



Purchasing Division
Finance Department
Room 120
411 West First Street
Duluth, Minnesota 55802

218-730-5340
purchasing@duluthmn.gov

Addendum 1 Solicitation
23-99427
3rd Street Reconditioning

This addendum serves to notify all bidders of the following changes to the solicitation documents:

1. The invitation for bid is revised and attached to include required advertisement language. For clarify, the new language is in *italics*.
2. Additional changes to the bid documents are identified in the attached addendum.

Please acknowledge receipt of this Addendum by checking the acknowledgment box within the www.bidexpress.com solicitation.

Posted: **5/19/23**



City of Duluth
Public Works & Utilities Department
Engineering Division
411 West First Street, Duluth, MN 55802

*******ADVERTISEMENT FOR BIDS*******
BIDS DUE May 31, 2023 at 2:00 PM

BID NUMBER: 23-99427

PROJECT NAME: 3rd Street Reconditioning

STATE/CITY PROJECT NUMBER: 1462

ANTICIPATED START DATE: June 26, 2023

The City of Duluth, Minnesota requests sealed bids for the above named project. Bids may be submitted electronically through Bid Express® at www.bidexpress.com until the bid deadline. The City Purchasing Agent will conduct a public bid opening immediately after the deadline for receiving bids. Bidders wishing to view the bid opening should visit <https://www.duluthmn.gov/purchasing/bids-request-for-proposals/> and select the appropriate link.

PROJECT DESCRIPTION & MAJOR WORK ITEMS: Concrete pavement rehabilitation on 3rd Street between Mesaba Avenue and 12th Avenue East; bituminous mill and overlay on 3rd Street between Mesaba Avenue and 12th Avenue East; full depth concrete intersection pavement reconstruction and new signals at the intersections of 3rd Street and 6th Avenue East and Lake Avenue; ADA improvements; storm sewer improvements; and concrete sidewalks and driveways.

COMPLETING FORMS: Forms to be submitted WITH the bid will need to be completed in Bid Express or uploaded into Bid Express. Please review the Bid Express solicitation early enough to allow for form completion.

Questions pertaining to this project should be directed to: **Alex Popp, P.E.; 218-730-5087, apopp@duluthmn.gov**

Plans and specifications may be viewed and downloaded at no cost at www.bidexpress.com. Bidders must create a free account with Bid Express®; and login to search for city projects (search by "City of Duluth" or bid number). Bidders will be required to create an Info Tech Digital ID in order to bid, which can take up to five (5) business days to process. Please allow ample time to obtain your digital id prior to the bid deadline. Bid Express® does charge a nominal fee for bid submission. More information can be found at https://www.bidexpress.com/vendor_resources

Plans and specifications are on file for inspection at the City Engineering office, Minnesota Builder's Exchange and Builder's Exchange of Wisconsin.

Bidders must review the 2019 edition of the City of Duluth Public Works/Utilities Department – Engineering Division Standard Construction Specifications (available at <http://www.duluthmn.gov/engineering/standard-construction-specifications/>) as these Specifications are incorporated by reference.

Bid surety in an amount equal to five per cent (5%) of the total bid shall be submitted with each bid. Electronic bid surety can be submitted in Bid Express using Surety 2000 or Tinubu. Bid bonds may be emailed to purchasing@duluthmn.gov or may be mailed or dropped off at 411 West 1st Street, Room 120, Duluth, MN 55802. Due to the possibility of the City's spam filter rejecting an emailed bid bond, bidders are strongly encouraged to submit the bid bond early and verify receipt. Regardless of the method of bid surety submission, bid surety must be received by the bid deadline.

Not less than prevailing wages as included in the specifications and provisions must be paid on this project.

The contractor must take affirmative action to ensure that the employees and applicants for employment are not discriminated against because of their race, color, creed, sex or national origin, and must meet the affirmative action goals. Contractors are encouraged to subcontract with Disadvantaged Business Enterprises when possible. Contractor will comply with all applicable Equal Employment Opportunity laws and regulations.

The City of Duluth reserves the right to waive informalities and to reject any or all bids.

Minimum wage rates to be paid by the Contractors have been predetermined and are subject to the Work Hours Act of 1962, P.L. 87-581 and implementing regulations.

*READ CAREFULLY THE WAGE SCALES AND DIVISION A OF THE SPECIAL
PROVISIONS AS THEY AFFECT THIS/THESE PROJECT/PROJECTS*

The Minnesota Department of Transportation hereby notifies all bidders:

in accordance with Title VI of the Civil Rights Act of 1964 (Act), as amended and Title 49, Code of Federal Regulations, Subtitle A Part 21, Non-discrimination in Federally-assisted programs of the Department of Transportation, it will affirmatively assure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded maximum opportunity to participate and/or to submit bids in response to this invitation, and will not be discriminated against on the grounds of race, color, disability, age, sex or national origin in consideration for an award;

in accordance with Title VI of the Civil Rights Act of 1964 as amended, and Title 23, Code of Federal Regulations, Part 230 Subpart A-Equal Employment Opportunity on Federal and Federal-Aid Construction Contracts (including supportive services), it will affirmatively assure increased participation of minority groups and disadvantaged persons and women in all phases of the highway construction industry, and that on any project constructed pursuant to this advertisement equal employment opportunity will be provided to all persons without regard to their race, color, disability, age, religion, sex or national origin;

in accordance with the Minnesota Human Rights Act, Minnesota Statute 363A.08 Unfair discriminatory Practices, it will affirmatively assure that on any project constructed pursuant to this advertisement equal employment opportunity will be offered to all persons without regard to race, color, creed, religion, national origin, sex, marital status, status with regard to public assistance, membership or activity in a local commission, disability, sexual orientation, or age;

in accordance with the Minnesota Human Rights Act, Minnesota Statute 363A.36 Certificates of Compliance for Public Contracts, and 363A.37 Rules for Certificates of Compliance, it will assure that appropriate parties to any contract entered into pursuant to this advertisement possess valid Certificates of Compliance.

If you have employed more than 40 full-time employees in any state, on any single working day during the previous 12 months, you must have a compliance certificate issued by the Minnesota Department of Human Rights to bid on any job in this advertisement. Please contact the Department of Human Rights immediately if you need assistance in obtaining a certificate.

The following notice from the Minnesota Department of Human Rights applies to all contractors:

"It is hereby agreed between the parties that Minnesota Statute, section 363A.36 and Minnesota Rules, parts 5000.3400 to 5000.3600 are incorporated into any contract between these parties based on this specification or any modification of it. A copy of Minnesota Statute 363A.36 and Minnesota Rules, parts 5000.3400 to 5000.3600 is available upon request from the contracting agency."

"It is hereby agreed between the parties that this agency will require affirmative action requirements be met by contractors in relation to Minnesota Statute 363A.36 and Minnesota Rules 5000.3600. Failure by a contractor to implement an affirmative action plan or make a good faith effort shall result in revocation of its certificate or revocation of the contract (Minnesota Statute 363A.36, Subd. 2 and 3)."

A minimum goal of 4.0 % Good Faith Effort to be subcontracted to Disadvantaged Business Enterprises.

Patrice Stalvig, City Purchasing Agent
City Purchasing Agent

ADDENDUM #1, Wednesday May 17, 2023

3rd Street Reconditioning
City Project # 1462
BID No. 23-99427

NOTICE

This Addendum is issued to modify, explain, or correct the original drawings, specifications and/or previous addenda and is hereby made a part of the Contract Documents. Please attach this Addendum to the specification and note receipt of this Addendum on the Request for Bid.

GENERAL

1. Signal fiber interconnect details are added and signal plans were modified.
2. Concrete pavement repair work is modified.
3. Special provisions are modified.
4. The Project Bid Form is revised.
5. Descriptions of changes to drawings are for reference only and provide only a general overview of changes made. It is the Contractor's responsibility to fully assess and provide the specific requirements of the Work on all Plan sheets regardless of the description of sheet change(s) provided herein.

DRAWINGS

1. Drawing changes to the STATEMENT OF ESTIMATED QUANTITIES are as follows:
 - a. Sheet 5; Delete Sheet 5 in its entirety and replace with revised Sheet 5. Revisions to Sheet 5 are as follows:
 - i. Added REMOVE CABLES item.
 - ii. Revised quantities for REMOVE HANDHOLE, BITUMINOUS PATCHING MIXTURE, DOWEL BAR, SUPPLEMENTAL PAVEMENT REINFORCEMENT, AND DRILL AND GROUT REINFORCEMENT BARS (EPOXY COATED).
 - iii. Replaced item CONCRETE PAVEMENT 8.0" with PLACE CONCRETE PAVEMENT 8".
 - b. Sheet 6; Delete Sheet 6 in its entirety and replace with revised Sheet 6. Revisions to Sheet 6 are as follows:
 - i. Removed JOINT REPAIR (TYPE A1), JOINT REPAIR (TYPE A2), JOINT AND CRACK REPAIR (TYPE B3), PARTIAL DEPTH REPAIR (TYPE BA) items.
 - ii. Replaced item FULL DEPTH REPAIR (TYPE CD-LV) with FULL DEPTH REPAIR (TYPE CD-HV).
 - iii. Revised quantities for FULL DEPTH REPAIR (TYPE CD), PAVEMENT REPLACEMENT (TYPE CX), SPOT FULL DEPTH REPAIR (TYPE C1-LV) items.

ADDENDUM #1, May 17, 2023
3rd Street Reconditioning
City Project # 1462

- c. Sheet 7; Delete Sheet 7 in its entirety and replace with revised Sheet 7. Revisions to Sheet 7 are as follows:
 - i. Added ADJUST HANDHOLE item.
 - ii. Revised quantities for OUTDOOR FIBER SPLICE ENCLOSURE, 1.5" NON-METALLIC CONDUIT, 2" NON-METALLIC CONDUIT, FIBER OPTIC SPLICE/PATCH PANEL, FIBER OPTIC PIGTAIL TERMINATION, FIBER OPTIC CABLE SPLICING, FIBER OPTIC TRUNK CABLE 144SM, FIBER OPTIC TRUNK CABLE 12SM.
2. Drawing changes to the CONSTRUCTION CHARTS are as follows:
 - a. Sheet 10; Delete Sheet 10 in its entirety and replace with revised Sheet 10. Revisions to Sheet 10 are as follows:
 - i. Replaced item CONCRETE PAVEMENT 8.0" with PLACE CONCRETE PAVEMENT 8" in chart C.
 - b. Sheet 11; Delete Sheet 11 in its entirety and replace with revised Sheet 11. Revisions to Sheet 11 are as follows:
 - i. Updated quantities and bid items in chart D
3. Sheet 38; Delete Sheet 38 in its entirety and replace with revised Sheet 38. Revisions to Sheet 38 are as follows:
 - a. Revised detail to FULL DEPTH REPAIR (TYPE CD-HV).
 - b. Added reinforcing to detail.
4. Sheet 39; Delete Sheet 39 in its entirety and replace with revised Sheet 39. Revisions to Sheet 39 are as follows:
 - a. Added reinforcing to detail.
5. Sheet 40; Delete Sheet 40 in its entirety and replace with revised Sheet 40. Revisions to Sheet 40 are as follows:
 - a. Detail no longer applies to project and was crossed out.
6. Sheet 41; Delete Sheet 41 in its entirety and replace with revised Sheet 41. Revisions to Sheet 41 are as follows:
 - a. Incidental to CX repair work.
7. Sheet 42; Delete Sheet 42 in its entirety and replace with revised Sheet 42. Revisions to Sheet 42 are as follows:
 - a. Detail no longer applies to project and was crossed out.
8. Sheet 43; Delete Sheet 43 in its entirety and replace with revised Sheet 43. Revisions to Sheet 43 are as follows:
 - a. Detail no longer applies to project and was crossed out.
9. Sheet 44; Delete Sheet 44 in its entirety and replace with revised Sheet 44. Revisions to Sheet 44 are as follows:
 - a. Added reinforcing to detail.
10. Sheets SS1, SS13, SS14, SS16, SS19, SS20, SS21, SS22, SS23, SS26; Delete Sheets SS1, SS13, SS14, SS16, SS19, SS20, SS21, SS22, SS23, SS26 in their entirety and replace with revised Sheet SS1, SS13, SS14, SS16, SS19, SS20, SS21, SS22, SS23, SS26.
11. Sheets SS12A through SS12Q, SS17A and SS23A are hereby added to the Plans.

ADDENDUM #1, May 17, 2023
3rd Street Reconditioning
City Project # 1462

SPECIFICATIONS

1. SP-25, (1806) DETERMINATION AND EXTENSION OF CONTRACT TIME is hereby amended as follows:
 - a. SP-25.2.a In the event that the Work is allowed to extend into the following construction season (as granted by the engineer), the contractor shall sequence the work so that all surfaces are paved over the winter. No milled surface will be allowed to remain over the winter months.
2. Division SP, (2503) CLEAN STORM SEWER is hereby added to the project Special Provisions.
3. Division SP, (2506) REPAIR DRAINAGE STRUCTURE is hereby added to the project Special Provisions.
4. Special Provision Division "ST" for the Signing is hereby added to the project Special Provisions.

