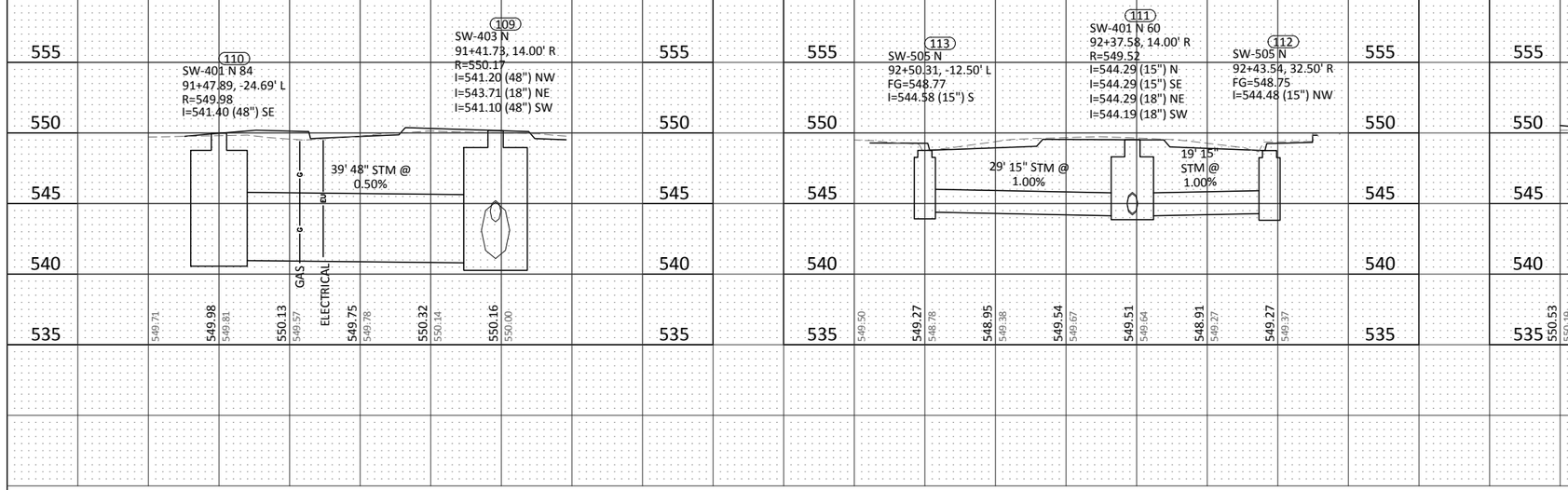
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - OAK STREET

SHEET M.34



NOTE: WATERMAIN SHOWN FOR REFERENCE ONLY. REFER TO M.36-M.53 FOR WATERMAIN DETAILS



HORZ. SCALE 0 10 20 FEET

VERT. SCALE 0 5 10 FEET

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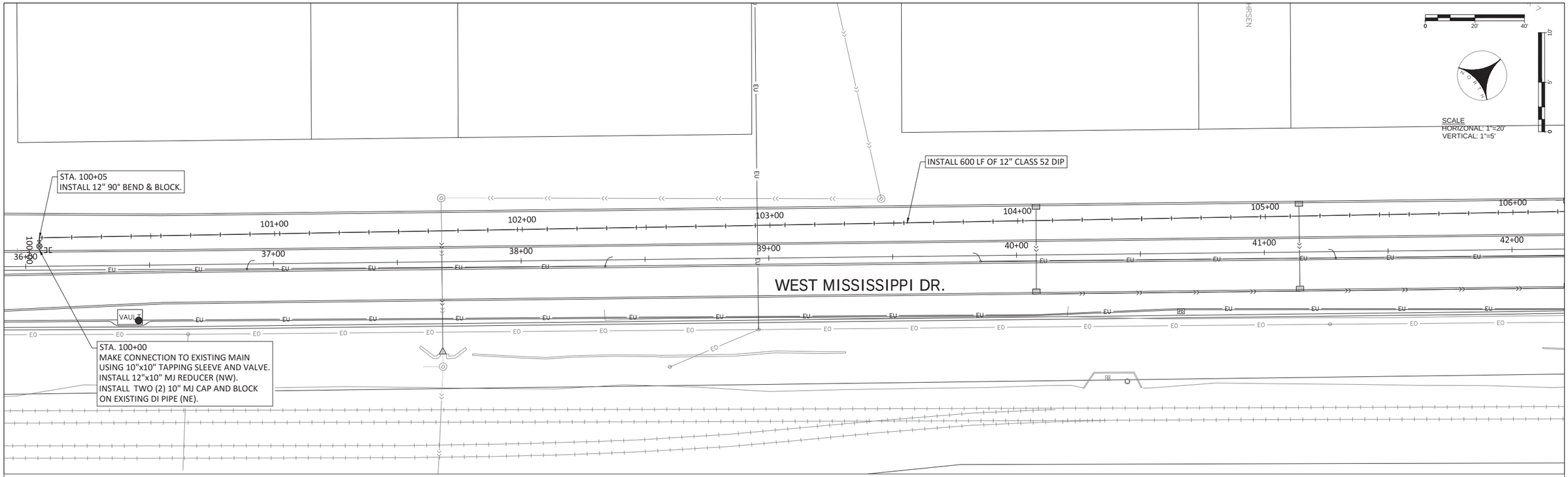
REV	ISSUED FOR	DATE

DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
UTILITY CROSS RUNS - E 2ND STREET

SHEET M.35



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100+00 101+00 102+00 103+00 104+00 105+00 106+00

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD BY	APPV. BY	APPV. BY	DATE

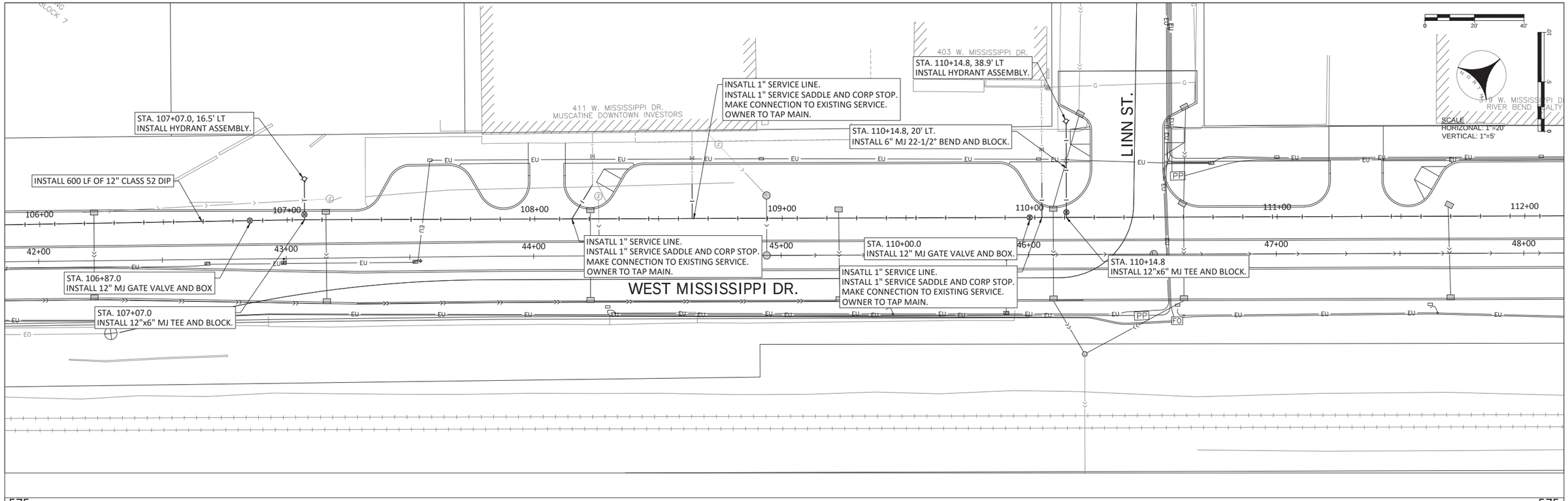
DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

MUSCATINE POWER & WATER

WATER DISTRIBUTION

MISSISSIPPI DR. CORRIDOR
AT BROADWAY STREET
PLAN AND PROFILE

REF No.
SCALE: NOTED — FILE No. 64
DRAWING No. DWD0350A — REV. No. 0
SHEET No. M.36



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

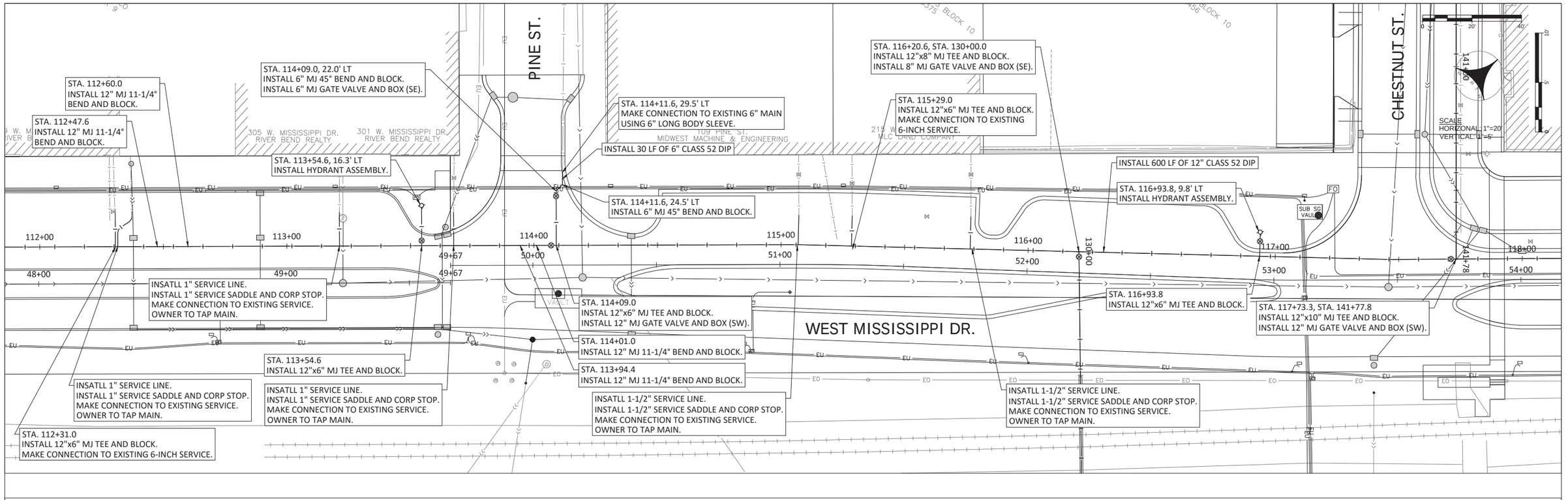
MUSCATINE POWER & WATER

WATER DISTRIBUTION

MISSISSIPPI DR. CORRIDOR AT LINN STREET PLAN AND PROFILE

REF No. | SCALE: NOTED | FILE No. 64 | DRAWING No. DWD0351A | REV. No. 0

SHEET No. M.37



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

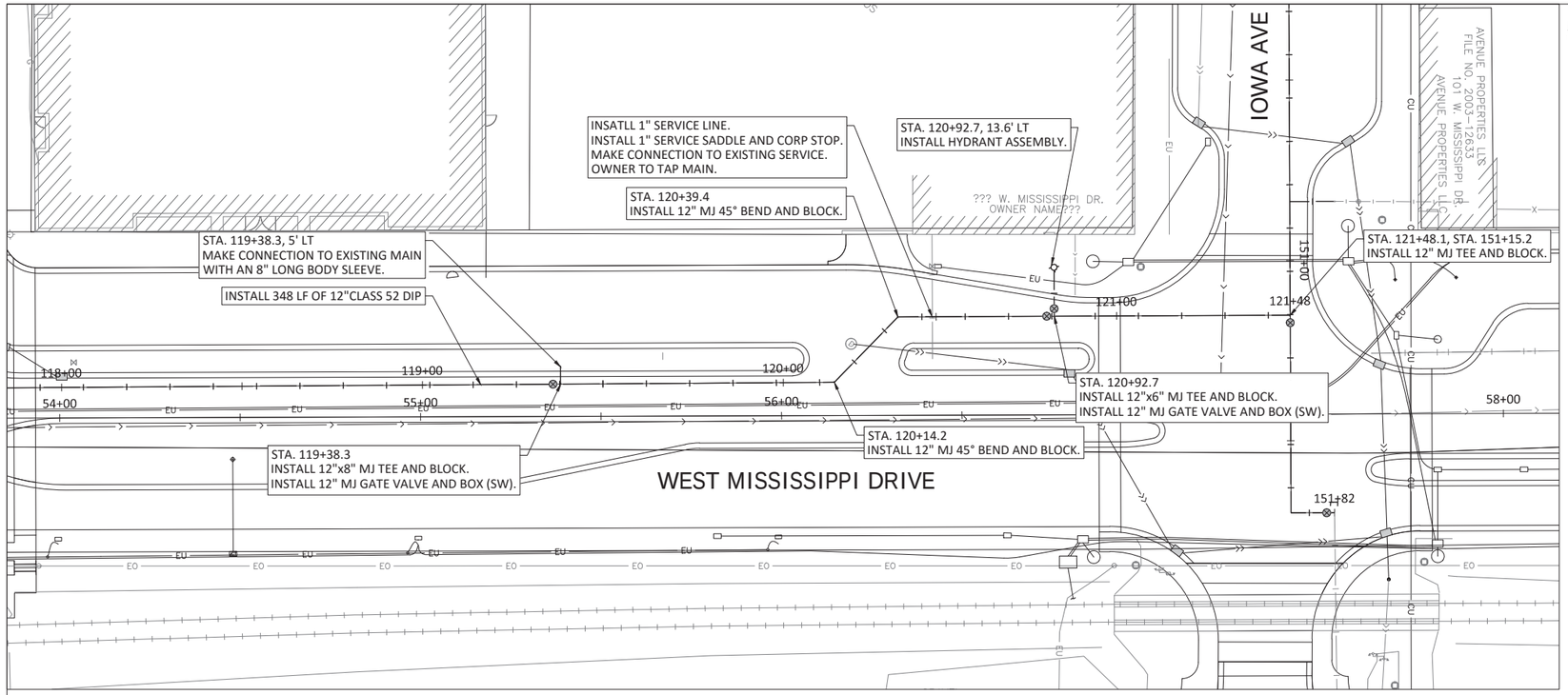
MUSCATINE POWER & WATER

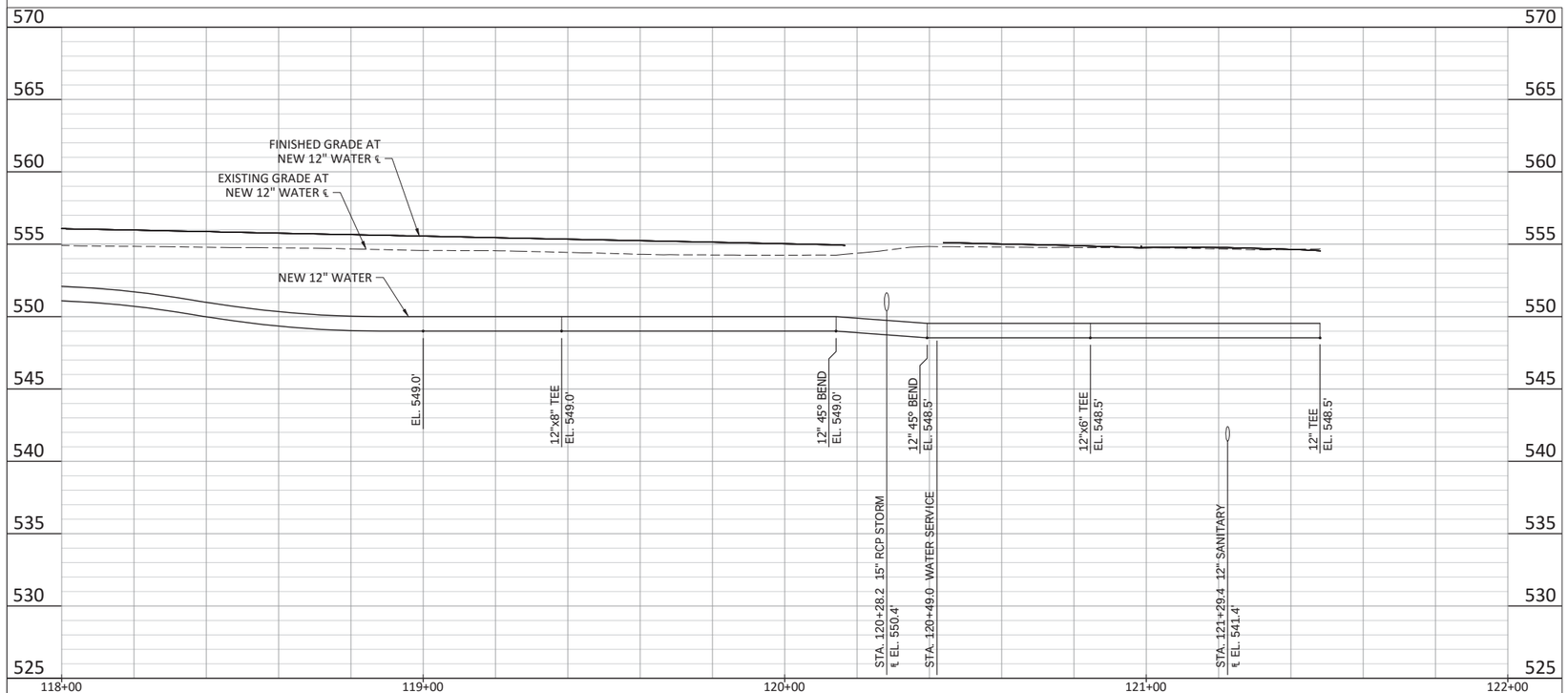
WATER DISTRIBUTION

MISSISSIPPI DR. CORRIDOR AT PINE ST. & CHESTNUT ST. PLAN AND PROFILE

REF No.
SCALE: NOTED — FILE No. 64
DRAWING No. DWD0352A — REV. No. 0

SHEET No. M.38





REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

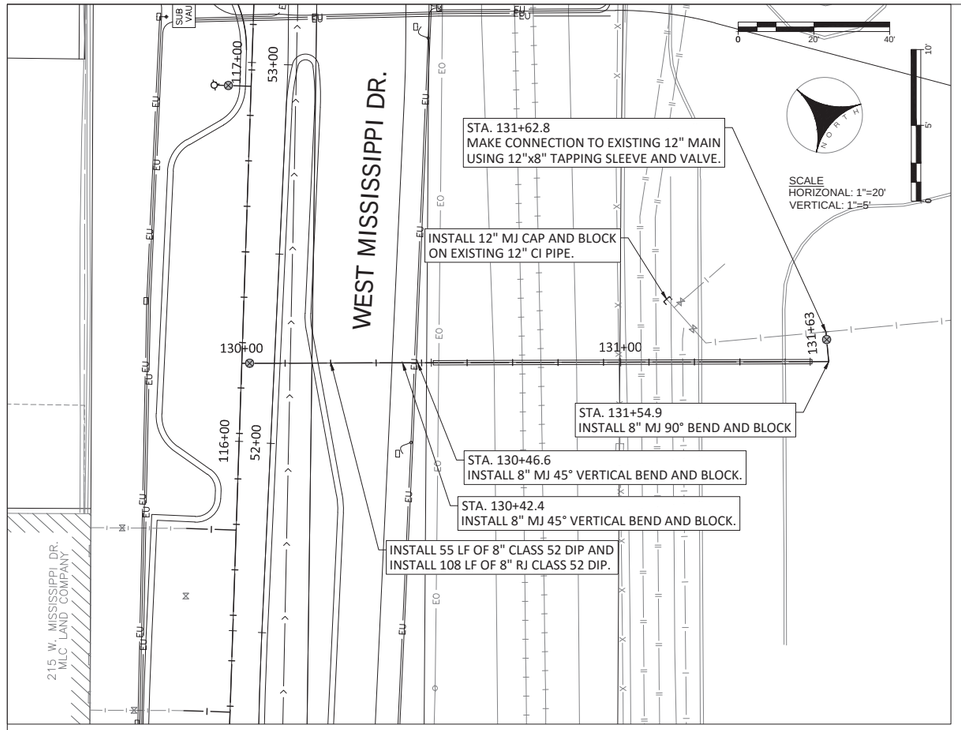
MUSCATINE POWER & WATER

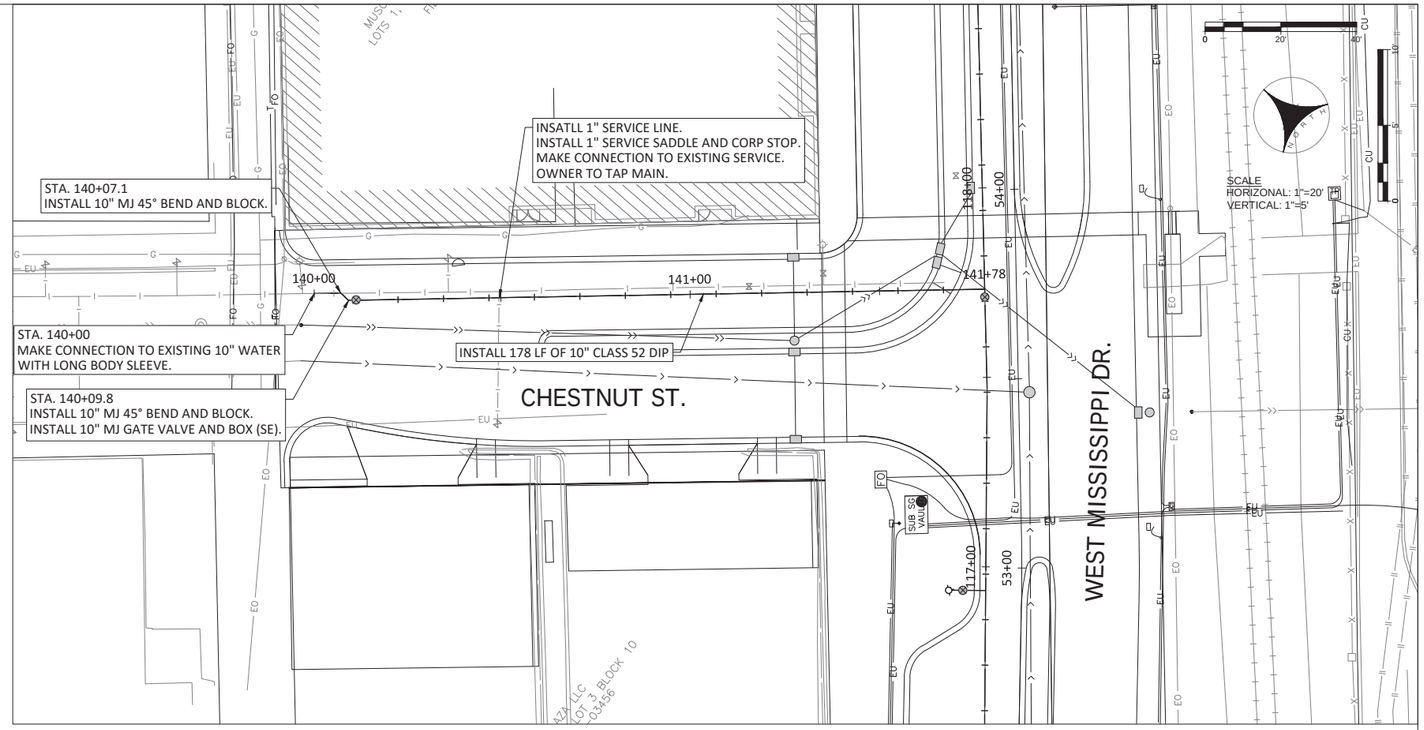
WATER DISTRIBUTION

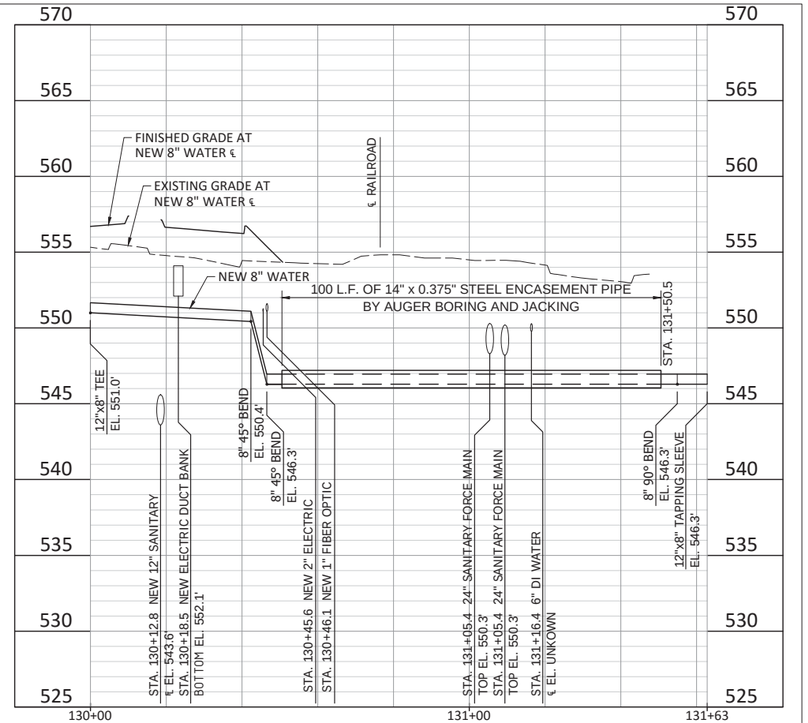
MISSISSIPPI DR. CORRIDOR
AT IOWA AVE.
PLAN AND PROFILE

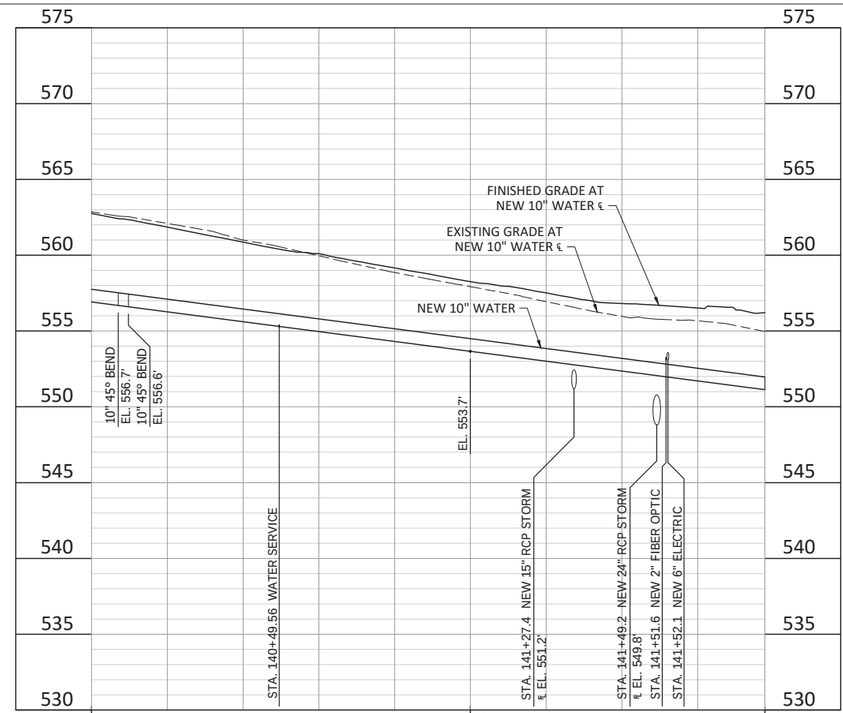
REF No.
SCALE: NOTED — FILE No. 64
DRAWING No. DWD0353A — REV. No. 0

SHEET No. M.39









REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D. BY	APPV. BY	APPV. BY	DATE

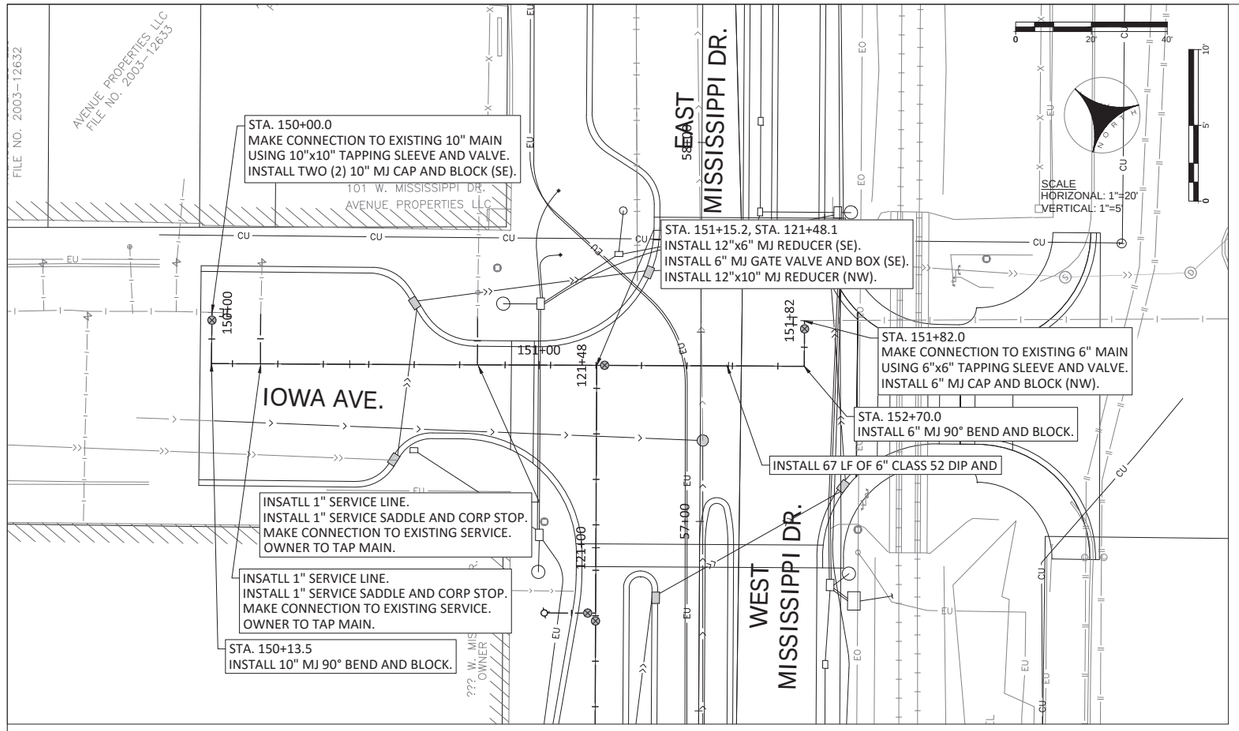
DRAWN BY: DAMION SHANNON	DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED	DATE: 01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

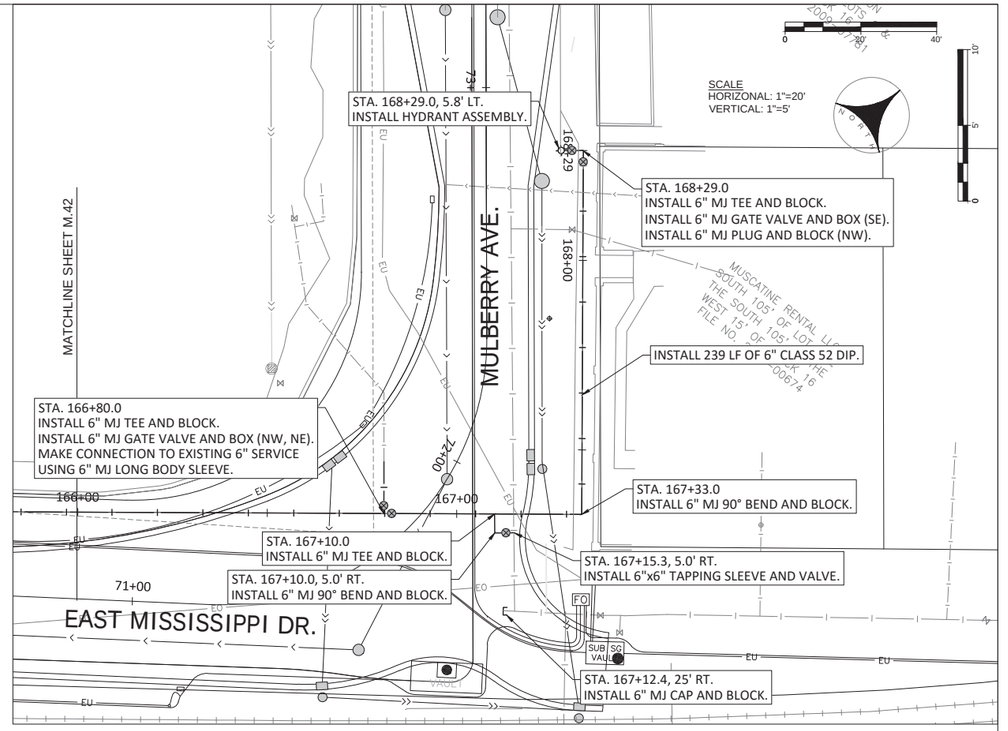
MUSCATINE POWER & WATER

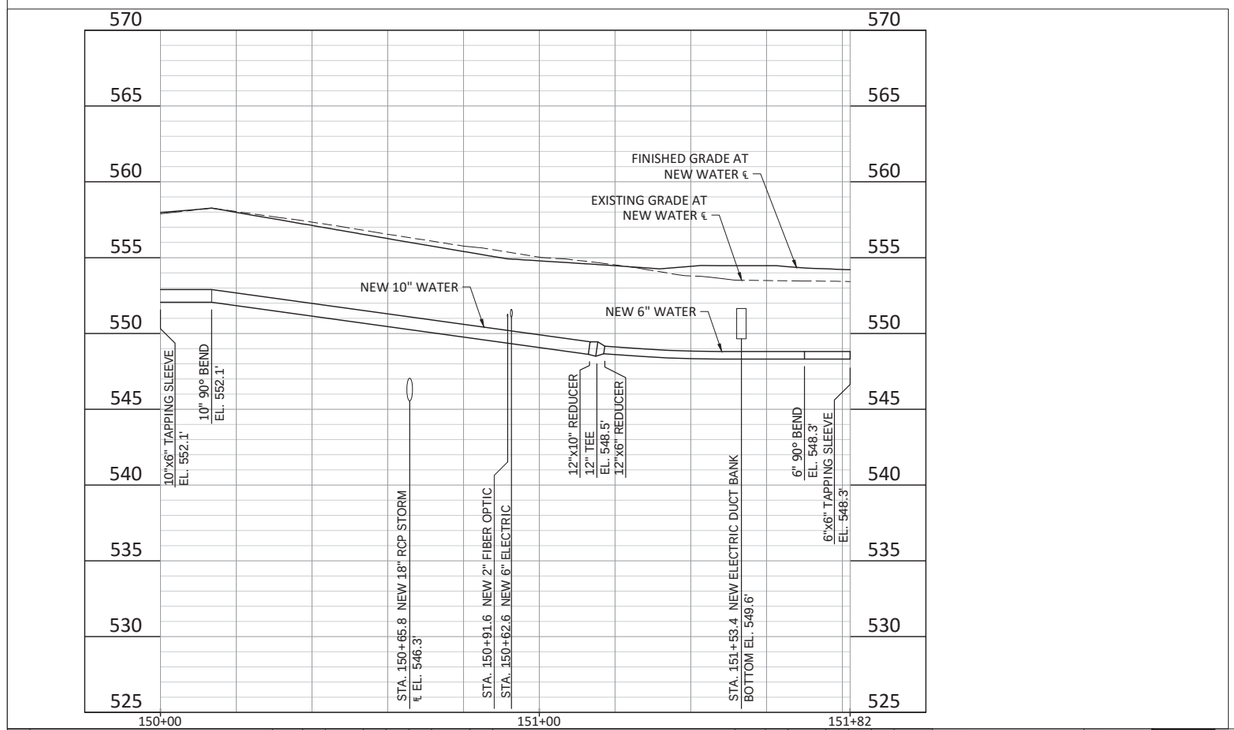
WATER DISTRIBUTION

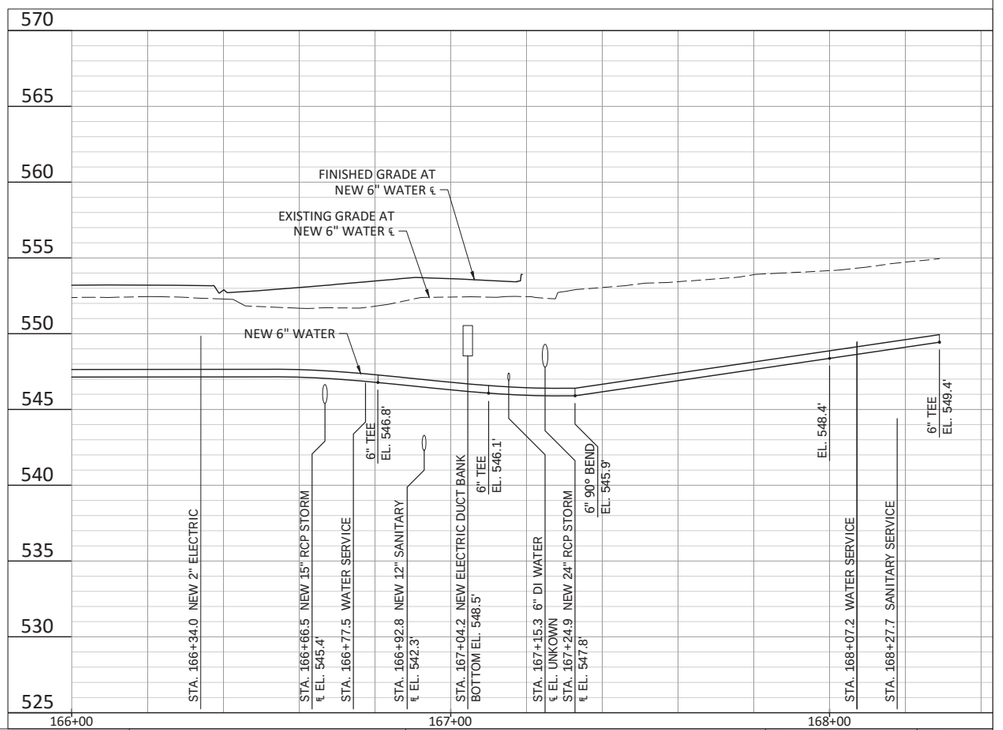
MISSISSIPPI DR. CORRIDOR CROSSINGS AT CHESTNUT ST. PLAN AND PROFILE

REF No.		SHEET No.
SCALE: NOTED	FILE No. 64	M.40
DRAWING No. DWD0354A	REV. No. 0	









REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D. BY	APPV. BY	APPV. BY	DATE

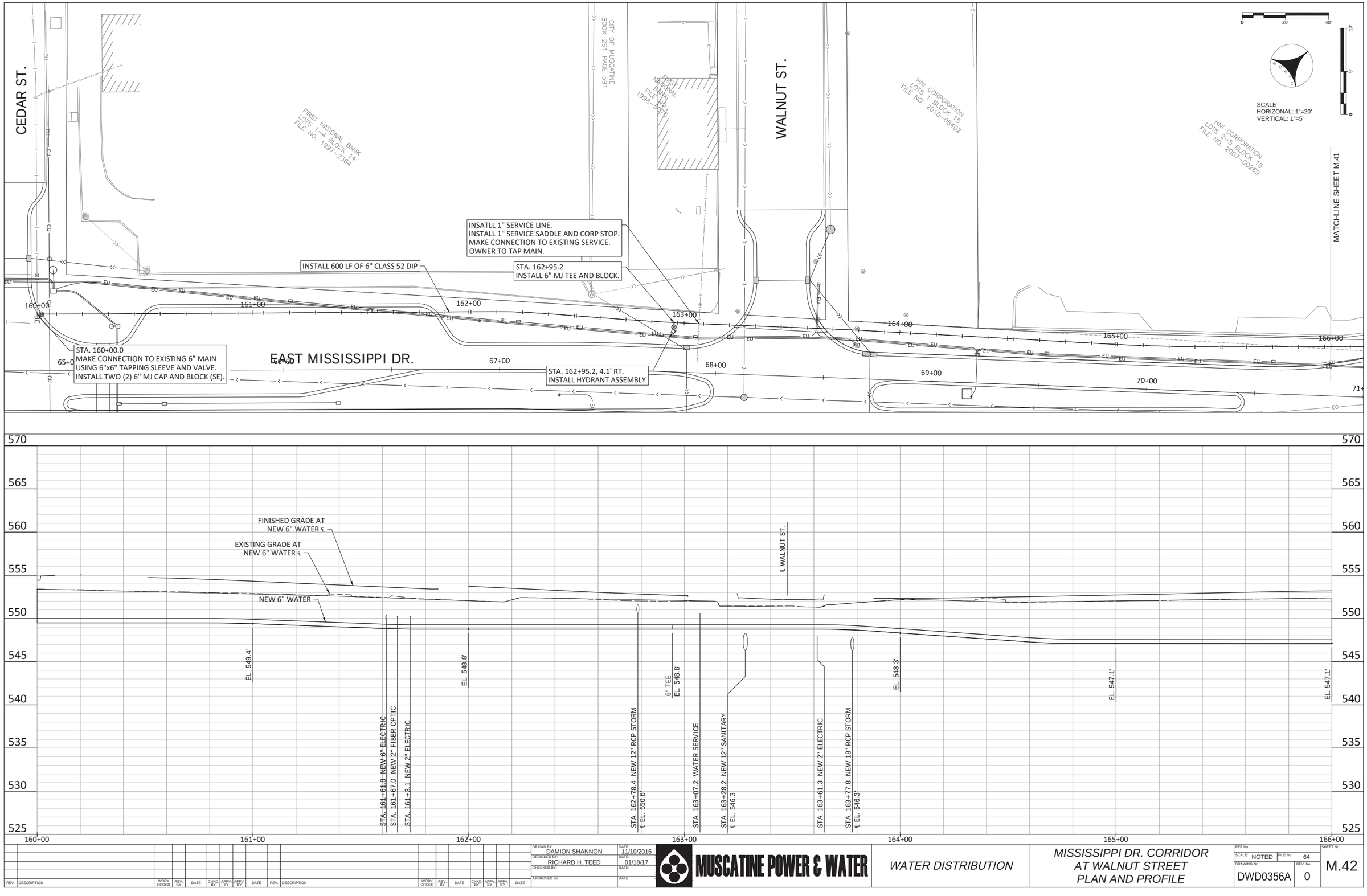
DRAWN BY:	DAMION SHANNON
DATE:	11/10/2016
DESIGNED BY:	RICHARD H. TEED
DATE:	01/18/17
CHECKED BY:	
DATE:	
APPROVED BY:	
DATE:	

MUSCATINE POWER & WATER

WATER DISTRIBUTION

MISSISSIPPI DR. CORRIDOR CROSSINGS AT IOWA & MULBERRY AVE. PLAN AND PROFILE

REF No.			SHEET No.
SCALE: NOTED	FILE No. 64		M.41
DRAWING No. DWD0355A	REV. No. 0		



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APP'V BY	APP'V BY	DATE

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APP'V BY	APP'V BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

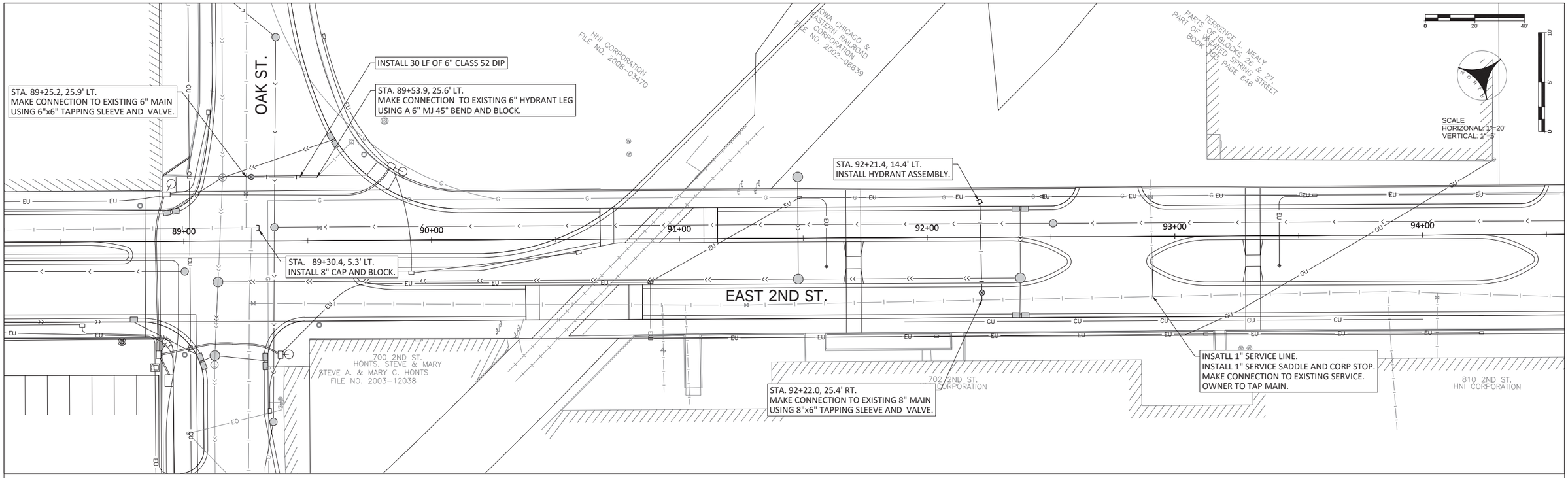
MUSCATINE POWER & WATER

WATER DISTRIBUTION

MISSISSIPPI DR. CORRIDOR AT WALNUT STREET PLAN AND PROFILE

REF No.
SCALE: NOTED — FILE No. 64
DRAWING No. DWD0356A — REV. No. 0

SHEET No. M.42



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	ChkD. BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON	DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED	DATE: 01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

MUSCATINE POWER & WATER

WATER DISTRIBUTION

MISSISSIPPI DR. CORRIDOR
OAK STREET
PLAN AND PROFILE

REF No.		SHEET No.
SCALE: NOTED	FILE No. 64	M.43
DRAWING No. DWD0357A	REV. No. 0	

FILE NO. 2009-01467

LINDA C. HINMAN, TR.
LOT 33 ISLAND VIEW ADD.
FILE NO. 2001-05132

ROBERT P & ROSEMARY BRYANT
BOOK 316 PAGE 941

DAVID L. & AMY C. STANBRO
LOT 7 BLOCK 43
BOOK 368 PAGE 165

2ND ST.

ELM ST.

ASH ST.

HERSHEY AVE.

WEST MISSISSIPPI DR.

SCALE
HORIZONAL: 1"=20'
VERTICAL: 1"=5'

INSTALL 303 LF OF 2-INCH LIGHT FEED CONDUIT.

INSTALL 7 LF OF 2-INCH LIGHT FEED CONDUIT.

INSTALL 90 LF OF 3-INCH ELECTRICAL CONDUIT.

INSTALL 92 LF OF COMMUNICATION QUAD DUCT CONDUIT.

STA. 22+59.4' LT.
INSTALL 17"x30" COMMUNICATION HAND HOLE.

STA. 23+42.8, 40.3' LT.
INSTALL 30"x48" COMMUNICATION HAND HOLE.

STA. 23+39.1, 35.9' LT.
INSTALL 13"x24" JUNCTION BOX.

MPW TO INSTALL NEW POWER POLE FOR SERVICE CONNECTIONS.

INSTALL 65 LF OF 2-INCH COMMUNICATION CONDUIT.

STA. 23+87.9, 35.7' LT.
INSTALL 10" COMMUNICATION HAND HOLE.

INSTALL 278 LF OF 2-INCH LIGHT FEED CONDUIT.

LIMIT OF WORK

INSTALL 14 LF OF 4-INCH ELECTRICAL CONDUIT.
INSTALL 14 LF OF 2-INCH ELECTRICAL CONDUIT.
INSTALL 14 LF OF 2-INCH LIGHT FEED CONDUIT.
INSTALL 14 LF OF COMMUNICATION QUAD DUCT CONDUIT.

ROAD CROSSING 1
DIRECTIONAL DRILL 54 LF OF 4-INCH ELECTRICAL CONDUIT.
DIRECTIONAL DRILL 54 LF OF 2-INCH ELECTRICAL CONDUIT.
DIRECTIONAL DRILL 54 LF OF 2-INCH LIGHT FEED CONDUIT.
DIRECTIONAL DRILL 54 LF OF COMMUNICATION QUAD DUCT CONDUIT.

STA. 25+99.2, 33.4' RT.
INSTALL 13"x24" JUNCTION BOX.

INSTALL 37 LF OF 2-INCH LIGHT FEED CONDUIT.

INSTALL 21 LF OF 2" LIGHT FEED CONDUIT.

INSTALL 266 LF OF 2-INCH ELECTRIC CONDUIT.

STA. 21+01.4, 28.0' RT.
INSTALL 17"x30" COMMUNICATION HAND HOLE.

INSTALL 6 LF OF COMMUNICATION QUAD DUCT CONDUIT.

INSTALL 600 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 600 LF OF 4-INCH ELECTRICAL CONDUIT.
INSTALL 120 LF OF 4-INCH ELECTRICAL CONDUIT.
INSTALL 530 LF OF 2-INCH LIGHT FEED CONDUIT.
INSTALL 570 LF OF COMMUNICATION QUAD DUCT CONDUIT.

INSTALL 20 LF OF COMMUNICATION QUAD DUCT CONDUIT.

STA. 23+23.1, 29.3' RT.
INSTALL 30"x48" COMMUNICATION HAND HOLE.

STA. 25+18.3, 42.8' RT.
INSTALL 30"x48" COMMUNICATION HAND HOLE.

INSTALL 6 LF OF 2-INCH COMMUNICATION CONDUIT (3' SWEEP SOUTH FOR FUTURE CONNECTION).

INSTALL 100 LF OF 6-INCH ELECTRIC CONDUIT.

INSTALL 25 LF OF 4-INCH ELECTRICAL CONDUIT.
INSTALL 25 LF OF COMMUNICATION QUAD DUCT CONDUIT.

INSTALL 187 LF OF 2-INCH ELECTRICAL CONDUIT.
INSTALL 196 LF OF 2-INCH COMMUNICATION CONDUIT.

INSTALL 217 LF OF 2-INCH LIGHT FEED CONDUIT.

ROAD CROSSING NO. 2
DIRECTIONAL DRILL 48 LF OF 4-INCH ELECTRICAL CONDUIT.
DIRECTIONAL DRILL 48 LF OF 2-INCH ELECTRICAL CONDUIT.
DIRECTIONAL DRILL 48 LF OF COMMUNICATION QUAD DUCT CONDUIT.

STA. 29+19.9, 2.7' LT.
INSTALL GFCI PEDESTAL,
SEE DETAIL 3/B.12.

INSTALL 7 LF OF COMMUNICATION QUAD DUCT CONDUIT.

INSTALL 91 LF OF 2-INCH LIGHT FEED CONDUIT.

STA. 26+30.9, 35.0' RT.
INSTALL 8'x8' TRANSFORMER PAD.

INSTALL 400 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 205 LF OF 4-INCH ELECTRICAL CONDUIT.
INSTALL 225 LF OF 2-INCH ELECTRICAL CONDUIT.
INSTALL 285 LF OF 2-INCH LIGHT FEED CONDUIT.
INSTALL 257 LF OF COMMUNICATION QUAD DUCT CONDUIT.

INSTALL 178 LF OF 2-INCH COMMUNICATION CONDUIT.

STA. 26+09.4, 41.7' RT.
INSTALL SWITCHGEAR PAD.

INSTALL 10 LF OF 4-INCH CONDUIT.

STA. 28+32.3, 26.0' RT.
INSTALL 30"x48" COMMUNICATION HAND HOLE.

INSTALL 10 LF OF 6-INCH CONDUIT.

STA. 26+20.1, 38.2' RT.
INSTALL SWITCHGEAR PAD.

REFERENCE NOTES:

1. INSTALL STREET LIGHT FOUNDATION AND 8"x18" JUNCTION BOX, SEE DETAIL 1A/B.06.
2. INSTALL 10"Ø JUNCTION BOX, SEE DETAIL 1B/B.06. SCREW IN FOUNDATION INSTALLED BY OTHERS.
3. STREET LIGHT TO BE INSTALLED ON TRAFFIC SIGNAL POLE.

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D. BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
ELM ST. AND ASH ST.
ELECTRICAL PLAN & PROFILE

REF No.
SCALE: NOTED — FILE No. 59
DRAWING No. DUG0096A — REV. No. 0

SHEET No. M.44

SOUTH ½ OF LOT 2, WEST 55' OF
THE SOUTH ½ OF LOT 3 BLOCK 5
FILE NO. 2007-03592

BROADWAY ST.

INSTALL 17 LF OF 2-INCH ELECTRIC CONDUIT.
INSTALL 13 LF OF 2-INCH COMMUNICATION CONDUIT.

STA. 30+25.2, 32.4 LT.
INSTALL 17"x30" COMMUNICATION
HAND HOLE.

MPW TO INSTALL NEW POWER
POLE FOR SERVICE CONNECTIONS.

INSTALL 240 LF OF 3-INCH ELECTRICAL CONDUIT.
INSTALL 235 LF OF 2-INCH COMMUNICATION CONDUIT.

MPW TO INSTALL NEW POWER
POLE FOR SERVICE CONNECTIONS.

STA. 32+61.8, 32.2 LT.
INSTALL 17"x30" COMMUNICATION
HAND HOLE.

STA. 30+29.2, 33.9 LT.
INSTALL 3'x3' SINGLE PHASE
TRANSFORMER PAD.

INSTALL 31 LF OF 2-INCH
LIGHT FEED CONDUIT.

INSTALL 581 LF OF 2-INCH
LIGHT FEED CONDUIT.

STA. 32+99.7, 1.4' LT.
INSTALL GFCI PEDESTAL,
SEE DETAIL 3/B.12.

30+00 31+00 32+00 33+00 34+00 35+00 36+00

STA. 30+29.1, 2.7 LT.
INSTALL 13"x24" JUNCTION
BOX.

STA. 32+99.7
INSTALL 13"x24" JUNCTION BOX.

WEST MISSISSIPPI DR.

INSTALL 17 LF OF 2-INCH
LIGHT FEED CONDUIT.

STA. 34+37.3, 22.9' RT.
INSTALL 30"x48" COMMUNICATION
HAND HOLE.

INSTALL 600 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 600 LF OF 2-INCH COMMUNICATION CONDUIT.

SCALE
HORIZONAL: 1"=20'
VERTICAL: 1"=5'

NEW 2" ELECTRIC CONDUIT (BY OTHERS).

INSTALL 225 LF OF 2-INCH LIGHT FEED CONDUIT.

INSTALL 225 LF OF 2-INCH LIGHT FEED CONDUIT.

36+00 37+00 38+00 39+00 40+00 41+00 42+00

WEST MISSISSIPPI DR.

VAULT

STA. 36+41.9, 20.9' RT.
INSTALL 6'x10' VAULT.
SEE DETAIL SHEET B.09

INSTALL 600 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 600 LF OF 2-INCH COMMUNICATION CONDUIT.

STA. 40+66.2, 23.4' RT.
INSTALL 17"x30" COMMUNICATION
HAND HOLE.

SCALE
HORIZONAL: 1"=20'
VERTICAL: 1"=5'

REFERENCE NOTES:

1. INSTALL STREET LIGHT FOUNDATION AND 8"x18" JUNCTION BOX, SEE DETAIL 1A/B.06.
2. INSTALL 10"Ø JUNCTION BOX, SEE DETAIL 1B/B.06. SCREW IN FOUNDATION INSTALLED BY OTHERS.
3. STREET LIGHT TO BE INSTALLED ON TRAFFIC SIGNAL POLE.

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

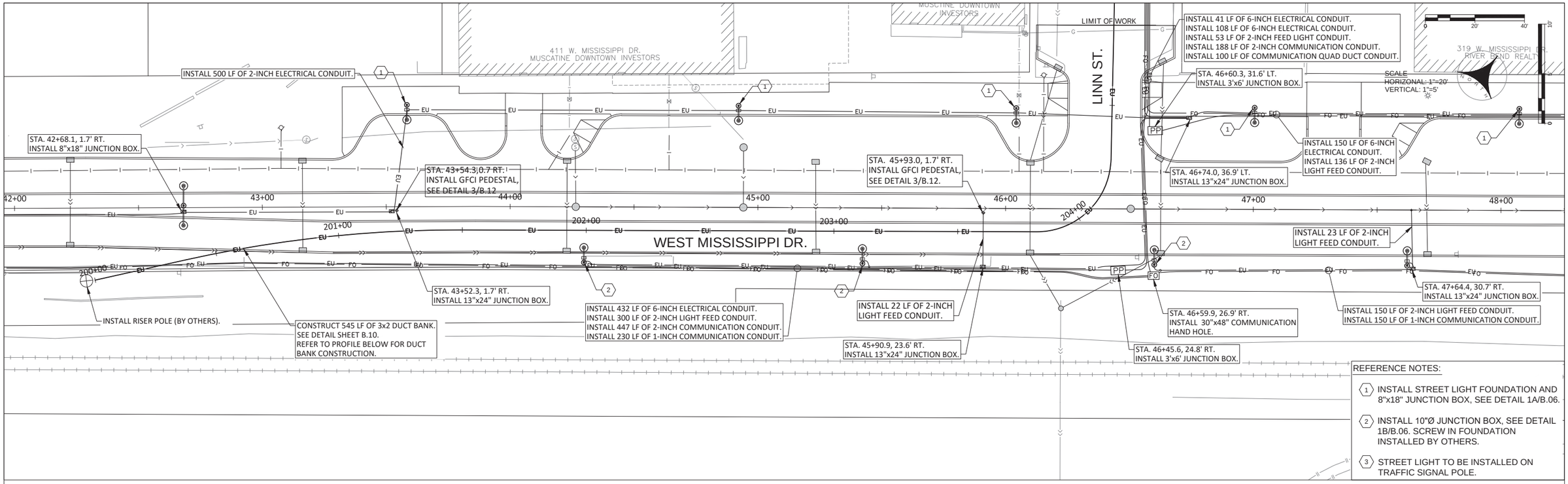
DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

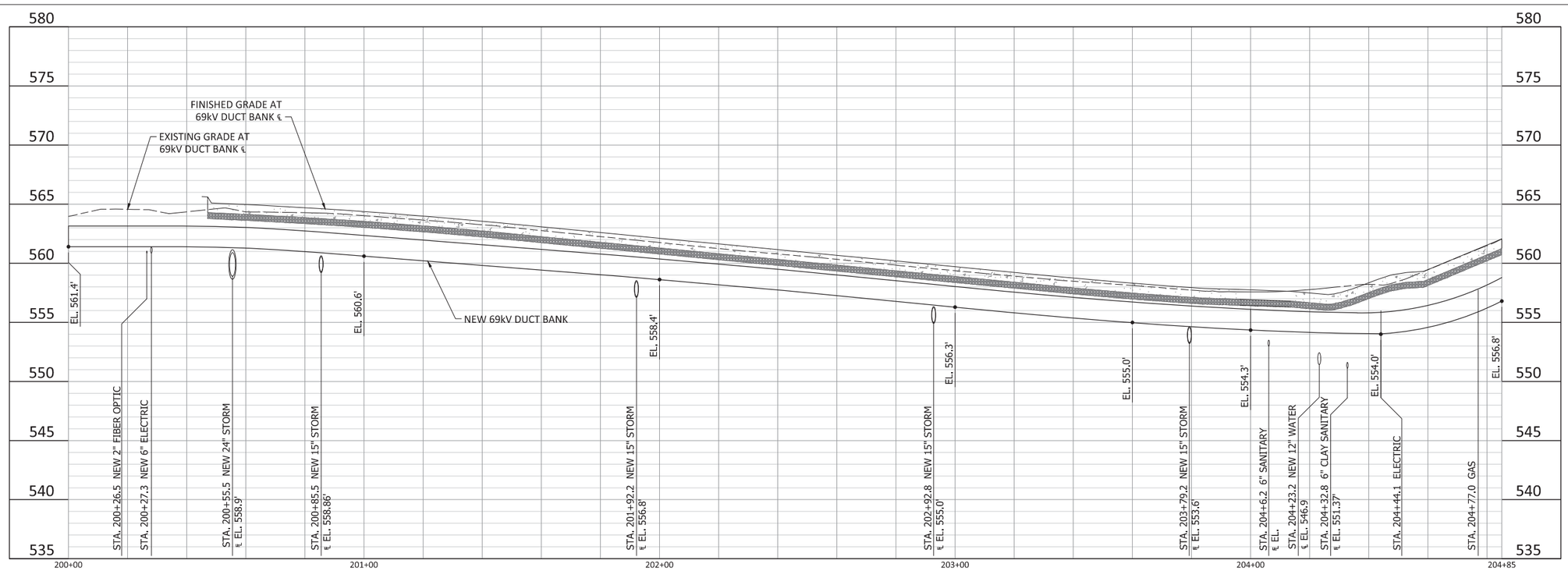
MUSCATINE POWER & WATER

UNDERGROUND

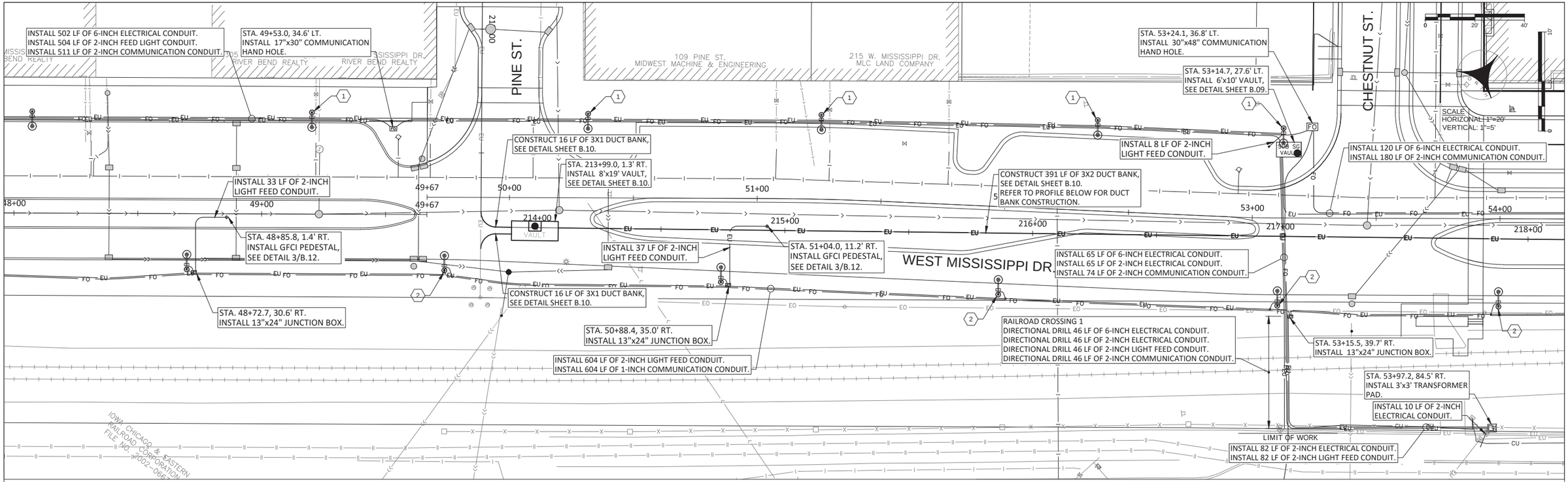
MISSISSIPPI DR. CORRIDOR
BROADWAY STREET
ELECTRICAL PLAN & PROFILE

REF No.
SCALE: NOTED — FILE No. 59
DRAWING No. DUG0096B — REV. No. 0
SHEET No. M.45


411 W. MISSISSIPPI DR.
MUSCATINE DOWNTOWN INVESTORS
MUSCATINE DOWNTOWN INVESTORS
319 W. MISSISSIPPI DR.
RIVER BEND REALTY
LIMIT OF WORK
LINN ST.
WEST MISSISSIPPI DR.
SCALE
HORIZONAL: 1"=20'
VERTICAL: 1"=5'
INSTALL 500 LF OF 2-INCH ELECTRICAL CONDUIT.
STA. 42+68.1, 1.7' RT.
INSTALL 8"x18" JUNCTION BOX.
STA. 43+54.3, 0.7 RT.
INSTALL GFCI PEDESTAL,
SEE DETAIL 3/B.12
STA. 43+52.3, 1.7' RT.
INSTALL 13"x24" JUNCTION BOX.
INSTALL RISER POLE (BY OTHERS).
CONSTRUCT 545 LF OF 3x2 DUCT BANK.
SEE DETAIL SHEET B.10.
REFER TO PROFILE BELOW FOR DUCT
BANK CONSTRUCTION.
INSTALL 432 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 300 LF OF 2-INCH LIGHT FEED CONDUIT.
INSTALL 447 LF OF 2-INCH COMMUNICATION CONDUIT.
INSTALL 230 LF OF 1-INCH COMMUNICATION CONDUIT.
STA. 45+93.0, 1.7' RT.
INSTALL GFCI PEDESTAL,
SEE DETAIL 3/B.12.
INSTALL 22 LF OF 2-INCH
LIGHT FEED CONDUIT.
STA. 45+90.9, 23.6' RT.
INSTALL 13"x24" JUNCTION BOX.
INSTALL 41 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 108 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 53 LF OF 2-INCH FEED LIGHT CONDUIT.
INSTALL 188 LF OF 2-INCH COMMUNICATION CONDUIT.
INSTALL 100 LF OF COMMUNICATION QUAD DUCT CONDUIT.
STA. 46+60.3, 31.6' LT.
INSTALL 3'x6' JUNCTION BOX.
INSTALL 150 LF OF 6-INCH
ELECTRICAL CONDUIT.
INSTALL 136 LF OF 2-INCH
LIGHT FEED CONDUIT.
STA. 46+74.0, 36.9' LT.
INSTALL 13"x24" JUNCTION BOX.
INSTALL 23 LF OF 2-INCH
LIGHT FEED CONDUIT.
STA. 46+59.9, 26.9' RT.
INSTALL 30"x48" COMMUNICATION
HAND HOLE.
STA. 46+45.6, 24.8' RT.
INSTALL 3'x6' JUNCTION BOX.
INSTALL 150 LF OF 2-INCH LIGHT FEED CONDUIT.
INSTALL 150 LF OF 1-INCH COMMUNICATION CONDUIT.
STA. 47+64.4, 30.7' RT.
INSTALL 13"x24" JUNCTION BOX.
42+00
43+00
44+00
45+00
46+00
47+00
48+00
200+00
201+00
202+00
203+00
204+00
EU
FO
PP
REFERENCE NOTES:
1 INSTALL STREET LIGHT FOUNDATION AND 8"x18" JUNCTION BOX, SEE DETAIL 1A/B.06.
2 INSTALL 10"Ø JUNCTION BOX, SEE DETAIL 1B/B.06. SCREW IN FOUNDATION INSTALLED BY OTHERS.
3 STREET LIGHT TO BE INSTALLED ON TRAFFIC SIGNAL POLE.

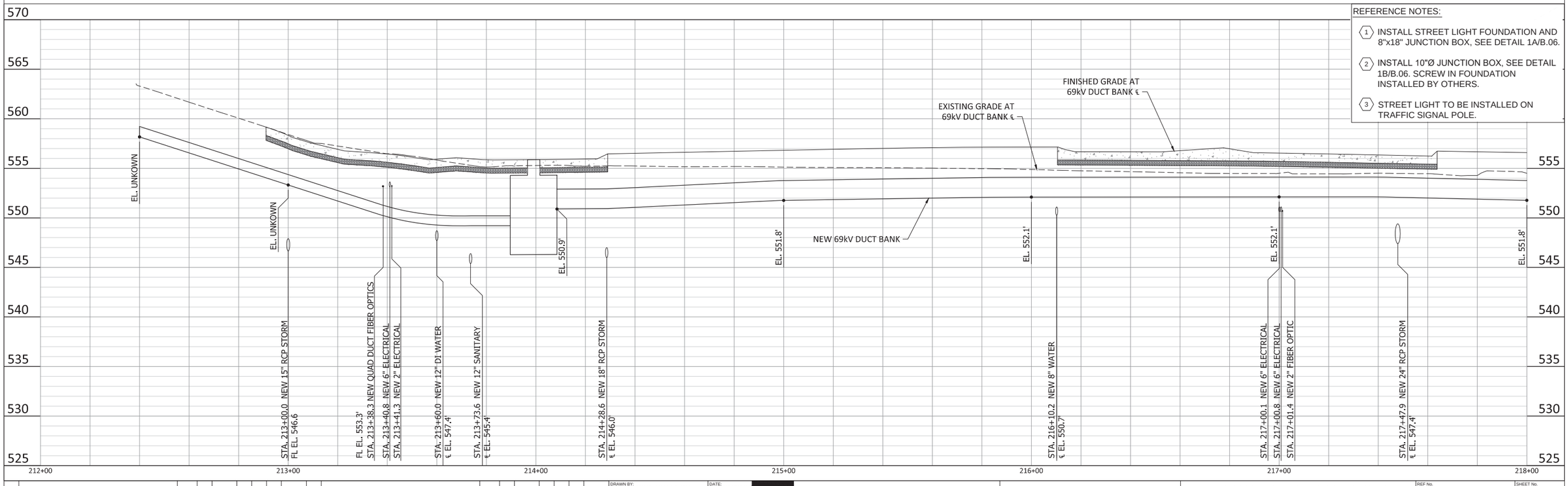

580
575
570
565
560
555
550
545
540
535
FINISHED GRADE AT
69kV DUCT BANK ℄
EXISTING GRADE AT
69kV DUCT BANK ℄
NEW 69kV DUCT BANK
EL. 561.4'
STA. 200+26.5 NEW 2" FIBER OPTIC
STA. 200+27.3 NEW 6" ELECTRIC
STA. 200+55.5 NEW 24" STORM
℄ EL. 558.9'
STA. 200+85.5 NEW 15" STORM
℄ EL. 558.86'
EL. 560.6'
STA. 201+92.2 NEW 15" STORM
℄ EL. 556.8'
EL. 558.4'
STA. 202+92.8 NEW 15" STORM
℄ EL. 555.0'
EL. 556.3'
EL. 555.0'
STA. 203+79.2 NEW 15" STORM
℄ EL. 553.6'
STA. 204+6.2 6" SANITARY
℄ EL.
EL. 554.3'
STA. 204+23.2 NEW 12" WATER
℄ EL. 546.9
STA. 204+32.8 6" CLAY SANITARY
℄ EL. 551.37'
EL. 554.0'
STA. 204+44.1 ELECTRIC
STA. 204+77.0 GAS
EL. 556.8'
200+00
201+00
202+00
203+00
204+00
204+85

| | | |



REFERENCE NOTES:

1. INSTALL STREET LIGHT FOUNDATION AND 8"x18" JUNCTION BOX, SEE DETAIL 1A/B.06.
2. INSTALL 10"Ø JUNCTION BOX, SEE DETAIL 1B/B.06. SCREW IN FOUNDATION INSTALLED BY OTHERS.
3. STREET LIGHT TO BE INSTALLED ON TRAFFIC SIGNAL POLE.



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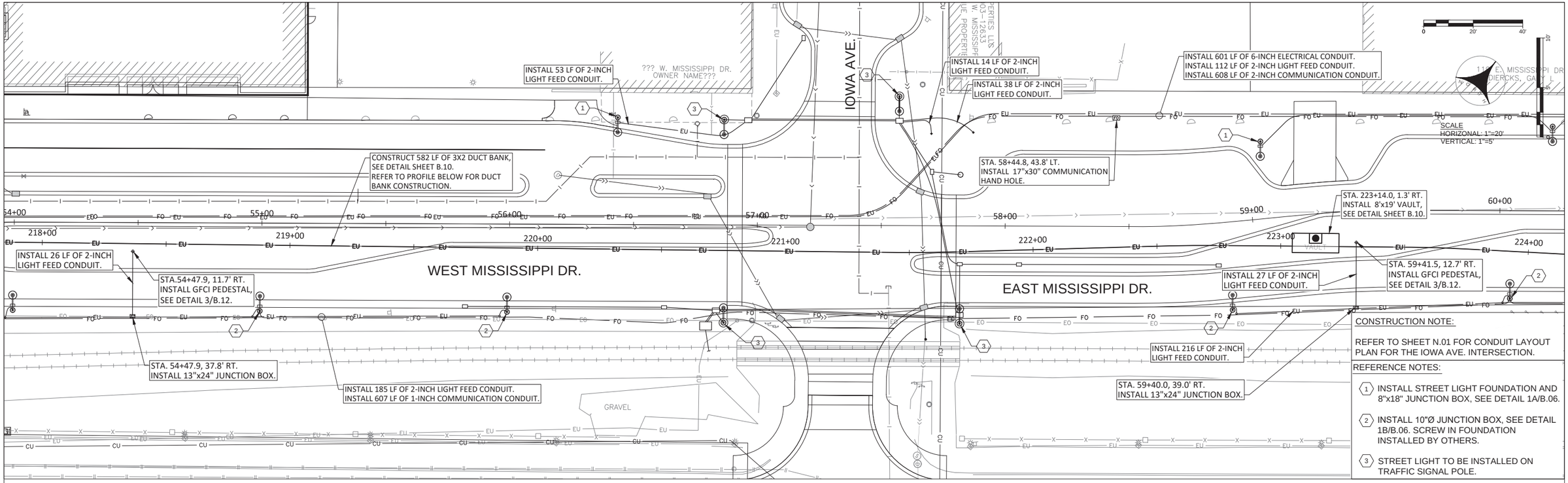
APPROVED BY: — DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
PINE ST. & CHESTNUT ST.
ELECTRICAL PLAN & PROFILE

REF No.
SCALE: NOTED — FILE No. 59
DRAWING No. DUG0096D — REV. No. 0
SHEET No. M.47



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	ChkD. BY	APPV. BY	APPV. BY	DATE

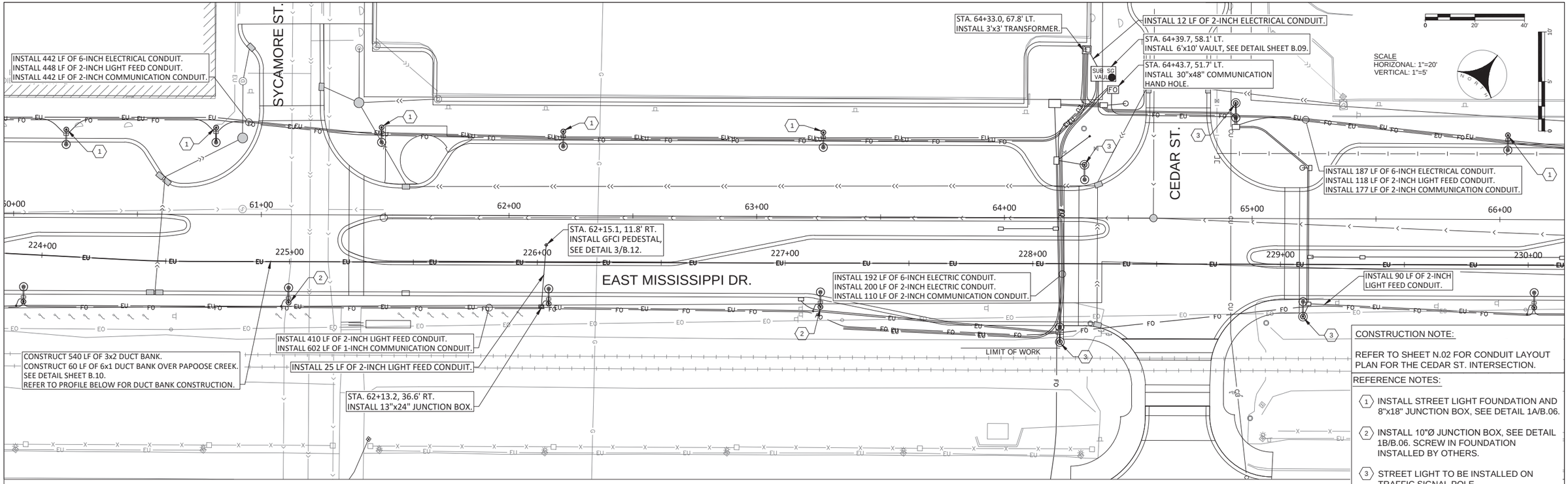
DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

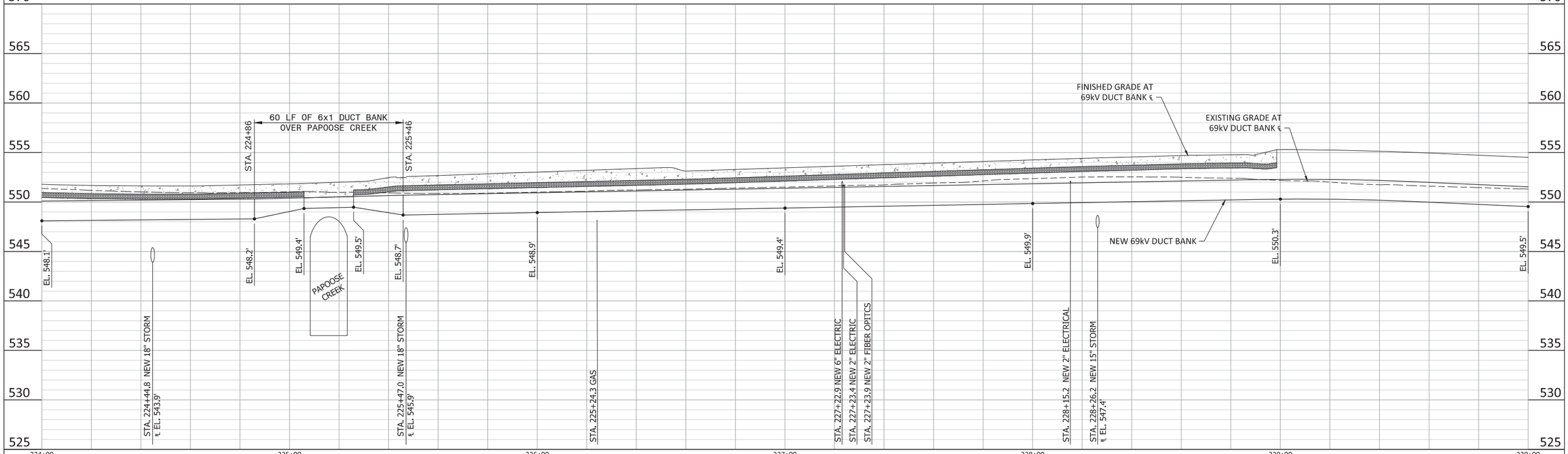
MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
IOWA AVE.
ELECTRICAL PLAN & PROFILE

REF No.
SCALE: NOTED
FILE No. 59
DRAWING No. DUG0096E
REV. No. 0
SHEET No. M.48





REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D. BY	APPV. BY	APPV. BY	DATE

DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE:
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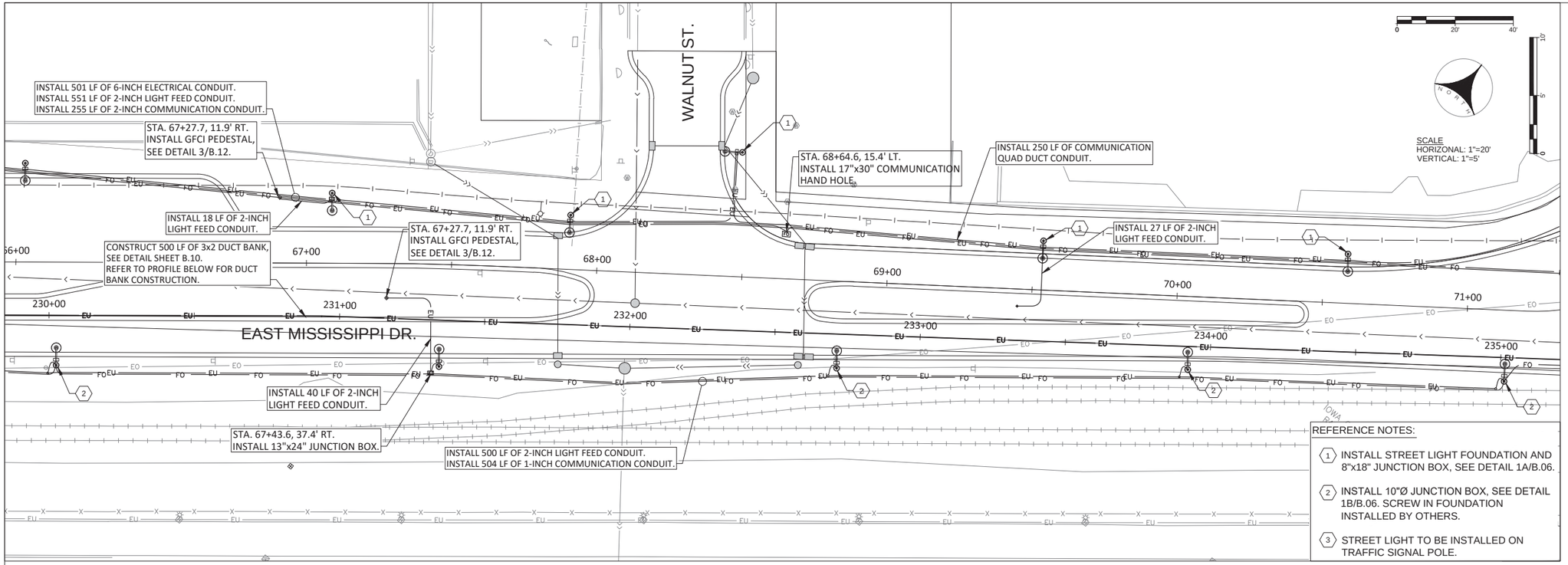
APPROVED BY: — DATE:

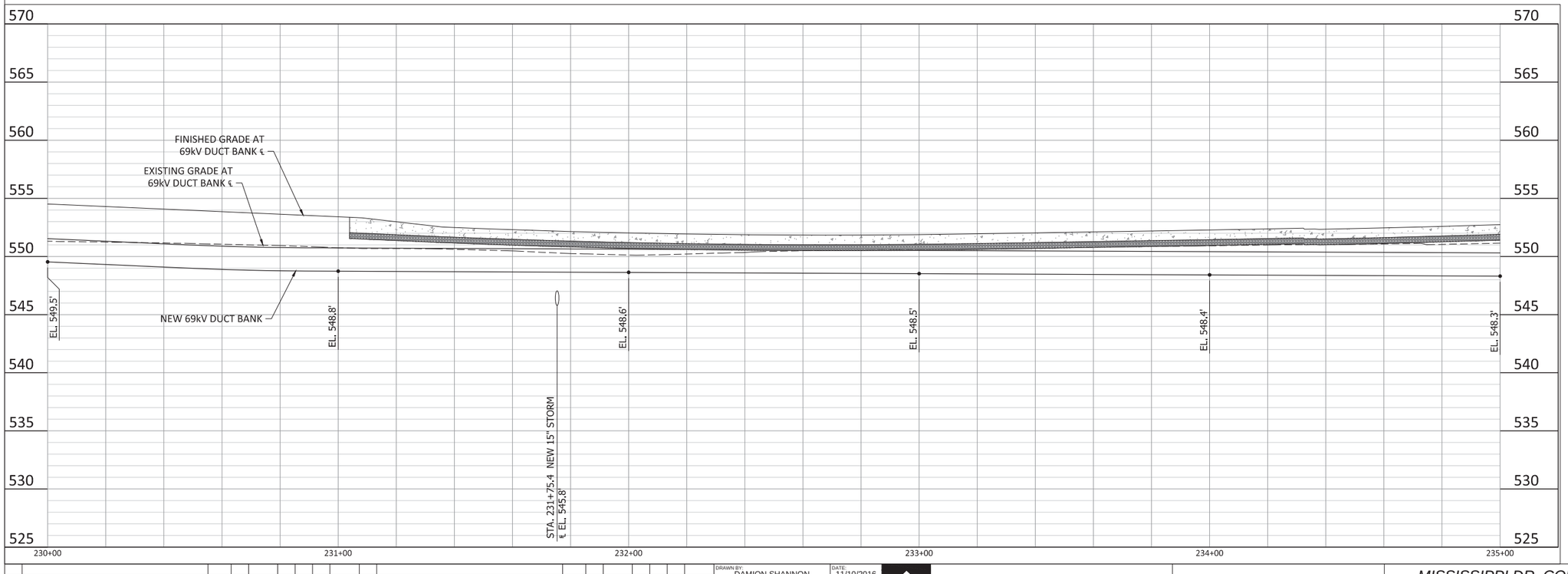
MUSCATINE POWER & WATER

UNDERGROUND

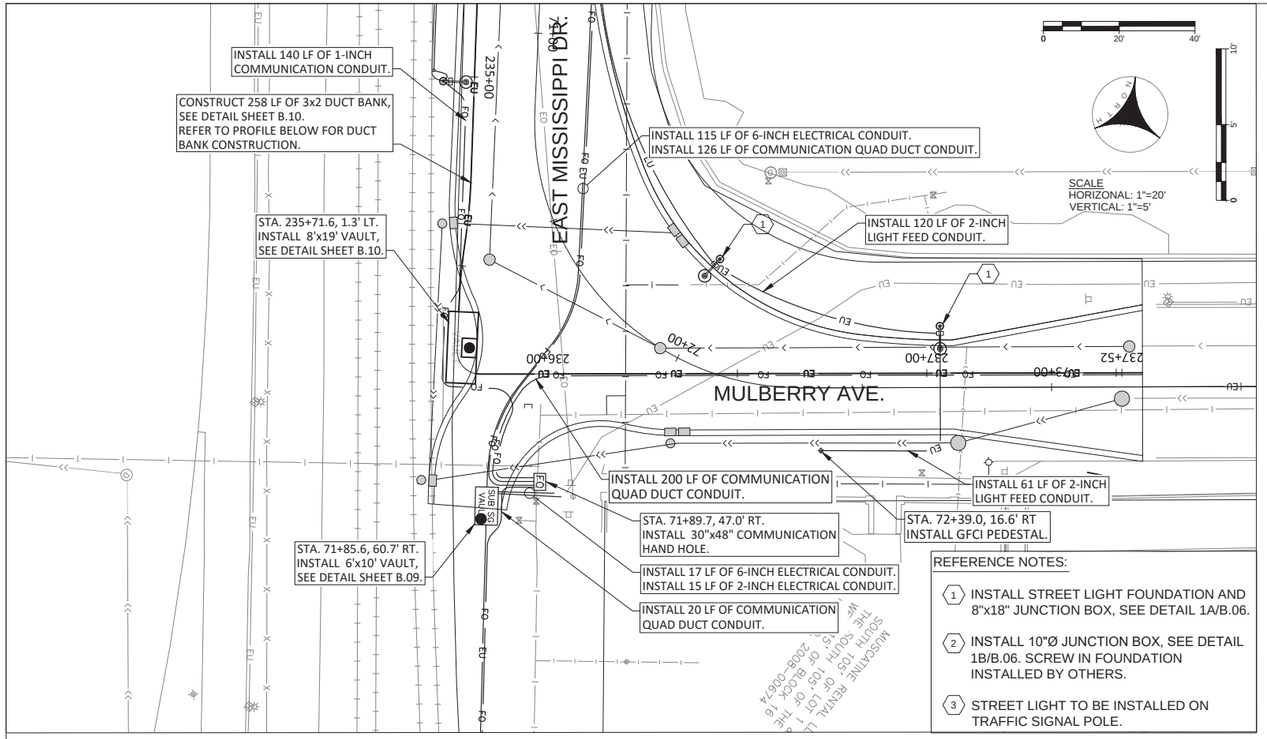
MISSISSIPPI DR. CORRIDOR
SYCAMORE ST. & CEDAR ST.
ELECTRICAL PLAN & PROFILE

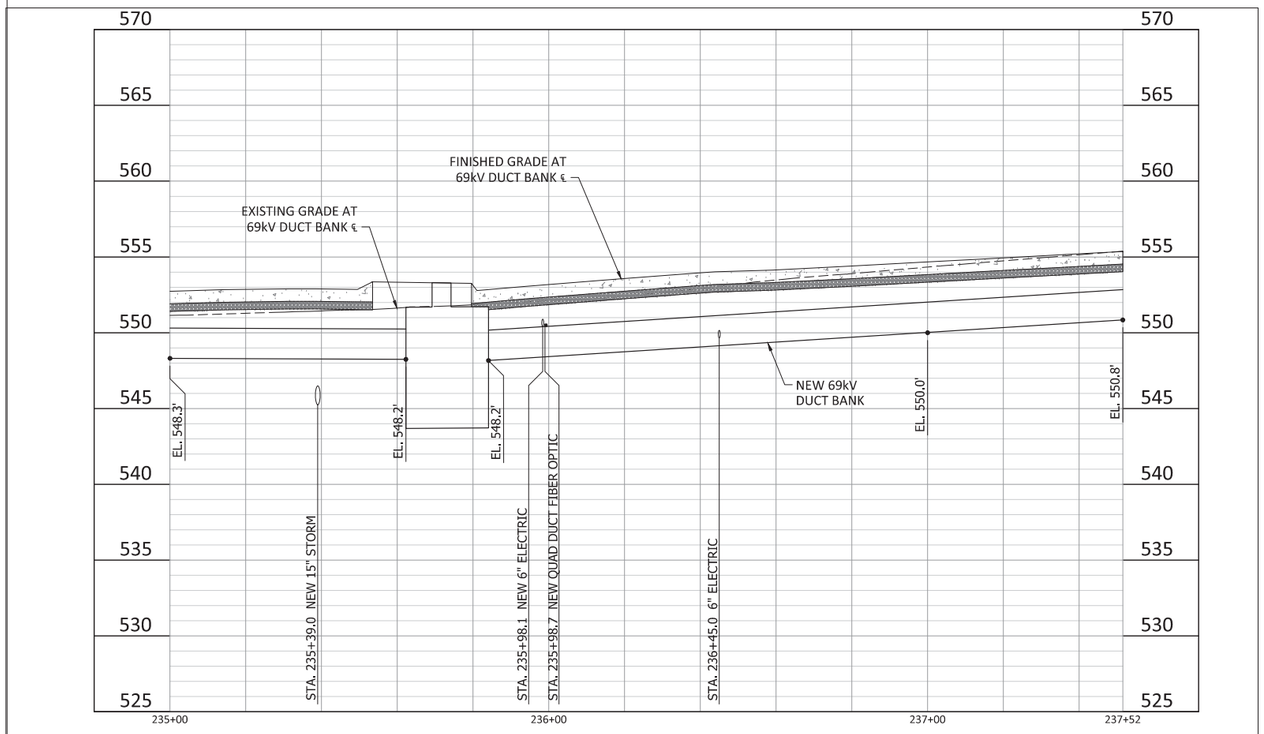
REF No.
SCALE: NOTED
FILE No. 59
DRAWING No. DUG0096F
REV. No. 0
SHEET No. M.49


INSTALL 501 LF OF 6-INCH ELECTRICAL CONDUIT.
INSTALL 551 LF OF 2-INCH LIGHT FEED CONDUIT.
INSTALL 255 LF OF 2-INCH COMMUNICATION CONDUIT.
STA. 67+27.7, 11.9' RT.
INSTALL GFCI PEDESTAL,
SEE DETAIL 3/B.12.
INSTALL 18 LF OF 2-INCH
LIGHT FEED CONDUIT.
CONSTRUCT 500 LF OF 3x2 DUCT BANK,
SEE DETAIL SHEET B.10.
REFER TO PROFILE BELOW FOR DUCT
BANK CONSTRUCTION.
STA. 67+27.7, 11.9' RT.
INSTALL GFCI PEDESTAL,
SEE DETAIL 3/B.12.
WALNUT ST.
STA. 68+64.6, 15.4' LT.
INSTALL 17"x30" COMMUNICATION
HAND HOLE.
INSTALL 250 LF OF COMMUNICATION
QUAD DUCT CONDUIT.
INSTALL 27 LF OF 2-INCH
LIGHT FEED CONDUIT.
EAST MISSISSIPPI DR.
INSTALL 40 LF OF 2-INCH
LIGHT FEED CONDUIT.
STA. 67+43.6, 37.4' RT.
INSTALL 13"x24" JUNCTION BOX.
INSTALL 500 LF OF 2-INCH LIGHT FEED CONDUIT.
INSTALL 504 LF OF 1-INCH COMMUNICATION CONDUIT.
66+00
67+00
68+00
69+00
70+00
71+00
230+00
231+00
232+00
233+00
234+00
235+00
0
20'
40'
SCALE
HORIZONAL: 1"=20'
VERTICAL: 1"=5'
REFERENCE NOTES:
1 INSTALL STREET LIGHT FOUNDATION AND 8"x18" JUNCTION BOX, SEE DETAIL 1A/B.06.
2 INSTALL 10"Ø JUNCTION BOX, SEE DETAIL 1B/B.06. SCREW IN FOUNDATION INSTALLED BY OTHERS.
3 STREET LIGHT TO BE INSTALLED ON TRAFFIC SIGNAL POLE.