END OF ADDENDUM

SEQ NOTES

1. ANY CASTINGS NOT REUSED ON PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR.
2. INCLUDES SAWCUTTING OF BITUMINOUS AND UNDERLYING CONCRETE PAVEMENT.
3. THICKNESS OF INPLACE BITUMINOUS PAVEMENT MAY VARY. MILLING OPERATION SHALL INCLUDE COMPLETE MILLING AND REMOVAL OF INPLACE BITUMINOUS SURFACE, INCLUDING REMOVAL OF ANY PREVIOUS PARTIAL DEPTH BITUMINOUS REPAIRS OR OTHER BITUMINOUS PATCHES.
4. CONTRACTOR AND CITY TO PERFORM A FIELD REVIEW TO IDENTIFY LOCATIONS OF JOINT REPAIRS.
5. INCLUDES EXCAVATION AND GRANULAR BEDDING IN ENCASEMENT ZONE.
6. QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER FOR PATCHING POTHoles AND PAVEMENT DETERIORATIONS PRIOR TO PAVING.
7. ALL MILLINGS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT AN APPROVED LOCATION OR CAN BECOME THE PROPERTY OF THE CONTRACTOR. THIS WORK SHALL BE INCLUDED FOR PAYMENT IN THE MILL BITUMINOUS SURFACE 3" PAY ITEM.
8. BITUMINOUS MATERIAL FOR TACK COAT (SPEC. 2357) SHALL BE PLACED AT A RATE OF 0.03-0.05 GAL./SQ. YD. BETWEEN ALL LIFTS.
9. STRING LINE SHALL BE USED ON ALL LIFTS FOR A GUIDE OF PAVING OPERATIONS.
10. INCLUDES REMOVAL OF ANY INTEGRANT CURB.
11. REPLACE OLD MONUMENT CASTINGS WITH NEW MONUMENT CASTINGS PROVIDED BY CITY OF DULUTH. CONTRACTOR TO INSTALL NEW CASTINGS. CALL NATHAN LAVINE AT (218) 348-8814 FOR CASTING LOCATIONS.
12. IF THE SURVEY MONUMENT IS DESTROYED DURING CONSTRUCTION, A NEW MONUMENT MUST BE CONSTRUCTED AT NO COST TO THE CITY OF DULUTH
13. BITUMINOUS TONNAGE COMPUTED AT 115 LBS/SQ. YD./INCH OF THICKNESS.
14. DURING MILLING AND OVERLAY OPERATIONS THE CONTRACTOR SHALL PROVIDE A STREET SWEEPER WITH PICKUP BROOM TO REMOVE EXCESS MILLINGS AND CLEAN THE MILLED SURFACE TO THE APPROVAL OF THE ENGINEER PRIOR TO APPLICATION OF SEAL COAT.
15. BITUMINOUS MATERIAL FOR SEAL COAT QUANTITY WAS COMPUTED AT 0.33 GAL/SQ. YD.
16. FOR BUMPOUTS, REFER TO SHEET 59 FOR DETAILS.
17. FOR BUS BULB AT 5TH AVE EAST, REFER TO SHEET 59 FOR DETAILS.
18. PROVIDE HIGH-EARLY (HE) CONCRETE.
19. INCLUDES UNDISTRIBUTED QUANTITY TO BE PLACED FOR CX REPAIRS.
20. INCLUDES REMOVAL OF ANY BITUMINOUS PAVEMENT NOT REMOVED IN MILLING OPERATION.
21. INCLUDES PAYMENT FOR 4" CLASS 5 BASE UNDER WALK (INCIDENTAL). INCLUDES COMMON EXCAVATION (INCIDENTAL).
22. INCLUDES PAYMENT FOR 12" CLASS 5 BASE UNDER DRIVE (INCIDENTAL). INCLUDES COMMON EXCAVATION (INCIDENTAL).
23. INCLUDES BORING CONDUIT WHERE NECESSARY. SEE SPECIAL PROVISIONS FOR BORED CONDUIT REQUIREMENTS.
24. PULL VAULTS LOCATED IN SIDEWALKS REQUIRE AN ADDITIONAL EXTENSION, LID, AND REINFORCEMENT. SEE DETAIL DRAWINGS.
25. FIBER OPTIC TERMINATION QUANTITY IS BASED ON THE NUMBER OF FIBER OPTIC CABLES TERMINATED. SEE FIBER SCHEMATICS FOR NUMBER OF INDIVIDUAL FIBER TERMINATIONS.
26. FIBER OPTIC CABLE SPLICING QUANTITY IS BASED ON THE NUMBER OF SPLICING LOCATIONS. SEE FIBER SCHEMATICS FOR NUMBER OF INDIVIDUAL FIBER SPLICES.

STATEMENT OF ESTIMATED QUANTITIES

NOTES	CHART	SHEET NO.	ITEM NO.	ITEM	UNIT	TOTAL PROJECT	SP 118-126-022		
						TOTAL ESTIMATED QUANTITY	PARTICIPATING		
							ROADWAY	STORM	TA ELIGIBLE
			2021.501	MOBILIZATION	LUMP SUM	1	0.72	0.06	0.22
	M	17-19	2104.502	REMOVE MANHOLE OR CATCH BASIN	EACH	13	13		
1	M, N	17-20	2104.502	REMOVE CASTING	EACH	27	27		
	K	14	2104.502	REMOVE SIGN TYPE C	EACH	1	1		
	K	14	2104.502	SALVAGE SIGN TYPE C	EACH	26	26		
		SS14	2104.502	REMOVE SIGNAL SYSTEM A	EACH	1	1		
		SS21	2104.502	REMOVE SIGNAL SYSTEM B	EACH	1	1		
		SS11-SS27	2104.502	REMOVE HANDHOLE	EACH	21			21
	M, N	17-20	2104.502	SALVAGE CASTING	EACH	102	102		
2	A	8	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	6 146	802		5 344
	M	17-19	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	135	135		
	A	8	2104.503	REMOVE CURB & GUTTER	LIN FT	3 870			3 870
	A	8	2104.503	REMOVE RETAINING WALL	LIN FT	129			129
20	A	8	2104.504	REMOVE CONCRETE PAVEMENT	SQ YD	2 474	2 474		
	A	8	2104.518	REMOVE CONCRETE SIDEWALK	SQ FT	28 367			28 367
10	A	8	2104.518	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ FT	3 533			3 533
			2104.601	REMOVE CABLES	LUMP SUM	1	1		
	K	14	2104.602	SALVAGE SIGN SPECIAL	EACH	14	14		
21, 22	G	12	2106.507	EXCAVATION - COMMON (P)	CU YD	1 559	1 559		
	G	12	2106.507	SELECT GRANULAR EMBANKMENT MOD 7% (CV)	CU YD	610	610		
	B	9	2108.504	GEOTEXTILE FABRIC TYPE 5	SQ YD	1 434	1 434		
14			2123.610	STREET SWEEPER (WITH PICKUP BROOM)	hour	20	20		
21, 22	C	10	2211.507	AGGREGATE BASE (CV) CLASS 5	CU YD	705	705		
6			2231.509	BITUMINOUS PATCHING MIXTURE	TON	200	200		
3, 7	A	8	2232.504	MILL BITUMINOUS SURFACE (3.0") (P)	SQ YD	32 127	26 557		5 570
19	C, D	10, 11	2301.502	DOWEL BAR	EACH	1 922	1 922		
18	C	10	2301.504	PLACE CONCRETE PAVEMENT 8"	SQ YD	3 618	3 618		
18	C	10	2301.507	STRUCTURAL CONCRETE	CU YD	804	804		
19	C, D	10, 11	2301.508	SUPPLEMENTAL PAVEMENT REINFORCEMENT	POUND	12 496	12 496		
	C	10	2301.602	DRILL AND GROUT DOWEL BAR (EPOXY COATED)	EACH	149	149		
19	D	11	2301.602	DRILL AND GROUT REINFORCEMENT BARS (EPOXY COATED)	EACH	280	280		
	C	10	2301.603	PAVEMENT END ANCHOR	LIN FT	165	165		

(P) DENOTES PLAN QUANTITY

PLOT DATE: 5/17/2023 2:46:06 PM FILE: Q:\22Pro\1\220226\500 Drawings\Ch\220226 04.0 SEQ.dwg

LHB PROJECT NO. 220226

I HEREBY CERTIFY that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

MEGAN GOPLIN
PRINTED NAME

Megan Goplin
SIGNATURE

3-15-2023
DATE
53018
LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

STATEMENT OF ESTIMATED QUANTITIES
SHEET NO. 5 OF 107 SHEETS

SEQ NOTES

1. ANY CASTINGS NOT REUSED ON PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR.
2. INCLUDES SAWCUTTING OF BITUMINOUS AND UNDERLYING CONCRETE PAVEMENT.
3. THICKNESS OF INPLACE BITUMINOUS PAVEMENT MAY VARY. MILLING OPERATION SHALL INCLUDE COMPLETE MILLING AND REMOVAL OF INPLACE BITUMINOUS SURFACE, INCLUDING REMOVAL OF ANY PREVIOUS PARTIAL DEPTH BITUMINOUS REPAIRS OR OTHER BITUMINOUS PATCHES.
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8. BITUMINOUS MATERIAL FOR TACK COAT (SPEC. 2357) SHALL BE PLACED AT A RATE OF 0.03-0.05 GAL./SQ. YD. BETWEEN ALL LIFTS.
9. STRING LINE SHALL BE USED ON ALL LIFTS FOR A GUIDE OF PAVING OPERATIONS.
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15. BITUMINOUS MATERIAL FOR SEAL COAT QUANTITY WAS COMPUTED AT 0.33 GAL/SQ. YD.
16. FOR BUMP-OUTS, REFER TO SHEET 59 FOR DETAILS.
17. FOR BUS BULB AT 5TH AVE EAST, REFER TO SHEET 59 FOR DETAILS.
18. PROVIDE HIGH-EARLY (HE) CONCRETE.
19. INCLUDES UNDISTRIBUTED QUANTITY TO BE PLACED FOR CX REPAIRS.
20. INCLUDES REMOVAL OF ANY BITUMINOUS PAVEMENT NOT REMOVED IN MILLING OPERATION.
21. INCLUDES PAYMENT FOR 4" CLASS 5 BASE UNDER WALK (INCIDENTAL). INCLUDES COMMON EXCAVATION (INCIDENTAL).
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STATEMENT OF ESTIMATED QUANTITIES

NOTES	CHART	SHEET NO.	ITEM NO.	ITEM	UNIT	TOTAL PROJECT	SP 118-126-022		
						TOTAL ESTIMATED QUANTITY	PARTICIPATING		
							ROADWAY	STORM	TA ELIGIBLE
4, 18	D	11	2302.503	FULL DEPTH REPAIR (TYPE CD-HV)	LIN FT	3 619	3 619		
4, 18	D	11	2302.504	PAVEMENT REPLACEMENT (TYPE CX)	SQ YD	1 307	1 307		
4, 18	D	11	2302.518	SPOT FULL DEPTH REPAIR (TYPE C1-LV)	SQ FT	2 890	2 890		
	B	9	2356.504	BITUMINOUS SEAL COAT	SQ YD	33 065	27 496		5 569
15	B	9	2356.506	BITUMINOUS MATERIAL FOR SEAL COAT	GAL	10 911	9 077		1 834
8	B	9	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	1 376	1 149		227
9, 13	B	9	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,E)	TON	5 833	4 875		958
		84	2475.503	PIPE RAILING	LIN FT	11			11
5	M	17-19	2503.503	12" RC PIPE SEWER DES 3006 CL III	LIN FT	131		131	
			2503.601	CLEAN STORM SEWER	LUMP SUM	1	1		
	M	17-19	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	12		12	
	L	16	2504.602	ADJUST VALVE BOX	EACH	56	56		
	L	16	2504.602	CONCRETE ENCASED VALVE BOX COVER IN ROADWAY	EACH	34	34		
	M	17-19	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	EACH	3		3	
	M	17-19	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	EACH	12		12	
	M, N	17-20	2506.502	CASTING ASSEMBLY	EACH	32		32	
	M, N	17-20	2506.502	ADJUST FRAME AND RING CASTING	EACH	28		28	
	M	17-19	2506.502	ADJUST FRAME AND RING CASTING (SPECIAL)	EACH	15		15	
	M, N	17-20	2506.603	REPAIR DRAINAGE STRUCTURE	LIN FT	15		15	
	M, N	17-20	2506.602	CONCRETE ENCASED CASTING COLLAR	EACH	70		70	
	N	20	2506.602	MANHOLE FRAME SEAL	EACH	33	33		
21	E	11	2521.518	4" CONCRETE WALK	SQ FT	24 068			24 068
21	E	11	2521.518	6" CONCRETE WALK	SQ FT	8 790			8 790
	J	13	2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	526			526
	E	11	2531.503	CONCRETE CURB AND GUTTER DESIGN B624	LIN FT	3 163			3 163
17	E	11	2531.503	CONCRETE CURB AND GUTTER DESIGN B1024	LIN FT	117			117
16	E	11	2531.503	CONCRETE CURB AND GUTTER DESIGN S524	LIN FT	738			738
22	F	12	2531.504	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	355			355
	J	13	2531.603	CONCRETE CURB DESIGN V	LIN FT	117			117
	J	13	2531.503	CONCRETE CURB DESIGN V8 (MODIFIED)	LIN FT	210			210
	J	13	2531.618	TRUNCATED DOMES	SQ FT	1 267			1 267
11, 12	L	16	2540.602	ADJUST MONUMENT BOX	EACH	9	9		

PLOT DATE: 5/17/2023 2:45:41 PM FILE: Q:\22Pro\1\20226\500 Drawings\Civil\20226_04.0_SEQ.dwg

LHB PROJECT NO. 220226

I HEREBY CERTIFY that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

MEGAN GOPLIN
PRINTED NAME

Megan Goplin
SIGNATURE

3-15-2023
DATE
53018
LIC. NO.

S.P. 118-126-022

CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

STATEMENT OF ESTIMATED QUANTITIES

SHEET NO. 6 OF 107 SHEETS

SEQ NOTES

1. ANY CASTINGS NOT REUSED ON PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR.
2. INCLUDES SAWCUTTING OF BITUMINOUS AND UNDERLYING CONCRETE PAVEMENT.
3. THICKNESS OF INPLACE BITUMINOUS PAVEMENT MAY VARY. MILLING OPERATION SHALL INCLUDE COMPLETE MILLING AND REMOVAL OF INPLACE BITUMINOUS SURFACE, INCLUDING REMOVAL OF ANY PREVIOUS PARTIAL DEPTH BITUMINOUS REPAIRS OR OTHER BITUMINOUS PATCHES.
4. CONTRACTOR AND CITY TO PERFORM A FIELD REVIEW TO IDENTIFY LOCATIONS OF JOINT REPAIRS.
5. INCLUDES EXCAVATION AND GRANULAR BEDDING IN ENCASEMENT ZONE.
6. QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER FOR PATCHING POTHoles AND PAVEMENT DETERIORATIONS PRIOR TO PAVING.
7. ALL MILLINGS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT AN APPROVED LOCATION OR CAN BECOME THE PROPERTY OF THE CONTRACTOR. THIS WORK SHALL BE INCLUDED FOR PAYMENT IN THE MILL BITUMINOUS SURFACE 3" PAY ITEM.
8. BITUMINOUS MATERIAL FOR TACK COAT (SPEC. 2357) SHALL BE PLACED AT A RATE OF 0.03-0.05 GAL./SQ. YD. BETWEEN ALL LIFTS.
9. STRING LINE SHALL BE USED ON ALL LIFTS FOR A GUIDE OF PAVING OPERATIONS.
10. INCLUDES REMOVAL OF ANY INTEGRANT CURB.
11. REPLACE OLD MONUMENT CASTINGS WITH NEW MONUMENT CASTINGS PROVIDED BY CITY OF DULUTH. CONTRACTOR TO INSTALL NEW CASTINGS. CALL NATHAN LAVINE AT (218) 348-8814 FOR CASTING LOCATIONS.
12. IF THE SURVEY MONUMENT IS DESTROYED DURING CONSTRUCTION, A NEW MONUMENT MUST BE CONSTRUCTED AT NO COST TO THE CITY OF DULUTH
13. BITUMINOUS TONNAGE COMPUTED AT 115 LBS/SQ. YD./INCH OF THICKNESS.
14. DURING MILLING AND OVERLAY OPERATIONS THE CONTRACTOR SHALL PROVIDE A STREET SWEEPER WITH PICKUP BROOM TO REMOVE EXCESS MILLINGS AND CLEAN THE MILLED SURFACE TO THE APPROVAL OF THE ENGINEER PRIOR TO APPLICATION OF SEAL COAT.
15. BITUMINOUS MATERIAL FOR SEAL COAT QUANTITY WAS COMPUTED AT 0.33 GAL/SQ. YD.
16. FOR BUMP-OUTS, REFER TO SHEET 59 FOR DETAILS.
17. FOR BUS BULB AT 5TH AVE EAST, REFER TO SHEET 59 FOR DETAILS.
18. PROVIDE HIGH-EARLY (HE) CONCRETE.
19. INCLUDES UNDISTRIBUTED QUANTITY TO BE PLACED FOR CX REPAIRS.
20. INCLUDES REMOVAL OF ANY BITUMINOUS PAVEMENT NOT REMOVED IN MILLING OPERATION.
21. INCLUDES PAYMENT FOR 4" CLASS 5 BASE UNDER WALK (INCIDENTAL). INCLUDES COMMON EXCAVATION (INCIDENTAL).
22. INCLUDES PAYMENT FOR 12" CLASS 5 BASE UNDER DRIVE (INCIDENTAL). INCLUDES COMMON EXCAVATION (INCIDENTAL).
23. INCLUDES BORING CONDUIT WHERE NECESSARY. SEE SPECIAL PROVISIONS FOR BORED CONDUIT REQUIREMENTS.
24. PULL VAULTS LOCATED IN SIDEWALKS REQUIRE AN ADDITIONAL EXTENSION, LID, AND REINFORCEMENT. SEE DETAIL DRAWINGS.
25. FIBER OPTIC TERMINATION QUANTITY IS BASED ON THE NUMBER OF FIBER OPTIC CABLES TERMINATED. SEE FIBER SCHEMATICS FOR NUMBER OF INDIVIDUAL FIBER TERMINATIONS.
26. FIBER OPTIC CABLE SPLICING QUANTITY IS BASED ON THE NUMBER OF SPLICING LOCATIONS. SEE FIBER SCHEMATICS FOR NUMBER OF INDIVIDUAL FIBER SPLICES.

STATEMENT OF ESTIMATED QUANTITIES

NOTES	CHART	SHEET NO.	ITEM NO.	ITEM	UNIT	TOTAL PROJECT	SP 118-126-022			
						TOTAL ESTIMATED QUANTITY	PARTICIPATING			
							ROADWAY	STORM	TA ELIGIBLE	
			SS1-SS27	2550.502	OUTDOOR FIBER SPLICE ENCLOSURE	EACH	6	6		
23			SS1-SS27	2550.503	1.5" NON-METALLIC CONDUIT	LIN FT	3 910	3 910		
23			SS1-SS27	2550.503	2" NON-METALLIC CONDUIT	LIN FT	630	630		
			SS1-SS27	2550.601	FIBER OPTIC CABLE TESTING	LUMP SUM	1	1		
			SS1-SS27	2550.602	FIBER OPTIC SPLICE / PATCH PANEL	EACH	7	7		
25			SS1-SS27	2550.602	FIBER OPTIC PIGTAIL TERMINATION	EACH	7	7		
26			SS1-SS27	2550.602	FIBER OPTIC CABLE SPLICING	EACH	7	7		
			SS1-SS27	2550.602	ADJUST HANDHOLE	EACH	1	1		
24			SS1-SS27	2550.602	PULL VAULT	EACH	16	16		
			SS1-SS27	2550.603	FIBER OPTIC TRUNK CABLE 144SM	LIN FT	9 310	9 310		
				2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.72	0.06	0.22
	K	14		2564.502	INSTALL SIGN TYPE C	EACH	26	26		
	K	14		2564.602	INSTALL SIGN SPECIAL	EACH	14	14		
	K	14		2564.618	SIGN TYPE C	SQ FT	262	160		102
			SS1-SS27	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM A	LUMP SUM	1	1		
			SS1-SS27	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM B	LUMP SUM	1	1		
			SS14	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM A	SYSTEM	1	0.93		0.07
			SS21	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM B	SYSTEM	1	0.93		0.07
			SS1-SS27	2565.603	FIBER OPTIC TRUNK CABLE 12SM	LIN FT	1 650	1 650		
			SS1-SS27	2565.616	REVISE SIGNAL SYSTEM C	SYSTEM	1	0.67		0.33
			SS1-SS27	2565.616	REVISE SIGNAL SYSTEM D	SYSTEM	1	0.67		0.33
			SS1-SS27	2565.616	REVISE SIGNAL SYSTEM E	SYSTEM	1	0.67		0.33
			SS1-SS27	2565.616	REVISE SIGNAL SYSTEM F	SYSTEM	1	0.67		0.33
	H	12		2573.502	STORM DRAIN INLET PROTECTION	EACH	109	109		
	H	12		2574.505	SOIL BED PREPARATION	ACRE	0.45	0.45		
	H	12		2574.507	COMMON TOPSOIL BORROW	CU YD	243	243		
	H	12		2574.508	FERTILIZER TYPE 1	POUND	90	90		
	H	12		2575.504	SODDING TYPE SALT TOLERANT	SQ YD	2 187	2 187		
	I	12		2582.503	4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	6 669	6 669		
	I	12		2582.503	6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	13 823			13 823
	I	12		2582.503	4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	1 386	1 386		
	I	12		2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	283	283		
	I	12		2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC GROUND IN	SQ FT	802			802
	I	12		2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN	SQ FT	1 500			1 500

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LHB PROJECT NO. 220226

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MEGAN GOPLIN
PRINTED NAME

Megan Goplin
SIGNATURE

3-15-2023
DATE
53018
LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

STATEMENT OF ESTIMATED QUANTITIES
SHEET NO. 7 OF 107 SHEETS

CONCRETE PAVEMENT								C	
STATION TO STATION	LT / RT	DOWEL BAR	AGGREGATE BASE (CV) CLASS 5	PLACE CONCRETE PAVEMENT (8.0")	STRUCTURAL CONCRETE	SUPPLEMENTAL PAVEMENT REINF.	DRILL AND GROUT DOWEL BAR (EPOXY COATED)	PAVEMENT END ANCHOR	REMARKS
		2301 EACH	2211 CU YD	2301 SQ YD	2301 CU YD	2301 POUND	2301 EACH	2301 LIN FT	
ALIGNMENT: 3RD STREET									
102+06 TO 106+97	LT / RT		4	25	6				
106+97 TO 107+83	LT / RT		10	61	14				
107+83 TO 111+65	LT / RT		9	53	12				
111+65 TO 112+50	LT / RT		6	38	8				
112+50 TO 116+29	LT / RT		7	44	10				
116+29 TO 117+21	LT / RT		8	48	11				
117+21 TO 120+99	LT / RT		3	21	5				
120+99 TO 121+84	LT / RT		7	42	9				
121+84 TO 125+33	LT / RT		8	46	10				
125+33 TO 126+84	LT / RT	766	210	957	213	1 295	76	84	
126+84 TO 130+25	LT / RT		96	575	128				
130+25 TO 131+31	LT / RT		8	46	10				
131+31 TO 135+02	LT / RT								
135+02 TO 135+82	LT / RT		8	46	10				
135+82 TO 139+68	LT / RT								
139+68 TO 140+52	LT / RT		8	46	10				
140+52 TO 144+33	LT / RT		6	38	8				
144+33 TO 145+23	LT / RT		10	61	14				
145+23 TO 149+04	LT / RT		6	39	9				
149+04 TO 149+87	LT / RT		8	47	10				
149+87 TO 153+29	LT / RT		2	15	3				
153+29 TO 154+98	LT / RT	626	215	977	217	1 441	73	81	
154+98 TO 158+33	LT / RT		5	28	6				
158+33 TO 159+23	LT / RT		8	47	10				
159+23 TO 162+97	LT / RT		1	6	1				
162+97 TO 163+90	LT / RT		7	42	9				
163+90 TO 167+70	LT / RT		11	64	14				
167+70 TO 168+54	LT / RT		7	41	9				
168+54 TO 172+30	LT / RT		20	119	26				
173+27 TO 177+06	LT / RT		1	8	2				
177+06 TO 177+87	LT / RT		6	36	8				
177+87 TO 181+77	LT / RT		1	4	1				
CHART TOTAL		1 392	705	3 618	804	2 736	149	165	CHART TOTAL

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THIRD STREET RECONDITIONING

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CONSTRUCTION CHARTS

SHEET NO. 10 OF 107 SHEETS

CONCRETE PAVEMENT REHABILITATION (CPR)								D
STATION TO STATION	LT / RT	DOWEL BAR	SUPPLEMENTAL PAVEMENT REINF.	DRILL AND GROUT REINF. BARS (EPOXY COATED)	FULL DEPTH REPAIR (TYPE CD-HV)	PAVEMENT REPLACEMENT (TYPE CX)	SPOT FULL DEPTH REPAIR (TYPE C1-LV)	REMARKS
		2301 EACH	2301 POUND	2301 EACH	2302 LIN FT	2302 SQ YD	2302 SQ FT	
ALIGNMENT: 3RD STREET								
102+06.31 TO 107+40.05	LT / RT				311		170	
107+40.05 TO 112+07.25	LT / RT				276		170	
112+07.25 TO 116+74.41	LT / RT	41	757	22	276	83	170	
116+74.41 TO 121+41.52	LT / RT	59	1 582	37	276	229	170	
121+41.52 TO 125+33.09	LT / RT	62	1 053	22	219	136	170	
126+84.34 TO 130+75.84	LT / RT	19	428	12	180	58	170	
130+75.84 TO 135+42.68	LT / RT	53	734	27	276	81	170	
135+42.68 TO 140+11.39	LT / RT	22	420	16	276	56	170	
140+11.39 TO 144+77.02	LT / RT	11	164	8	276	17	170	
144+77.02 TO 149+43.80	LT / RT	54	688	12	276	66	170	
149+43.80 TO 153+29.14	LT / RT	60	1 427	51	219	180	170	
153+29.14 TO 158+78.58	LT / RT	22	374	22	109	52	170	
158+78.58 TO 163+45.62	LT / RT	30	344	10	138	43	170	
163+45.62 TO 168+12.71	LT / RT	29	413	7	138	54	170	
168+12.71 TO 172+30.53	LT / RT	48	825	18	121	112	170	
173+26.69 TO 177+46.38	LT / RT	20	551	16	127	80	170	
177+46.38 TO 181+77.16	LT / RT				127	60	170	
CHART TOTAL		530	9 760	280	3 619	1 307	2 890	CHART TOTAL

SIDEWALKS AND CURB & GUTTER							E
STATION TO STATION	LT / RT	4" CONCRETE WALK	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B624	CONCRETE CURB & GUTTER DESIGN B1024	CONCRETE CURB & GUTTER DESIGN S524	REMARKS
		2521 SQ FT	2521 SQ FT	2531 LIN FT	2531 LIN FT	2531 LIN FT	
ALIGNMENT: 3RD STREET							
102+06 TO 107+40	LT / RT	638	383	106		77	
107+40 TO 112+08	LT / RT	818	645	144		78	
112+08 TO 116+75	LT / RT	573	441	177			
116+75 TO 121+42	LT / RT	513	483	274			
121+42 TO 126+08	LT / RT	906	486	187		72	
126+08 TO 130+78	LT / RT	1 980	626	189		74	
130+78 TO 135+42	LT / RT	1 150	520	174			
135+42 TO 140+10	LT / RT	1 792	572	147			
140+10 TO 144+78	LT / RT	2 015	685	240		80	
144+78 TO 149+46	LT / RT	2 206	749	151	117	81	
149+46 TO 154+14	LT / RT	1 139	811	160		163	
154+14 TO 158+78	LT / RT	2 165	723	295		113	
158+78 TO 163+44	LT / RT	899	623	228			
163+44 TO 168+12	LT / RT	3 167	402	167			
168+12 TO 172+30	LT / RT	1 471	219	326			
173+27 TO 177+47	LT / RT	1 440	220	108			
177+47 TO 181+77	LT / RT	1 196	202	90			
CHART TOTAL		24 068	8 790	3 163	117	738	CHART TOTAL

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CITY PROJECT 1462

THIRD STREET RECONDITIONING

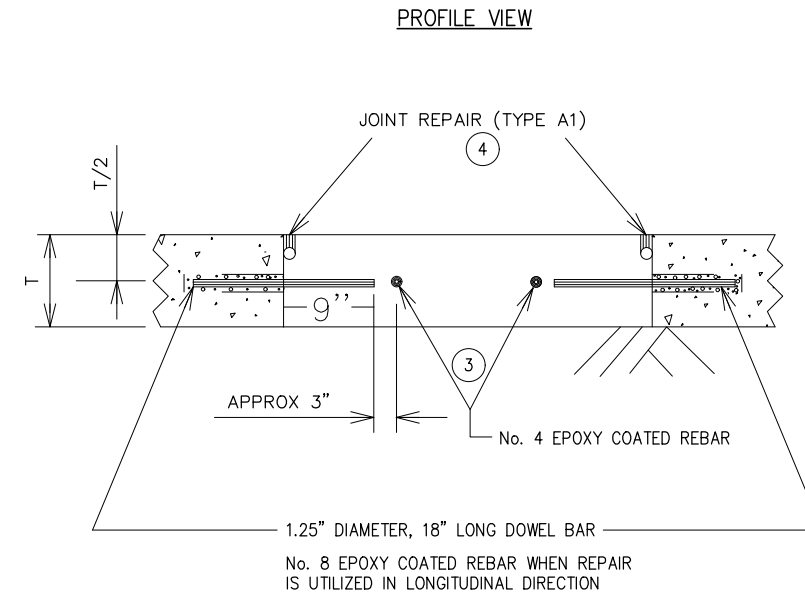
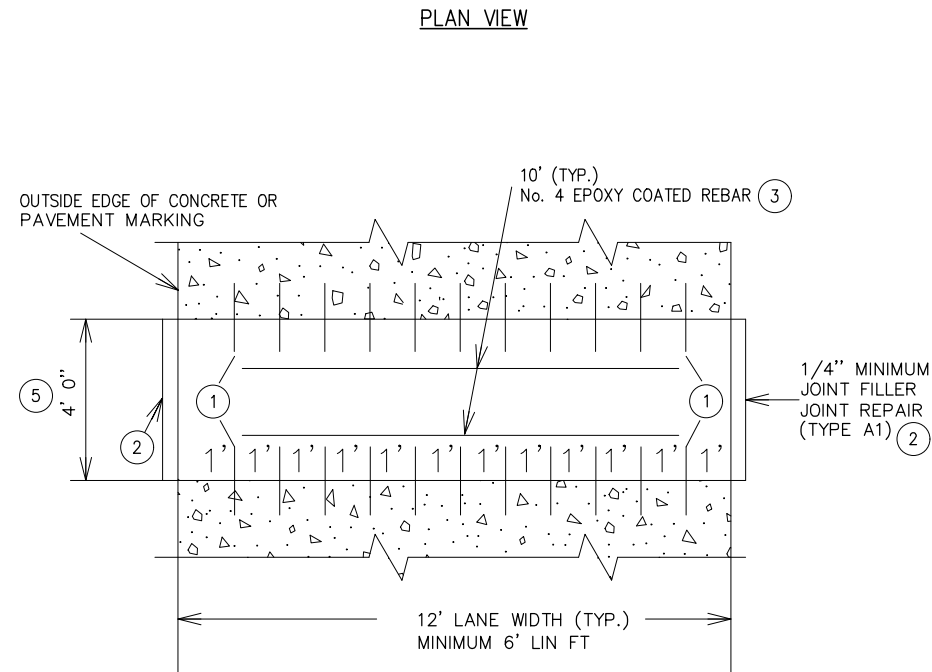
REVISION
5-17-2023

CONSTRUCTION CHARTS

SHEET NO. 11 OF 107 SHEETS

FULL DEPTH REPAIR (TYPE CD-HV)

DESCRIPTION: REMOVE CONCRETE, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS.