570
565
560
555
550
545
540
535
530
525
FINISHED GRADE AT
69kV DUCT BANK ℄
EXISTING GRADE AT
69kV DUCT BANK ℄
NEW 69kV DUCT BANK
EL. 549.5'
EL. 548.8'
EL. 548.6'
EL. 548.5'
EL. 548.4'
EL. 548.3'
STA. 231+75.4 NEW 15" STORM
℄ EL. 545.8'
230+00
231+00
232+00
233+00
234+00
235+00

| | | |





REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D. BY	APPV. BY	APPV. BY	DATE

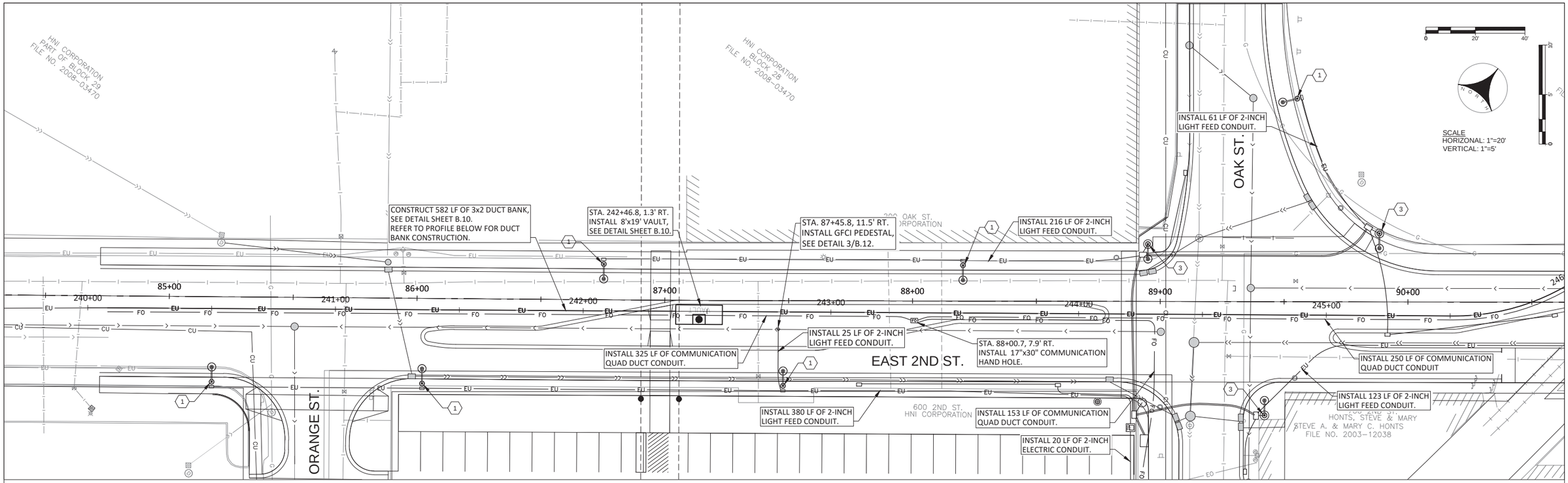
DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

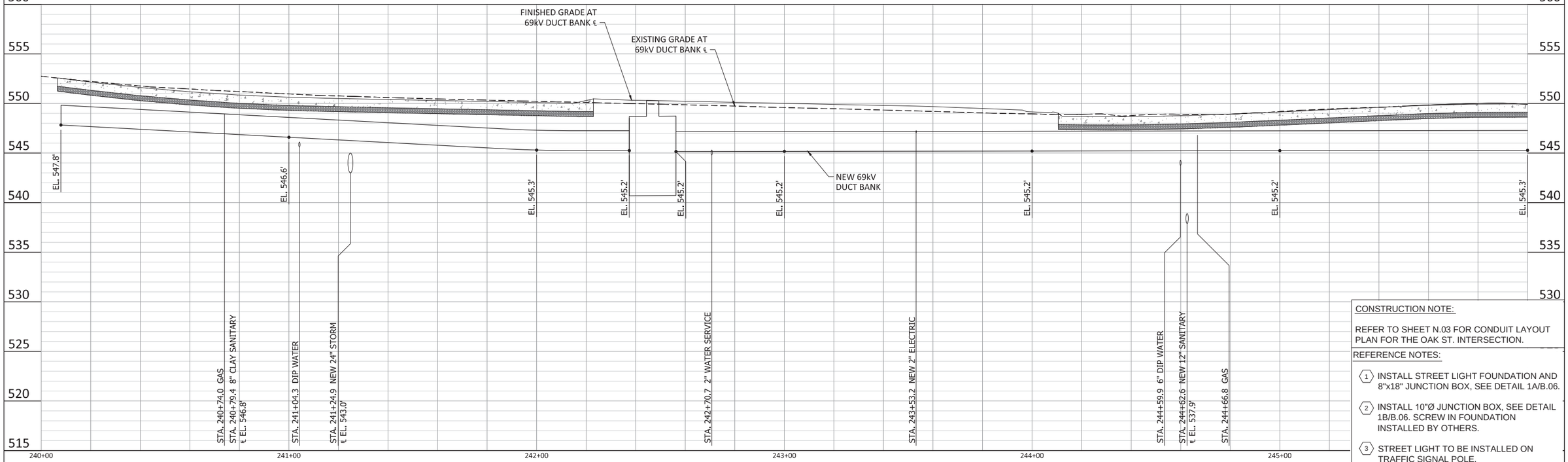
MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
MULBERRY AVE.
ELECTRICAL PLAN & PROFILE

REF No.
SCALE: NOTED
FILE No. 59
DRAWING No. DUG0096H
REV. No. 0
SHEET No. M.51





CONSTRUCTION NOTE:

REFER TO SHEET N.03 FOR CONDUIT LAYOUT PLAN FOR THE OAK ST. INTERSECTION.

REFERENCE NOTES:

1. INSTALL STREET LIGHT FOUNDATION AND 8"x18" JUNCTION BOX, SEE DETAIL 1A/B.06.
2. INSTALL 10"Ø JUNCTION BOX, SEE DETAIL 1B/B.06. SCREW IN FOUNDATION INSTALLED BY OTHERS.
3. STREET LIGHT TO BE INSTALLED ON TRAFFIC SIGNAL POLE.

REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	ChkD. BY	APPV. BY	APPV. BY	DATE

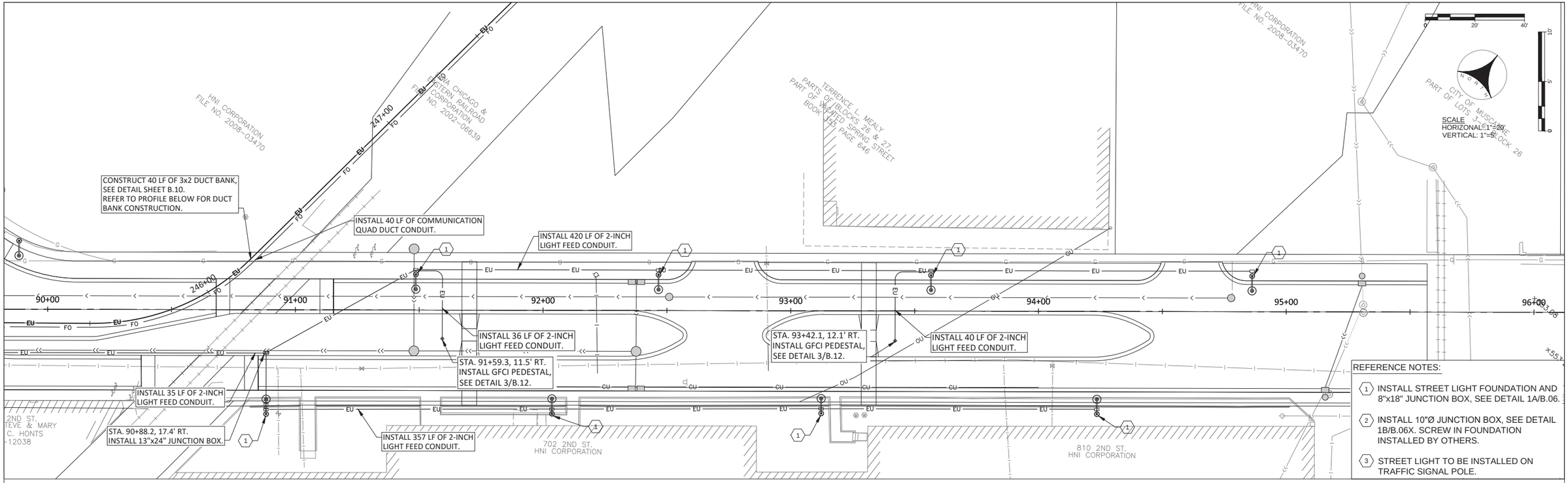
DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

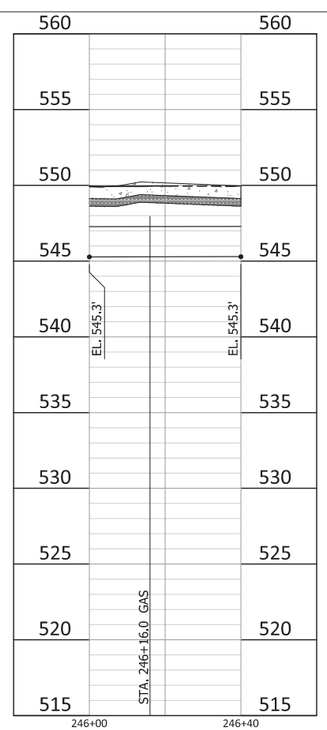
MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
ORANGE ST. & OAK ST.
ELECTRICAL PLAN & PROFILE

REF No.
SCALE: NOTED
FILE No. 59
DRAWING No. DUG0096I
REV. No. 0
SHEET No. M.52





REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D. BY	APPV. BY	APPV. BY	DATE

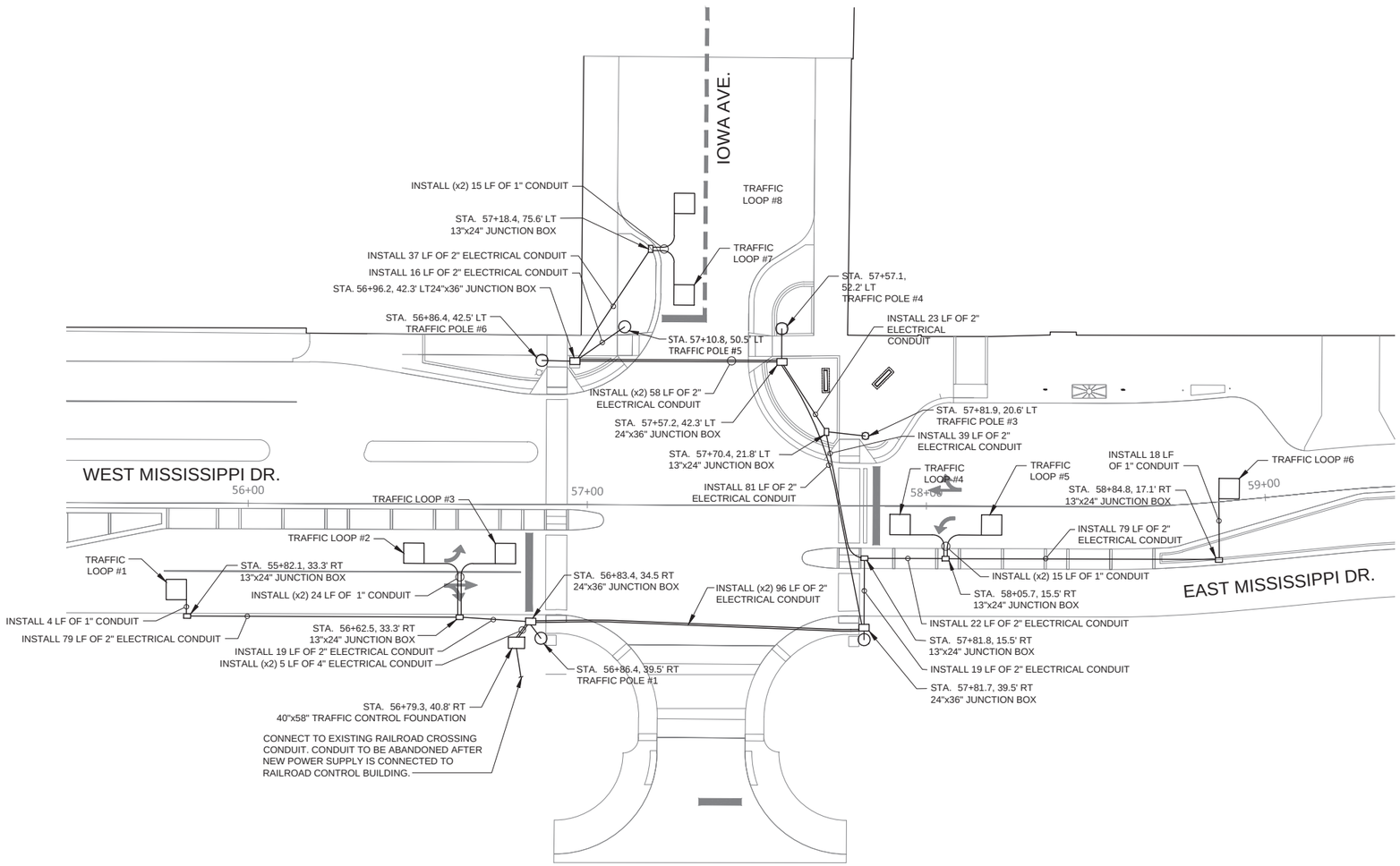
DRAWN BY: DAMION SHANNON — DATE: 11/10/2016
DESIGNED BY: RICHARD H. TEED — DATE: 01/18/17
CHECKED BY: — DATE:
APPROVED BY: — DATE:

MUSCATINE POWER & WATER

UNDERGROUND

MISSISSIPPI DR. CORRIDOR
MAD CREEK
ELECTRICAL PLAN & PROFILE

REF No.
SCALE: NOTED
FILE No. 59
DRAWING No. DUG0096J
REV. No. 0
SHEET No. M.53



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHKD. BY	APPV. BY	APPV. BY	DATE

DRAWN BY:	DATE:
DAMION SHANNON	11/10/2016
DESIGNED BY:	DATE:
ANDREW J. KURRIGER	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

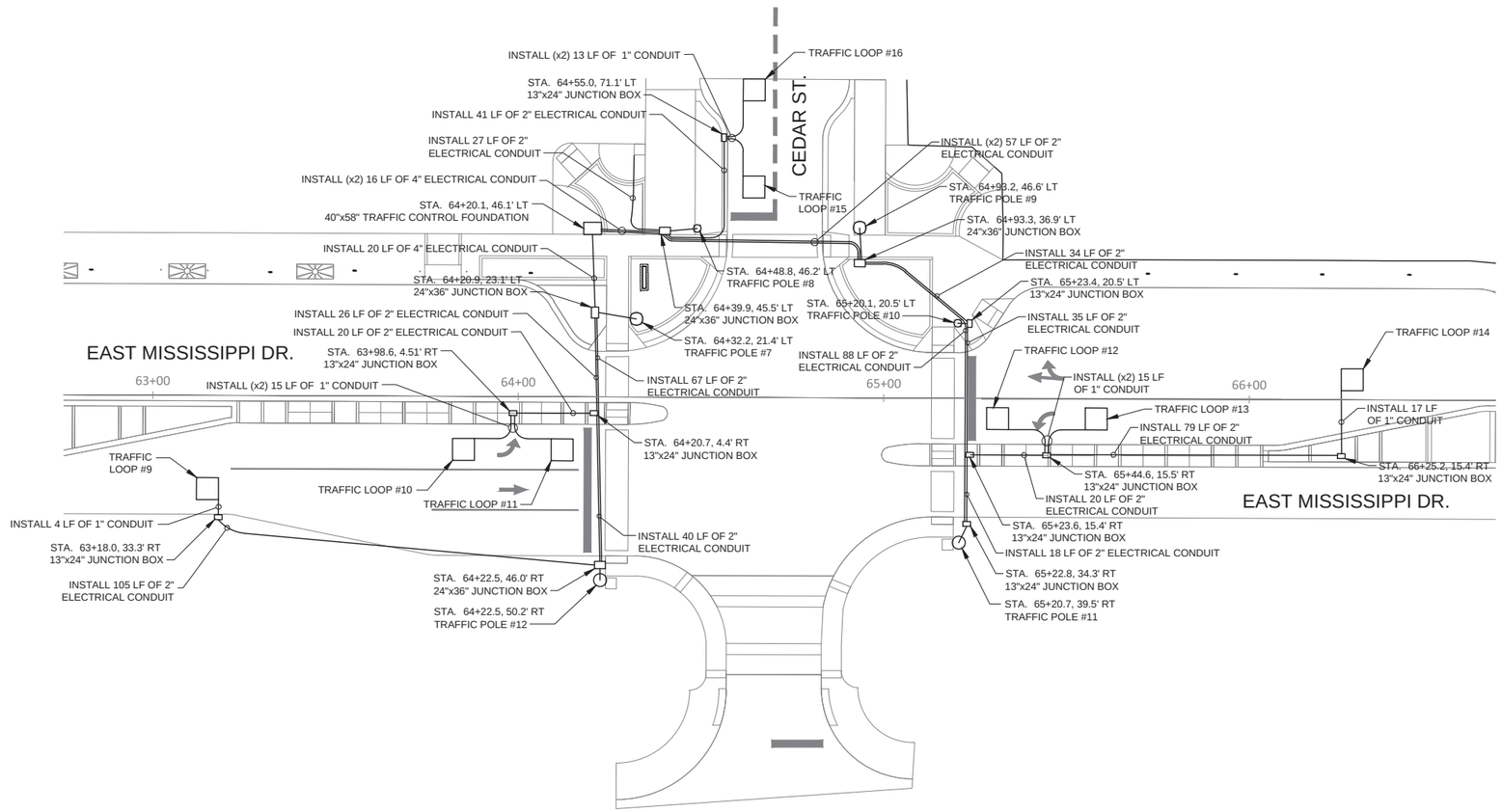
MUSCATINE POWER & WATER

TRAFFIC SIGNALS

MISSISSIPPI DR. CORRIDOR
TRAFFIC LIGHT INSTALLATION
IOWA AVE. & MISSISSIPPI DR.

REF No.			
SCALE: NOTED	FILE No.	51	
DRAWING No.		REV. No.	
DTR0134A		0	

SHEET No.
N.01



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	ChkD. BY	APPV. BY	APPV. BY	DATE

DRAWN BY:	DATE:
DAMION SHANNON	11/10/2016
DESIGNED BY:	DATE:
ANDREW J. KURRIGER	01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

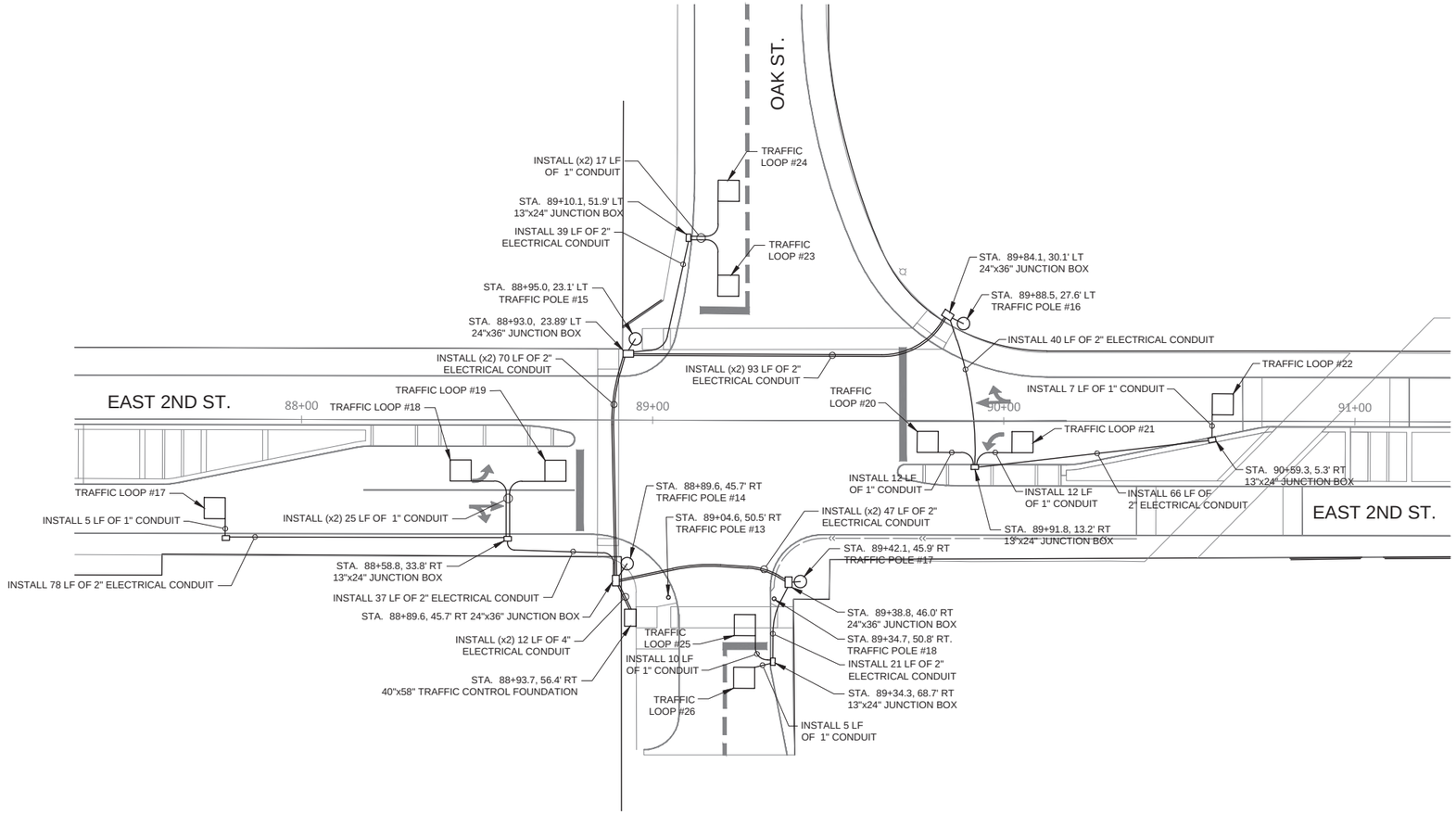
MUSCATINE POWER & WATER

TRAFFIC SIGNALS

MISSISSIPPI DR. CORRIDOR
TRAFFIC LIGHT INSTALLATION
CEDAR ST. & MISSISSIPPI DR.

REF No.		SHEET No.
SCALE: NOTED	FILE No. 51	N.02
DRAWING No. DTR0135A	REV. No. 0	

0 20' 40'



REV.	DESCRIPTION	WORK ORDER	REV. BY	DATE	CHK'D BY	APPV. BY	APPV. BY	DATE

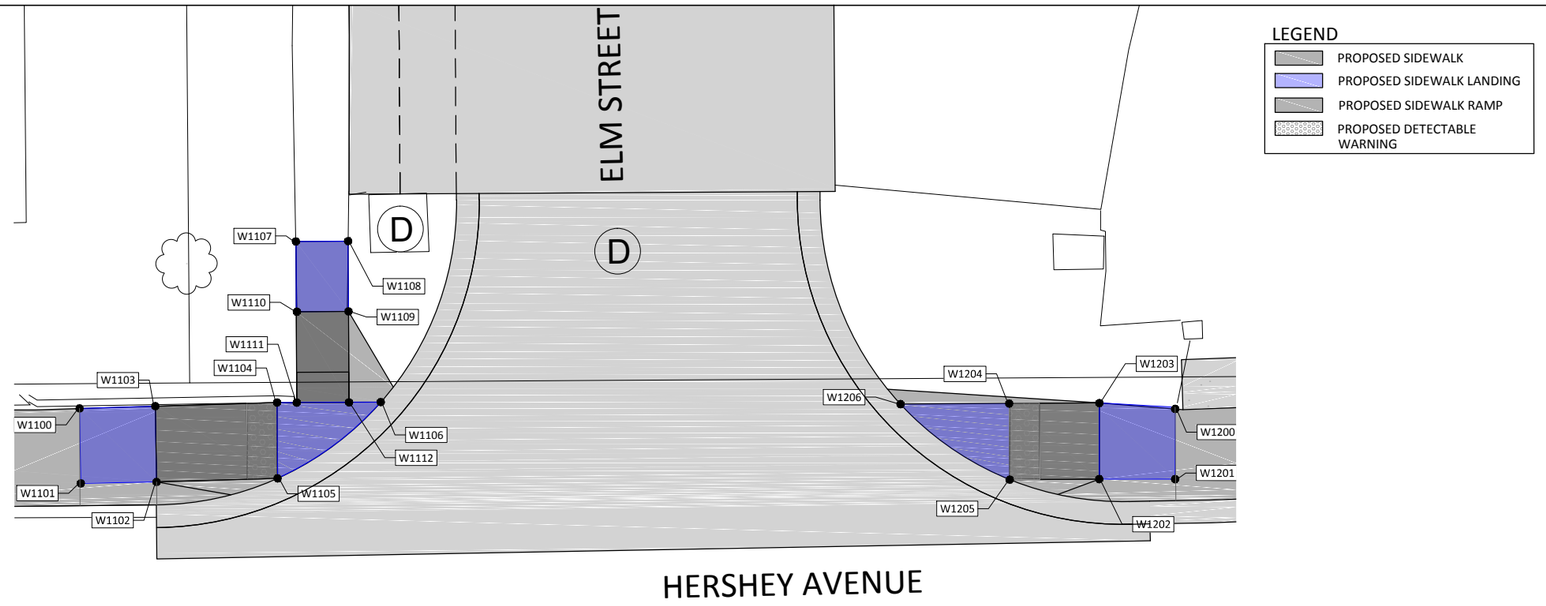
DRAWN BY:	DATE:
DAMION SHANNON	11/10/2016
DESIGNED BY: ANDREW J. KURRIGER	DATE: 01/18/17
CHECKED BY:	DATE:
APPROVED BY:	DATE:

MUSCATINE POWER & WATER

TRAFFIC SIGNALS

MISSISSIPPI DR. CORRIDOR
TRAFFIC LIGHT INSTALLATION
OAK ST. & E. 2ND ST.

REF No.		FILE No.	51	SHEET No.
SCALE: NOTED				N.03
DRAWING No.	DTR0136A	REV. No.	0	



LEGEND

- PROPOSED SIDEWALK
- PROPOSED SIDEWALK LANDING
- PROPOSED SIDEWALK RAMP
- PROPOSED DETECTABLE WARNING

SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb

(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

This Data Entry Sheet fills Tab 113-10 effective 10-15-13

Point	Station	Offset	Elevation	Point to Point		Sidewalk Designation	Distance*	Δ Elevation	Slope	Legally Acceptable Range	Difference between Designed Slope and Maximum Legally Acceptable Range	Acceptable Constructed Range	Does Designer need to obtain design approval from Method's Engineer?	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
							FT	FT	%	Pos. or Neg.		Pos. or Neg.			%				Point	Station	Offset	Elevation
W1100	2328.03	-28.175	557.2217	W1100	W1101	Landing/Turning Space	4.93	-0.07	-1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W1100	23+28.03	-28.18	557.22
W1101	2328.09	-23.237	557.1475	W1101	W1102	Landing/Turning Space	4.99	-0.01	-0.2%	0.1% to 2.0%	1.8%	0.1% to 2.0%							W1101	23+28.09	-23.24	557.15
W1102	2333.08	-23.296	557.1393	W1100	W1103	Landing/Turning Space	5.00	-0.01	-0.1%	0.1% to 2.0%	1.9%	0.1% to 2.0%							W1102	23+33.08	-23.30	557.14
W1103	2333.03	-28.296	557.215	W1102	W1103	Ramp Cross Slope	5.00	0.08	1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W1103	23+33.03	-28.30	557.22
W1104	2341.07	-28.491	557.03	W1103	W1104	Ramp Running Slope	8.04	-0.19	-2.3%	0.5% to 8.3%	6.0%	0.5% to 8.3%							W1104	23+41.07	-28.49	557.03
W1105	2341.07	-23.489	556.9281	W1102	W1105	Ramp Running Slope	7.99	-0.21	-2.6%	0.5% to 8.3%	5.7%	0.5% to 8.3%							W1105	23+41.07	-23.49	556.93
W1106	2347.91	-28.473	557.0814	W1104	W1105	Ramp Cross Slope	5.00	-0.10	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W1106	23+47.91	-28.47	557.08
				W1105	W1106	Landing/Turning Space	8.46	0.15	1.8%	0.1% to 2.0%	0.2%	0.1% to 2.0%	Yes	Yes								
W1107	2342.37	-39.11	557.8599	W1107	W1108	Match Existing Cross Slope	3.45	0.00	0.0%	Match Existing	FALSE	Match Existing							W1107	23+42.37	-39.11	557.86
W1108	2345.82	-39.108	557.8599	W1108	W1109	Landing/Turning Space	4.64	-0.27	-5.7%	0.1% to 2.0%	-3.7%	0.1% to 6.7%	Yes						W1108	23+45.82	-39.11	557.86
W1109	2345.82	-34.474	557.5947	W1109	W1110	Landing/Turning Space	3.41	0.05	1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W1109	23+45.82	-34.47	557.59
W1110	2342.41	-34.476	557.6458	W1107	W1110	Landing/Turning Space	4.63	-0.21	-4.6%	0.1% to 2.0%	-2.6%	0.1% to 5.6%	Yes						W1110	23+42.41	-34.48	557.65
W1111	2342.37	-28.476	557.15	W1110	W1111	Ramp Running Slope	6.00	-0.50	-8.3%	0.5% to 8.3%	0.0%	0.5% to 8.3%	Yes	Yes					W1111	23+42.37	-28.48	557.15
W1112	2345.82	-28.474	557.095	W1109	W1112	Ramp Running Slope	6.00	-0.50	-8.3%	0.5% to 8.3%	0.0%	0.5% to 8.3%	Yes	Yes					W1112	23+45.82	-28.47	557.10
				W1111	W1112	Ramp Cross Slope	3.45	-0.05	-1.6%	0.1% to 2.0%	0.4%	0.1% to 2.0%	Yes	Yes								
				W1112	W1106	Landing/Turning Space	2.09	-0.01	-0.7%	0.1% to 2.0%	1.3%	0.1% to 2.0%										
W1200	2400.32	-27.698	556.8834	W1200	W1201	Landing/Turning Space	4.63	-0.05	-1.2%	0.1% to 2.0%	0.8%	0.1% to 2.0%							W1200	24+00.32	-27.70	556.88
W1201	2400.29	-23.067	556.8289	W1201	W1202	Landing/Turning Space	5.01	0.10	2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W1201	24+00.29	-23.07	556.83
W1202	2395.28	-23.106	556.93	W1200	W1203	Landing/Turning Space	5.01	0.09	1.8%	0.1% to 2.0%	0.2%	0.1% to 2.0%	Yes	Yes					W1202	23+95.28	-23.11	556.93
W1203	2395.33	-28.119	556.975	W1202	W1203	Landing/Turning Space	5.01	0.05	0.9%	0.1% to 2.0%	1.1%	0.1% to 2.0%							W1203	23+95.33	-28.12	556.98
W1204	2389.38	-28.124	557.002	W1203	W1204	Ramp Running Slope	5.95	0.03	0.5%	0.5% to 8.3%	7.8%	0.5% to 8.3%							W1204	23+89.38	-28.12	557.00
W1205	2389.38	-23.104	556.9	W1202	W1205	Ramp Running Slope	5.90	-0.03	-0.5%	0.5% to 8.3%	7.8%	0.5% to 8.3%							W1205	23+89.38	-23.10	556.90
W1206	2382.2	-28.124	556.99	W1204	W1205	Ramp Cross Slope	5.02	-0.10	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W1206	23+82.20	-28.12	556.99
				W1205	W1206	Landing/Turning Space	8.76	0.09	1.0%	0.1% to 2.0%	1.0%	0.1% to 2.0%										
				W1206	W1204	Landing/Turning Space	7.18	0.01	0.2%	0.1% to 2.0%	1.8%	0.1% to 2.0%										

HORIZ. SCALE 0 5 10 FEET

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MUSCATINE

HDR

BOLTON & MENK

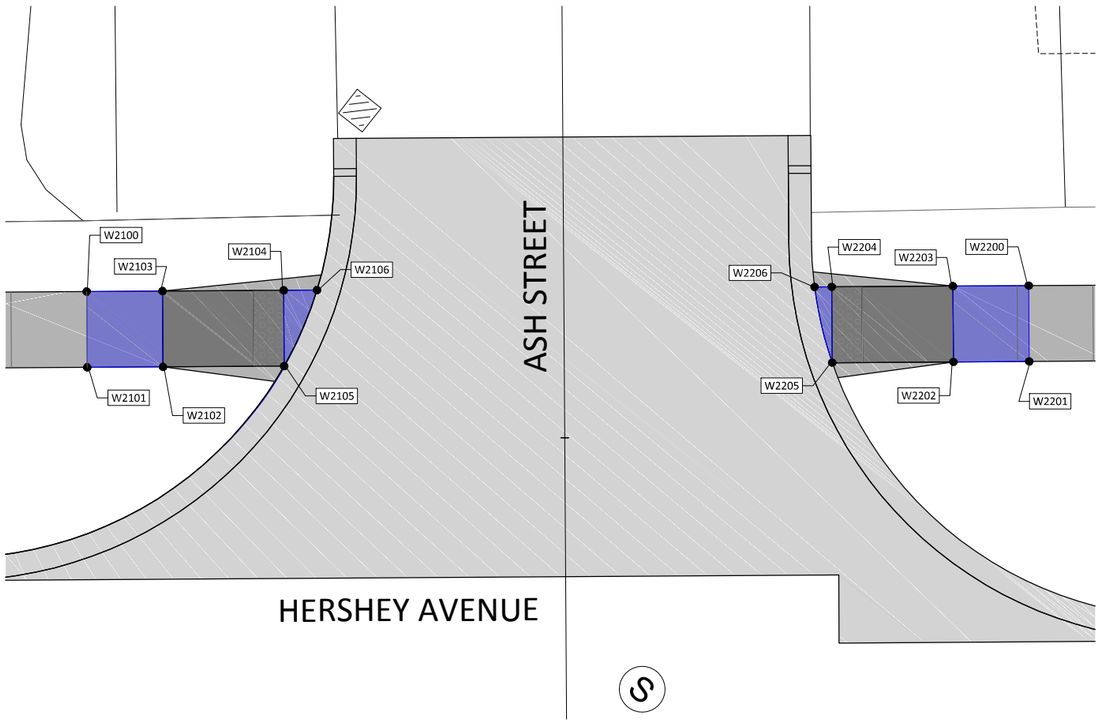
309 E 5TH STREET, SUITE 202
DES MOINES, IOWA 50309
Phone: (515) 259-9190
Email: DesMoines@bolton-menk.com
www.bolton-menk.com

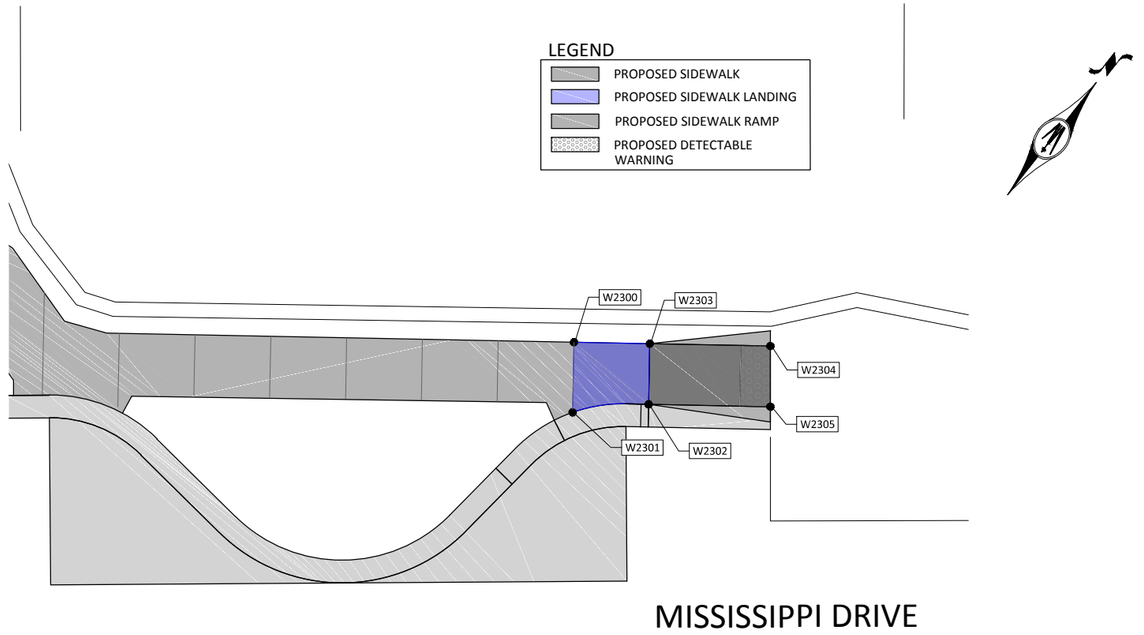
REV	ISSUED FOR	DATE

DESIGNED AMP
DRAWN AMP
CHECKED KDM

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
SIDEWALK COMPLIANCE

SHEET S.01





SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb

(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

This Data Entry Sheet fills Tab 113-10 effective 10-15-13

Point	Station	Offset	Elevation	Point to Point		Sidewalk Designation	Distance*	Δ Elevation	Slope	Legally Acceptable Range	Difference between Designed Slope and Maximum Legally Acceptable Range	Acceptable Constructed Range	Does Designer need to obtain design approval from Method's Engineer?	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
							FT	FT	%	Pos. or Neg.		Pos. or Neg.			%				Point	Station	Offset	Elevation
W2100	2786.36	-42	556.8626	W2100	W2101	Landing/Turning Space	5.00	-0.08	-1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W2100	27+86.36	-42.00	556.86
W2101	2786.36	-37	556.7876	W2101	W2102	Landing/Turning Space	5.00	0.07	1.4%	0.1% to 2.0%	0.6%	0.1% to 2.0%							W2101	27+86.36	-37.00	556.79
W2102	2791.36	-37	556.8572	W2100	W2103	Landing/Turning Space	5.00	0.07	1.4%	0.1% to 2.0%	0.6%	0.1% to 2.0%							W2102	27+91.36	-37.00	556.86
W2103	2791.36	-42	556.9322	W2102	W2103	Landing/Turning Space	5.00	0.07	1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W2103	27+91.36	-42.00	556.93
W2104	2799.36	-42	557.12	W2103	W2104	Ramp Running Slope	8.00	0.19	2.3%	0.5% to 8.3%	6.0%	0.5% to 8.3%							W2104	27+99.36	-42.00	557.12
W2105	2799.36	-37	557.0184	W2102	W2105	Ramp Running Slope	8.00	0.16	2.0%	0.5% to 8.3%	6.3%	0.5% to 8.3%							W2105	27+99.36	-37.00	557.02
W2106	2801.56	-42	557.1648	W2104	W2105	Ramp Cross Slope	5.00	-0.10	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W2106	28+01.56	-42.00	557.16
				W2105	W2106	Match Existing Cross Slope	5.46	0.15	2.7%	Match Existing	FALSE	Match Existing										
				W2106	W2104	Landing/Turning Space	2.20	-0.04	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes								
W2200	2848.53	-42	558.1984	W2200	W2201	Landing/Turning Space	5.00	-0.08	-1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W2200	28+48.53	-42.00	558.20
W2201	2848.53	-37	558.1234	W2201	W2202	Landing/Turning Space	5.00	-0.05	-1.1%	0.1% to 2.0%	0.9%	0.1% to 2.0%							W2201	28+48.53	-37.00	558.12
W2202	2843.53	-37	558.0704	W2200	W2203	Landing/Turning Space	5.00	-0.05	-1.1%	0.1% to 2.0%	0.9%	0.1% to 2.0%							W2202	28+43.53	-37.00	558.07
W2203	2843.53	-42	558.1454	W2202	W2203	Landing/Turning Space	9.43	0.08	0.8%	0.1% to 2.0%	1.2%	0.1% to 2.0%							W2203	28+43.53	-42.00	558.15
W2204	2835.53	-42	557.51	W2203	W2204	Ramp Running Slope	8.00	-0.64	-7.9%	0.5% to 8.3%	0.4%	0.5% to 8.3%	Yes	Yes					W2204	28+35.53	-42.00	557.51
W2205	2835.53	-37.001	557.4503	W2202	W2205	Ramp Running Slope	8.00	-0.62	-7.8%	0.5% to 8.3%	0.5%	0.5% to 8.3%	Yes	Yes					W2205	28+35.53	-37.00	557.45
W2206	2834.39	-42	557.4988	W2204	W2205	Ramp Cross Slope	5.00	-0.06	-1.2%	0.1% to 2.0%	0.8%	0.1% to 2.0%							W2206	28+34.39	-42.00	557.50
				W2205	W2206	Landing/Turning Space	5.13	0.05	0.9%	0.1% to 2.0%	1.1%	0.1% to 2.0%										
				W2206	W2204	Landing/Turning Space	1.14	0.01	1.0%	0.1% to 2.0%	1.0%	0.1% to 2.0%										
W2300	3417.22	-34.277	564.9678	W2300	W2301	Landing/Turning Space	4.63	-0.08	-1.7%	0.1% to 2.0%	0.3%	0.1% to 2.0%	Yes	Yes					W2300	34+17.22	-34.28	564.97
W2301	3417.1	-29.65	564.8886	W2301	W2302	Landing/Turning Space	5.03	0.08	1.6%	0.1% to 2.0%	0.4%	0.1% to 2.0%	Yes	Yes					W2301	34+17.10	-29.65	564.89
W2302	3422.11	-30.149	564.9667	W2300	W2303	Landing/Turning Space	4.99	0.06	1.2%	0.1% to 2.0%	0.8%	0.1% to 2.0%							W2302	34+22.11	-30.15	564.97
W2303	3422.21	-34.148	565.0267	W2302	W2303	Landing/Turning Space	4.00	0.06	1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W2303	34+22.21	-34.15	565.03
W2304	3430.17	-33.942	565.1205	W2303	W2304	Ramp Running Slope	7.96	0.09	1.2%	0.5% to 8.3%	7.1%	0.5% to 8.3%							W2304	34+30.17	-33.94	565.12
W2305	3430.15	-29.941	565.0606	W2302	W2305	Ramp Running Slope	8.04	0.09	1.2%	0.5% to 8.3%	7.1%	0.5% to 8.3%							W2305	34+30.15	-29.94	565.06
				W2304	W2305	Ramp Cross Slope	4.00	-0.06	-1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%										

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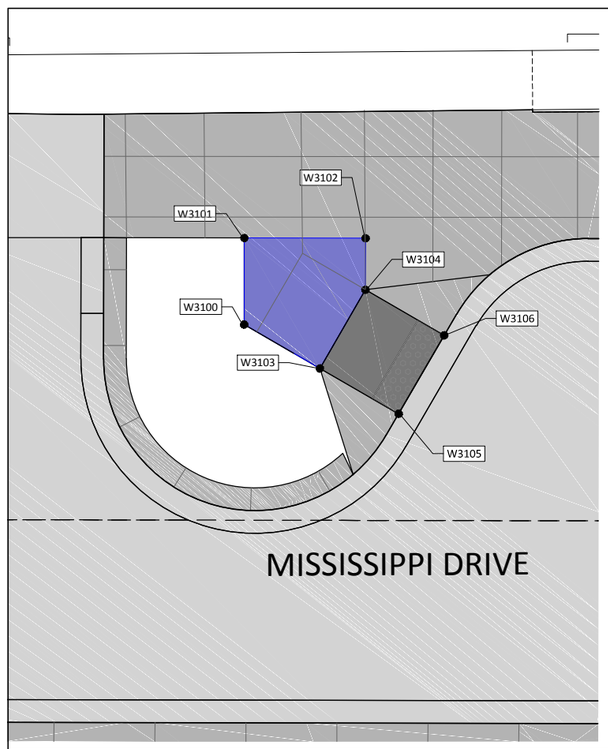
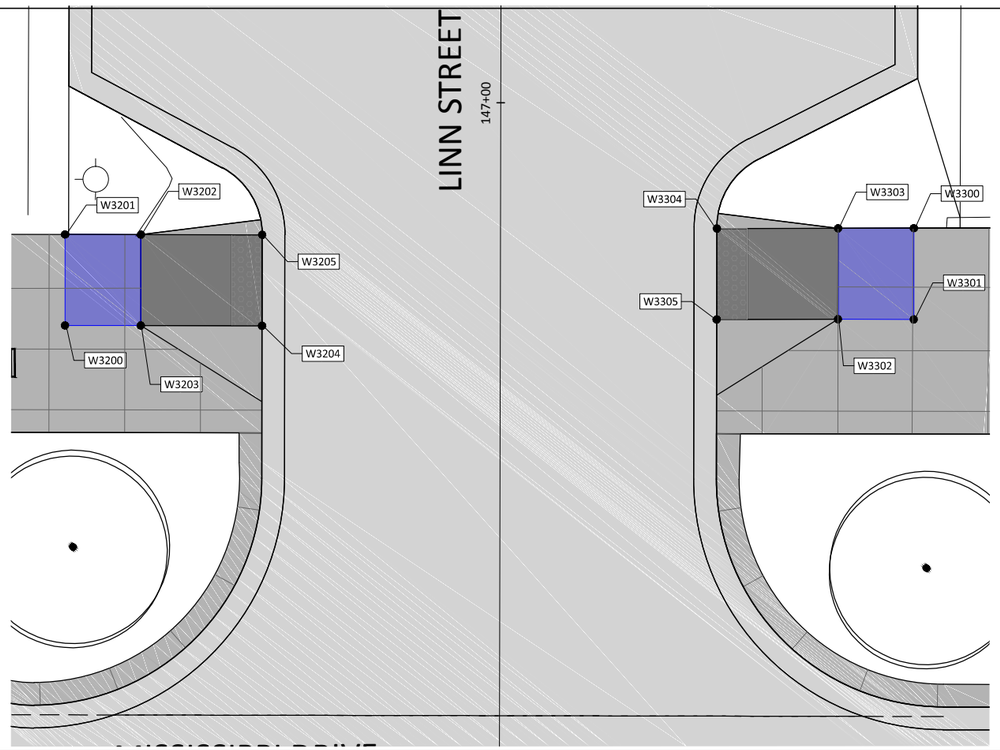
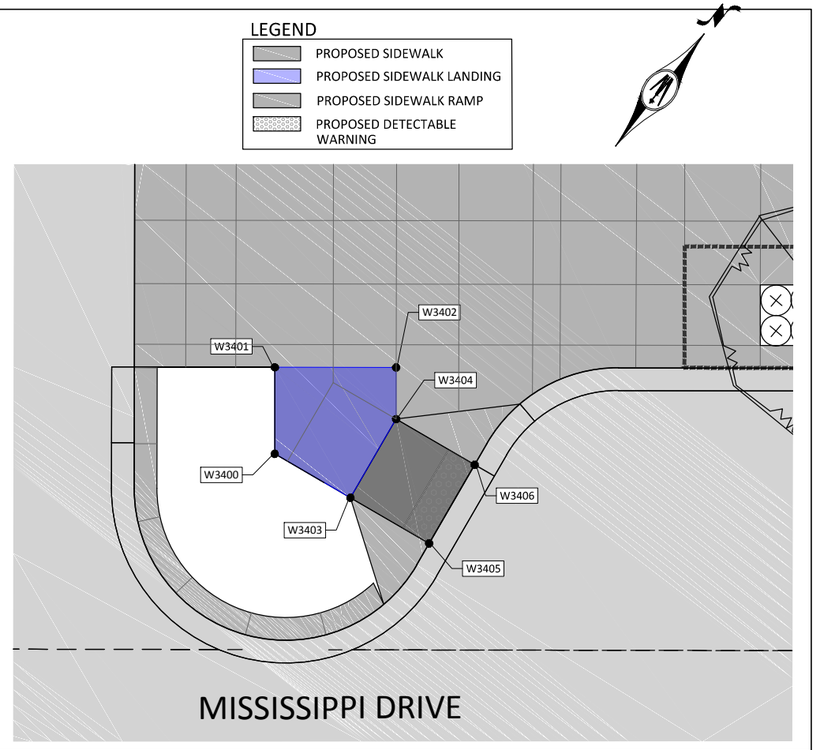
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
SIDEWALK COMPLIANCE

SHEET S.02







LEGEND

- PROPOSED SIDEWALK
- PROPOSED SIDEWALK LANDING
- PROPOSED SIDEWALK RAMP
- PROPOSED DETECTABLE WARNING

SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb

(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

This Data Entry Sheet fills Tab 113-10 effective 10-15-13

Point	Station	Offset	Elevation	Point to Point		Sidewalk Designation	Distance*	Δ Elevation	Slope	Legally Acceptable Range	Difference between Designed Slope and Maximum Legally Acceptable Range	Acceptable Constructed Range	Does Designer need to obtain design approval from Method's Engineer?	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
							FT	FT	%	Pos. or Neg.		Pos. or Neg.			%				Point	Station	Offset	Elevation
W3100	4422.21	-31.789	562.633	W3101	W3102	Landing/Turning Space	8.00	-0.16	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W3100	44+22.21	-31.79	562.63
W3101	4422.21	-37.5	562.73	W3102	W3104	Landing/Turning Space	3.40	-0.07	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W3101	44+22.21	-37.50	562.73
W3102	4430.21	-37.5	562.57	W3101	W3100	Landing/Turning Space	5.71	-0.10	-1.7%	0.1% to 2.0%	0.3%	0.1% to 2.0%	Yes	Yes					W3102	44+30.21	-37.50	562.57
W3103	4427.21	-28.902	562.4645	W3103	W3100	Landing/Turning Space	8.33	0.17	2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W3103	44+27.21	-28.90	562.46
W3104	4430.21	-34.098	562.502	W3104	W3103	Landing/Turning Space	6.00	-0.04	-0.6%	0.1% to 2.0%	1.4%	0.1% to 2.0%							W3104	44+30.21	-34.10	562.50
W3105	4432.42	-25.918	561.9666	W3103	W3105	Ramp Running Slope	6.00	-0.50	-8.3%	0.5% to 8.3%	0.0%	0.5% to 8.3%	Yes	Yes					W3105	44+32.42	-25.92	561.97
W3106	4435.41	-31.098	562.004	W3104	W3106	Ramp Running Slope	6.00	-0.50	-8.3%	0.5% to 8.3%	0.0%	0.5% to 8.3%	Yes	Yes					W3106	44+35.41	-31.10	562.00
W3200	4611.97	-44.561	559.3062	W3105	W3106	Ramp Cross Slope	5.98	0.04	0.6%	0.1% to 2.0%	1.4%	0.1% to 2.0%							W3200	46+11.97	-44.56	559.31
W3201	4611.97	-50.561	559.3962	W3200	W3201	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W3201	46+11.97	-50.56	559.40
W3202	4616.97	-50.561	559.3672	W3201	W3202	Landing/Turning Space	5.00	-0.03	-0.6%	0.1% to 2.0%	1.4%	0.1% to 2.0%							W3202	46+16.97	-50.56	559.37
W3203	4616.97	-44.561	559.2772	W3200	W3203	Landing/Turning Space	5.00	-0.03	-0.6%	0.1% to 2.0%	1.4%	0.1% to 2.0%							W3203	46+16.97	-44.56	559.28
W3204	4624.97	-44.561	559.0042	W3202	W3203	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W3204	46+24.97	-44.56	559.00
W3205	4624.97	-50.565	559.0965	W3203	W3204	Ramp Running Slope	8.00	-0.27	-3.4%	0.5% to 8.3%	4.9%	0.5% to 8.3%							W3205	46+24.97	-50.57	559.10
				W3202	W3205	Ramp Running Slope	8.00	-0.27	-3.4%	0.5% to 8.3%	4.9%	0.5% to 8.3%										
				W3204	W3205	Ramp Cross Slope	6.01	0.09	1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%										
W3300	4667.97	-51.083	559.143	W3300	W3301	Landing/Turning Space	6.02	-0.09	-1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W3300	46+67.97	-51.08	559.14
W3301	4667.97	-45.065	559.0528	W3301	W3302	Landing/Turning Space	5.00	0.08	1.7%	0.1% to 2.0%	0.3%	0.1% to 2.0%	Yes	Yes					W3301	46+67.97	-45.06	559.05
W3302	4662.97	-45.065	559.1378	W3300	W3303	Landing/Turning Space	5.00	0.08	1.7%	0.1% to 2.0%	0.3%	0.1% to 2.0%	Yes	Yes					W3302	46+62.97	-45.06	559.14
W3303	4662.97	-51.065	559.2279	W3302	W3303	Landing/Turning Space	6.01	0.09	1.5%	0.1% to 2.0%	0.5%	0.1% to 2.0%							W3303	46+62.97	-51.07	559.23
W3304	4654.97	-51.035	559.1225	W3303	W3304	Ramp Running Slope	8.00	-0.11	-1.3%	0.5% to 8.3%	7.0%	0.5% to 8.3%							W3304	46+54.97	-51.04	559.12
W3305	4654.97	-45.035	559.0283	W3302	W3305	Ramp Running Slope	8.00	-0.11	-1.4%	0.5% to 8.3%	6.9%	0.5% to 8.3%							W3305	46+54.97	-45.04	559.03
				W3304	W3305	Ramp Cross Slope	6.00	-0.09	-1.6%	0.1% to 2.0%	0.4%	0.1% to 2.0%	Yes	Yes								
W3400	4752.7	-31.789	557.53	W3401	W3402	Landing/Turning Space	8.00	-0.15	-1.8%	0.1% to 2.0%	0.2%	0.1% to 2.0%	Yes	Yes					W3400	47+52.70	-31.79	557.53
W3401	4752.7	-37.5	557.645	W3402	W3404	Landing/Turning Space	3.40	-0.07	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W3401	47+52.70	-37.50	557.65
W3402	4760.7	-37.5	557.4992	W3401	W3400	Landing/Turning Space	5.71	-0.12	-2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W3402	47+60.70	-37.50	557.50
W3403	4757.7	-28.902	557.3599	W3403	W3400	Landing/Turning Space	8.33	0.17	2.0%	0.1% to 2.0%	0.0%	0.1% to 2.0%	Yes	Yes					W3403	47+57.70	-28.90	557.36
W3404	4760.7	-34.098	557.4312	W3404	W3403	Landing/Turning Space	6.00	-0.07	-1.2%	0.1% to 2.0%	0.8%	0.1% to 2.0%							W3404	47+60.70	-34.10	557.43
W3405	4762.89	-25.902	556.862	W3403	W3405	Ramp Running Slope	5.99	-0.50	-8.3%	0.5% to 8.3%	0.0%	0.5% to 8.3%	Yes	Yes					W3405	47+62.89	-25.90	556.86
W3406	4765.89	-31.094	556.9748	W3404	W3406	Ramp Running Slope	6.00	-0.46	-7.6%	0.5% to 8.3%	0.7%	0.5% to 8.3%	Yes	Yes					W3406	47+65.89	-31.09	556.97

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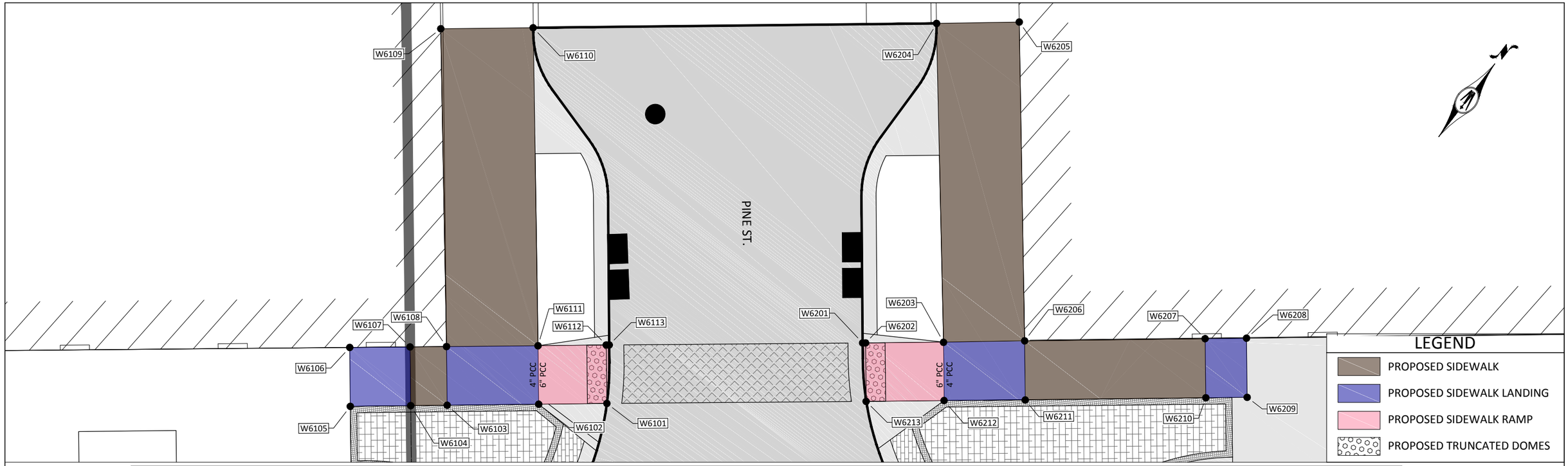
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
SIDEWALK COMPLIANCE

SHEET S.03



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
			FT	FT	%	Pos. or Neg.		%				Point	Station	Offset	Elevation
W6101	W6113	Crosswalk Cross Slope - Yield Condition	6.00	0.09	1.5%	0.0% to 2.0%						W6101			556.65
W6101	W6112	Ramp Cross Slope	6.00	0.10	1.7%	0.1% to 2.0%	Yes					W6102			556.83
W6101	W6102	Ramp Running Slope	7.00	0.18	2.6%	0.5% to 8.3%						W6103			556.97
W6112	W6111	Ramp Running Slope	7.00	0.17	2.4%	0.5% to 8.3%						W6104			557.02
W6102	W6111	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W6105			557.09
W6102	W6103	Landing/Turning Space	9.38	0.14	1.5%	0.1% to 2.0%						W6106			557.20
W6103	W6108	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W6107			557.14
W6103	W6104	Sidewalk Running Slope	3.74	0.05	1.3%	0.5% to 5.0%						W6108			557.06
W6108	W6107	Sidewalk Running Slope	3.74	0.08	2.1%	0.5% to 5.0%						W6109			559.50
W6104	W6107	Landing/Turning Space	6.00	0.12	2.0%	0.1% to 2.0%	Yes					W6110			559.54
W6104	W6105	Landing/Turning Space	6.20	0.07	1.1%	0.1% to 2.0%						W6111			556.92
W6107	W6106	Landing/Turning Space	6.20	0.06	1.0%	0.1% to 2.0%						W6112			556.75
W6105	W6106	Sidewalk Cross Slope	6.00	0.11	1.8%	0.5% to 2.0%	Yes					W6113			556.74
W6108	W6111	Landing/Turning Space	9.38	-0.14	-1.5%	0.1% to 2.0%									
W6108	W6109	Sidewalk Running Slope	32.63	2.44	7.5%	0.5% to 8.5%				Length constructed must exceed 15 feet at a uniform running slope					
W6111	W6110	Sidewalk Running Slope	32.63	2.62	8.0%	0.5% to 9%				Length constructed must exceed 15 feet at a uniform running slope					
W6109	W6110	Match Existing Cross Slope	9.38	0.04	0.4%	Match Existing									
W6201	W6213	Crosswalk Cross Slope - Yield Condition	6.00	-0.10	-1.7%	0.0% to 2.0%									
W6202	W6213	Ramp Cross Slope	6.00	-0.12	-2.0%	0.1% to 2.0%	Yes								
W6202	W6203	Ramp Running Slope	8.00	0.44	5.5%	0.5% to 8.3%						W6201			556.74
W6213	W6212	Ramp Running Slope	8.00	0.47	5.9%	0.5% to 8.3%						W6202			556.76
W6203	W6212	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W6203			557.20
W6212	W6211	Landing/Turning Space	8.33	0.16	1.9%	0.1% to 2.0%	Yes					W6204			559.39
W6206	W6211	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W6205			559.51
W6206	W6207	Sidewalk Running Slope	18.52	0.12	0.6%	0.5% to 5.0%						W6206			557.36
W6211	W6210	Sidewalk Running Slope	18.52	0.12	0.6%	0.5% to 5.0%						W6207			557.48
W6207	W6210	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W6208			557.43
W6207	W6208	Landing/Turning Space	4.25	-0.05	-1.2%	0.1% to 2.0%						W6209			557.34
W6210	W6209	Landing/Turning Space	4.25	-0.05	-1.2%	0.1% to 2.0%						W6210			557.39
W6208	W6209	Sidewalk Cross Slope	6.00	-0.09	-1.5%	0.5% to 2.0%						W6211			557.27
W6203	W6206	Landing/Turning Space	8.33	0.16	1.9%	0.1% to 2.0%	Yes					W6212			557.11
W6203	W6204	Sidewalk Running Slope	32.73	2.19	6.7%	0.5% to 7.7%				Length constructed must exceed 15 feet at a uniform running slope		W6213			556.64
W6206	W6205	Sidewalk Running Slope	32.73	2.15	6.6%	0.5% to 7.6%				Length constructed must exceed 15 feet at a uniform running slope					
W6204	W6205	Match Existing Cross Slope	8.33	0.12	1.4%	Match Existing									

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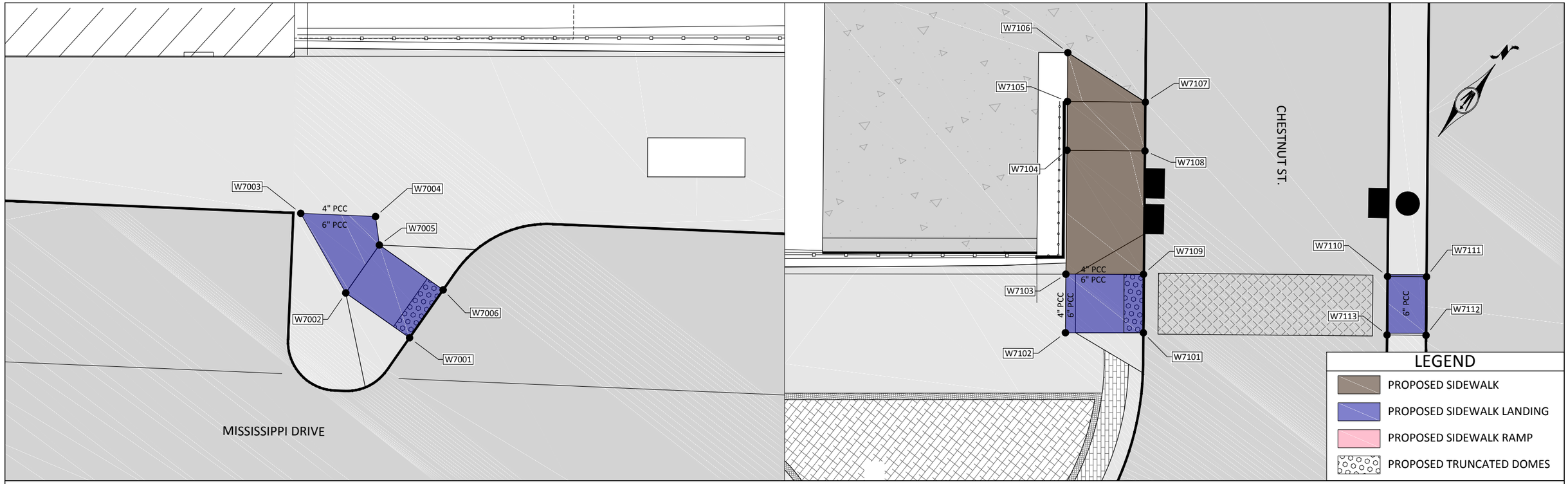
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - PINE ST.

SHEET S.04



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point		Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W7001	W7006	Crosswalk Cross Slope - No Yield Condition	6.00	0.11	1.8%	0.0% to 5.0%						W7001			556.86
W7001	W7002	Landing/Turning Space	8.00	0.06	0.7%	0.1% to 2.0%						W7002			556.92
W7006	W7005	Landing/Turning Space	8.00	0.04	0.5%	0.1% to 2.0%						W7003			556.91
W7002	W7005	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W7004			557.03
W7002	W7003	Landing/Turning Space	9.38	-0.01	-0.1%	0.1% to 2.0%						W7005			557.01
W7005	W7004	Landing/Turning Space	2.95	0.02	0.7%	0.1% to 2.0%						W7006			556.97
W7003	W7004	Landing/Turning Space	7.68	0.12	1.6%	0.1% to 2.0%	Yes								
W7101	W7109	Crosswalk Cross Slope - Yield Condition	6.00	0.09	1.5%	0.0% to 2.0%						W7101			557.12
W7101	W7102	Landing/Turning Space	8.00	0.12	1.5%	0.1% to 2.0%						W7102			557.24
W7109	W7103	Landing/Turning Space	8.00	0.12	1.5%	0.1% to 2.0%						W7103			557.33
W7102	W7103	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W7104			558.33
W7103	W7104	Sidewalk Running Slope	12.71	1.00	7.9%	0.5% to 8.9%						W7105			558.02
W7109	W7108	Sidewalk Running Slope	12.71	1.00	7.9%	0.5% to 8.9%						W7106			558.23
W7108	W7104	Sidewalk Cross Slope	8.00	0.12	1.5%	0.5% to 2.0%						W7107			557.90
W7104	W7105	Sidewalk Running Slope	5.00	-0.31	-6.2%	0.5% to 7.2%						W7108			558.21
W7108	W7107	Sidewalk Running Slope	5.00	-0.31	-6.2%	0.5% to 7.2%						W7109			557.21
W7107	W7105	Sidewalk Cross Slope	8.00	0.12	1.5%	0.5% to 2.0%						W7110			557.24
W7105	W7106	Sidewalk Running Slope	5.00	0.21	4.2%	0.5% to 5.0%	Yes					W7111			557.23
												W7112			557.02
W7110	W7113	Crosswalk Cross Slope - Yield Condition	6.00	-0.17	-2.8%	0.0% to 3.8%						W7113			557.07
W7110	W7111	Landing/Turning Space	4.00	-0.01	-0.2%	0.1% to 2.0%									
W7113	W7112	Landing/Turning Space	4.00	-0.05	-1.3%	0.1% to 2.0%									
W7111	W7112	Crosswalk Cross Slope - Yield Condition	6.00	-0.21	-3.5%	0.0% to 4.5%									

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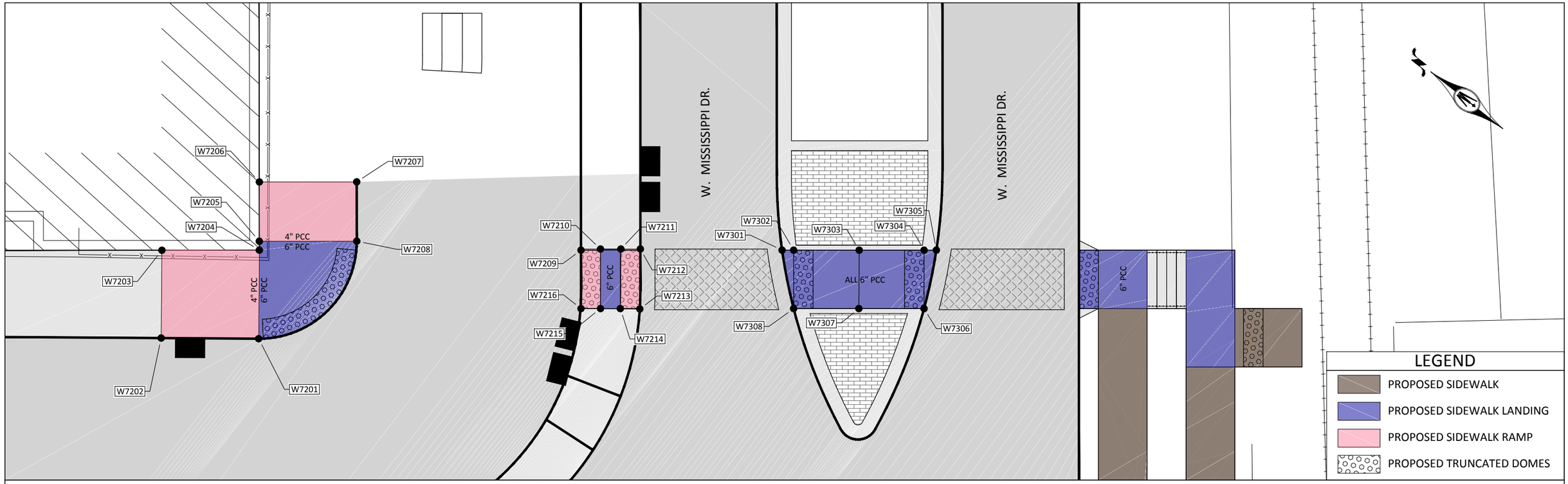
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - CHESTNUT ST.

SHEET S.05



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES		
			FT	FT	%	Pos. or Neg.		%				Point	Offset	Elevation
W7201	W7208	Crosswalk Cross Slope - Yield Condition	15.79	-0.02	-0.1%	0.0% to 2.0%						W7201		556.90
W7201	W7204	Landing/Turning Space	9.00	0.13	1.4%	0.1% to 2.0%						W7202		557.65
W7201	W7202	Ramp Running Slope	10.00	0.75	7.5%	0.5% to 8.3%	Yes					W7203		557.80
W7204	W7203	Ramp Running Slope	10.00	0.77	7.7%	0.5% to 8.3%	Yes					W7204		557.03
W7202	W7203	Sidewalk Cross Slope	9.00	0.15	1.7%	0.5% to 2.0%	Yes					W7205		557.03
W7208	W7205	Landing/Turning Space	10.00	0.15	1.5%	0.1% to 2.0%						W7206		557.46
W7208	W7207	Ramp Running Slope	6.00	0.48	8.0%	0.5% to 8.3%	Yes					W7207		557.36
W7205	W7206	Ramp Running Slope	6.00	0.43	7.2%	0.5% to 8.3%						W7208		556.88
W7206	W7207	Sidewalk Cross Slope	10.00	-0.10	-1.0%	0.5% to 2.0%						W7209		556.32
												W7210		556.20
W7209	W7216	Crosswalk Cross Slope - No Yield Condition	6.00	-0.14	-2.3%	0.0% to 5.0%						W7211		556.19
W7209	W7210	Ramp Running Slope	2.00	-0.12	-6.0%	0.5% to 8.3%						W7212		556.12
W7216	W7215	Ramp Running Slope	2.00	-0.02	-1.0%	0.5% to 8.3%						W7213		556.15
W7210	W7215	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%						W7214		556.16
W7210	W7211	Landing/Turning Space	2.00	-0.01	-0.5%	0.1% to 2.0%						W7215		556.16
W7215	W7214	Landing/Turning Space	2.00	0.00	0.0%	0.1% to 2.0%						W7216		556.18
W7211	W7214	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%								
W7211	W7212	Ramp Running Slope	2.00	-0.07	-3.5%	0.5% to 8.3%						W7301		556.31
W7214	W7213	Ramp Running Slope	2.00	-0.01	-0.5%	0.5% to 8.3%						W7302		556.28
W7212	W7213	Crosswalk Cross Slope - No Yield Condition	6.00	0.03	0.5%	0.0% to 5.0%						W7303 W7304		556.16 556.03
W7301	W7308	Crosswalk Cross Slope - No Yield Condition	6.10	-0.03	-0.5%	0.0% to 5.0%						W7305		556.00
W7302	W7308	Landing/Turning Space	6.00	0.00	0.0%	0.1% to 2.0%						W7306		556.09
W7302	W7303	Landing/Turning Space	6.73	-0.12	-1.8%	0.1% to 2.0%	Yes					W7307		556.19
W7308	W7307	Landing/Turning Space	6.73	-0.09	-1.3%	0.1% to 2.0%						W7308		556.28
W7306	W7307	Landing/Turning Space	6.73	0.10	1.5%	0.1% to 2.0%								
W7304	W7303	Landing/Turning Space	6.73	0.13	1.9%	0.1% to 2.0%	Yes							
W7304	W7306	Landing/Turning Space	6.00	0.06	1.0%	0.1% to 2.0%								
W7305	W7306	Crosswalk Cross Slope - No Yield Condition	6.10	0.09	1.5%	0.0% to 5.0%								

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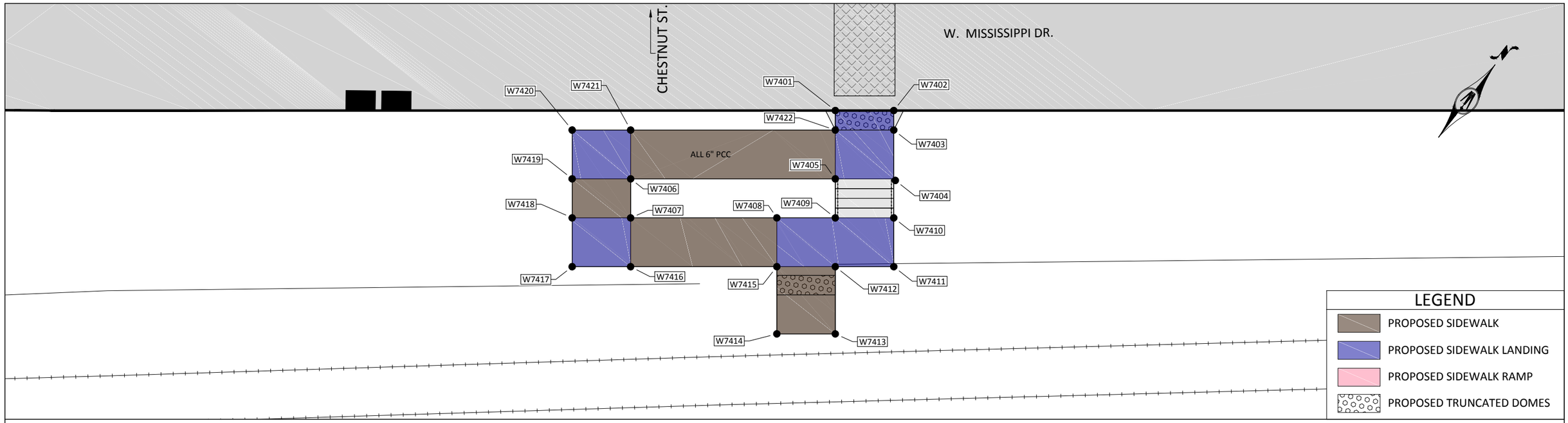
PEDESTRIAN RAMP DETAILS - CHESTNUT ST.

SHEET S.06



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W7401	W7402	Crosswalk Cross Slope - No Yield Condition	6.00	-0.03	-0.5%	0.0% to 5.0%									
W7401	W7422	Landing/Turning Space	2.00	0.03	1.5%	0.1% to 2.0%						W7401			555.71
W7402	W7403	Landing/Turning Space	2.00	0.03	1.5%	0.1% to 2.0%						W7402			555.68
W7422	W7403	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%						W7403			555.71
W7422	W7405	Landing/Turning Space	5.00	-0.07	-1.4%	0.1% to 2.0%						W7404			555.64
W7403	W7404	Landing/Turning Space	5.00	-0.07	-1.4%	0.1% to 2.0%						W7405			555.67
W7404	W7405	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W7406			555.04
W7422	W7421	Sidewalk Running Slope	21.00	-0.63	-3.0%	0.5% to 5.0%						W7407			554.96
W7405	W7406	Sidewalk Running Slope	21.00	-0.63	-3.0%	0.5% to 5.0%						W7408			554.51
W7421	W7406	Landing/Turning Space	5.00	-0.07	-1.4%	0.1% to 2.0%						W7409			554.47
W7421	W7420	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%						W7410			554.44
W7420	W7419	Landing/Turning Space	5.00	-0.07	-1.4%	0.1% to 2.0%						W7411			554.37
W7406	W7419	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%						W7412			554.40
W7419	W7418	Sidewalk Running Slope	4.00	-0.02	-0.5%	0.5% to 5.0%						W7413			554.50
W7406	W7407	Sidewalk Running Slope	4.00	-0.08	-2.0%	0.5% to 5.0%						W7414			554.50
W7418	W7407	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%						W7415			554.43
W7418	W7417	Landing/Turning Space	5.00	-0.08	-1.6%	0.1% to 2.0%	Yes					W7416			554.88
W7417	W7416	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%						W7417			554.91
W7407	W7416	Landing/Turning Space	5.00	-0.08	-1.6%	0.1% to 2.0%	Yes					W7418			554.99
W7407	W7408	Sidewalk Running Slope	15.00	-0.45	-3.0%	0.5% to 5.0%						W7419			555.01
W7416	W7415	Sidewalk Running Slope	15.00	-0.45	-3.0%	0.5% to 5.0%						W7420			555.08
W7408	W7415	Landing/Turning Space	5.00	-0.08	-1.6%	0.1% to 2.0%	Yes					W7421			555.11
W7408	W7409	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%						W7422			555.74
W7409	W7410	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%									
W7410	W7411	Landing/Turning Space	5.00	-0.07	-1.4%	0.1% to 2.0%									
W7411	W7412	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%									
W7412	W7415	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%									
W7415	W7414	Sidewalk Running Slope	6.90	0.07	1.0%	0.5% to 5.0%									
W7412	W7413	Sidewalk Running Slope	6.90	0.10	1.4%	0.5% to 5.0%									
W7414	W7413	Match Existing Cross Slope	6.00	0.00	0.0%	Match Existing									

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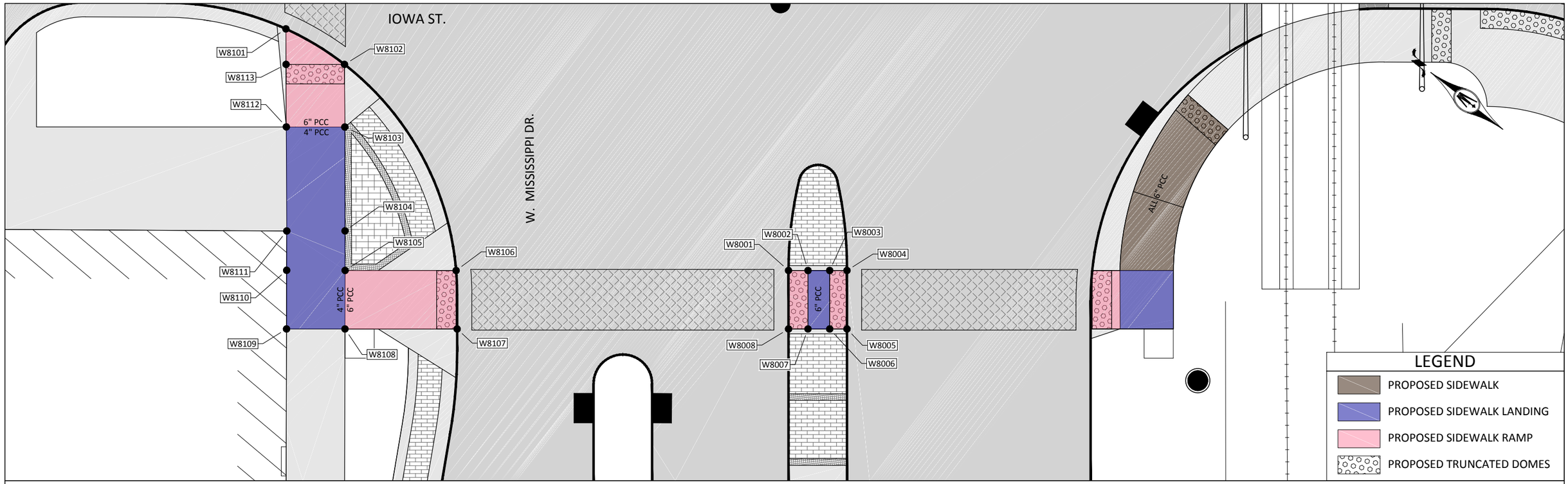
PEDESTRIAN RAMP DETAILS - CHESTNUT ST.

SHEET S.07



113-10
10-15-13

SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance* FT	? Elevation FT	Slope %	Acceptable Constructed Range Pos. or Neg.	Staking Required on this Quadrant? (1)	Measured Slope %	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES Point	Station	Offset	Elevation
W8001	W8008	Crosswalk Cross Slope - No Yield Condition	6.00	0.03	0.5%	0.0% to 5.0%						W8001			554.77
W8001	W8002	Ramp Running Slope	2.00	0.08	4.0%	0.5% to 8.3%						W8002			554.85
W8008	W8007	Ramp Running Slope	2.00	0.08	4.0%	0.5% to 8.3%						W8003			554.88
W8002	W8007	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W8004			554.94
W8002	W8003	Landing/Turning Space	2.23	0.03	1.3%	0.1% to 2.0%						W8005			554.96
W8007	W8006	Landing/Turning Space	2.23	0.03	1.3%	0.1% to 2.0%						W8006			554.91
W8003	W8006	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W8007			554.88
W8003	W8004	Ramp Running Slope	2.00	0.06	3.0%	0.5% to 8.3%						W8008			554.80
W8006	W8005	Ramp Running Slope	2.00	0.05	2.5%	0.5% to 8.3%									
W8004	W8005	Crosswalk Cross Slope - No Yield Condition	6.00	0.02	0.3%	0.0% to 5.0%						W8101			555.17
												W8102			555.10
W8101	W8102	Crosswalk Cross Slope - Yield Condition	7.00	-0.07	-1.0%	0.0% to 2.0%						W8103			555.28
W8101	W8113	Ramp Running Slope	3.64	0.02	0.5%	0.5% to 8.3%						W8104			555.41
W8102	W8113	Ramp Cross Slope	6.00	0.09	1.5%	0.1% to 2.0%						W8105			555.47
W8102	W8103	Ramp Running Slope	6.43	0.18	2.8%	0.5% to 8.3%						W8106			554.85
W8113	W8112	Ramp Running Slope	6.43	0.18	2.8%	0.5% to 8.3%						W8107			554.84
W8103	W8112	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W8108			555.51
W8103	W8104	Landing/Turning Space	10.66	0.13	1.2%	0.1% to 2.0%						W8109			555.60
W8104	W8111	Landing/Turning Space	6.00	0.12	2.0%	0.1% to 2.0%	Yes					W8110			555.56
W8104	W8105	Landing/Turning Space	4.06	0.06	1.5%	0.1% to 2.0%						W8111			555.53
W8104	W8108	Landing/Turning Space	6.00	0.10	1.7%	0.1% to 2.0%	Yes					W8112			555.37
W8105	W8111	Landing/Turning Space	6.00	0.06	1.0%	0.1% to 2.0%						W8113			555.19
W8105	W8106	Ramp Running Slope	11.39	-0.62	-5.4%	0.5% to 8.3%									
W8108	W8107	Ramp Running Slope	11.39	-0.67	-5.9%	0.5% to 8.3%									
W8106	W8107	Crosswalk Cross Slope - No Yield Condition	6.00	-0.01	-0.2%	0.0% to 5.0%									
W8108	W8109	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									
W8109	W8110	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%									
W8110	W8111	Landing/Turning Space	4.06	-0.03	-0.7%	0.1% to 2.0%									
W8111	W8112	Landing/Turning Space	10.66	-0.16	-1.5%	0.1% to 2.0%									

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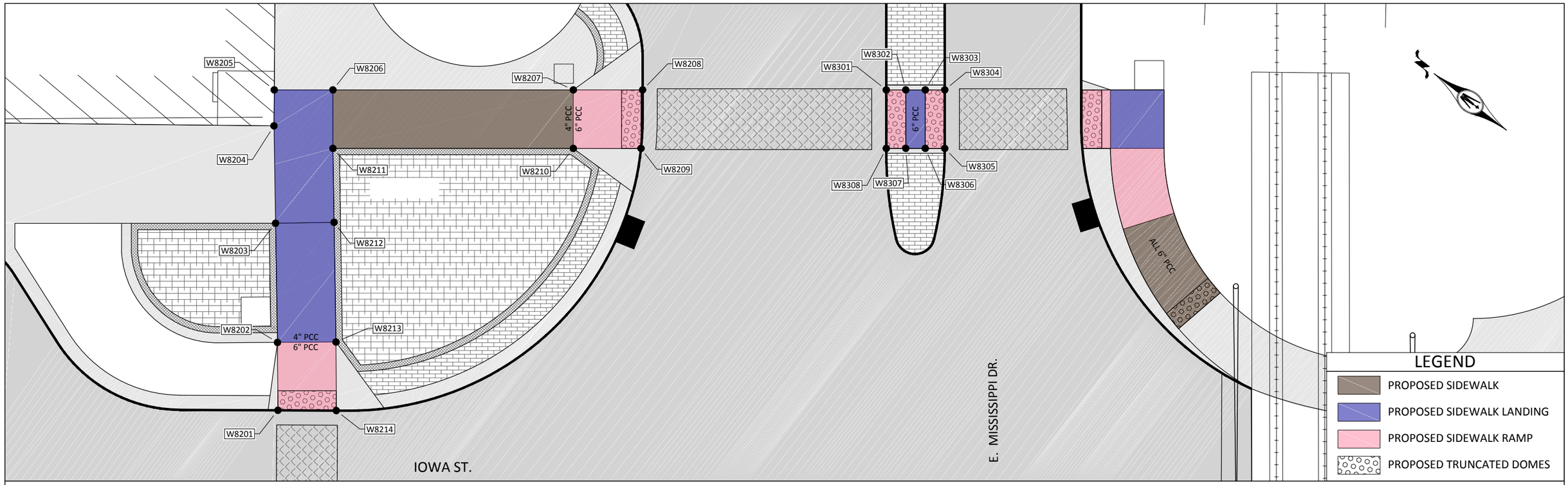
PEDESTRIAN RAMP DETAILS - IOWA ST.