AREA TO BE REMOVED

WORK TO BE DONE

1. SAW CUT TO FULL DEPTH AND REMOVE CONCRETE PAVEMENT. RESTORE AND COMPACT IN PLACE BASE.
2. DRILL IN PLACE CONCRETE PAVEMENT FOR DOWEL BARS OR EPOXY COATED REINFORCEMENT BARS ON LONGITUDINAL REPAIRS. (1)
3. FURNISH AND INSTALL DOWELS OR REINFORCEMENT BARS. SECURE THE DOWEL BARS OR REINFORCEMENT BARS TO THE INPLACE CONCRETE BY USING AN APPROVED NON-SHRINK GROUT OR EPOXY ADHESIVE. COAT FREE END OF DOWEL BARS WITH FORM COATING MATERIAL MEETING SPEC. 3902. (1)
4. CLEAN THE VERTICAL SURFACES OF THE IN PLACE CONCRETE.
5. FURNISH AND INSTALL JOINT FILLER. (2)
6. FURNISH AND PLACE CONCRETE MIX NUMBER 3R52.
7. FURNISH AND INSTALL REINFORCEMENT BARS IN PLASTIC CONCRETE, 3" FROM END OF DOWEL BAR AT MID DEPTH. (3)
8. VIBRATE, FINISH TO GRADE AND SLOPE, EDGE, TEXTURE, AND APPLY CURE.
9. SAW AND SEAL JOINTS IN ACCORDANCE WITH JOINT REPAIR (TYPE A1) DETAIL. (2) (4) (INCIDENTAL)

BASIS OF PAYMENT

2302 FULL DEPTH REPAIR (TYPE CD-HV) (LIN FT)

NOTE:
MEASUREMENT FOR PAYMENT IS MADE ALONG A SINGLE TRANSVERSE SAW CUT.

IF THIS REPAIR IS PLACED AT A SKEW, THE STANDARD 4-FOOT DIMENSION IS MEASURED PERPENDICULAR FROM THE SAW CUT. (5)

NOTES:

IF REPAIR IS PLACED OVER AN EXISTING SKEWED CONTRACTION JOINT, MATCH EXISTING CONTRACTION JOINT SKEW, UNLESS OTHERWISE ALLOWED BY THE ENGINEER. IF THIS REPAIR IS PLACED AT A SKEW, THE STANDARD 4 FOOT DIMENSION IS MEASURED PERPENDICULAR FROM THE SAW CUT.

MEASUREMENT FOR PAYMENT IS MADE ALONG A SINGLE TRANSVERSE SAW CUT.

PLOT DATE: 5/16/2023 4:59:07 PM FILE: Q:\222226\220226\500 Drawings\CD\220226-071 Construction Details.dwg

LHB PROJECT NO. 220226

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CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
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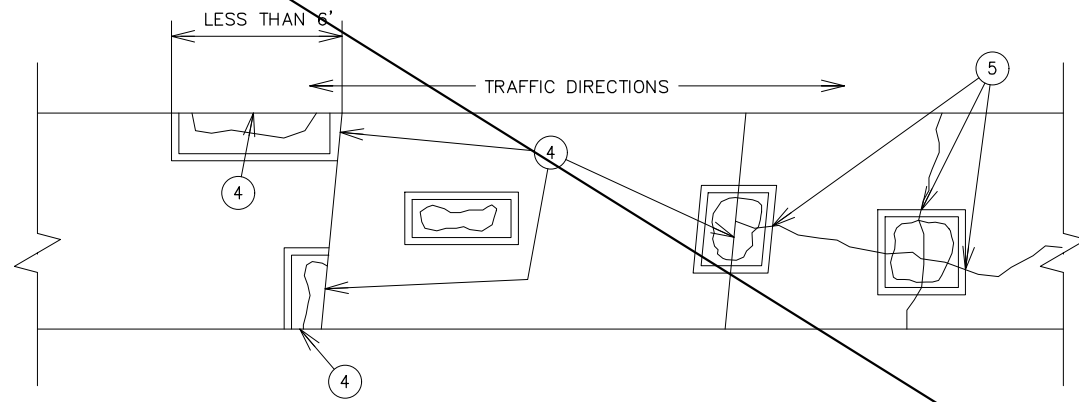
CONSTRUCTION DETAILS

SHEET NO. 38 OF 107 SHEETS

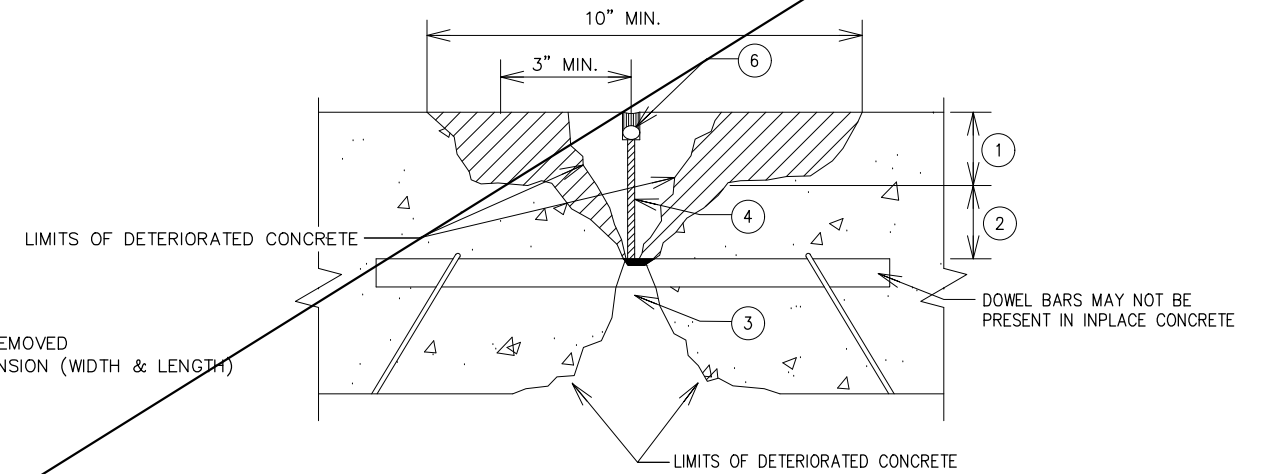
PARTIAL DEPTH REPAIR (TYPE BA)

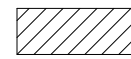
DESCRIPTION: REMOVE CONCRETE, REESTABLISH JOINTS AND CRACKS, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS AND CRACKS.

PLAN VIEW



PROFILE VIEW



 AREA TO BE REMOVED
(10" MIN. DIMENSION (WIDTH & LENGTH))

WORK TO BE DONE

1. REMOVE ALL CONCRETE TO LIMITS SHOWN IN DETAIL, INCLUDING ALL UNSOUND CONCRETE BY MILLING (1) AND CHIPPING HAMMERS. (2) TAPER ALL SIDES OF THE REPAIR 30° - 60° FROM VERTICAL AND TO A MINIMUM DEPTH OF 2". (1)
2. IF THE END OF THE DOWEL BAR IS EXPOSED, REMOVE THE DOWEL.
3. CLEAN EXPOSED SURFACE BY SANDBLASTING AND AIR BLASTING.
4. PLACE DUCT TAPE AS A BOND BREAKER ON EXPOSED DOWEL BARS.
5. PROVIDE JOINT COMPRESSION RELIEF IN THE VOID BELOW THE EXPOSED DOWEL BAR BY FURNISHING AND PLACING CLEAN CONCRETE SAND LEVEL WITH THE TOP OF THE DOWEL BAR. (3)
6. PROVIDE JOINT COMPRESSION RELIEF ABOVE THE DOWEL BARS BY FURNISHING AND INSTALLING PREFORMED JOINT FILLER. (4)
AND/OR
REESTABLISH THE CRACK THROUGH THE REPAIR BY FURNISHING AND INSTALLING WAX COATED CARDBOARD. (5)
7. APPLY BONDING GROUT IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. RE-SANDBLAST AND AIR BLAST IF THE BONDING GROUT DRIES BEFORE THE CONCRETE IS PLACED.
AND/OR
THE CONTRACTOR MAY USE WATER TO PRECONDITION THE INPLACE CONCRETE PRIOR TO PLACING CONCRETE BACKFILL. REAPPLY WATER IF CONCRETE DRIES PRIOR TO PLACING CONCRETE BACKFILL.
8. FURNISH AND PLACE CONCRETE MIX NUMBER 3U18. VIBRATE, FINISH TO GRADE AND SLOPE, EDGE ADJACENT TO JOINT FILLER. SEAL EDGES WITH GROUT AND APPLY CURE.
9. SAW AND SEAL JOINTS AND CRACKS IN ACCORDANCE WITH JOINT REPAIR (TYPE A1) DETAIL. (6)

BASIS OF PAYMENT

2302 PARTIAL DEPTH REPAIR (TYPE BA) (SQ FT)

NOTES:

- JOINT AND CRACK REESTABLISHMENT IS REQUIRED. FURNISH AND INSTALL PREFORMED JOINT FILLER PRIOR TO CONCRETE PLACEMENT.
- SAWING FOR THE INITIAL JOINT ESTABLISHMENT IS NOT ALLOWED.
- FURNISH PREFORMED JOINT FILLER OF A WIDTH EQUAL TO THE EXISTING TRANSVERSE JOINT OR CRACK 1/4" MIN. THICKNESS (SPEC 3702). WAX COATED CARDBOARD IS ALLOWED ON CRACKS THAT ARE 1/4" OR LESS IN WIDTH. (5)
- CHIPPING HAMMERS ARE LIMITED TO A MAXIMUM WEIGHT OF 35 POUNDS.

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THIRD STREET RECONDITIONING

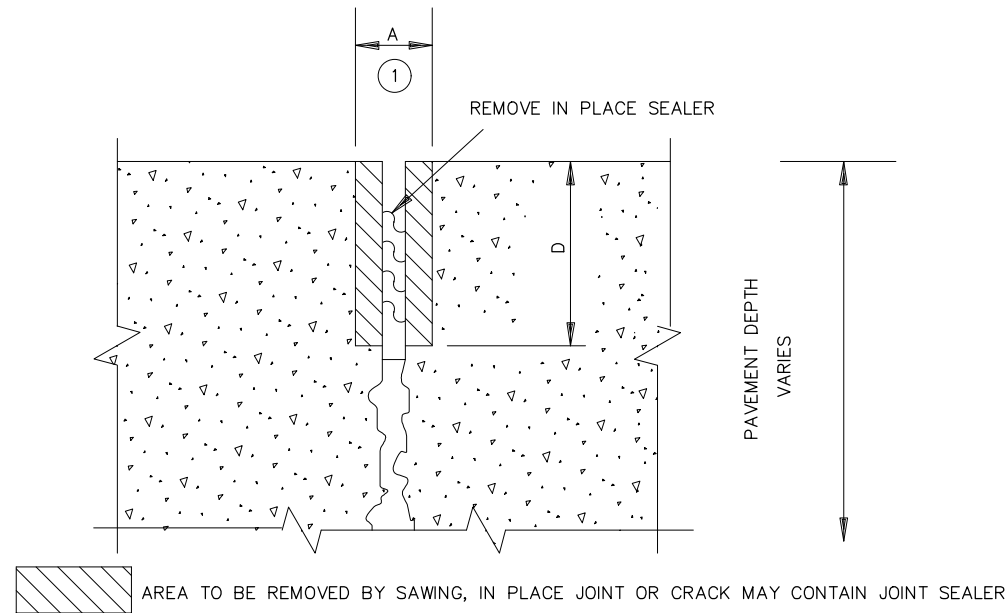
REVISION
5-17-2023

CONSTRUCTION DETAILS
SHEET NO. 40 OF 107 SHEETS

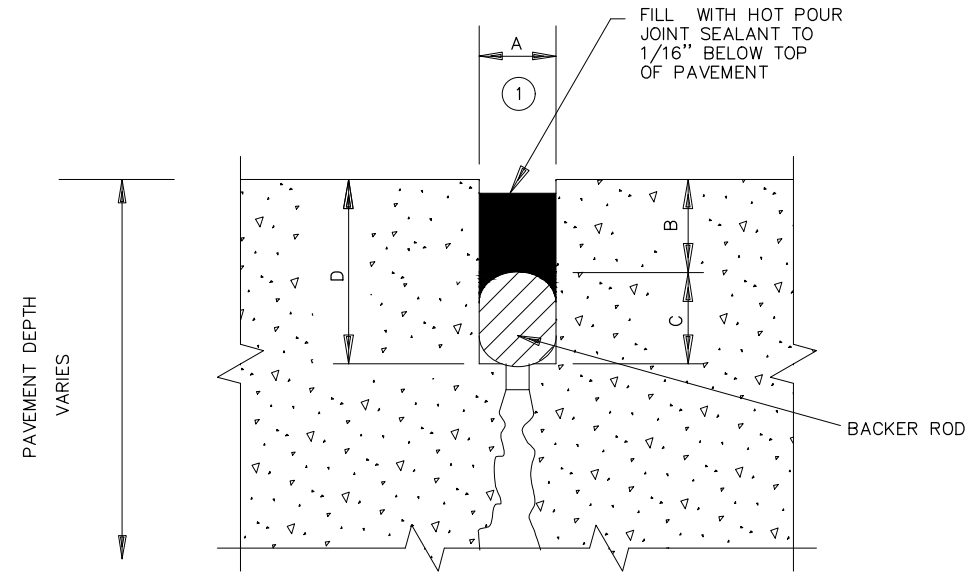
VARIABLE WIDTH JOINT CRACK REPAIR / JOINT REPAIR (TYPE A1)

DESCRIPTION: IN NEWLY CONSTRUCTED REPAIRS. SAW, CLEAN, SEAL TRANSVERSE AND / OR LONGITUDINAL PAVEMENT JOINTS OR CRACKS.