SHEET S.08



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W8201	W8214	Crosswalk Cross Slope - Yield Condition	6.00	-0.09	-1.5%	0.0% to 2.0%						W8201			554.79
W8201	W8202	Ramp Running Slope	6.96	0.41	5.9%	0.5% to 8.3%						W8202			555.20
W8214	W8213	Ramp Running Slope	7.03	0.41	5.8%	0.5% to 8.3%						W8203			555.38
W8202	W8213	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W8204			555.53
W8202	W8203	Landing/Turning Space	12.22	0.18	1.5%	0.1% to 2.0%						W8205			555.48
W8213	W8212	Landing/Turning Space	12.22	0.18	1.5%	0.1% to 2.0%						W8206			555.39
W8203	W8212	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W8207			554.46
W8203	W8204	Landing/Turning Space	10.00	0.15	1.5%	0.1% to 2.0%						W8208			554.18
W8212	W8211	Landing/Turning Space	7.58	0.11	1.5%	0.1% to 2.0%						W8209			554.14
W8204	W8205	Landing/Turning Space	3.69	-0.05	-1.4%	0.1% to 2.0%						W8210			554.55
W8211	W8206	Landing/Turning Space	6.00	-0.01	-0.2%	0.1% to 2.0%						W8211			555.40
W8205	W8206	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W8212			555.29
W8206	W8207	Sidewalk Running Slope	24.67	-0.93	-3.8%	0.5% to 5.0%						W8213			555.11
W8211	W8210	Sidewalk Running Slope	24.67	-0.85	-3.4%	0.5% to 5.0%						W8214			554.70
W8207	W8210	Ramp Cross Slope	6.00	0.09	1.5%	0.1% to 2.0%									
W8207	W8208	Ramp Running Slope	7.11	-0.28	-3.9%	0.5% to 8.3%						W8301			554.45
W8210	W8209	Ramp Running Slope	6.95	-0.41	-5.9%	0.5% to 8.3%						W8302			554.30
W8208	W8209	Crosswalk Cross Slope - No Yield Condition	6.00	-0.04	-0.7%	0.0% to 5.0%						W8303			554.27
												W8304			554.12
W8301	W8302	Crosswalk Cross Slope - No Yield Condition	6.00	-0.15	-2.5%	0.0% to 5.0%						W8305			554.18
W8301	W8302	Ramp Running Slope	2.00	-0.15	-7.5%	0.5% to 8.3%	Yes					W8306			554.33
W8308	W8307	Ramp Running Slope	2.00	-0.13	-6.5%	0.5% to 8.3%						W8307			554.36
W8302	W8307	Landing/Turning Space	6.00	0.06	1.0%	0.1% to 2.0%						W8308			554.49
W8302	W8303	Landing/Turning Space	2.00	-0.03	-1.5%	0.1% to 2.0%									
W8307	W8306	Landing/Turning Space	2.00	-0.03	-1.5%	0.1% to 2.0%									
W8303	W8306	Landing/Turning Space	6.00	0.06	1.0%	0.1% to 2.0%									
W8303	W8304	Ramp Running Slope	2.00	-0.15	-7.5%	0.5% to 8.3%	Yes								
W8306	W8305	Ramp Running Slope	2.00	-0.15	-7.5%	0.5% to 8.3%	Yes								
W8304	W8305	Crosswalk Cross Slope - No Yield Condition	6.00	0.06	1.0%	0.0% to 5.0%									

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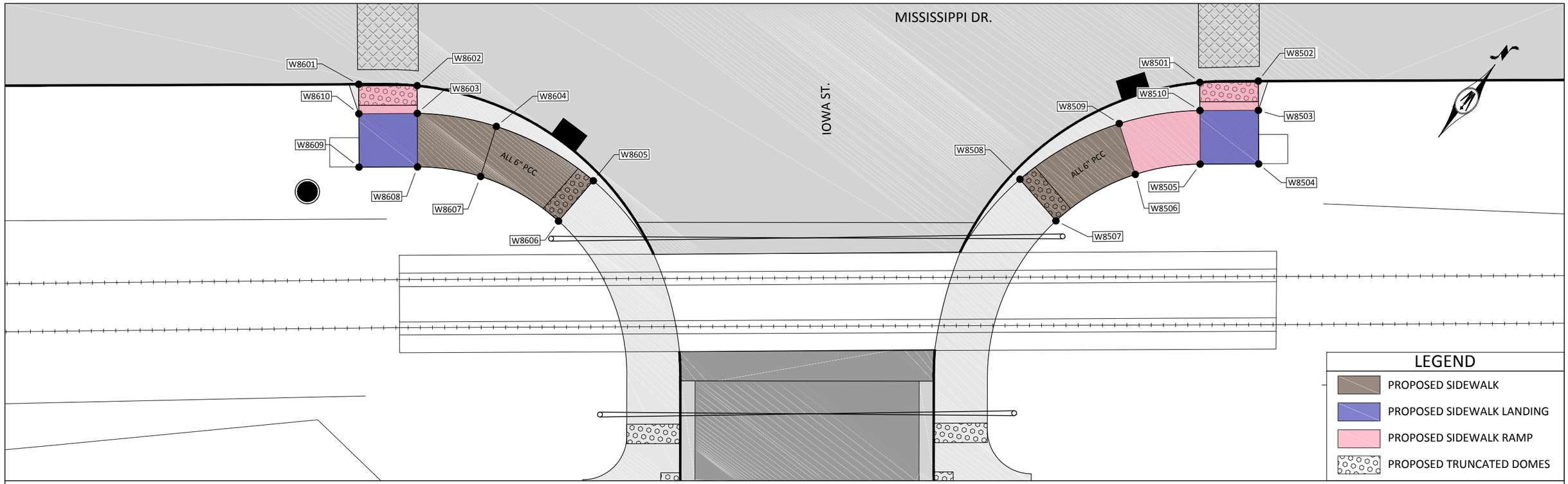
PEDESTRIAN RAMP DETAILS - IOWA ST.

SHEET S.09



113-10
10-15-13

SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb

(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W8501	W8502	Crosswalk Cross Slope - No Yield Condition	6.00	-0.08	-1.3%	0.0% to 5.0%						W8501			553.95
W8501	W8510	Ramp Running Slope	3.00	0.21	7.0%	0.5% to 8.3%						W8502			553.87
W8502	W8503	Ramp Running Slope	3.00	0.20	6.7%	0.5% to 8.3%						W8503			554.07
W8510	W8503	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W8504			554.15
W8503	W8504	Landing/Turning Space	5.50	0.08	1.5%	0.1% to 2.0%						W8505			554.24
W8510	W8505	Landing/Turning Space	5.50	0.08	1.5%	0.1% to 2.0%						W8506			554.74
W8504	W8505	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W8507			554.47
W8505	W8506	Ramp Running Slope	6.76	0.50	7.4%	0.5% to 8.3%	Yes					W8508			554.40
W8510	W8509	Ramp Running Slope	8.42	0.50	5.9%	0.5% to 8.3%						W8509			554.66
W8506	W8509	Ramp Cross Slope	5.50	-0.08	-1.5%	0.1% to 2.0%						W8510			554.16
W8506	W8507	Sidewalk Running Slope	9.51	-0.27	-2.8%	0.5% to 5.0%									
W8509	W8508	Sidewalk Running Slope	11.77	-0.26	-2.2%	0.5% to 5.0%						W8601			554.49
W8507	W8508	Sidewalk Cross Slope	5.50	-0.07	-1.3%	0.5% to 2.0%						W8602			554.43
												W8603			554.62
W8601	W8602	Crosswalk Cross Slope - No Yield Condition	6.00	-0.06	-1.0%	0.0% to 5.0%						W8604			554.69
W8601	W8610	Ramp Running Slope	3.00	0.20	6.7%	0.5% to 8.3%						W8605			554.25
W8602	W8603	Ramp Running Slope	3.00	0.19	6.3%	0.5% to 8.3%						W8606			554.42
W8610	W8603	Landing/Turning Space	6.00	-0.07	-1.2%	0.1% to 2.0%						W8607			554.77
W8610	W8609	Landing/Turning Space	5.50	0.08	1.5%	0.1% to 2.0%						W8608			554.70
W8603	W8608	Landing/Turning Space	5.50	0.08	1.5%	0.1% to 2.0%						W8609			554.77
W8609	W8608	Landing/Turning Space	6.00	-0.07	-1.2%	0.1% to 2.0%						W8610			554.69
W8608	W8607	Sidewalk Running Slope	6.58	0.07	1.1%	0.5% to 5.0%									
W8603	W8604	Sidewalk Running Slope	8.25	0.07	0.8%	0.5% to 5.0%									
W8604	W8607	Sidewalk Cross Slope	5.50	0.08	1.5%	0.5% to 2.0%									
W8604	W8605	Sidewalk Running Slope	11.49	-0.34	-3.0%	0.5% to 5.0%									
W8607	W8606	Sidewalk Running Slope	9.28	-0.35	-3.8%	0.5% to 5.0%									
W8605	W8606	Sidewalk Cross Slope	5.50	0.07	1.3%	0.5% to 2.0%									

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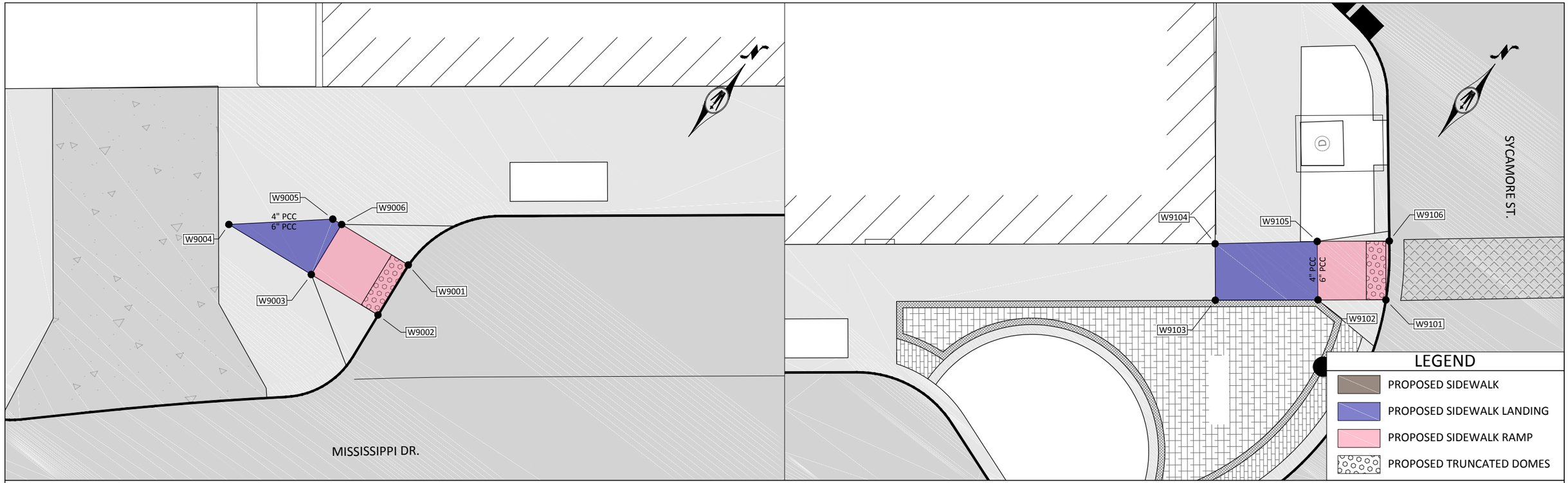
PEDESTRIAN RAMP DETAILS - IOWA ST.

SHEET S.10



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W9001	W9002	Crosswalk Cross Slope - No Yield Condition	6.00	-0.06	-1.0%	0.0% to 5.0%						W9001			552.56
W9001	W9006	Ramp Running Slope	8.00	0.56	7.0%	0.5% to 8.3%						W9002			552.50
W9002	W9003	Ramp Running Slope	8.00	0.56	7.0%	0.5% to 8.3%						W9003			553.06
W9006	W9003	Landing/Turning Space	6.00	-0.06	-1.0%	0.1% to 2.0%						W9004			553.21
W9006	W9005	Landing/Turning Space	1.06	0.02	1.9%	0.1% to 2.0%	Yes					W9005			553.14
W9003	W9004	Landing/Turning Space	9.89	0.15	1.5%	0.1% to 2.0%						W9006			553.12
W9005	W9004	Landing/Turning Space	10.68	0.07	0.7%	0.1% to 2.0%									
												W9101			551.76
W9101	W9106	Crosswalk Cross Slope - Yield Condition	6.00	0.05	0.8%	0.0% to 2.0%						W9102			552.20
W9101	W9102	Ramp Running Slope	6.97	0.44	6.3%	0.5% to 8.3%						W9103			552.30
W9106	W9105	Ramp Running Slope	7.39	0.48	6.5%	0.5% to 8.3%						W9104			552.39
W9102	W9105	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W9105			552.29
W9102	W9103	Landing/Turning Space	10.50	0.10	1.0%	0.1% to 2.0%						W9106			551.81
W9103	W9104	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									
W9104	W9105	Landing/Turning Space	10.50	-0.10	-1.0%	0.1% to 2.0%									

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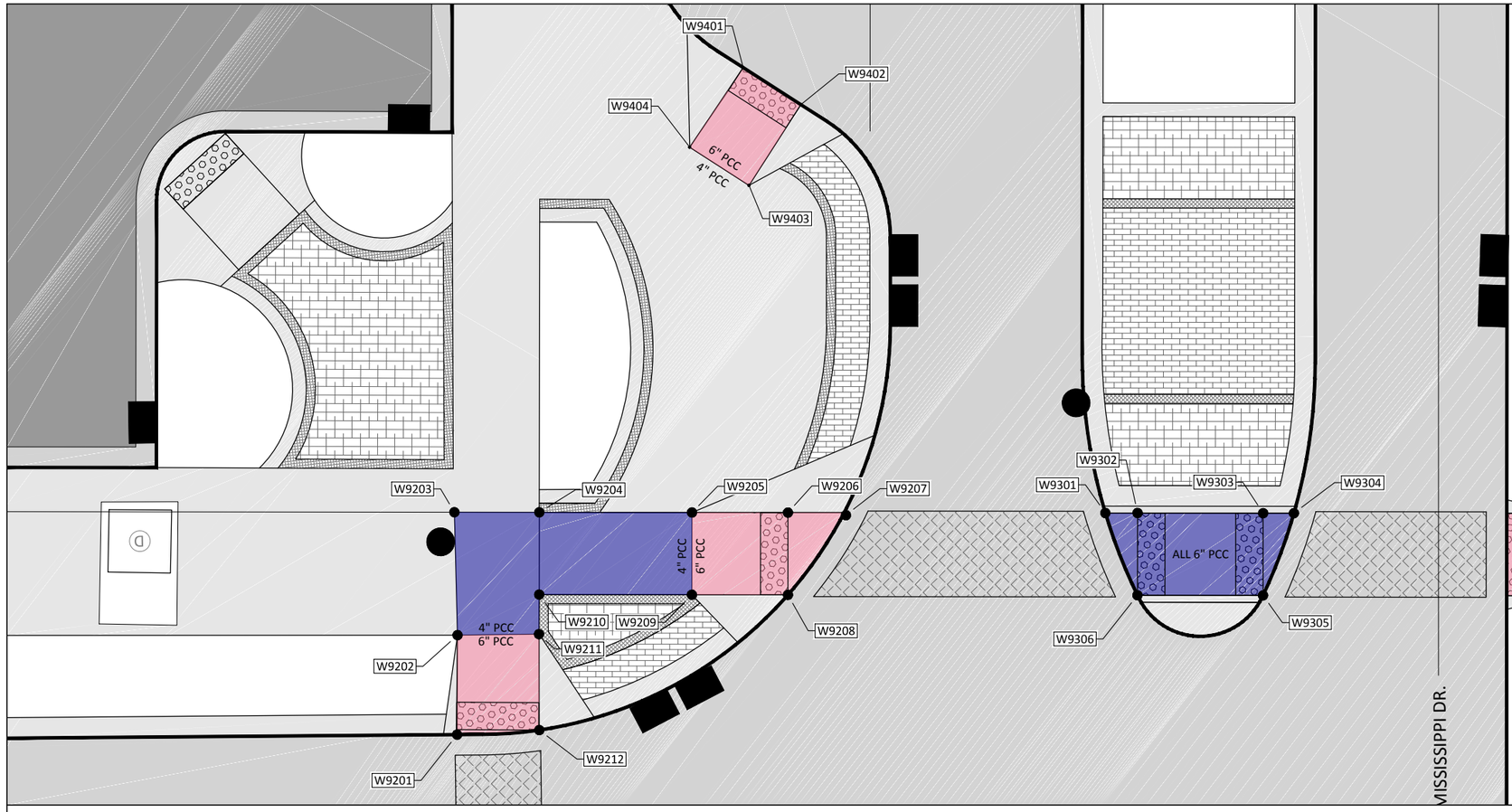
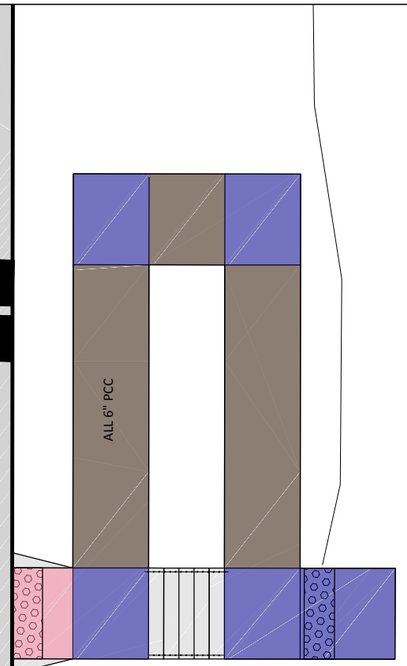
SHEET S.11





LEGEND

- PROPOSED SIDEWALK
- PROPOSED SIDEWALK LANDING
- PROPOSED SIDEWALK RAMP
- PROPOSED TRUNCATED DOMES

113-10
10-15-13

SIDEWALK COMPLIANCE

See 5 Sheets

∴ Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks
			FT	FT	%	Pos. or Neg.		%		
W9201	W9212	Crosswalk Cross Slope - Yield Condition	6.00	-0.07	-1.2%	0.0% to 2.0%				
W9201	W9202	Ramp Running Slope	7.26	0.51	7.0%	0.5% to 8.3%				
W9212	W9211	Ramp Running Slope	7.00	0.49	7.0%	0.5% to 8.3%				
W9202	W9211	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%				
W9211	W9210	Landing/Turning Space	2.89	0.02	0.7%	0.1% to 2.0%				
W9202	W9203	Landing/Turning Space	9.00	0.04	0.4%	0.1% to 2.0%				
W9203	W9204	Landing/Turning Space	6.20	0.08	1.3%	0.1% to 2.0%				
W9204	W9210	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%				
W9204	W9205	Landing/Turning Space	11.14	-0.17	-1.5%	0.1% to 2.0%				
W9210	W9209	Landing/Turning Space	11.14	-0.17	-1.5%	0.1% to 2.0%				
W9209	W9205	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%				
W9209	W9208	Ramp Running Slope	7.00	-0.30	-4.3%	0.5% to 8.3%				
W9205	W9206	Ramp Running Slope	7.00	-0.21	-3.0%	0.5% to 8.3%				
W9208	W9206	Ramp Cross Slope	6.00	0.12	2.0%	0.1% to 2.0%	Yes			
W9206	W9207	Ramp Running Slope	4.11	0.02	0.5%	0.5% to 8.3%				
W9208	W9207	Crosswalk Cross Slope - No Yield Condition	7.26	0.10	1.4%	0.0% to 5.0%				
W9301	W9306	Crosswalk Cross Slope - No Yield Condition	6.44	-0.02	-0.3%	0.0% to 5.0%				
W9307	W9306	Landing/Turning Space	6.00	-0.01	-0.2%	0.1% to 2.0%				
W9302	W9303	Landing/Turning Space	9.16	-0.02	-0.2%	0.1% to 2.0%				
W9306	W9305	Landing/Turning Space	9.16	-0.04	-0.4%	0.1% to 2.0%				
W9303	W9305	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%				
W9304	W9305	Landing/Turning Space	6.44	-0.02	-0.3%	0.1% to 2.0%				
W9401	W9402	Crosswalk Cross Slope - No Yield Condition	5.00	-0.11	-2.2%	0.0% to 5.0%				
W9401	W9404	Ramp Running Slope	7.00	0.36	5.1%	0.5% to 8.3%				
W9402	W9403	Ramp Running Slope	7.00	0.40	5.7%	0.5% to 8.3%				
W9404	W9403	Ramp Cross Slope	5.00	-0.07	-1.4%	0.1% to 2.0%				

FOR INFORMATION ONLY:
VALUES USED TO DETERMINE DESIGNED SLOPES

Point	Station	Offset	Elevation
W9201			551.81
W9202			552.32
W9203			552.36
W9204			552.28
W9205			552.11
W9206			551.90
W9207			551.88
W9208			551.78
W9209			552.08
W9210			552.25
W9211			552.23
W9212			551.74
W9301			552.22
W9302			552.21
W9303			552.19
W9304			552.18
W9305			552.16
W9306			552.20
W9401			552.39
W9402			552.28
W9403			552.68
W9404			552.75

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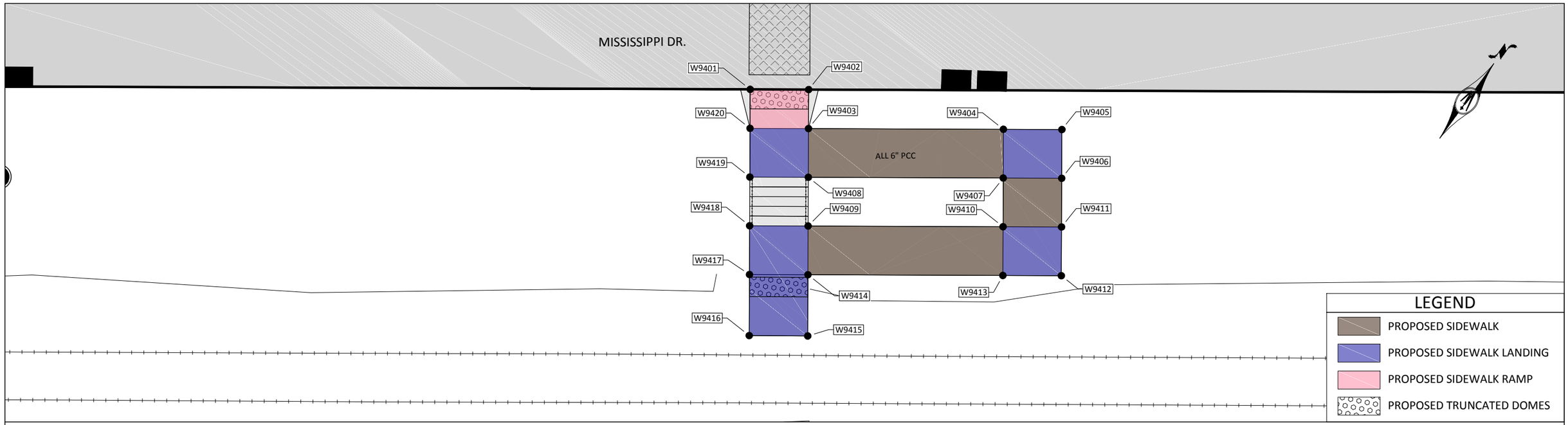
SHEET S.12



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W9501	W9502	Crosswalk Cross Slope - No Yield Condition	6.00	0.05	0.8%	0.0% to 5.0%						W9501			551.83
W9501	W9520	Ramp Running Slope	4.00	0.22	5.5%	0.5% to 8.3%						W9502			551.88
W9502	W9503	Ramp Running Slope	4.00	0.26	6.5%	0.5% to 8.3%						W9503			552.14
W9520	W9503	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W9504			553.09
W9520	W9519	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes					W9505			553.12
W9503	W9508	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes					W9506			553.20
W9519	W9508	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W9507			553.17
W9503	W9504	Sidewalk Running Slope	20.00	0.95	4.8%	0.5% to 5.0%	Yes					W9508			552.22
W9508	W9507	Sidewalk Running Slope	20.00	0.95	4.7%	0.5% to 5.0%	Yes					W9509			554.30
W9504	W9507	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes					W9510			553.35
W9504	W9505	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W9511			553.32
W9505	W9506	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes					W9512			553.40
W9507	W9506	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W9513			553.43
W9507	W9510	Sidewalk Running Slope	5.00	0.18	3.6%	0.5% to 5.0%						W9514			554.38
W9506	W9511	Sidewalk Running Slope	5.00	0.12	2.4%	0.5% to 5.0%						W9515			554.50
W9510	W9511	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%						W9516			554.50
W9511	W9512	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes					W9517			554.47
W9510	W9513	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes					W9518			554.39
W9512	W9513	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W9519			552.13
W9510	W9509	Sidewalk Running Slope	20.00	0.95	4.7%	0.5% to 5.0%	Yes					W9520			552.05
W9513	W9514	Sidewalk Running Slope	20.00	0.95	4.8%	0.5% to 5.0%	Yes								
W9509	W9514	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes								
W9509	W9518	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									
W9514	W9517	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									
W9518	W9517	Landing/Turning Space	5.00	0.08	1.6%	0.1% to 2.0%	Yes								
W9517	W9516	Landing/Turning Space	6.30	0.03	0.5%	0.1% to 2.0%									
W9514	W9515	Landing/Turning Space	6.30	0.12	1.9%	0.1% to 2.0%	Yes								
W9515	W9516	Match Existing Cross Slope	[redacted]	0.00	[redacted]	Match Existing									

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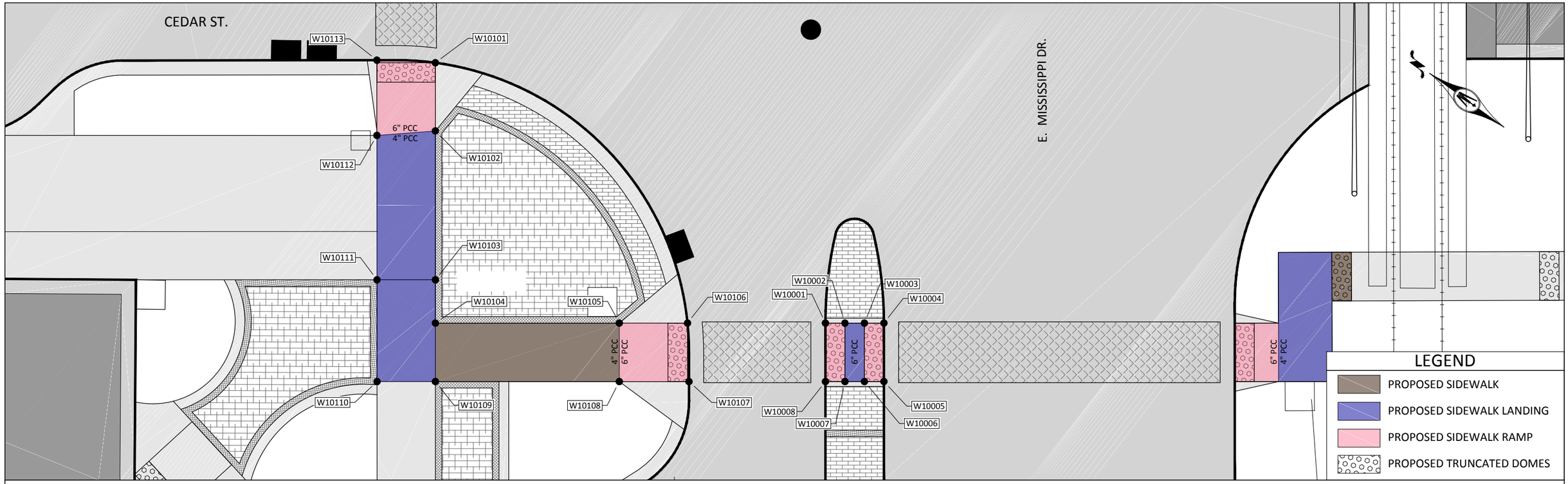
SHEET S.13



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
			FT	FT	%	Pos. or Neg.		%				Point	Station	Offset	Elevation
W10001	W10008	Crosswalk Cross Slope - No Yield Condition	6.00	-0.04	-0.7%	0.0% to 5.0%						W10001			554.55
W10001	W10002	Ramp Running Slope	2.00	0.09	4.5%	0.5% to 8.3%						W10002			554.64
W10008	W10007	Ramp Running Slope	2.00	0.09	4.5%	0.5% to 8.3%						W10003			554.67
W10002	W10007	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%						W10004			554.77
W10002	W10003	Landing/Turning Space	2.00	0.03	1.5%	0.1% to 2.0%						W10005			554.72
W10007	W10006	Landing/Turning Space	2.00	0.03	1.5%	0.1% to 2.0%						W10006			554.63
W10003	W10006	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%						W10007			554.60
W10003	W10004	Ramp Running Slope	2.00	0.10	5.0%	0.5% to 8.3%						W10008			554.51
W10006	W10005	Ramp Running Slope	2.00	0.09	4.5%	0.5% to 8.3%									
W10004	W10005	Crosswalk Cross Slope - No Yield Condition	6.00	-0.05	-0.8%	0.0% to 5.0%						W10101			554.56
												W10102			554.95
W10101	W10113	Crosswalk Cross Slope - Yield Condition	6.00	0.06	1.0%	0.0% to 2.0%						W10103			555.18
W10101	W10102	Ramp Running Slope	7.00	0.39	5.6%	0.5% to 8.3%						W10104			555.15
W10113	W10112	Ramp Running Slope	7.72	0.39	5.1%	0.5% to 8.3%						W10105			554.72
W10102	W10112	Landing/Turning Space	6.00	0.06	1.0%	0.1% to 2.0%						W10106			554.30
W10102	W10103	Landing/Turning Space	15.27	0.23	1.5%	0.1% to 2.0%						W10107			554.26
W10112	W10111	Landing/Turning Space	14.82	0.22	1.5%	0.1% to 2.0%						W10108			554.66
W10103	W10111	Landing/Turning Space	6.00	0.05	0.8%	0.1% to 2.0%						W10109			555.08
W10111	W10110	Landing/Turning Space	10.44	-0.06	-0.6%	0.1% to 2.0%						W10110			555.17
W10103	W10104	Landing/Turning Space	4.45	-0.03	-0.7%	0.1% to 2.0%						W10111			555.23
W10110	W10109	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W10112			555.01
W10104	W10109	Landing/Turning Space	6.00	-0.07	-1.2%	0.1% to 2.0%						W10113			554.62
W10104	W10105	Sidewalk Running Slope	18.87	-0.43	-2.3%	0.5% to 5.0%									
W10109	W10108	Sidewalk Running Slope	18.87	-0.42	-2.2%	0.5% to 5.0%									
W10105	W10108	Sidewalk Cross Slope	6.00	-0.06	-1.0%	0.5% to 2.0%									
W10105	W10106	Ramp Running Slope	7.00	-0.42	-6.0%	0.5% to 8.3%									
W10108	W10107	Ramp Running Slope	7.00	-0.40	-5.7%	0.5% to 8.3%									
W10106	W10107	Crosswalk Cross Slope - No Yield Condition	6.00	-0.04	-0.7%	0.0% to 5.0%									

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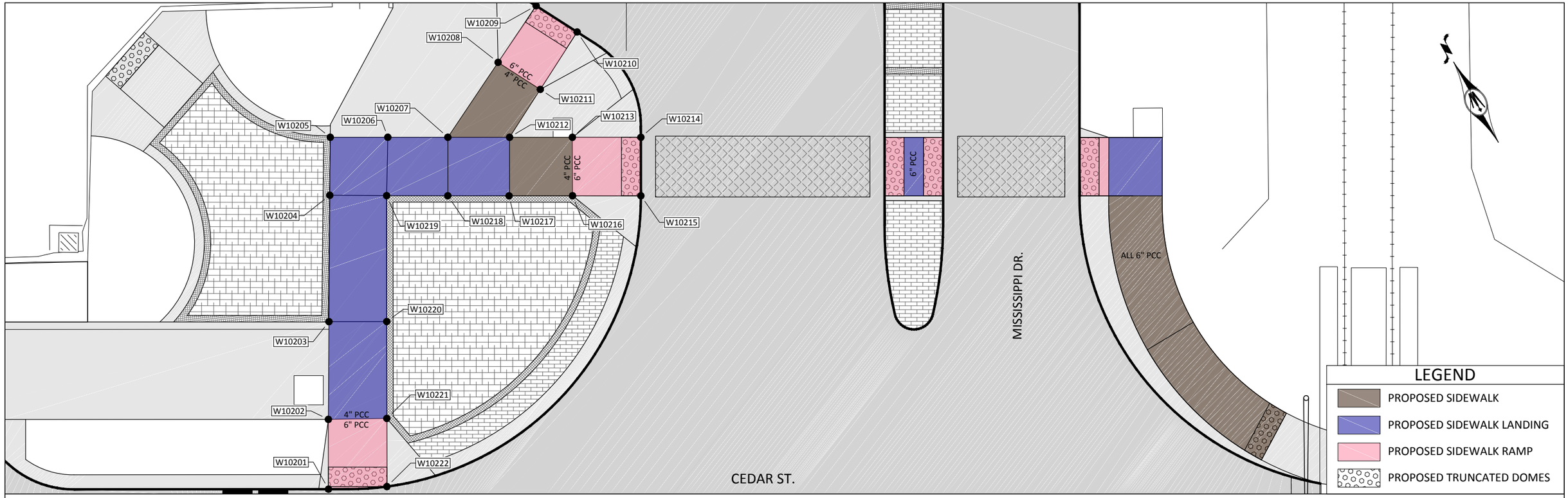
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - CEDAR ST.

SHEET S.14



113-10
10-15-13

SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb

(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance* FT	? Elevation FT	Slope %	Acceptable Constructed Range Pos. or Neg.	Staking Required on this Quadrant? (1)	Measured Slope %	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES Point	Station	Offset	Elevation
W10201	W10222	Crosswalk Cross Slope - Yield Condition	6.00	-0.05	-0.8%	0.0% to 2.0%						W10201			554.62
W10201	W10202	Ramp Running Slope	7.00	0.46	6.6%	0.5% to 8.3%						W10202			555.08
W10222	W10221	Ramp Running Slope	7.00	0.44	6.3%	0.5% to 8.3%						W10203			555.14
W10202	W10221	Landing/Turning Space	6.00	-0.07	-1.2%	0.1% to 2.0%						W10204			555.20
W10202	W10203	Landing/Turning Space	10.00	0.06	0.6%	0.1% to 2.0%						W10205			555.14
W10221	W10220	Landing/Turning Space	10.00	0.05	0.5%	0.1% to 2.0%						W10206			555.07
W10203	W10220	Landing/Turning Space	6.00	-0.08	-1.3%	0.1% to 2.0%						W10207			554.99
W10203	W10204	Landing/Turning Space	13.00	0.06	0.5%	0.1% to 2.0%						W10208			554.75
W10220	W10219	Landing/Turning Space	13.00	0.07	0.5%	0.1% to 2.0%						W10209			554.25
W10204	W10219	Landing/Turning Space	5.90	-0.07	-1.2%	0.1% to 2.0%						W10210			554.20
W10204	W10205	Landing/Turning Space	6.00	-0.06	-1.0%	0.1% to 2.0%						W10211			554.70
W10205	W10206	Landing/Turning Space	5.90	-0.07	-1.2%	0.1% to 2.0%						W10212			554.90
W10206	W10219	Landing/Turning Space	6.00	0.06	1.0%	0.1% to 2.0%						W10213			554.70
W10206	W10207	Landing/Turning Space	6.20	-0.08	-1.3%	0.1% to 2.0%						W10214			554.26
W10219	W10218	Landing/Turning Space	6.20	-0.08	-1.3%	0.1% to 2.0%						W10215			554.28
W10218	W10217	Landing/Turning Space	6.30	-0.09	-1.4%	0.1% to 2.0%						W10216			554.76
W10207	W10212	Landing/Turning Space	6.30	-0.09	-1.4%	0.1% to 2.0%						W10217			554.96
W10206	W10208	Sidewalk Running Slope	9.26	-0.32	-3.5%	0.5% to 5.0%						W10218			555.05
W10212	W10211	Sidewalk Running Slope	5.84	-0.20	-3.4%	0.5% to 5.0%						W10219			555.13
W10208	W10211	Sidewalk Cross Slope	5.14	-0.05	-1.0%	0.5% to 2.0%						W10220			555.06
W10208	W10209	Ramp Running Slope	7.00	-0.50	-7.1%	0.5% to 8.3%						W10221			555.01
W10211	W10210	Ramp Running Slope	7.00	-0.50	-7.1%	0.5% to 8.3%						W10222			554.57
W10209	W10210	Crosswalk Cross Slope - Yield Condition	5.14	-0.05	-1.0%	0.0% to 2.0%									
W10212	W10217	Landing/Turning Space	6.00	0.06	1.0%	0.1% to 2.0%									
W10212	W10213	Sidewalk Running Slope	6.00	-0.20	-3.3%	0.5% to 5.0%									
W10217	W10216	Sidewalk Running Slope	6.00	-0.20	-3.3%	0.5% to 5.0%									
W10213	W10216	Sidewalk Cross Slope	6.00	0.06	1.0%	0.5% to 2.0%									
W10213	W10214	Ramp Running Slope	7.00	-0.44	-6.3%	0.5% to 8.3%									
W10216	W10215	Ramp Running Slope	7.00	-0.48	-6.9%	0.5% to 8.3%									
W10214	W10215	Crosswalk Cross Slope - No Yield Condition	6.00	0.02	0.3%	0.0% to 5.0%									

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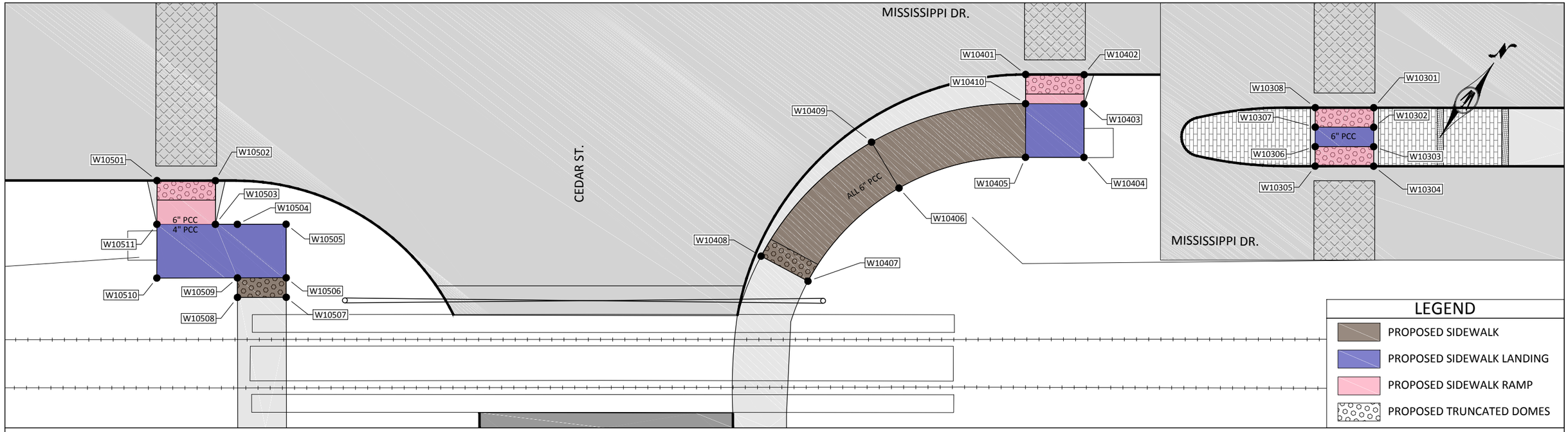
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - CEDAR ST.

SHEET S.15



113-10
10-15-13

SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance* FT	? Elevation FT	Slope %	Acceptable Constructed Range Pos. or Neg.	Staking Required on this Quadrant? (1)	Measured Slope %	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES Point	Station	Offset	Elevation
W10301	W10308	Crosswalk Cross Slope - No Yield Condition	6.00	0.05	0.8%	0.0% to 5.0%						W10301			554.70
W10301	W10302	Ramp Running Slope	2.00	-0.10	-5.0%	0.5% to 8.3%						W10302			554.60
W10308	W10307	Ramp Running Slope	2.00	-0.10	-5.0%	0.5% to 8.3%						W10303			554.57
W10302	W10307	Landing/Turning Space	6.00	0.05	0.8%	0.1% to 2.0%						W10304			554.48
W10302	W10303	Landing/Turning Space	2.00	-0.03	-1.5%	0.1% to 2.0%						W10305			554.53
W10307	W10306	Landing/Turning Space	2.00	-0.03	-1.5%	0.1% to 2.0%						W10306			554.62
W10303	W10306	Landing/Turning Space	6.00	0.05	0.8%	0.1% to 2.0%						W10307			554.65
W10303	W10304	Ramp Running Slope	2.00	-0.09	-4.5%	0.5% to 8.3%						W10308			554.75
W10306	W10305	Ramp Running Slope	2.00	-0.09	-4.5%	0.5% to 8.3%									
W10304	W10305	Crosswalk Cross Slope - No Yield Condition	6.00	0.05	0.8%	0.0% to 5.0%						W10401			554.28
												W10402			554.23
W10401	W10402	Crosswalk Cross Slope - No Yield Condition	6.00	-0.05	-0.8%	0.0% to 5.0%						W10403			554.42
W10401	W10408	Ramp Running Slope	3.00	0.23	7.7%	0.5% to 8.3%	Yes					W10404			554.50
W10402	W10403	Ramp Running Slope	3.00	0.19	6.3%	0.5% to 8.3%						W10405			554.55
W10410	W10403	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%						W10406			555.00
W10410	W10405	Landing/Turning Space	5.50	0.09	1.6%	0.1% to 2.0%	Yes					W10407			554.59
W10403	W10404	Landing/Turning Space	5.50	0.08	1.5%	0.1% to 2.0%						W10408			554.51
W10405	W10404	Landing/Turning Space	6.00	-0.05	-0.8%	0.1% to 2.0%						W10409			555.03
W10405	W10406	Sidewalk Running Slope	13.53	0.45	3.3%	0.5% to 5.0%						W10410			554.46
W10410	W10409	Sidewalk Running Slope	16.50	0.57	3.5%	0.5% to 5.0%									
W10406	W10409	Sidewalk Cross Slope	5.50	0.03	0.5%	0.5% to 2.0%						W10501			554.03
W10406	W10407	Sidewalk Running Slope	13.53	-0.41	-3.0%	0.5% to 5.0%						W10502			554.08
W10409	W10408	Sidewalk Running Slope	16.50	-0.52	-3.2%	0.5% to 5.0%						W10503			554.27
W10407	W10408	Sidewalk Cross Slope	5.50	-0.08	-1.5%	0.5% to 2.0%						W10504			554.29
												W10505			554.34
W10501	W10502	Crosswalk Cross Slope - No Yield Condition	6.00	0.05	0.8%	0.0% to 5.0%						W10506			554.40
W10501	W10511	Ramp Running Slope	4.50	0.18	4.0%	0.5% to 8.3%						W10507			554.43
W10502	W10503	Ramp Running Slope	4.50	0.19	4.2%	0.5% to 8.3%						W10508			554.40
W10511	W10510	Landing/Turning Space	5.50	0.06	1.1%	0.1% to 2.0%						W10509			554.35
W10510	W10509	Landing/Turning Space	8.30	0.08	1.0%	0.1% to 2.0%						W10510			554.27
W10503	W10505	Landing/Turning Space	7.30	0.07	1.0%	0.1% to 2.0%						W10511			554.21
W10504	W10509	Landing/Turning Space	5.50	0.06	1.1%	0.1% to 2.0%									
W10505	W10506	Landing/Turning Space	5.50	0.06	1.1%	0.1% to 2.0%									
W10509	W10506	Landing/Turning Space	5.00	0.05	1.0%	0.1% to 2.0%									
W10509	W10508	Sidewalk Running Slope	2.00	0.05	2.5%	0.5% to 5.0%									
W10506	W10507	Sidewalk Running Slope	2.00	0.03	1.5%	0.5% to 5.0%									
W10508	W10507	Sidewalk Cross Slope	5.00	0.03	0.6%	0.5% to 2.0%									

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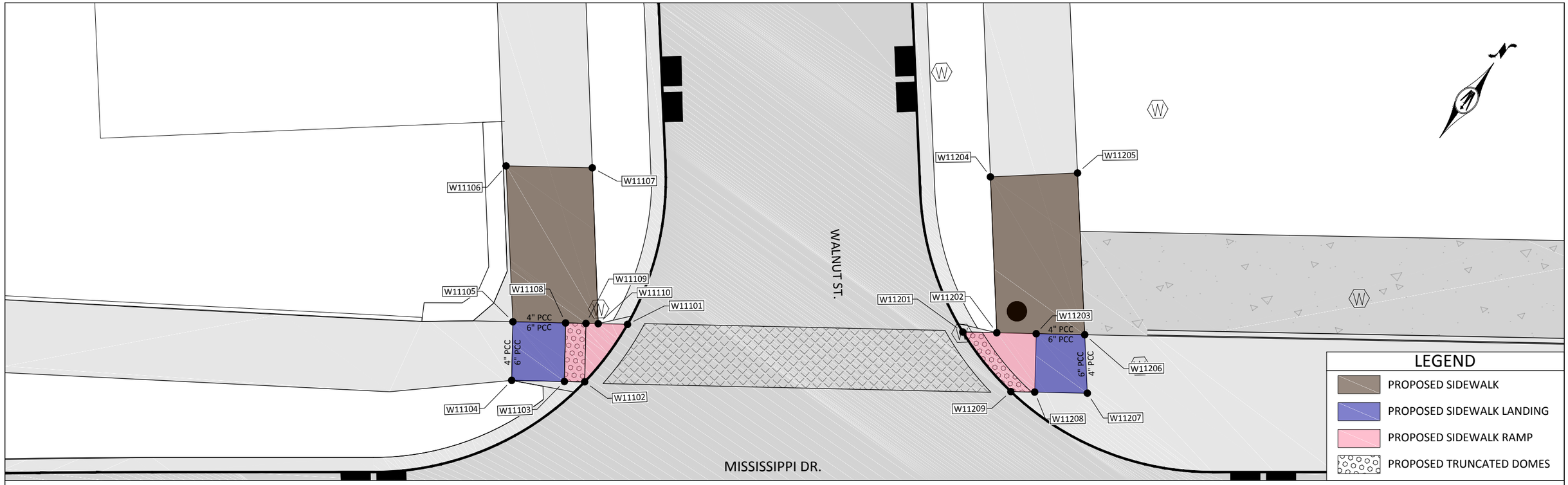
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - CEDAR ST.

SHEET S.16



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W11101	W11102	Crosswalk Cross Slope - Yield Condition	7.36	-0.36	-4.9%	0.0% to 5.9%						W11101			552.13
W11101	W11110	Ramp Running Slope	3.00	-0.19	-6.3%	0.5% to 8.3%						W11102			551.77
W11110	W11109	Sidewalk Cross Slope	1.27	0.02	1.6%	0.5% to 2.0%	Yes					W11103			551.90
W11102	W11109	Ramp Cross Slope	6.00	0.19	3.2%	0.1% to 4.2%						W11104			551.98
W11109	W11108	Sidewalk Cross Slope	2.00	0.03	1.5%	0.5% to 2.0%						W11105			552.07
W11102	W11103	Ramp Running Slope	2.00	0.13	6.5%	0.5% to 8.3%						W11106			553.04
W11108	W11103	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W11107			552.89
W11103	W11104	Landing/Turning Space	5.40	0.08	1.5%	0.1% to 2.0%						W11108			551.99
W11108	W11105	Landing/Turning Space	5.40	0.08	1.5%	0.1% to 2.0%						W11109			551.96
W11104	W11105	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W11110			551.94
W11105	W11106	Sidewalk Running Slope	16.00	0.97	6.1%	0.5% to 7.1%				Length constructed must exceed 15 feet at a uniform running slope					
W11110	W11107	Sidewalk Running Slope	16.00	0.95	5.9%	0.5% to 6.9%				Length constructed must exceed 15 feet at a uniform running slope		W11201			551.75
W11106	W11107	Sidewalk Cross Slope	8.85	-0.15	-1.7%	0.5% to 2.0%	Yes					W11202			551.82
												W11203			551.88
W11201	W11208	Crosswalk Cross Slope - Yield Condition	7.90	0.04	0.5%	0.0% to 2.0%						W11204			552.69
W11201	W11202	Ramp Running Slope	3.50	0.07	2.0%	0.5% to 8.3%						W11205			552.82
W11209	W11208	Ramp Running Slope	2.44	0.17	7.0%	0.5% to 8.3%						W11206			551.95
W11202	W11203	Sidewalk Cross Slope	4.00	0.06	1.5%	0.5% to 2.0%						W11207			551.87
W11208	W11203	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W11208			551.79
W11208	W11207	Landing/Turning Space	5.40	0.08	1.5%	0.1% to 2.0%				Length constructed must exceed 15 feet at a uniform running slope		W11209			551.62
W11207	W11206	Landing/Turning Space	6.00	0.08	1.3%	0.1% to 2.0%				Length constructed must exceed 15 feet at a uniform running slope					
W11203	W11206	Landing/Turning Space	5.00	0.07	1.4%	0.1% to 2.0%									
W11202	W11204	Sidewalk Running Slope	16.00	0.87	5.4%	0.5% to 6.4%									
W11206	W11205	Sidewalk Running Slope	16.00	0.87	5.4%	0.5% to 6.4%									
W11204	W11205	Sidewalk Cross Slope	9.00	0.13	1.4%	0.5% to 2.0%									

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SCALE FEET

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MUSCATINE, IOWA
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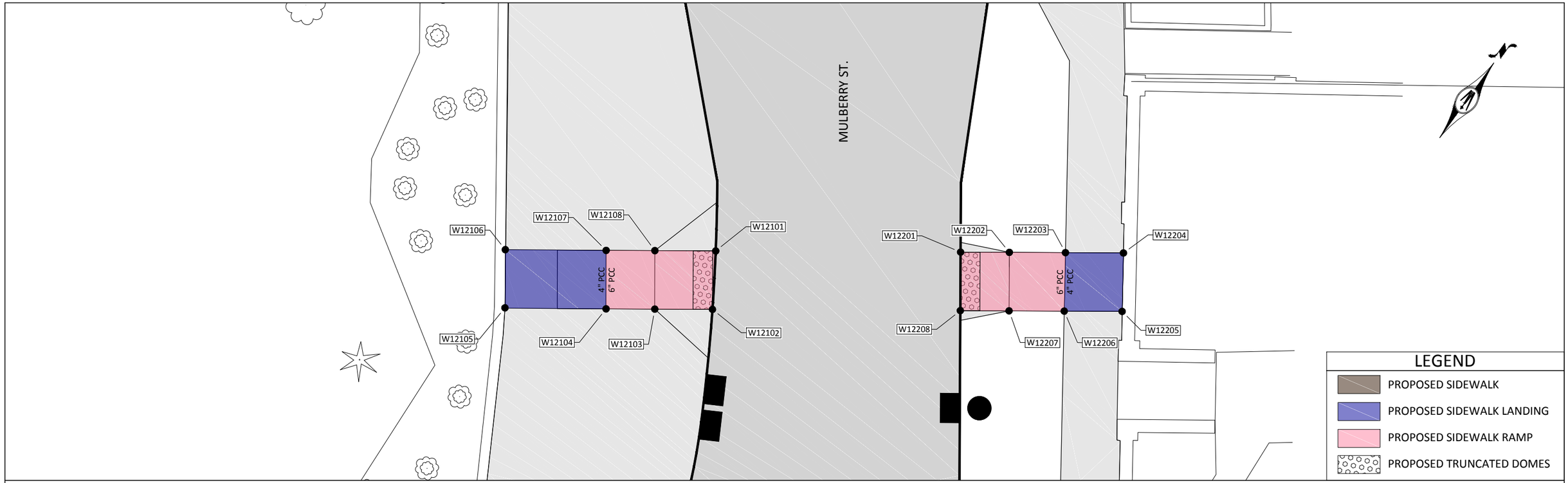
PEDESTRIAN RAMP DETAILS - WALNUT ST.

SHEET S.17



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W12101	W12102	Crosswalk Cross Slope - No Yield Condition	6.00	-0.11	-1.8%	0.0% to 5.0%						W12101			554.27
W12102	W12103	Ramp Running Slope	5.92	0.37	6.3%	0.5% to 8.3%						W12102			554.16
W12101	W12108	Ramp Running Slope	6.24	0.35	5.6%	0.5% to 8.3%						W12103			554.53
W12103	W12108	Ramp Cross Slope	6.00	0.09	1.5%	0.1% to 2.0%						W12104			554.78
W12103	W12104	Ramp Running Slope	5.00	0.25	5.0%	0.5% to 8.3%						W12105			554.93
W12108	W12107	Ramp Running Slope	5.00	0.25	5.0%	0.5% to 8.3%						W12106			555.02
W12104	W12107	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W12107			554.87
W12107	W12106	Landing/Turning Space	10.00	0.15	1.5%	0.1% to 2.0%						W12108			554.62
W12104	W12105	Landing/Turning Space	10.00	0.15	1.5%	0.1% to 2.0%									
W12106	W12105	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%									
												W12201			554.28
W12201	W12208	Crosswalk Cross Slope - No Yield Condition	6.00	-0.11	-1.8%	0.0% to 5.0%						W12202			554.30
W12201	W12202	Ramp Running Slope	5.00	0.02	0.4%	0.5% to 8.3%						W12203			554.32
W12208	W12207	Ramp Running Slope	5.00	0.03	0.6%	0.5% to 8.3%						W12204			554.41
W12202	W12207	Ramp Cross Slope	6.00	-0.10	-1.7%	0.1% to 2.0%	Yes					W12205			554.32
W12202	W12203	Ramp Running Slope	5.00	0.02	0.4%	0.5% to 8.3%						W12206			554.24
W12207	W12206	Ramp Running Slope	5.00	0.04	0.8%	0.5% to 8.3%						W12207			554.20
W12203	W12206	Landing/Turning Space	6.00	-0.08	-1.3%	0.1% to 2.0%						W12208			554.17
W12203	W12204	Landing/Turning Space	5.50	0.09	1.6%	0.1% to 2.0%	Yes								
W12206	W12205	Landing/Turning Space	5.50	0.08	1.5%	0.1% to 2.0%									
W12204	W12205	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%									

HORIZ. SCALE 0 5 10 FEET

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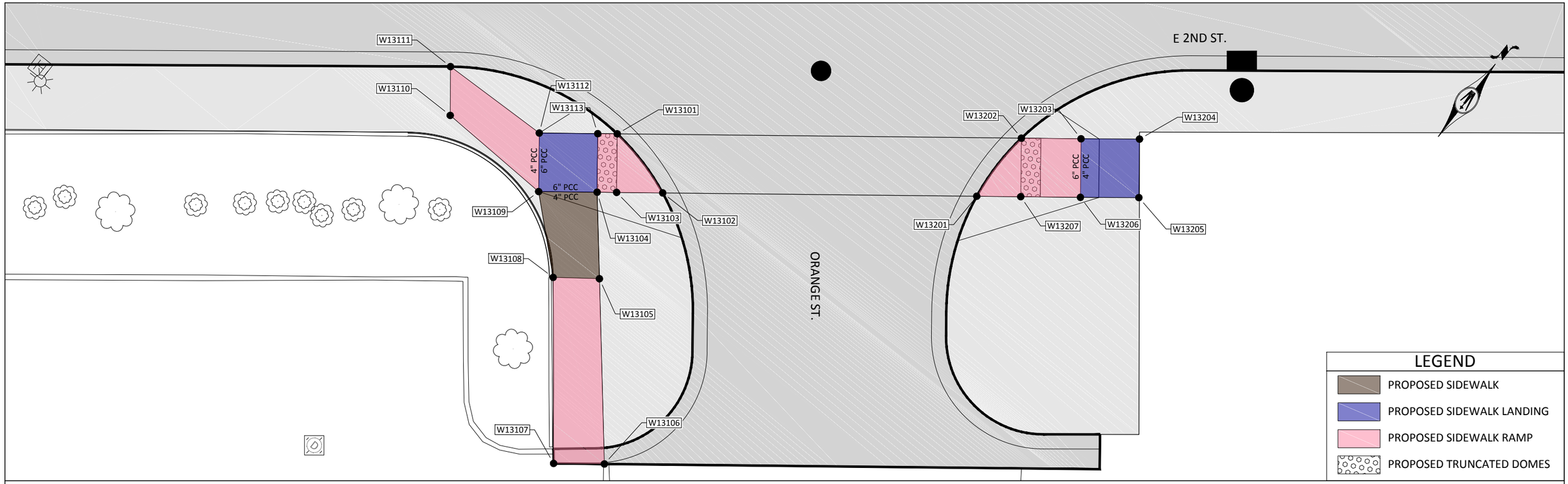
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - MULBERRY ST.

SHEET S.18



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance* FT	? Elevation FT	Slope %	Acceptable Constructed Range Pos. or Neg.	Staking Required on this Quadrant? (1)	Measured Slope %	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES Point	Station	Offset	Elevation
W13101	W13102	Crosswalk Cross Slope - Yield Condition	7.60	-0.12	-1.6%	0.0% to 2.0%						W13101			550.65
W13102	W13103	Ramp Running Slope	4.70	0.21	4.5%	0.5% to 8.3%						W13102			550.53
W13101	W13103	Ramp Cross Slope	6.00	0.09	1.5%	0.1% to 2.0%						W13103			550.74
W13101	W13113	Ramp Running Slope	2.00	0.13	6.5%	0.5% to 8.3%						W13104			550.87
W13103	W13104	Ramp Running Slope	2.00	0.13	6.5%	0.5% to 8.3%						W13105			551.27
W13113	W13104	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W13106			550.11
W13113	W13112	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W13107			550.47
W13112	W13109	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W13108			551.33
W13112	W13111	Ramp Running Slope	11.40	0.58	5.1%	0.5% to 8.3%						W13109			550.96
W13109	W13110	Ramp Running Slope	12.00	0.56	4.7%	0.5% to 8.3%						W13110			551.52
W13111	W13110	Ramp Cross Slope	5.00	0.07	1.4%	0.1% to 2.0%						W13111			551.45
W13109	W13104	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W13112			550.87
W13104	W13105	Sidewalk Running Slope	8.90	0.40	4.5%	0.5% to 5.0%	Yes					W13113			550.78
W13109	W13108	Sidewalk Running Slope	8.90	0.37	4.2%	0.5% to 5.0%	Yes								
W13105	W13108	Sidewalk Cross Slope	4.75	0.06	1.3%	0.5% to 2.0%						W13201			550.24
W13105	W13106	Ramp Running Slope	19.00	-1.16	-6.1%	0.5% to 8.3%						W13202			550.21
W13108	W13107	Ramp Running Slope	19.00	-0.86	-4.5%	0.5% to 8.3%						W13203			550.61
W13106	W13107	Match Existing Cross Slope	5.10	0.36	7.1%	Match Existing						W13204 W13205			550.70 550.79
W13201	W13202	Crosswalk Cross Slope - Yield Condition	7.50	-0.03	-0.4%	0.0% to 2.0%						W13206			550.70
W13201	W13207	Ramp Running Slope	4.50	0.06	1.3%	0.5% to 8.3%						W13207			550.30
W13202	W13207	Ramp Cross Slope	6.00	0.09	1.5%	0.1% to 2.0%									
W13207	W13206	Ramp Running Slope	6.12	0.40	6.5%	0.5% to 8.3%									
W13202	W13203	Ramp Running Slope	6.12	0.40	6.5%	0.5% to 8.3%									
W13203	W13206	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									
W13203	W13204	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									
W13204	W13205	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									
W13206	W13205	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%									

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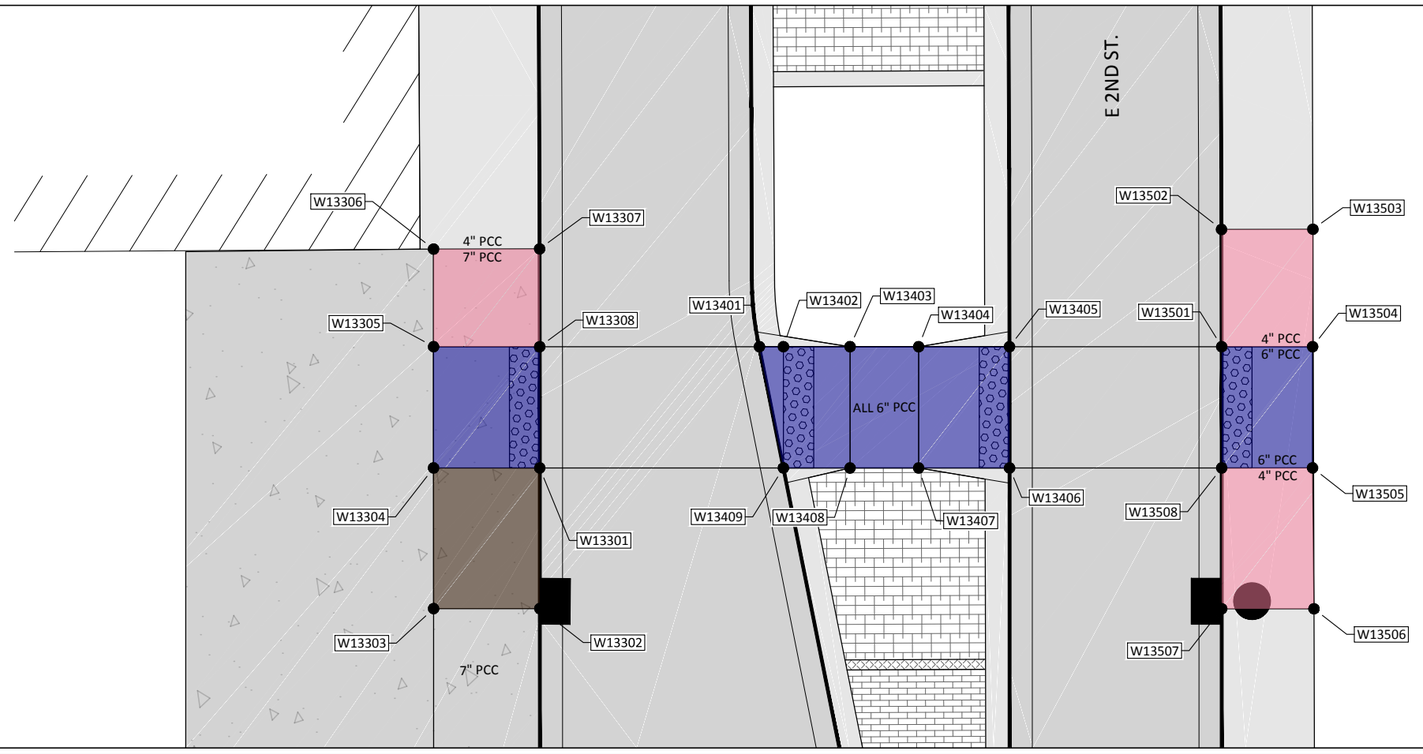
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - ORANGE ST.

SHEET S.19



LEGEND

- PROPOSED SIDEWALK
- PROPOSED SIDEWALK LANDING
- PROPOSED SIDEWALK RAMP
- PROPOSED TRUNCATED DOMES

SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance* FT	? Elevation FT	Slope %	Acceptable Constructed Range Pos. or Neg.	Staking Required on this Quadrant? (1)	Measured Slope %	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES Point	Station	Offset	Elevation
W13301	W13302	Crosswalk Cross Slope - No Yield Condition	8.00	-0.04	-0.5%	0.0% to 5.0%						W13301			549.65
W13301	W13304	Landing/Turning Space	7.00	0.11	1.6%	0.1% to 2.0%	Yes					W13302			549.89
W13308	W13305	Landing/Turning Space	7.00	0.11	1.6%	0.1% to 2.0%	Yes					W13303			549.99
W13304	W13305	Landing/Turning Space	8.00	-0.04	-0.5%	0.1% to 2.0%						W13304			549.76
W13305	W13306	Ramp Running Slope	6.45	0.37	5.7%	0.5% to 8.3%						W13305			549.72
W13308	W13307	Ramp Running Slope	6.45	0.36	5.6%	0.5% to 8.3%						W13306			550.09
W13306	W13307	Ramp Cross Slope	7.00	-0.12	-1.7%	0.1% to 2.0%	Yes					W13307			549.97
W13301	W13302	Sidewalk Running Slope	9.30	0.24	2.6%	0.5% to 5.0%						W13308			549.61
W13304	W13303	Sidewalk Running Slope	9.30	0.23	2.5%	0.5% to 5.0%									
W13302	W13303	Sidewalk Cross Slope	7.00	0.10	1.4%	0.5% to 2.0%						W13401			549.88
												W13402			549.90
W13401	W13409	Crosswalk Cross Slope - No Yield Condition	8.15	0.07	0.9%	0.0% to 5.0%						W13403			549.97
W13401	W13402	Landing/Turning Space	1.58	0.02	1.3%	0.1% to 2.0%						W13404			549.95
W13409	W13402	Landing/Turning Space	8.00	-0.05	-0.6%	0.1% to 2.0%						W13405			549.87
W13402	W13403	Landing/Turning Space	4.40	0.07	1.6%	0.1% to 2.0%	Yes					W13406			549.91
W13409	W13408	Landing/Turning Space	4.40	0.06	1.4%	0.1% to 2.0%						W13407			549.99
W13403	W13408	Landing/Turning Space	8.00	0.04	0.5%	0.1% to 2.0%						W13408			550.01
W13403	W13404	Landing/Turning Space	4.50	-0.02	-0.4%	0.1% to 2.0%						W13409			549.95
W13408	W13407	Landing/Turning Space	4.50	-0.02	-0.4%	0.1% to 2.0%									
W13404	W13407	Landing/Turning Space	8.00	0.04	0.5%	0.1% to 2.0%						W13501			549.61
W13404	W13405	Landing/Turning Space	6.00	-0.08	-1.3%	0.1% to 2.0%						W13502			550.06
W13407	W13406	Landing/Turning Space	6.00	-0.08	-1.3%	0.1% to 2.0%						W13503			550.15
W13405	W13406	Crosswalk Cross Slope - No Yield Condition	8.00	0.04	0.5%	0.0% to 5.0%						W13504			549.70
												W13505			549.74
W13501	W13508	Crosswalk Cross Slope - No Yield Condition	8.00	0.04	0.5%	0.0% to 5.0%						W13506			550.28
W13501	W13504	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W13507			550.19
W13508	W13505	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W13508			549.65
W13501	W13502	Ramp Running Slope	7.75	0.45	5.8%	0.5% to 8.3%									
W13504	W13503	Ramp Running Slope	7.75	0.45	5.8%	0.5% to 8.3%									
W13502	W13503	Ramp Cross Slope	6.00	0.09	1.5%	0.1% to 2.0%									
W13508	W13507	Ramp Running Slope	9.30	0.54	5.8%	0.5% to 8.3%									
W13505	W13506	Ramp Running Slope	9.30	0.54	5.8%	0.5% to 8.3%									
W13507	W13506	Ramp Cross Slope	6.00	0.09	1.5%	0.1% to 2.0%									

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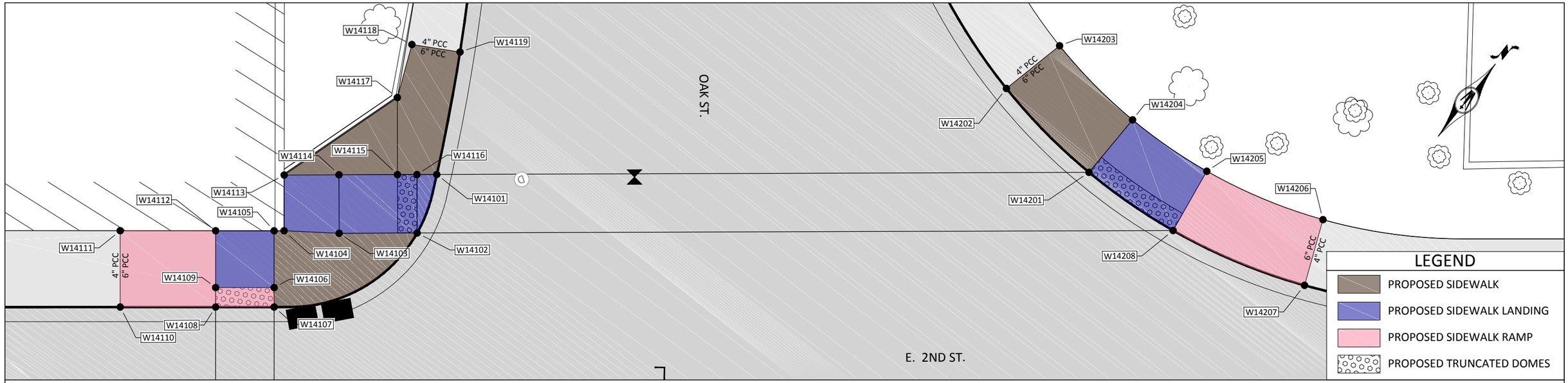
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - E. 2ND ST.

SHEET S.20



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point	to Point	Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W14101	W14102	Crosswalk Cross Slope - Yield Condition	6.33	-0.04	-0.6%	0.0% to 2.0%						W14101			548.50
W14101	W14116	Landing/Turning Space	2.00	0.02	1.0%	0.1% to 2.0%						W14102			548.46
W14116	W14102	Landing/Turning Space	6.00	-0.06	-1.0%	0.1% to 2.0%						W14103			548.50
W14116	W14114	Landing/Turning Space	8.00	0.06	0.8%	0.1% to 2.0%						W14104			548.54
W14102	W14103	Landing/Turning Space	8.00	0.04	0.5%	0.1% to 2.0%						W14105			548.55
W14114	W14103	Landing/Turning Space	6.00	-0.08	-1.3%	0.1% to 2.0%						W14106			548.46
W14103	W14104	Landing/Turning Space	5.60	0.04	0.7%	0.1% to 2.0%						W14107			548.35
W14114	W14113	Landing/Turning Space	5.60	0.05	0.9%	0.1% to 2.0%						W14108			548.36
W14105	W14113	Landing/Turning Space	5.70	0.08	1.4%	0.1% to 2.0%						W14109			548.49
W14115	W14117	Sidewalk Running Slope	7.90	0.33	4.2%	0.5% to 5.0%	Yes					W14110			548.89
W14113	W14117	Sidewalk Running Slope	14.10	0.23	1.6%	0.5% to 5.0%						W14111			549.01
W14116	W14119	Sidewalk Running Slope	12.80	0.54	4.2%	0.5% to 5.0%	Yes					W14112			548.58
W14117	W14118	Sidewalk Running Slope	5.65	0.28	5.0%	0.5% to 5.0%	Yes					W14113			548.63
W14118	W14119	Sidewalk Cross Slope	5.00	-0.08	-1.6%	0.5% to 2.0%	Yes					W14114			548.58
W14103	W14104	Sidewalk Running Slope	1.00	0.04	4.0%	0.5% to 5.0%						W14115			548.53
W14102	W14107	Sidewalk Running Slope	17.45	-0.11	-0.6%	0.5% to 5.0%						W14116			548.52
W14105	W14106	Landing/Turning Space	5.83	-0.09	-1.5%	0.1% to 2.0%						W14117			548.86
W14105	W14112	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W14118			549.14
W14107	W14108	Crosswalk Cross Slope - No Yield Condition	6.00	0.01	0.2%	0.0% to 5.0%						W14119			549.06
W14107	W14106	Ramp Running Slope	2.00	0.11	5.5%	0.5% to 8.3%									
W14108	W14109	Ramp Running Slope	2.00	0.13	6.5%	0.5% to 8.3%						W14201			548.72
W14109	W14112	Landing/Turning Space	5.83	0.09	1.5%	0.1% to 2.0%						W14202			548.96
W14108	W14110	Ramp Running Slope	9.80	0.53	5.4%	0.5% to 8.3%						W14203			549.07
W14112	W14111	Ramp Running Slope	9.80	0.43	4.4%	0.5% to 8.3%						W14204			548.83
W14110	W14111	Ramp Cross Slope	7.80	0.12	1.5%	0.1% to 2.0%						W14205			549.01
												W14206			549.70
W14201	W14208	Crosswalk Cross Slope - Yield Condition	10.50	0.18	1.7%	0.0% to 2.0%						W14207			549.60
W14201	W14204	Landing/Turning Space	7.00	0.11	1.6%	0.1% to 2.0%	Yes					W14208			548.90
W14208	W14205	Landing/Turning Space	7.00	0.11	1.6%	0.1% to 2.0%	Yes								
W14204	W14205	Landing/Turning Space	9.30	0.18	1.9%	0.1% to 2.0%	Yes								
W14201	W14202	Sidewalk Running Slope	12.10	0.24	2.0%	0.5% to 5.0%									
W14204	W14203	Sidewalk Running Slope	10.70	0.24	2.2%	0.5% to 5.0%									
W14203	W14202	Sidewalk Cross Slope	7.00	-0.11	-1.6%	0.5% to 2.0%	Yes								
W14208	W14207	Ramp Running Slope	14.60	0.70	4.8%	0.5% to 8.3%									
W14205	W14206	Ramp Running Slope	12.90	0.69	5.3%	0.5% to 8.3%									
W14206	W14207	Ramp Cross Slope	7.00	-0.10	-1.4%	0.1% to 2.0%									

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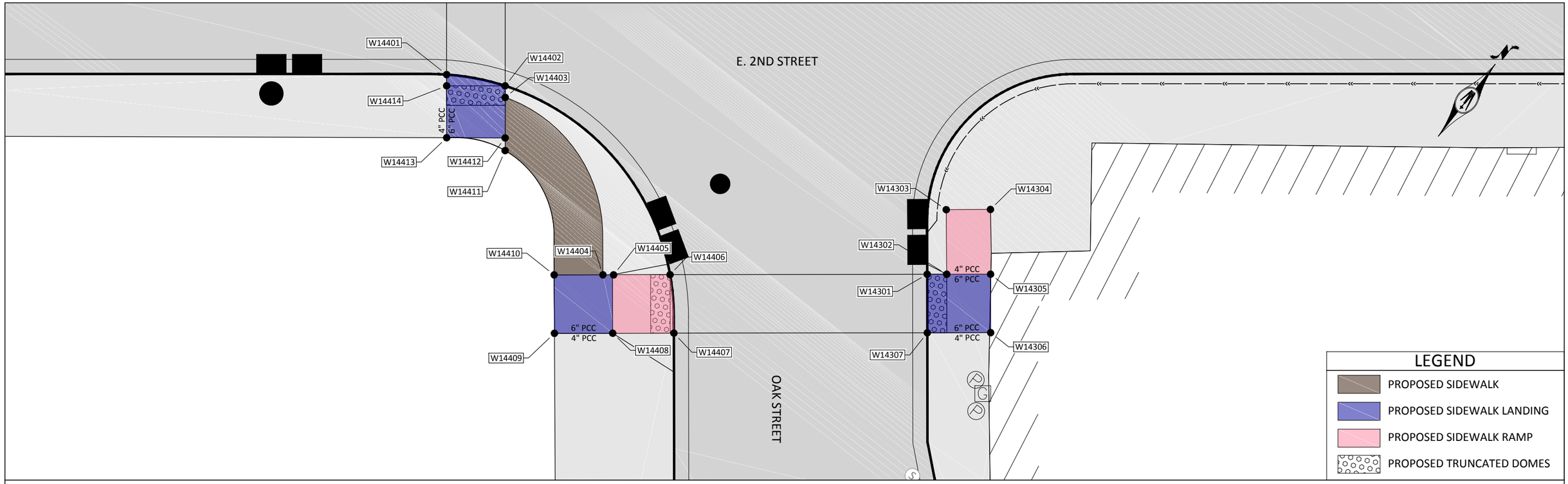
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PEDESTRIAN RAMP DETAILS - OAK ST.

SHEET S.21



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SIDEWALK COMPLIANCE

See S Sheets

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W14301	W14307	Crosswalk Cross Slope - Yield Condition	6.00	0.08	1.3%	0.0% to 2.0%						W14301			548.21
W14301	W14305	Landing/Turning Space	6.50	0.10	1.5%	0.1% to 2.0%						W14302			548.24
W14307	W14306	Landing/Turning Space	6.50	0.10	1.5%	0.1% to 2.0%						W14303			548.70
W14306	W14305	Landing/Turning Space	6.00	-0.08	-1.3%	0.1% to 2.0%						W14304			548.77
W14302	W14303	Ramp Running Slope	6.60	0.46	7.0%	0.5% to 8.3%						W14305			548.31
W14305	W14304	Ramp Running Slope	6.60	0.46	7.0%	0.5% to 8.3%						W14306			548.39
W14303	W14304	Ramp Cross Slope	4.50	0.07	1.6%	0.1% to 2.0%	Yes					W14307			548.29
W14401	W14402	Crosswalk Cross Slope - No Yield Condition	6.10	-0.04	-0.7%	0.0% to 5.0%						W14401			548.39
W14401	W14414	Landing/Turning Space	1.15	0.01	0.9%	0.1% to 2.0%						W14402			548.35
W14402	W14414	Landing/Turning Space	6.00	0.05	0.8%	0.1% to 2.0%						W14403			548.36
W14402	W14412	Landing/Turning Space	5.35	0.07	1.3%	0.1% to 2.0%						W14404			548.62
W14414	W14413	Landing/Turning Space	5.35	0.08	1.5%	0.1% to 2.0%						W14405			548.60
W14403	W14411	Sidewalk Cross Slope	5.50	0.08	1.5%	0.5% to 2.0%						W14406			548.25
W14411	W14410	Sidewalk Running Slope	14.55	0.25	1.7%	0.5% to 5.0%						W14407			548.29
W14403	W14404	Sidewalk Running Slope	22.50	0.26	1.2%	0.5% to 5.0%						W14408			548.69
W14410	W14404	Sidewalk Cross Slope	5.00	-0.07	-1.4%	0.5% to 2.0%						W14409			548.78
W14410	W14405	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W14410			548.69
W14410	W14409	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W14411			548.44
W14409	W14408	Landing/Turning Space	6.00	-0.09	-1.5%	0.1% to 2.0%						W14412			548.42
W14405	W14408	Landing/Turning Space	6.00	0.09	1.5%	0.1% to 2.0%						W14413			548.48
W14405	W14406	Ramp Running Slope	5.90	-0.35	-5.9%	0.5% to 8.3%						W14414			548.40
W14408	W14407	Ramp Running Slope	6.20	-0.40	-6.5%	0.5% to 8.3%									
W14406	W14407	Crosswalk Cross Slope - Yield Condition	6.00	0.04	0.7%	0.0% to 2.0%									

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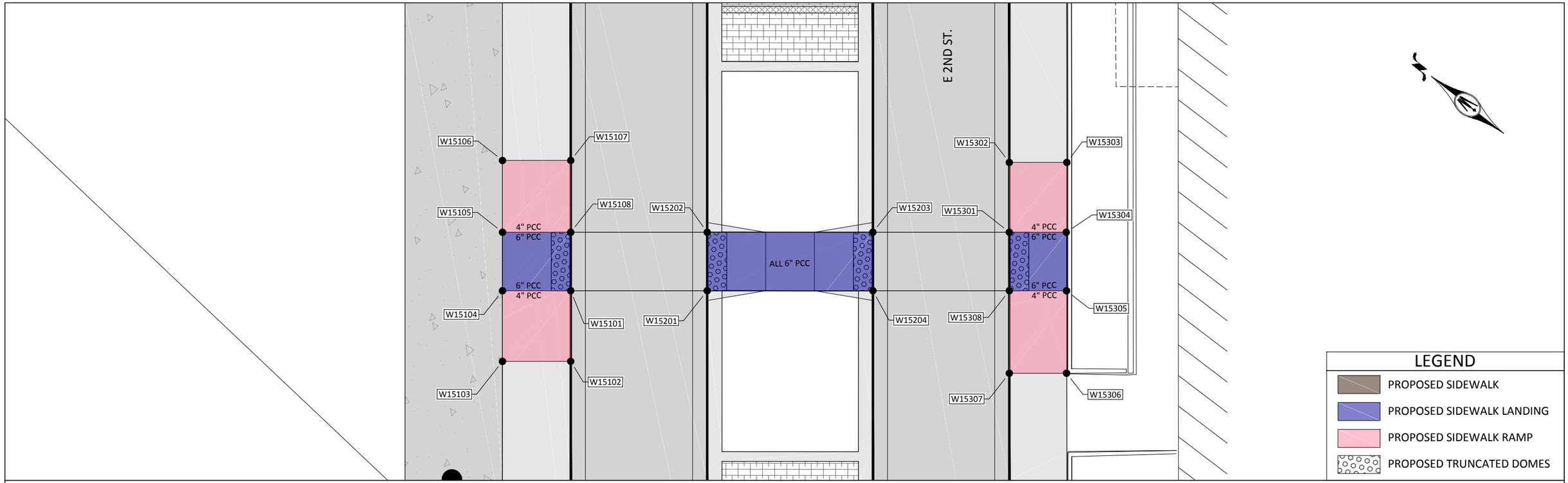
PEDESTRIAN RAMP DETAILS - OAK ST.

SHEET S.22



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W15101	W15108	Crosswalk Cross Slope - No Yield Condition	6.00	-0.08	-1.3%	0.0% to 5.0%						W15101			549.35
W15101	W15104	Landing/Turning Space	7.00	0.10	1.4%	0.1% to 2.0%						W15102			549.93
W15108	W15105	Landing/Turning Space	7.00	0.11	1.6%	0.1% to 2.0%	Yes					W15103			550.03
W15104	W15105	Landing/Turning Space	6.00	-0.07	-1.2%	0.1% to 2.0%						W15104			549.45
W15105	W15106	Ramp Running Slope	7.30	0.40	5.5%	0.5% to 8.3%						W15105			549.38
W15108	W15107	Ramp Running Slope	7.30	0.40	5.5%	0.5% to 8.3%						W15106			549.78
W15106	W15107	Ramp Cross Slope	7.00	-0.11	-1.6%	0.1% to 2.0%	Yes					W15107			549.67
W15101	W15102	Ramp Running Slope	7.30	0.58	7.9%	0.5% to 8.3%	Yes					W15108			549.27
W15104	W15103	Ramp Running Slope	7.30	0.58	7.9%	0.5% to 8.3%	Yes								
W15102	W15103	Ramp Cross Slope	7.00	0.10	1.4%	0.1% to 2.0%						W15201			549.60
												W15202			549.53
W15201	W15202	Crosswalk Cross Slope - No Yield Condition	6.00	-0.07	-1.2%	0.0% to 5.0%						W15203			549.32
W15201	W15204	Landing/Turning Space	17.00	-0.22	-1.3%	0.1% to 2.0%						W15204			549.38
W15202	W15203	Landing/Turning Space	17.00	-0.21	-1.2%	0.1% to 2.0%									
W15203	W15204	Crosswalk Cross Slope - No Yield Condition	6.00	0.06	1.0%	0.0% to 5.0%						W15301			549.07
												W15302			549.50
W15301	W15308	Crosswalk Cross Slope - No Yield Condition	6.00	0.05	0.8%	0.0% to 5.0%						W15303			549.58
W15301	W15304	Landing/Turning Space	5.84	0.09	1.5%	0.1% to 2.0%						W15304			549.16
W15308	W15305	Landing/Turning Space	5.84	0.09	1.5%	0.1% to 2.0%						W15305			549.21
W15304	W15305	Landing/Turning Space	6.00	0.05	0.8%	0.1% to 2.0%						W15306			549.78
W15301	W15302	Ramp Running Slope	7.20	0.43	6.0%	0.5% to 8.3%						W15307			549.69
W15304	W15303	Ramp Running Slope	7.20	0.42	5.8%	0.5% to 8.3%						W15308			549.12
W15302	W15303	Ramp Cross Slope	5.84	0.08	1.4%	0.1% to 2.0%									
W15308	W15307	Ramp Running Slope	8.45	0.57	6.7%	0.5% to 8.3%									
W15305	W15306	Ramp Running Slope	8.45	0.57	6.7%	0.5% to 8.3%									
W15307	W15306	Ramp Cross Slope	5.84	0.09	1.5%	0.1% to 2.0%									

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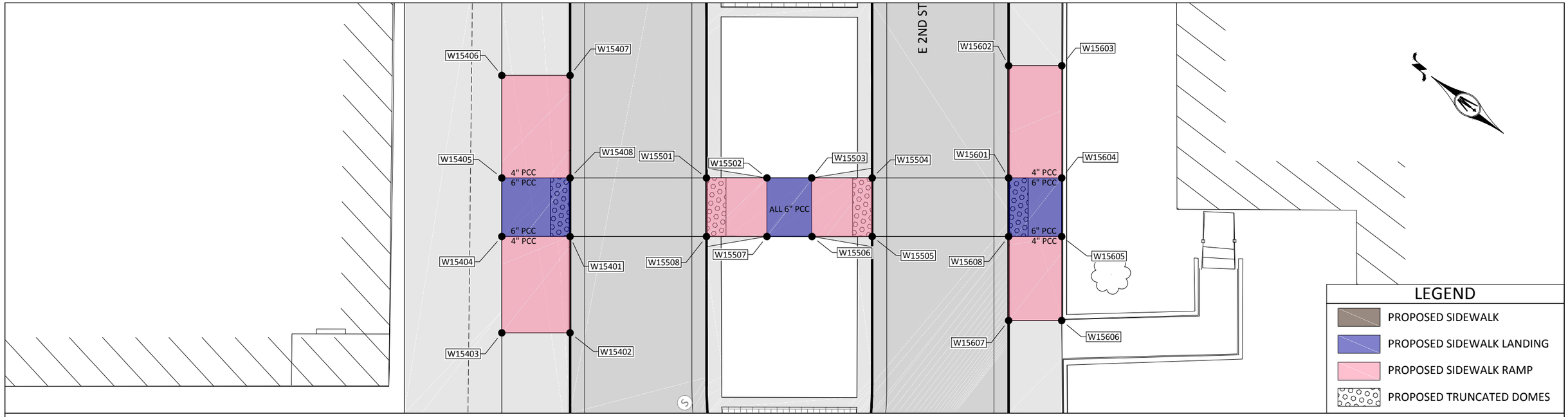
PEDESTRIAN RAMP DETAILS - E. 2ND ST.

SHEET S.23



SIDEWALK COMPLIANCE

* Does not include curb
(1) Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.

Point to Point		Sidewalk Designation	Distance*	? Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? (1)	Measured Slope	Initials	Remarks		FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES			
												Point	Station	Offset	Elevation
			FT	FT	%	Pos. or Neg.		%							
W15401	W15408	Crosswalk Cross Slope - No Yield Condition	6.00	0.04	0.7%	0.0% to 5.0%						W15401			549.12
W15401	W15404	Landing/Turning Space	7.00	0.11	1.6%	0.1% to 2.0%	Yes					W15402			549.55
W15408	W15405	Landing/Turning Space	7.00	0.10	1.4%	0.1% to 2.0%						W15403			549.65
W15404	W15405	Landing/Turning Space	6.00	0.03	0.5%	0.1% to 2.0%						W15404			549.23
W15405	W15406	Ramp Running Slope	10.50	0.55	5.2%	0.5% to 8.3%						W15405			549.26
W15408	W15407	Ramp Running Slope	10.50	0.55	5.2%	0.5% to 8.3%						W15406			549.81
W15407	W15406	Ramp Cross Slope	7.00	0.10	1.4%	0.1% to 2.0%						W15407			549.71
W15401	W15402	Ramp Running Slope	9.90	0.43	4.3%	0.5% to 8.3%						W15408			549.16
W15404	W15403	Ramp Running Slope	9.90	0.42	4.2%	0.5% to 8.3%									
W15402	W15403	Ramp Cross Slope	7.00	0.10	1.4%	0.1% to 2.0%						W15501			549.41
												W15502			549.60
W15501	W15508	Crosswalk Cross Slope - No Yield Condition	6.00	-0.03	-0.5%	0.0% to 5.0%						W15503			549.58
W15501	W15502	Ramp Running Slope	6.20	0.19	3.1%	0.5% to 8.3%						W15504			549.42
W15508	W15507	Ramp Running Slope	6.20	0.18	2.9%	0.5% to 8.3%						W15505			549.38
W15502	W15507	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%						W15506			549.54
W15502	W15503	Landing/Turning Space	4.60	-0.02	-0.4%	0.1% to 2.0%						W15507			549.56
W15507	W15506	Landing/Turning Space	4.60	-0.02	-0.4%	0.1% to 2.0%						W15508			549.38
W15503	W15506	Landing/Turning Space	6.00	-0.04	-0.7%	0.1% to 2.0%									
W15503	W15504	Ramp Running Slope	6.20	-0.16	-2.6%	0.5% to 8.3%						W15601			549.16
W15506	W15505	Ramp Running Slope	6.20	-0.16	-2.6%	0.5% to 8.3%						W15602			549.72
W15504	W15505	Crosswalk Cross Slope - No Yield Condition	6.00	-0.04	-0.7%	0.0% to 5.0%						W15603			549.80
												W15604			549.24
W15601	W15608	Crosswalk Cross Slope - No Yield Condition	6.00	-0.03	-0.5%	0.0% to 5.0%						W15605			549.21
W15601	W15604	Landing/Turning Space	5.45	0.08	1.5%	0.1% to 2.0%						W15606			549.64
W15608	W15605	Landing/Turning Space	5.45	0.08	1.5%	0.1% to 2.0%						W15607			549.56
W15604	W15605	Landing/Turning Space	6.00	-0.03	-0.5%	0.1% to 2.0%						W15608			549.13
W15601	W15602	Ramp Running Slope	11.50	0.56	4.9%	0.5% to 8.3%									
W15604	W15603	Ramp Running Slope	11.50	0.56	4.9%	0.5% to 8.3%									
W15602	W15603	Ramp Cross Slope	5.45	0.08	1.5%	0.1% to 2.0%									
W15608	W15607	Ramp Running Slope	8.60	0.43	5.0%	0.5% to 8.3%									
W15605	W15606	Ramp Running Slope	8.60	0.43	5.0%	0.5% to 8.3%									
W15607	W15606	Ramp Cross Slope	5.45	0.08	1.5%	0.1% to 2.0%									

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SHEET S.24

GENERAL NOTES:

1. UNDERGROUND UTILITIES: FIELD LOCATE UNDERGROUND UTILITIES PRIOR TO EXCAVATION FOR INSTALLATION OF SITE IMPROVEMENTS. IF A CONFLICT EXISTS BETWEEN PROPOSED SITE IMPROVEMENTS AND EXISTING OR PROPOSED UTILITIES, IMMEDIATELY ADVISE THE OWNERS REPRESENTATIVE.
2. SPOT ELEVATIONS: WHERE SHOWN ON THESE DRAWINGS, SPOT ELEVATIONS ARE TO THE TOP OF FINISH SURFACES
3. DIMENSIONS: DIMENSIONS ARE FROM BACK OF CURB UNLESS NOTED OR SHOWN OTHERWISE ON THE DRAWINGS.
4. HORIZONTAL CONTROL: HORIZONTAL CONTROL FOR THE LAYOUT OF SITE IMPROVEMENTS WILL BE PROVIDED BY THE ENGINEER. STATIONS AND OFFSETS INDICATED ON THE DRAWINGS ARE RELATIVE TO THE ROADWAY STATIONING.
5. ISOLATION JOINTS IN SIDEWALK PAVING: GENERALLY, ISOLATION JOINTS WILL BE LOCATED ALONG THE BACK OF CURB BETWEEN SIDEWALK PAVEMENTS AND PERMANENT STRUCTURES, WALLS AND BUILDINGS. ISOLATION JOINTS WILL ALSO BE LOCATED WHERE THE SIDEWALK PAVEMENT TURNS OR CHANGES DIRECTION, AND AT EVERY 100 FOOT MARK OF LINEAR SIDEWALK.
6. ALL SIDEWALKS AND CONCRETE SURFACES TO HAVE A LIGHT BROOM FINISH PERPENDICULAR TO DIRECTION OF TRAVEL UNLESS OTHERWISE NOTED, TYPICAL.
7. SAWCUTS TO BE MADE AS SHOWN ON PLANS UNLESS CONTRACTOR SUBMITTAL OTHERWISE APPROVED BY OWNERS REP.
8. CONTRACTOR IS TO PRESERVE AND PROTECT EXISTING VEGETATION TO REMAIN AT ALL STAGES OF CONSTRUCTION. DAMAGED PLANT MATERIAL WILL BE REPLACED AT CONTRACTOR'S EXPENSE.
9. CONTRACTOR IS TO PRESERVE AND PROTECT EXISTING BUILDINGS AND FOUNDATIONS AT ALL STAGES OF CONSTRUCTION.
10. CONTRACTOR IS TO VERIFY THAT ALL SLOPES, CROSS SLOPES, LONGITUDINAL SLOPES, DROP CURB SLOPES, ETC. DO NOT EXCEED PROWAG MAXIMUMS. CONTRACTOR IS TO NOTIFY OWNER'S REPRESENTATIVE IF SLOPES EXCEED GUIDELINE RECOMMENDATIONS.
11. HATCH PATTERNS ON PLAN DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION OR SCALING PURPOSES. REFER TO CONSTRUCTION DETAILS FOR PAVER PATTERNS AND FINISHES.