SECTION REMOVAL



SECTION INSTALLATION



KEY NOTES:

- ① ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER THE MAXIMUM RECOMMENDED "A" DIMENSION IS 3/8 INCH.

WORK TO BE DONE

- REMOVE IN PLACE JOINT SEALANT, IF APPLICABLE.
- SAW BOTH JOINT FACES TO CONFIGURATION SHOWN THEN IMMEDIATELY WATER FLUSH THE JOINT OR CRACK.
- CLEAN AND DRY JOINT OR CRACK BY SANDBLASTING AND AIR BLASTING.
- FURNISH AND INSTALL BACKER ROD OF APPROPRIATE DIAMETER IN JOINT OR CRACK OPENING. FURNISH AND INSTALL BACKER ROD WHEN JOINTS ARE 1/4" WIDE OR GREATER.
- FILL JOINT OR CRACK WITH JOINT AND CRACK SEALER (SPECIFICATION 3725 HOT POURED).
- TO PREVENT TRACKING OF THE JOINT AND CRACK SEALER USE TISSUE PAPER IF NECESSARY.

BASIS OF PAYMENT

INCIDENTAL TO OTHER CONCRETE REPAIR TYPES

JOINT WIDTH (INCHES)	SEALANT BEAD THICKNESS (INCHES)	BACKER ROD DIAMETER (INCHES)	MINIMUM JOINT DEPTH (INCHES)	ESTIMATED QUANTITY (FT/GAL)	ESTIMATED QUANTITY (LB/LF)
A	B	C	D		
1/4	1/4	3/8	11/16	268	0.035
3/8	3/8	1/2	15/16	119	0.079
1/2	1/2	5/8	1-3/16	67	0.140
5/8	5/8	3/4	1-7/16	43	0.219
3/4	3/4	7/8	1-11/16	30	0.316
7/8	7/8	1.0	1-15/16	22	0.430
1.0	1.0	1-1/8	2-3/16	17	0.562
1-1/8	1-1/8	1-1/4	2-7/16	13	0.711
1-1/4	1-1/4	1-3/8	2-11/16	11	0.877

PLOT DATE: 5/16/2023 4:59:54 PM FILE: Q:\222226\1\222226\500 Drawings\Con\222226-071 Construction Details.dwg

LHB PROJECT NO. 220226

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PRINTED NAME

Megan Goplin
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S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

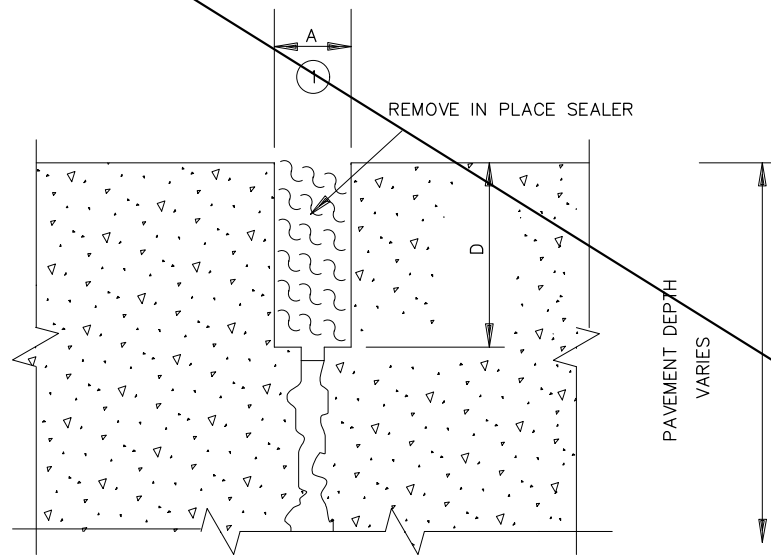
REVISION
5-17-2023

CONSTRUCTION DETAILS
SHEET NO. 41 OF 107 SHEETS

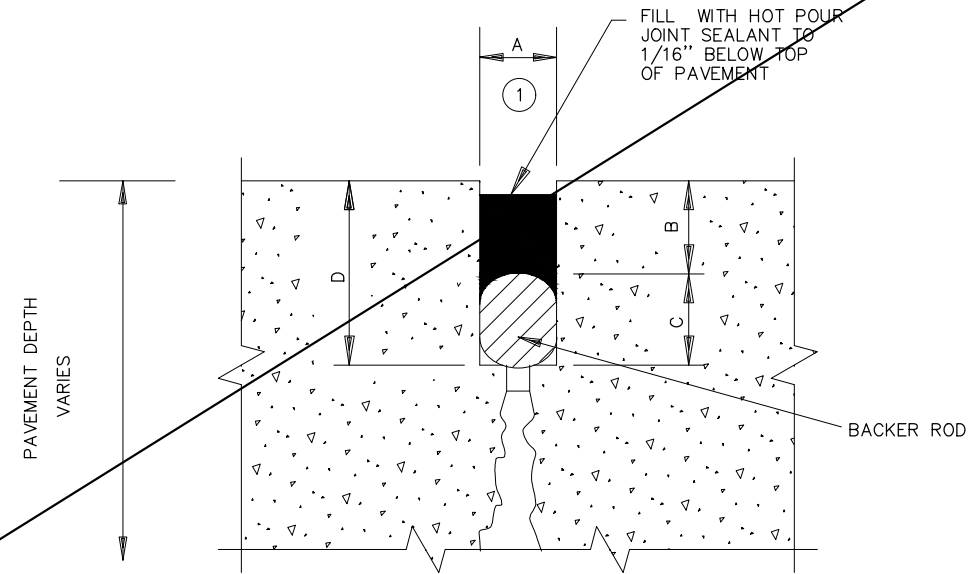
VARIABLE WIDTH INPLACE JOINT OR CRACK REPAIR / JOINT REPAIR (TYPE A2)

DESCRIPTION: IN NEWLY CONSTRUCTED REPAIRS. SAW, CLEAN, SEAL TRANSVERSE AND / OR LONGITUDINAL PAVEMENT JOINTS OR CRACKS.

SECTION REMOVAL



SECTION INSTALLATION



KEY NOTES:

- ① ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER THE MAXIMUM RECOMMENDED "A" DIMENSION IS $\frac{3}{8}$ INCH.

WORK TO BE DONE

- REMOVE IN PLACE JOINT SEALANT, IF APPLICABLE.
- CLEAN AND DRY JOINT OR CRACK BY SANDBLASTING AND AIR BLASTING.
- FURNISH AND INSTALL BACKER ROD OF APPROPRIATE DIAMETER IN JOINT OR CRACK OPENING. FURNISH AND INSTALL BACKER ROD WHEN JOINTS ARE 1/4" WIDE OR GREATER.
- FILL JOINT OR CRACK WITH JOINT AND CRACK SEALER (SPECIFICATION 3725 HOT Poured).
- TO PREVENT TRACKING OF THE JOINT AND CRACK SEALER USE TISSUE PAPER IF NECESSARY.

BASIS OF PAYMENT

2302 JOINT REPAIR (TYPE A2) (LIN FT)

JOINT WIDTH (INCHES)	SEALANT BEAD THICKNESS (INCHES)	BACKER ROD DIAMETER (INCHES)	MINIMUM JOINT DEPTH (INCHES)	ESTIMATED QUANTITY (FT/GAL)	ESTIMATED QUANTITY (LB/LF)
A	B	C	D	(FT/GAL)	(LB/LF)
1/4	1/4	3/8	11/16	268	0.035
3/8	3/8	1/2	15/16	119	0.079
1/2	1/2	5/8	1-3/16	67	0.140
5/8	5/8	3/4	1-7/16	43	0.219
3/4	3/4	7/8	1-11/16	30	0.316
7/8	7/8	1.0	1-15/16	22	0.430
1.0	1.0	1-1/8	2-3/16	17	0.562
1-1/8	1-1/8	1-1/4	2-7/16	13	0.711
1-1/4	1-1/4	1-3/8	2-11/16	11	0.877

PLOT DATE: 5/16/2023 5:00:04 PM FILE: Q:\222226\1\222226\500 Drawings\CD\222226 071 Construction Details.dwg

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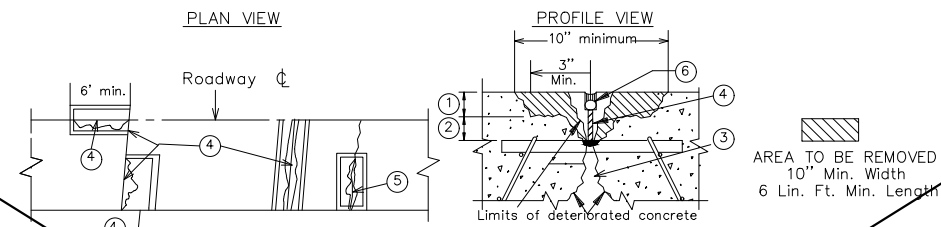
THIRD STREET RECONDITIONING

REVISION
5-17-2023

CONSTRUCTION DETAILS
SHEET NO. 42 OF 107 SHEETS

JOINT AND CRACK REPAIR (TYPE B3)

DESCRIPTION: REMOVE CONCRETE, REESTABLISH JOINTS AND CRACKS, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS AND CRACKS.



NOTES

- * Joint and crack reestablishment is required. Furnish and install preformed joint filler prior to concrete placement.
- * Sawing for the initial joint establishment is not allowed when placed over random cracks.
- * Furnish preformed joint filler of a width equal to the existing transverse joint or crack 1/4" minimum thickness (Standard Spec. 3702). (4) Wax coated cardboard is allowed on cracks that are 1/4" or less in width. (5)
- * Chipping hammers are limited to a maximum weight of 35 pounds.

WORK TO BE DONE

1. Remove all concrete to limits shown in detail, including all unsound concrete by milling or (1) chipping hammers. Taper all sides of the repair 30° - 60° from vertical and to a minimum depth of 2". (1)
2. If the end of the dowel bar is exposed, remove the dowel. (2)
3. Clean exposed surface by sandblasting and air blasting.
4. Place duct tape as a bond breaker on exposed dowel bars.
5. Provide joint compression relief in the void below the exposed dowel bar by furnishing and placing clean concrete sand level with the top of the dowel bars. (3)
6. Provide joint compression relief above the dowel bars by furnishing and installing preformed joint filler. (4)

AND / OR

- 6A. Reestablish the crack through the repair by furnishing and installing wax coated cardboard. (5)
7. Apply bonding grout immediately prior to concrete placement. Re-sandblast and air blast if the bonding grout dries before the concrete is placed.

AND / OR

- The Contractor may use water to precondition the in place concrete prior to placing concrete backfill. Reapply water if concrete dries prior to placing concrete backfill.
8. Furnish & place Concrete Mix Number 3U18. Vibrate, finish to grade and slope, edge adjacent to joint filler, Seal edges with grout and apply cure.
9. Saw and seal joints and cracks in accordance with Joint Repair (Type A1) detail. (6) (Incidental)

BASIS OF PAYMENT

2302 Joint and Crack repair (Type B3) (Lin. Ft.)

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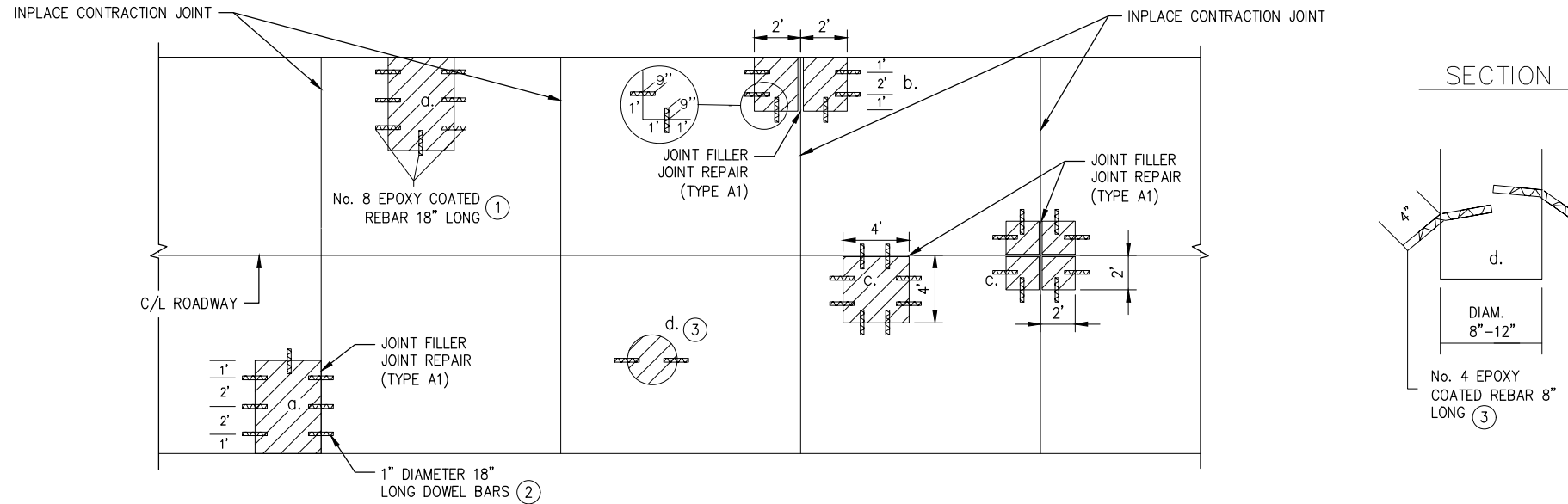
REVISION
5-17-2023

CONSTRUCTION DETAILS

SHEET NO. 43 OF 107 SHEETS

SPOT FULL DEPTH REPAIR (TYPE C1-LV)

DESCRIPTION: SAW CONCRETE, REMOVE CONCRETE, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS.