GENERAL LANDSCAPE IMPROVEMENT NOTES:

1. MASTER PLANT SCHEDULE: SHRUBS AND PERENNIALS ARE LISTED IN THE MASTER PLANT SCHEDULE. IF THERE IS A CONFLICT BETWEEN THE QUANTITIES SHOWN ON THE DRAWING AND THE QUANTITIES SHOWN IN THE PLANT SCHEDULE, THE PLAN QUANTITIES SHALL PREVAIL.
2. PLANTING LAYOUT: LAYOUT A TYPICAL SHRUB AND PERENNIAL BED LAYOUT, AND OBTAIN APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. SHRUB AND PERENNIAL GROUPINGS SHALL BE PLANTED AND MULCHED IN ONE CONTINUOUSLY MULCHED BED.
4. SOD ALL AREAS WHERE INDICATED ON DRAWINGS.
5. SEED ALL DISTURBED AREAS, UNLESS OTHERWISE INDICATED AS SOD.

SPECIALTY SOIL TYPES AND NOTES:

1. STRUCTURAL SOIL: REFER TO SUPPLEMENTAL SPECIFICATIONS FOR MIX DESIGN.

   INSTALL WHERE INDICATED ON PLANS. T SHEETS FOR EXTENTS/LOCATIONS, AND U SHEETS FOR TYPICAL SIDEWALK/PLANTING DETAILS AND CROSS SECTIONS.

2. AMENDED PLANTING SOIL: INCIDENTAL TO PERENNIAL/GROUNDCOVER/SHRUB/TREE PLANTING TO DEPTHS SPECIFIED IN PLANTING/STREETSCAPE DETAILS ON U SHEETS.

   PLANTING BACKFILL SHALL BE COMPOSED OF SUITABLE TOPSOIL AMENDED TO CONSIST OF 30% TOPSOIL, 60% SAND AND 10% COMPOST.

SEEDING NOTES:

SUDAS TYPE 2 (PERMANENT COOL SEASON) MIX

A. MIX AND INSTALLATION PER SUDAS SPECIFICATIONS
B. APPLY COMMERCIAL FERTILIZER TO ALL SEEDED AREA AT THE RATE OF 450 POUNDS PER ACRE OF 13-13-13 (OR EQUIVALENT). INCORPORATE INTO THE TOP 2-3 INCHES OF TOPSOIL DURING SEEDBED PREPARATION
C. ALL SLOPES 3.5:1 OR GREATER SHALL BE BLANKETED WITH TEMPORARY RECP, TYPE 2.C IMMEDIATELY FOLLOWING SEEDING.
D. ALL SEEDED AREAS NOT COVERED WITH RECP SHALL BE COVERED WITH HYDROMULCH AT RATE OF MIN. OF 2,600 POUNDS PER ACRE DRY WEIGHT. TACKIFIER SHALL BE INCORPORATED AT RATE OF 50 POUNDS PER ACRE.

LEGEND

- DECIDUOUS/ORNAMENTAL TREES
- SHRUBS/PERENNIALS/GRASSES/ANNUALS
- SOD, LAWN
- SEED
- PAVER TYPE 'A'
- PAVER TYPE 'B'
- PAVER TYPE 'C'
- PAVER TYPE 'D', CROSSWALK PAVERS
- STRUCTURAL SOIL LIMITS
- STREET LIGHT POLE (NOT-IN-CONTRACT, TO BE USED FOR FOOTING LOCATION ONLY) FOOTING IN CONTRACT
- BOULDER SEATWALL
- OUTCROPPING BOULDER
- STEEL BENCH
- LITTER RECEPTACLE
- BIKE RACKS

CONCRETE PAVER TYPES

TYPE "A": HISTORIC PAVER, CITY FURNISHED TO CONTRACTOR FOR INSTALLATION, PATTERN: RUNNING BOND (SEE PLANS AND DETAILS)

TYPE "B": UNILOCK - SERIES 3000, 7.75" x 4" x 2.75" (20 CM x 10 CM x 7 CM), COLOR: ONYX BLACK, PATTERN: SOLDIER COURSE (SEE PLANS AND DETAILS), OR APPROVED EQUAL

TYPE "C": UNILOCK - ARTLINE, VARIABLE SIZES PER STANDARD LAYING PATTERN, 2.75" (7 CM) THICKNESS, PREMIER FINISH, COLOR: COPPER RIDGE, OR APPROVED EQUAL

TYPE "D": UNILOCK - HOLLAND PREMIER, 7.75" x 4" x 3.25" (20 CM x 10 CM x 8 CM), COLOR: CHARCOAL, PREMIER FINISH, PATTERN: SOLDIER COURSE BORDER, 90 DEGREE HERRINGBONE FIELD (SEE PLANS AND DETAILS), OR APPROVED EQUAL

CONTACT:

UNILOCK

301 E. SULLIVAN ROAD, AURORA, ILLINOIS 60505

BRAD PUNKE - TERRITORY MANAGER

O: 630-892-9191 EXT. 253 M: 847-489-0382

MASTER PLANT SCHEDULE (refer to plan drawings for locations)

Qty.	Sym.	Scientific Name	Common Name	Unit	Size	Spacing	Characteristics
		Trees					
21	QB	Quercus bicolor	Swamp White Oak	EA	2" B&B	see plan	Balled & Burlapped
17	AF	Acer x freemanii Sienna	Sienna Glen Maple	EA	2" B&B	see plan	Balled & Burlapped
13	CO	Celtis occidentalis	Hackberry	EA	2" B&B	see plan	Balled & Burlapped
17	SR	Syringa reticulata 'Ivory Silk'	Ivory Silk Japanese Tree Lilac	EA	1.5" B&B	see plan	Balled & Burlapped
9	MP	Malus sp. 'Prairiefire'	Prairiefire Crab	EA	1.5" B&B	see plan	Balled & Burlapped
4	CC	Crataegus crus-galli (thornless form)	Thornless Cockspur Hawthorn	EA	1.5" B&B	see plan	Balled & Burlapped
6	GT	Gleditsia triacanthos 'Shademaster'	Shademaster Honeylocust	EA	2" B&B	see plan	Balled & Burlapped
4	GTS	Gleditsia triacanthos 'Skyline'	Skyline Honeylocust	EA	2" B&B	see plan	Balled & Burlapped
10	CV	Crataegus virdis 'Winter King' (Thornless)	Winter King Hawthorn	EA	1.5" B&B	see plan	Balled & Burlapped
3	UF	Ulmus 'Frontier'	Frontier Elm	EA	2" B&B	see plan	Balled & Burlapped
4	UA	Ulmus americana 'New Harmony'	New Harmony Elm	EA	2" B&B	see plan	Balled & Burlapped
		Shrubs					
250	RA	Rhus aromatica 'Gro-Low'	Grow-Low Fragrant Sumac	EA	3 gal.	see plan	
		Perennials					
550	SA	Sedum x 'Autumn Joy'	Autumn Joy Sedum	EA	1 gal.	see plan	
106	SM	Salvia x sylvestris 'May Night'	Salvia May Night	EA	1 gal.	see plan	
328	LS	Liatris spicata 'Kobold'	Kobold Liatris	EA	1 gal.	see plan	
331	NR	Nepeta racemosa	Walker's Low Catmint	EA	1 gal.	see plan	
628	DF	Dianthus Feurhexe 'Firewitch'	Firewitch Dianthus	EA	1 gal.	see plan	
		Perennial Grasses					
928	SH	Sporobolus heterolepis	Prairie Dropseed	EA	2 gal.	see plan	
573	SHT	Sporobolus heterolepis 'Tara'	Prairie Dropseed, Dwarf	EA	2 gal.	see plan	
202	KF	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	EA	2 gal.	see plan	

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LANDSCAPE PLAN

SHEET T.01

5" PCC SIDEWALK, TYP.

5" PCC MEDIAN, TYP.

STREETLIGHT, FOUNDATION IN CONTRACT, TYP.

STREET
FOUND

19+00

20+00

21+00

SEE SHEET T.01

SEE SHEET T.03

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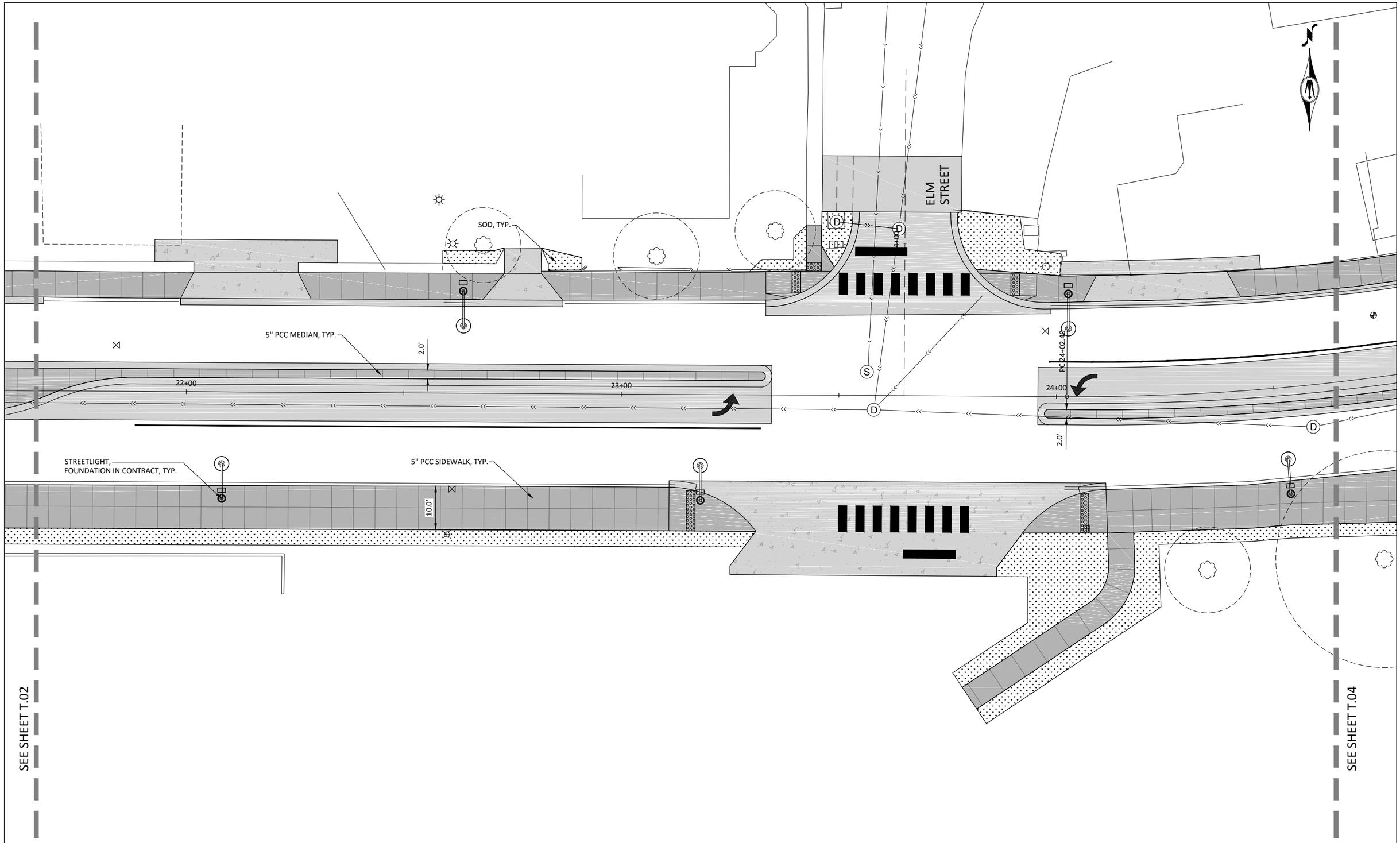
SHEET T.02



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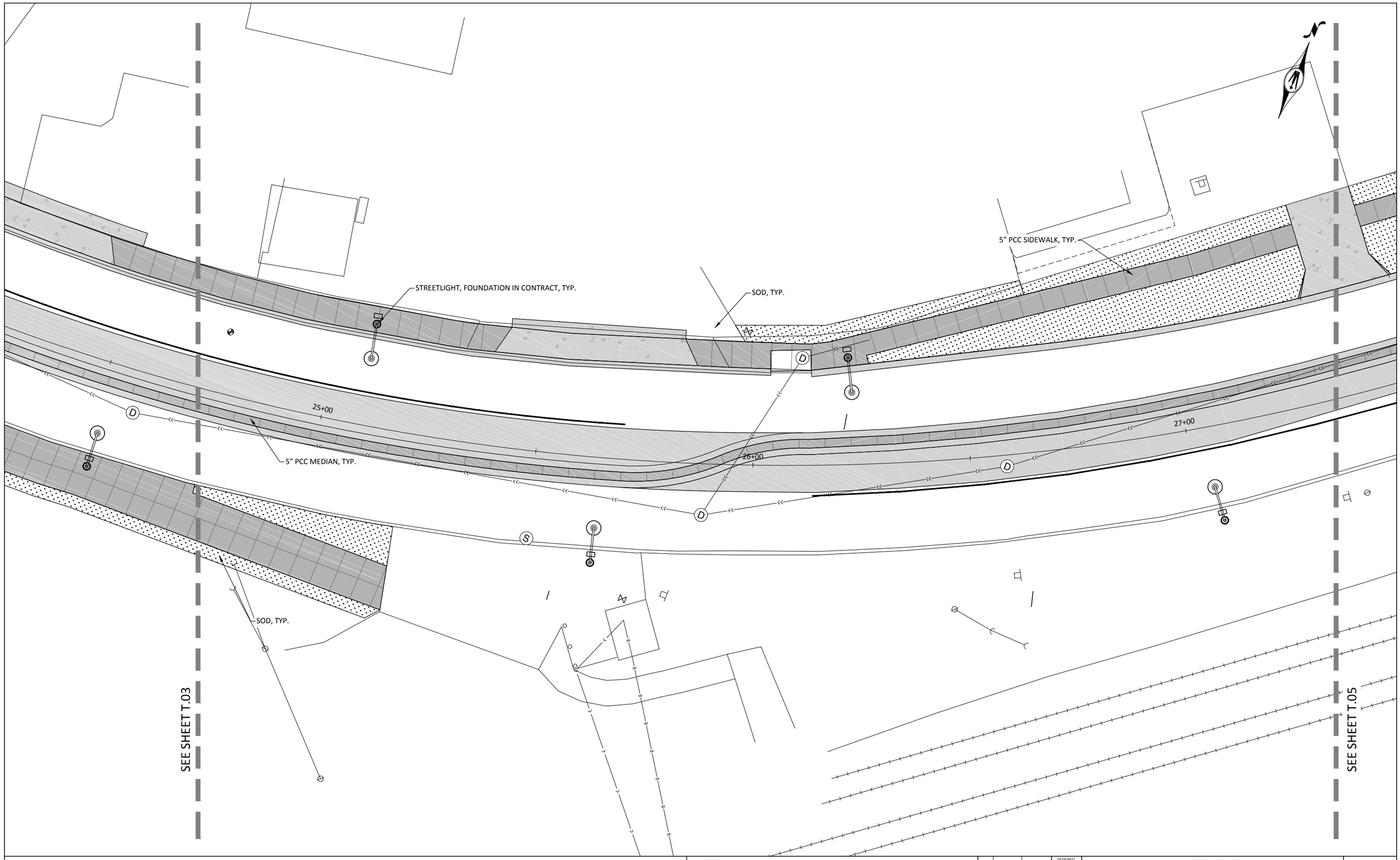
SHEET T.03



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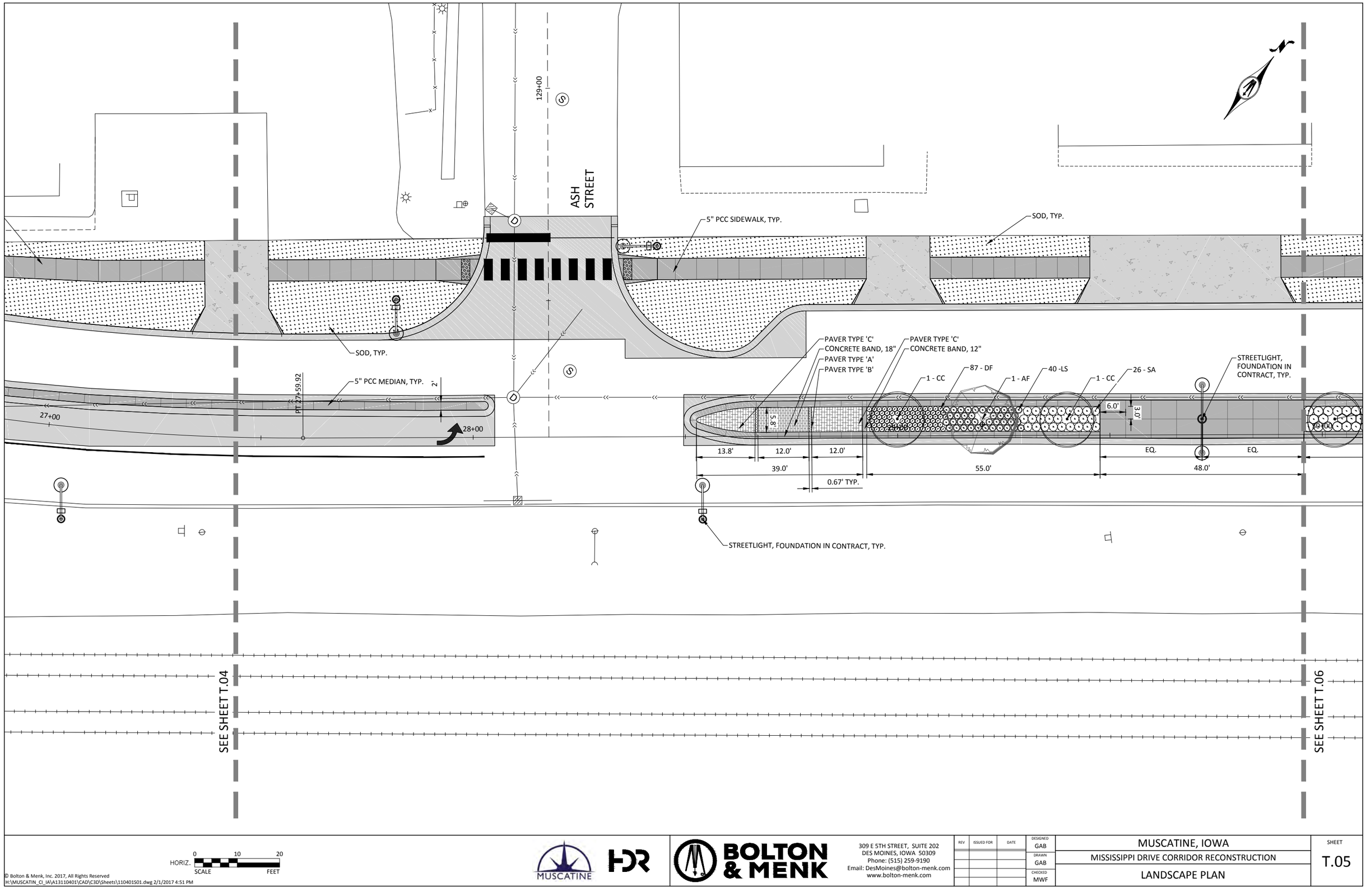

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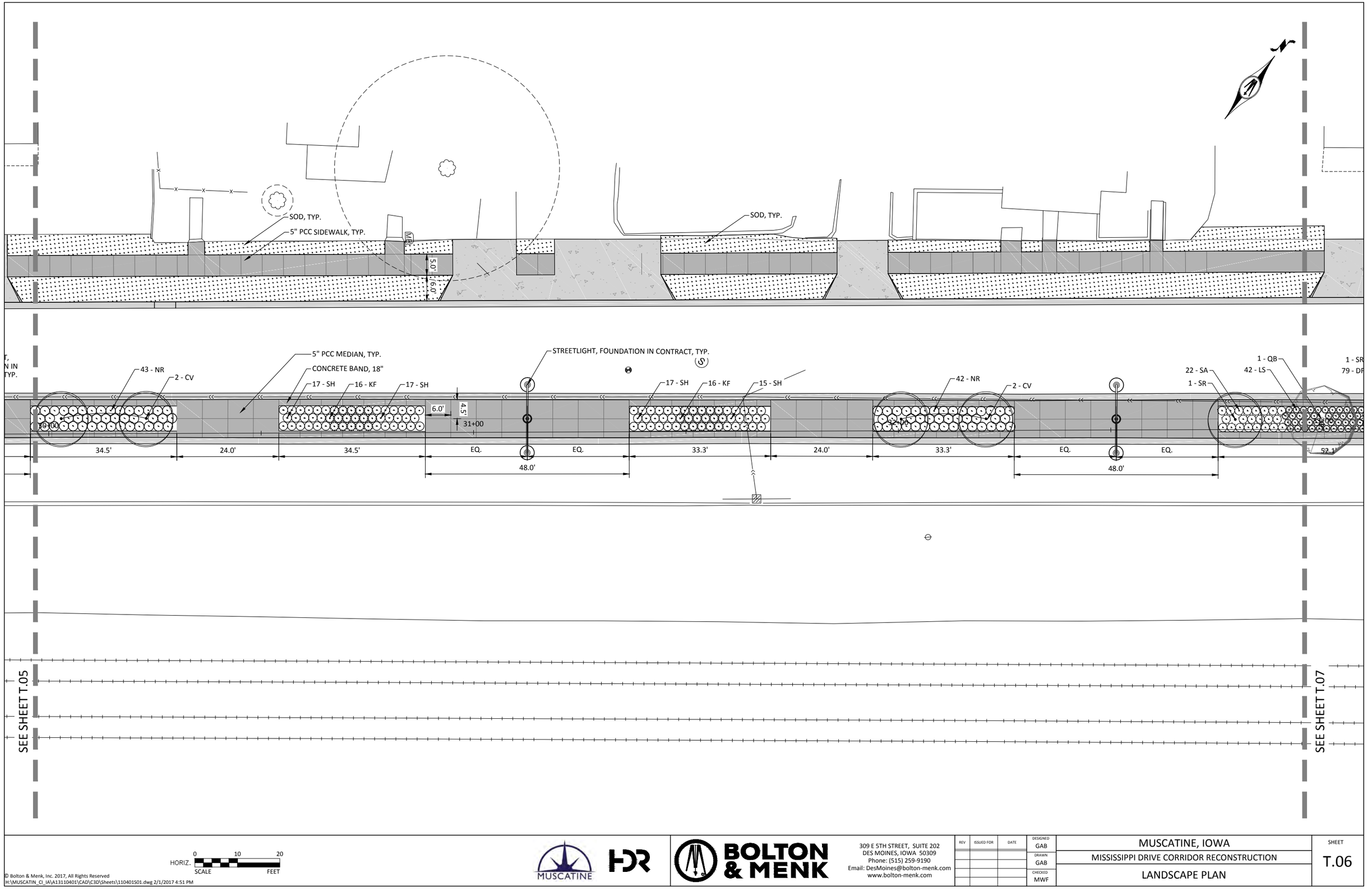
SHEET T.05



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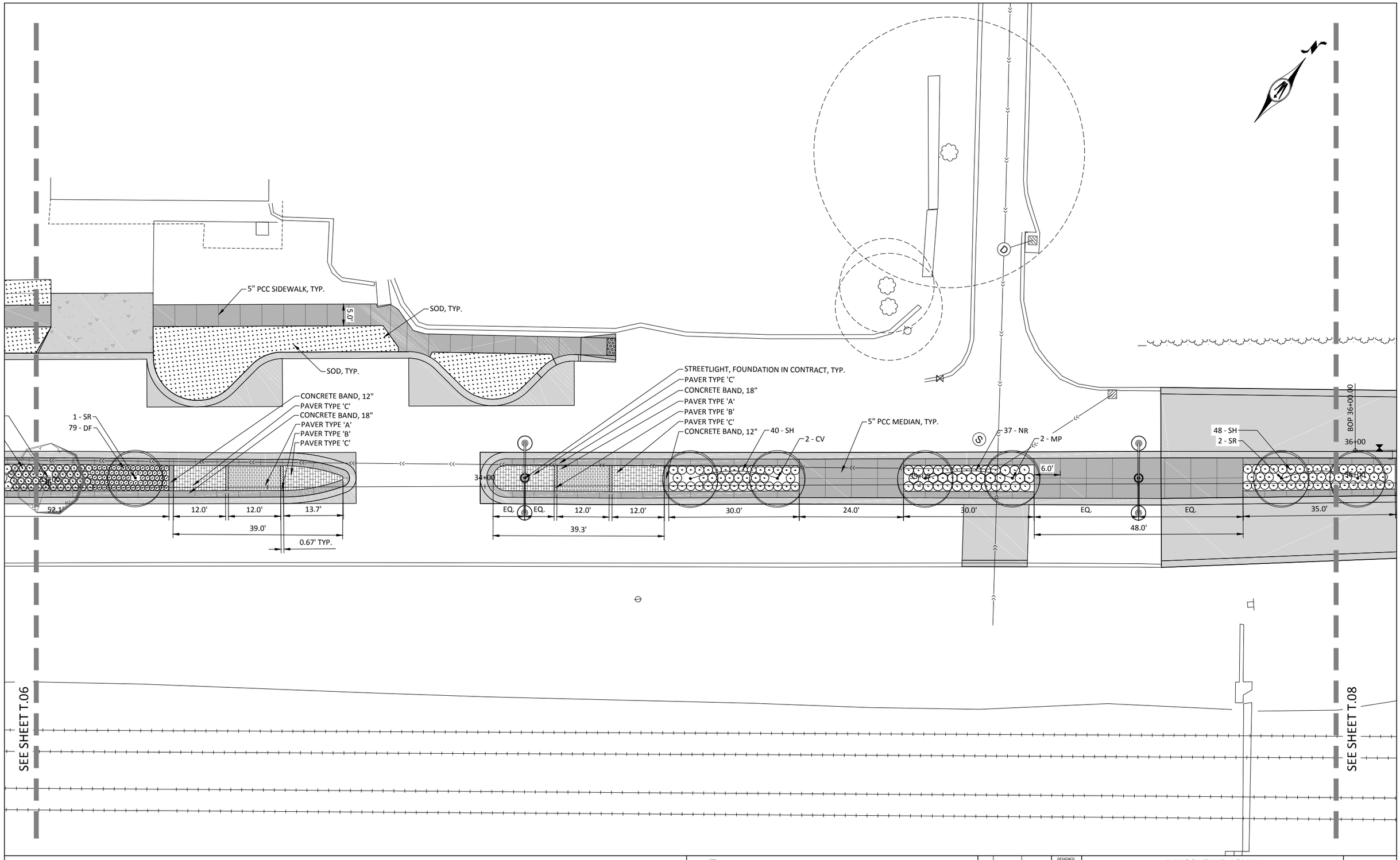

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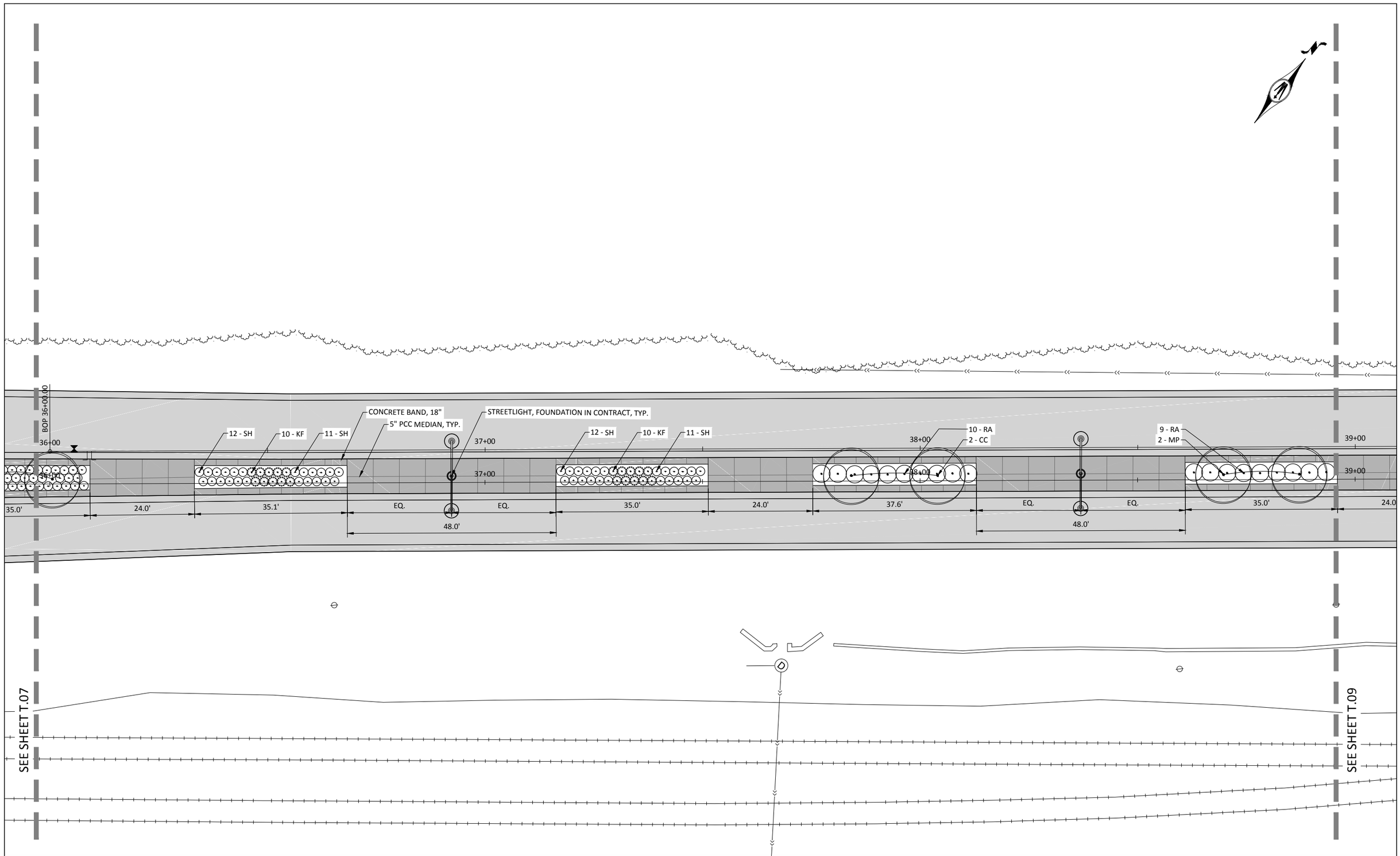

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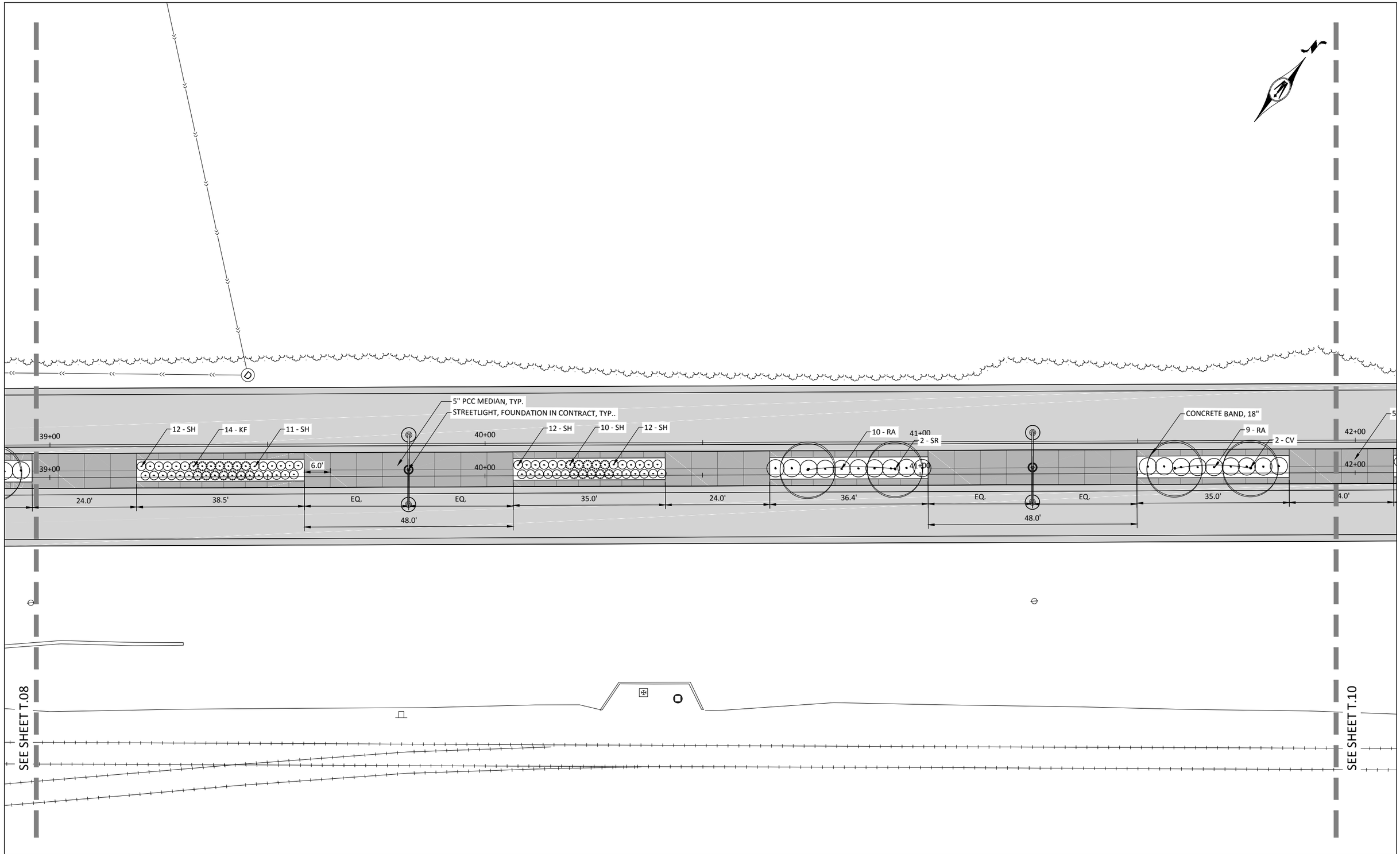
LANDSCAPE PLAN

SHEET T.08



0 10 20
HORIZ.
SCALE FEET

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Email: DesMoines@bolton-menk.com
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DRAWN GAB
CHECKED MWF

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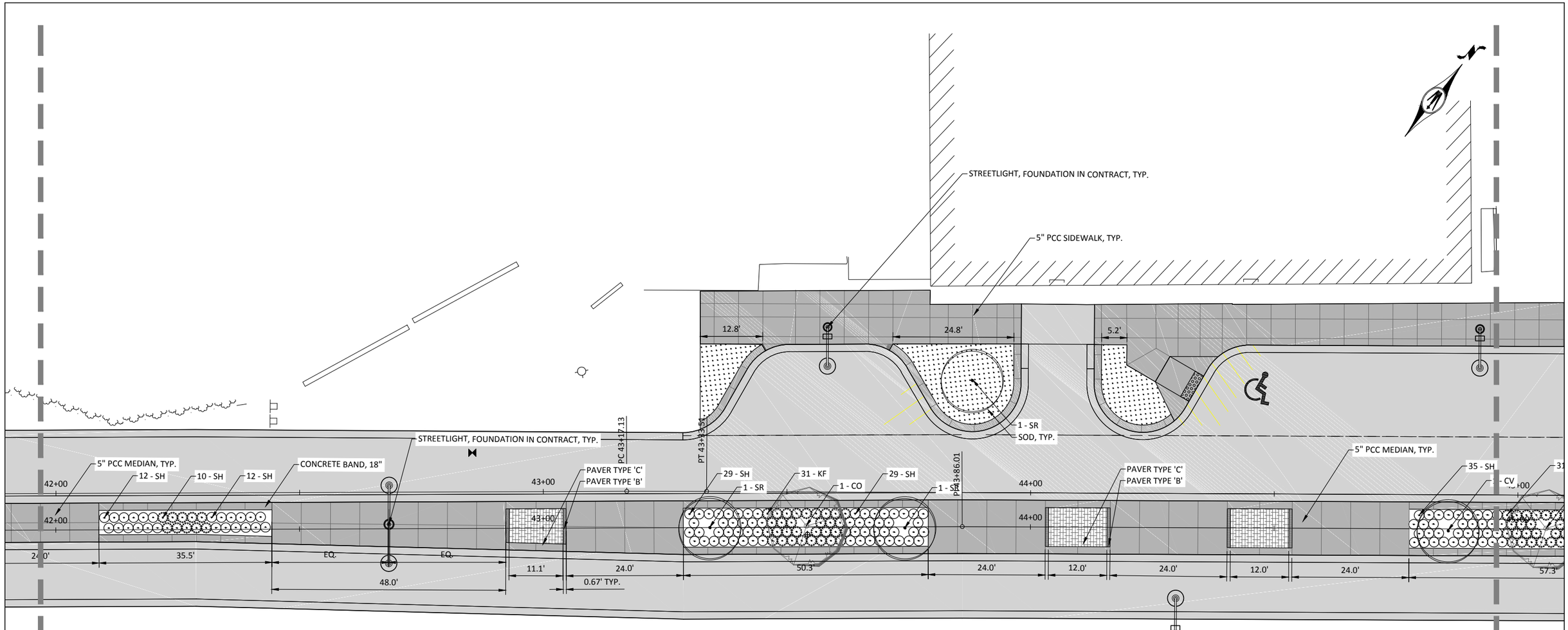
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
LANDSCAPE PLAN

SHEET
T.09



0 10 20
HORIZ. SCALE FEET

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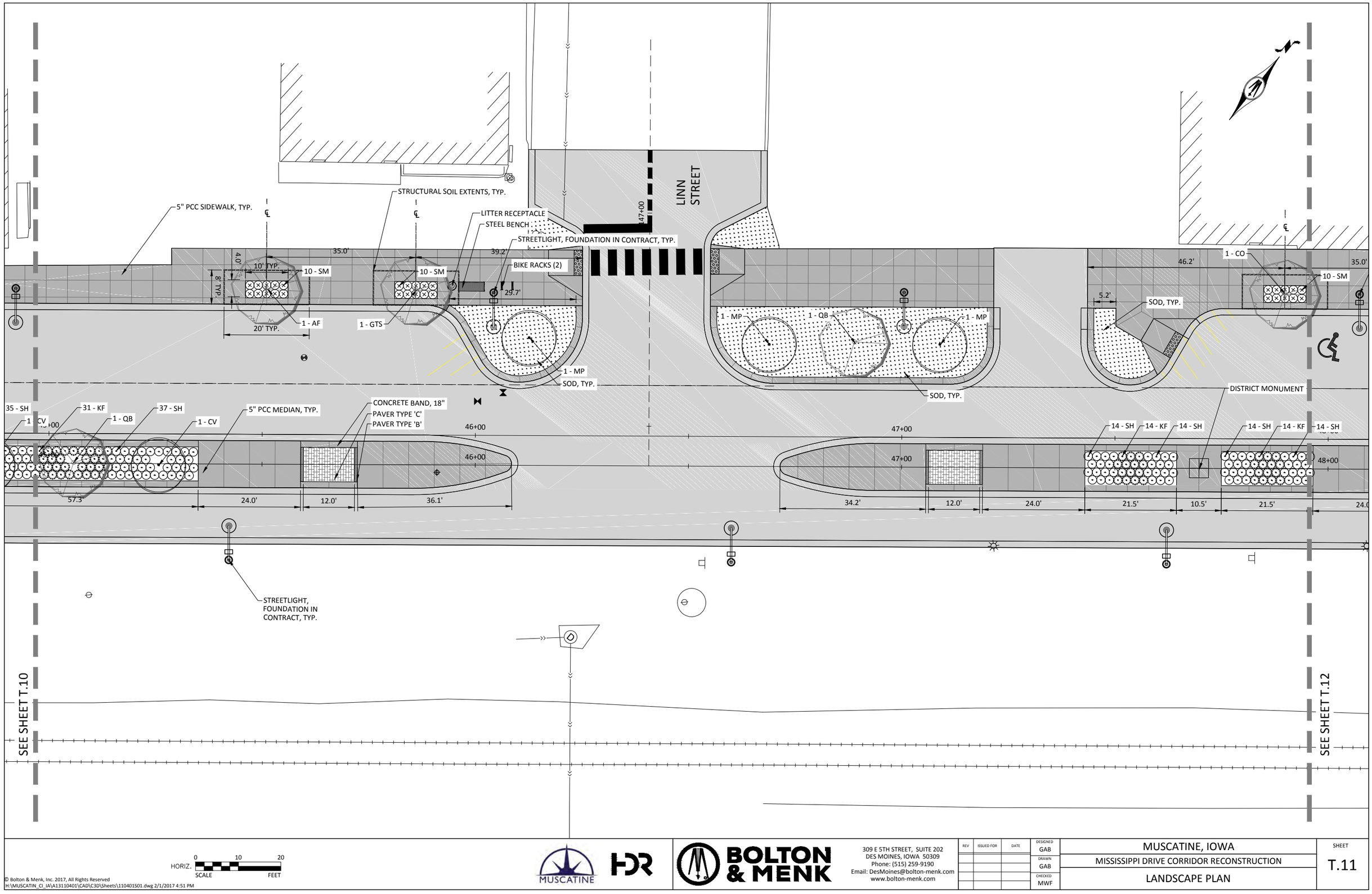
SHEET T.10



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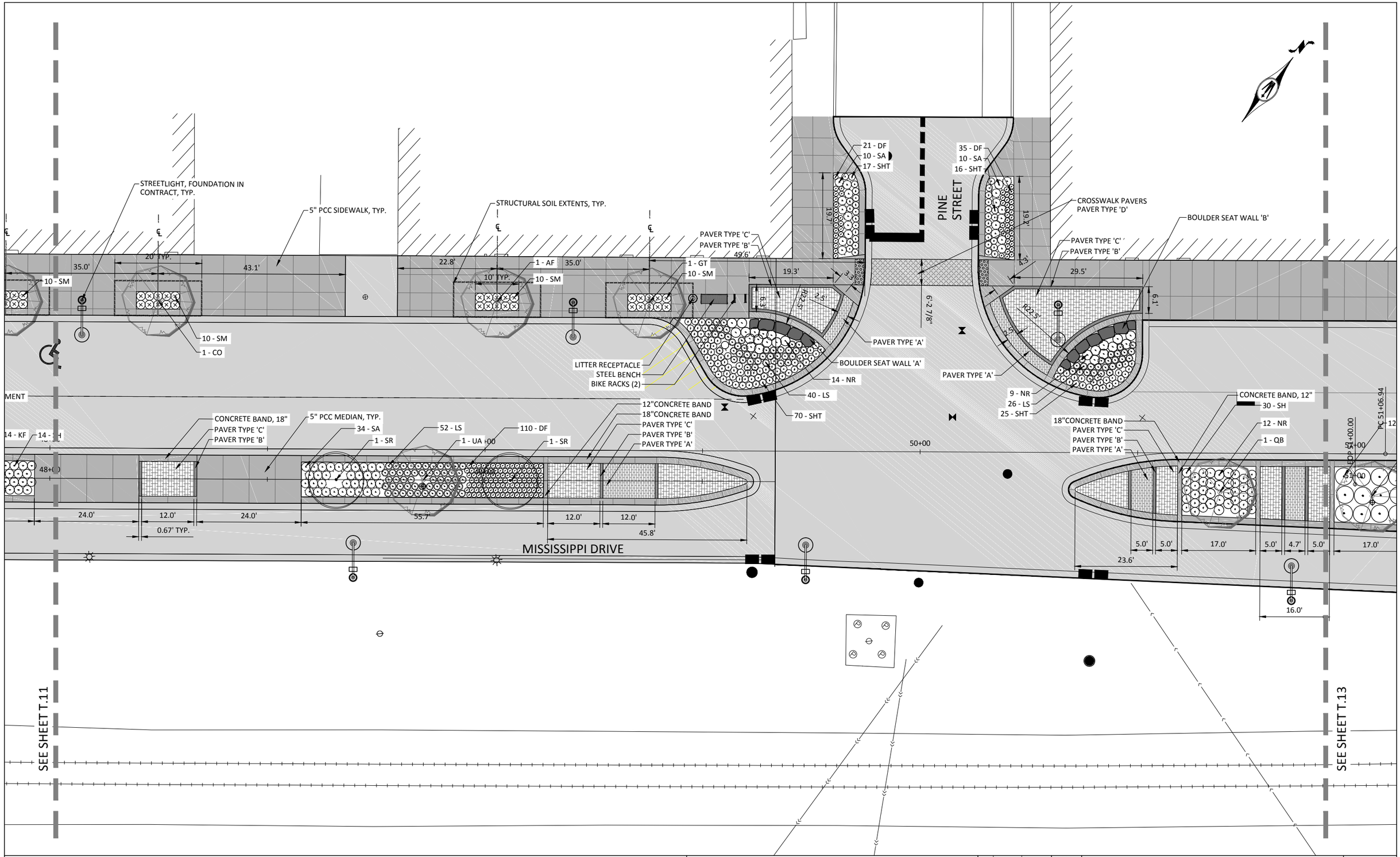
SHEET T.11



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SHEET T.12

5" PCC SIDEWALK, TYP.
BIKE RACKS (2)
STEEL BENCH
LITTER RECEPTACLE
TREE GRATE, TYP.
1 - CO
STRUCTURAL SOIL EXTENTS, TYP.
10 - SM
1 - UA
CROSSWALK PAVERS PAVER TYPE 'D'
BOULDER SEATWALL 'C'
35.0'
10' TYP.
20' TYP.
8'YP
4.0'
55.0'
2.2'
R12'
9.0'
23.4'
6'-2 7/8"
CHESTNUT STREET
PAVER TYPE 'A'
PAVER TYPE 'B'
PAVER TYPE 'C'
CONCRETE BAND, 18"
PC 51+06.94
PT 51+47
36 - SH
14 - NR
1 - UF
12 - RA
1 - AF
EOP 51+00.00
51+00
CONCRETE BAND, 12"
12 - RA
1 - QB
52+00
5" PCC MEDIAN, TYP.
9 - NR
35 - LS
1 - AF
34 - SHT
PC 52+62.29
INTERSECTION MARKER
53+00
CROSSWALK PAVERS PAVER TYPE 'D'
6'-2 7/8"
54+00
5.0'
17.0'
5.0'
4.7'
5.0'
17.0'
5.0'
4.7'
5.0'
17.0'
0.67' TYP.
12.0'
6.0'
12.0'
12.0'
12.0'
12.0'
6.0'
12.0'
12.0'
15.6'
MISSISSIPPI DRIVE
11.4'
9.7'
33.0'
STREETLIGHT, FOUNDATION IN CONTRACT, TYP.
5" PCC SIDEWALK, TYP.
21.0'
14.0'
21.0'
6.9'
TYPE A CONCRETE STEPS WITH HANDRAILS
6.0'
SEE SHEET T.12
SEE SHEET T.14

HORIZ. SCALE 0 10 20 FEET

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LANDSCAPE PLAN

SHEET T.13

MERRILL HOTEL

NOTE:
IT IS ASSUMED THAT MERRIL HOTEL
WILL BE COMPLETE PRIOR TO
CONSTRUCTION OF MISSISSIPPI DRIVE.

BY OTHERS

5" PCC SIDEWALK, TYP.

CONCRETE BAND, 12"

6.0'

35.7'

2.5'

CONCRETE BAND, 18"
PAVER TYPE 'A'
35 - SHT

11 - NR

ALK PAVERS
YPE 'D'

6'-2 7/8"

36 - SH
1 - CO
14 - NR

CONCRETE BAND, 18"
PAVER TYPE 'C'
PAVER TYPE 'B'
PAVER TYPE 'A'

1 - QB
12 - RA

CONCRETE BAND, 12"

36 - SH
1 - GT
14 - NR

1 - CO
12 - RA

PAVER TYPE 'B'
PAVER TYPE 'A'

5" PCC MEDIAN, TYP.

54+00

55+00

56+00

14.0'
6.0'
12.0'
12.0'
6.0'
12.0'
12.0'
6.0'
12.0'
6.0'

MISSISSIPPI DRIVE

11.4'
9.7'
17.0'
5.0'
4.7'
5.0'
17.0'
16.0'
0.67' TYP.
12.0'
6.0'
12.0'
15.5'

33.0'

STREETLIGHT, FOUNDATION IN CONTRACT, TYP.

21.0'

1.0'

RETE
ANDRAILS

6.9'

6.0'

SEE SHEET T.13

SEE SHEET T.15

HORIZ. SCALE 0 10 20 FEET

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MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
LANDSCAPE PLAN

SHEET T.14

IOWA AVENUE

MISSISSIPPI DRIVE

54 - DF
20 - SA
39 - SHT
OUTCROPPING BOULDERS, TYP.
25.6'
14.7'
6'-2 7/8"
TRAFFIC SIGNALS BY OTHERS, TYP.
CROSSWALK PAVERS, PAVER TYPE 'D'
CROSSWALK PAVERS, PAVER TYPE 'D'
CONCRETE BAND, 18"
PAVER TYPE 'A'
PAVER TYPE 'B'
PAVER TYPE 'C'
31 - SHT
16 - SA
36 - DF
CONCRETE BAND, 12"
R10'
14.8'
11.2'
19.9'
24.7'
INTERSECTION MARKER
KIOSK
HISTORIC MONUMENT AND PLAQUE
BOULDER SEATWALL 'D.2'
R12'
4.0'
10' TYP.
8' TYP.
20' TYP.
35.0'
35.0'
10 - NR
34 - SHT
1 - QB
35 - LS
10 - SM
1 - CO
TREE GRATE, TYP.
1 - AF
STRUCTURAL SOIL EXTENTS, TYP.
6 - SM
1 - GTS
STEEL BENCH
LITTER RECEPTACLE
5" PCC SIDEWALK, TYP.
1 - GT
34.9'
BOULDER SEATWALL 'D.1'
TRAFFIC SIGNALS BY OTHERS, TYP.
PC 58+52.36
PT 58+89.17
PC 59+12.58
PT 55+89
1 - QB
44 - NR
33 - RA
1 - QB
38 - NR
1 - QB
57+00
58+00
59+00
CONCRETE BAND, 18"
27 - SH
5" PCC MEDIAN, TYP.
PAVER TYPE 'B'
PAVER TYPE 'A'
PAVER TYPE 'A'
6.0'
10.3'
10.3'
9.4'
12.0'
6.0'
12.0'
12.0'
6.0'
12.0'
12.0'
0.67' TYP.
STREETLIGHT, FOUNDATION IN CONTRACT, TYP.
SEE SHEET T.14
SEE SHEET T.16

HORIZ. SCALE 0 10 20 FEET

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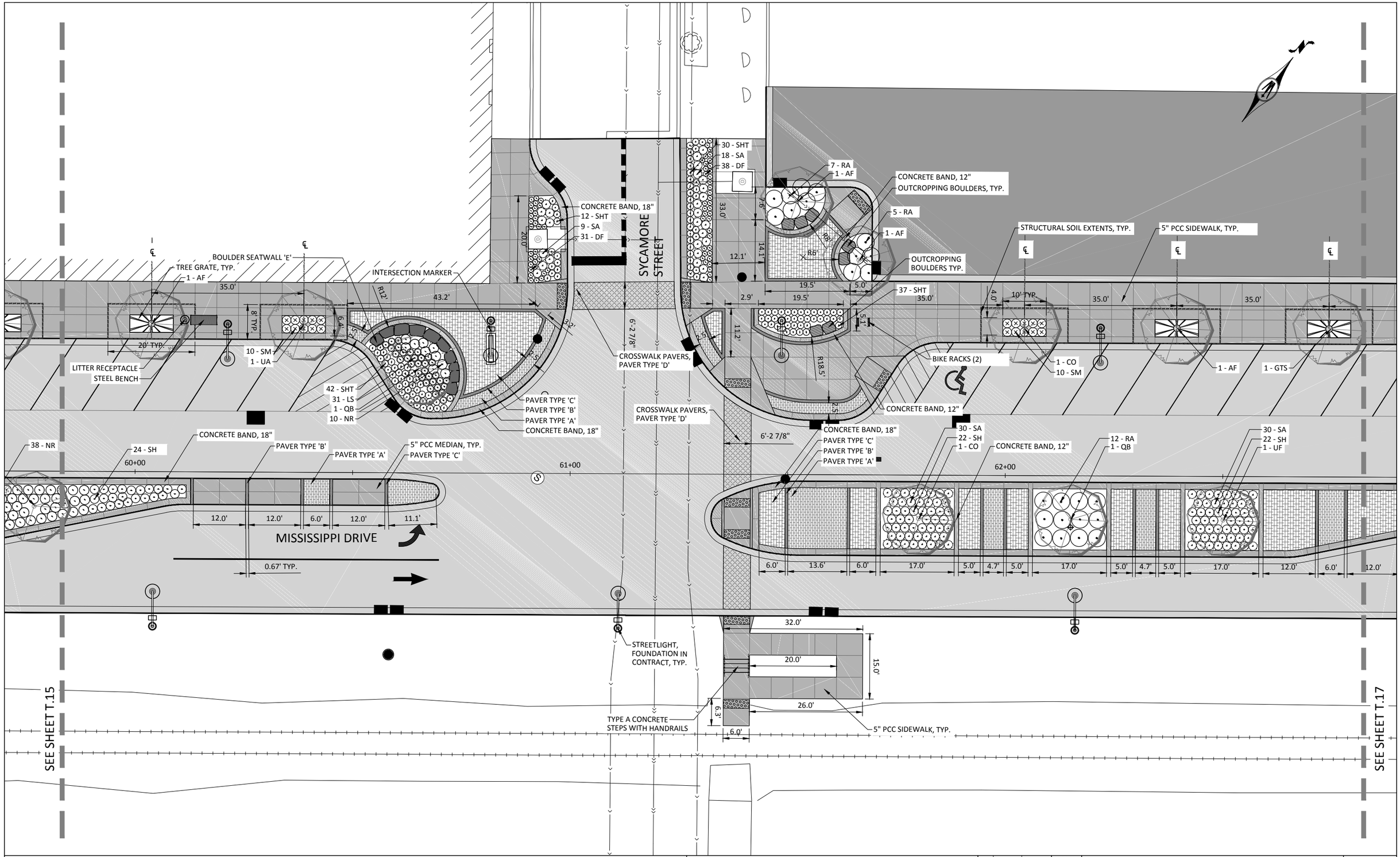
LANDSCAPE PLAN

SHEET T.15



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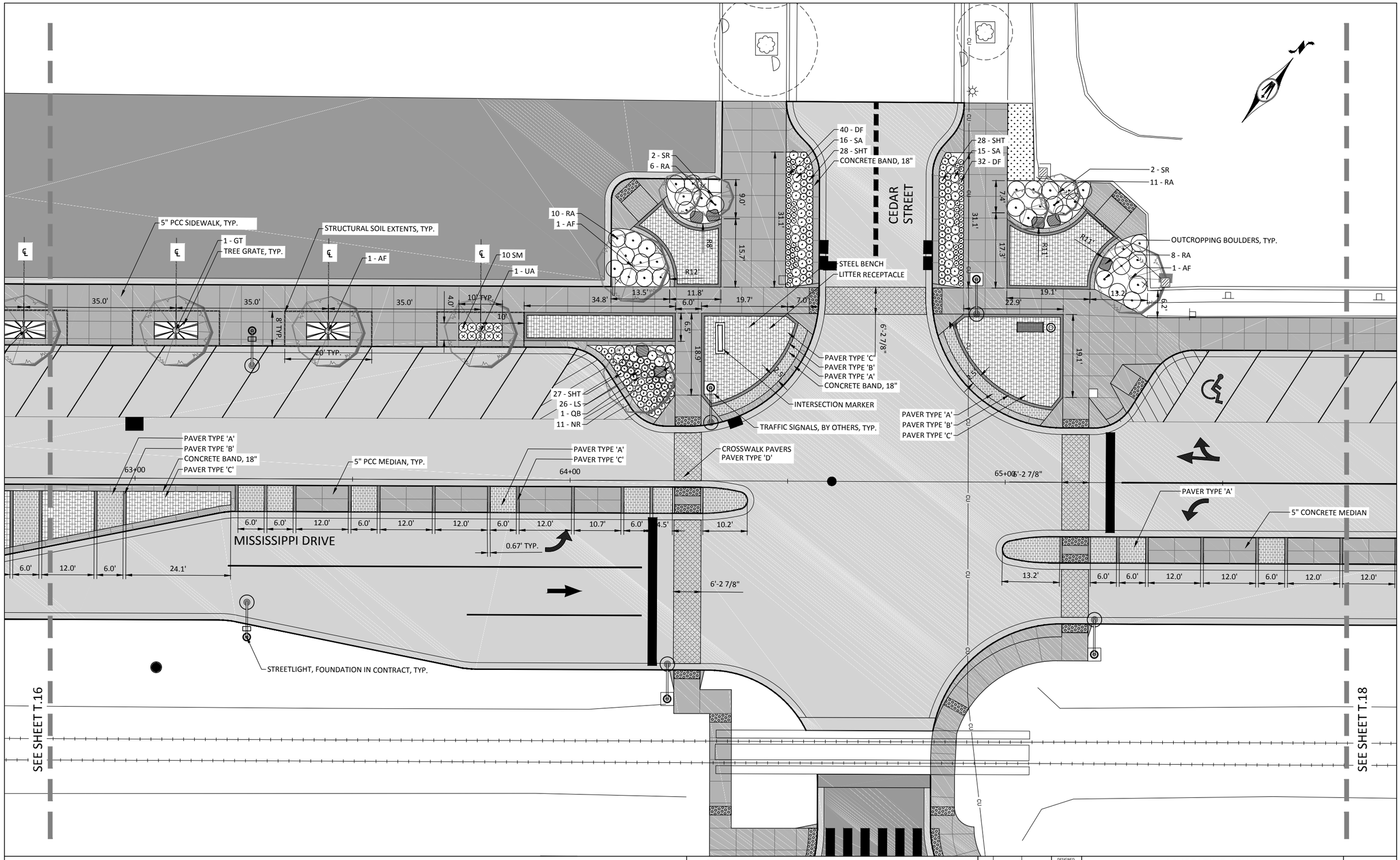
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
LANDSCAPE PLAN

SHEET T.16



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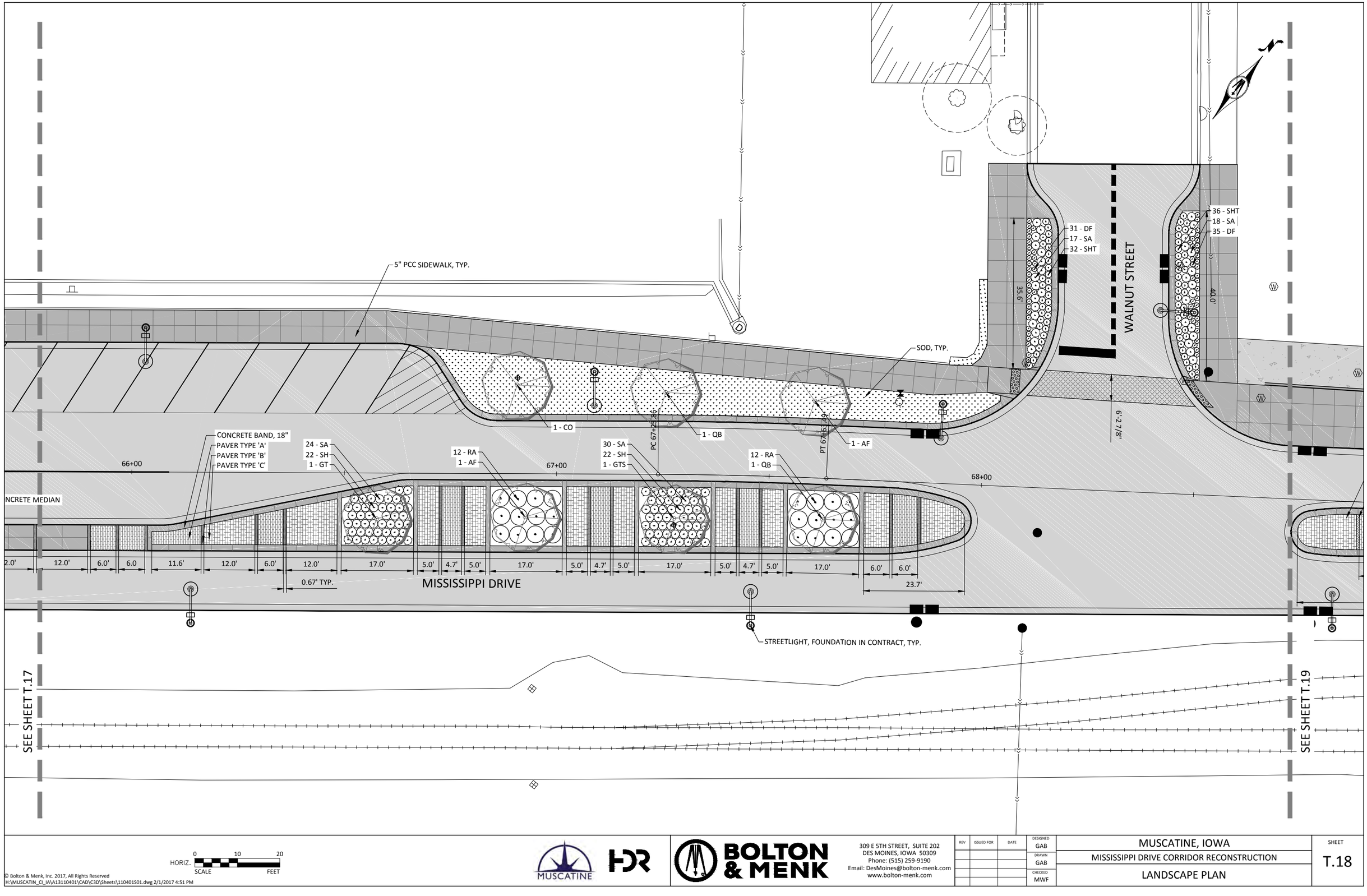
LANDSCAPE PLAN

SHEET T.17



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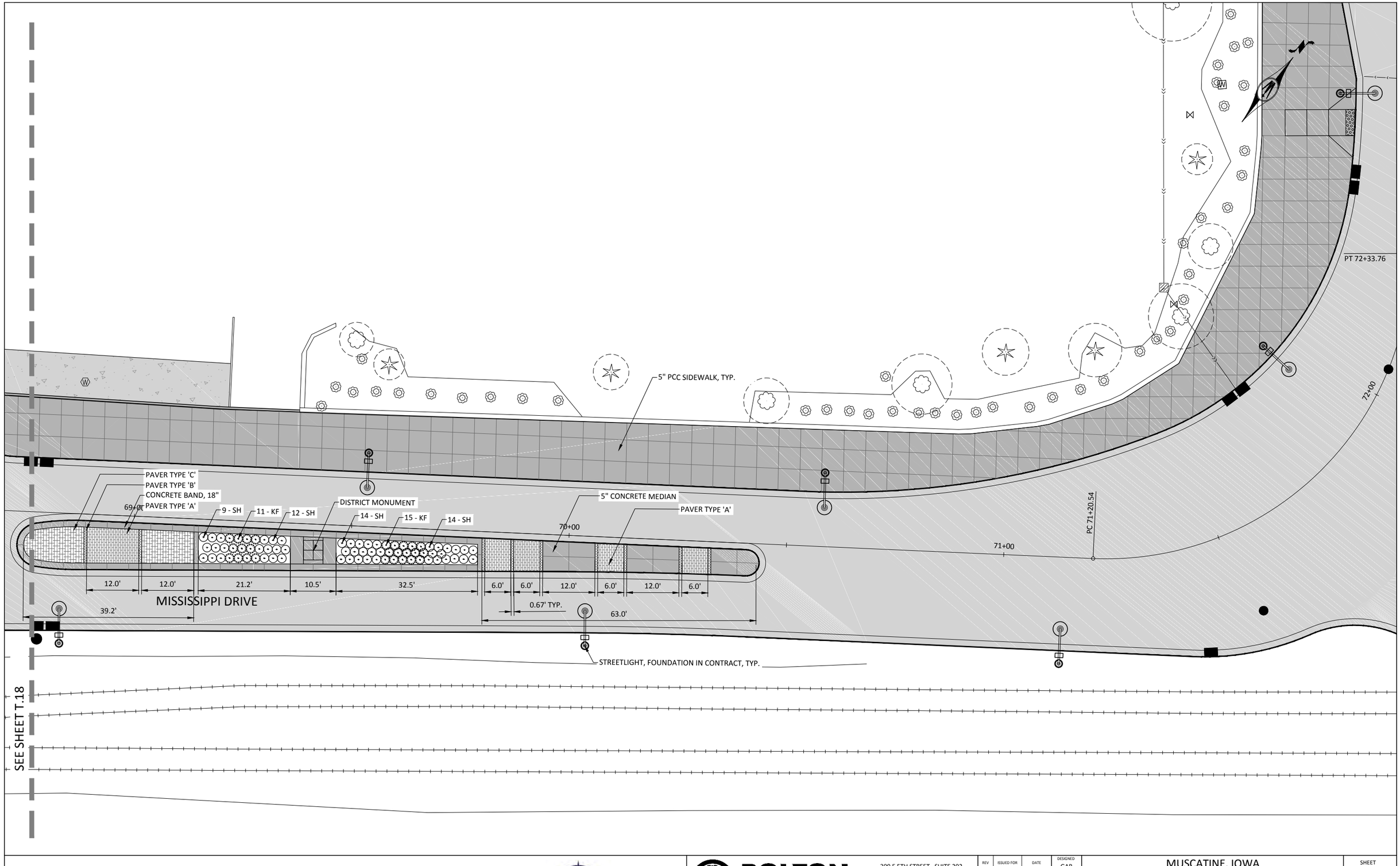
LANDSCAPE PLAN

SHEET T.18



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MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION

LANDSCAPE PLAN

SHEET T.19

7" PCC DRIVEWAY

PAVER TYPE 'C'
PAVER TYPE 'B'
CONCRETE BAND, 18"
PAVER TYPE 'A'
CONCRETE BAND, 12"
5" PCC MEDIAN, TYP.

10.4' 6.0' 12.0' 12.0' 21.1' 12.0' 12.6'
43.0'
0.67' TYP.

5" PCC SIDEWALK, TYP.

STREETLIGHT, FOUNDATION IN CONTRACT, TYP.

BEAM CURB

ORANGE STREET

CU

SEE SHEET T.21

HORIZ. 0 10 20
SCALE FEET

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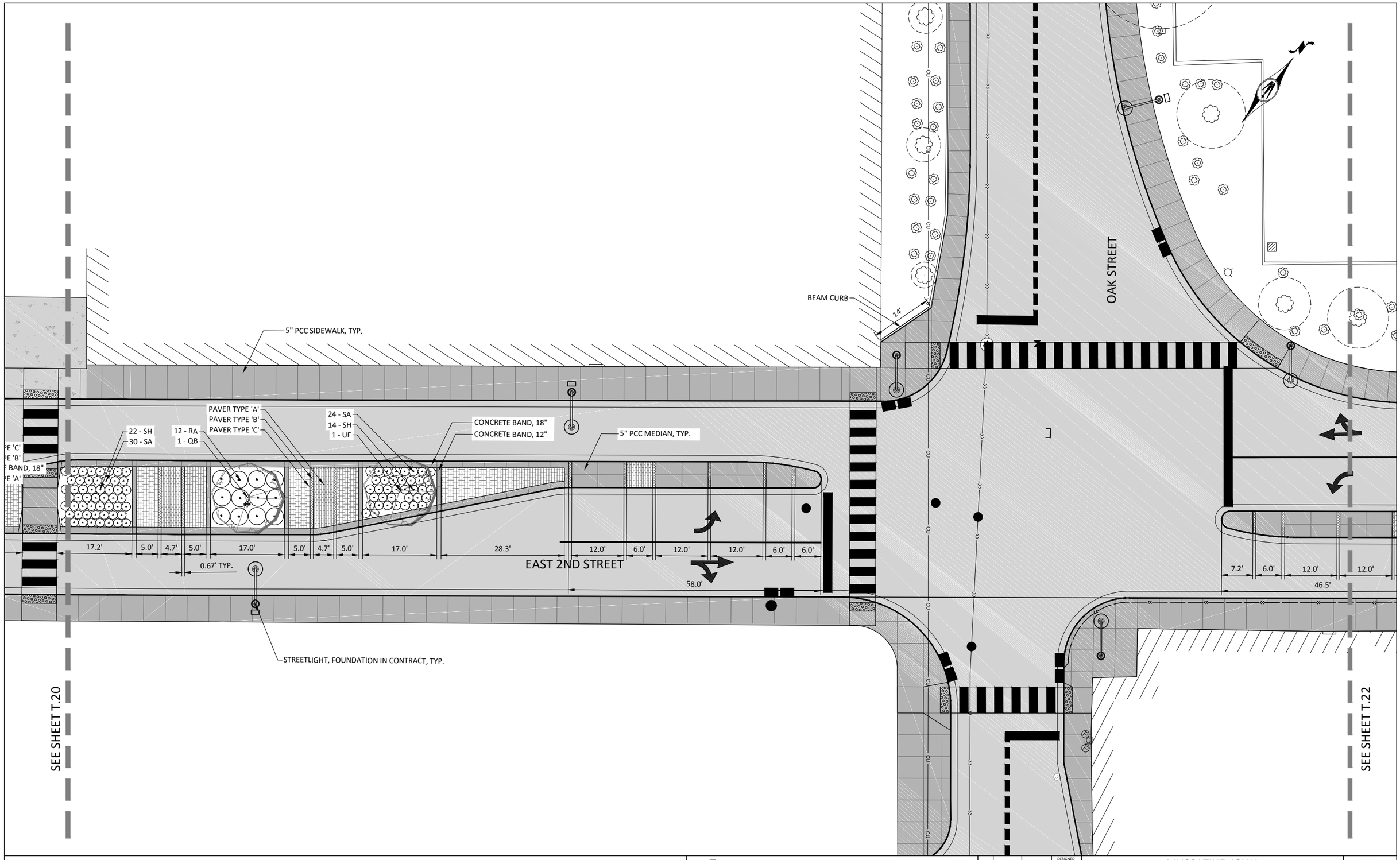
LANDSCAPE PLAN

SHEET T.20



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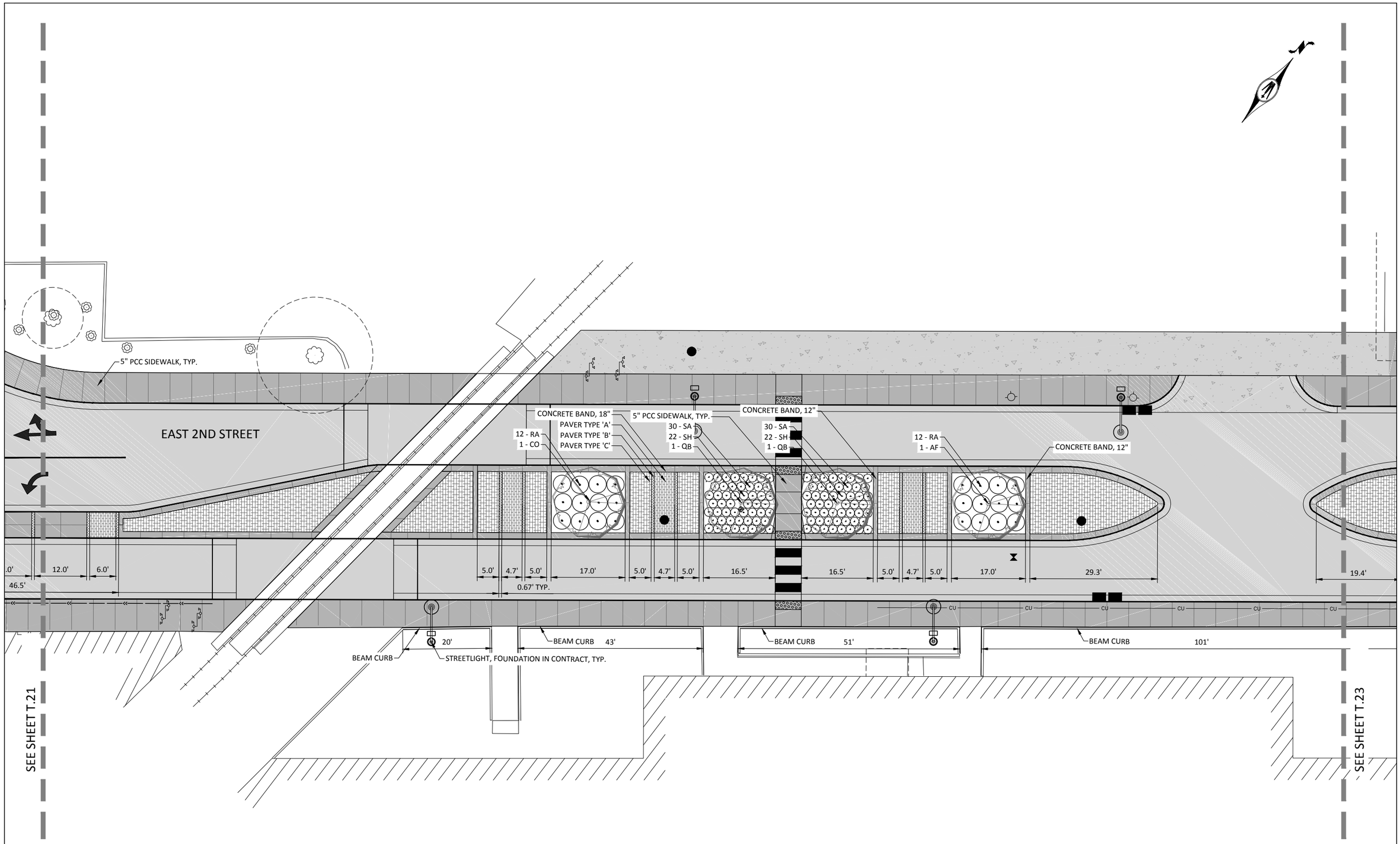
SHEET T.21



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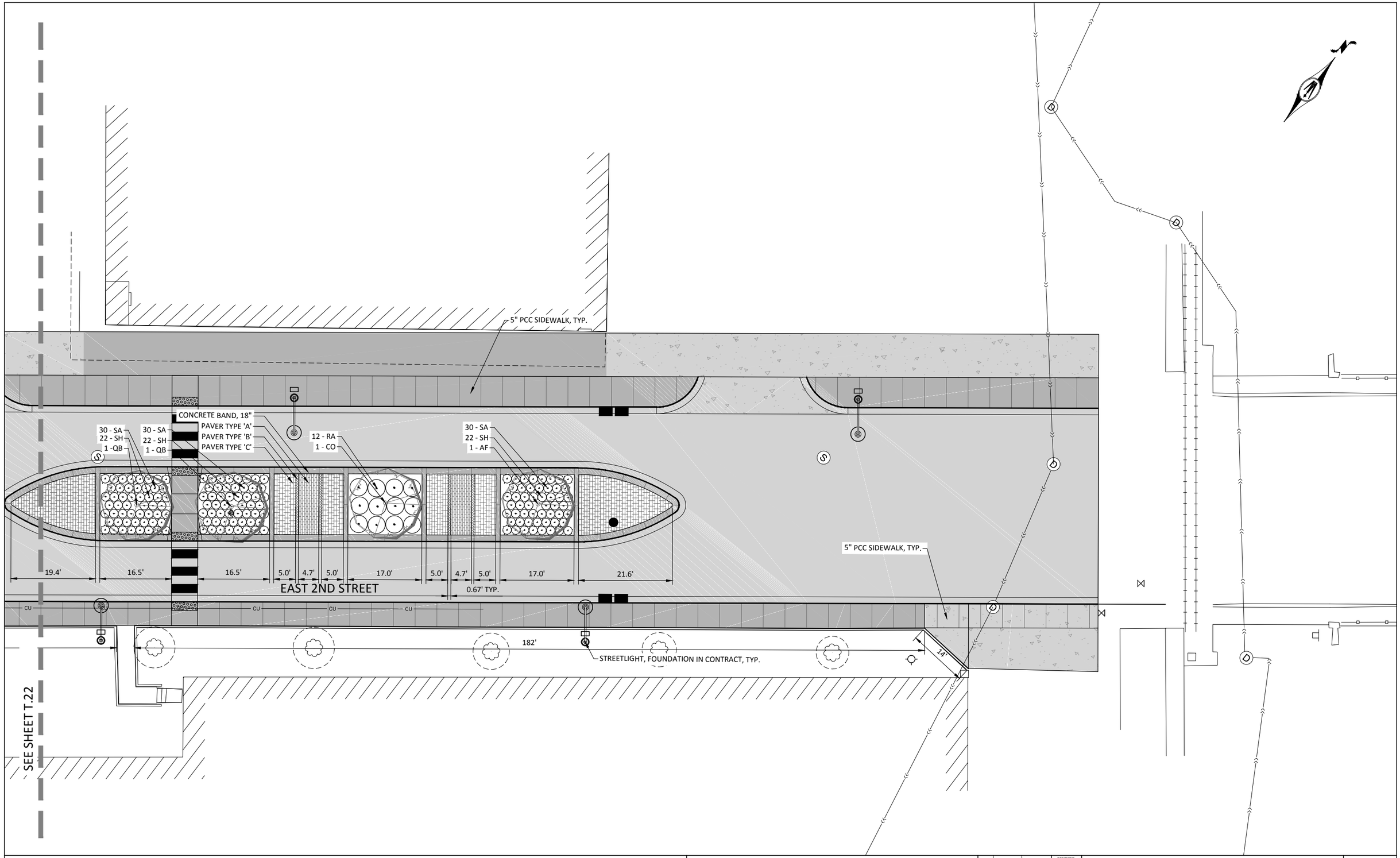
LANDSCAPE PLAN

SHEET T.22



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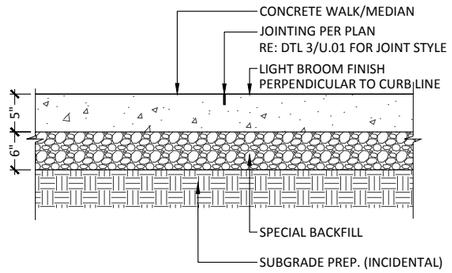
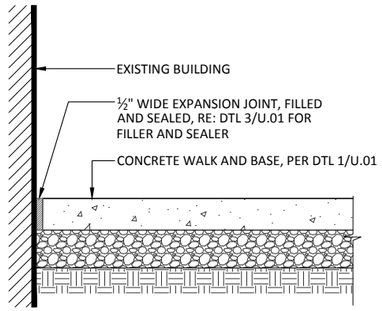
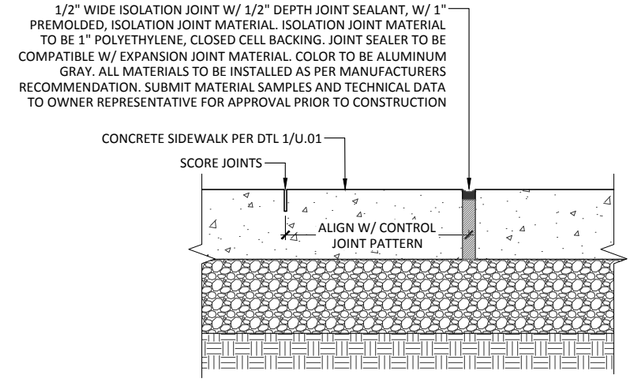
SHEET T.23



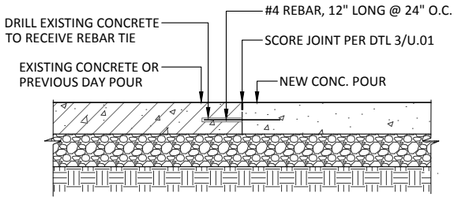
1 TYPICAL SECTION: PCC WALK/MEDIAN
SCALE: 1"=1'-0"



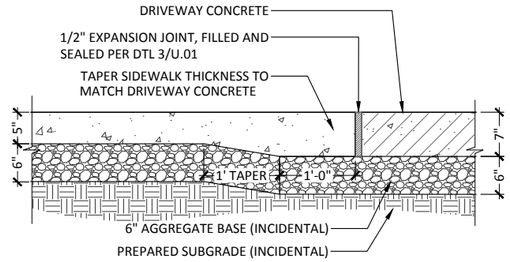
2 TYPICAL SECTION: CONCRETE SIDEWALK AT BUILDING EDGE
SCALE: 1"=1'-0"



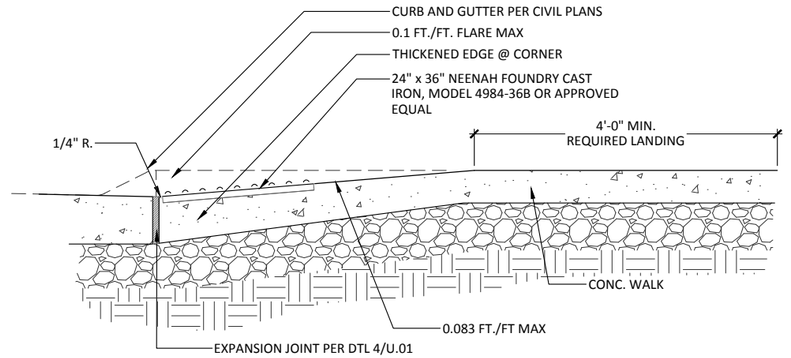
3 TYPICAL SECTION: CONCRETE SIDEWALK JOINTS
SCALE: N.T.S.