PLAN VIEW

REPAIR DIMENSIONS

- a. EXTERIOR EDGE, 3'-6" MIN. FOR A ONE-HALF LANE REPAIR.
- b. EXTERIOR EDGE AT A JOINT LOCATION, 4' X 4' MIN. SIZE.
- c. INTERIOR EDGE AT CENTERLINE, 4' X 4' MIN. SIZE.
- d. GAS LINE OR EXPLORATORY CORE HOLE 4" DIAMETER MINIMUM SIZE AND 12" DIAMETER MAXIMUM SIZE.



NOTES

DRILL INPLACE PAVEMENT UTILIZING DRILL BIT(S) WITH A STATED OR MEASURED DIAMETER OF AT LEAST ONE EIGHTH INCH LARGER IN DIAMETER THAN D&G DOWEL/REBAR DIAMETERS.

WORK TO BE DONE

1. SAW FULL DEPTH & REMOVE INPLACE CONCRETE PAVEMENT. RESTORE AND COMPACT INPLACE BASE.
2. DRILL INPLACE CONCRETE AT 2' CENTER TO CENTER: FOR No. 8 EPOXY COATED REINFORCEMENT BARS ① OR 1" DOWEL BARS ② OR No. 4 EPOXY COATED REINFORCEMENT BARS. ③
3. FURNISH AND INSTALL EPOXY COATED REINFORCEMENT BARS OR DOWEL BARS. SECURE THE REINFORCEMENT BARS OR DOWELS BARS TO THE INPLACE CONCRETE BY USING AN APPROVED NON-SHRINK GROUT OR EPOXY ADHESIVE. COAT FREE AND OF DOWEL BARS WITH A FORM COATING MATERIAL MEETING SPECIFICATION 3902.
4. CLEAN VERTICAL SURFACES OF INPLACE CONCRETE.
5. FURNISH AND INSTALL JOINT FILLER.
6. FURNISH AND PLACE CONCRETE MIX NUMBER 3R52 OR FURNISH AND PLACE 3U18 FOR CORE HOLE "d" REPAIRS.
7. VIBRATE, FINISH TO GRADE AND SLOPE, EDGE, TEXTURE, AND APPLY CURE.
8. SAW AND SEAL JOINTS IN ACCORDANCE WITH JOINT REPAIR (TYPE A1) DETAIL. (INCIDENTAL)

BASIS OF PAYMENT

2302 SPOT FULL DEPTH REPAIR (TYPE C1-LV) (SQ. FT.)

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CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

CONSTRUCTION DETAILS
SHEET NO. 44 OF 107 SHEETS

TRAFFIC SIGNAL PLANS INDEX	
SHEET	DESCRIPTION
SS1	ABBREVIATIONS, SYMBOLS, AND WIRE DETAIL
SS2	POLE MOUNT DETAIL
SS3	SIGN MOUNTING POLE DETAIL
SS4	SIGN MOUNTING MAST ARM DETAIL
SS5	VIDEO DETECTION CAMERA MOUNTING DETAIL
SS6	HANDHOLE DETAIL
SS7	APS PUSH BUTTON STATION DETAIL
SS8	EQUIPMENT PAD LAYOUT DETAIL
SS9	FIBER OPTIC CONDUIT DETAIL
SS10	PULL VAULT DETAIL
SS11	FIBER OPTIC CABLE LABELING DETAIL
SS12	FIBER OPTIC SCHEMATIC LEGEND
SS12A-SS12Q	FIBER OPTIC SCHEMATIC
SS13-SS15	INTERCONNECT LAYOUT
SS16-SS18	SYSTEM A (3RD STREET/LAKE AVENUE)
SS19-SS21	INTERCONNECT LAYOUT
SS22-SS24	SYSTEM B (EAST 3RD STREET/6TH AVENUE EAST)
SS25-SS27	INTERCONNECT LAYOUT
SS28-SS40	FOR INFORMATION ONLY

CONDUCTOR COLOR CODE		
FROM		TO DEVICE
SIGNAL SERVICE	1/C 6 EGC	AS SHOWN ON PLAN
SOP	3-1/C 2	R WH SIGNAL SERVICE BLK
SIGNAL SERVICE	3-1/C 6	BLK WH SIGNAL CABINET G
SIGNAL CABINET	(6SM) CABLE	SIGNAL CABINET
SIGNAL CABINET TO DEVICE		
	6PR 19	AS SHOWN ON PLAN
COAXIAL CABLE		AS SHOWN ON PLAN
	4/C 18	R BLK AS SHOWN ON PLAN WH G
	2/C 14	BLK WH OR CLR AS SHOWN ON PLAN
	3/C 20	R OR O WH OR YEL AS SHOWN ON PLAN BLK OR BL
	CAT 5	AS SHOWN ON PLAN
SIGNAL CABINET TO DEVICE		
6/C 14 CABLE	R BLK/R O BLK BL WH BLK/R BLK	RED/RLA YEL/YLA 4 AND 5 SECTION GRN/GLA SIGNAL HEADS NEU YLA/FYA GLA
4/C 14 CABLE	R BLK/R BLK WH	RED/DWK 3 SECTION HEAD YEL/WLK PED HEADS GRN/SPR NEU
4/C 14 CABLE	R BLK/R BLK WH	RED YEL GRN NEU FYA YLA GLA NEU
3/C 14 CABLE	BLK G WH	EVP LIGHT/AWF LUMINAIRE VIDEO CAMERA ENFORCEMENT LIGHT

NOTES:
ARRANGE AND TERMINATE CONDUCTORS AND CABLES AS SHOWN WITHOUT SPLICE.
NUMBER ONLY MEANS AWG CONDUCTOR SIZE (e.g. 14=14AWG)
1/C MEANS AN INDIVIDUAL CONDUCTOR NOT PART OF A CABLE ASSEMBLY

ABBREVIATIONS

APS	ACCESSIBLE PEDESTRIAN SIGNAL
AWF	ADVANCE WARNING FLASHER
C.D.	COUNT DOWN
D2-1 (e.g.)	DETECTOR (PHASE 2, NO. 1)
DEG	DEGREES
DWK	DON'T WALK
F&I	FURNISH AND INSTALL
FL	FLASH/FLASHING
FYA	FLASHING YELLOW ARROW
FYLA	FLASHING YELLOW LEFT ARROW
GLA	GREEN LEFT ARROW
GRN	GREEN INDICATION
GR. RD.	GROUND ROD
GRA	GREEN RIGHT ARROW
GTA	GREEN THRU ARROW
HH	HANDHOLE
IND	INDICATION
INP	INPLACE
INS. GR.	INSULATED GROUND
JB	JUNCTION BOX
LED	LIGHT EMITTING DIODE
LUM	LUMINAIRE
NEU	NEUTRAL
P1-1 (e.g.)	PEDESTRIAN HEAD (PHASE 1, NO. 1)
PB	PUSH BUTTON
PB2-1 (e.g.)	PUSH BUTTON (PHASE 2, NO. 1)
PED	PEDESTRIAN
RED	RED INDICATION
R&S	REMOVE AND SALVAGE
RLA	RED LEFT TURN ARROW
S&I	SALVAGE AND INSTALL
SPR	SPARE
STA	STATION
WLK	WALK INDICATION
YEL	YELLOW INDICATION
YLA	YELLOW LEFT ARROW
YRA	YELLOW RIGHT ARROW

SYMBOLS

■	HANDHOLE
⊖	EQ.G CONNECTION
⊖	EVP CONFIRMATORY LIGHT
⇒	EVP DETECTOR
⇒	EVP DETECTOR AND CONFIRMATORY LIGHT
●	SPLICE
⓪	FIBER OPTIC SPLICE VAULT
PV	PULL VAULT
△	LUMINAIRE NO.
③	SIGNAL BASE NO.
⑤-②	SIGNAL HEAD NO./FLASHER HEAD NO.
Ⓜ	BARREL MOUNT BASE NO.
Ⓜ	WOOD POLE NO.
TV	TELEVISION CAMERA (CCTV)
V	VIDEO DETECTION
Ⓜ	RADIO/GPS EVP UNIT
Ⓜ	EQUIPMENT PAD AND CABINETS
Ⓜ	INPLACE EQUIPMENT PAD AND CABINETS
Ⓜ	SOURCE OF POWER
Ⓜ	VIDEO DETECTION ZONE
Ⓜ	BREAK LINE

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

WIRE COLOR CODE KEY

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

CABLE LABELING ABBREVIATIONS

ABBREVIATION	LABEL REFERENCE DSICRIPTION & EXAMPLE	COMPONENT
X-Y	INDICATION NUMBER 2-1	SIGNAL HEAD
X-Y	LOOP NUMBER D2-1	DETECTOR
X-Y	PUSH BUTTON NUMBER PB2-1	PUSH BUTTON
X-Y	PED INDICATION NUMBER P2-1	PED INDICATION
X-Y	LUMINAIRE NUMBER L1	LUMINAIRE
X-Y	EVP PHASE NUMBER EVP 2+5	EVP DETECTOR
X-Y	EVP LIGHT PHASE NUMBER EVPL 2+5	EVP CON. LIGHT
X-Y	VIDEO DETECTION PHASE V2-1	VIDEO DETECTION
X-Y	RADAR DETECTION PHASE RD2-1	RADAR DETECTION
SS	SIGNAL SERVICE	SERVICE WIRE
CC	CABINET COMMS	COMMS CABLE
FO	FIBER OPTIC	FIBER CABLE
SPARE Y	SPARE WIRE TO POLE NUMB. SPARE1	SPARE WIRE
ELYZ *	ENFORC. LIGHT POLE & DIRECTION	ENFORCEMENT LIGHT
PTZ1	PTZ CAMERA POLE NUMBER PTZ1	PTZ CAMERA
IC	INTERCONNECT CABLE	INTERCONNECT
EGC	EQUIPMENT GROUNDING CONDUCTOR	GROUND

X = SIGNAL SYSTEM PHASE NUMBER; REFER TO THE PLAN
Y = SIGNAL SYSTEM ASSIGNED COMPONENT NUMBER; REFER TO THE PLAN
Z * = DIRECTION
FURNISH AND INSTALL LABELS ON CABLES WITH ABBREVIATIONS SHOWN ON THIS TABLE AND IN ACCORDANCE WITH THE WIRING DIAGRAM.

CONDUCTOR AND CABLE SPECIFICATION CHART

NUMBER OF CONDUCTORS & AWG SIZE	TYPE	Specification Number
1/C 2	INDIVIDUAL SERVICE CONDUCTORS	3815.2B.1
1/C 6	FEEDER AND BRANCH CONDUCTORS	3815.2B.1
1/C 6 INS.GR.	Grounding Conductors	3815.2B.5
2/C 14	Loop Detector Lead-In Cable	3815.2C.4
3/C 14	Signal Control Cable	3815.2C.3
4/C 14	Signal Control Cable	3815.2C.3
6/C 14	Signal Control Cable	3815.2C.3
12/C 14	Signal Control Cable	3815.2C.3
6PR 19	Telephone Cables Outdoor	3815.2C.6.b
3/C 20	EVP Detector Cable	3815.2C.5

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LUKE S. JAMES
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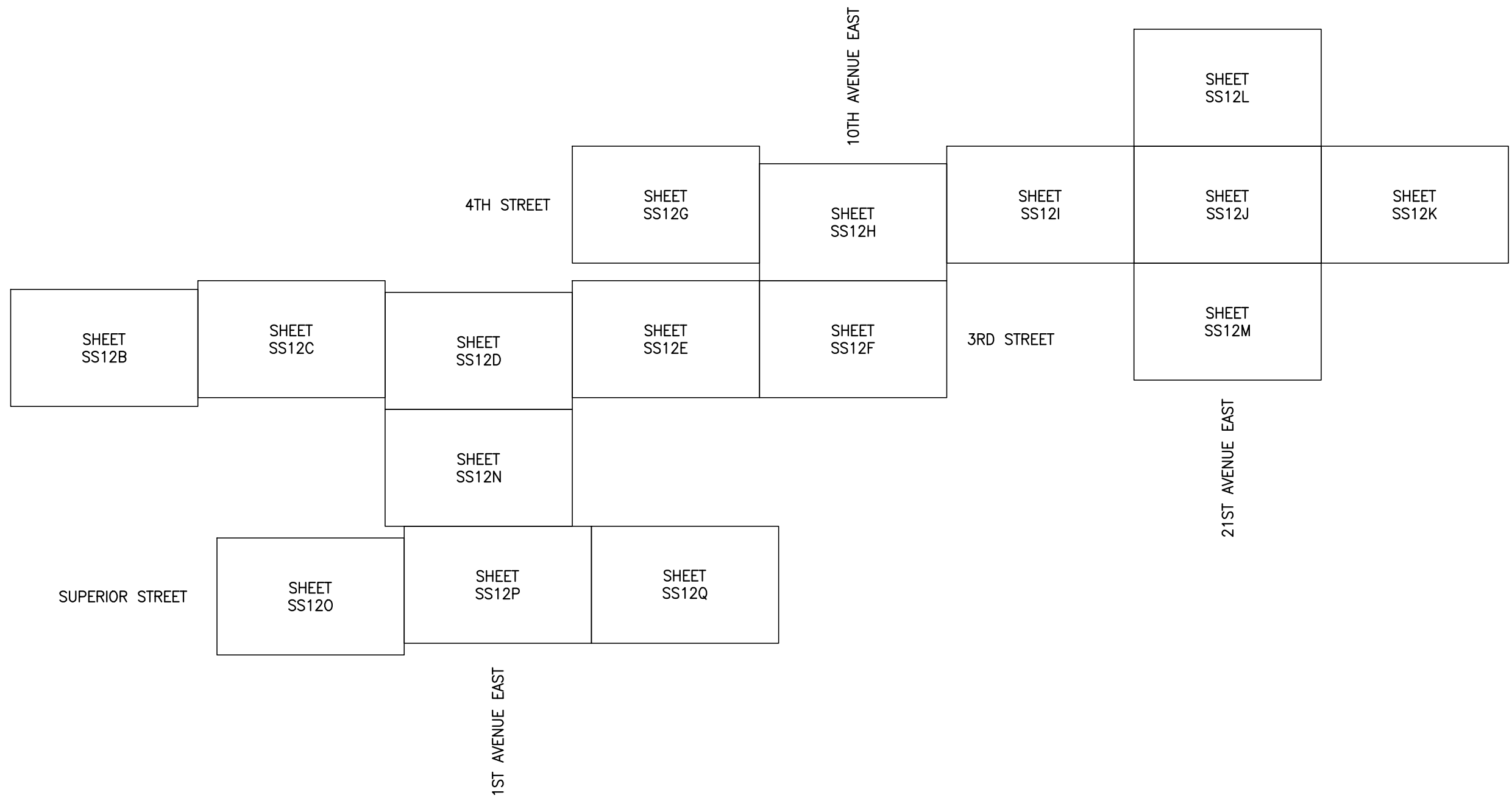
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CITY PROJECT 1462