4 TYPICAL SECTION: SIDEWALK REINFORCED CONSTRUCTION JOINT
SCALE: 1"=1'-0"



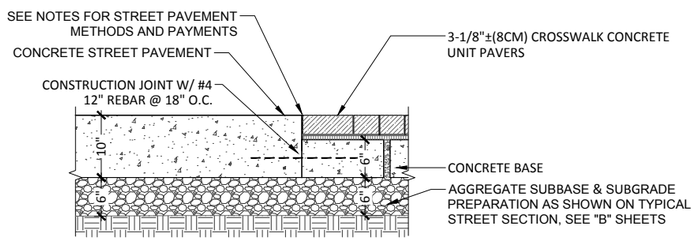
5 SECTION: SIDEWALK TO DRIVEWAY CONNECTION
SCALE: 1"=1'-0"



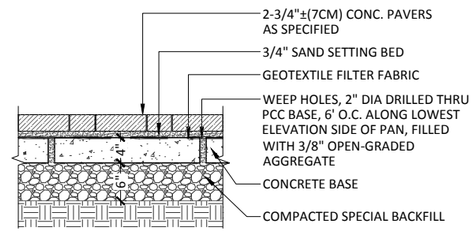
6 SECTION: PEDESTRIAN CURB RAMP / DETACTABLE WARNING PANEL
SCALE: 1"=1'-0"

NOTES:

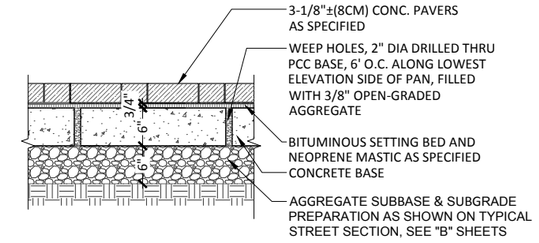
1. IN PEDESTRIAN CROSSINGS, CONCRETE PAVEMENT SHALL BE PLACED WITHIN CROSSWALK AREAS IN CONJUNCTION WITH STREET PAVING OPERATIONS. THE EDGES OF THE CONCRETE PAVER CROSSWALKS SHALL THEN BE SAW CUT FULL-DEPTH AND THE CONCRETE REMOVED FOR THE PLACEMENT OF CONCRETE PAVERS AND CONCRETE BASE.
2. PAYMENT FOR CONCRETE PAVEMENT GREATER THAN 10" THICK ADJACENT TO CROSSWALK AND OTHER STREET PAVERS WILL BE AT THE UNIT PRICE BID FOR 10" CONCRETE PAVEMENT
3. PAYMENT FOR CONCRETE PAVEMENT PLACED AND SUBSEQUENTLY REMOVED WILL BE AT THE UNIT PRICE BID FOR 10" CONCRETE PAVEMENT. SAW CUTTING AND REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 'CROSSWALK PAVERS W/ 6" CONCRETE BASE'



7 SECTION: CROSSWALK PAVERS WITH PCC BASE AND ROADWAY INTERFACE
SCALE: 1"=1'-0"



8 SECTION: SIDEWALK / MEDIAN CONCRETE UNIT PAVERS
SCALE: 1"=1'-0"



9 SECTION: CROSSWALK CONCRETE UNIT PAVERS
SCALE: 1"=1'-0"

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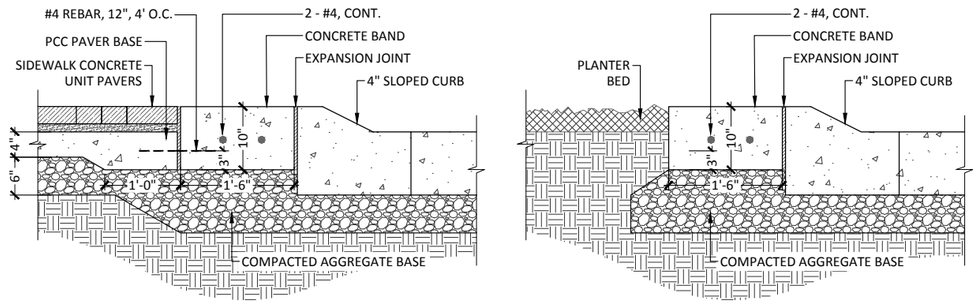
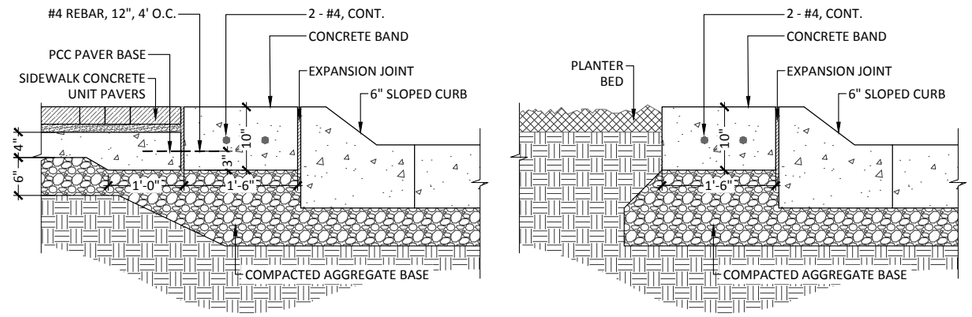
LANDSCAPE DETAILS

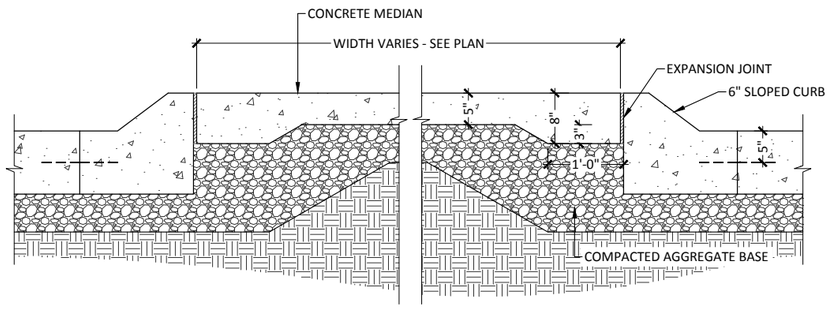
SHEET
U.01



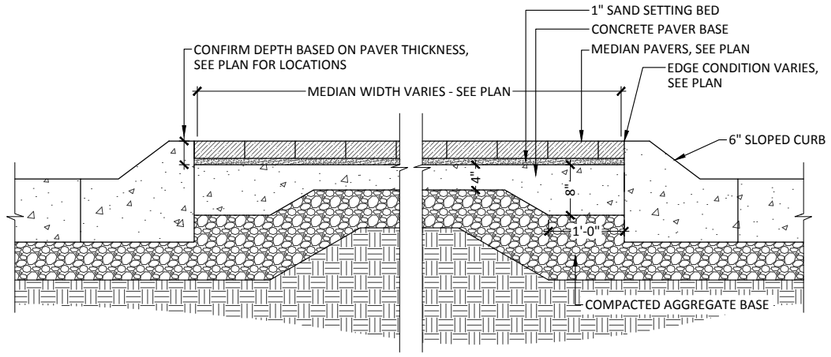
1 SECTION: CONCRETE BAND AT BUMPOUT/4" SLOPED CURB
SCALE: 1"=1'-0"



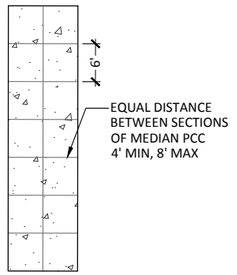
2 SECTION: CONCRETE BAND AT MEDIAN/6" SLOPED CURB
SCALE: 1"=1'-0"



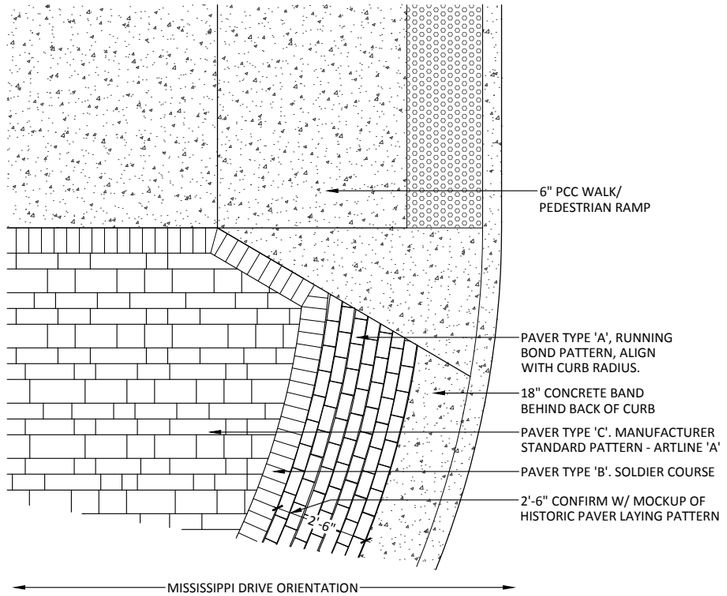
3 SECTION: CONCRETE MEDIAN/6" SLOPED CURB
SCALE: 1"=1'-0"



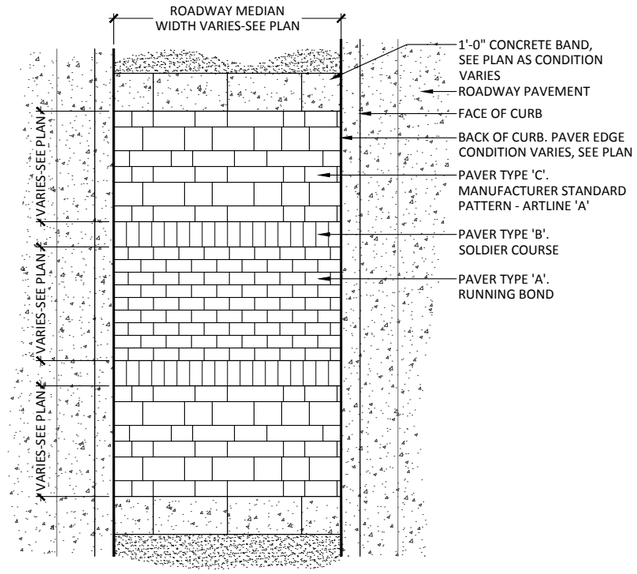
4 SECTION: MEDIAN PAVERS/6" SLOPED CURB
SCALE: 1"=1'-0"



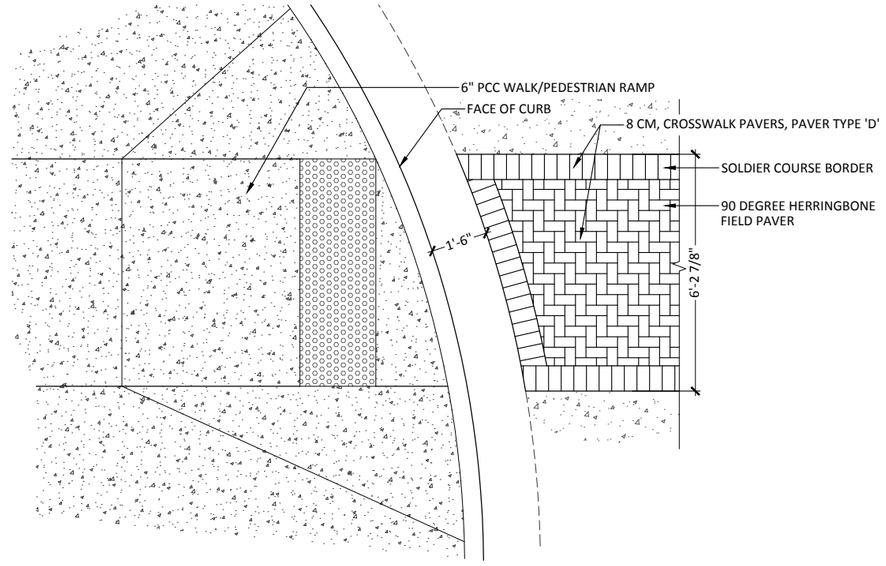
5 MEDIAN/CONCRETE BAND JOINTING PLAN
N.T.S.



6 TYPICAL PAVER PATTERN: SIDEWALK PAVERS
SCALE: 1/2"=1'-0"



7 TYPICAL PAVER PATTERN: MEDIAN PAVERS
SCALE: 1/2"=1'-0"



8 TYPICAL PAVER PATTERN: CROSSWALK PAVERS
SCALE: 1/2"=1'-0"

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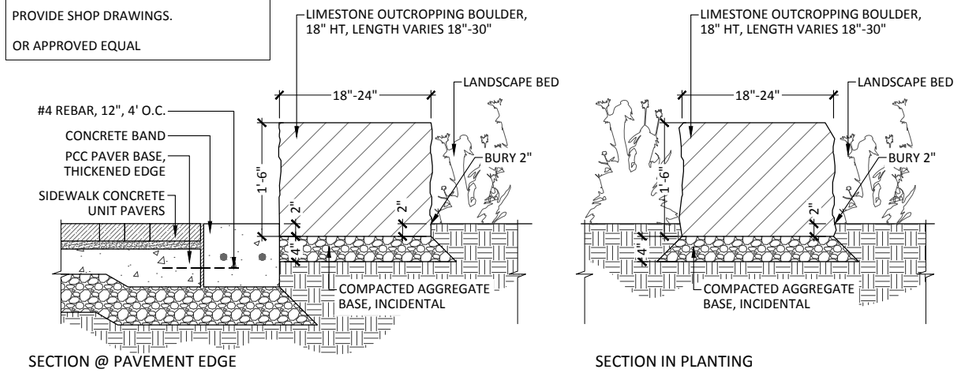
OUTCROPPING BOULDER APPROVED MFG.
WEBER STONE - ANAMOSA, IOWA
CHAD FOLEY - 319-462-3581

-ANAMOSA LIMESTONE OUTCROPPING
-STOCK OUTCROPPING
-NATURAL, ALL SIDES

PROVIDE SHOP DRAWINGS.

OR APPROVED EQUAL



SECTION @ PAVEMENT EDGE

SECTION IN PLANTING

1 SECTION: OUTCROPPING BOULDERS
SCALE: 1"=1'-0"

PLAN VIEW - TYPICAL SEATWALL

BOULDER SEATWALL APPROVED MFG.
WEBER STONE - ANAMOSA, IOWA
CHAD FOLEY - 319-462-3581

-ANAMOSA LIMESTONE CUSTOM BLOCK
-SPLITFACE FRONT/BACK
-NATURAL TOP/BOTTOM, WITH SAWN/ MITERED JOINTS AS REQUESTED TO FIT RADIUS.

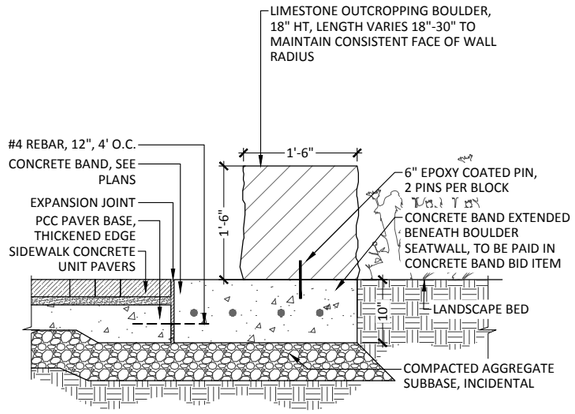
PROVIDE SHOP DRAWINGS.

OR APPROVED EQUAL

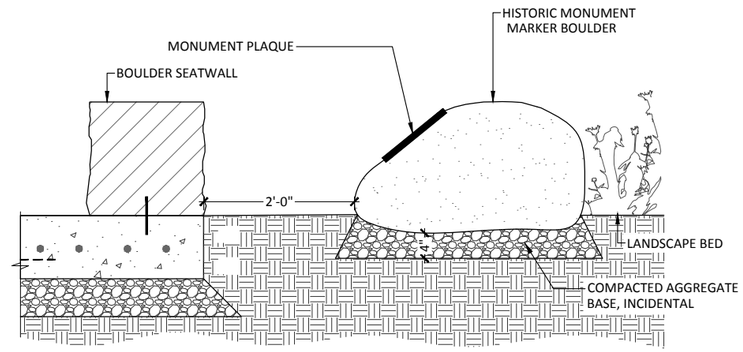
BOULDER SEATWALL DIMENSIONS:
*RADIUS TO FRONT FACE OF WALL

SEATWALL 'A':	RADIUS=22.5', LENGTH=16'
SEATWALL 'B':	RADIUS=22.5', LENGTH=21'
SEATWALL 'C':	RADIUS=12', LENGTH=33'
SEATWALL 'D.1':	RADIUS=12', LENGTH=18'
SEATWALL 'D.2':	RADIUS=12', LENGTH=18'
SEATWALL 'E':	RADIUS=12', LENGTH=33'

2 PLAN: BOULDER SEATWALLS
SCALE: 1/2"=1'-0"



3 SECTION: BOULDER SEATWALLS
SCALE: 1"=1'-0"



4 SECTION: HISTORIC MONUMENT AND PLAQUE
SCALE: 1"=1'-0"

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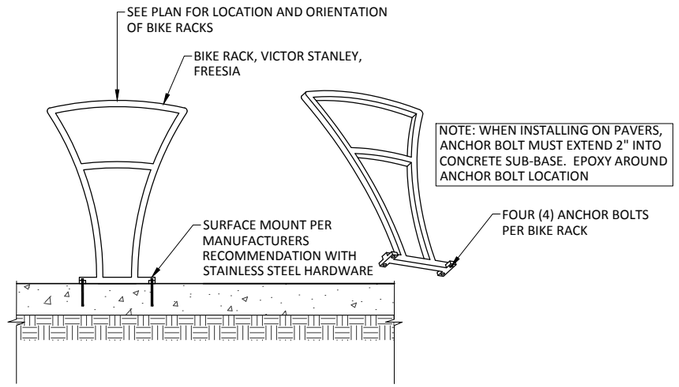
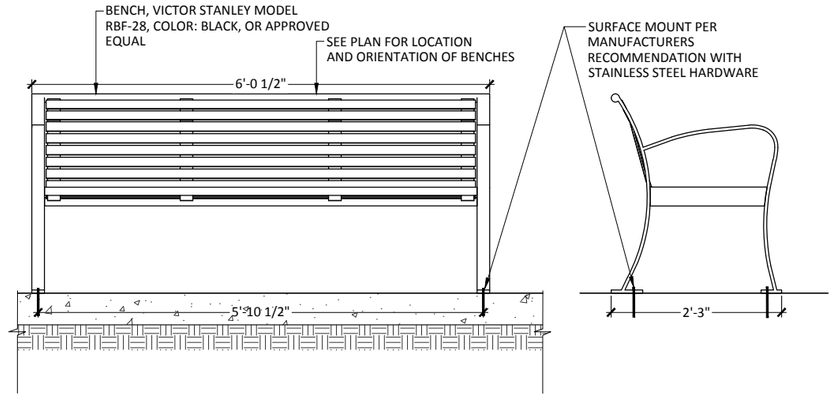
CONTACT:
VICTOR STANLEY SITE FURNISHINGS
ATTN: ANDREW HOSMER
PH: 800-368-2573 X 323
EMAIL: andrewh@victorstanley.com



1 SECTION: BIKE RACK
SCALE: 1"=1'-0"

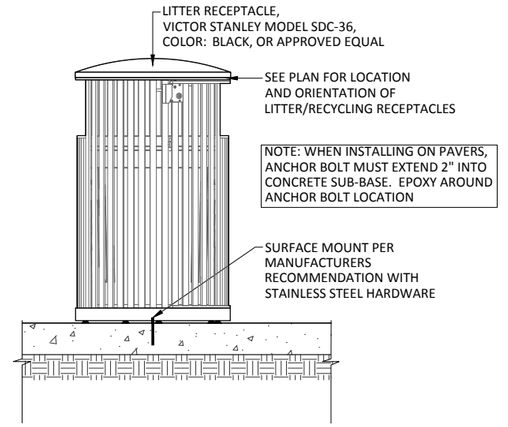
CONTACT:
VICTOR STANLEY SITE FURNISHINGS
ATTN: ANDREW HOSMER
PH: 800-368-2573 X 323
EMAIL: andrewh@victorstanley.com

NOTE: WHEN INSTALLING ON PAVERS, ANCHOR BOLT MUST EXTEND 2" INTO CONCRETE SUB-BASE. EPOXY AROUND ANCHOR BOLT LOCATION



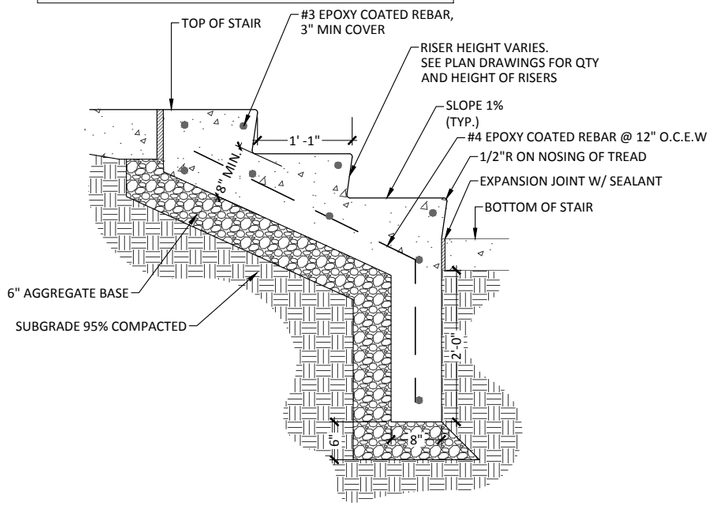
2 SECTION: BENCH
SCALE: 1"=1'-0"

CONTACT:
VICTOR STANLEY SITE FURNISHINGS
ATTN: ANDREW HOSMER
PH: 800-368-2573 X 323
EMAIL: andrewh@victorstanley.com



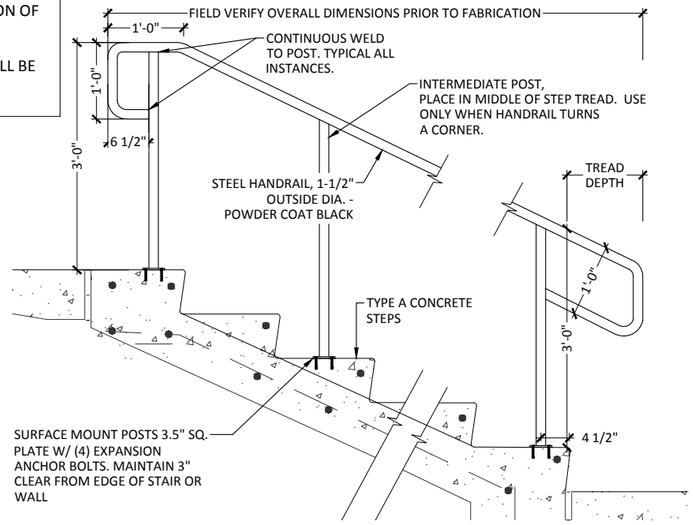
3 SECTION: LITTER RECEPTACLE
SCALE: 1"=1'-0"

NOTES:
1. SEE PLAN DRAWINGS FOR RISER QUANTITY AND HEIGHT, INCLUDING TOP OF STAIR AND BOTTOM OF STAIR ELEVATIONS
2. RISERS TO BE EQUAL HEIGHT FOR ENTIRE RUN
3. TREADS TO BE EQUAL DEPTH FOR ENTIRE RUN



4 SECTION: TYPE A CONCRETE STEPS
SCALE: 1"=1'-0"

NOTES:
1. CONTRACTOR SHALL VERIFY ALL MEASUREMENTS OF HANDRAILS FOLLOWING CONSTRUCTION OF STAIRS AND PRIOR TO FABRICATION.
2. ALL STEEL HANDRAILS SHALL BE POWDER COAT BLACK.



5 SECTION/ELEVATION: STEEL HANDRAIL
SCALE: 1"=1'-0"

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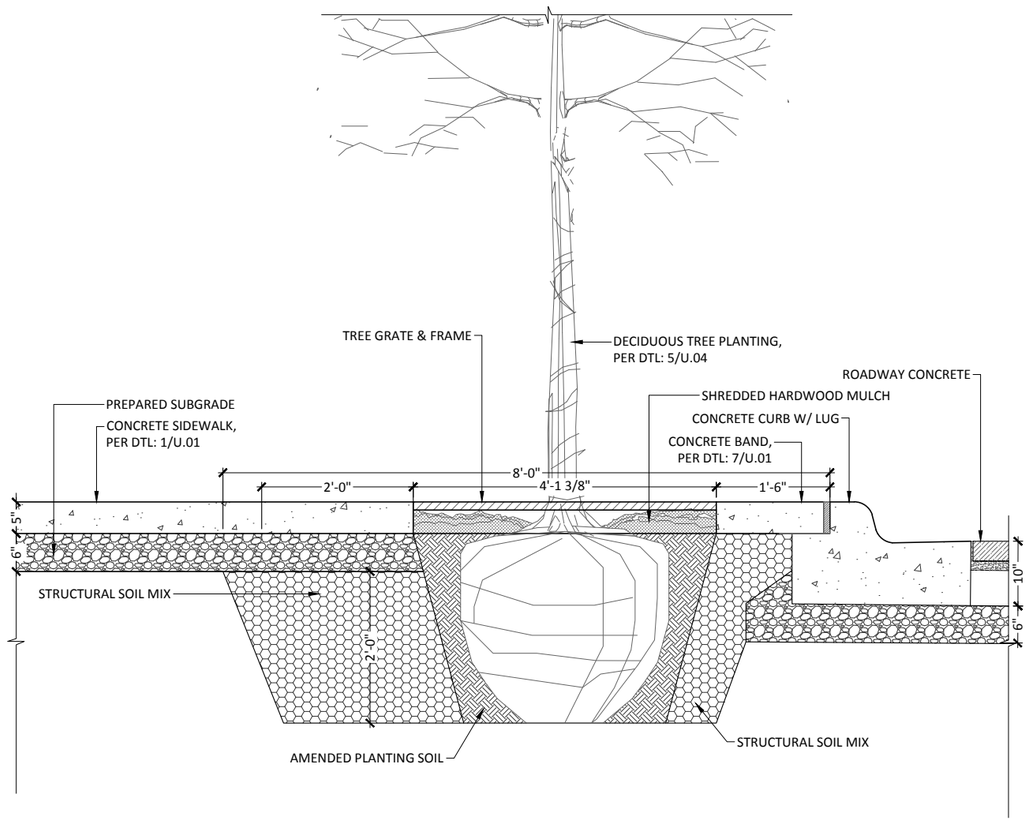
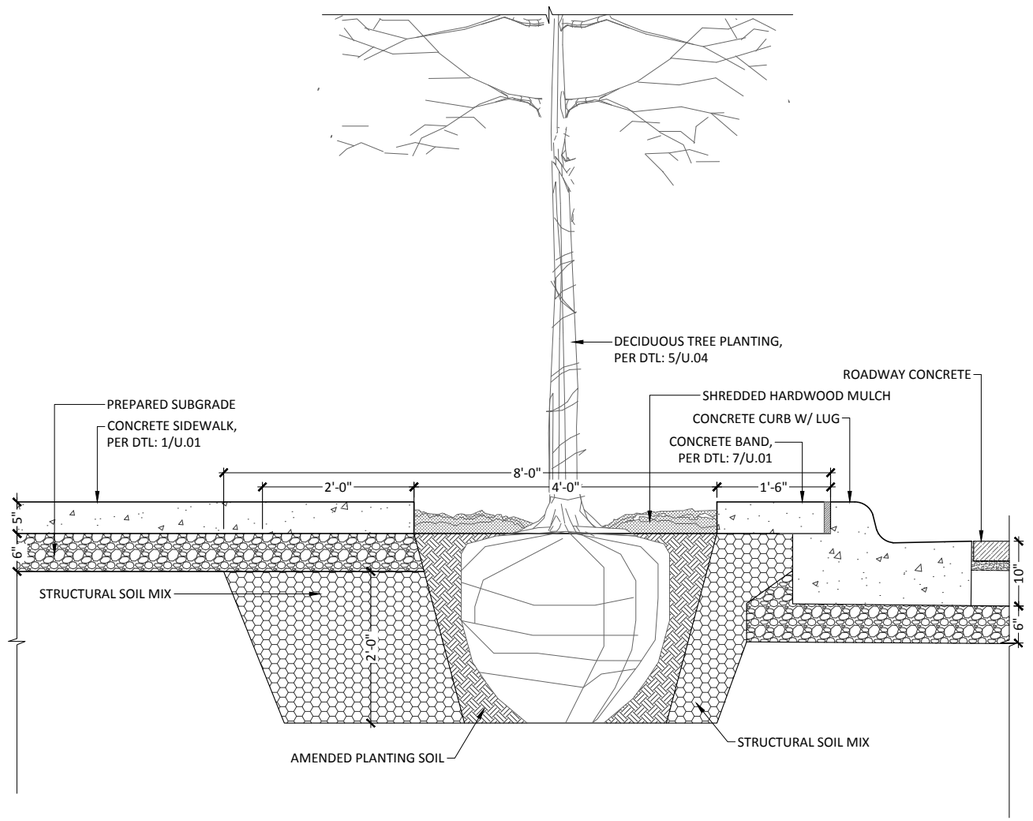
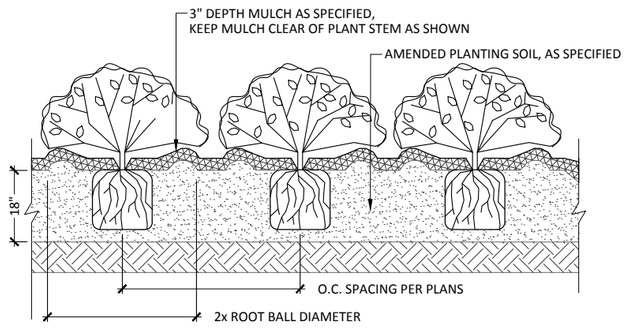


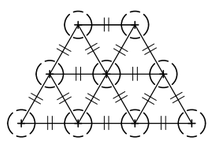
1 SECTION: STREET TREE PLANTING WITH TREE GRATE
SCALE: 1"=1'-0"



2 SECTION: STREET TREE PLANTING, WITHOUT TREE GRATE
SCALE: 1"=1'-0"



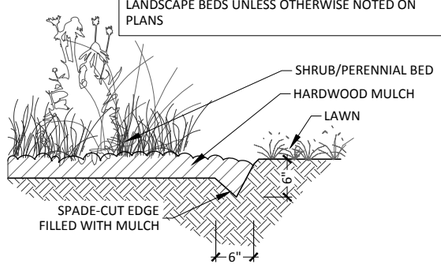
3 SECTION: PERENNIAL / SHRUB PLANTING
SCALE: 1"=1'-0"



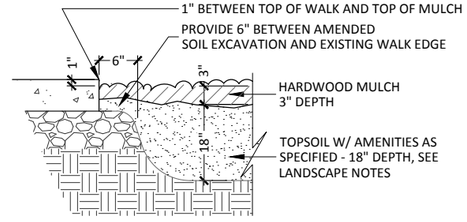
NOTES:
1. O.C. TRIANGULAR PLANT SPACING PER PLANS
2. AREAS IDENTIFIED ON PLANTING PLAN AS O.C. SHALL BE TRIANGULAR SPACED
3. SEE PLANTING PLAN/SCHEDULE FOR SPECIES

4 SECTION: PERENNIAL PLANT SPACING
SCALE: 1"=1'-0"

NOTES:
SPADE-CUT EDGE TO BE INCIDENTAL TO PLANT MATERIAL COST AND SHALL BE USED ON ALL LANDSCAPE BEDS UNLESS OTHERWISE NOTED ON PLANS



5 SECTION: SPADE-CUT EDGE
SCALE: 1"=1'-0"



6 PLANTING EDGE AT CONC. WALK
SCALE: N.T.S.

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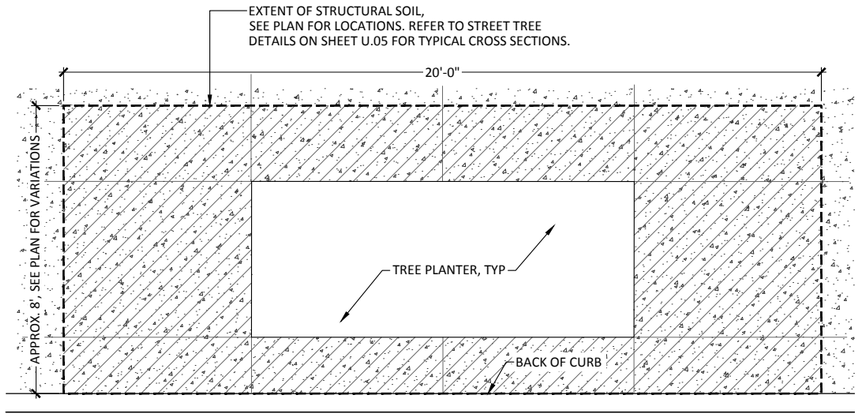
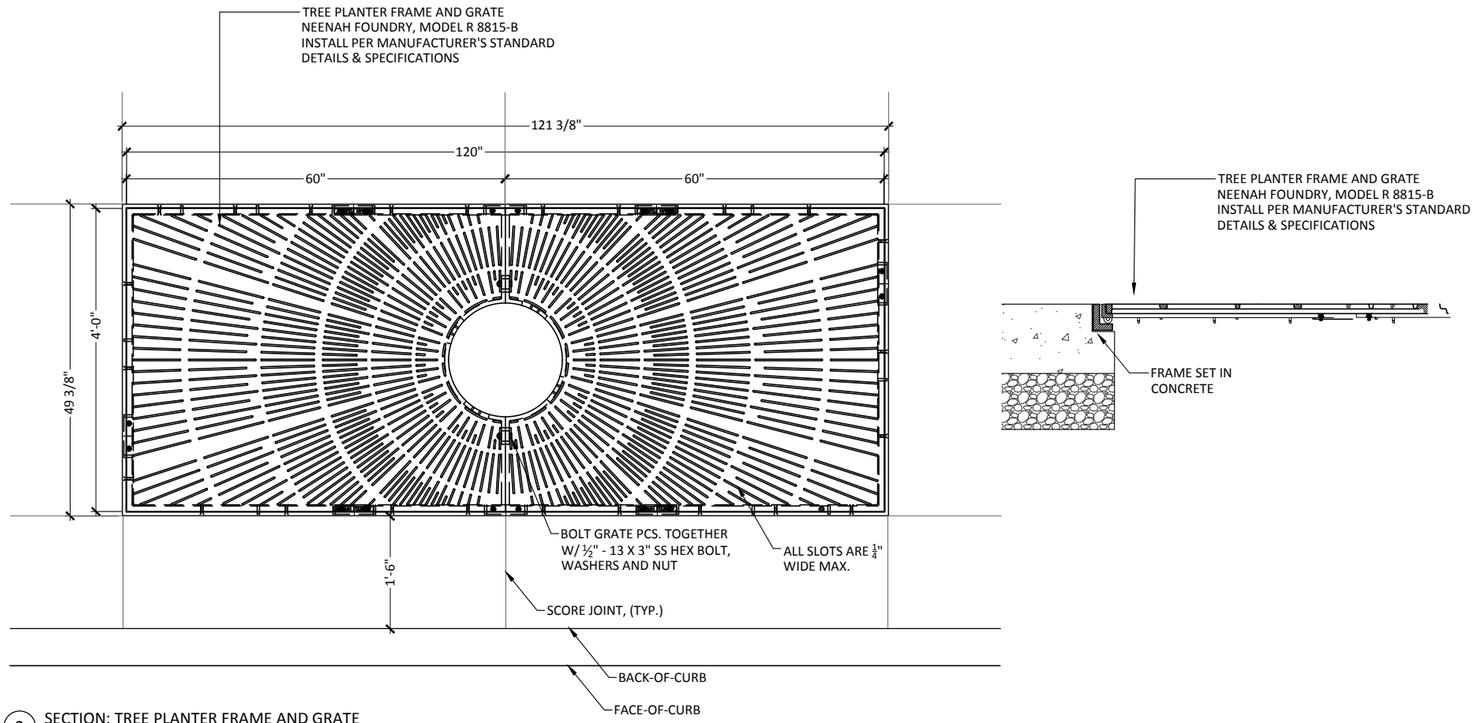
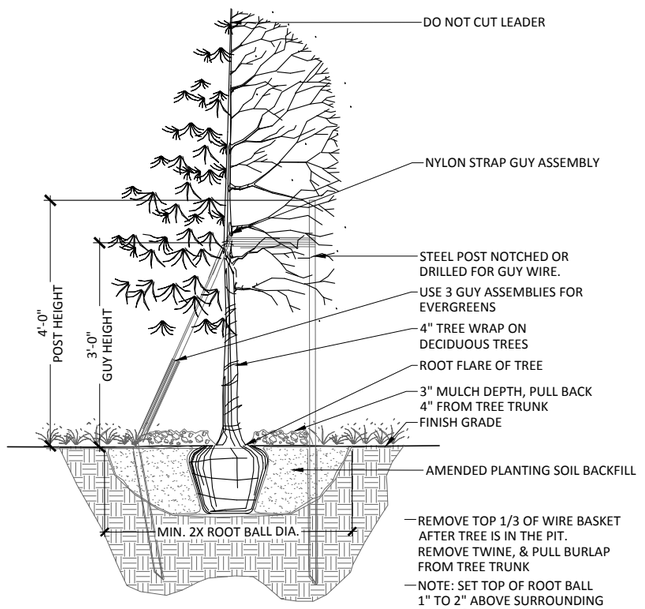


1 PLAN: STRUCTURAL SOIL EXTENTS
SCALE: 1/2"=1'-0"



2 SECTION: TREE PLANTER FRAME AND GRATE
SCALE: 1"=1'-0"



3 SECTION: TREE PLANTING IN MEDIAN/PLANTER DETAIL
SCALE: 1"=1'-0"

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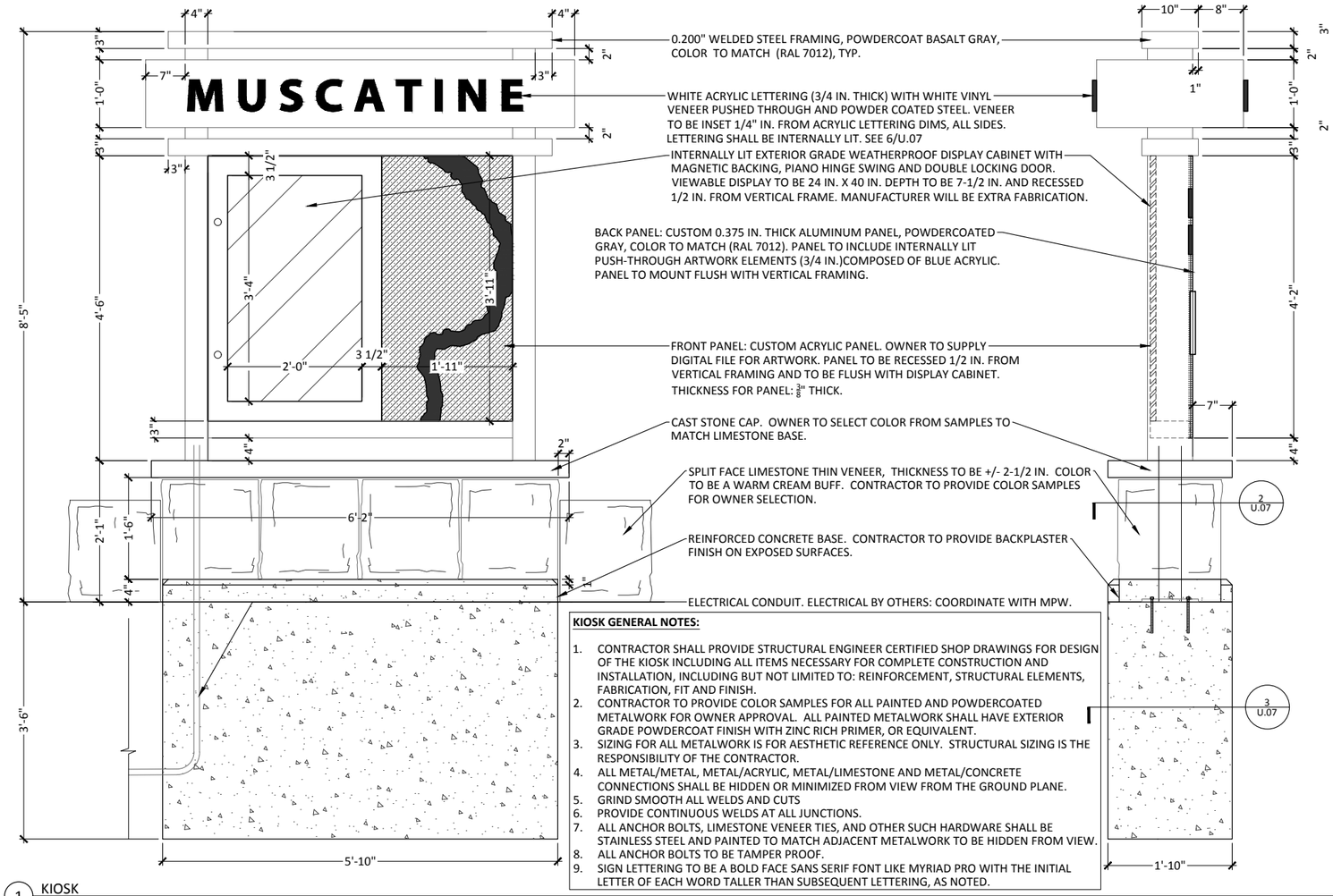


KIOSK GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER CERTIFIED SHOP DRAWINGS FOR DESIGN OF THE KIOSK INCLUDING ALL ITEMS NECESSARY FOR COMPLETE CONSTRUCTION AND INSTALLATION, INCLUDING BUT NOT LIMITED TO: REINFORCEMENT, STRUCTURAL ELEMENTS, FABRICATION, FIT AND FINISH.
2. CONTRACTOR TO PROVIDE COLOR SAMPLES FOR ALL PAINTED AND POWDERCOATED METALWORK FOR OWNER APPROVAL. ALL PAINTED METALWORK SHALL HAVE EXTERIOR GRADE POWDERCOAT FINISH WITH ZINC RICH PRIMER, OR EQUIVALENT.
3. SIZING FOR ALL METALWORK IS FOR AESTHETIC REFERENCE ONLY. STRUCTURAL SIZING IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL METAL/METAL, METAL/ACRYLIC, METAL/LIMESTONE AND METAL/CONCRETE CONNECTIONS SHALL BE HIDDEN OR MINIMIZED FROM VIEW FROM THE GROUND PLANE.
5. GRIND SMOOTH ALL WELDS AND CUTS
6. PROVIDE CONTINUOUS WELDS AT ALL JUNCTIONS.
7. ALL ANCHOR BOLTS, LIMESTONE VENEER TIES, AND OTHER SUCH HARDWARE SHALL BE STAINLESS STEEL AND PAINTED TO MATCH ADJACENT METALWORK TO BE HIDDEN FROM VIEW.
8. ALL ANCHOR BOLTS TO BE TAMPER PROOF.
9. SIGN LETTERING TO BE A BOLD FACE SANS SERIF FONT LIKE MYRIAD PRO WITH THE INITIAL LETTER OF EACH WORD TALLER THAN SUBSEQUENT LETTERING, AS NOTED.

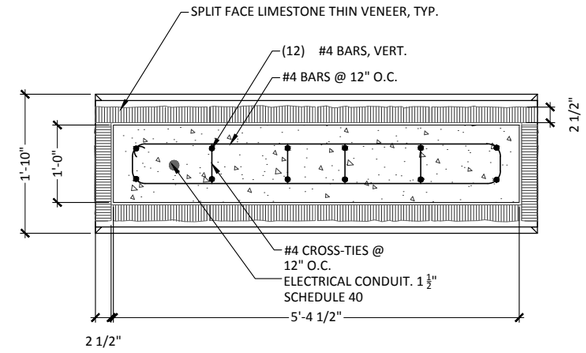
1 KIOSK
SCALE: 1"=1'-0"

KIOSK, INTERSECTION MARKER, DISTRICT MONUMENT APPROVED MFG.

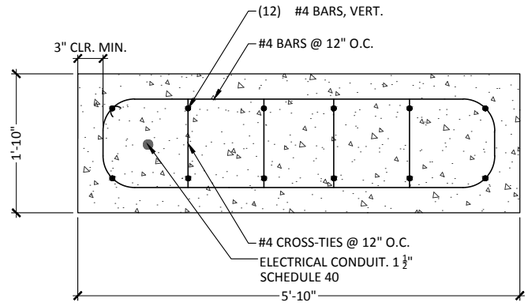
ASI SIGNAGE INNOVATIONS
GRINNELL, IOWA
PAT MESCHER - (M) 515-778-4689

- PROVIDE SHOP DRAWINGS.

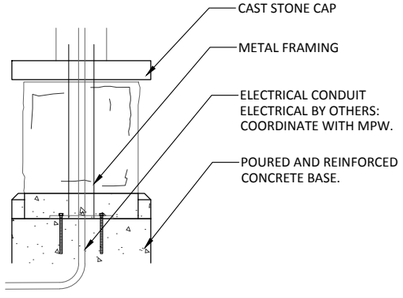
OR APPROVED EQUAL



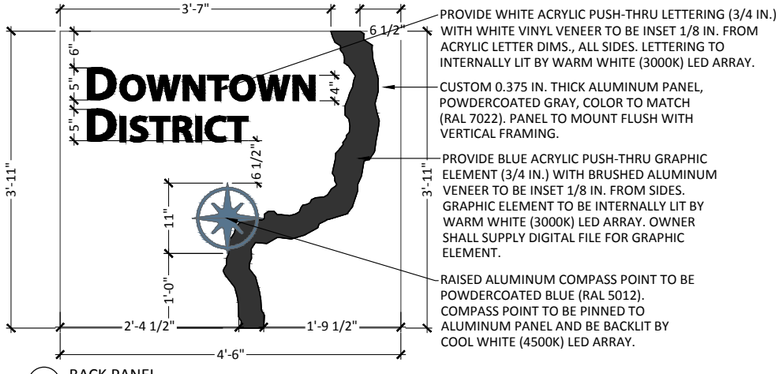
2 SECTION: REINFORCED LIMESTONE VENEER BASE
SCALE: 1"=1'-0"



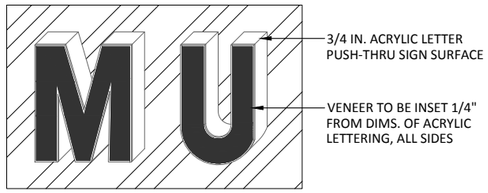
3 SECTION: REINFORCED CONCRETE FOOTING
SCALE: 1"=1'-0"



4 METAL FRAMING TO CONCRETE FOOTING
SCALE: 1"=1'-0"



5 BACK PANEL
SCALE: 1"=1'-0"



6 KIOSK SIGNAGE LETTERING
SCALE: 1"=1'-0"

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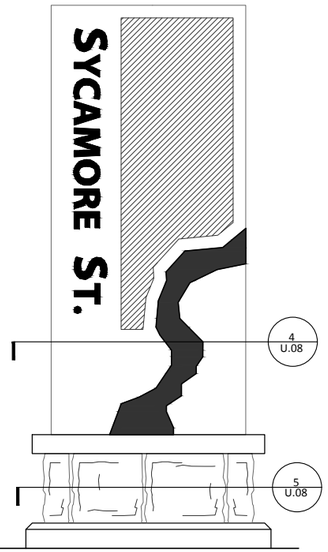
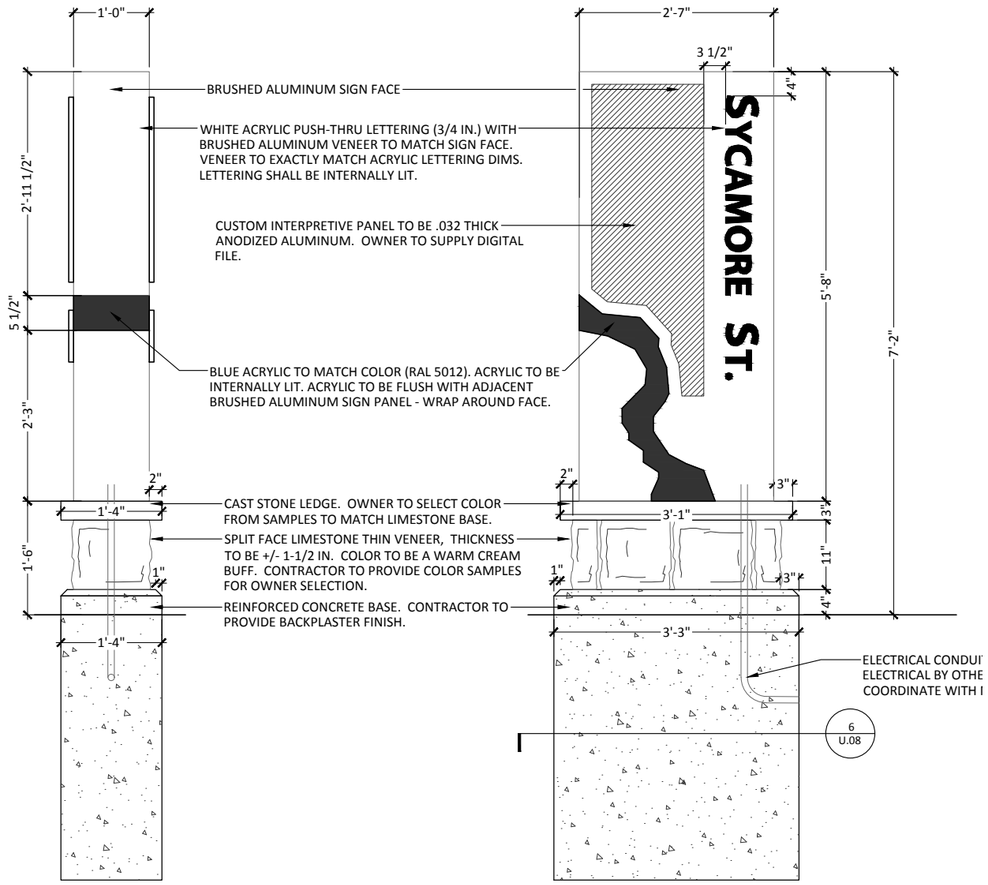
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
LANDSCAPE DETAILS

SHEET U.07



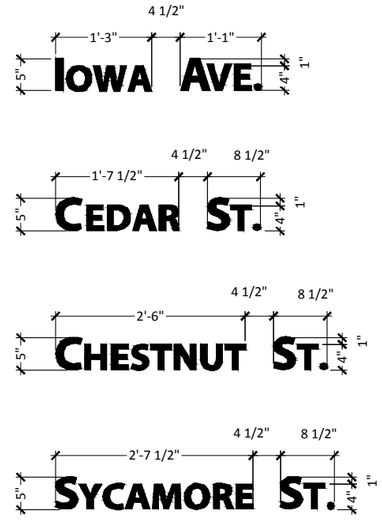
1 INTERSECTION MARKER
SCALE: 1"=1'-0"



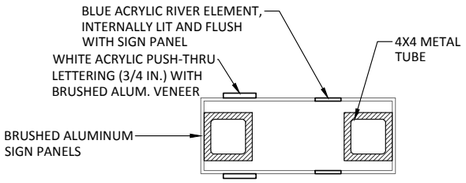
2 SECTION/ELEVATION
SCALE: 1"=1'-0"

INTERSECTION MARKER GENERAL NOTES:

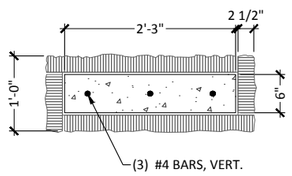
1. CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER CERTIFIED SHOP DRAWINGS FOR DESIGN AND DETAILING OF INTERSECTION MARKER
2. ELEMENTS TO MATCH KIOSK AND DISTRICT MONUMENT FINISHES. CONTRACTOR TO SUBMIT SAMPLES FOR APPROVAL PRIOR TO FABRICATION.
   2.1. ALUMINUM TO BE BRUSHED OR ANODIZED, COLOR: RAL. 7012 OR APPROVED EQUAL
3. LIMESTONE TO BE WEBER STONE, COLOR: WARM CREAM BUFF, SPLIT FACE VENEER
4. LIGHTING AND GFCI LOCATIONS TO BE COORDINATED AND APPROVED BY MPW PRIOR TO FINAL INSTALLATION. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE AND CONDUITS.
5. FONT AND TEXT ON SIGN ARE FOR BIDDING PURPOSES ONLY. CONTACT OWNER'S REPRESENTATIVE FOR DIGITAL FILE OF TEXT OUTLINE FOR CONTRACTORS FABRICATION. COLOR OF TEXT FACE TO BE A CONTRASTING COLOR TO BACK PLATE, FINAL COLOR SELECTION TO BE SELECTED BY OWNERS REPRESENTATIVE.
6. ALL METAL SHALL BE PER STRUCTURAL DRAWINGS WITH FINAL FINISH OF EPOXY PAINT FOR USE ON GALVANIZED SURFACE. COLOR TO BE GRAY UNLESS OTHERWISE NOTED. CONTRACTOR TO SUBMIT PRODUCT CUT SHEET FOR APPROVAL BY OWNERS REP.



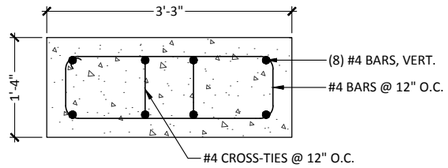
3 TEXT DIMENSIONS
SCALE: 1"=1'-0"



4 SECTION: ALUMINUM SIGN HOUSING
SCALE: 1"=1'-0"



5 SECTION: LIMESTONE VENEER BASE
SCALE: 1"=1'-0"



6 SECTION: CONCRETE FOOTING
SCALE: 1"=1'-0"

KIOSK, INTERSECTION MARKER, DISTRICT MONUMENT APPROVED MFG.

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- PROVIDE SHOP DRAWINGS.

OR APPROVED EQUAL

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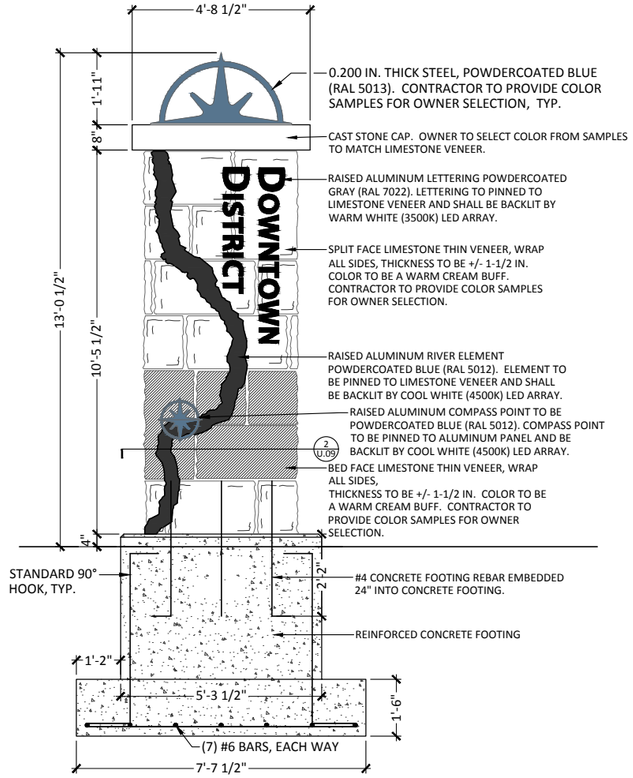
LANDSCAPE DETAILS

SHEET
U.08



1 DISTRICT MONUMENT
SCALE: 1/2"=1'-0"

DISTRICT MONUMENT GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE STRUCTURAL ENGINEER CERTIFIED SHOP DRAWINGS FOR DESIGN AND DETAILING OF DISTRICT MONUMENT.
2. ELEMENTS TO MATCH KIOSK AND INTERSECTION MARKER FINISHES. CONTRACTOR TO SUBMIT SAMPLES FOR APPROVAL PRIOR TO FABRICATION.
   2.1. ALUMINUM TO BE BRUSHED OR ANODIZED, COLOR: RAL 7012 OR APPROVED EQUAL
3. LIMESTONE TO BE WEBER STONE, COLOR: WARM CREAM BUFF, SEE DETAILS FOR VENEER.
4. LIGHTING AND GFCI LOCATIONS TO BE COORDINATED AND APPROVED BY MPW PRIOR TO FINAL INSTALLATION. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE AND CONDUITS.
5. FONT AND TEXT ON SIGN ARE FOR BIDDING PURPOSES ONLY. CONTACT OWNER'S REPRESENTATIVE FOR DIGITAL FILE OF TEXT OUTLINE FOR CONTRACTORS FABRICATION. COLOR OF TEXT FACE TO BE A CONTRASTING COLOR TO BACK PLATE, FINAL COLOR SELECTION TO BE SELECTED BY OWNERS REPRESENTATIVE.
6. ALL METAL SHALL BE PER STRUCTURAL DRAWINGS WITH FINAL FINISH OF EPOXY PAINT FOR USE ON GALVANIZED SURFACE. COLOR TO BE GRAY UNLESS OTHERWISE NOTED. CONTRACTOR TO SUBMIT PRODUCT CUT SHEET FOR APPROVAL BY OWNERS REP.

KIOSK, INTERSECTION MARKER, DISTRICT MONUMENT APPROVED MFG.

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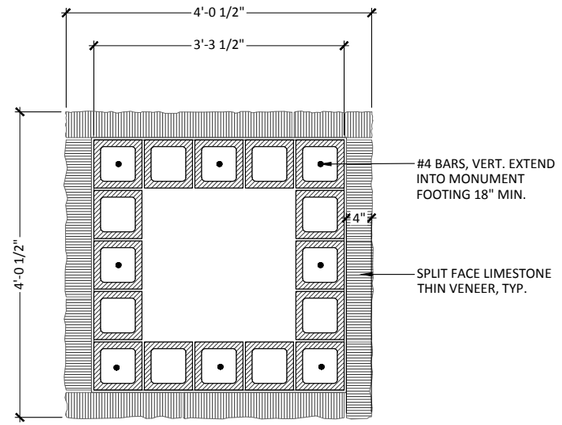
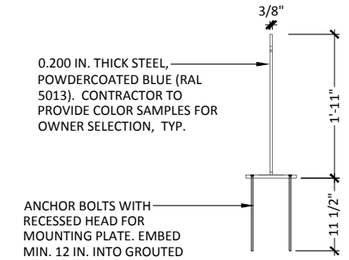
PAT MESCHER - (M) 515-778-4689

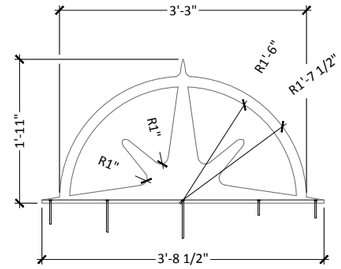
- PROVIDE SHOP DRAWINGS.

OR APPROVED EQUAL



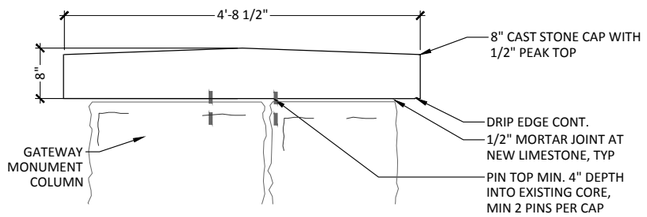
2 SECTION: LIMESTONE VENEER BASE
SCALE: 1"=1'-0"





3 SECTION: CUSTOM MEDAL MEDALLION/POST TOPPER
SCALE: 1"=1'-0"

4 TEXT DIMENSIONS
SCALE: 1"=1'-0"



5 GATEWAY MONUMENT CAP
SCALE: 1"=1'-0"

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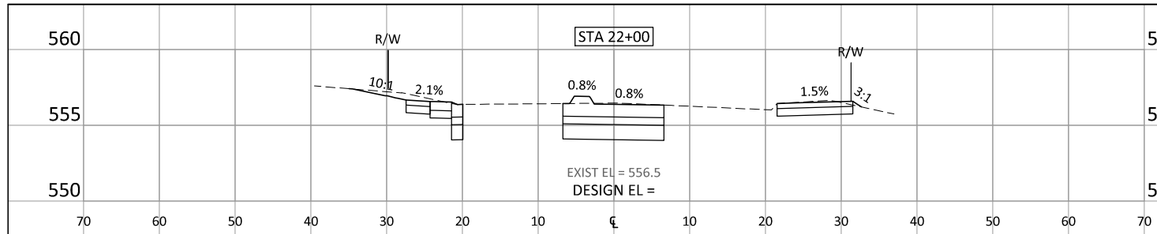
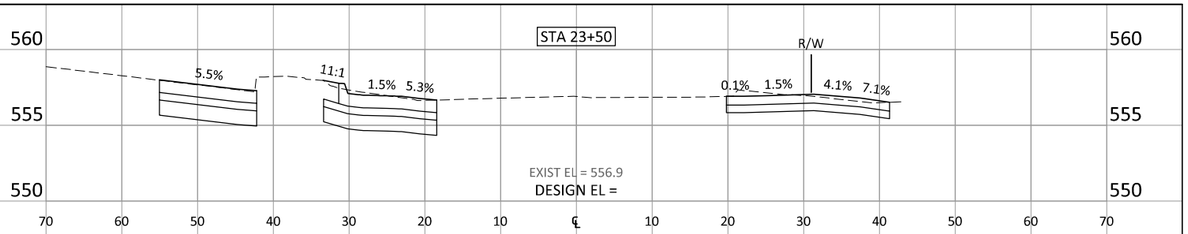
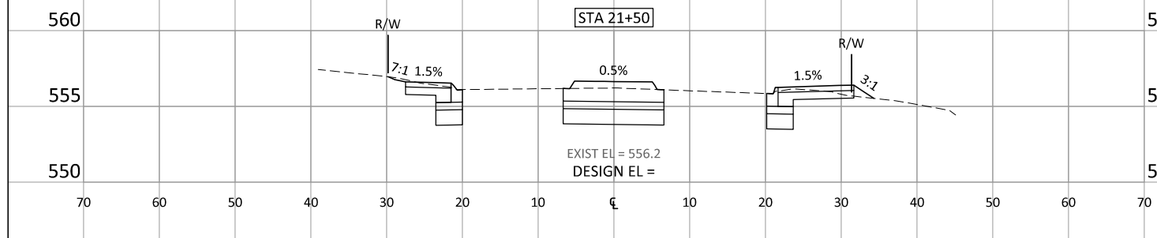
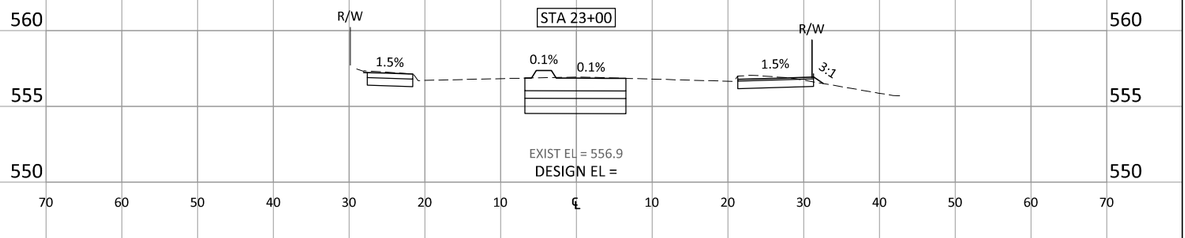
LANDSCAPE DETAILS

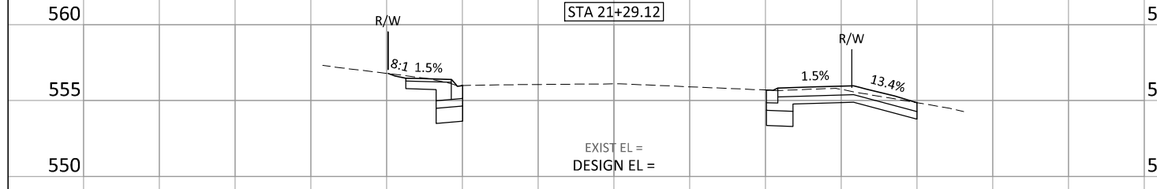
SHEET U.09

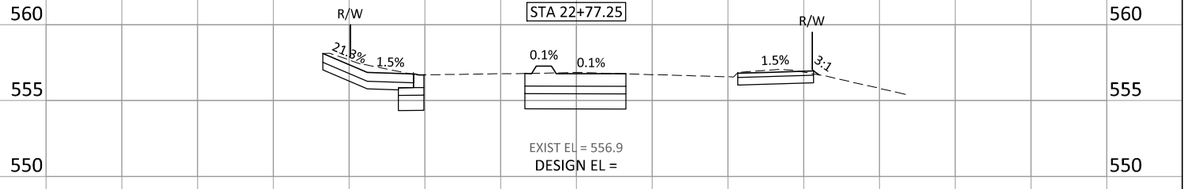


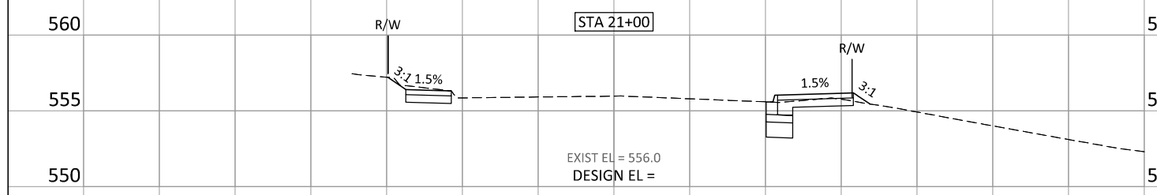


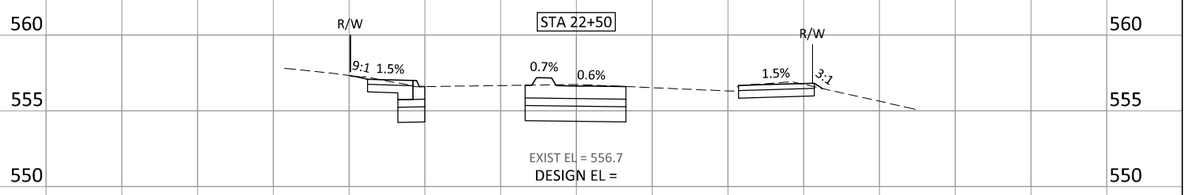


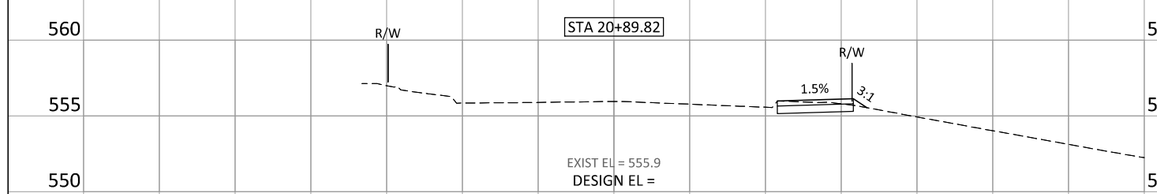


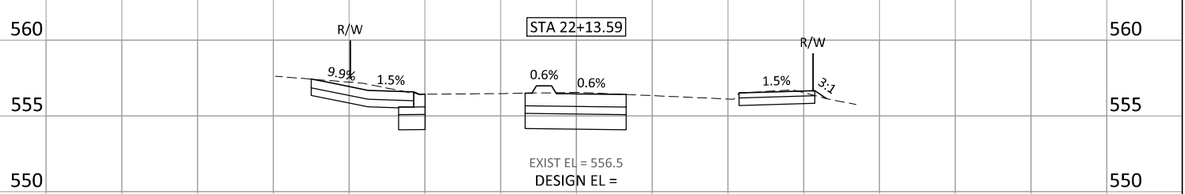












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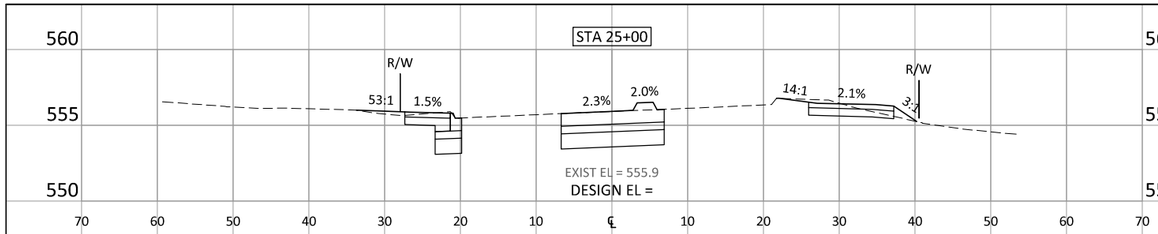
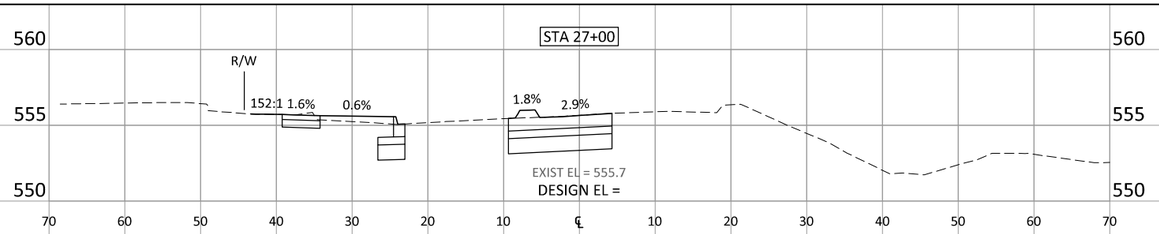
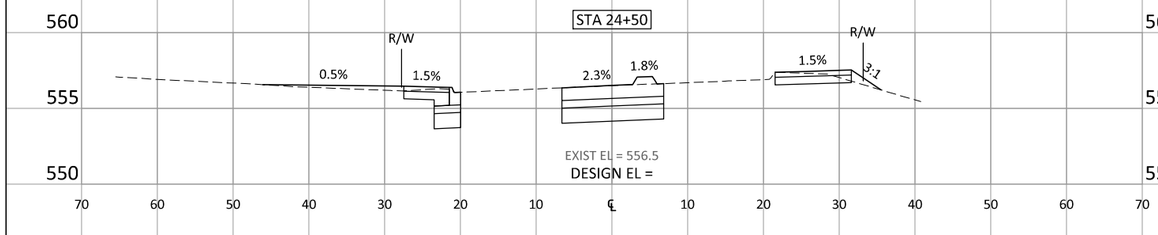
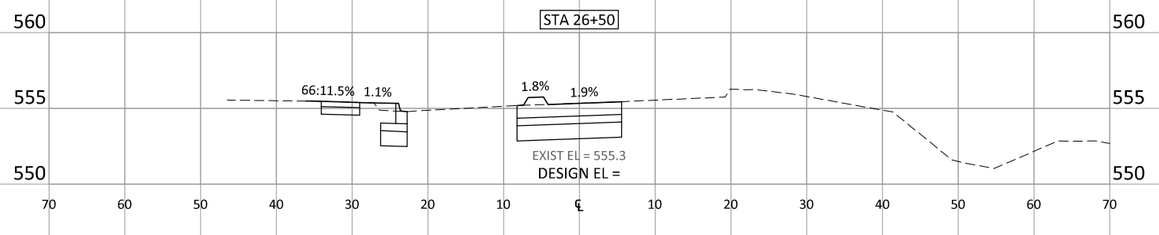
CROSS SECTIONS - MISSISSIPPI DRIVE

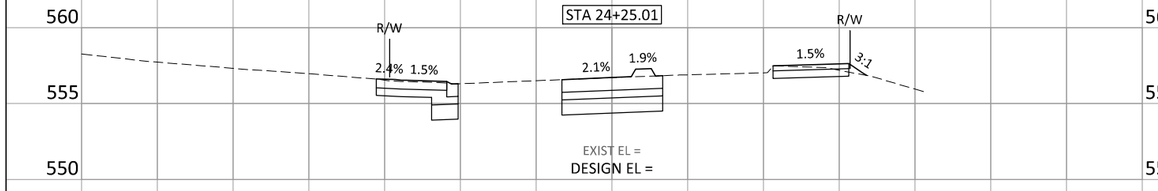
SHEET W.01

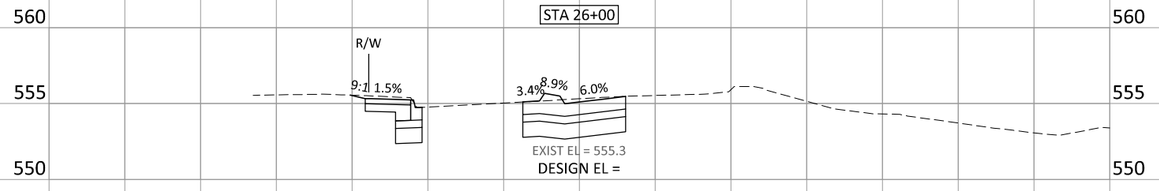


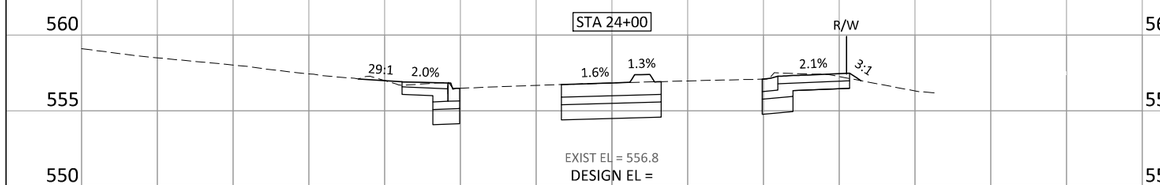


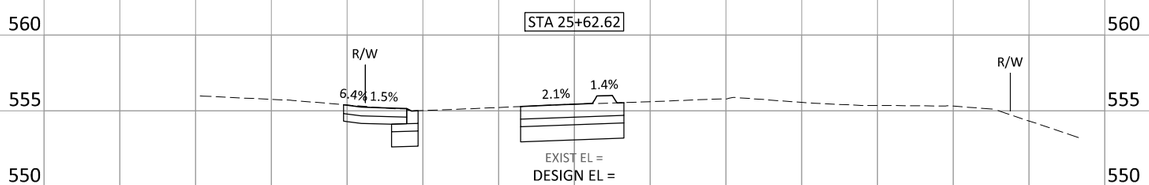


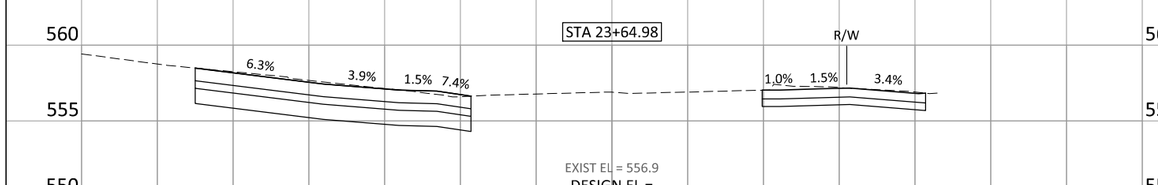


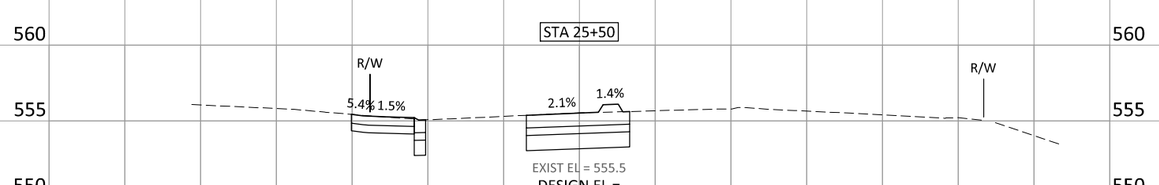












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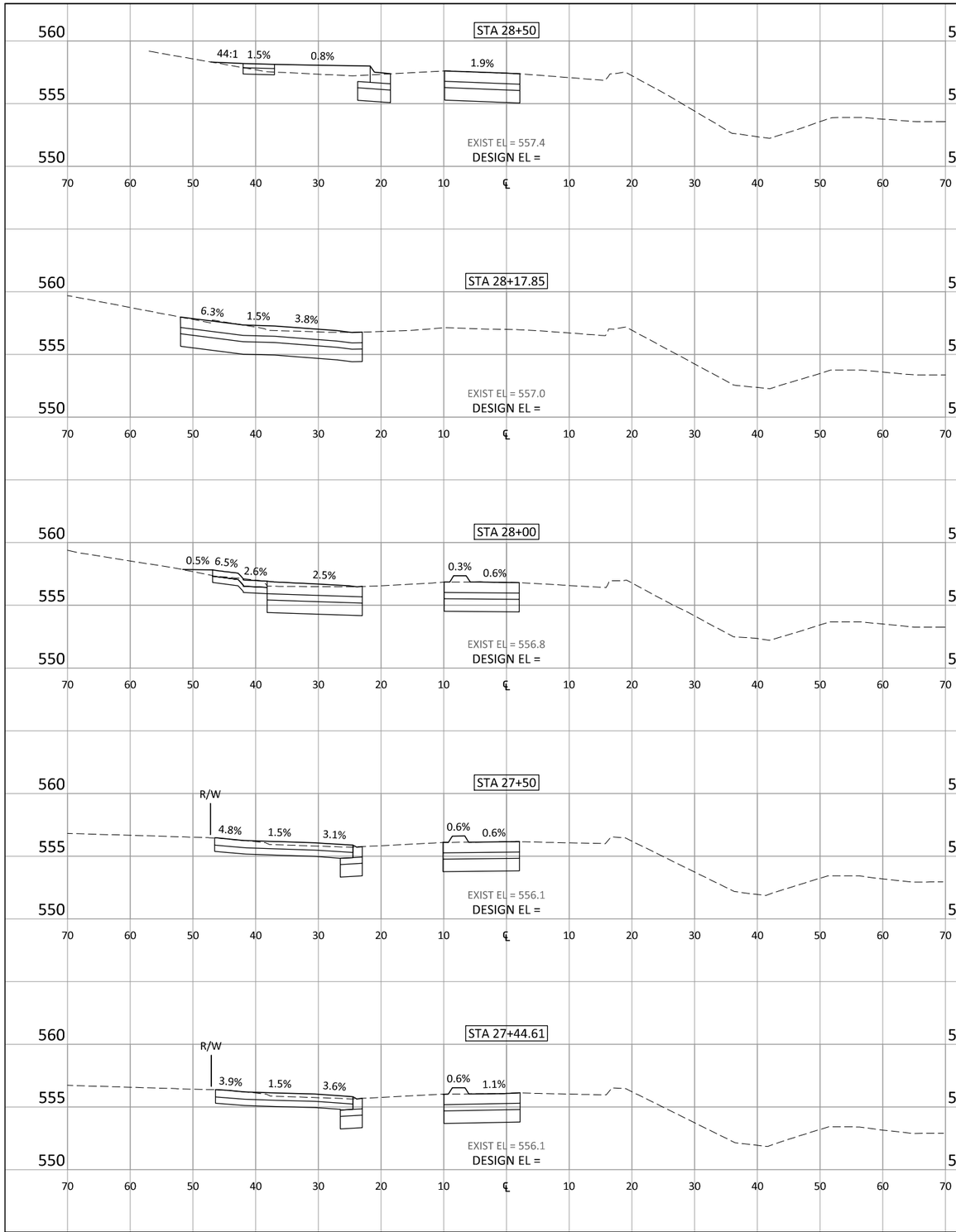
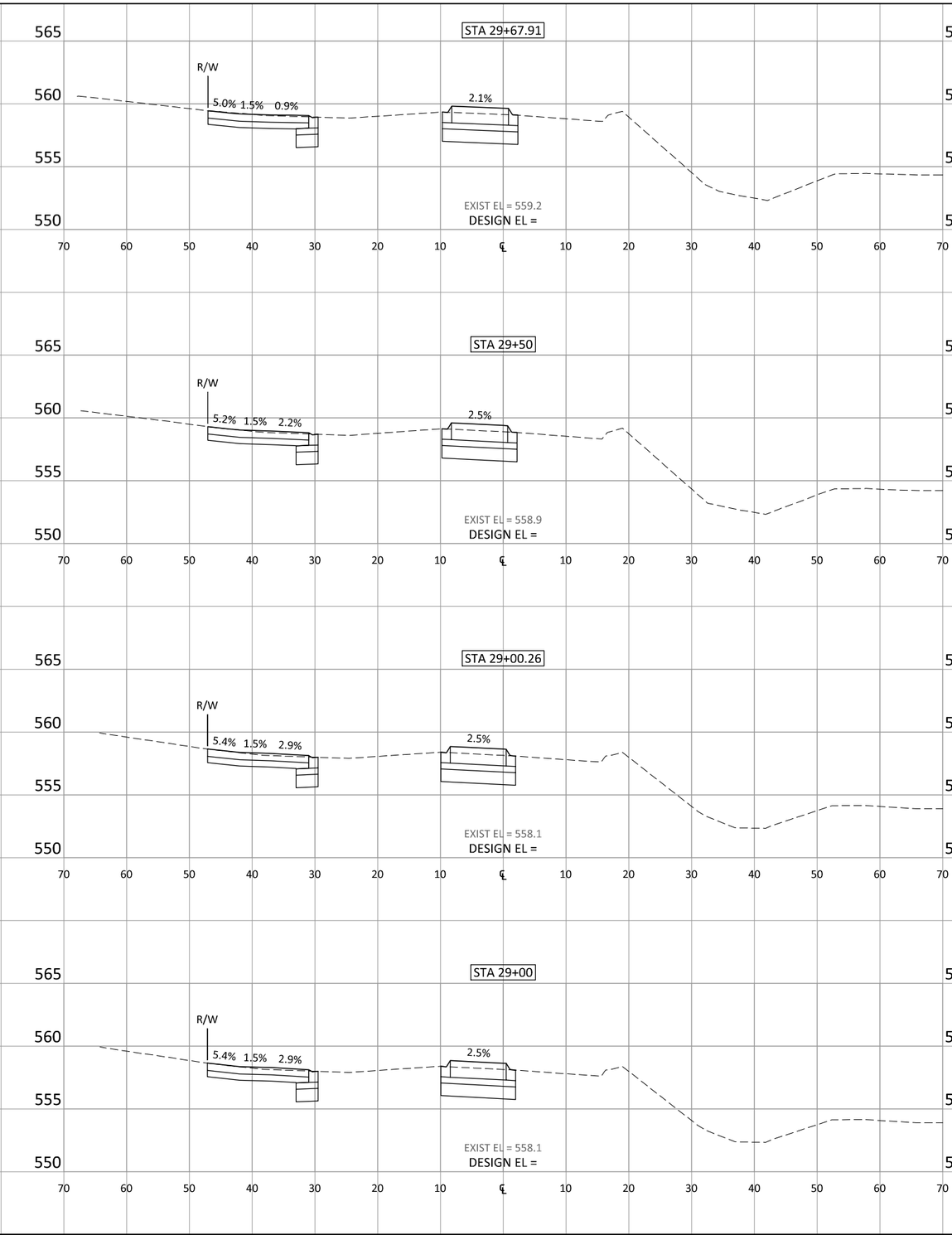
CROSS SECTIONS - MISSISSIPPI DRIVE

SHEET W.02





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MUSCATINE, IOWA
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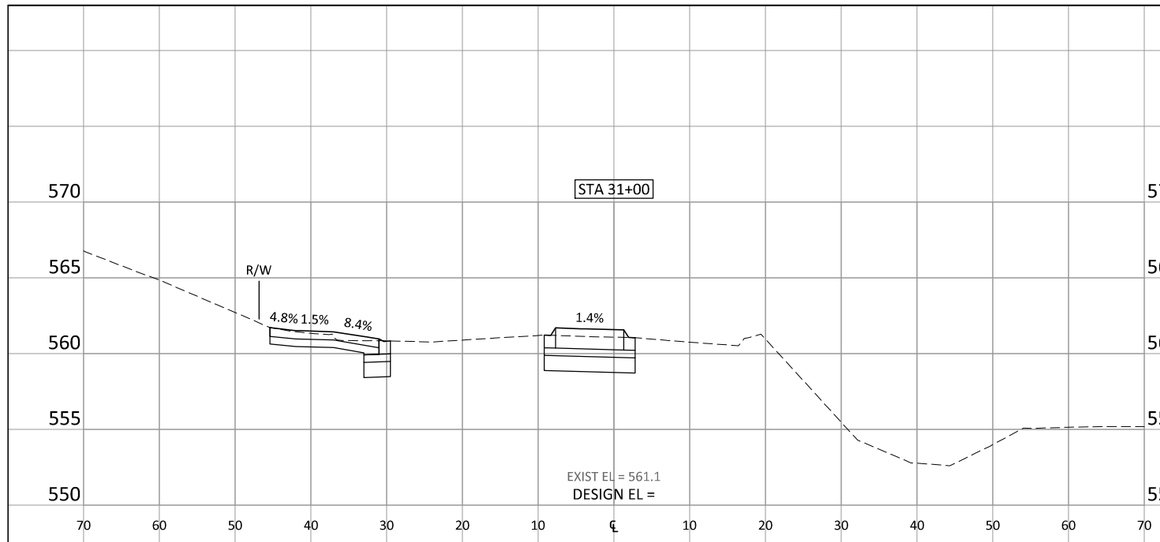
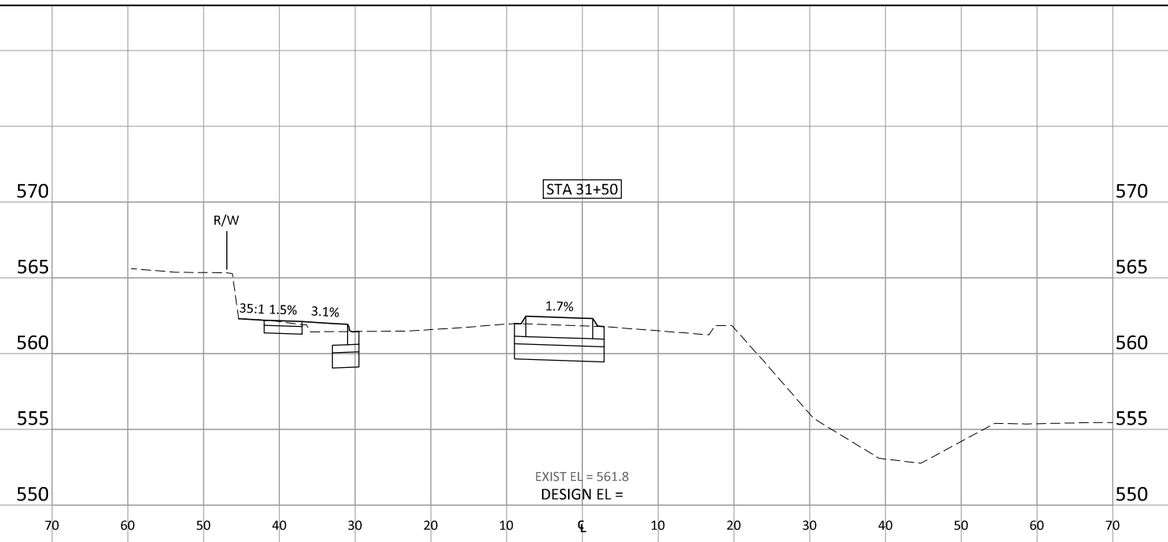
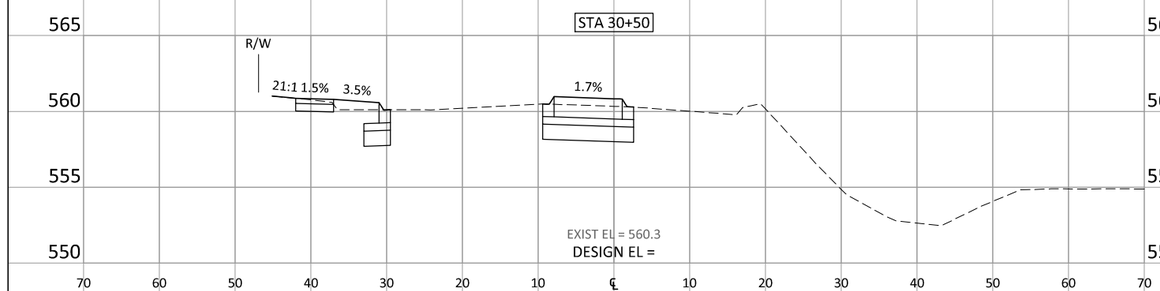
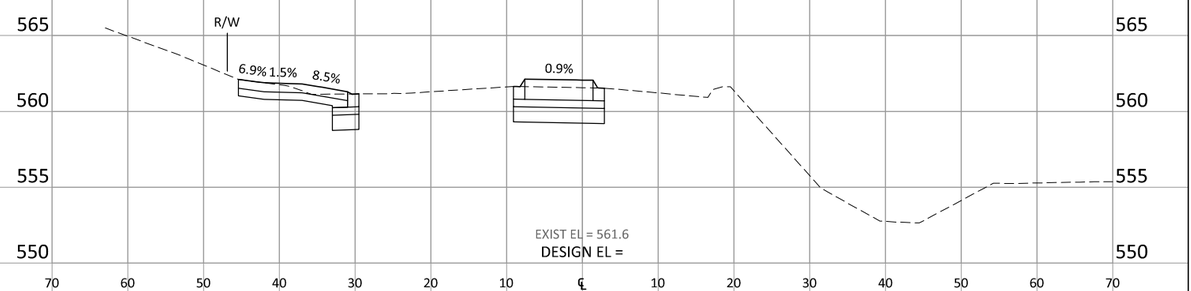
CROSS SECTIONS - MISSISSIPPI DRIVE

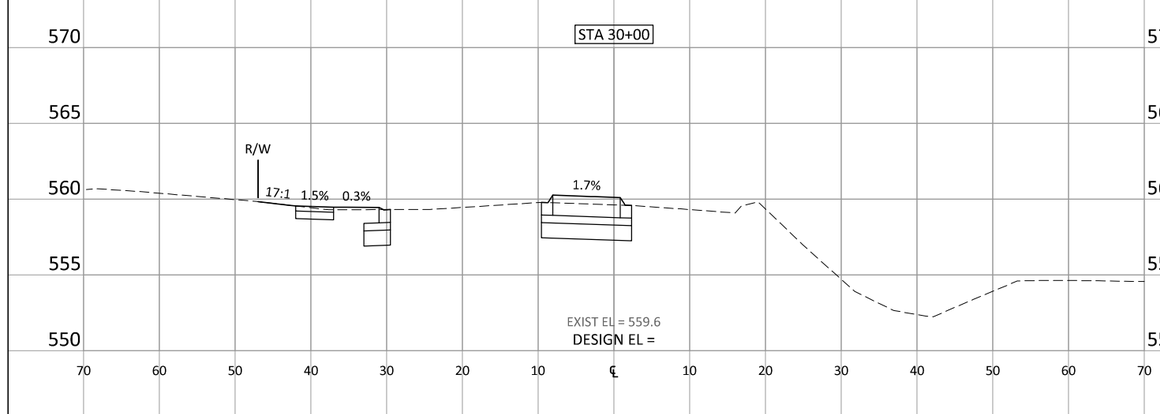
SHEET W.03











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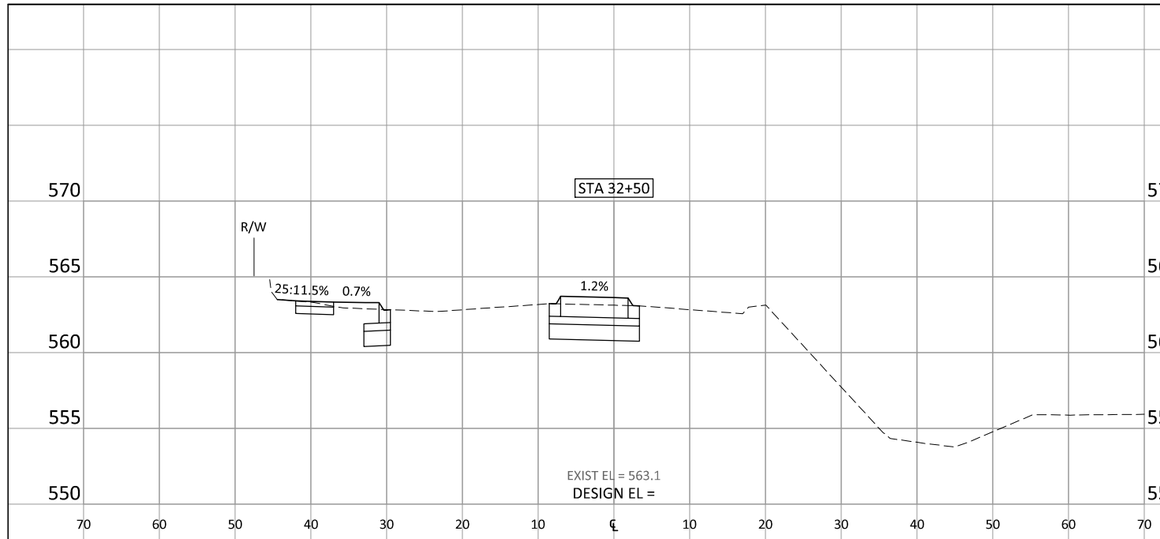
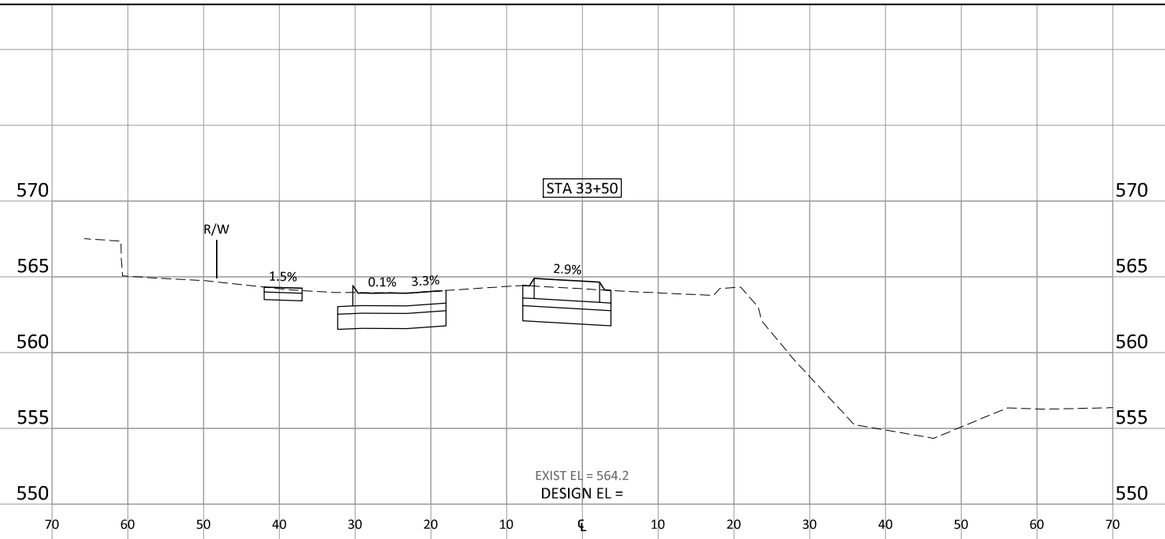
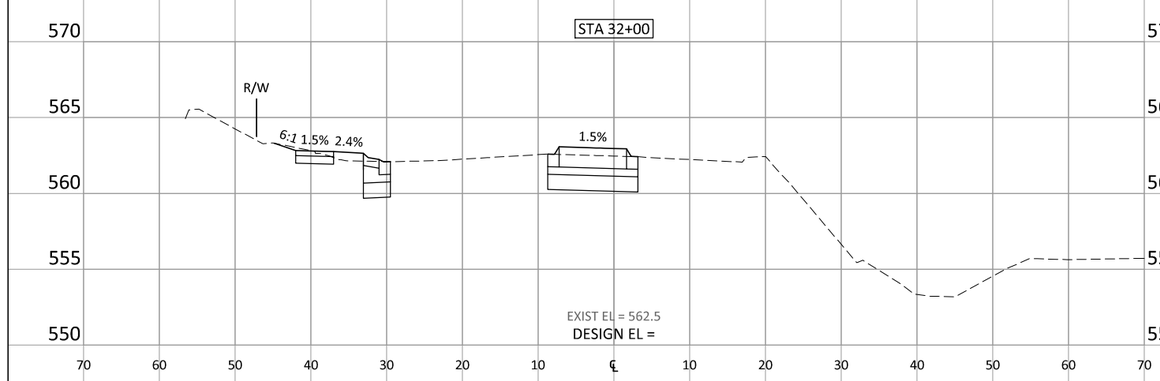
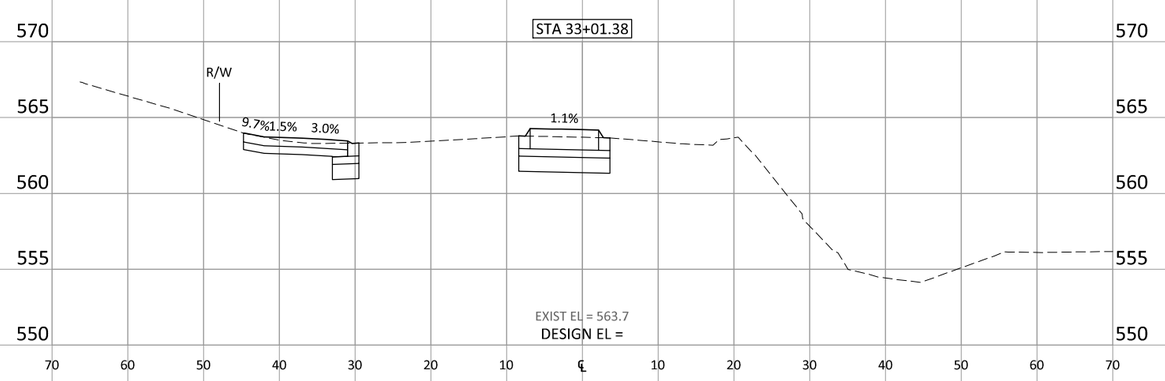
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CROSS SECTIONS - MISSISSIPPI DRIVE