THIRD STREET RECONDITIONING

ABBREVIATIONS, SYMBOLS, AND WIRE DETAIL

REVISION	TRAFFIC SIGNAL PLANS
5-17-2023	SHEET NO. SS1 OF SS40 SHEETS

PLOT DATE: 5/17/2023 8:39:02 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS1-SS40.dwg.1



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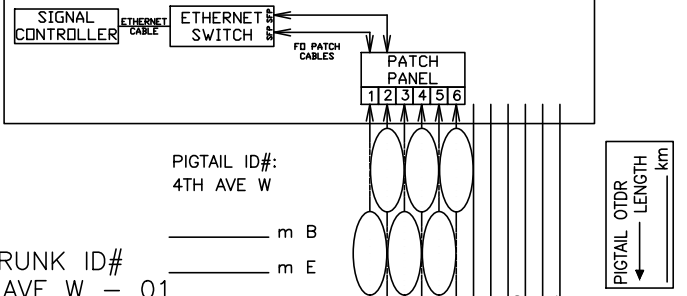
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THIRD STREET RECONDITIONING

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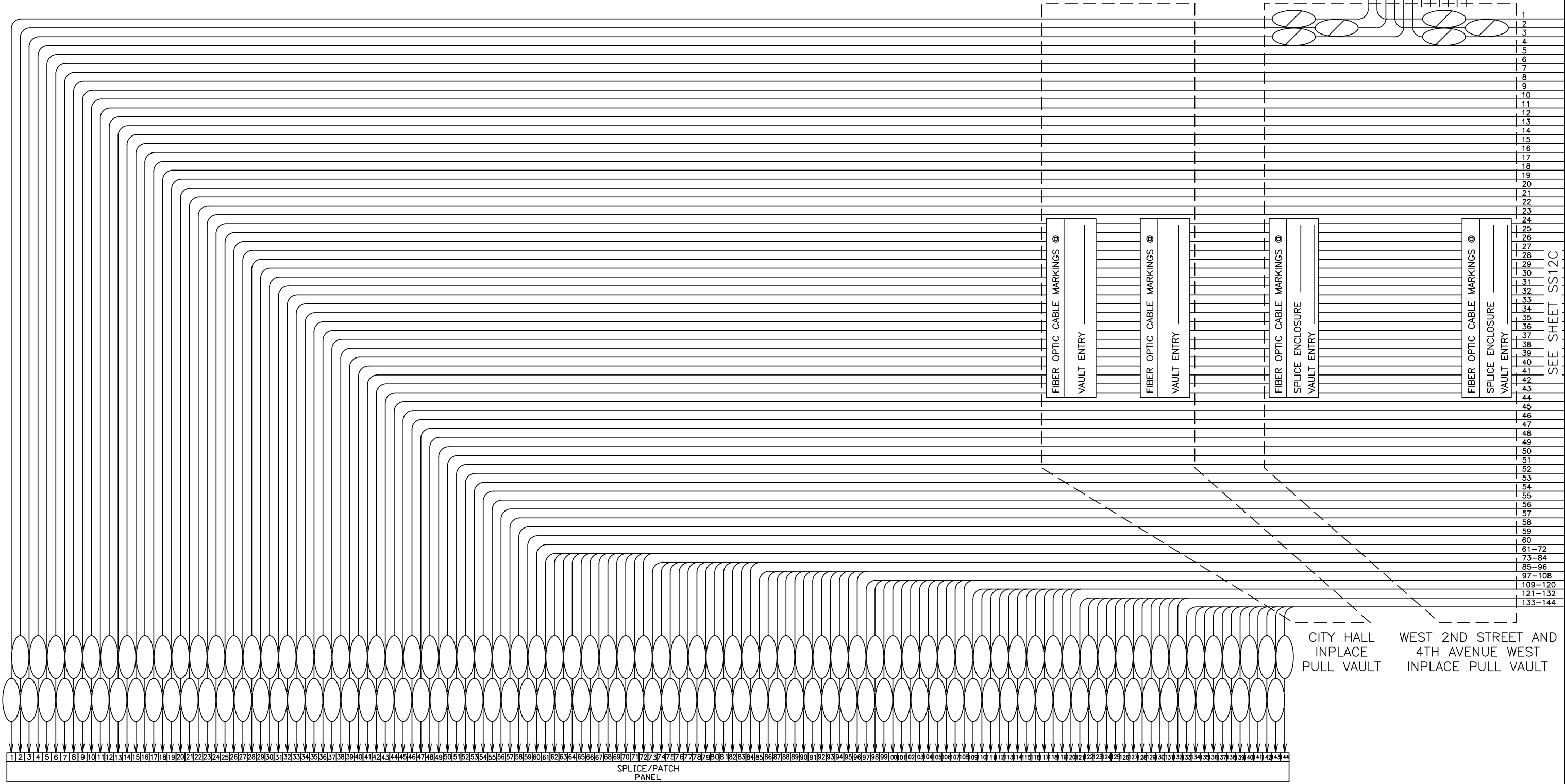
TRAFFIC SIGNAL PLANS
SHEET NO. SS12A OF SS40 SHEETS

WEST 2ND STREET AND 4TH AVENUE WEST
SIGNAL CABINET



TRUNK ID#
4TH AVE W - 01

TRUNK ID#
4TH AVE W - 01



SEE SHEET SS12C

PLOT DATE: 5/17/2023 6:39:04 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS12C-SD.dwg.11

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CITY HALL (NORTH ENTRY ROUTE)

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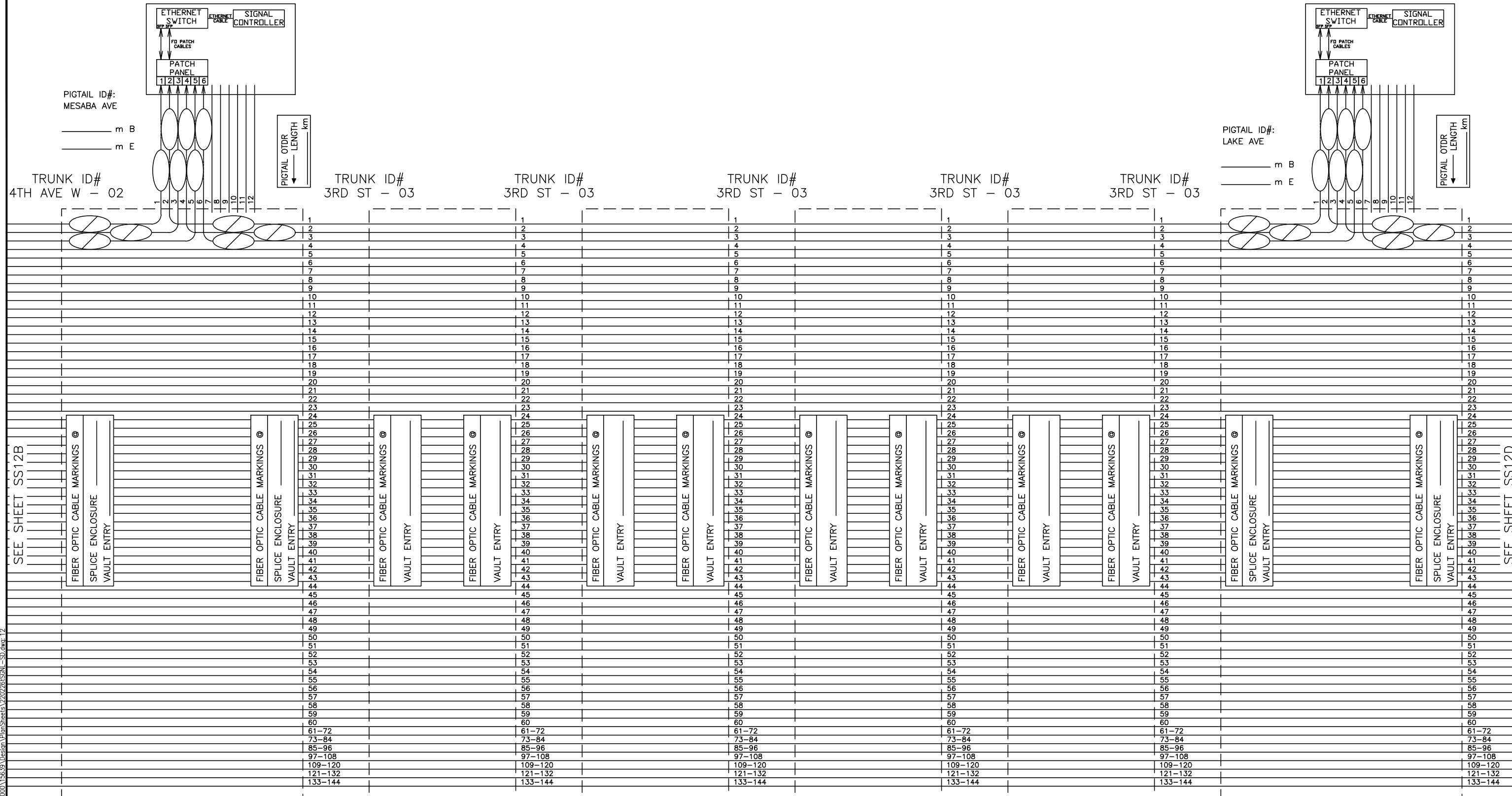
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TRAFFIC SIGNAL PLANS
SHEET NO. SS12B OF SS40 SHEETS

WEST 3RD STREET AND MESABA AVENUE
SIGNAL CABINET

3RD STREET AND LAKE AVENUE
SIGNAL CABINET



SEE SHEET SS12B

SEE SHEET SS12D

WEST 3RD STREET AND
4TH AVENUE WEST
SW PULL VAULT (PV 1)

WEST 3RD STREET AND
4TH AVENUE WEST
NE PULL VAULT (PV 2)

WEST 3RD STREET AND
3RD AVENUE WEST
PULL VAULT (PV 3)

WEST 3RD STREET AND
2ND AVENUE WEST
PULL VAULT (PV 4)

WEST 3RD STREET AND
1ST AVENUE WEST
PULL VAULT (PV 5)

3RD STREET AND
LAKE AVENUE
PULL VAULT (PV 6)

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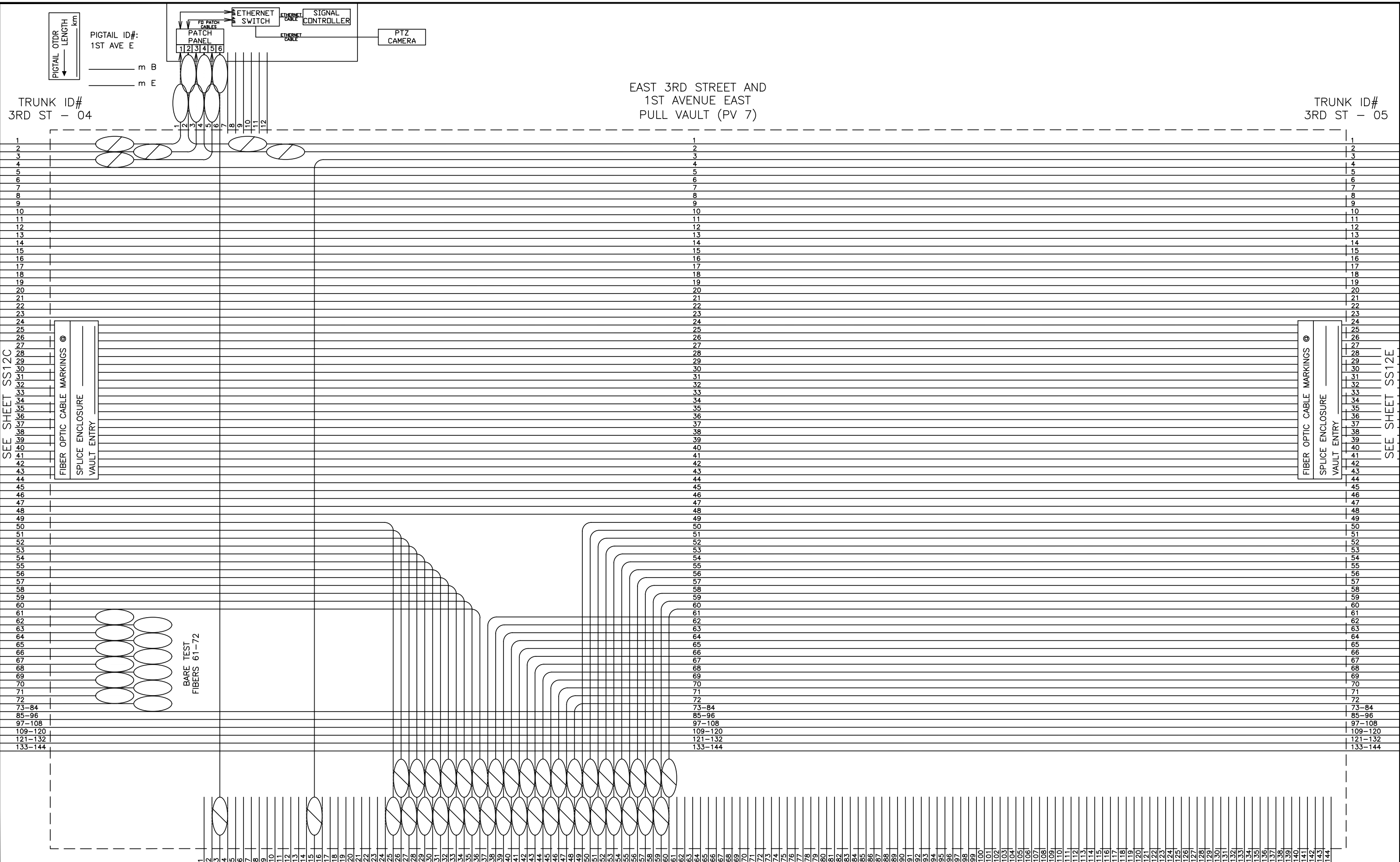
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TRAFFIC SIGNAL PLANS

SHEET NO. SS12C OF SS40 SHEETS

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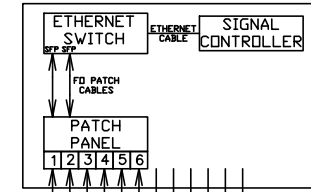
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SHEET NO. SS12D OF SS40 SHEETS