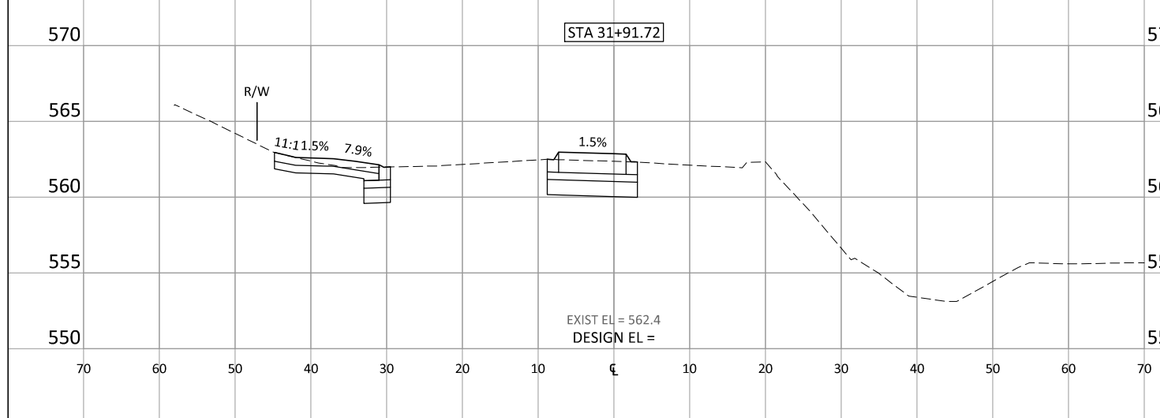
SHEET W.04

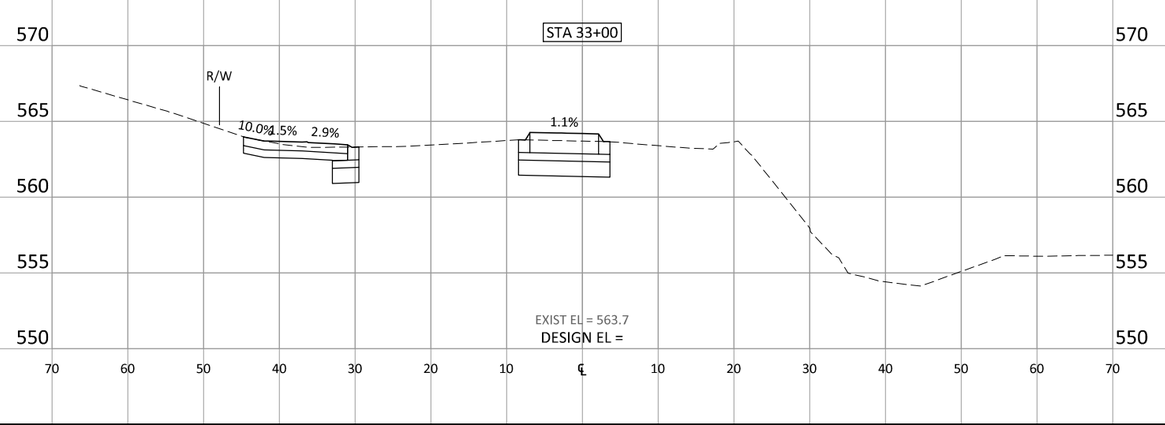












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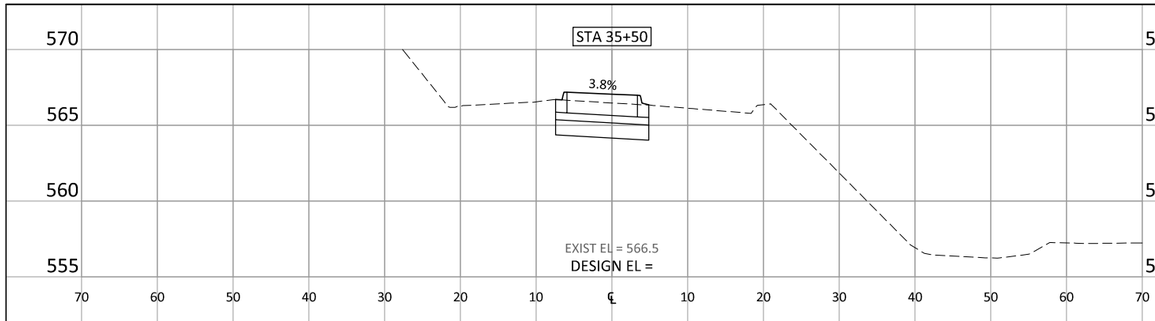
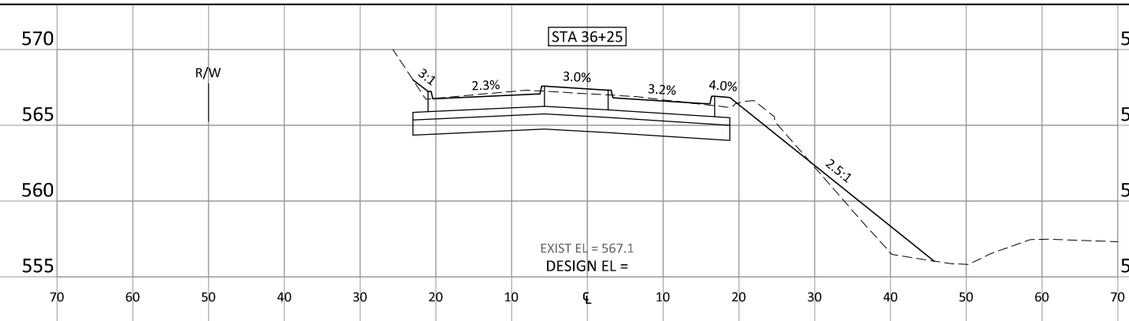
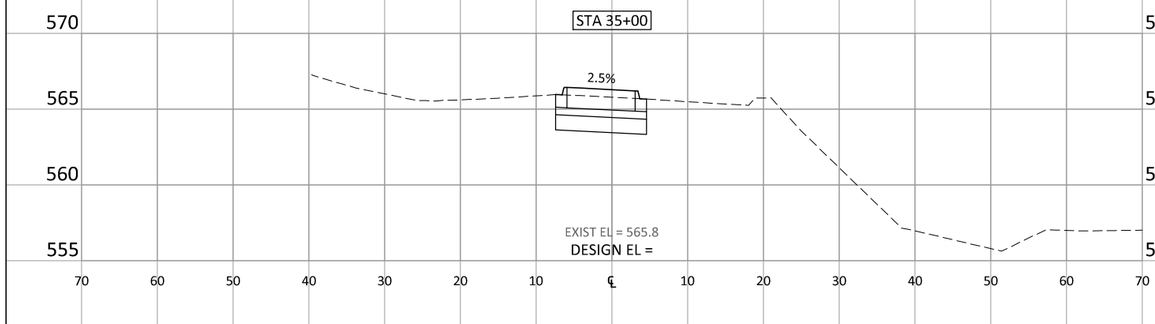
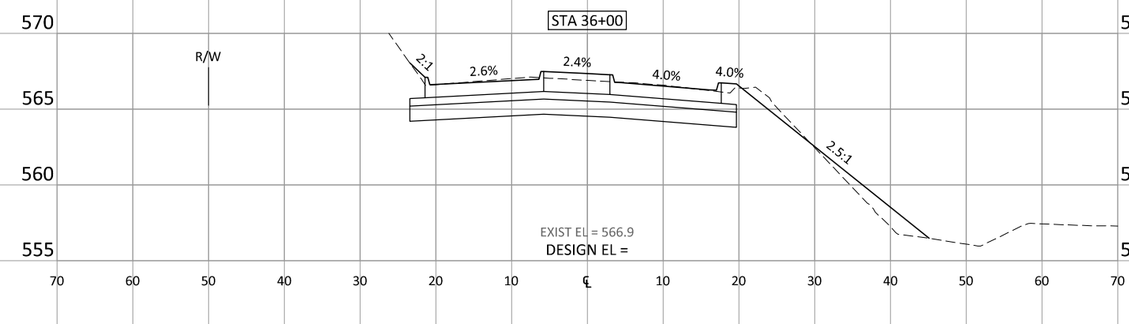
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CROSS SECTIONS - MISSISSIPPI DRIVE

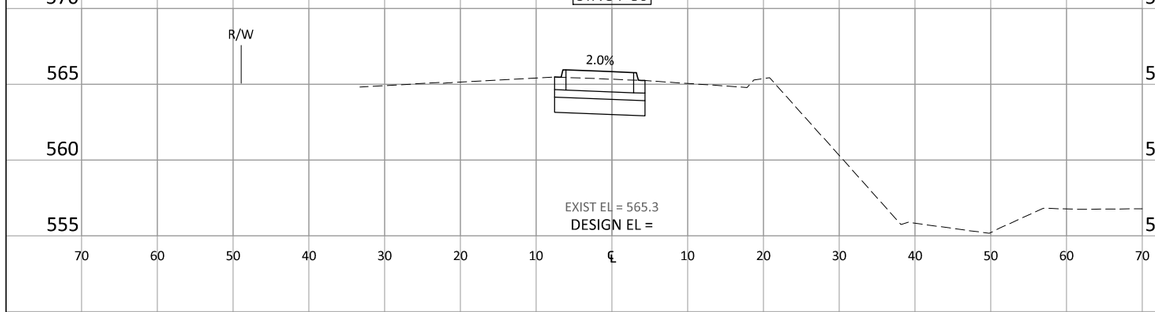
SHEET W.05

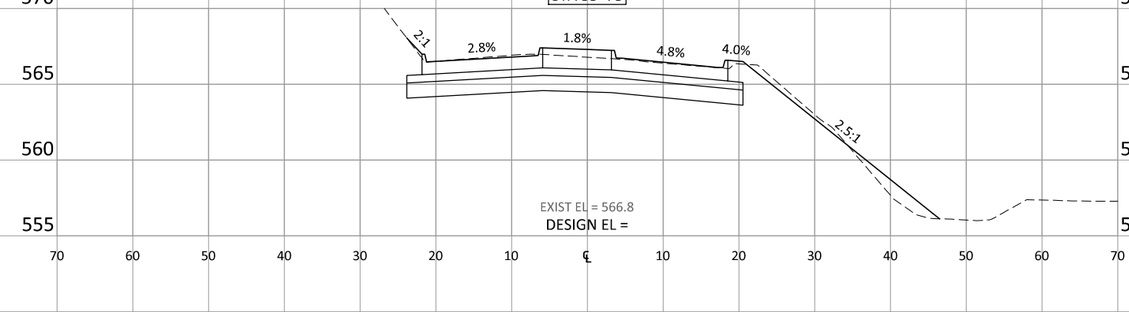


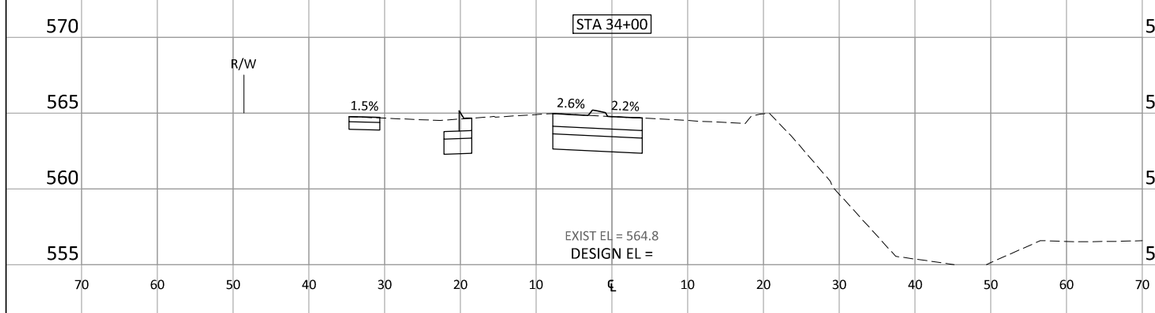


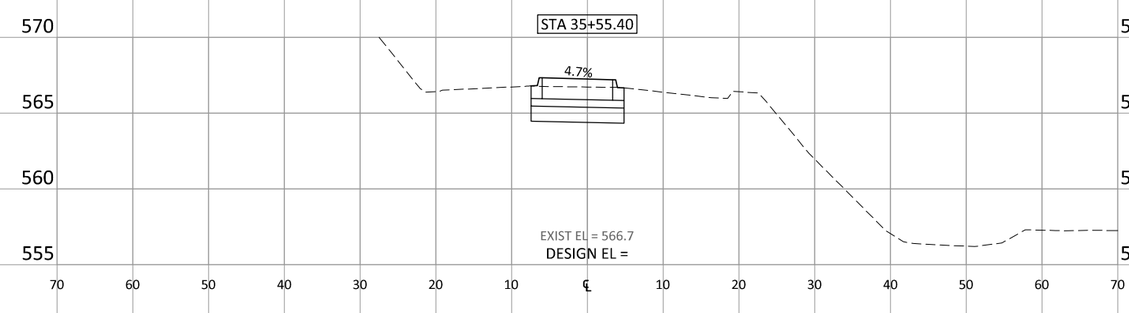












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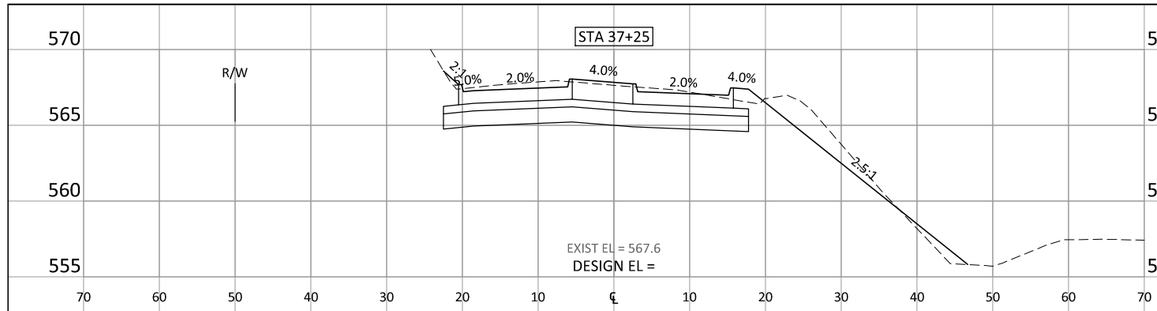
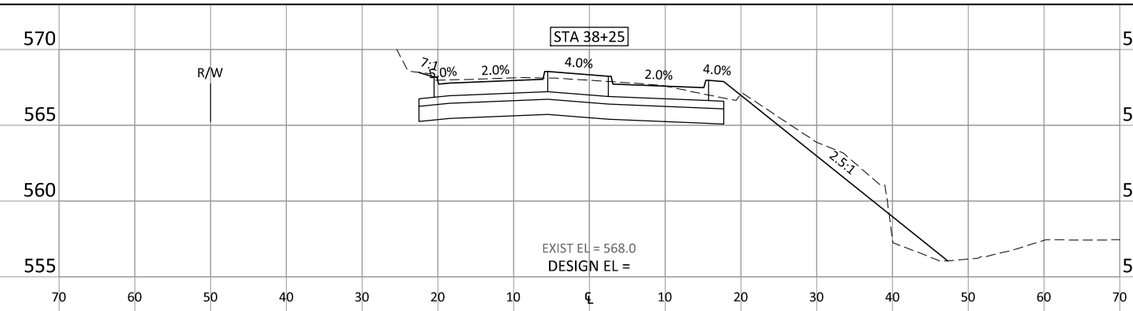
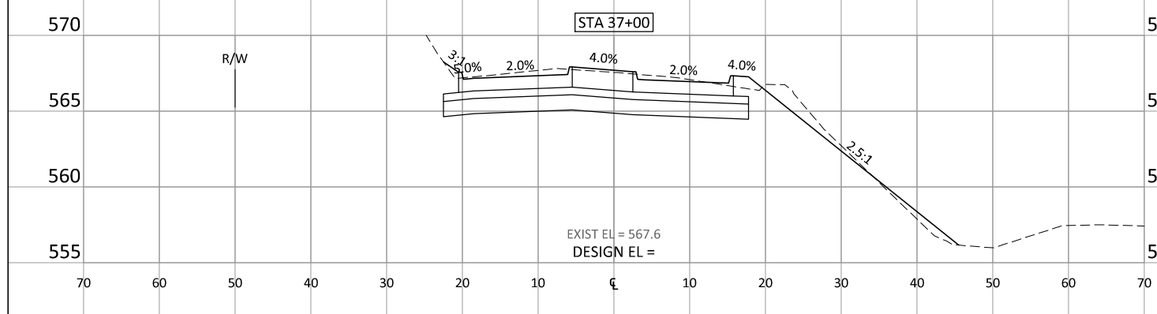
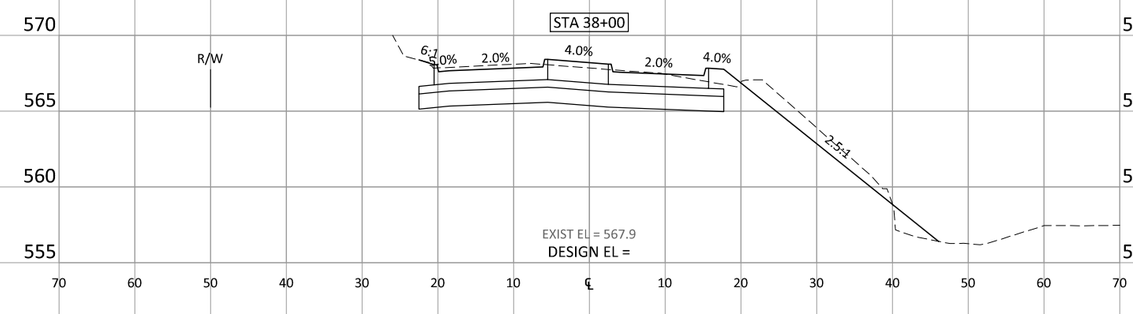
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CROSS SECTIONS - MISSISSIPPI DRIVE

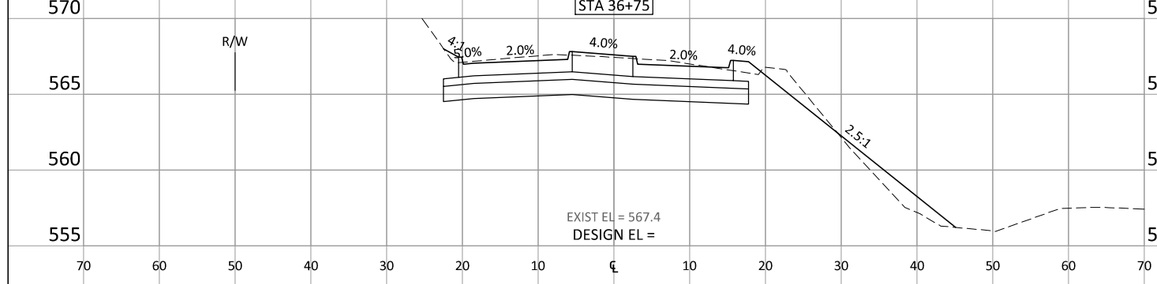
SHEET W.06

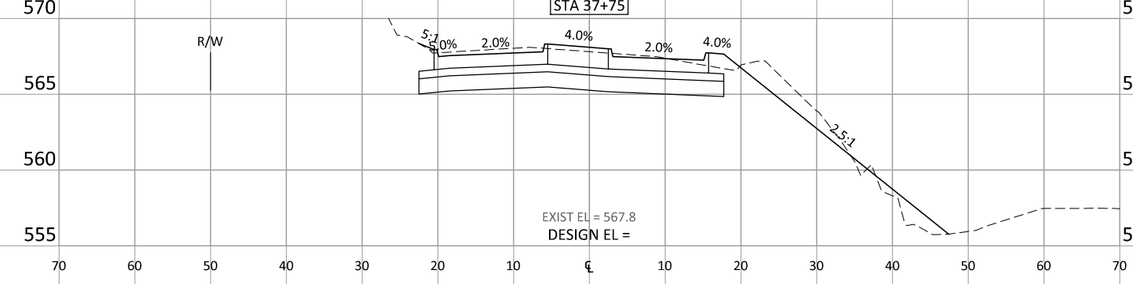


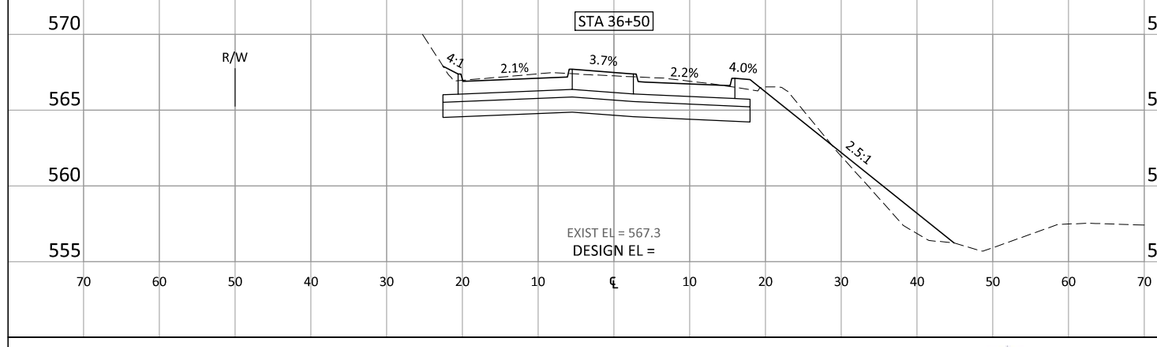


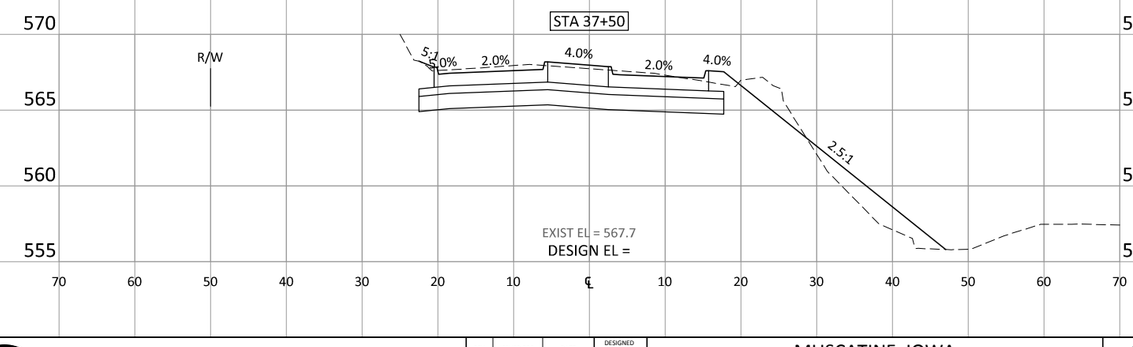












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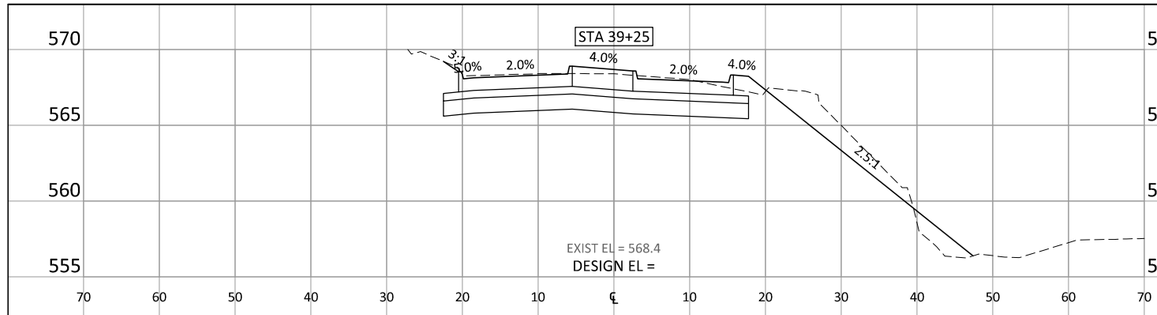
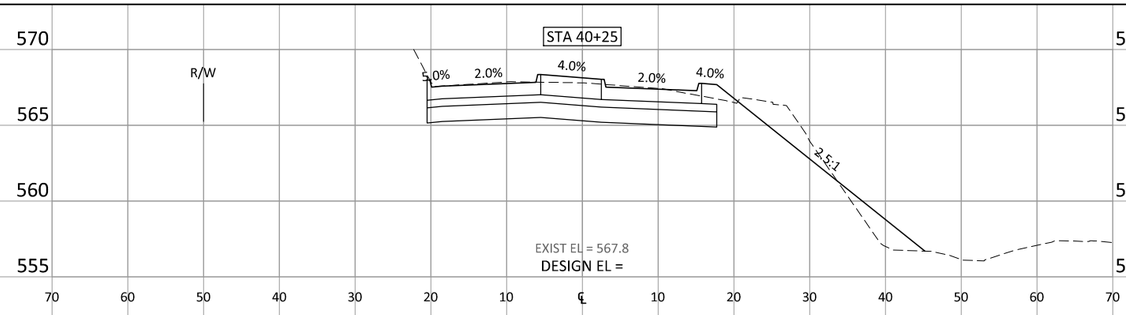
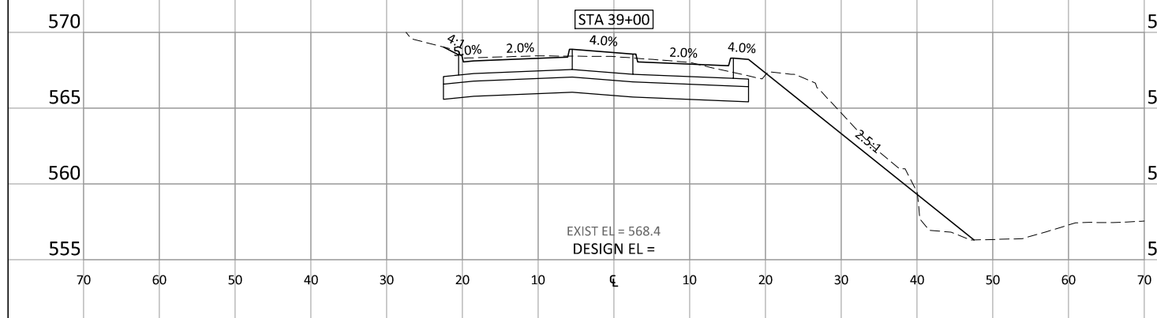
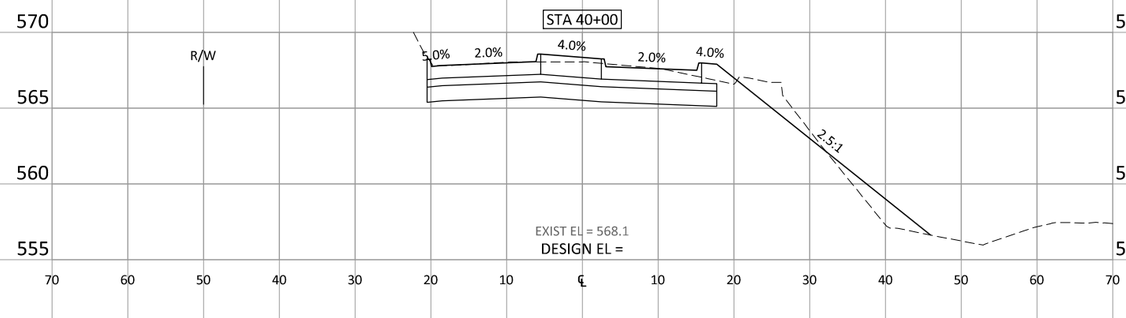
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CROSS SECTIONS - MISSISSIPPI DRIVE

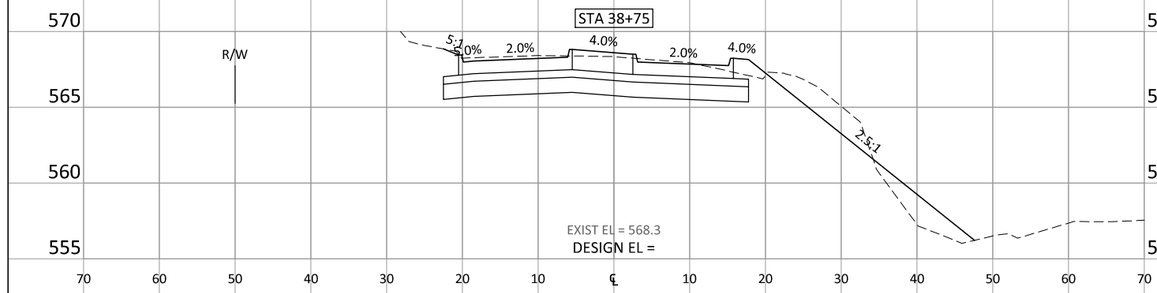
SHEET W.07

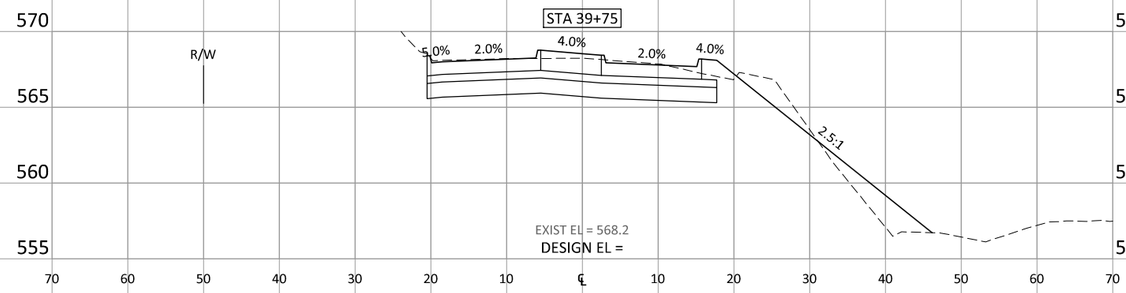


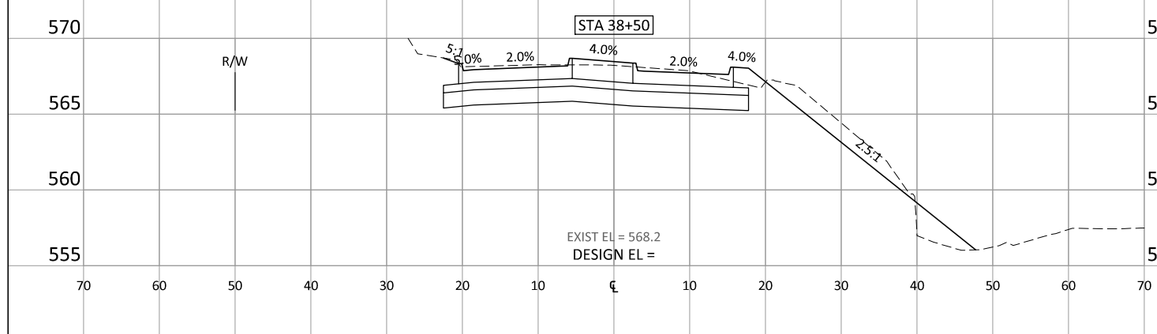


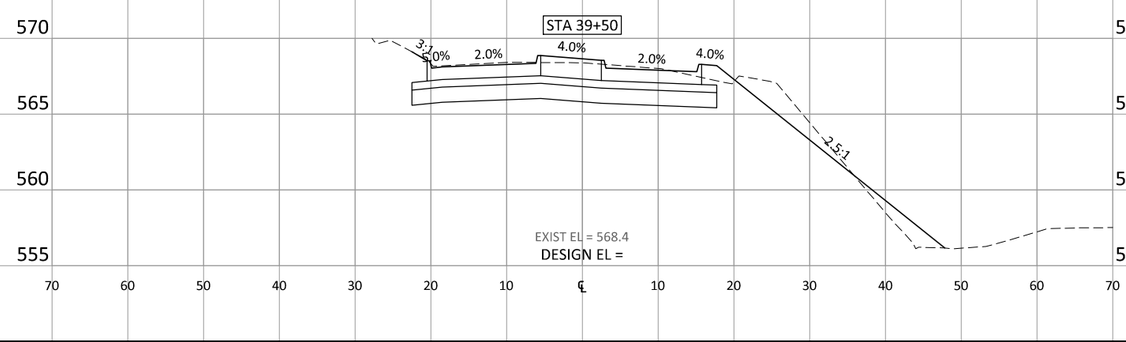












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MUSCATINE, IOWA
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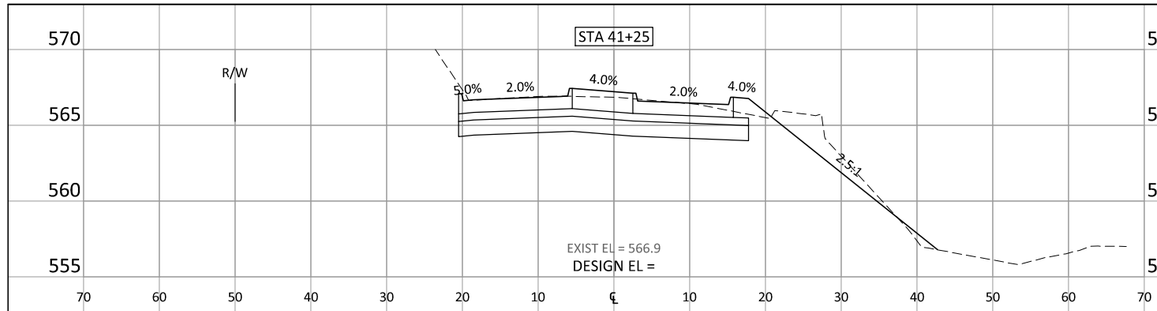
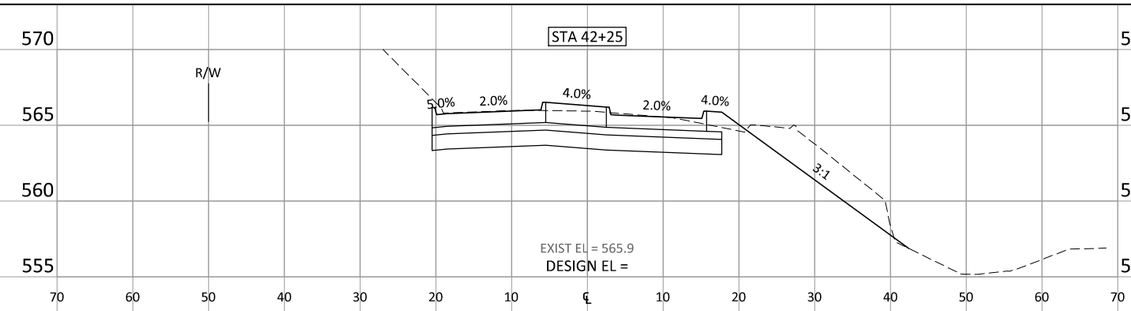
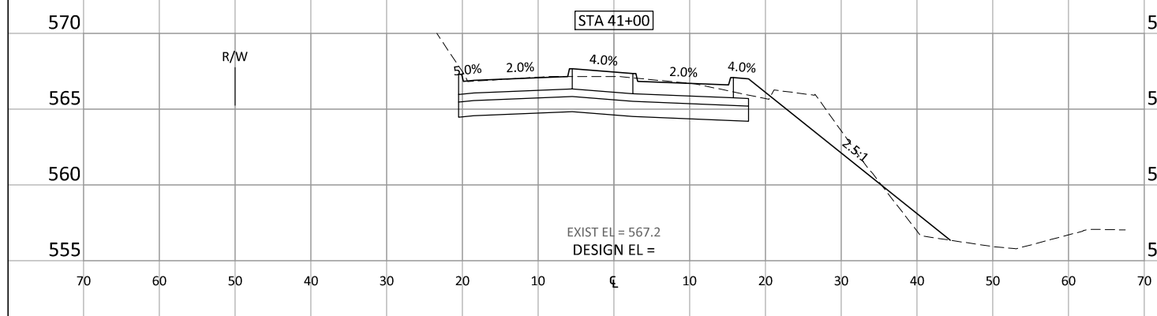
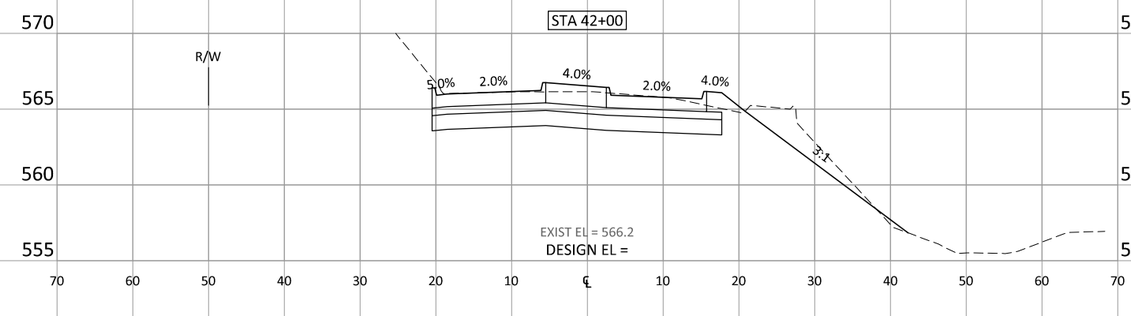
CROSS SECTIONS - MISSISSIPPI DRIVE

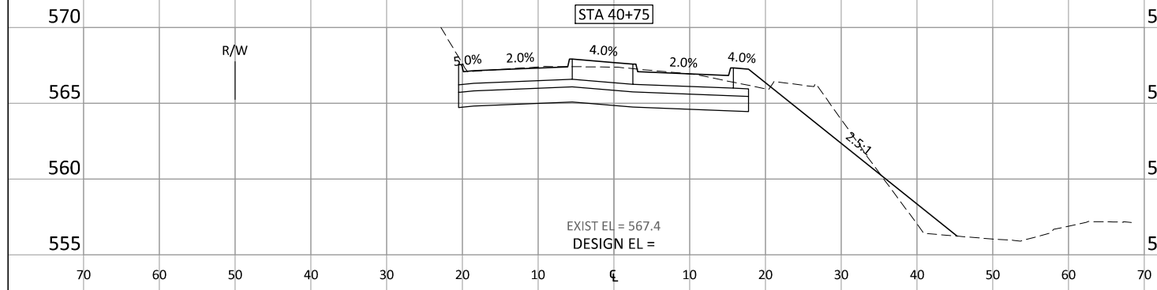
SHEET W.08

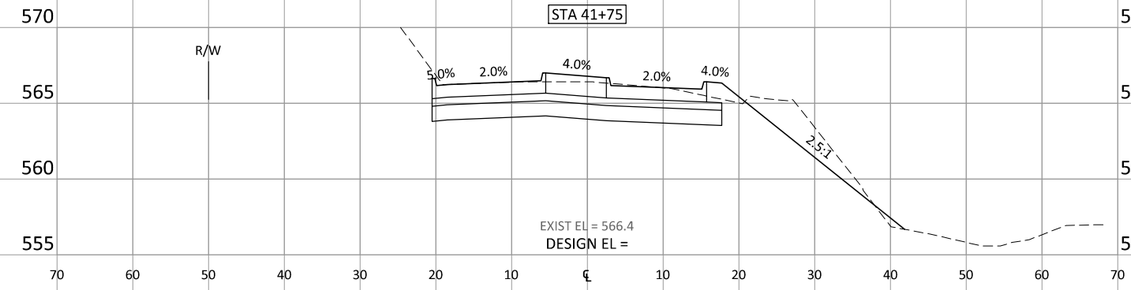


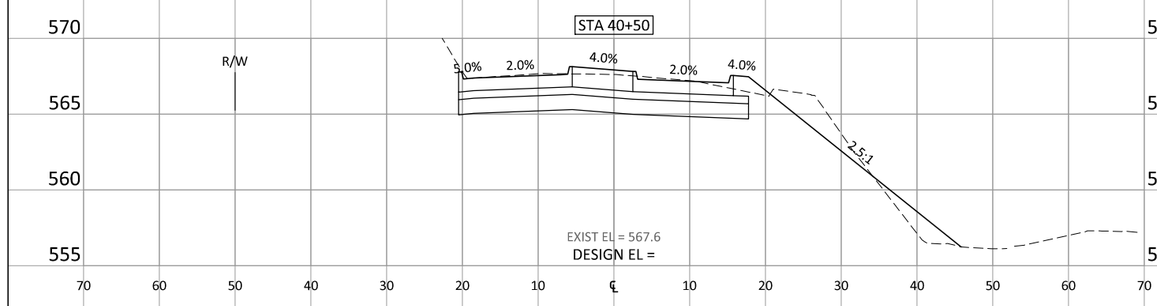


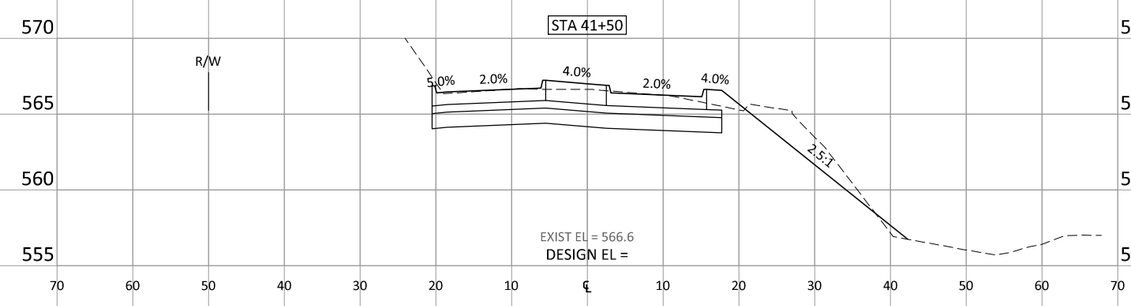












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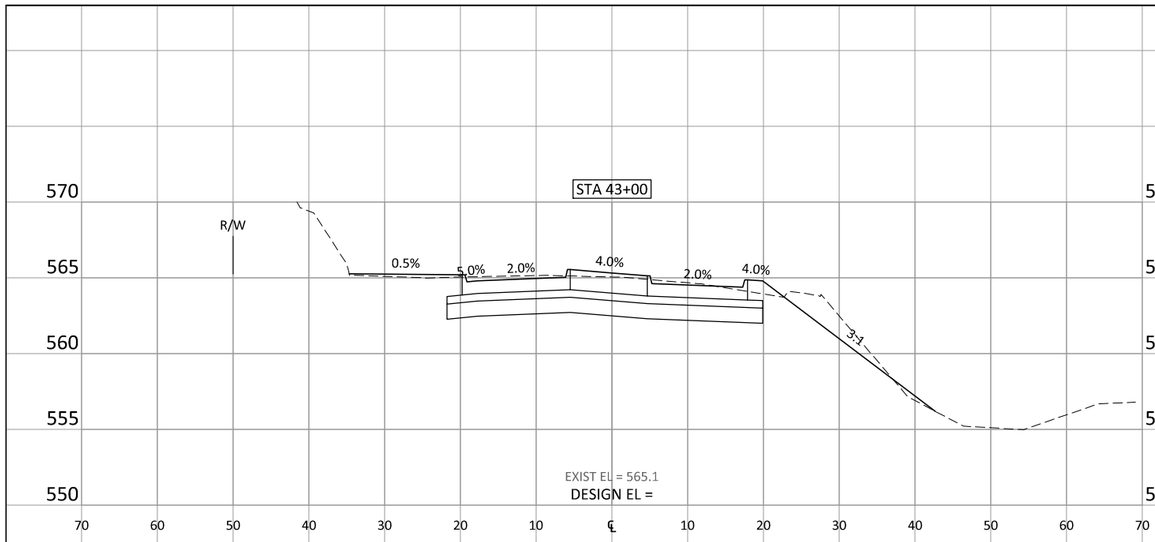
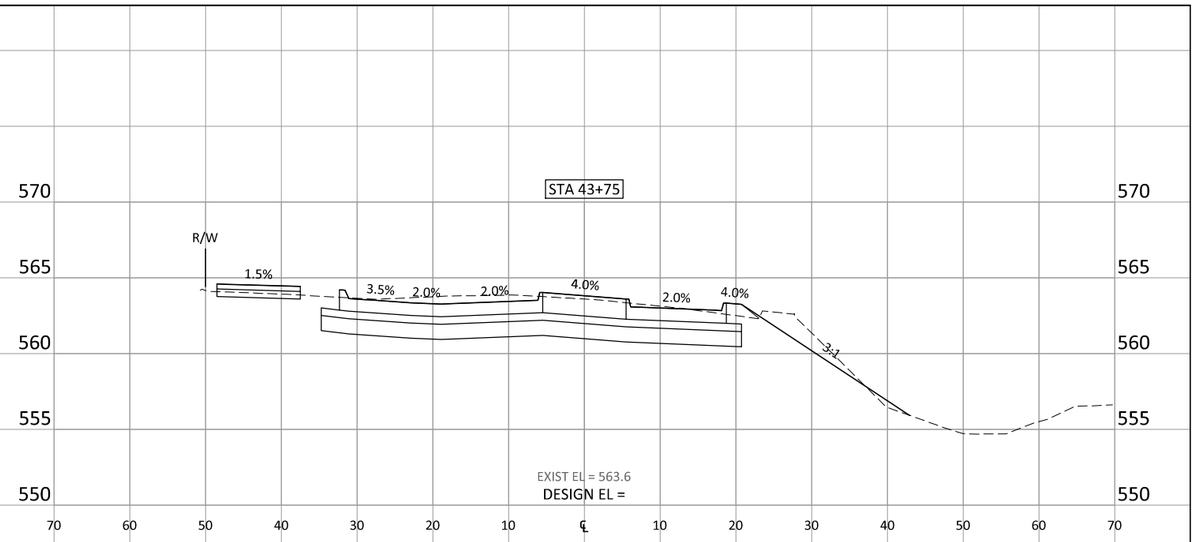
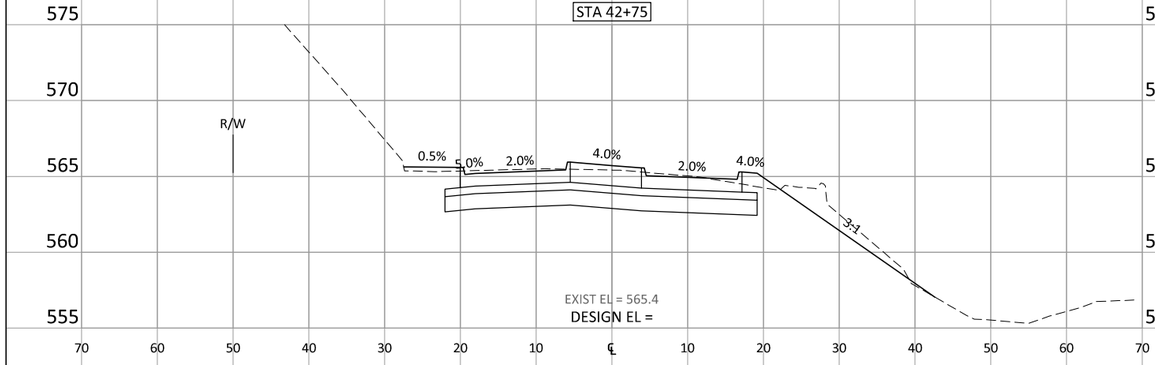
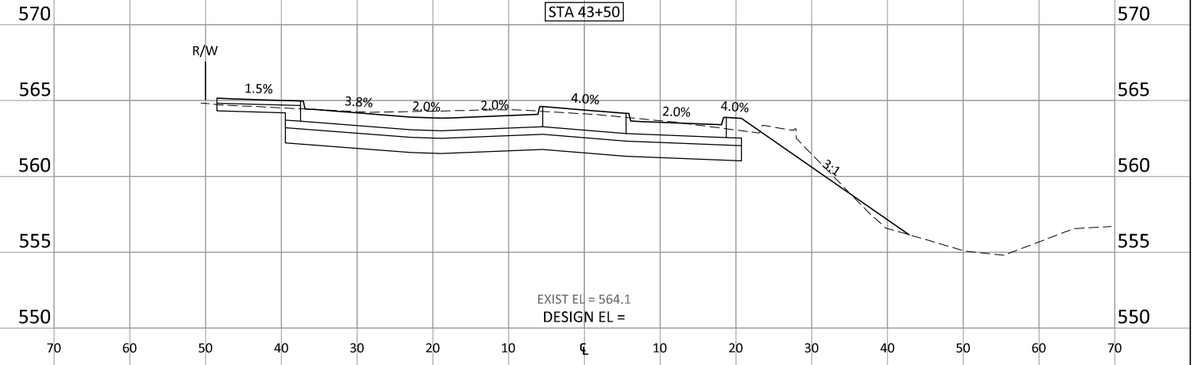
CROSS SECTIONS - MISSISSIPPI DRIVE

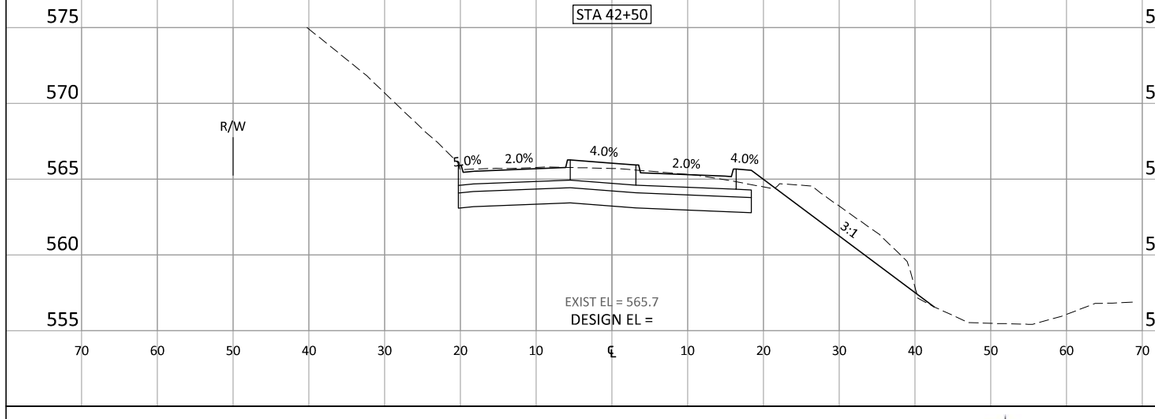
SHEET W.09

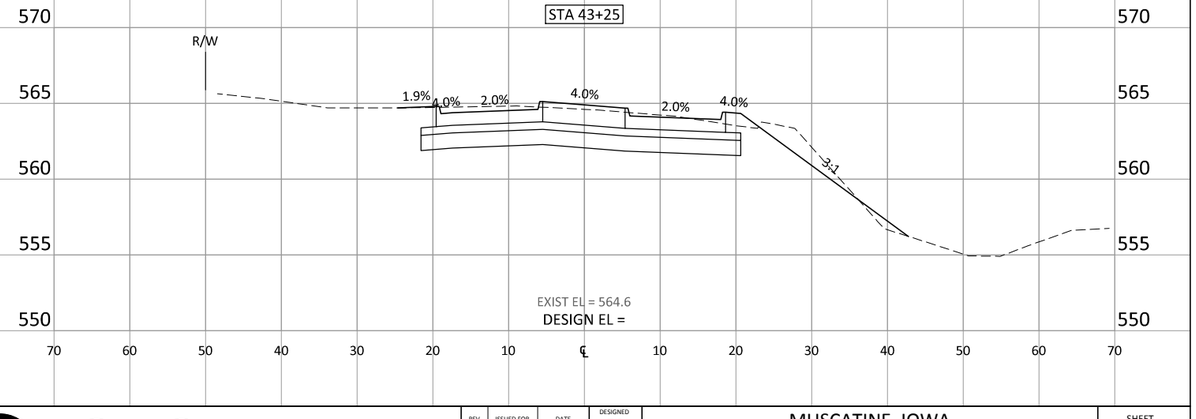












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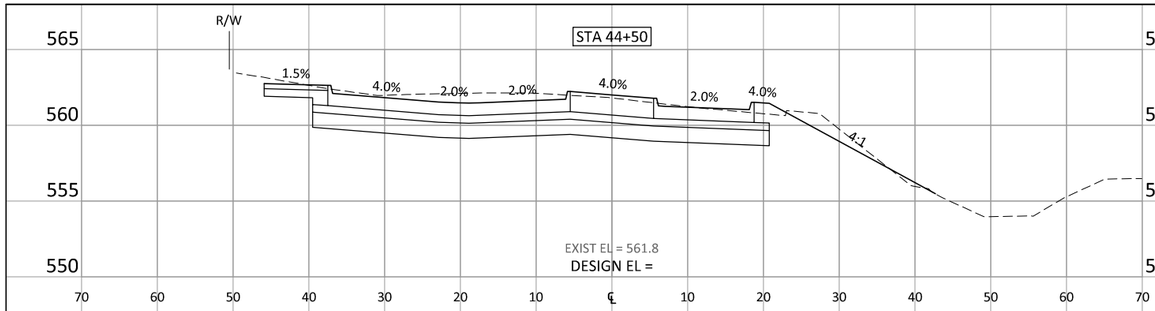
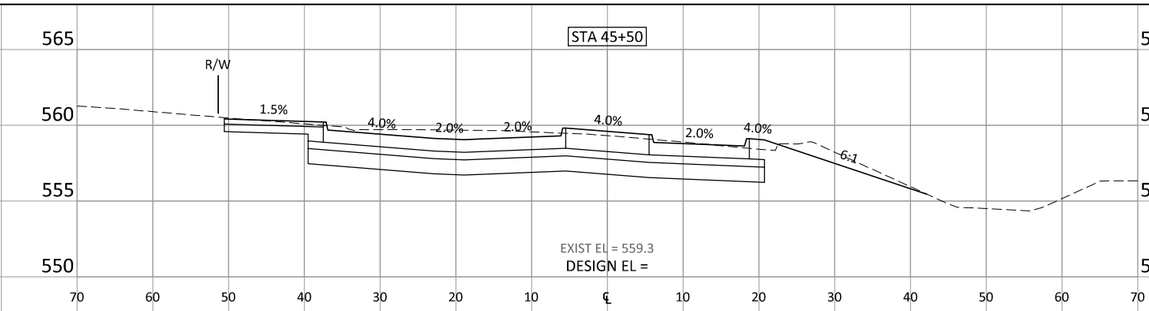
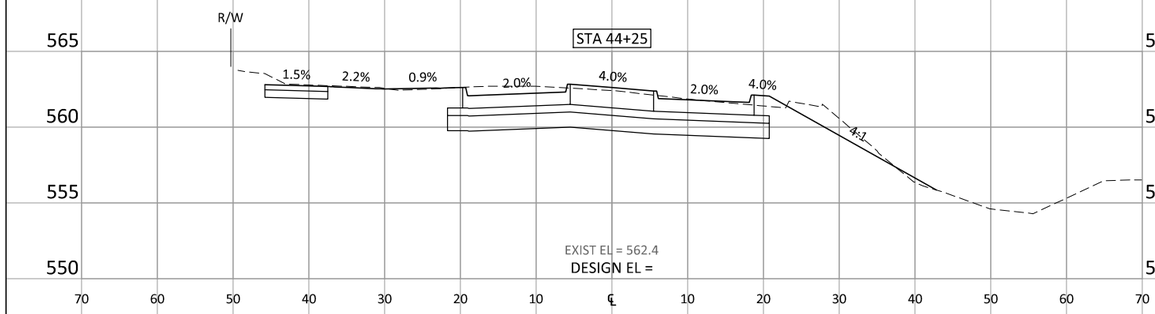
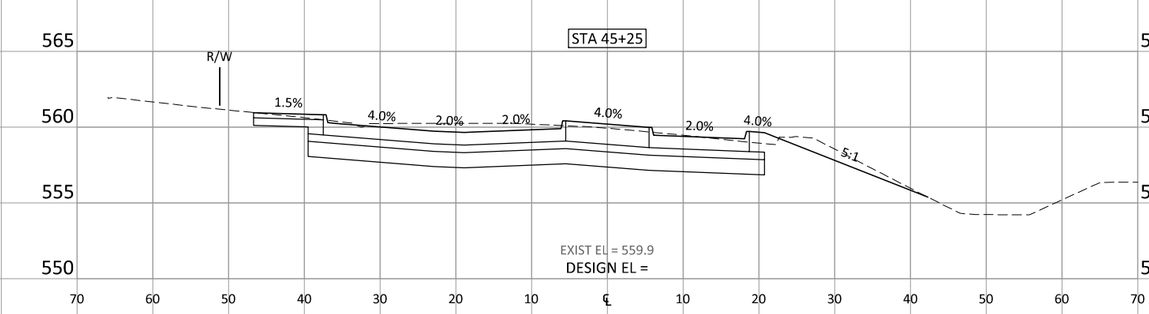
CROSS SECTIONS - MISSISSIPPI DRIVE

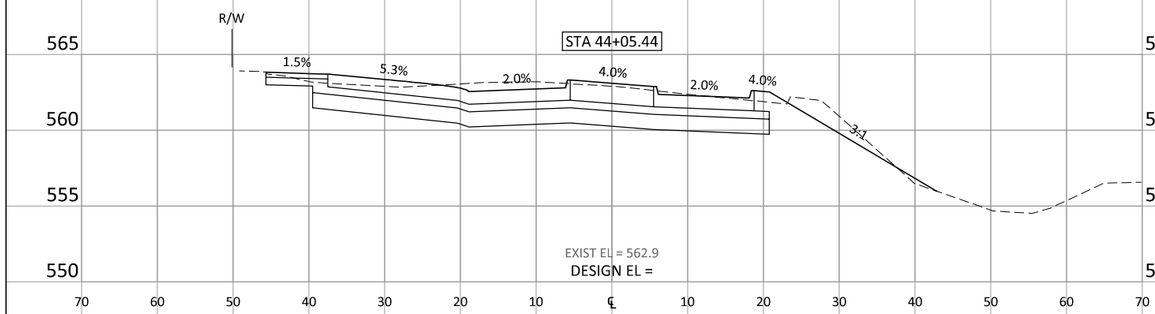
SHEET W.10

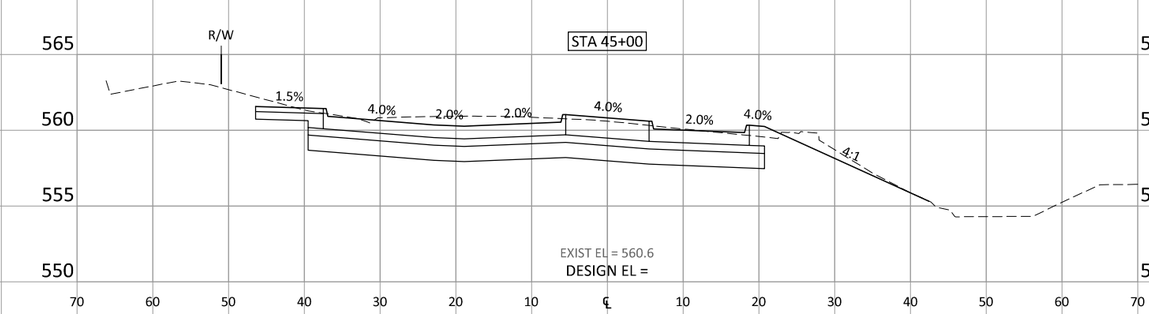


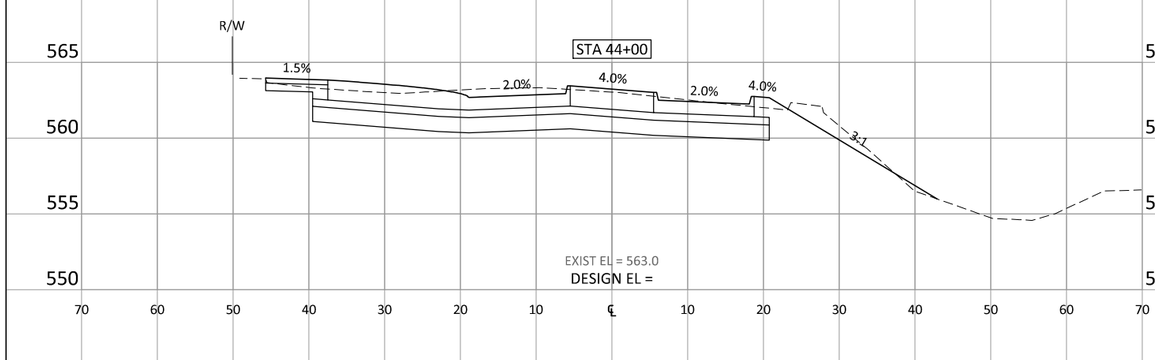


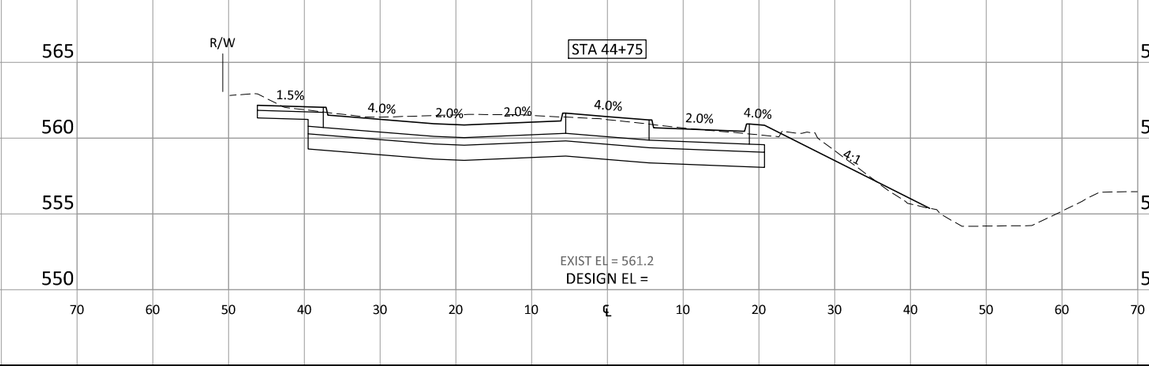












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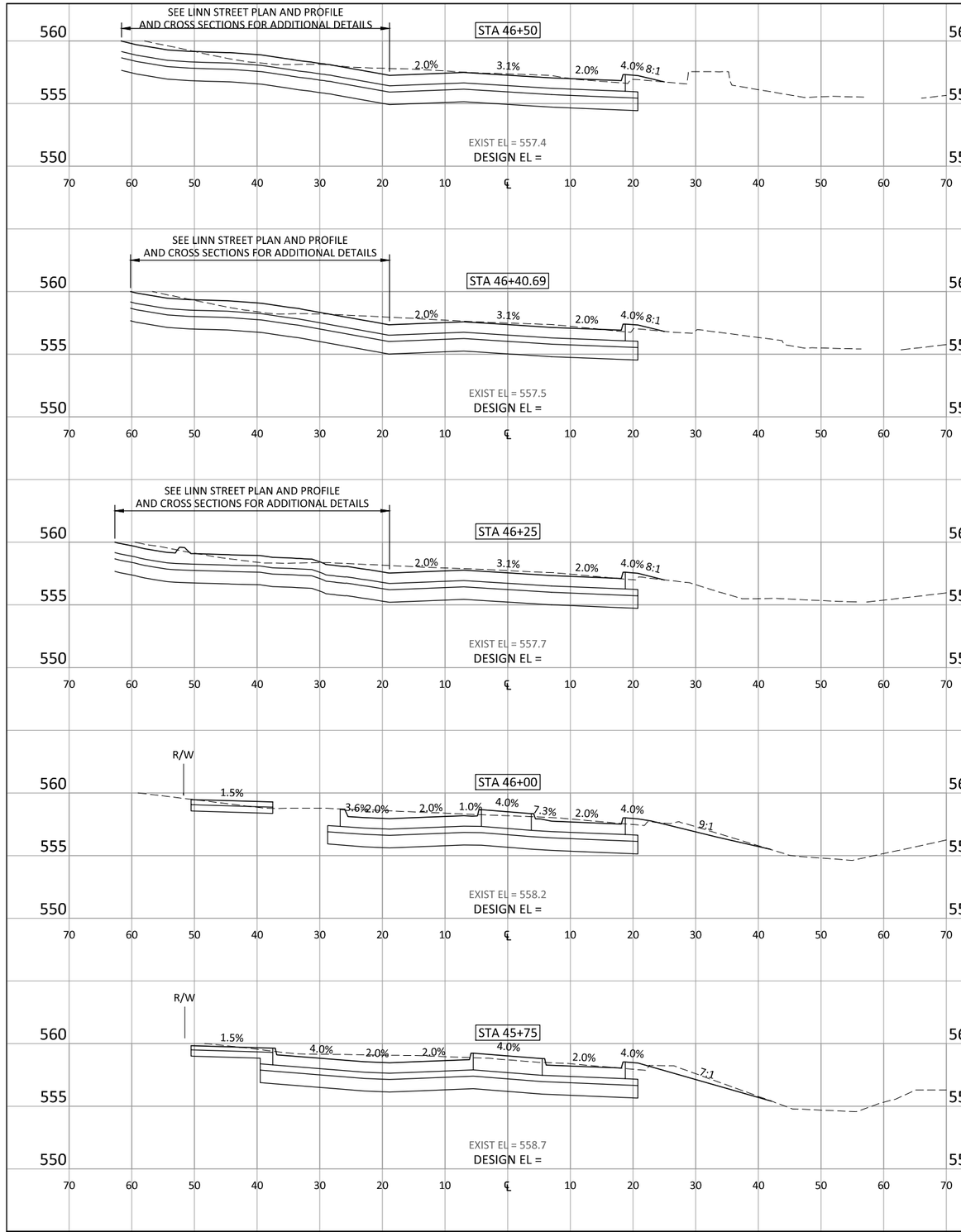
CHECKED KDM

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CROSS SECTIONS - MISSISSIPPI DRIVE

SHEET W.11



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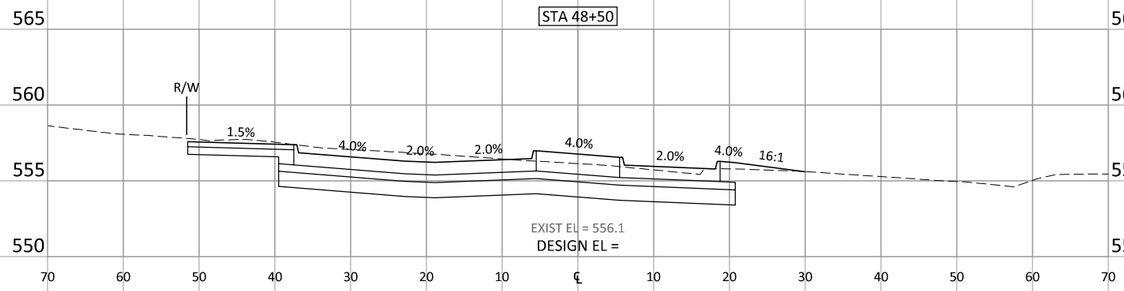
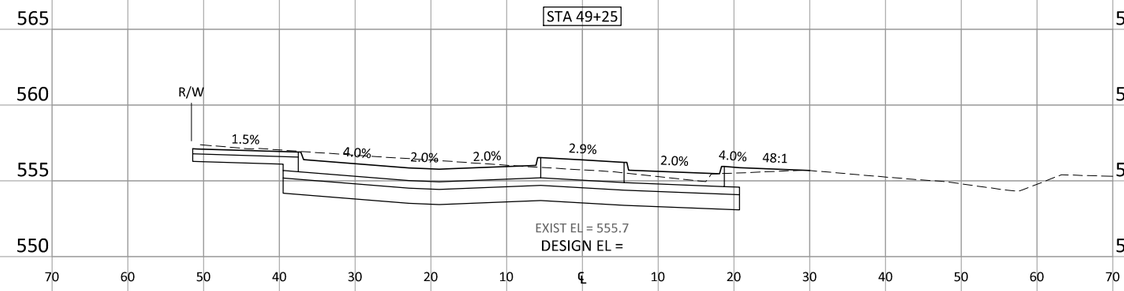
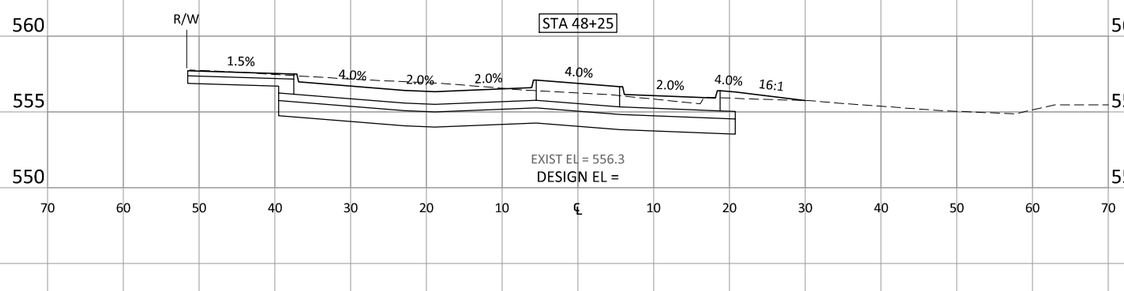
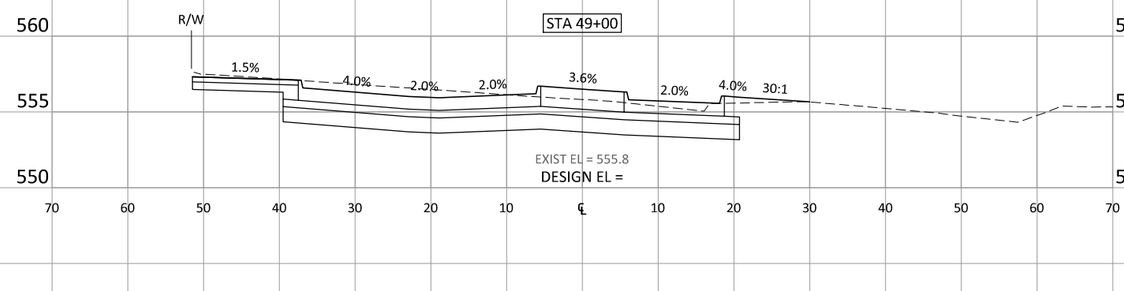
CROSS SECTIONS - MISSISSIPPI DRIVE

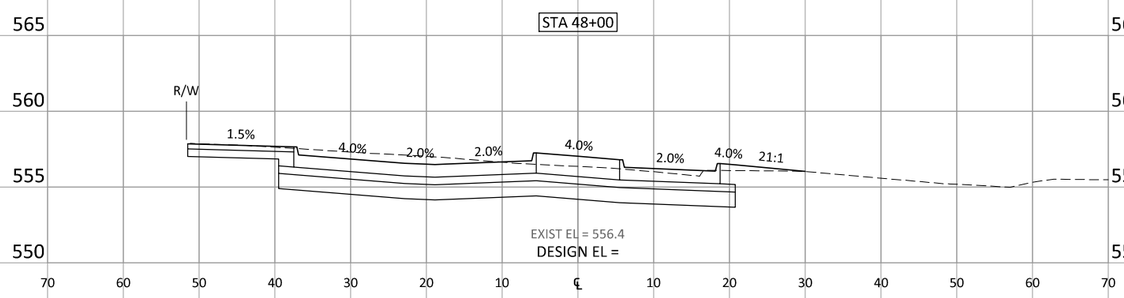
SHEET W.12

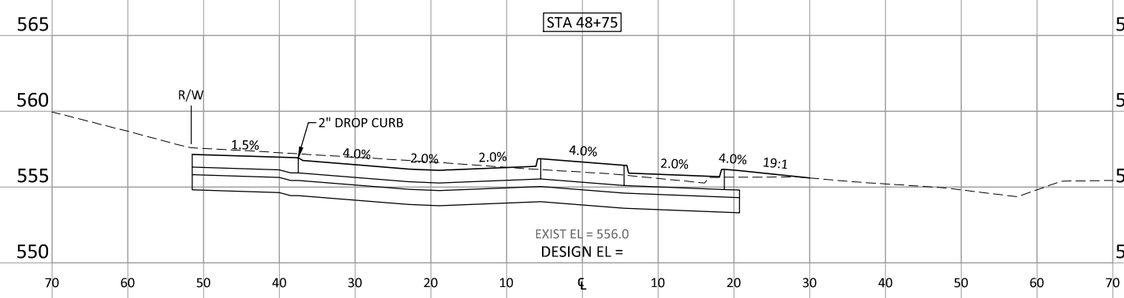


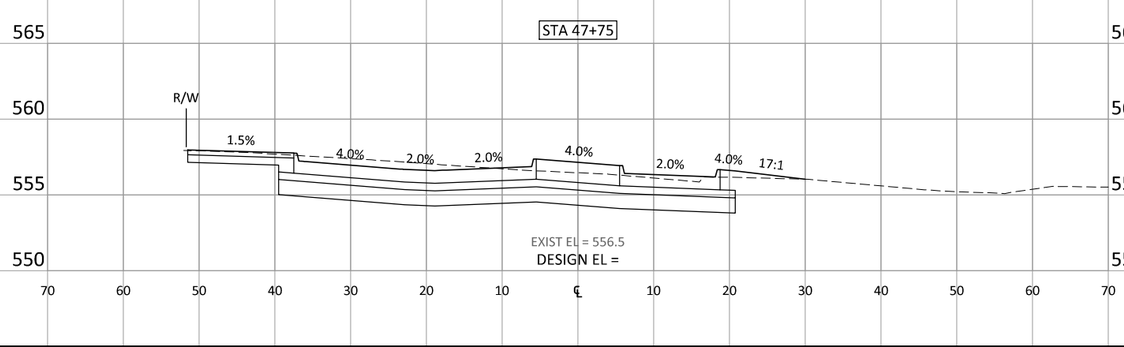


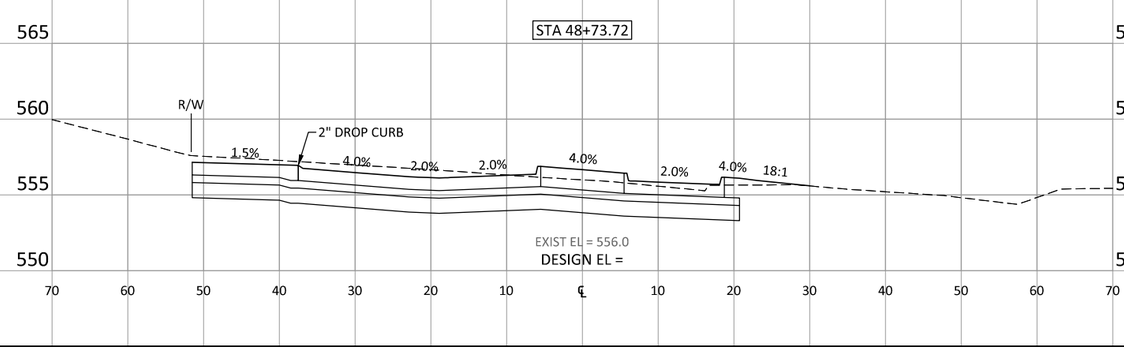












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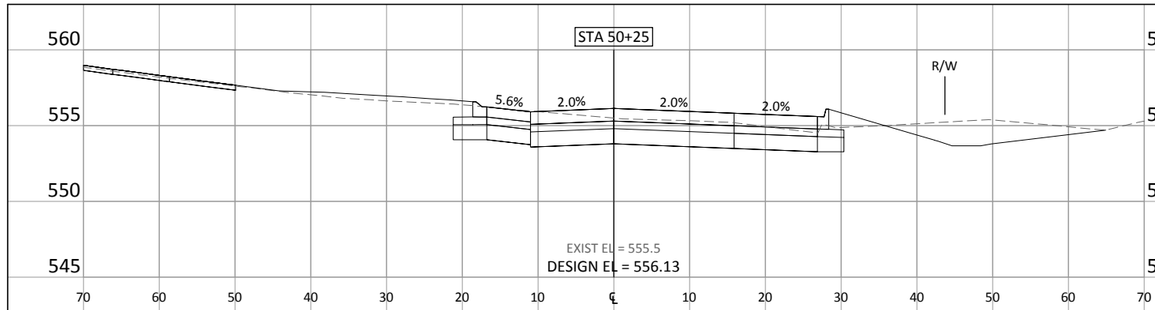
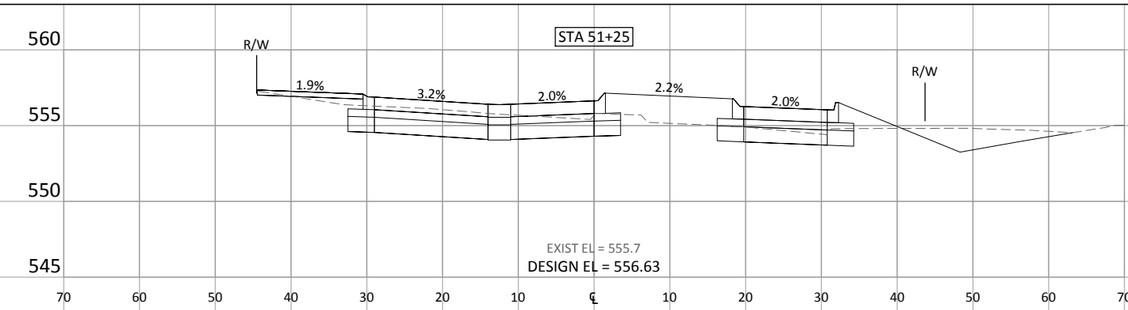
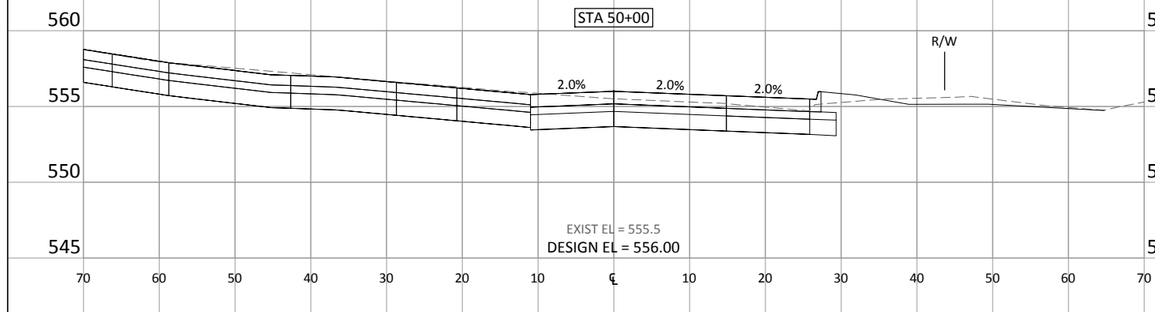
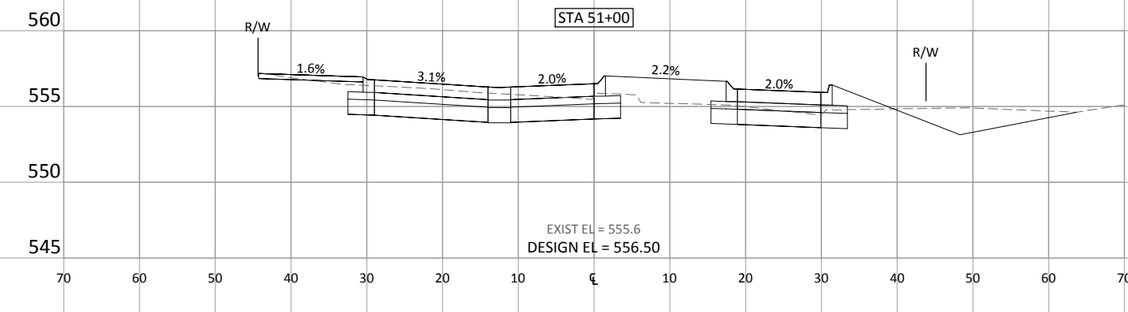
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CROSS SECTIONS - MISSISSIPPI DRIVE

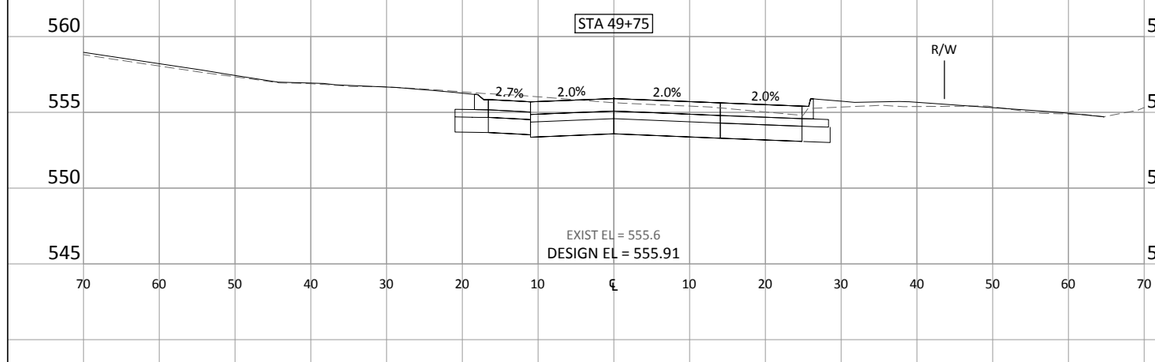
SHEET W.13

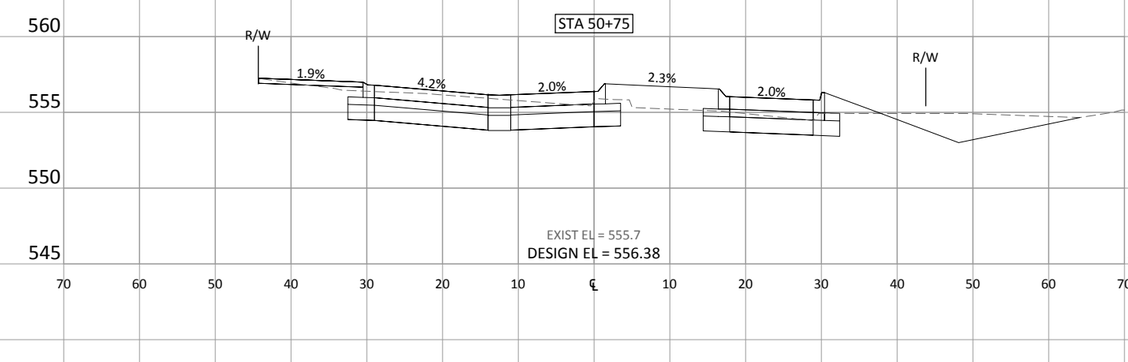


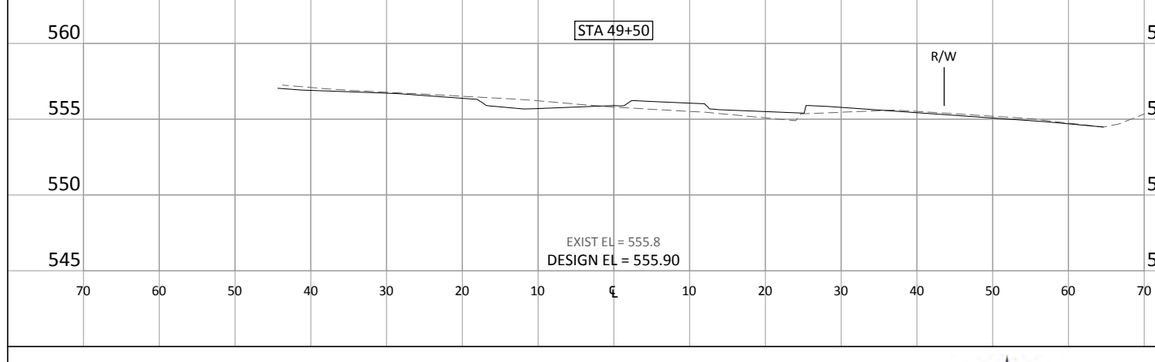


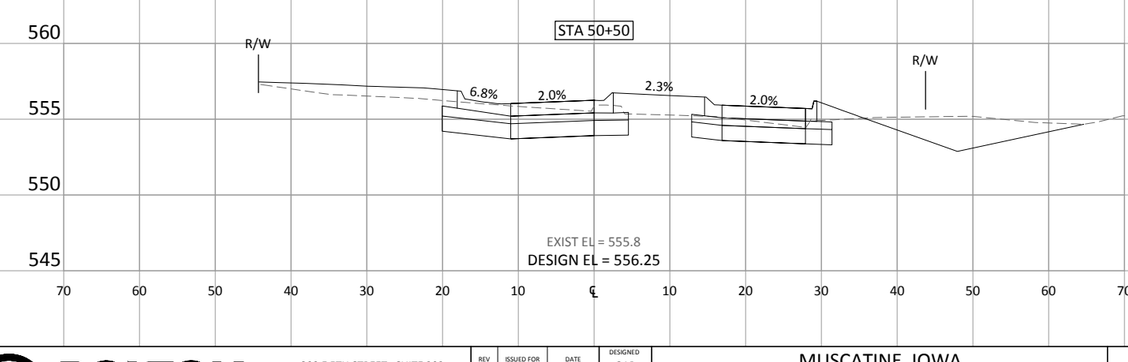












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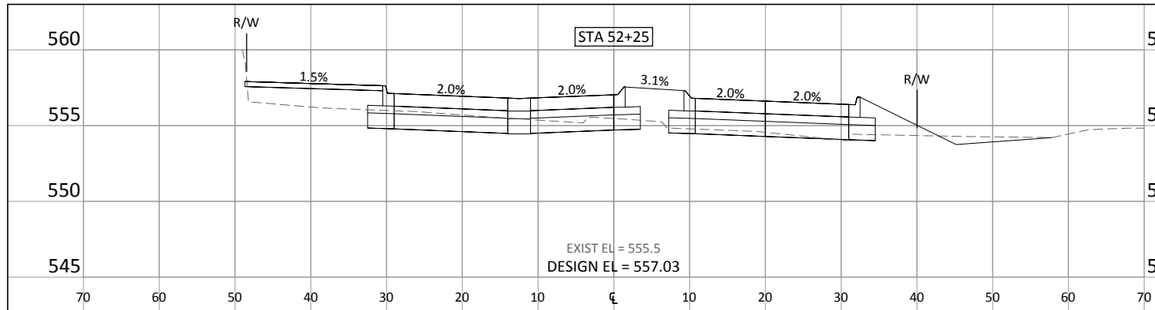
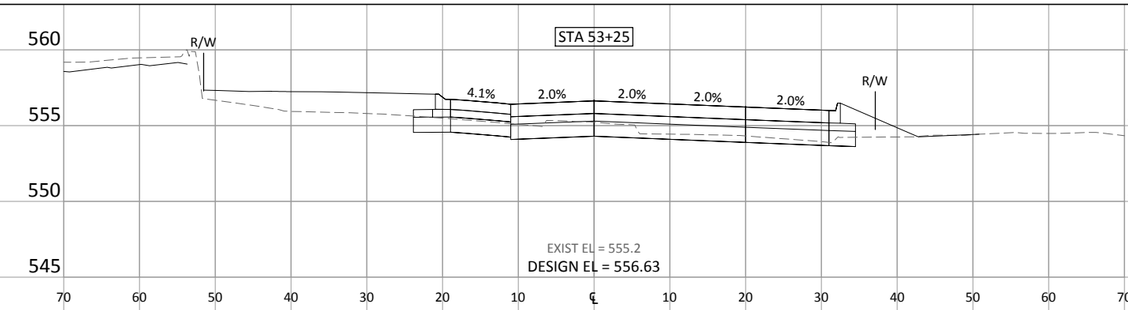
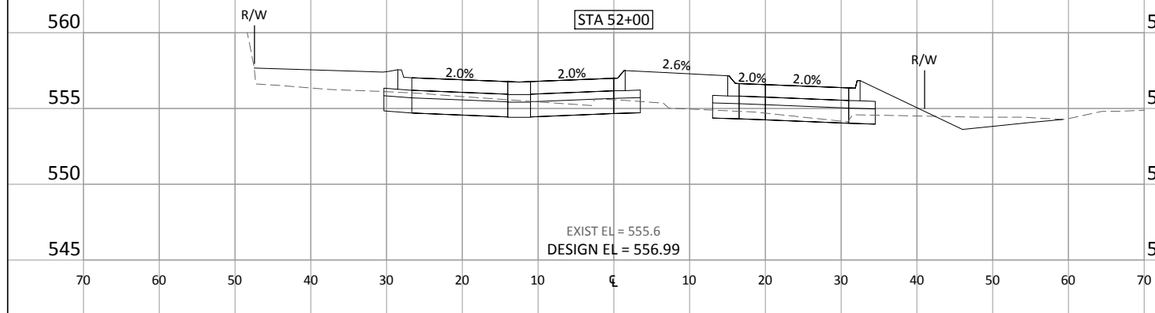
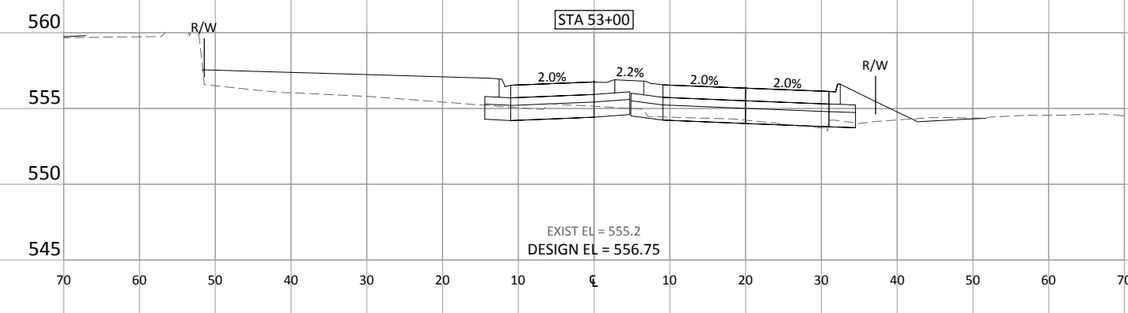
MISSISSIPPI CROSS-SECTIONS

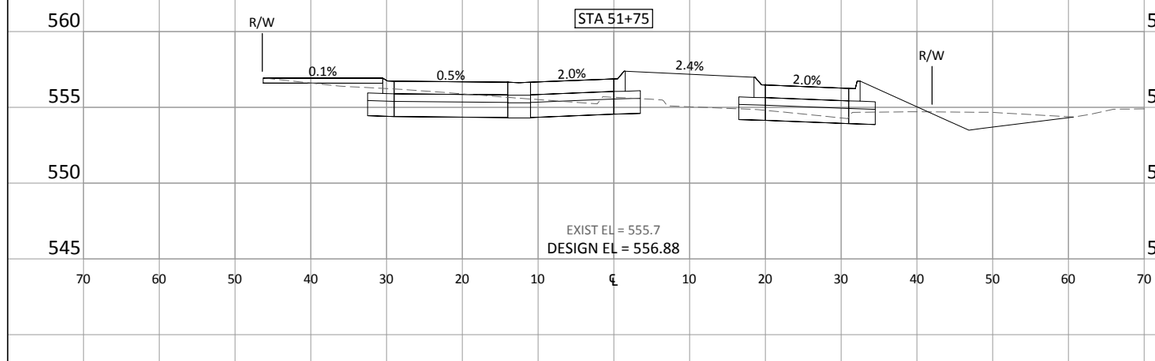
SHEET W.14

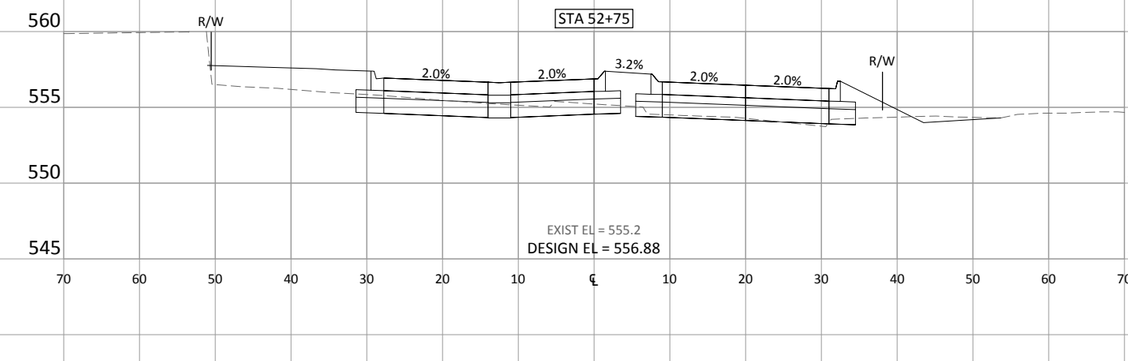


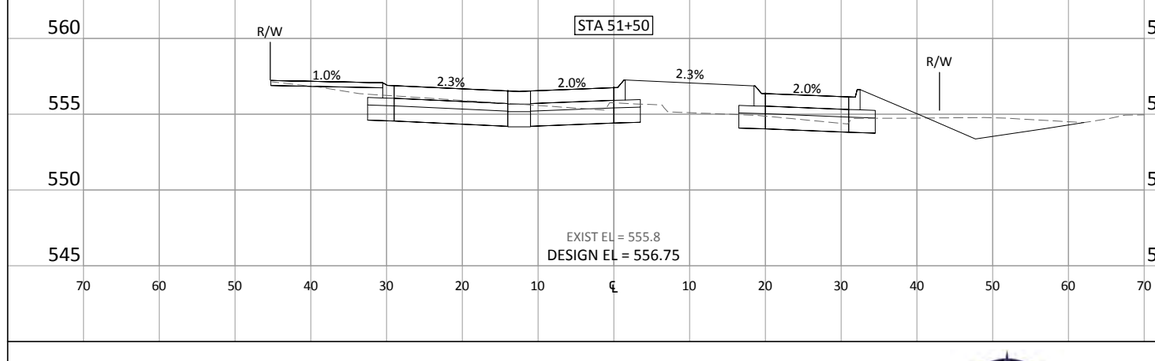


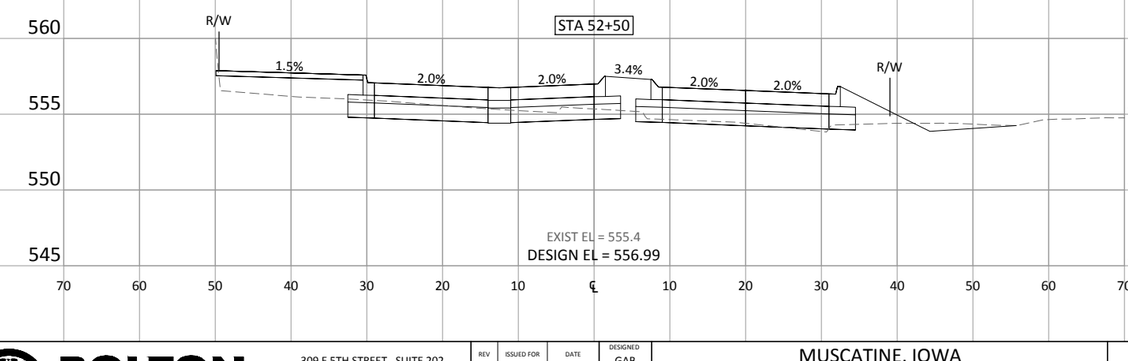












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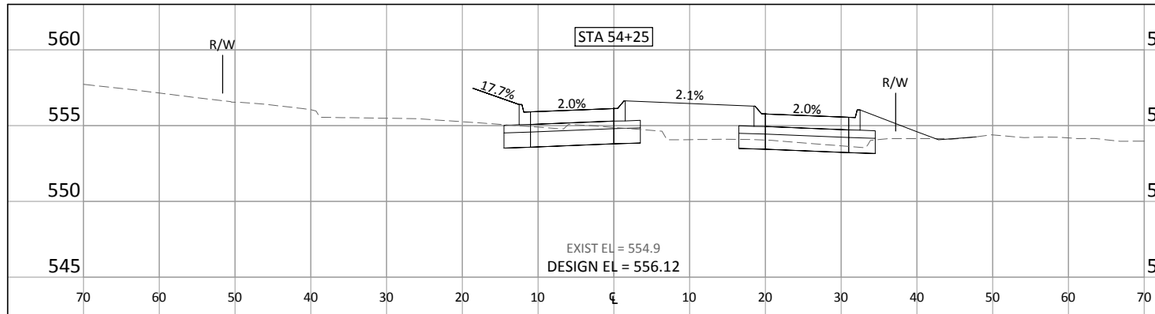
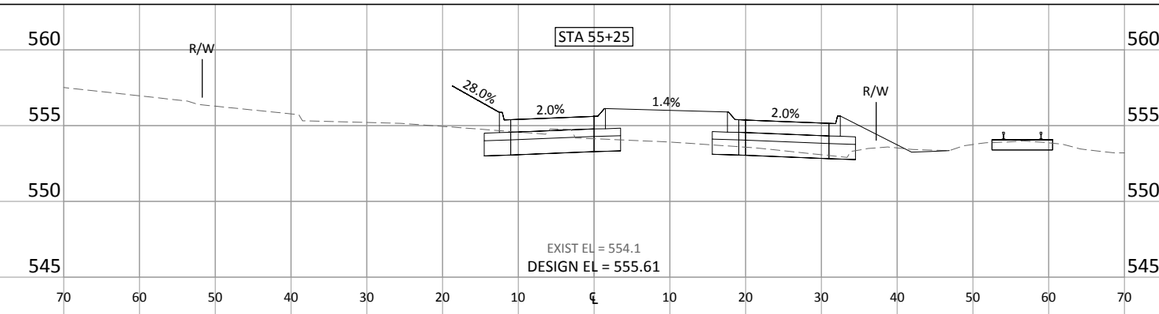
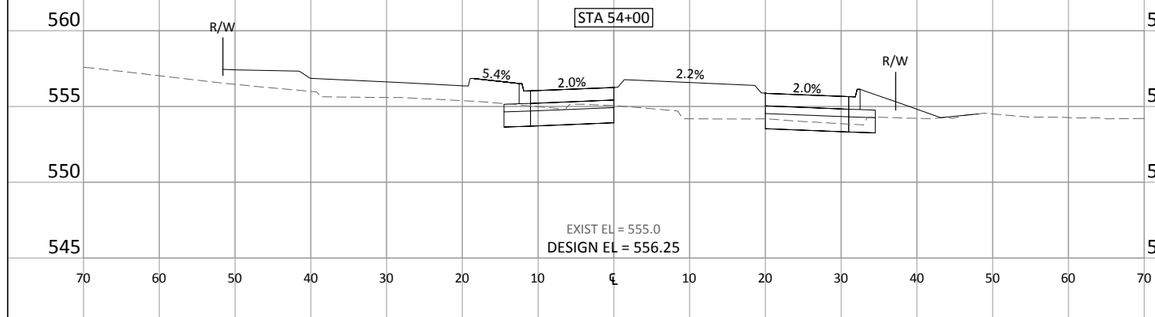
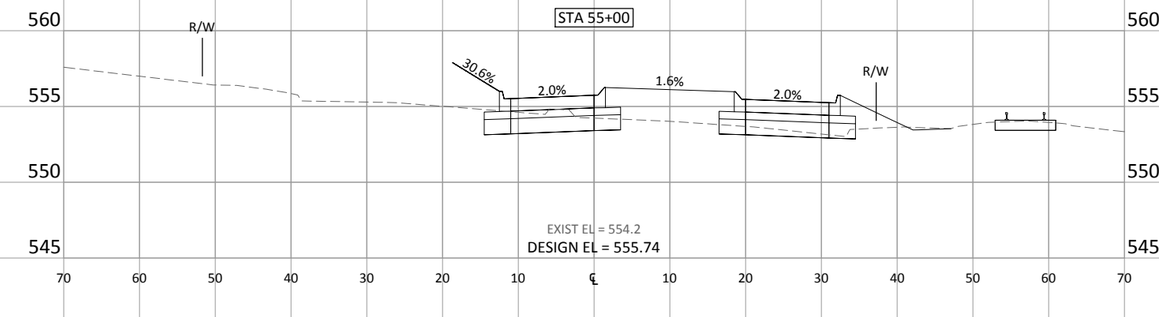
MISSISSIPPI CROSS-SECTIONS

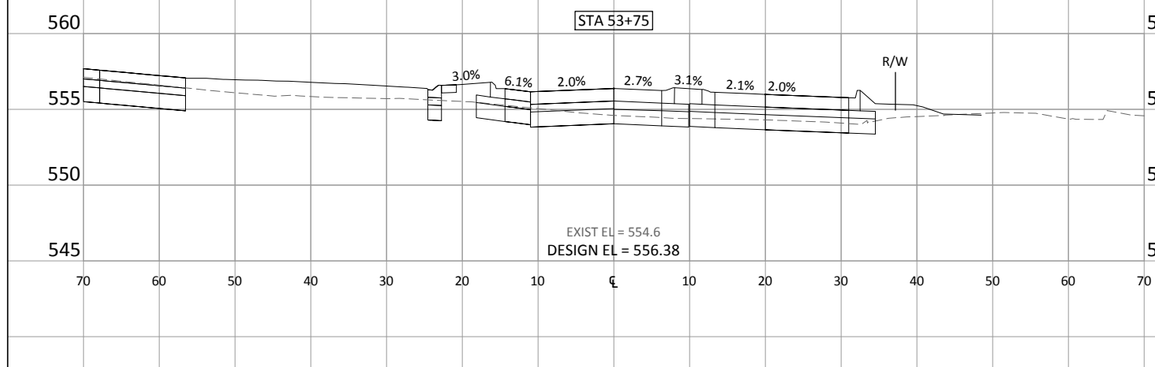
SHEET W.15

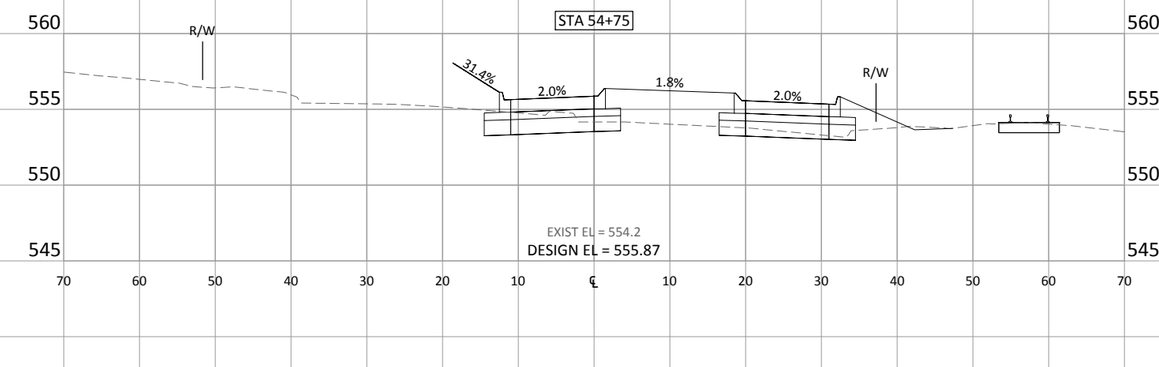


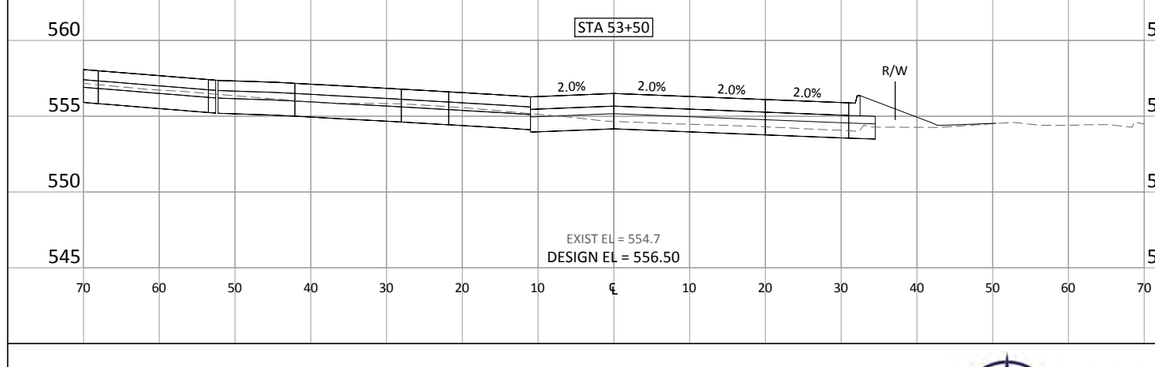


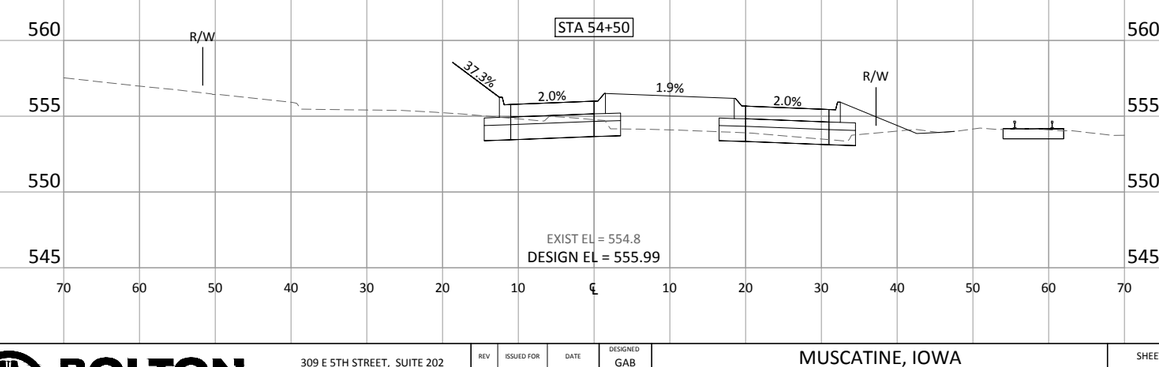












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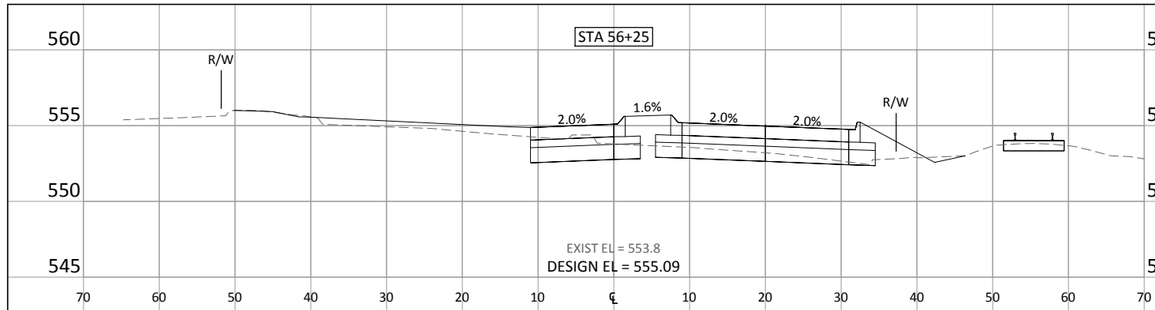
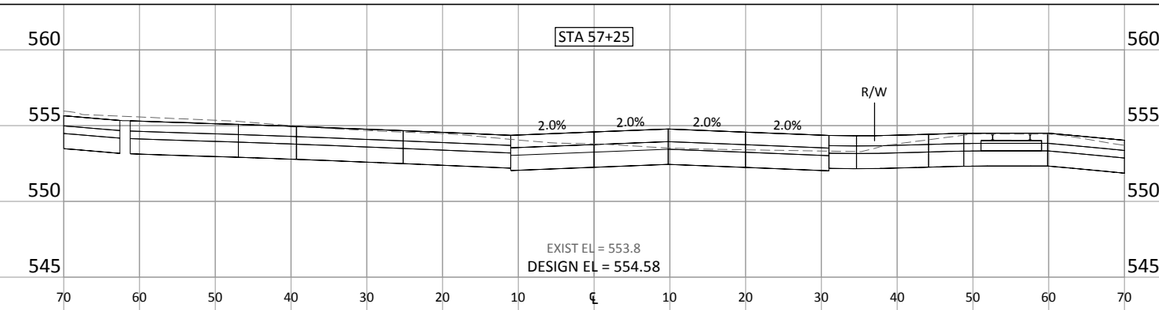
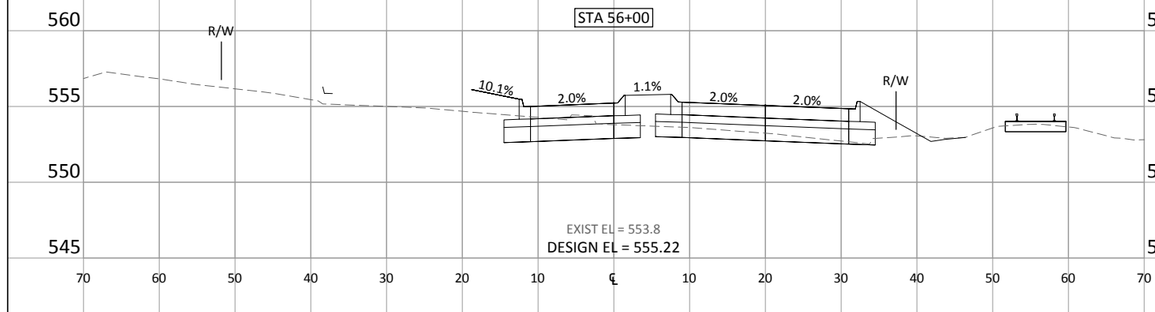
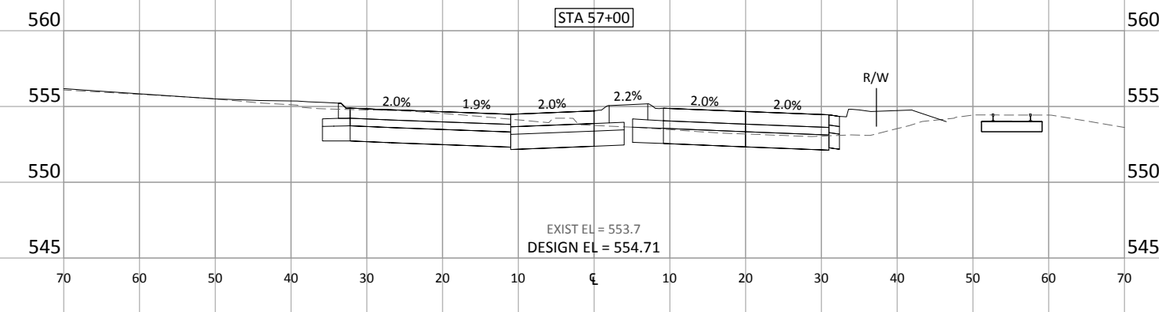
MISSISSIPPI CROSS-SECTIONS

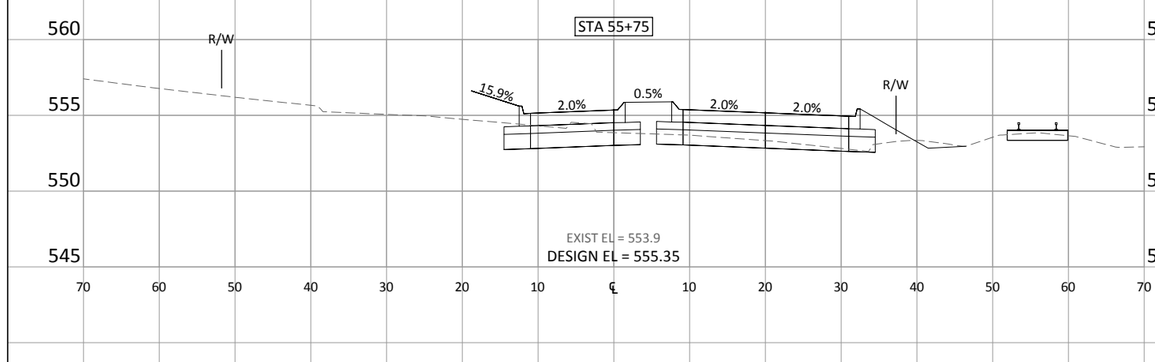
SHEET W.16

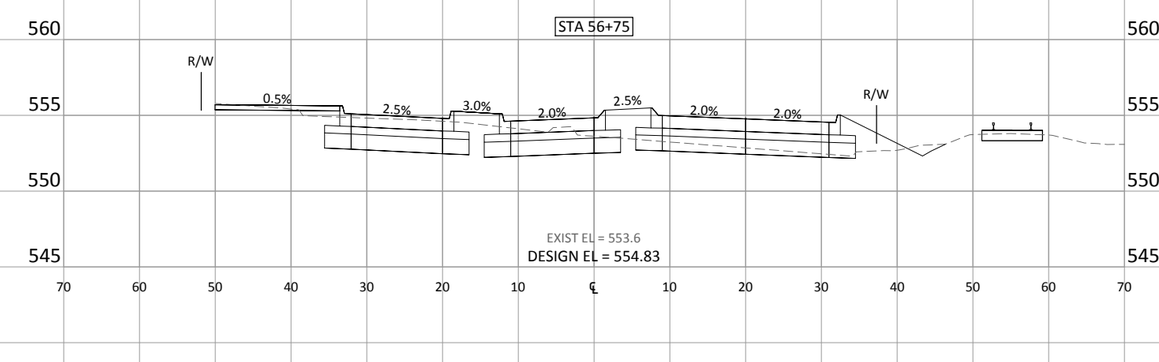


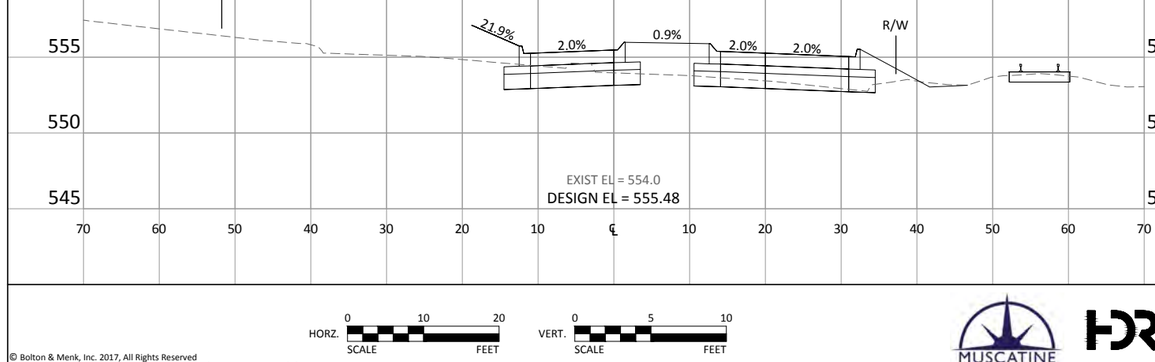


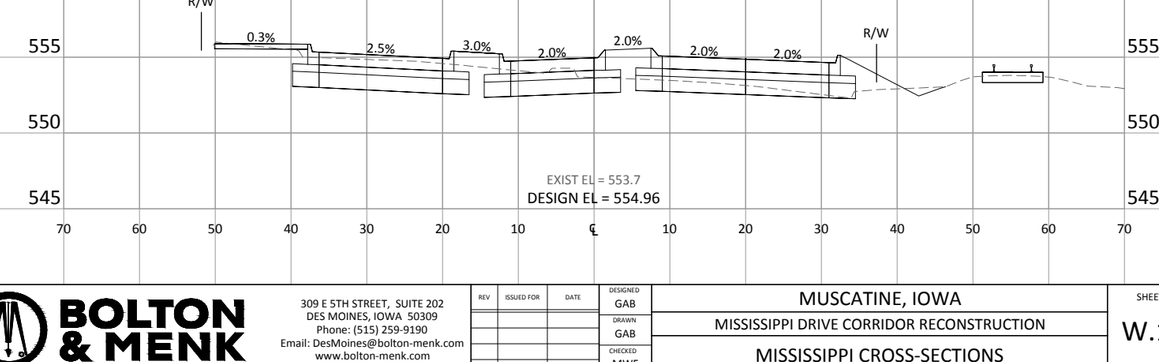












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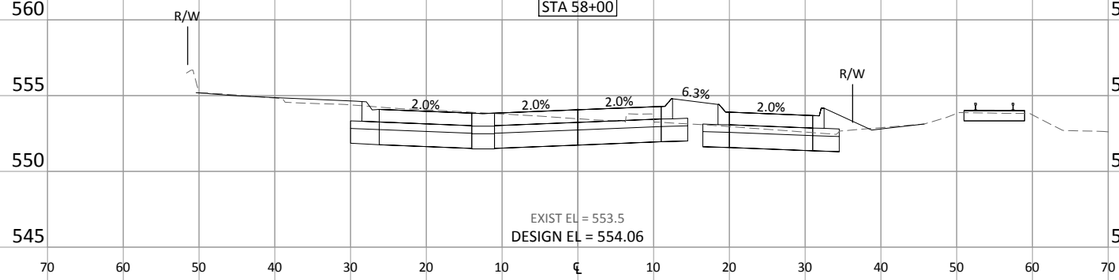
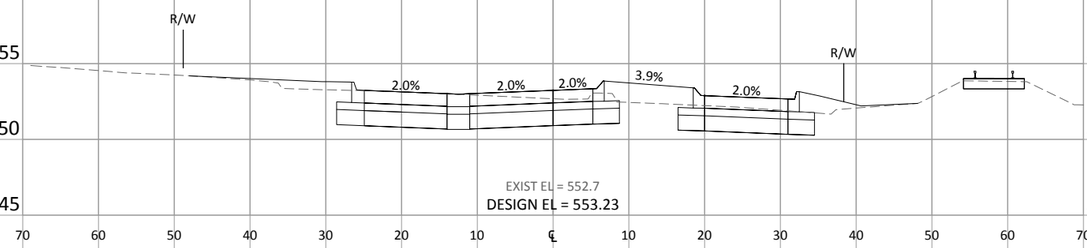
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI CROSS-SECTIONS

SHEET W.17

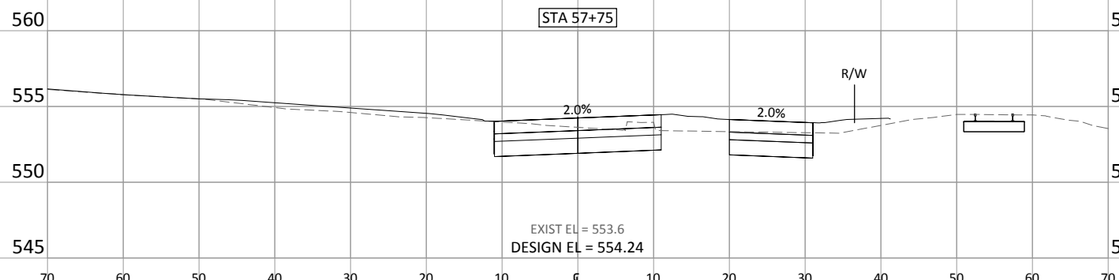
STA 58+00



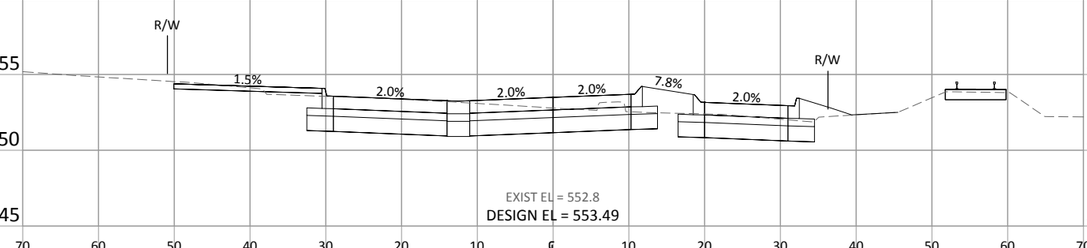
STA 59+00



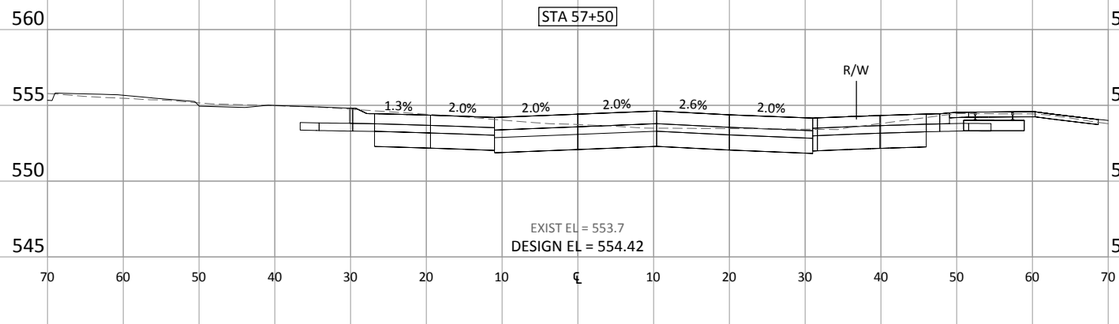
STA 57+75



STA 58+75

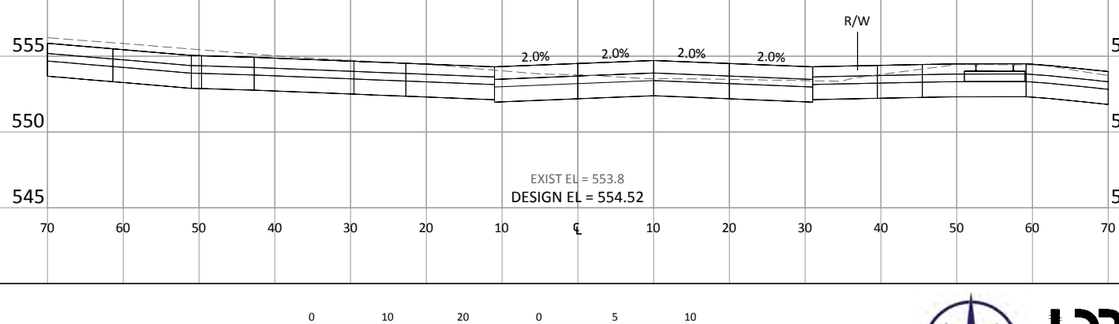


STA 57+50

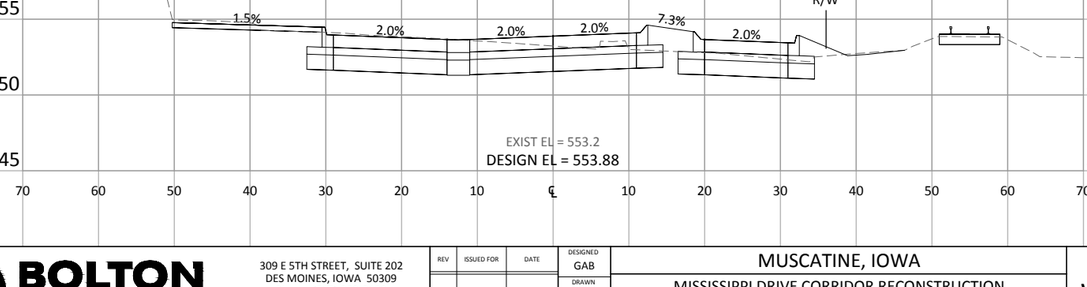


STA 58+50

STA 57+35



STA 58+25



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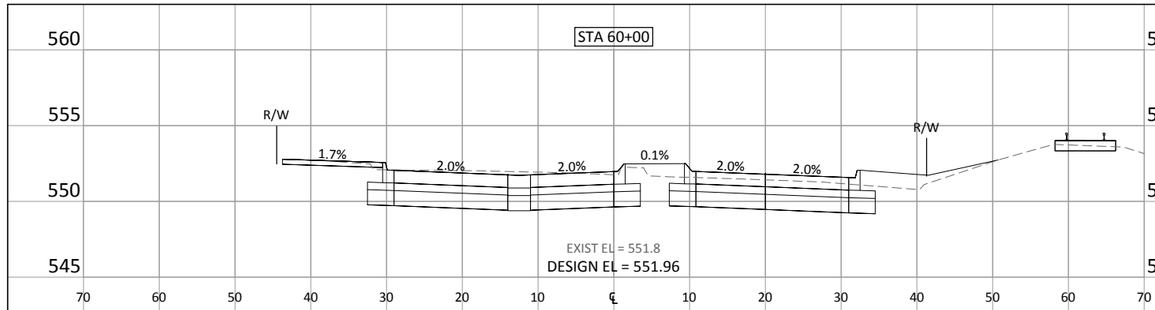
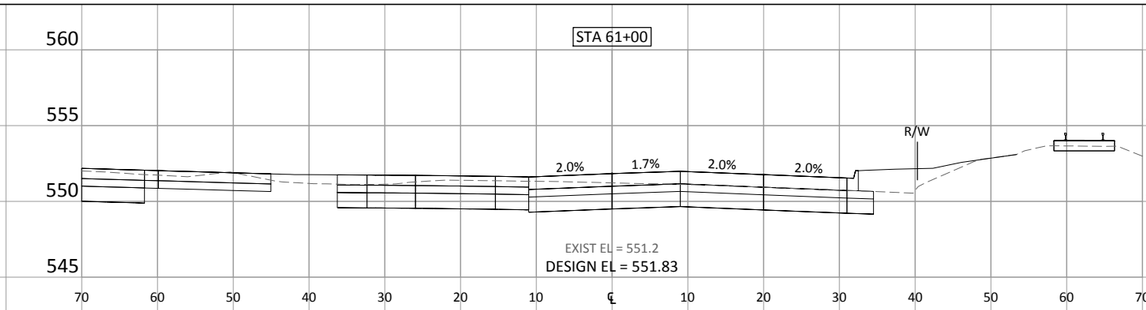
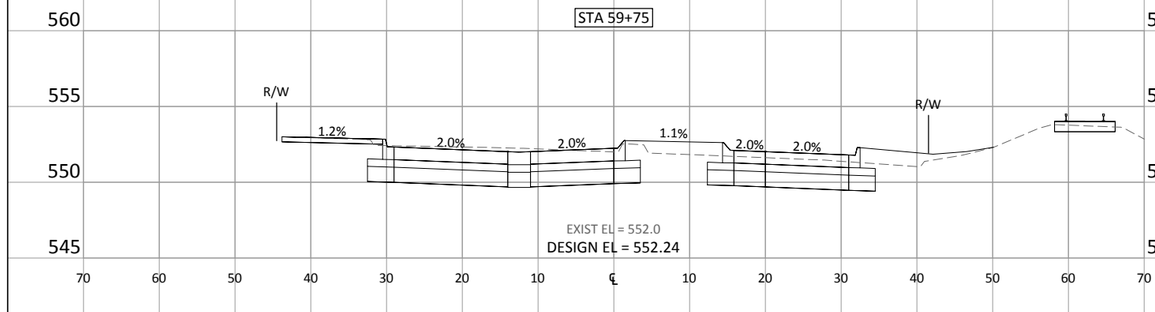
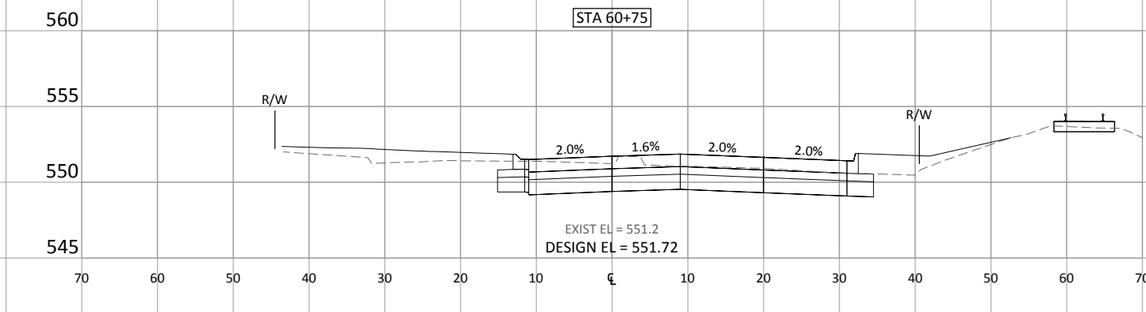
MISSISSIPPI CROSS-SECTIONS

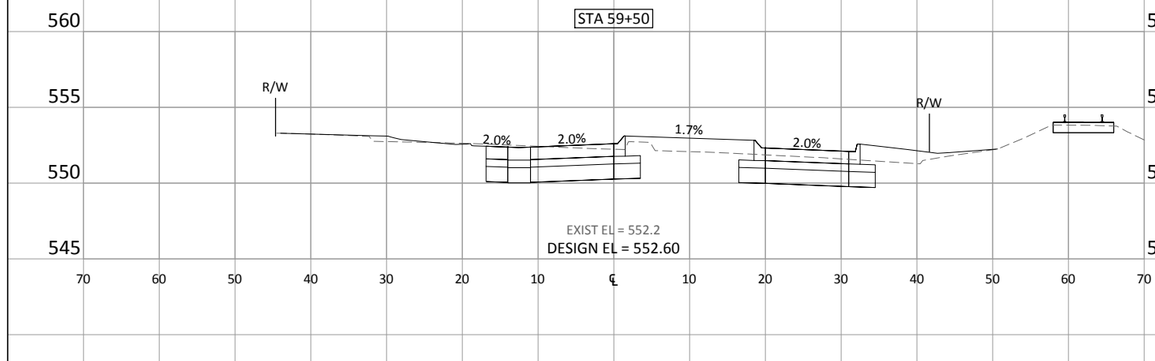
SHEET W.18

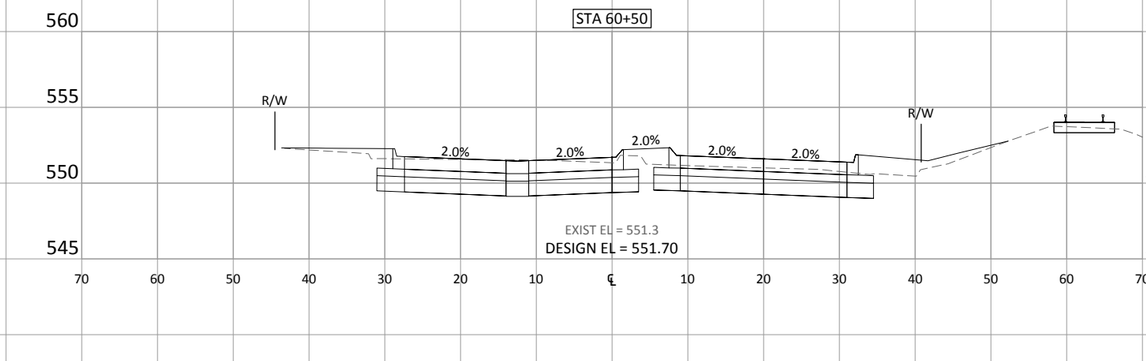


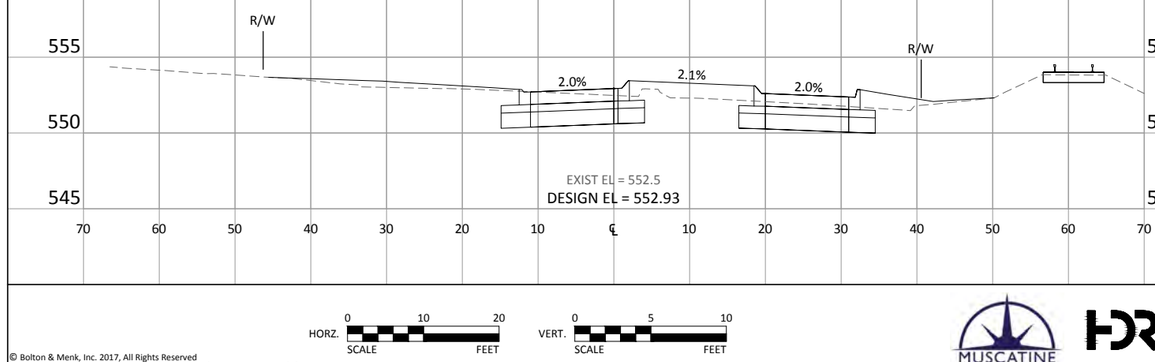


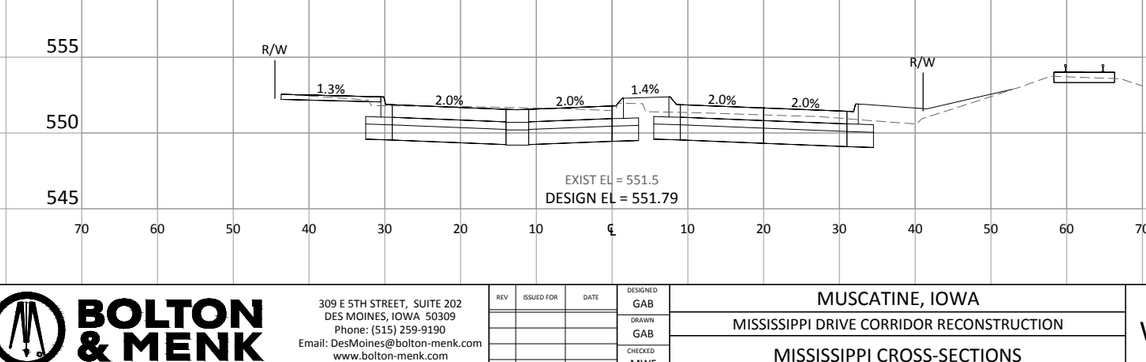












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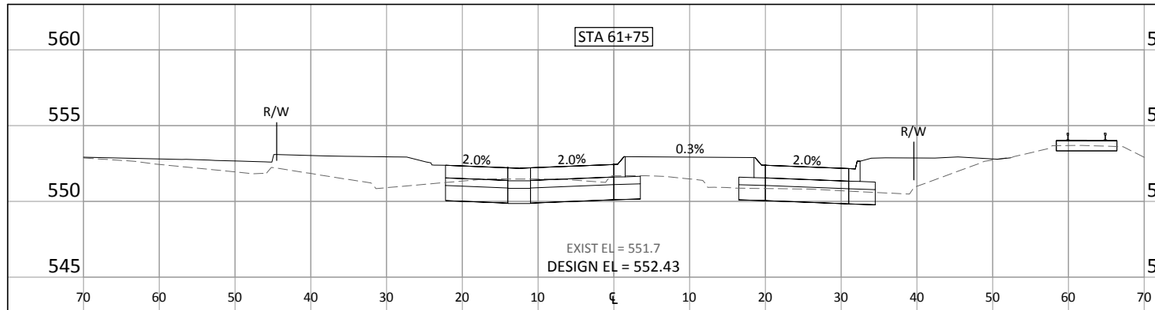
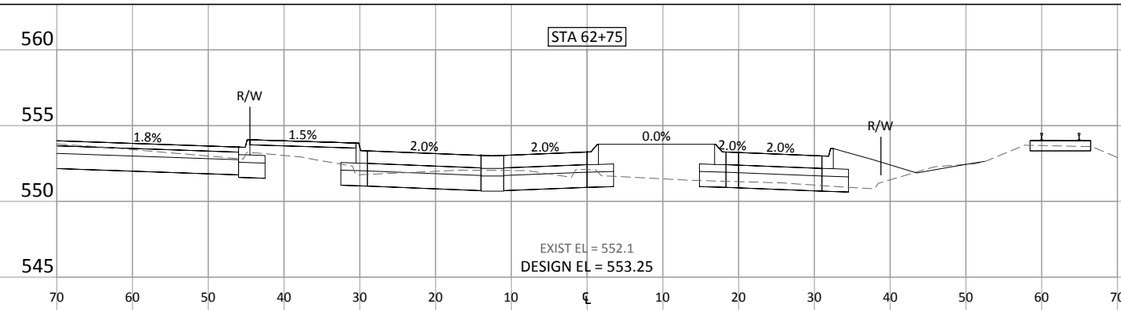
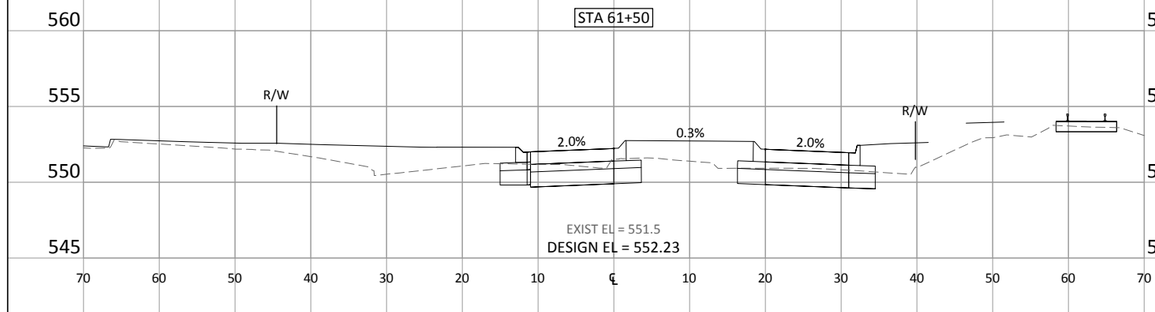
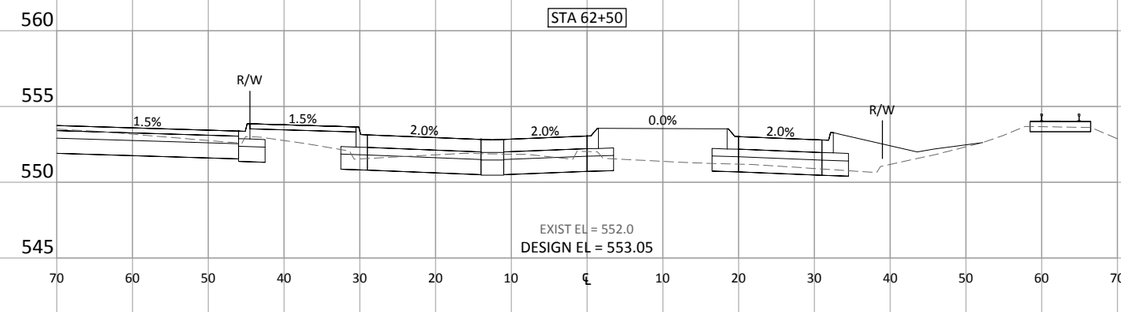
MISSISSIPPI CROSS-SECTIONS

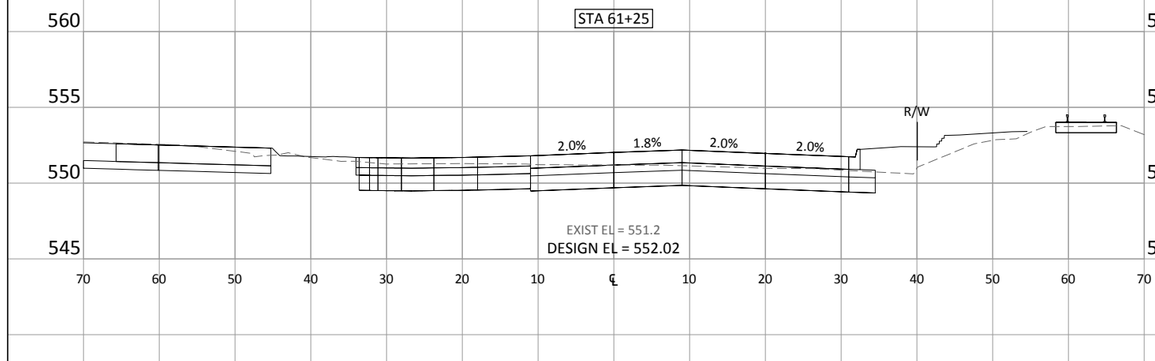
SHEET W.19

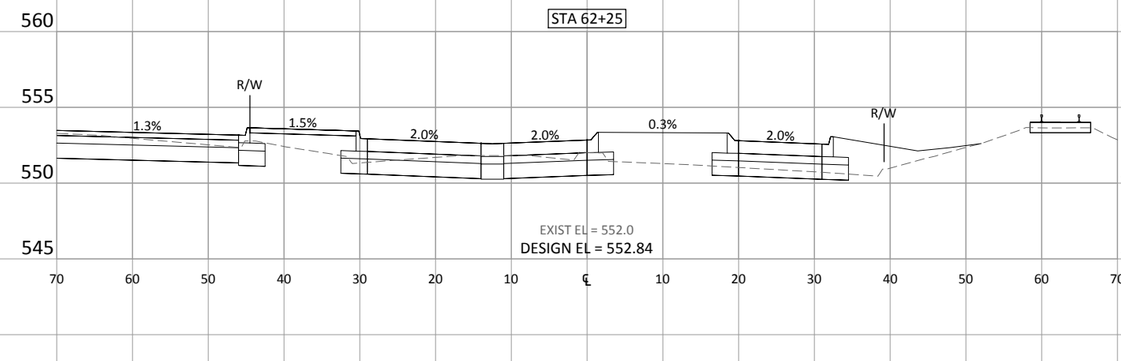


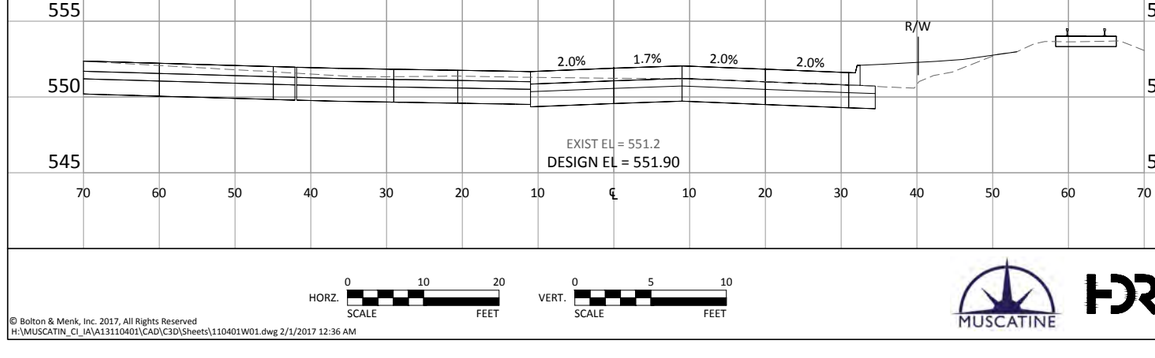


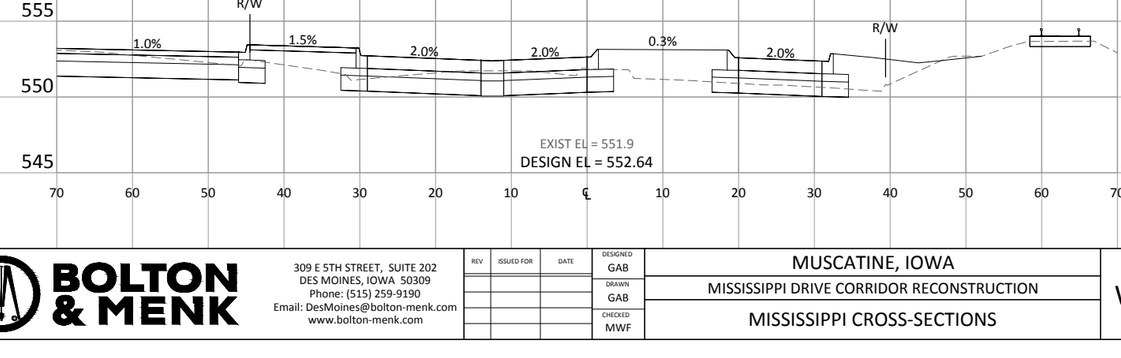












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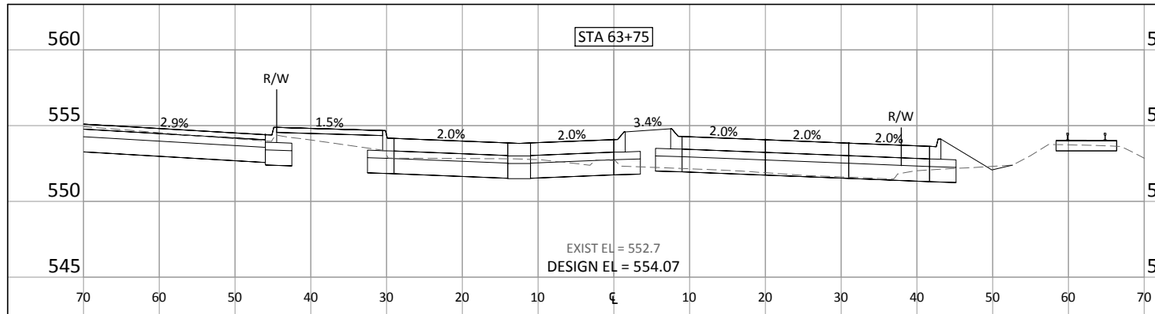
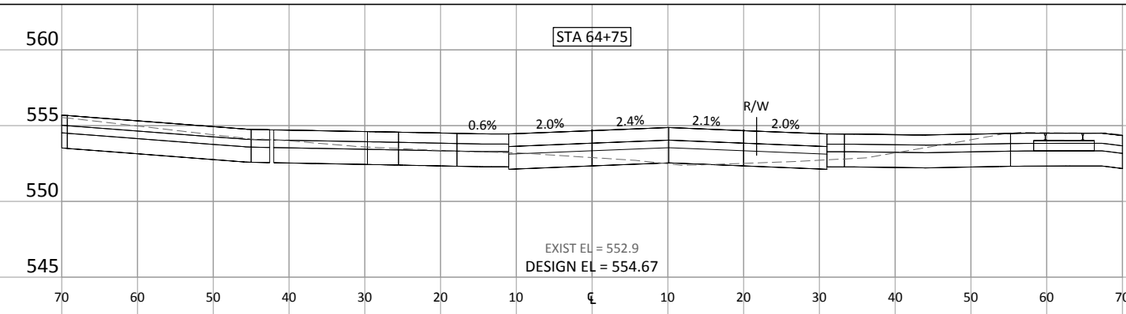
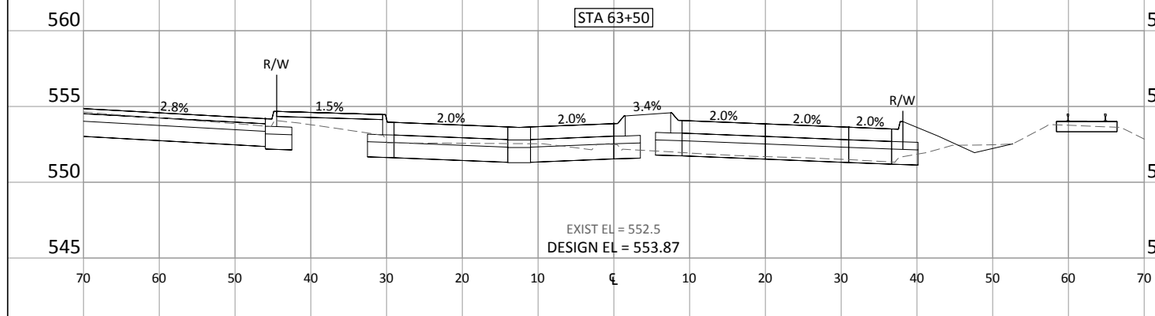
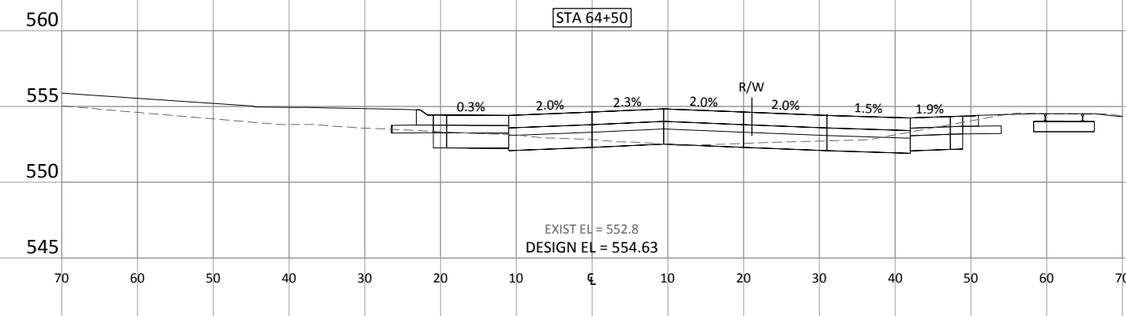
MISSISSIPPI CROSS-SECTIONS

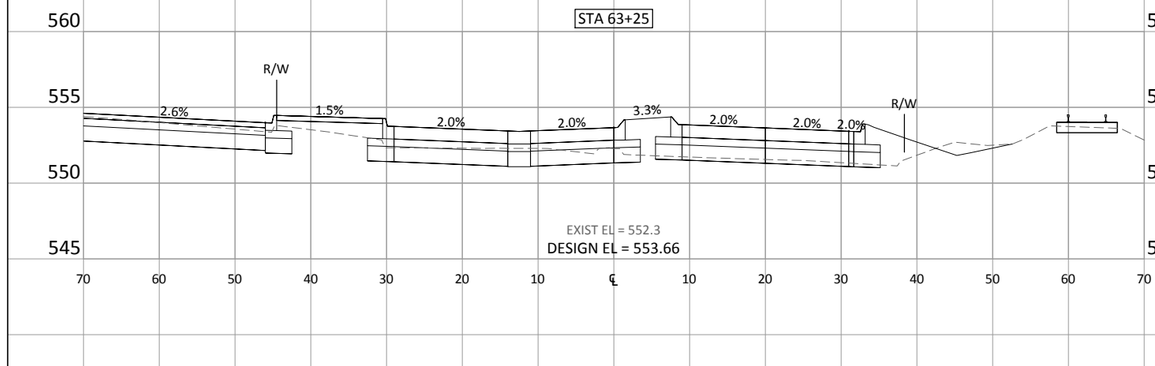
SHEET W.20

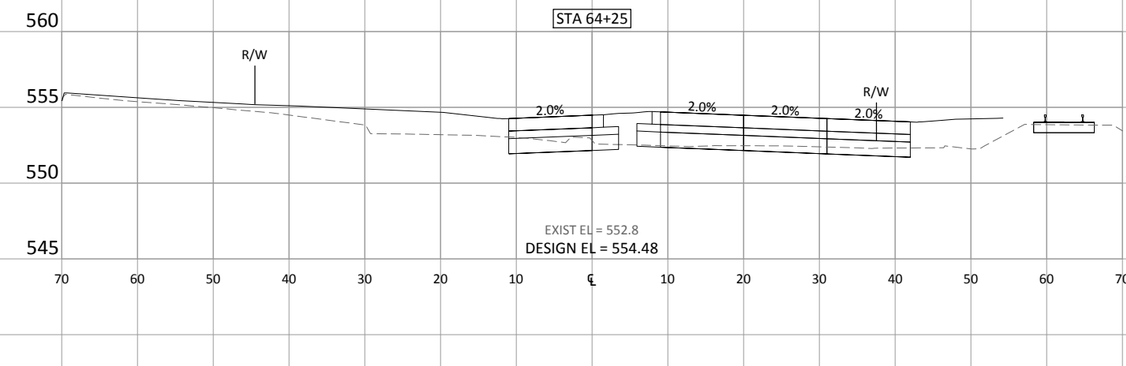


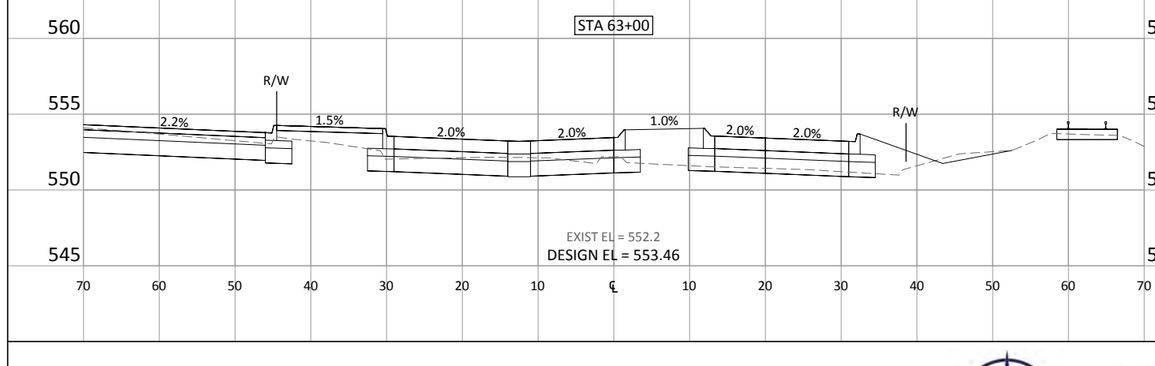


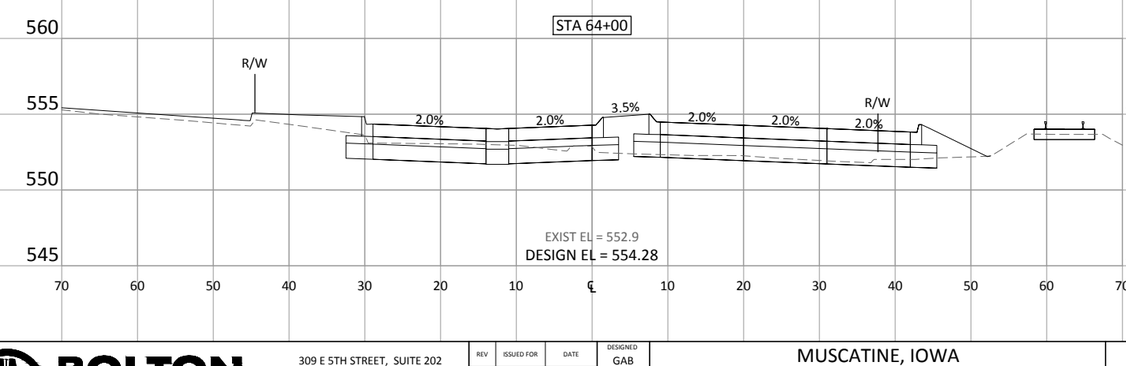












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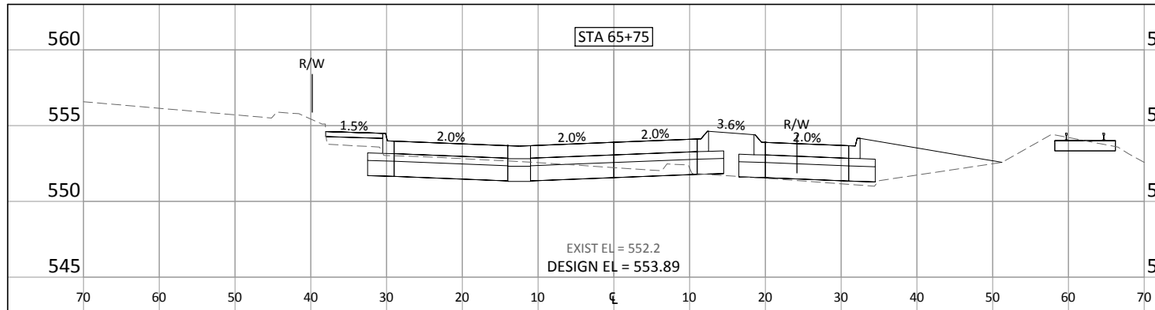
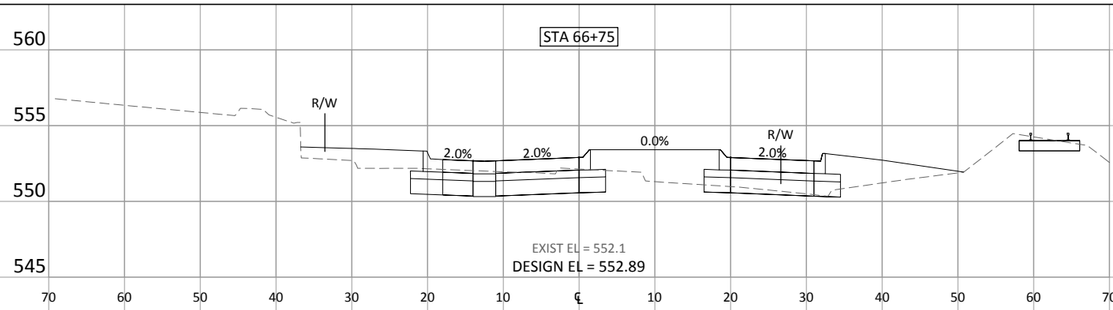
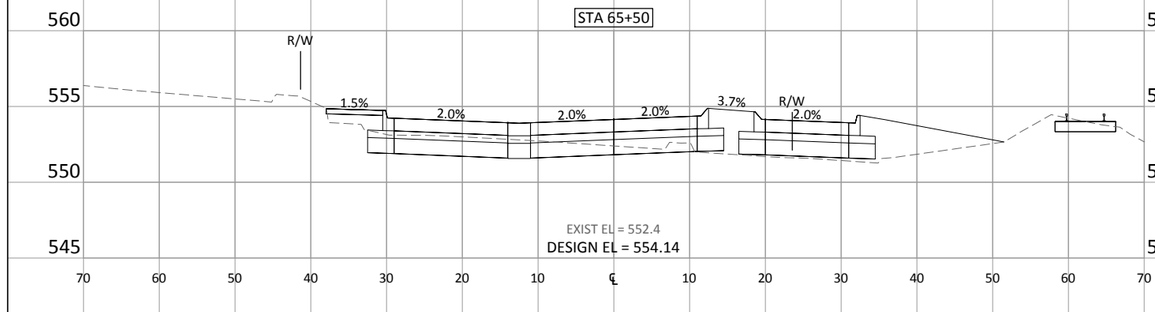
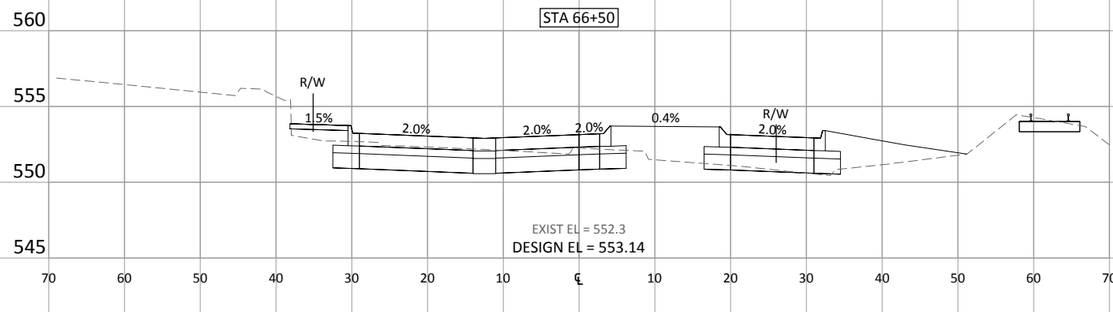
MISSISSIPPI CROSS-SECTIONS

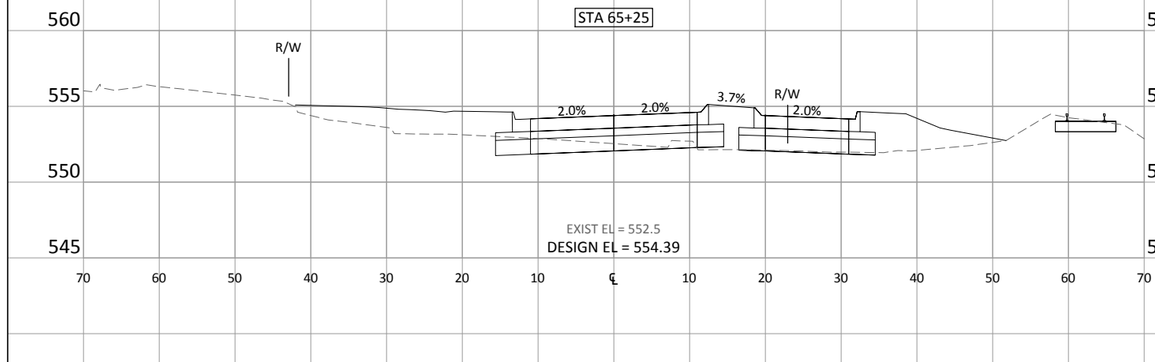
SHEET W.21

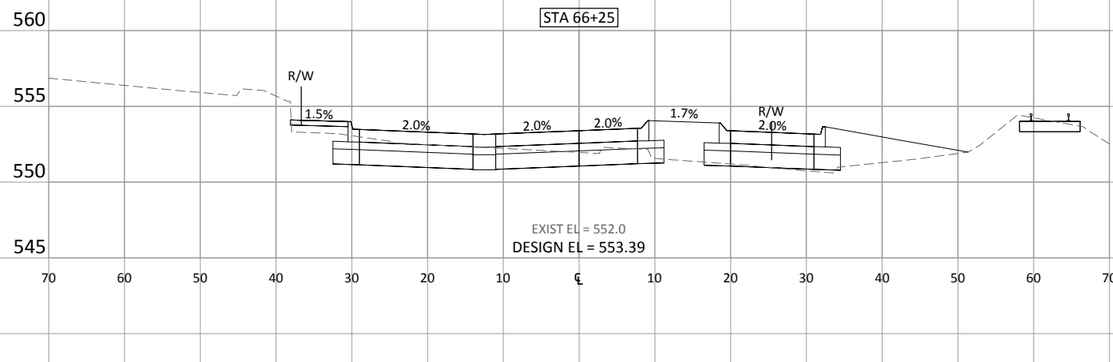


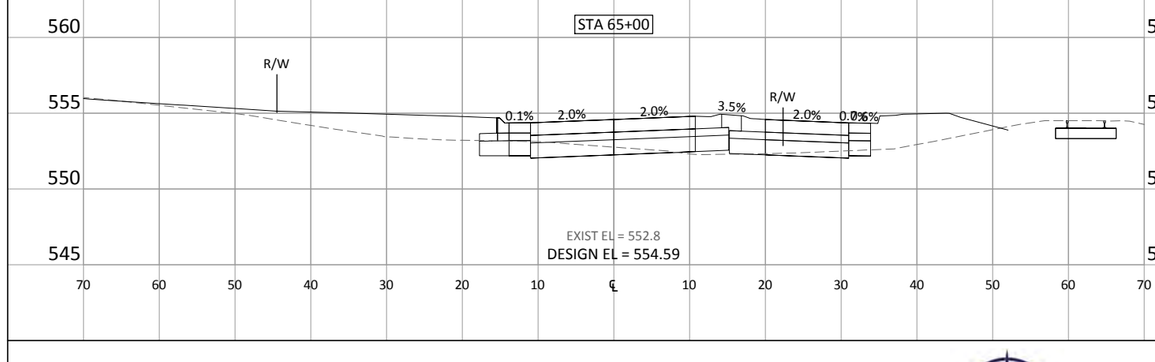


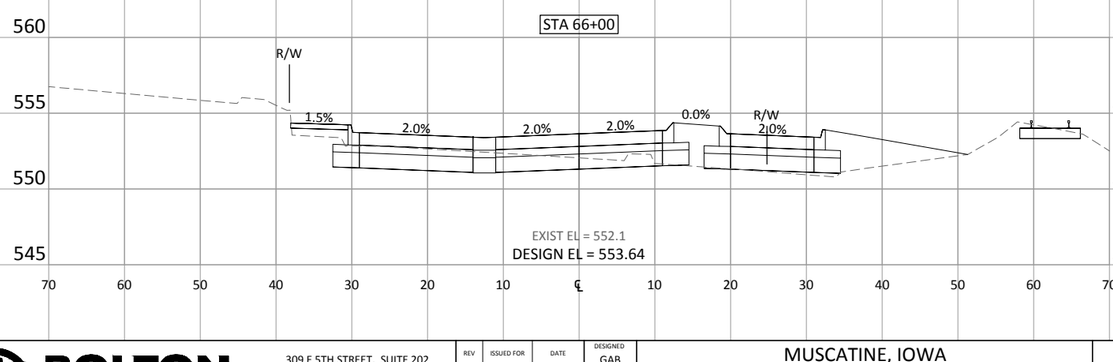












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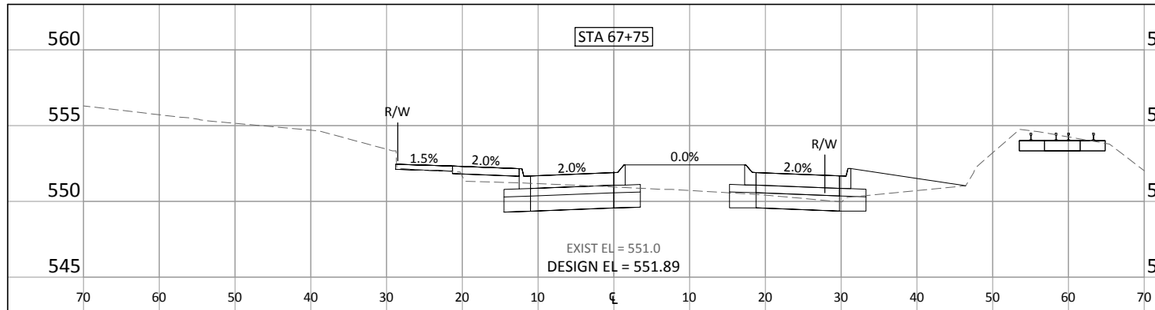
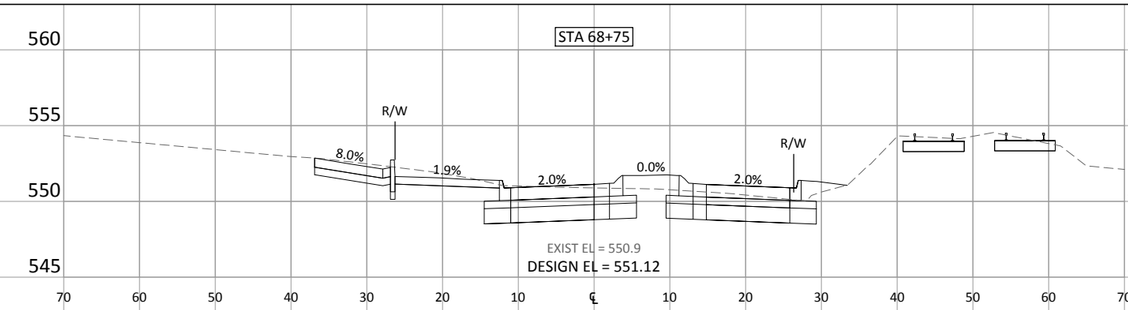
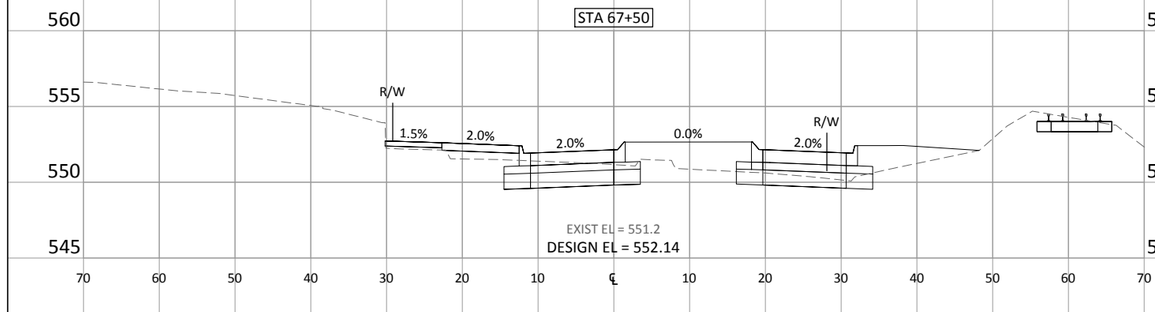
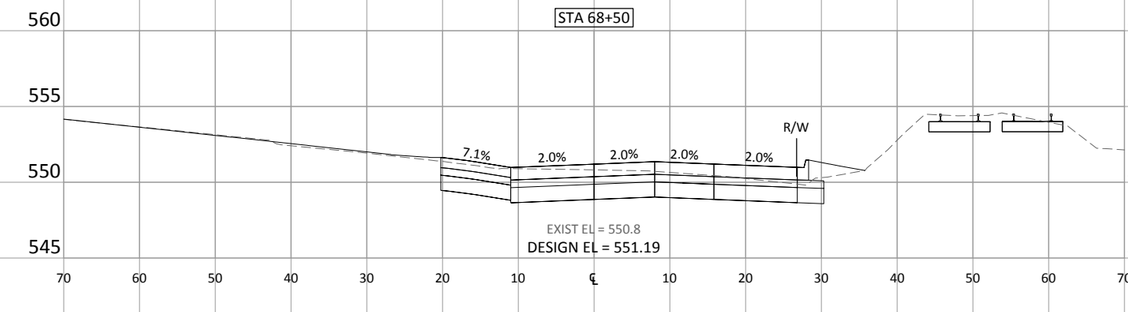
MISSISSIPPI CROSS-SECTIONS

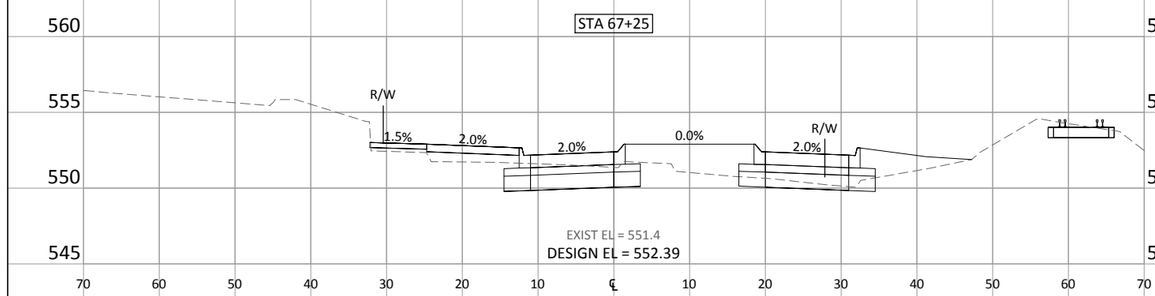
SHEET W.22

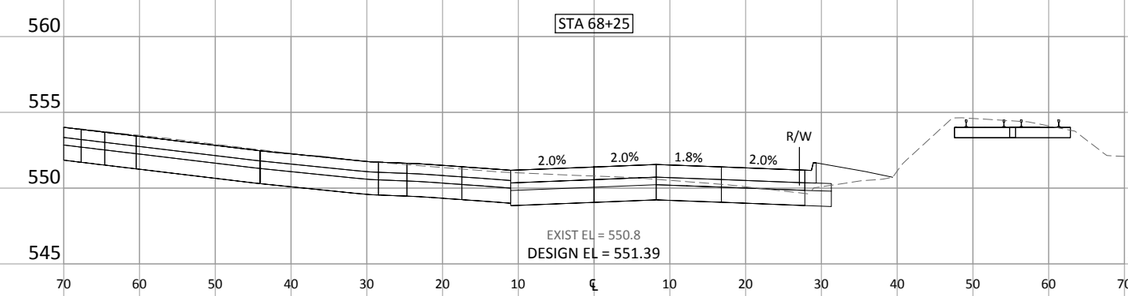


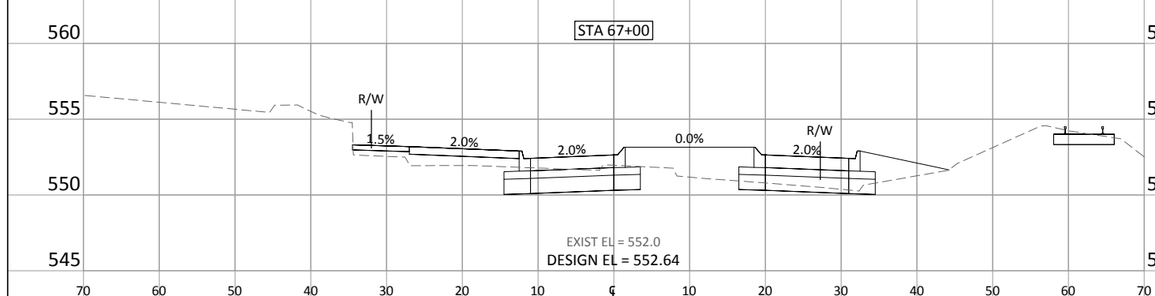


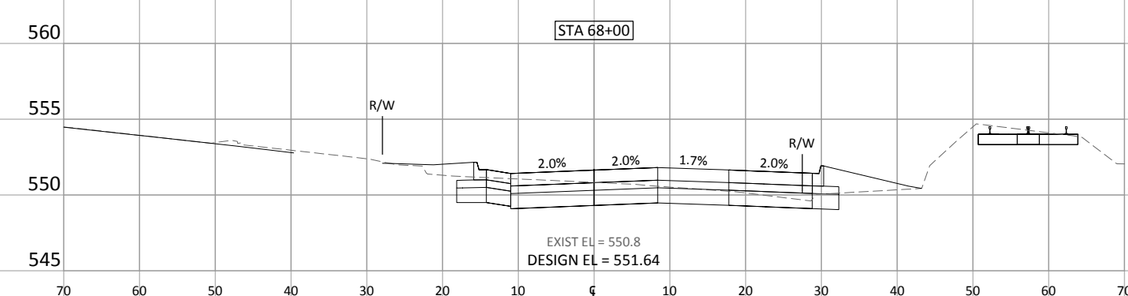












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VERT. 0 5 10 SCALE FEET

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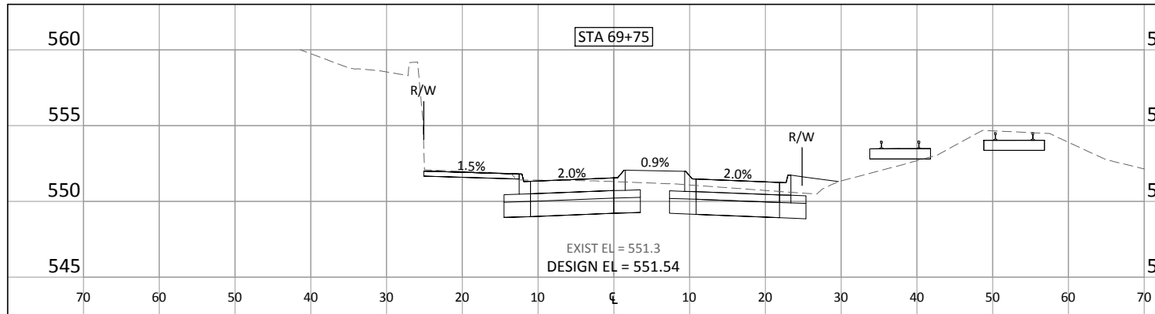
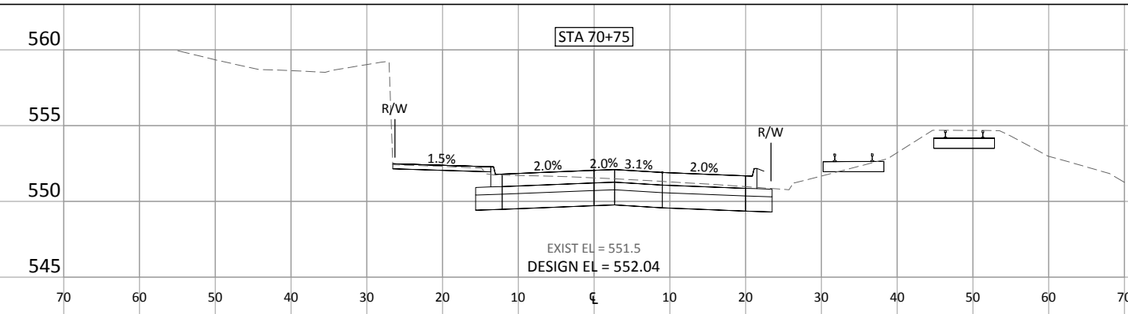
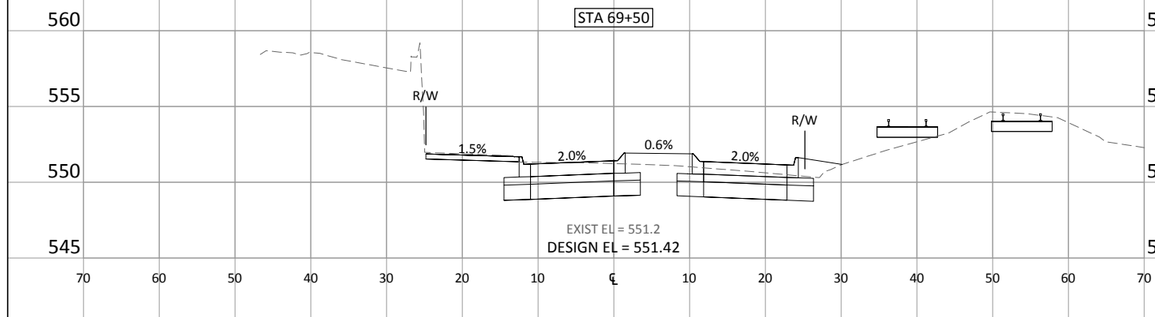
DRAWN GAB
CHECKED MWF

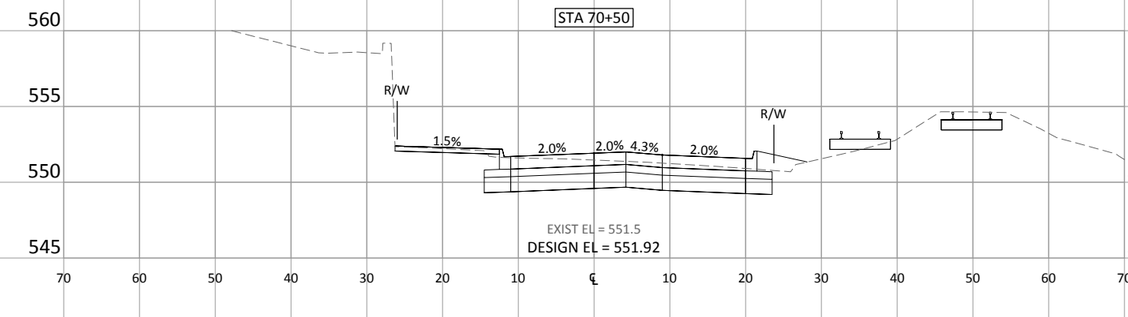
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI CROSS-SECTIONS

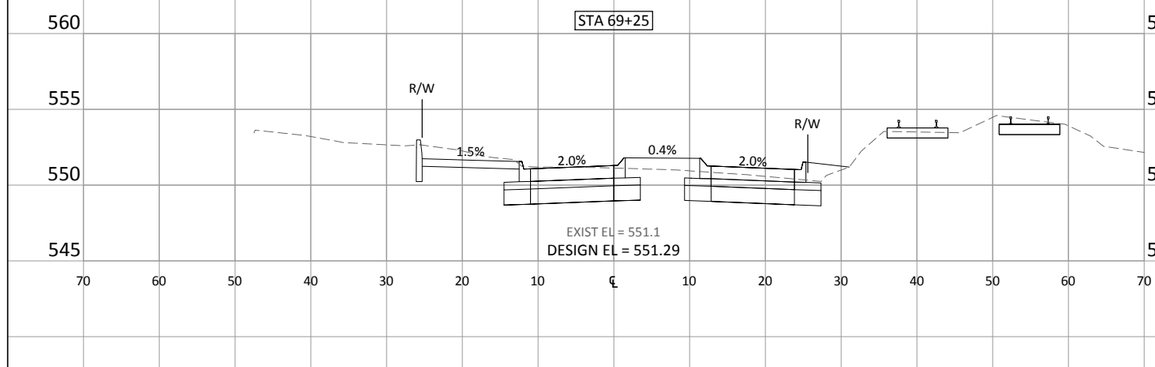
SHEET W.23

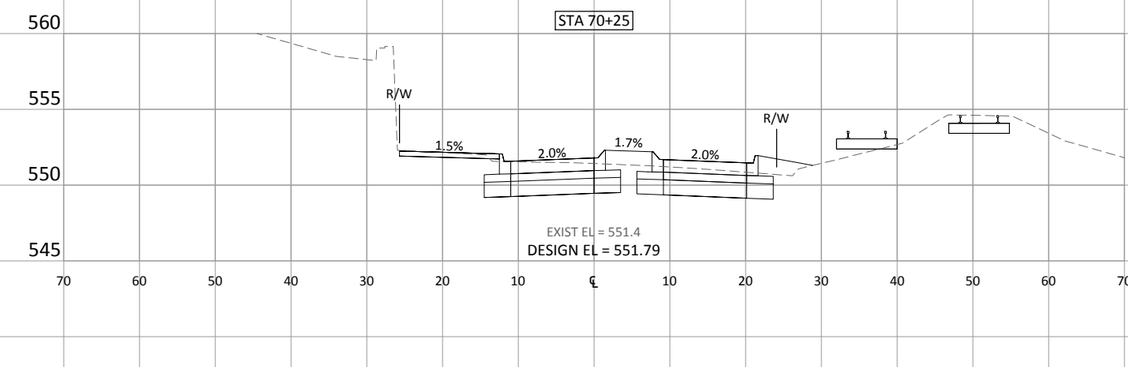


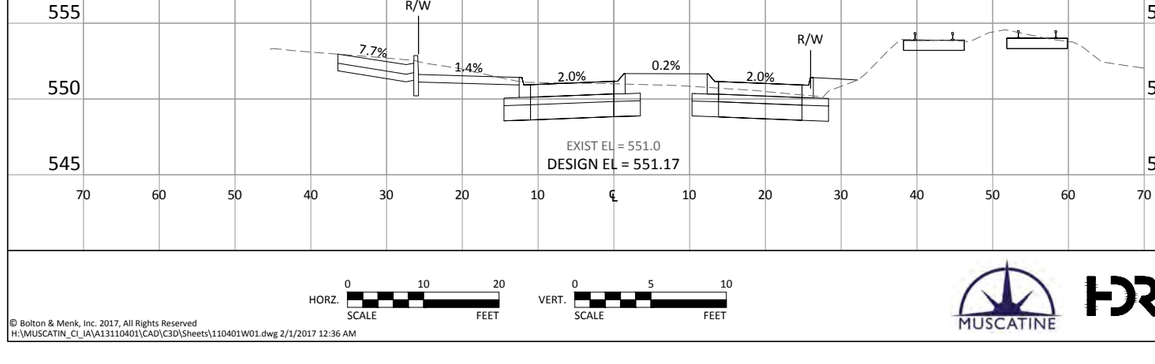


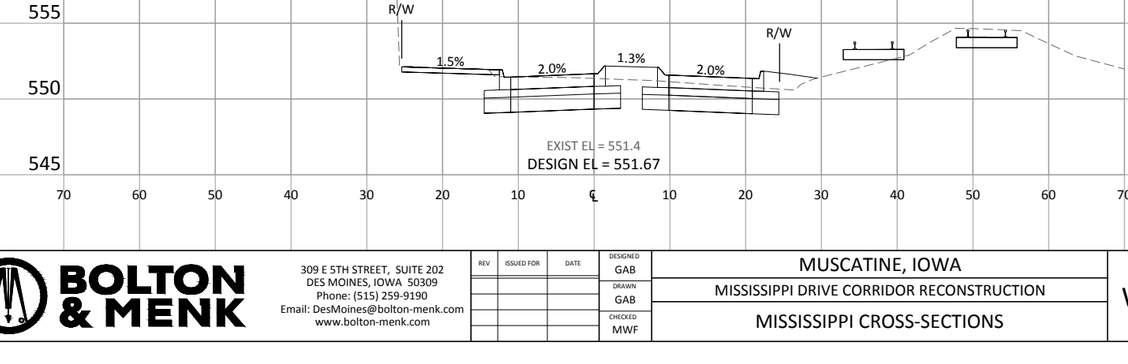












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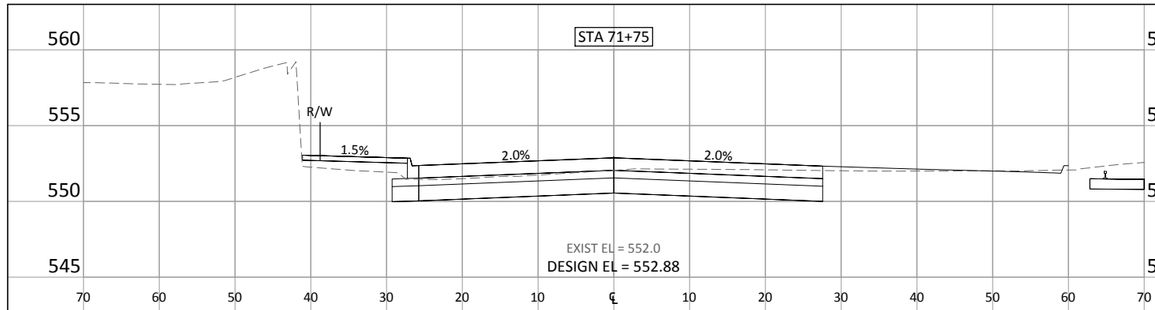
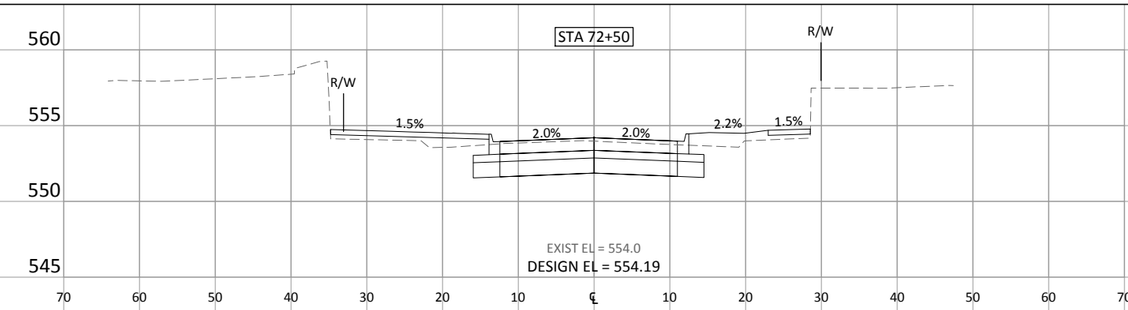
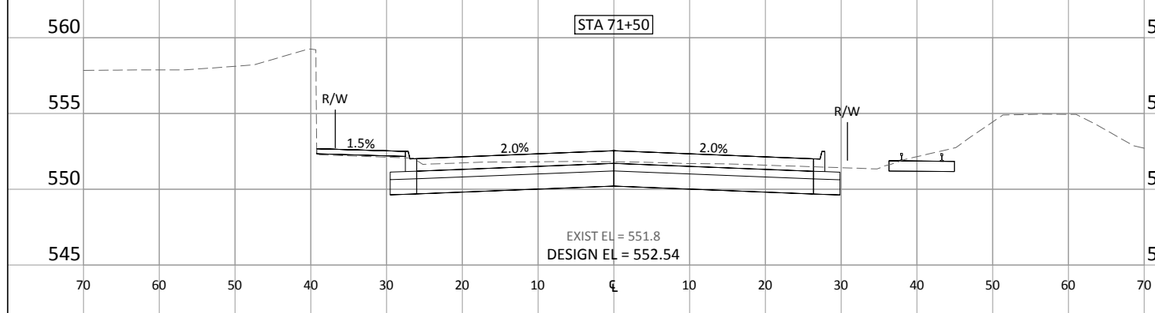
CHECKED MWF

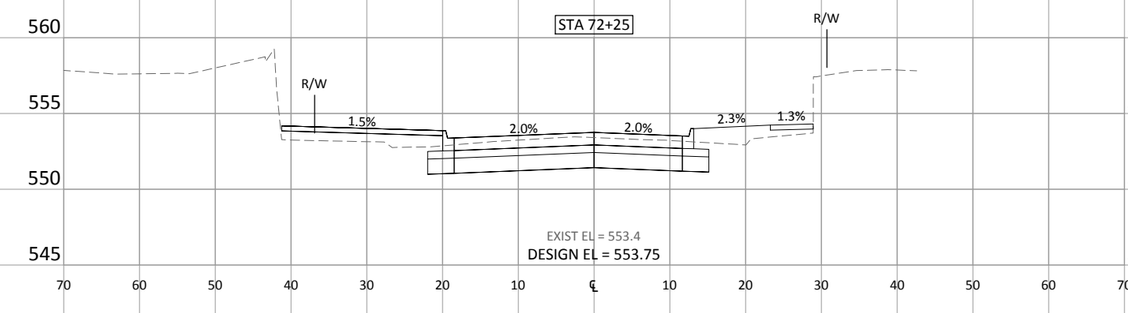
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI CROSS-SECTIONS

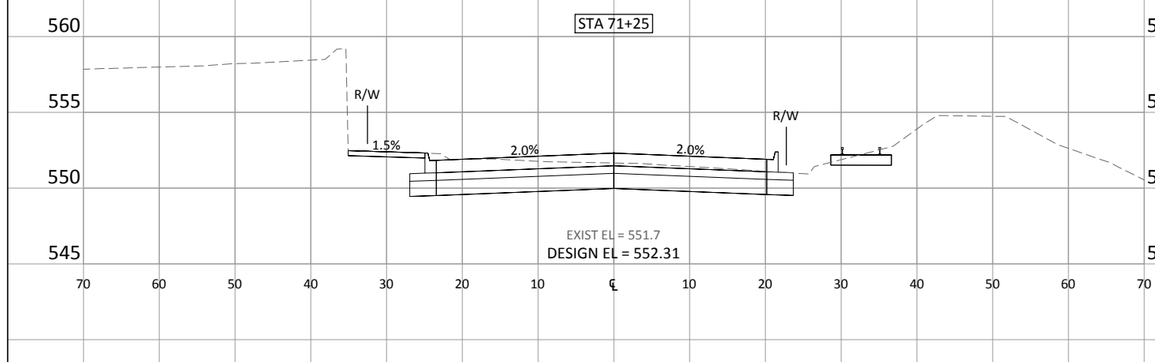
SHEET W.24

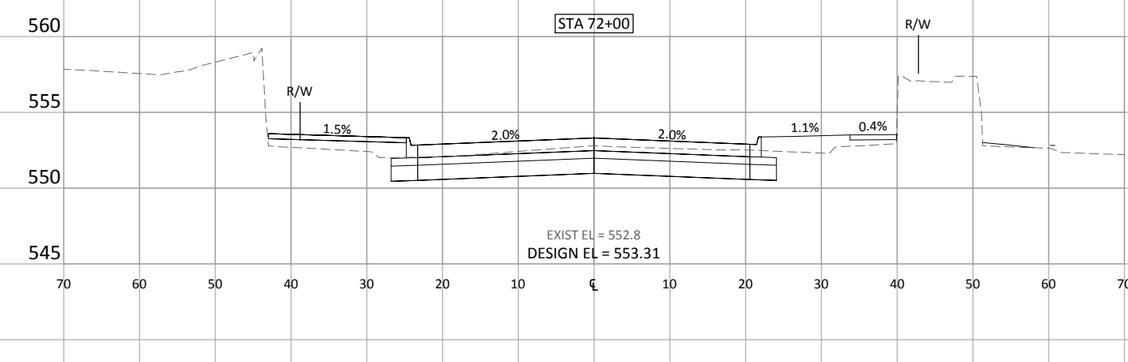


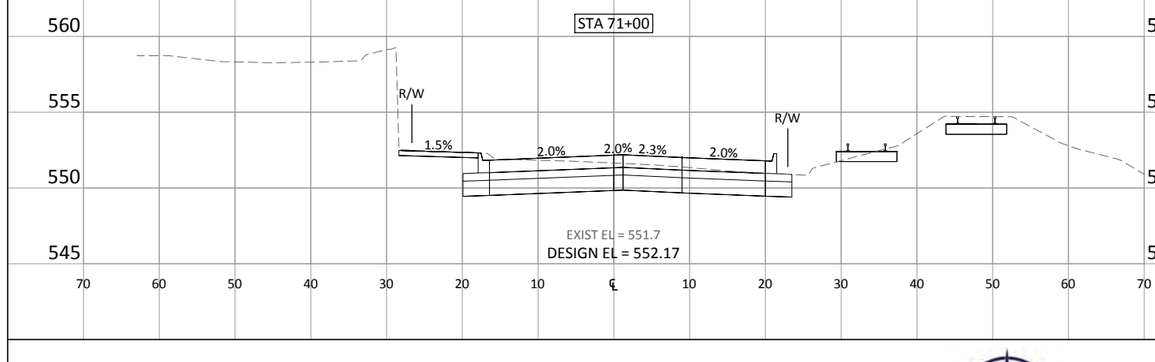


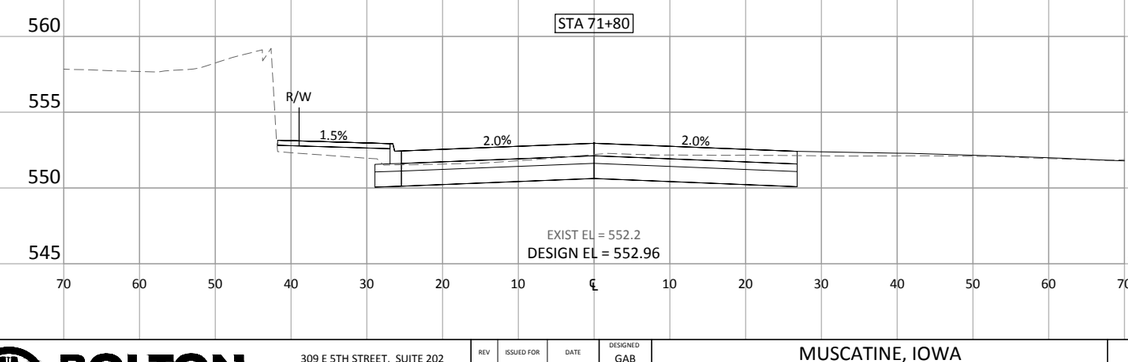












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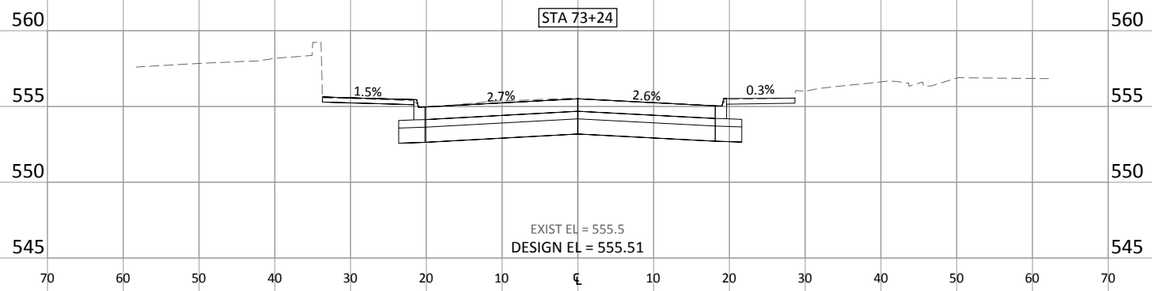
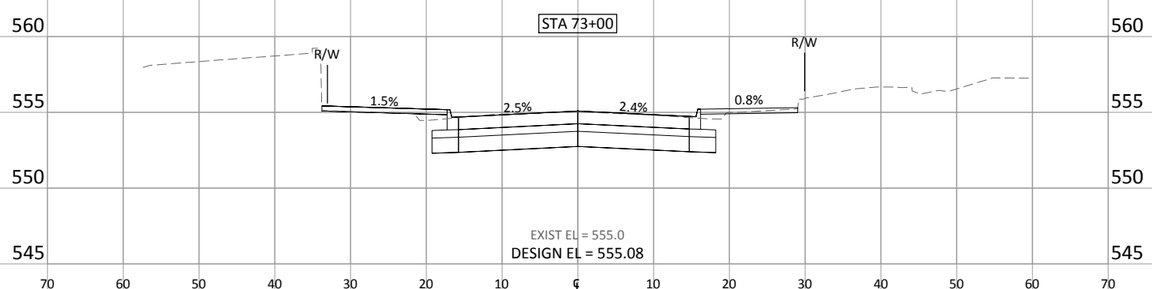
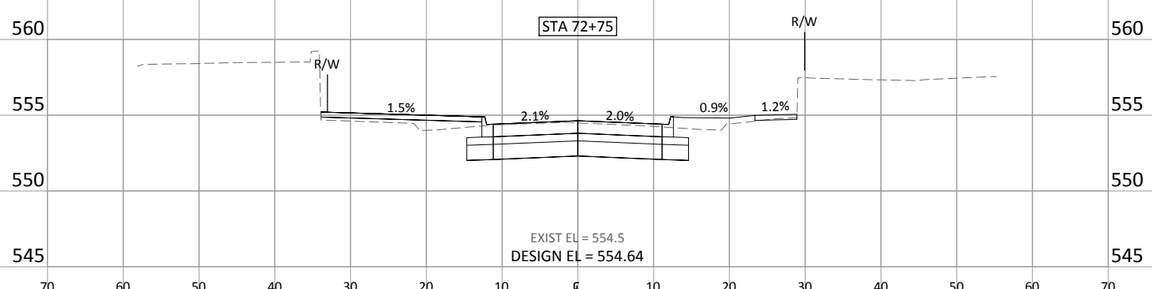
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
MISSISSIPPI CROSS-SECTIONS

SHEET W.25







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VERT. 0 5 10 SCALE FEET

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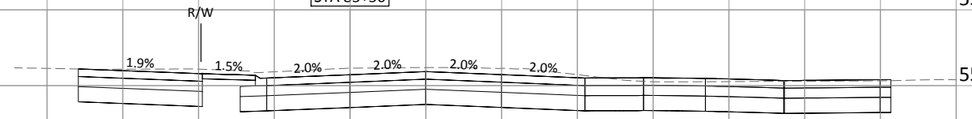
MISSISSIPPI CROSS-SECTIONS

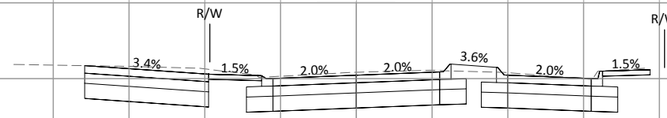
SHEET W.26

STA 85+50



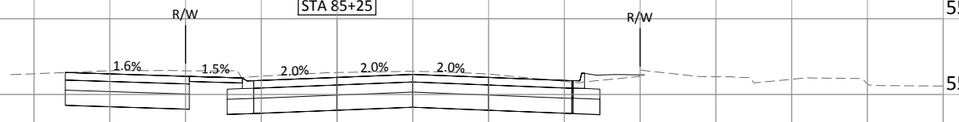
EXIST EL = 551.1
DESIGN EL = 550.72

STA 86+25



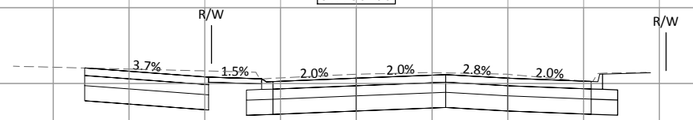
EXIST EL = 550.4
DESIGN EL = 550.22

STA 85+25



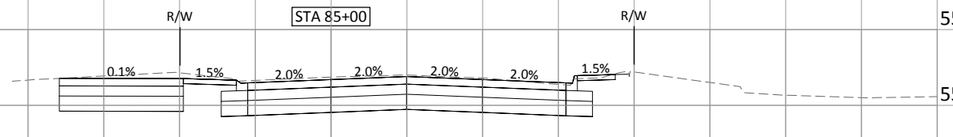
EXIST EL = 551.4
DESIGN EL = 551.12

STA 86+00



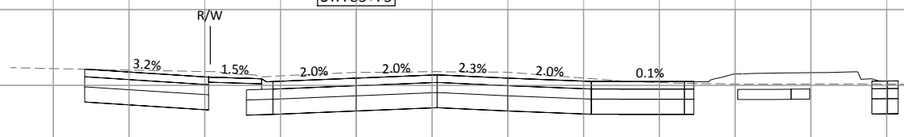
EXIST EL = 550.6
DESIGN EL = 550.35

STA 85+00



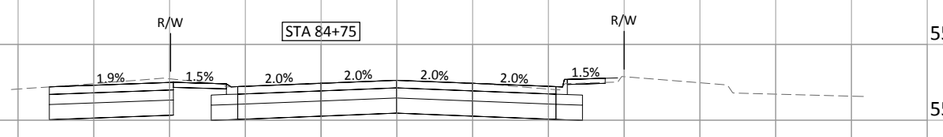
EXIST EL = 551.9
DESIGN EL = 551.70

STA 85+75



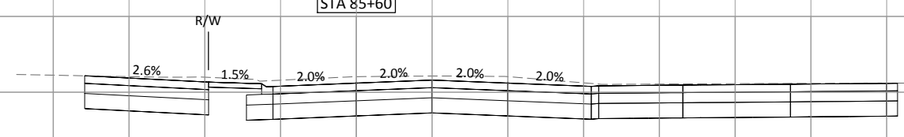
EXIST EL = 550.9
DESIGN EL = 550.47

STA 84+75



EXIST EL = 552.5
DESIGN EL = 552.44

STA 85+60



EXIST EL = 551.0
DESIGN EL = 550.60

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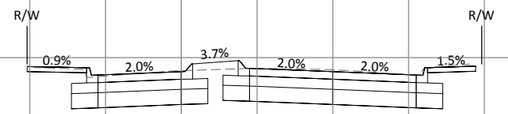
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EAST 2ND CROSS-SECTIONS

SHEET W.27

STA 87+25

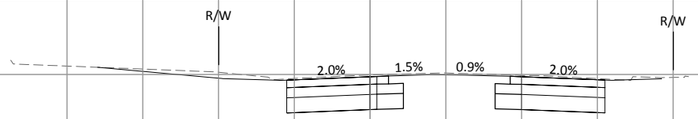
EXIST EL = 549.8
DESIGN EL = 549.72

STA 88+25



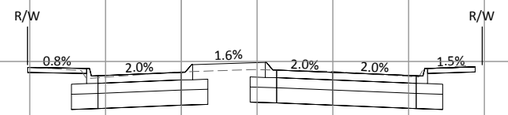
EXIST EL = 549.1
DESIGN EL = 549.07

STA 87+00



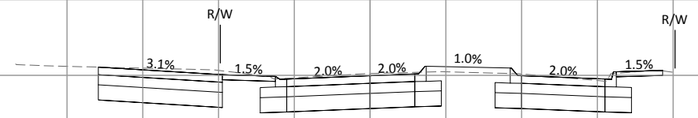
EXIST EL = 550.0
DESIGN EL = 549.85

STA 88+00



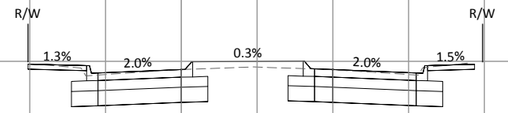
EXIST EL = 549.3
DESIGN EL = 549.28

STA 86+75



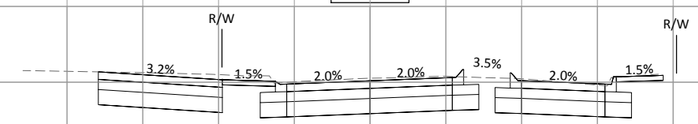
EXIST EL = 550.1
DESIGN EL = 549.97

STA 87+75



EXIST EL = 549.5
DESIGN EL = 549.46

STA 86+50



EXIST EL = 550.3
DESIGN EL = 550.10

STA 87+50

EXIST EL = 549.7
DESIGN EL = 549.60

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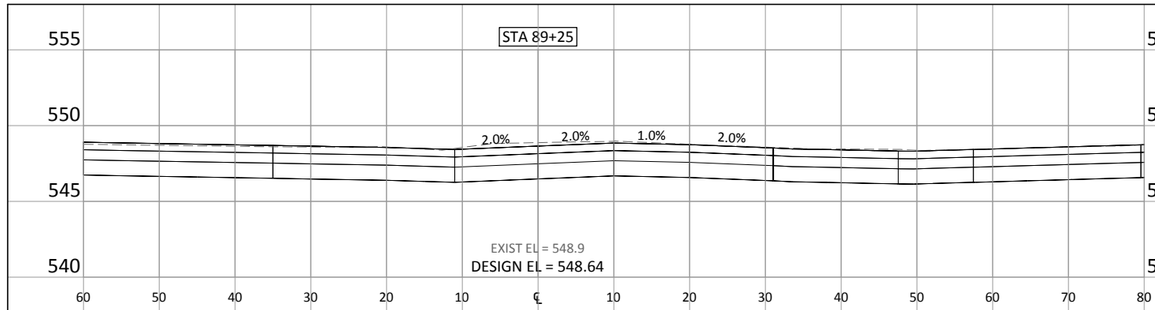
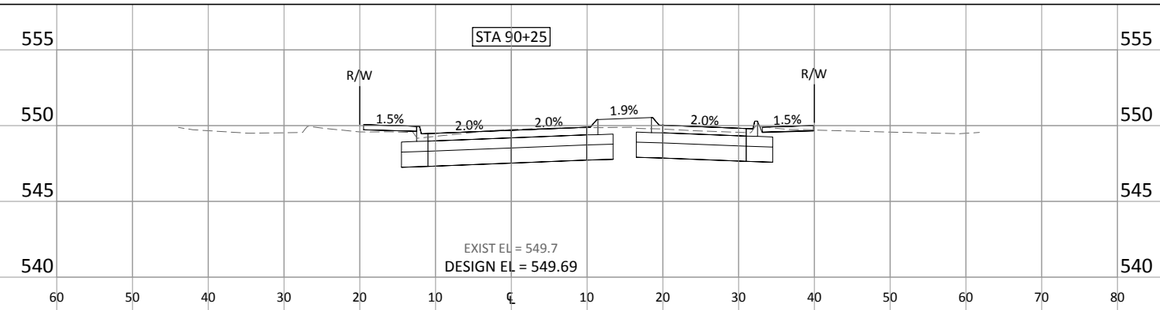
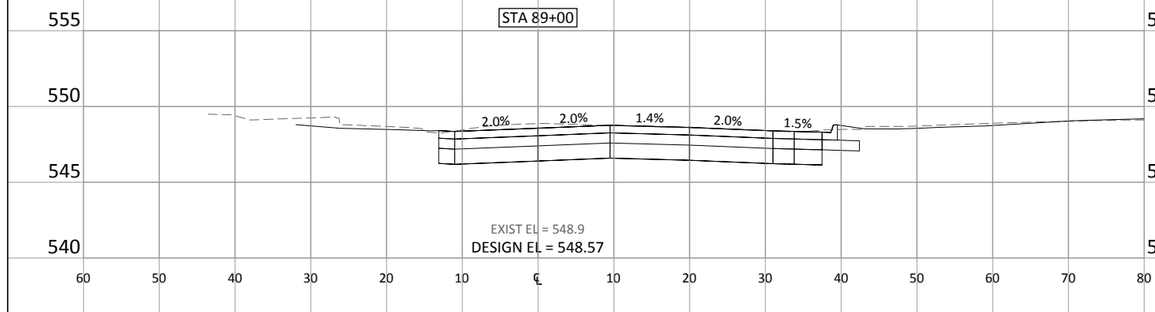
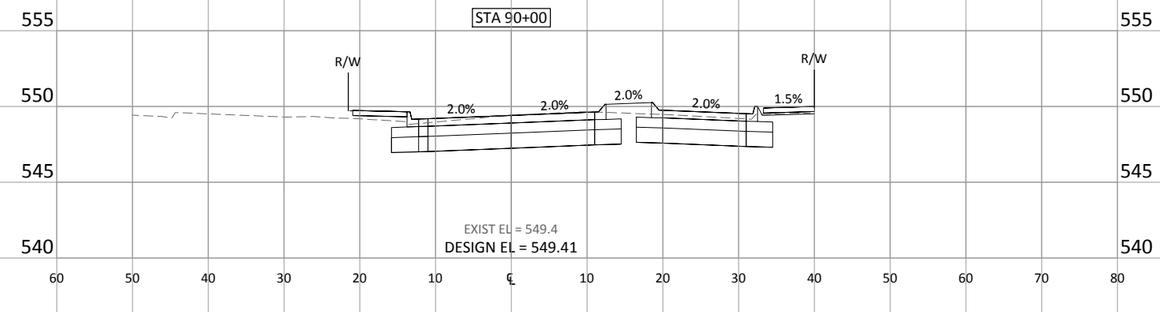
EAST 2ND CROSS-SECTIONS

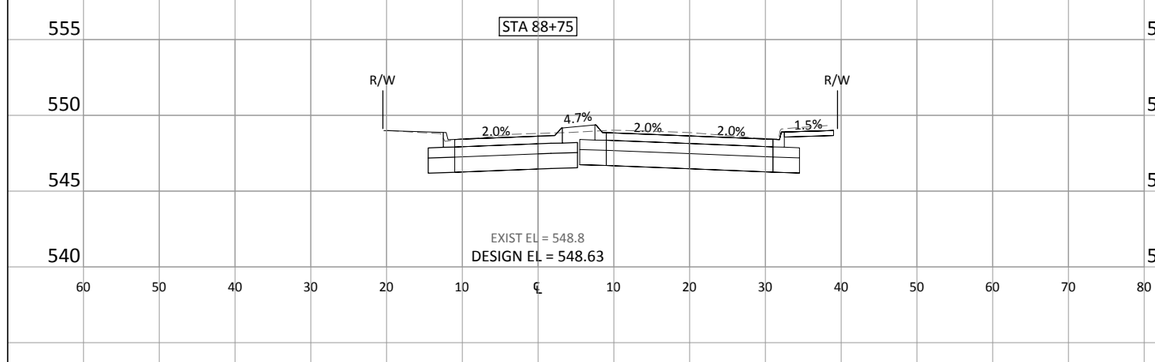
SHEET W.28

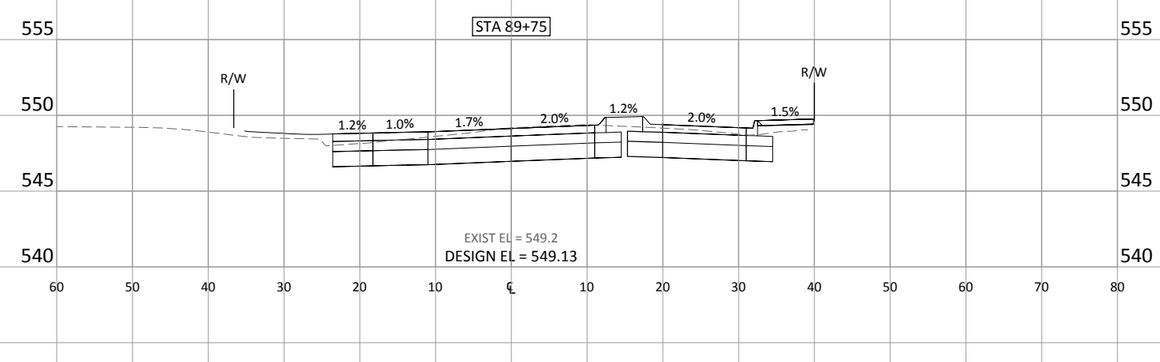


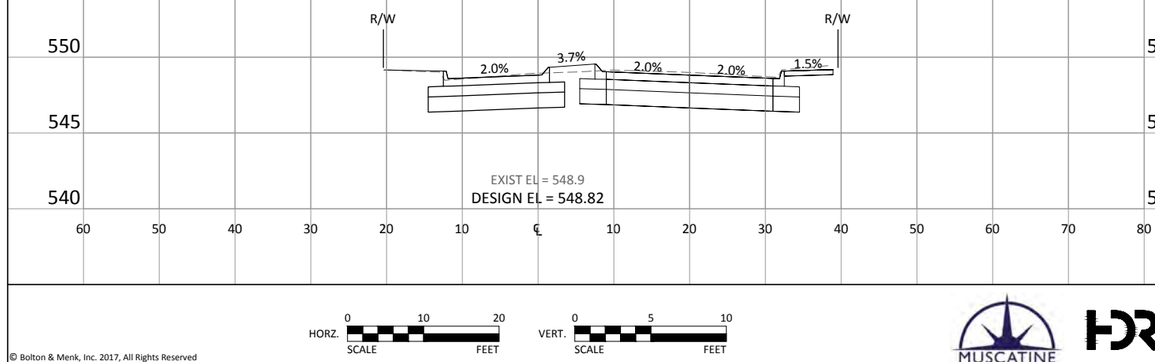


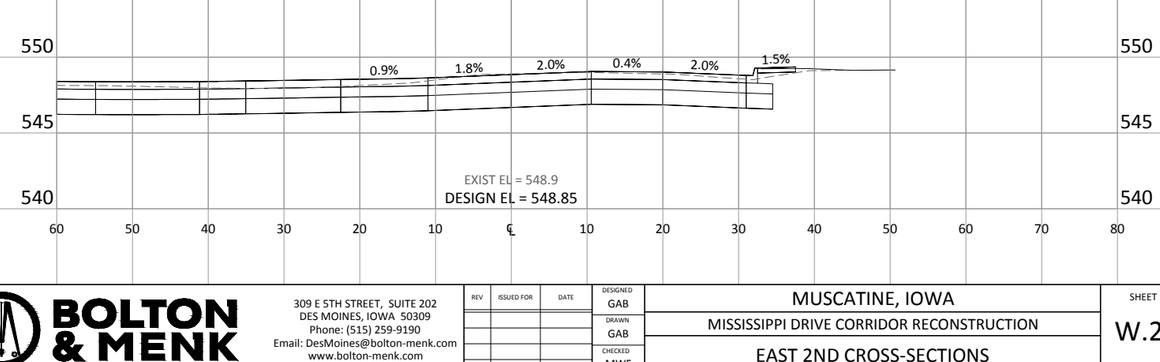












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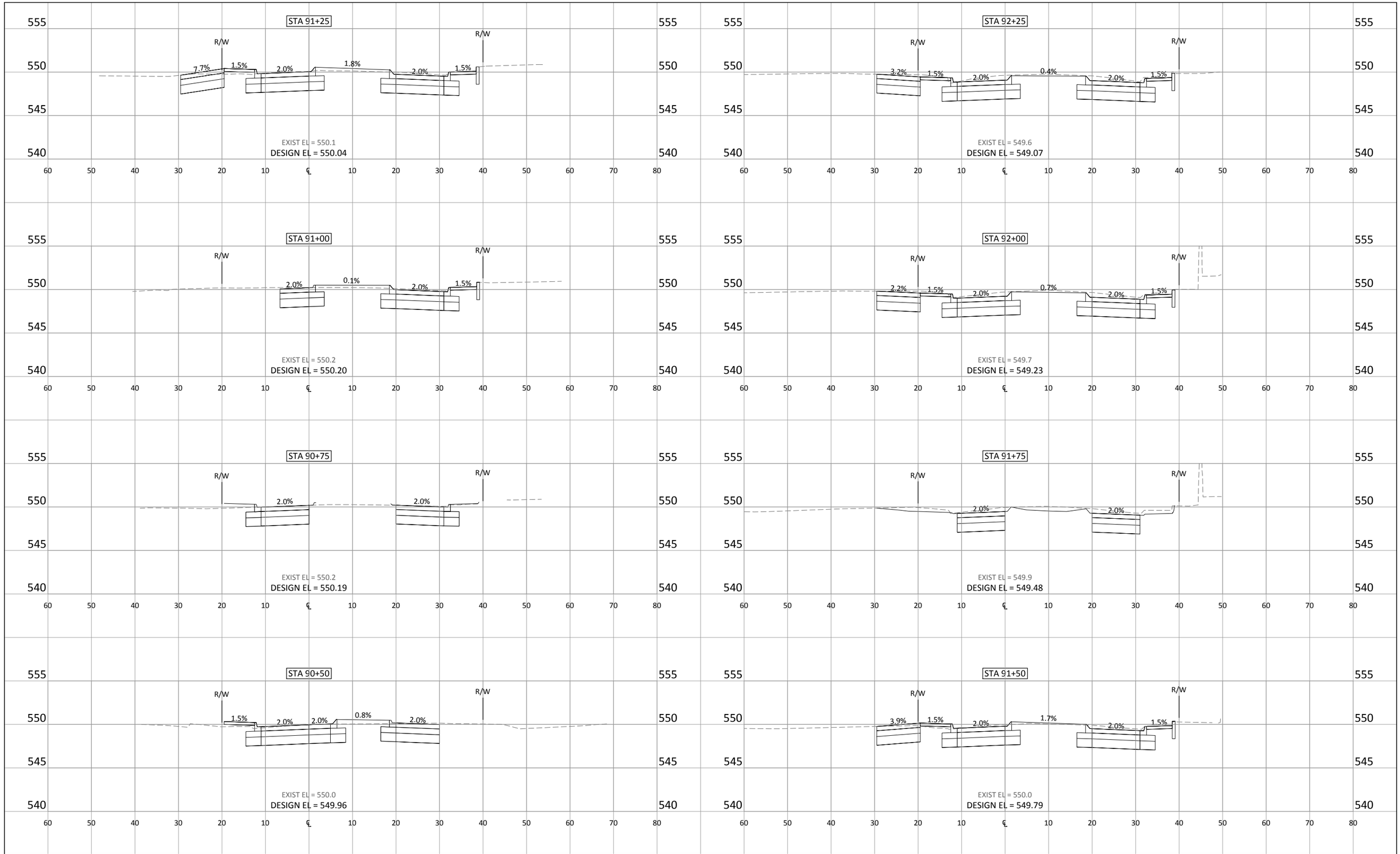
DESIGNED GAB
DRAWN GAB
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EAST 2ND CROSS-SECTIONS

SHEET W.29



HORZ. 0 10 20 SCALE FEET

VERT. 0 5 10 SCALE FEET

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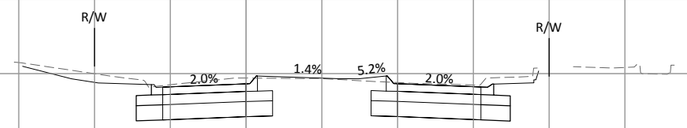
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EAST 2ND CROSS-SECTIONS

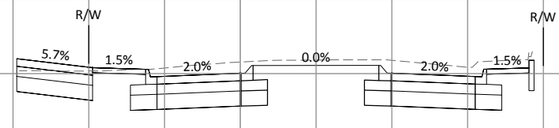
SHEET W.30

STA 93+25



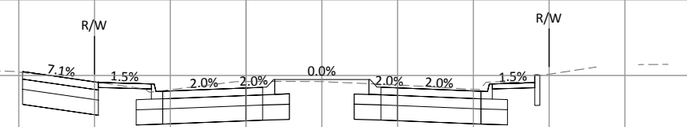
EXIST EL = 549.7
DESIGN EL = 549.33

STA 94+25



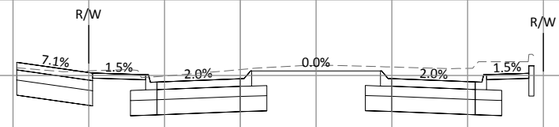
EXIST EL = 550.8
DESIGN EL = 550.02

STA 93+00



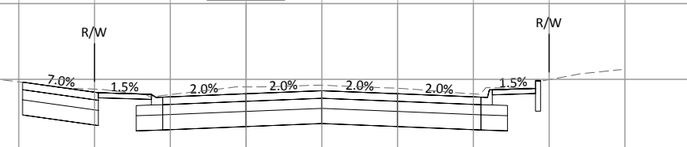
EXIST EL = 549.6
DESIGN EL = 549.18

STA 94+00



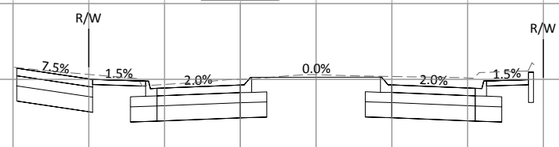
EXIST EL = 550.4
DESIGN EL = 549.79

STA 92+75



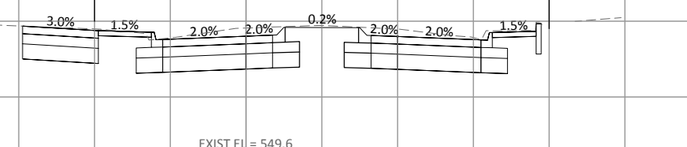
EXIST EL = 549.5
DESIGN EL = 549.05

STA 93+75



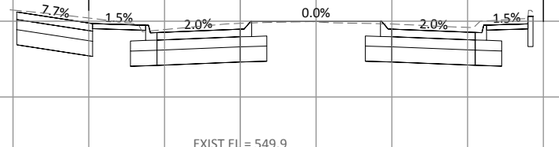
EXIST EL = 550.0
DESIGN EL = 549.63

STA 92+50



EXIST EL = 549.6
DESIGN EL = 549.01

STA 93+50



EXIST EL = 549.9
DESIGN EL = 549.48

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VERT. 0 5 10 SCALE FEET

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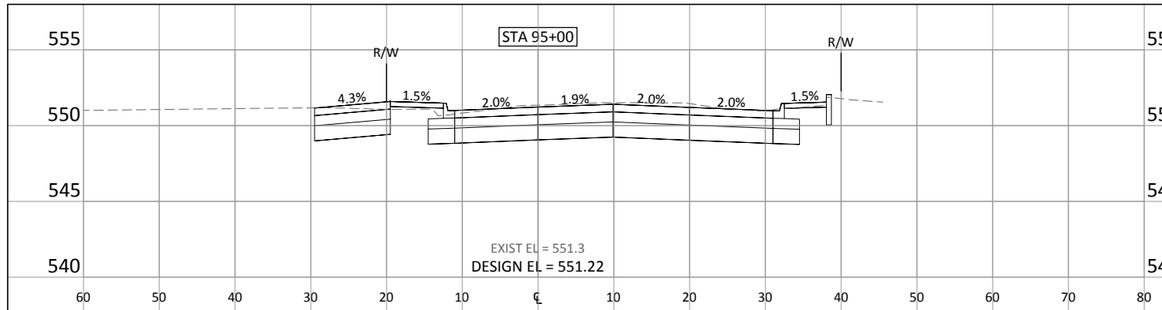
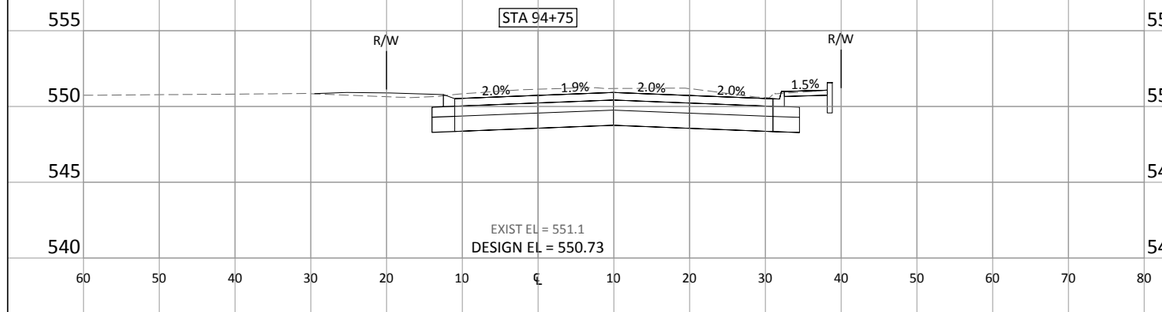
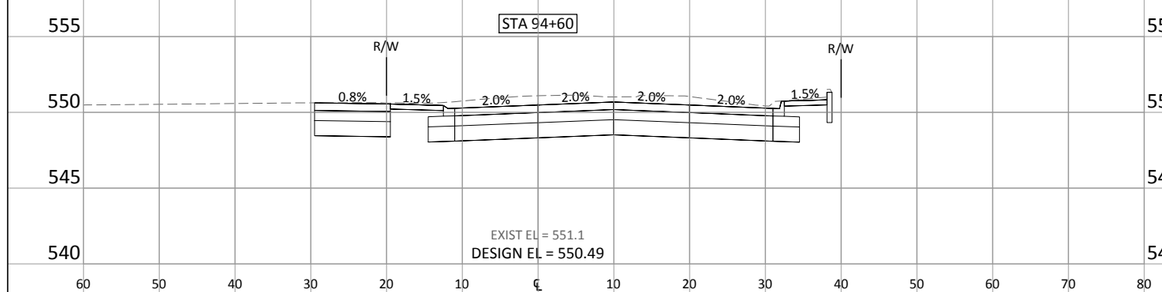
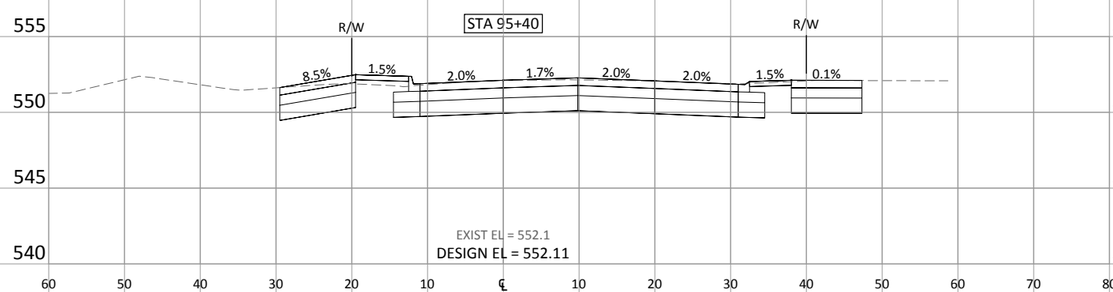
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EAST 2ND CROSS-SECTIONS

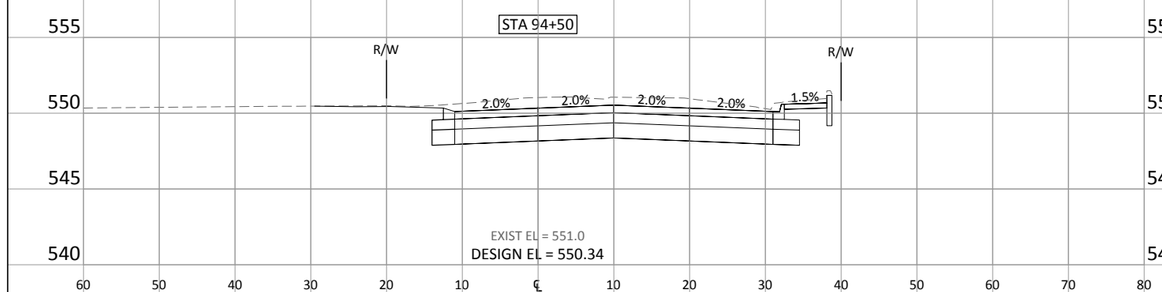
SHEET W.31

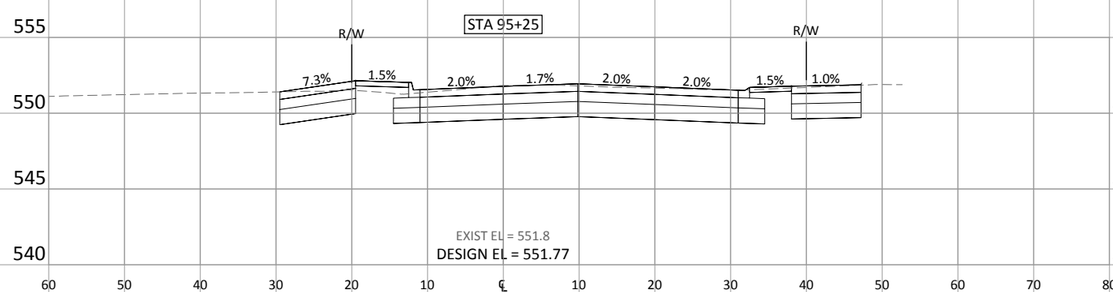












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VERT. 0 5 10 SCALE FEET

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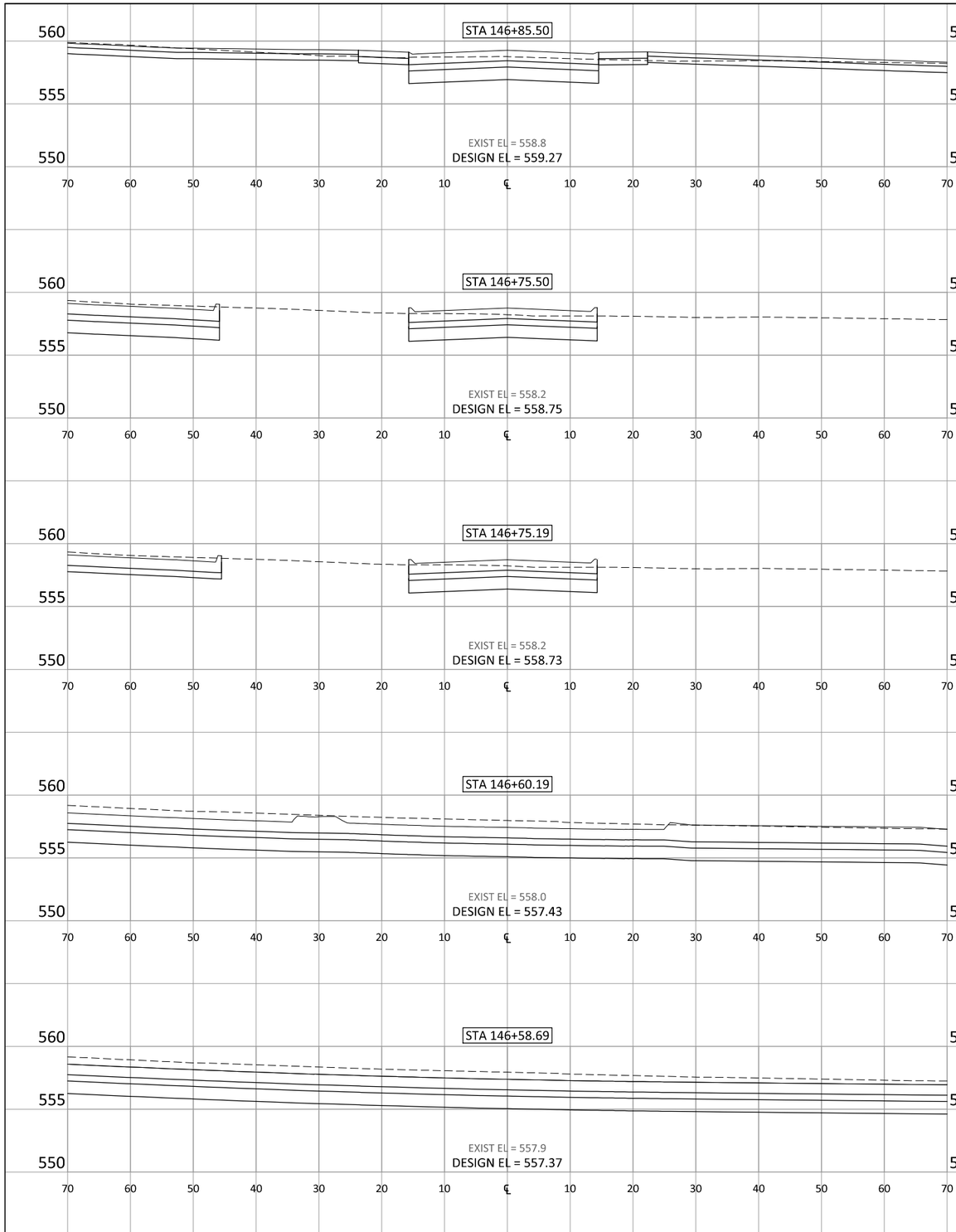
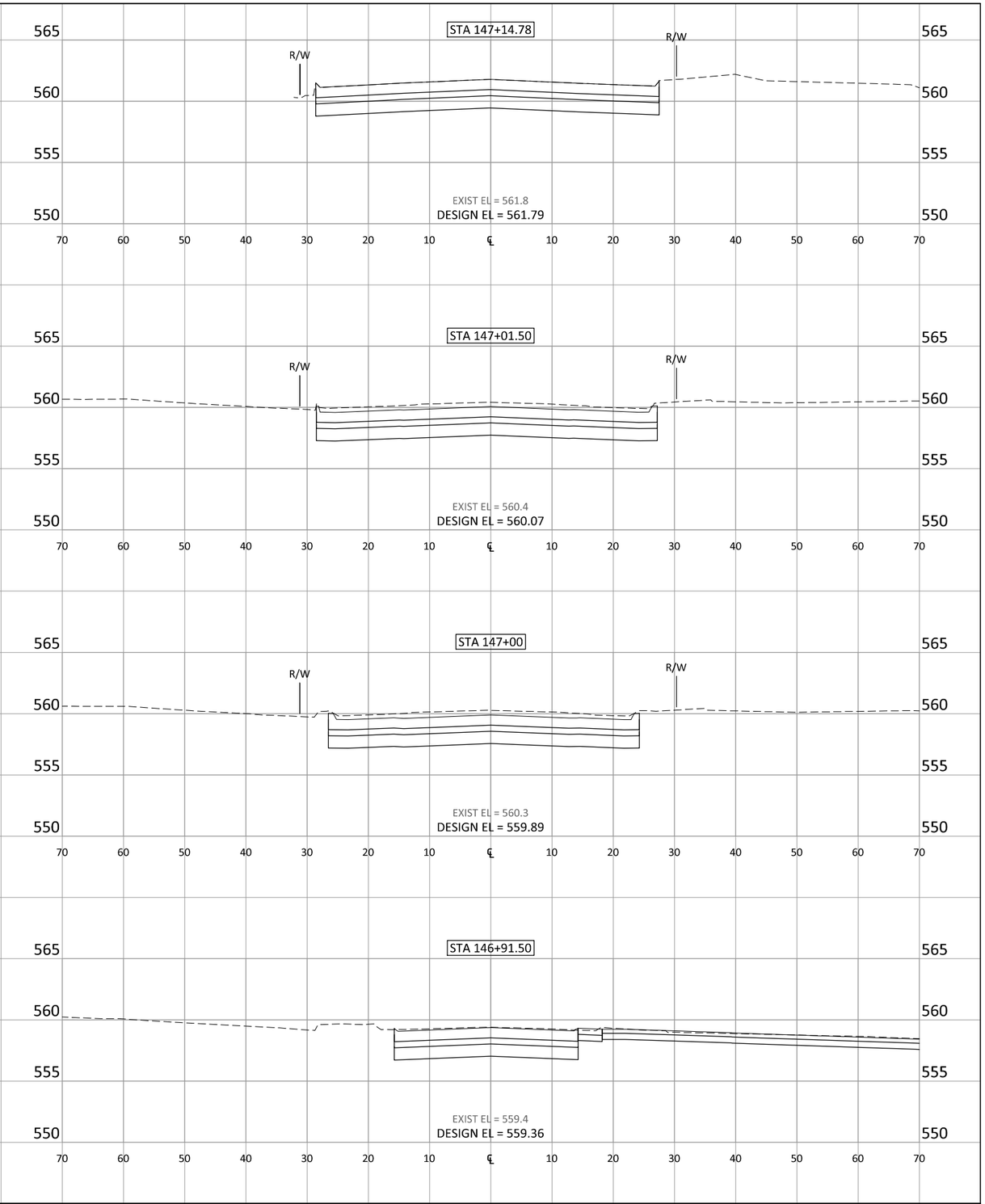
CHECKED MWF

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
EAST 2ND CROSS-SECTIONS

SHEET W.32





HORIZ. 0 10 20 SCALE FEET

VERT. 0 5 10 SCALE FEET

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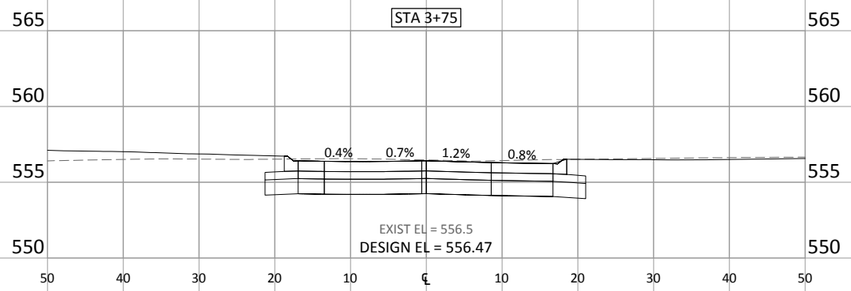
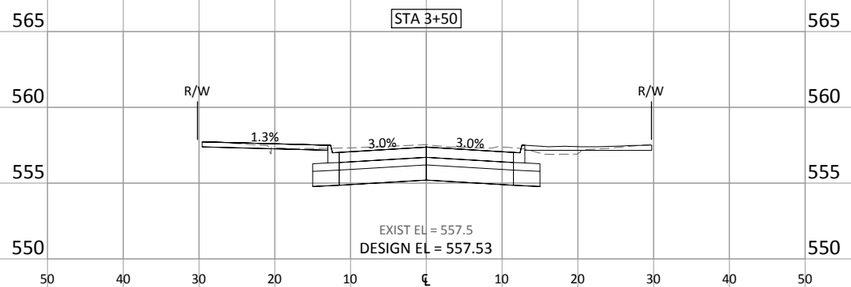
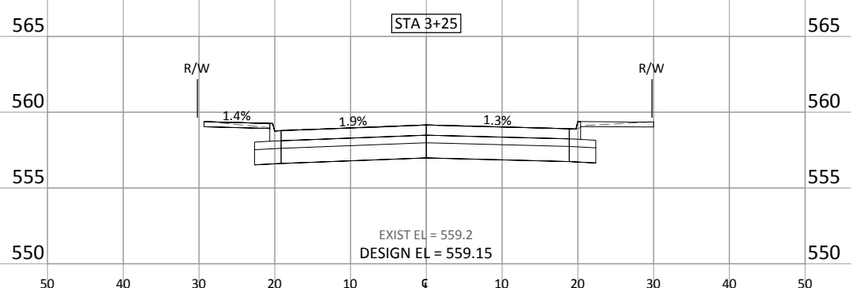
DESIGNED TJB
DRAWN TJB
CHECKED KDM

MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CROSS SECTIONS - LINN STREET

SHEET X.01







HORZ. 0 10 20 SCALE FEET

VERT. 0 5 10 SCALE FEET

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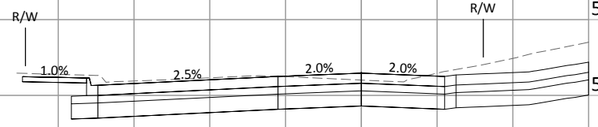
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
PINE CROSS-SECTIONS

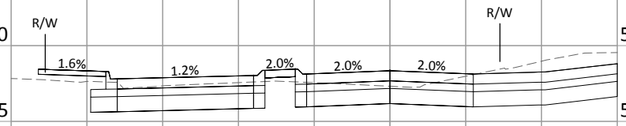
SHEET X.02

STA 7+50



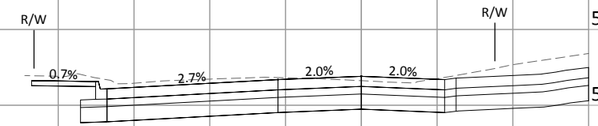
EXIST EL = 561.0
DESIGN EL = 561.47

STA 8+25



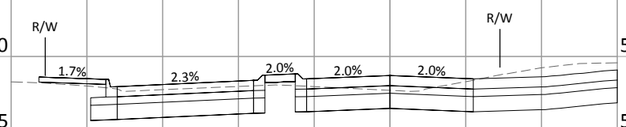
EXIST EL = 557.3
DESIGN EL = 558.34

STA 7+40



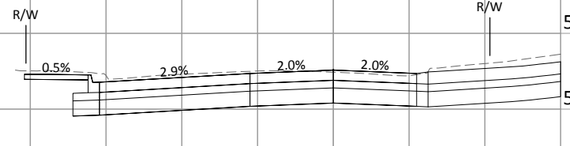
EXIST EL = 561.6
DESIGN EL = 561.91

STA 8+15



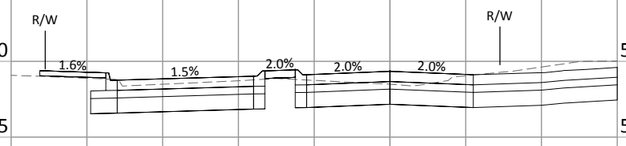
EXIST EL = 557.8
DESIGN EL = 558.74

STA 7+25



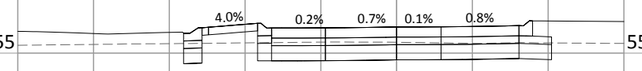
EXIST EL = 562.4
DESIGN EL = 562.57

STA 8+00



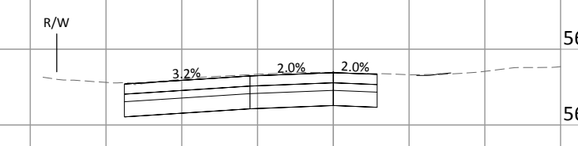
EXIST EL = 558.5
DESIGN EL = 559.34

STA 8+75



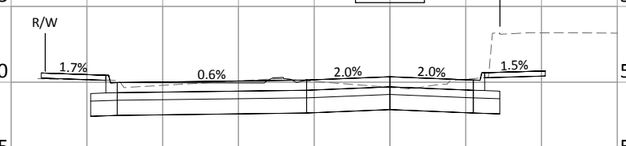
EXIST EL = 555.7
DESIGN EL = 556.73

STA 7+05



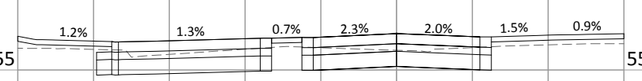
EXIST EL = 563.5
DESIGN EL = 563.46

STA 7+75



EXIST EL = 559.7
DESIGN EL = 560.36

STA 8+50



EXIST EL = 556.3
DESIGN EL = 557.41

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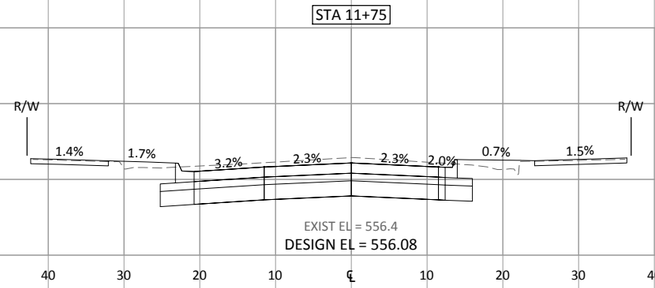
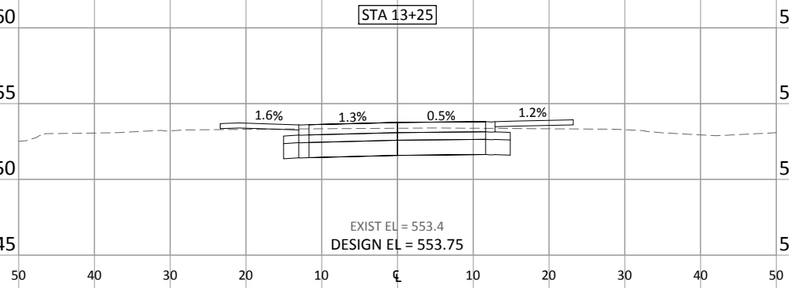
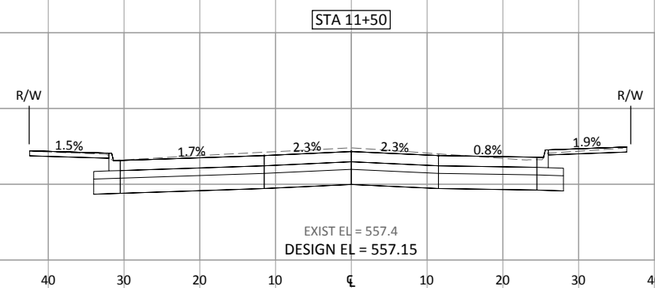
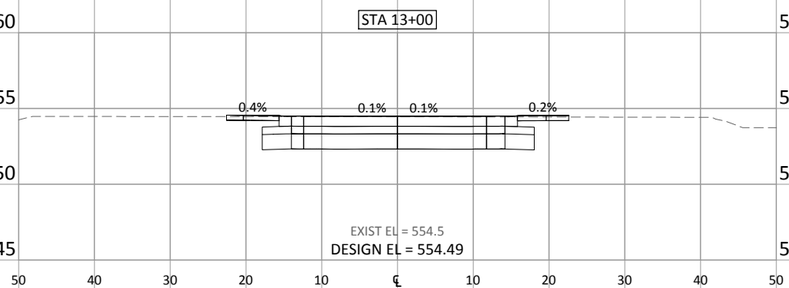
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CHESTNUT CROSS-SECTIONS

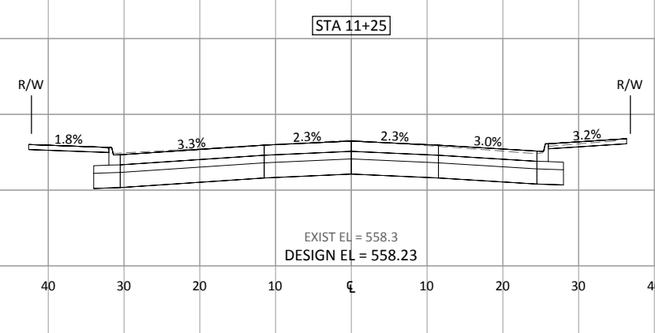
SHEET X.03

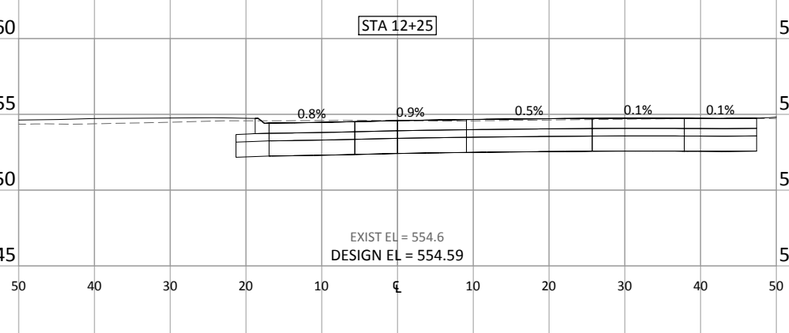


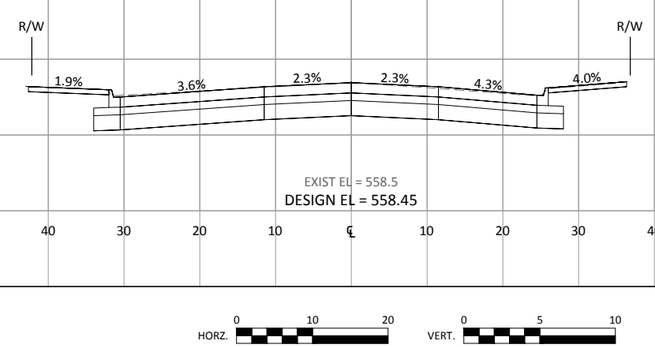


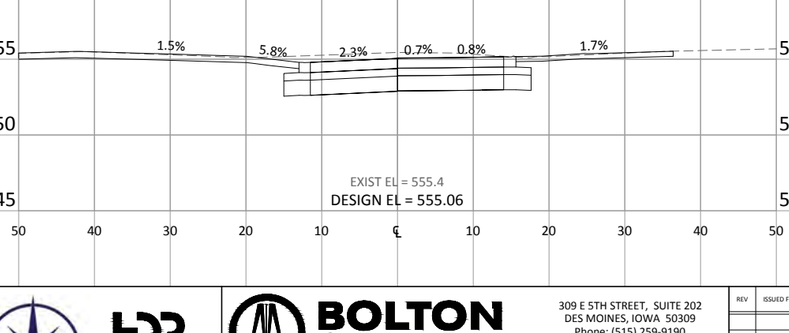












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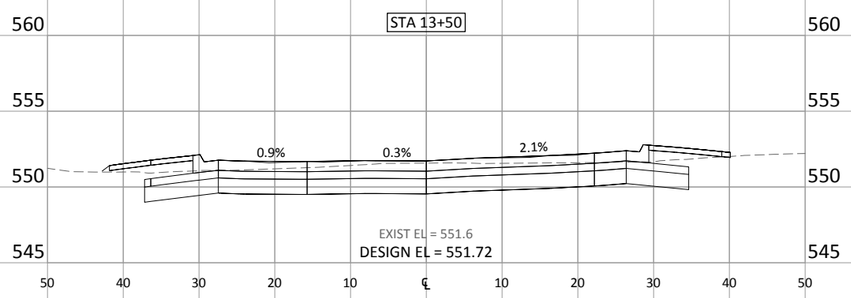
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
IOWA CROSS-SECTIONS

SHEET X.04



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VERT. SCALE 0 5 10 FEET

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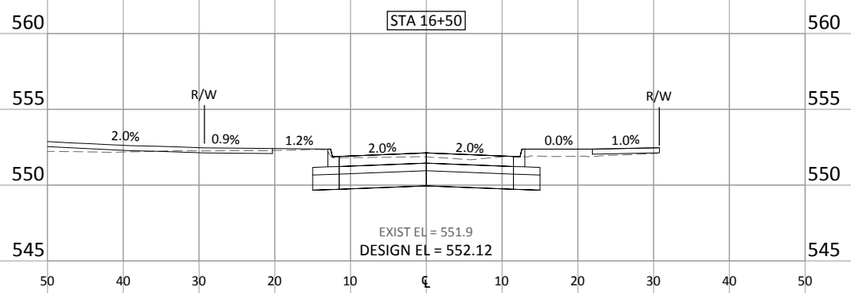
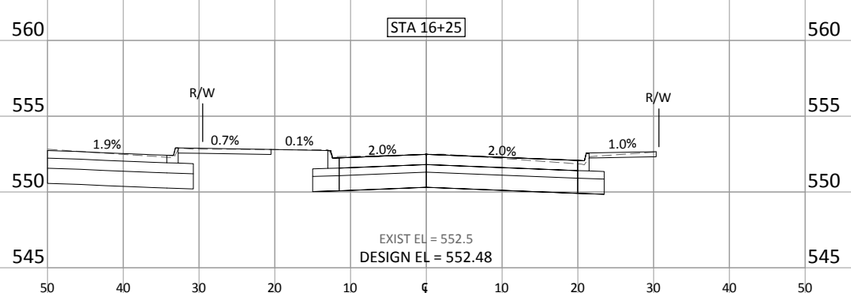
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
IOWA CROSS-SECTIONS

SHEET X.05





HORZ. 0 10 20 SCALE FEET

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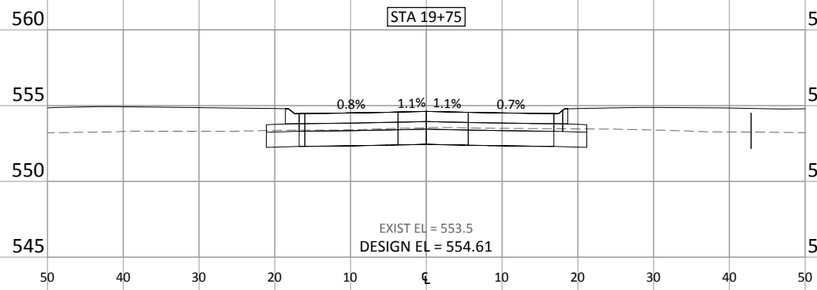
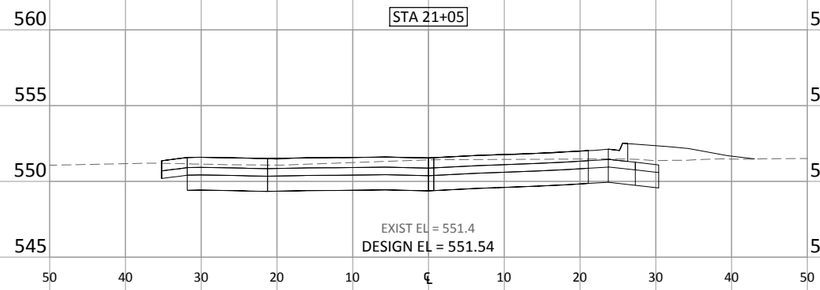
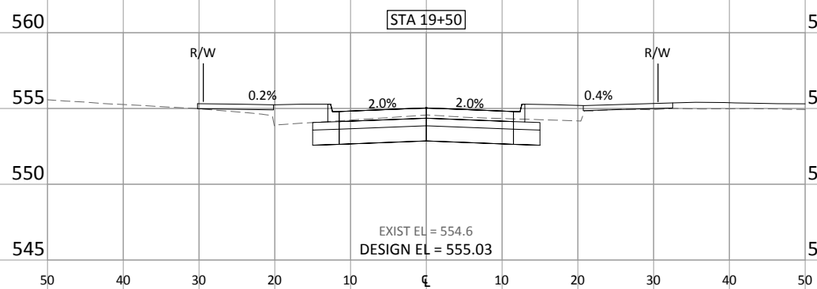
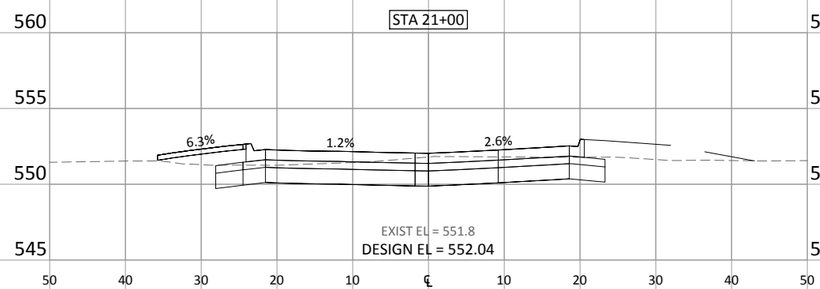
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
SYCAMORE CROSS-SECTIONS

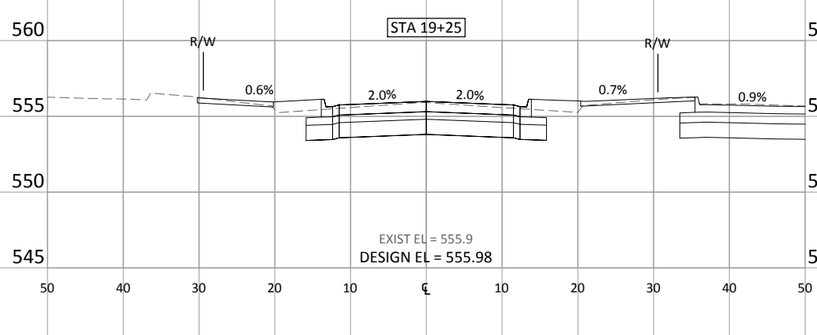
SHEET X.06

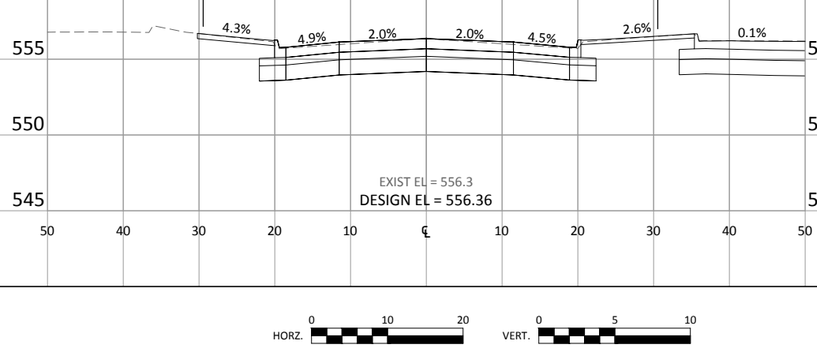


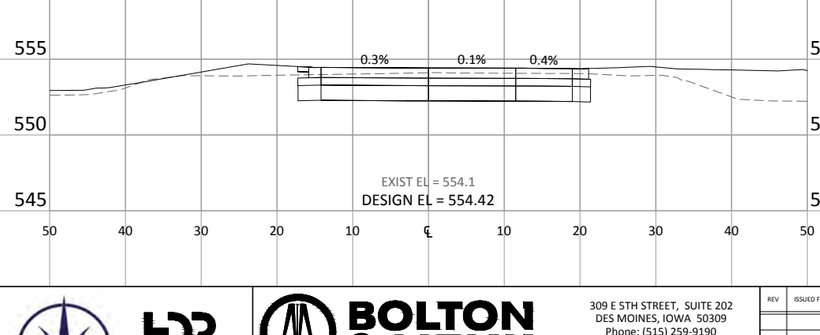












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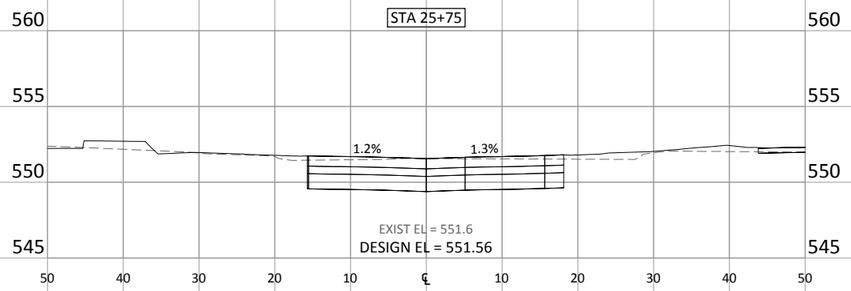
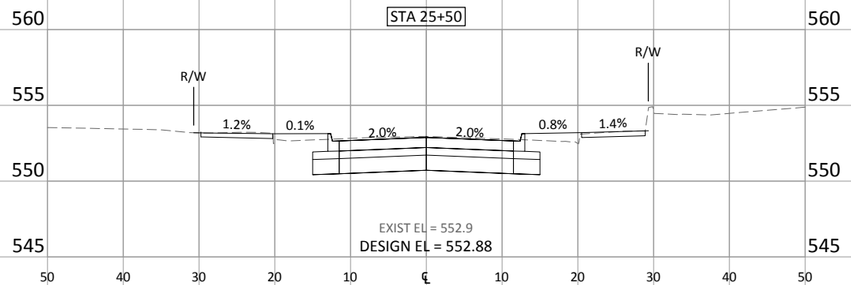
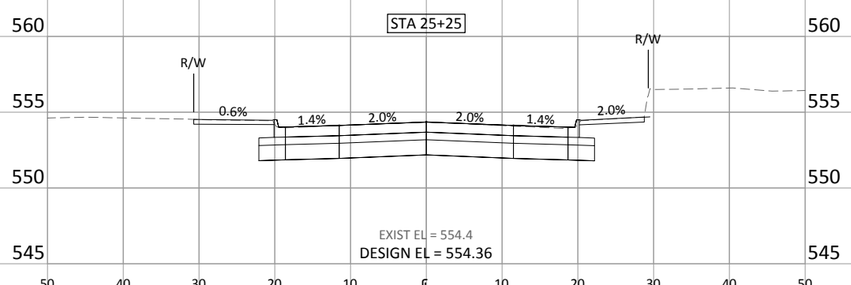
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
CEDAR CROSS-SECTIONS

SHEET X.07







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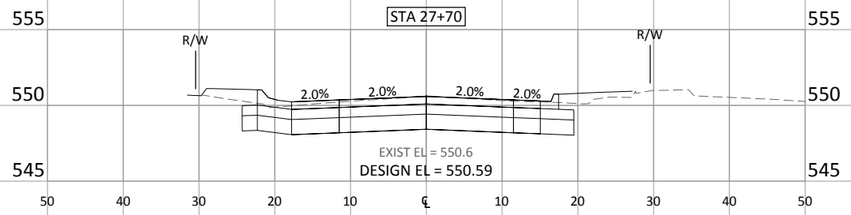
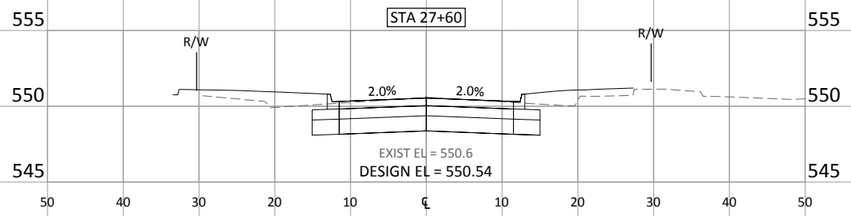
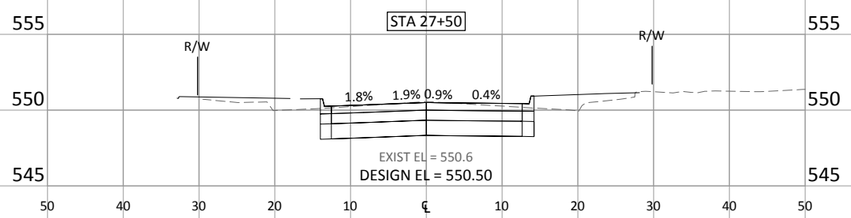
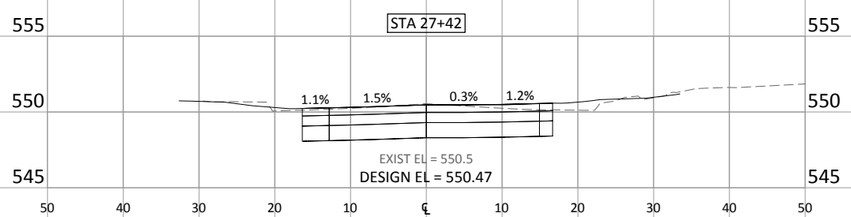
MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
WALNUT CROSS-SECTIONS

SHEET X.08









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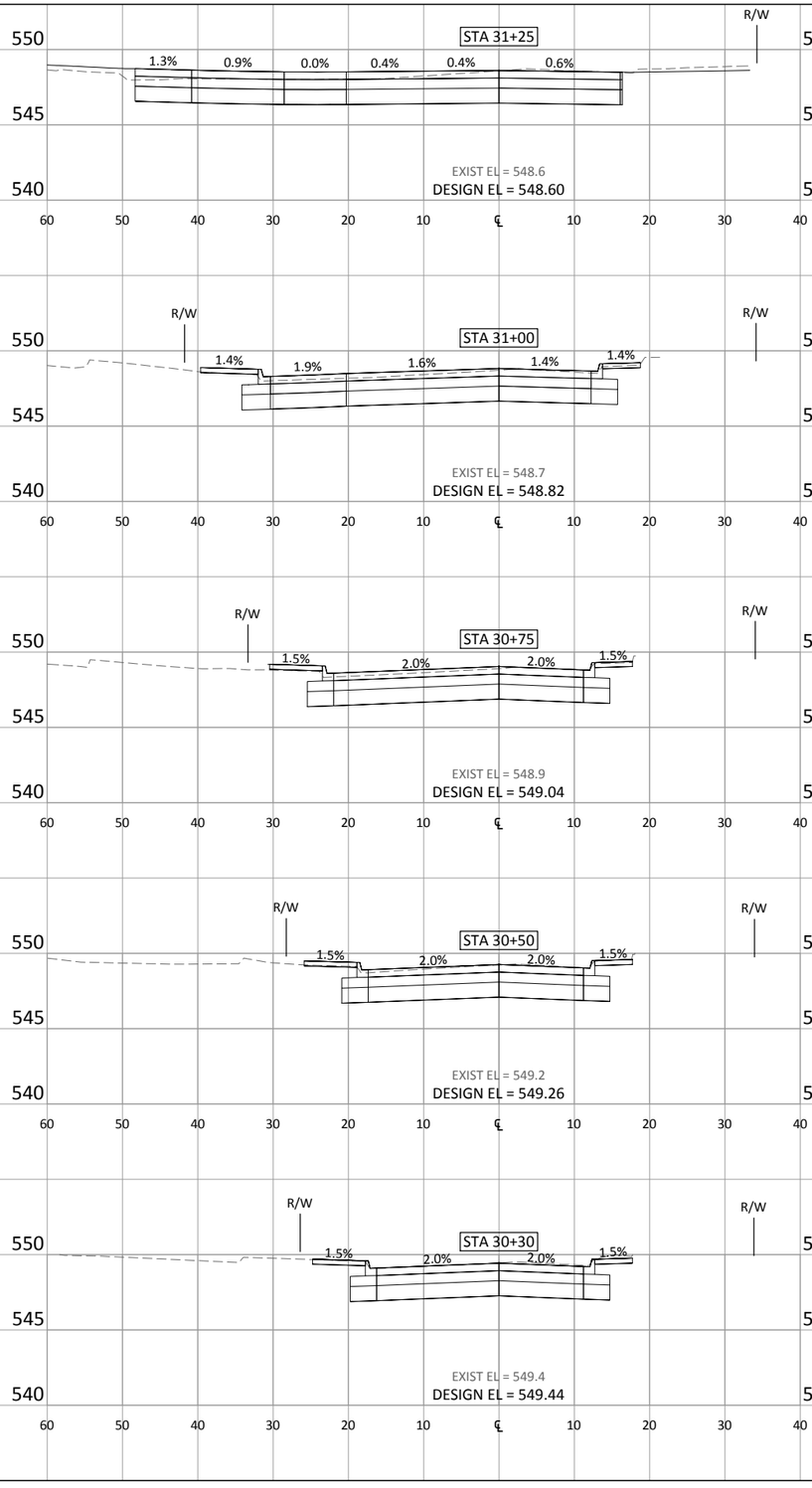
ORANGE CROSS-SECTIONS

SHEET X.09



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VERT. SCALE 0 5 10 FEET

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MUSCATINE, IOWA
MISSISSIPPI DRIVE CORRIDOR RECONSTRUCTION
OAK CROSS-SECTIONS

SHEET X.10