SEE SHEET SS12C

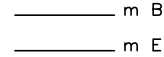
SEE SHEET SS12E

SEE SHEET SS12N

EAST 3RD STREET AND 6TH AVENUE EAST
SIGNAL CABINET



PIGTAIL ID#:
6TH AVE E



TRUNK ID#
3RD ST - 05

TRUNK ID#
3RD ST - 05

TRUNK ID#
3RD ST - 05

TRUNK ID#
3RD ST - 05

TRUNK ID#
3RD ST - 05

TRUNK ID#
3RD ST - 06

TRUNK ID#
3RD ST - 06

SEE SHEET SS12D

SEE SHEET SS12F



EAST 3RD STREET AND
2ND AVENUE EAST
PULL VAULT (PV 8)

EAST 3RD STREET AND
3RD AVENUE EAST
PULL VAULT (PV 9)

EAST 3RD STREET AND
4TH AVENUE EAST
PULL VAULT (PV 10)

EAST 3RD STREET AND
5TH AVENUE EAST
PULL VAULT (PV 11)

EAST 3RD STREET AND
6TH AVENUE EAST
PULL VAULT (PV 12)

EAST 3RD STREET AND
7TH AVENUE EAST
PULL VAULT (PV 13)

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

FIBER OPTIC SCHEMATIC

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CITY PROJECT 1462

THIRD STREET RECONDITIONING

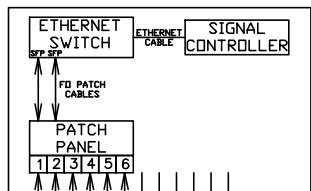
REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS12E OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:06 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SSCN-SD.dwg: 14

EAST 3RD STREET AND 10TH AVENUE EAST
SIGNAL CABINET

SEE SHEET SS12H



PIGTAIL ID#:
10TH AVE E

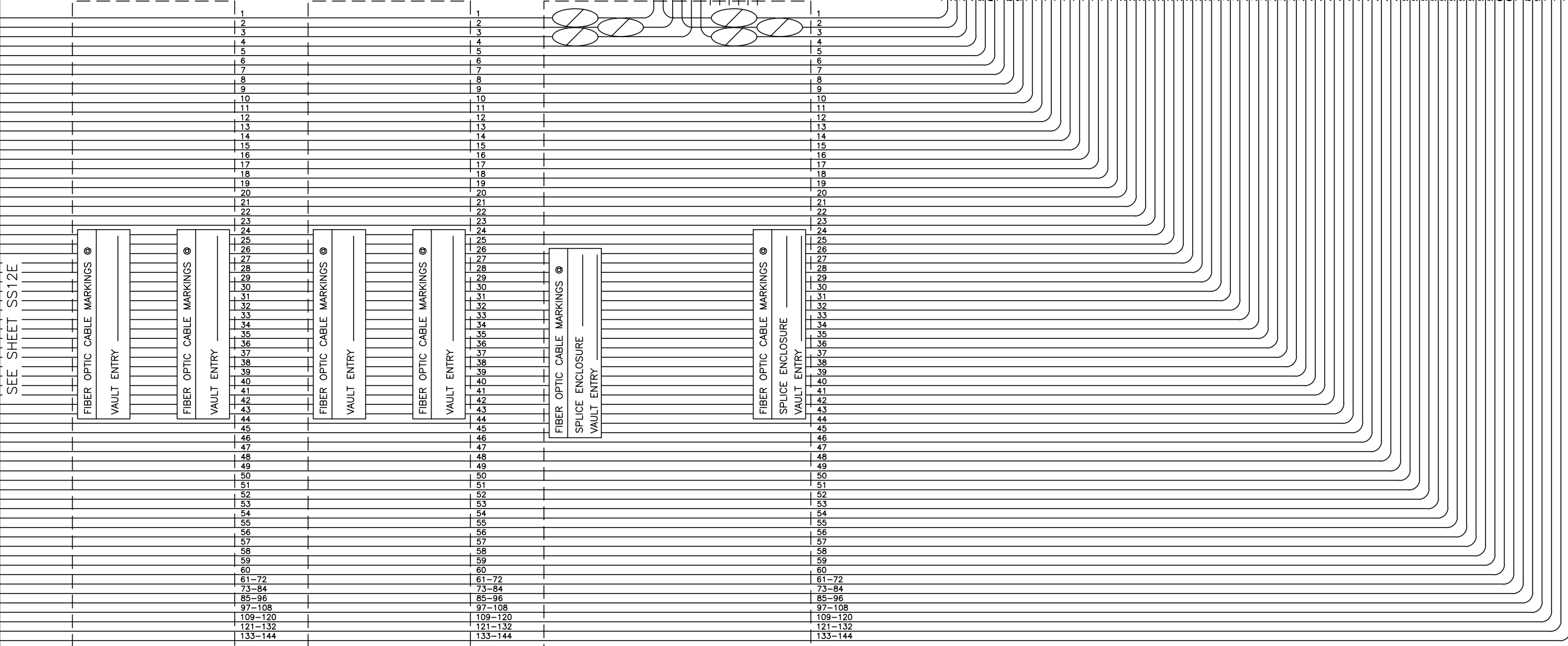
m B
m E



TRUNK ID#
3RD ST - 06

TRUNK ID#
3RD ST - 06

TRUNK ID#
3RD ST - 06



EAST 3RD STREET AND
8TH AVENUE EAST
PULL VAULT (PV 14)

EAST 3RD STREET AND
9TH AVENUE EAST
PULL VAULT (PV 15)

EAST 3RD STREET AND
10TH AVENUE EAST
PULL VAULT (PV 16)

SEE SHEET SS12E

PLOT DATE: 5/17/2023 6:39:07 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SSCN-SD.dwg: 15

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

I HEREBY CERTIFY that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

LUKE S. JAMES
PRINTED NAME

Luke S. James
SIGNATURE

3-15-2023
DATE
55393
LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

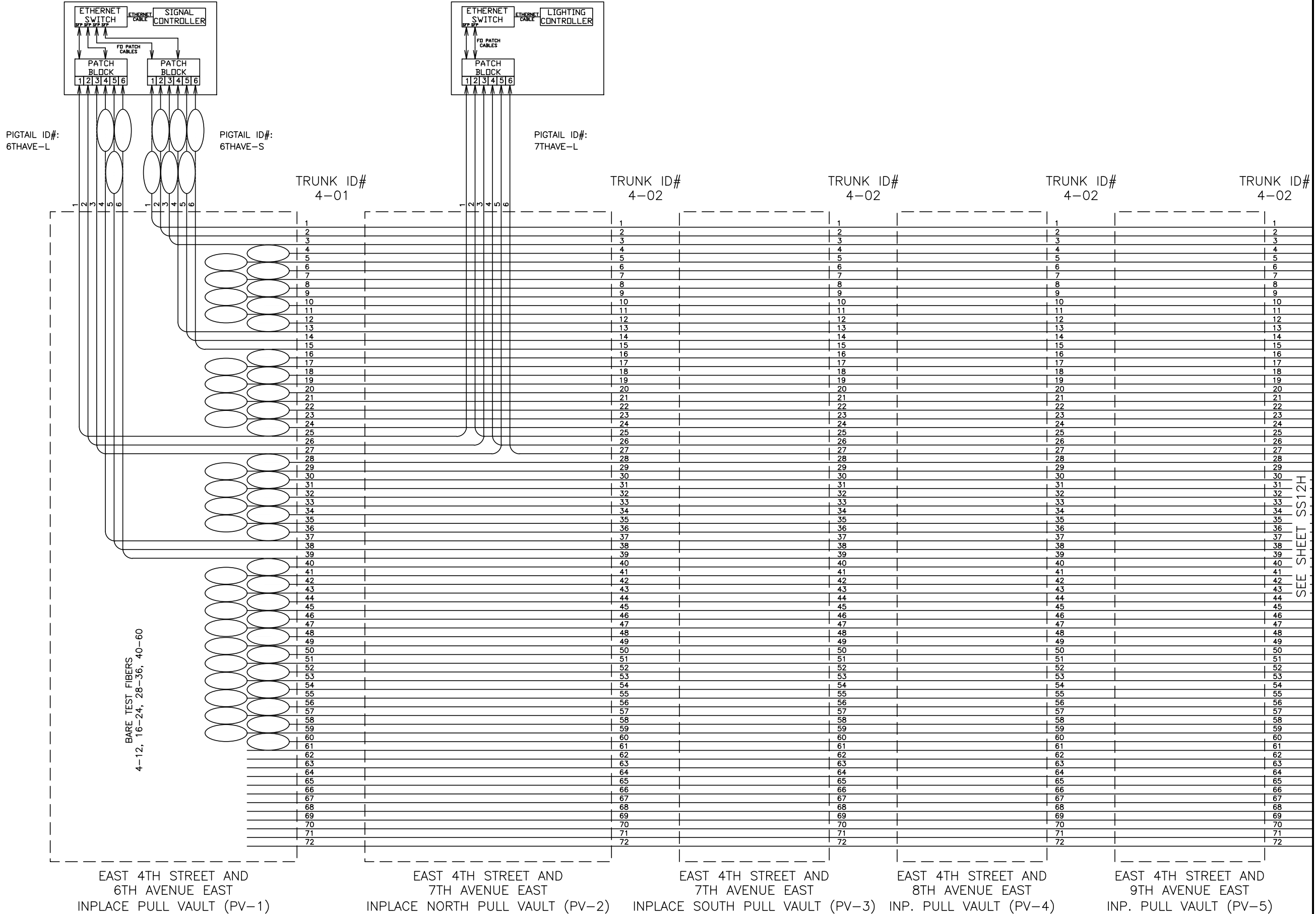
THIRD STREET RECONDITIONING

REVISION
5-17-2023

FIBER OPTIC SCHEMATIC
TRAFFIC SIGNAL PLANS
SHEET NO. SS12F OF SS40 SHEETS

EAST 4TH STREET AND 6TH AVENUE EAST
SIGNAL CABINET

EAST 4TH STREET AND 7TH AVENUE EAST
LIGHTING CABINET



SEE SHEET SS12H

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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S.P. 118-126-022
CITY PROJECT 1462

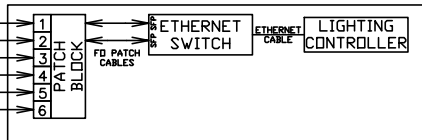
THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS12G OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:08 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS12G.dwg: 16

PIGTAIL ID#: 10THAVE-L

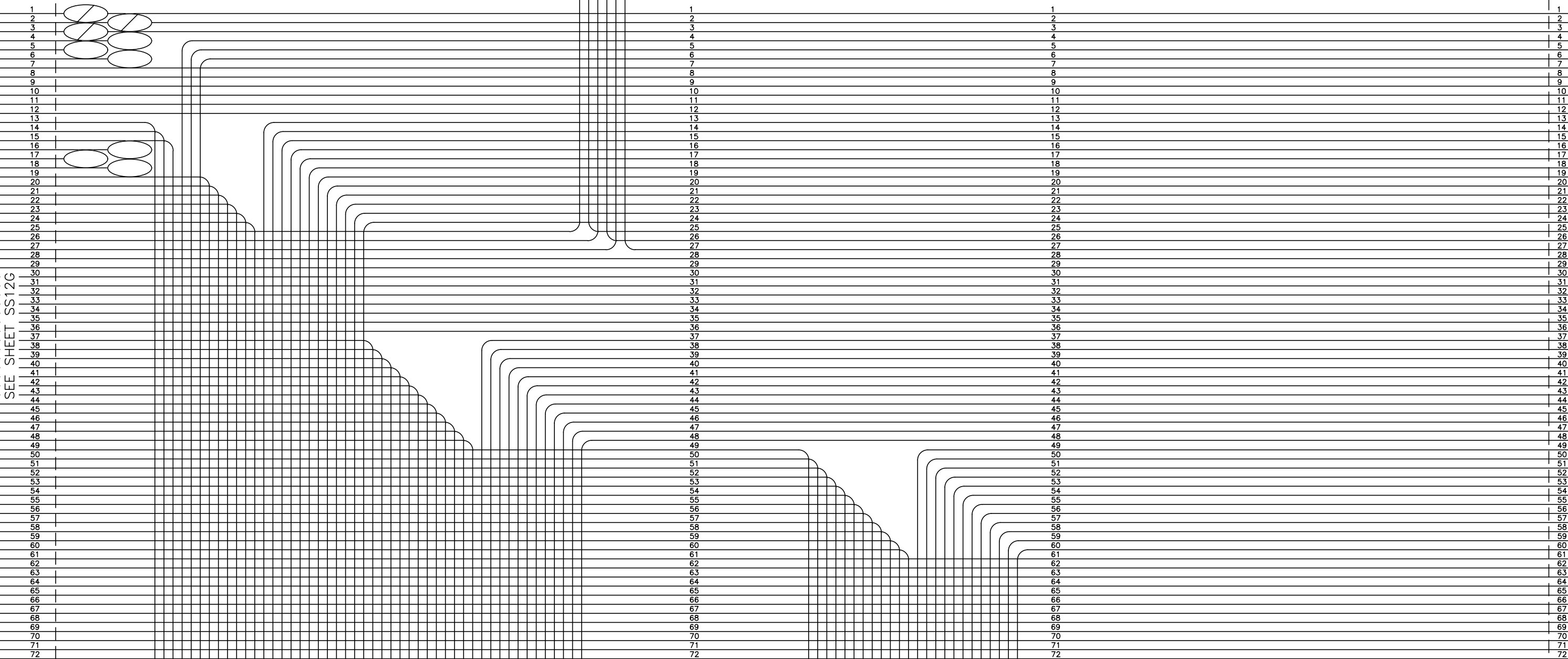


EAST 4TH STREET AND 10TH AVENUE EAST INPLACE PULL VAULT (PV-6)

TRUNK ID# 4-02

BARE TEST FIBERS 4-6, 16-18

TRUNK ID# 4-03



SEE SHEET SS12G

SEE SHEET SS12I

FIBER OPTIC CABLE MARKINGS @
SPlice ENCLOSURE _____
VAULT ENTRY _____

BARE TEST FIBERS 49-60

BARE TEST FIBERS 121-144

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

SEE SHEET SS12F

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LUKE S. JAMES
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Luke S. James
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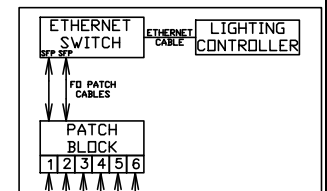
3-15-2023
DATE
55393
LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS-FIBER OPTIC SCHEMATIC
SHEET NO. SS12H OF SS40 SHEETS



PIGTAIL ID#: 17THAVE-L

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SEE SHEET SS12H

SEE SHEET SS12J

EAST 4TH STREET AND 11TH AVENUE EAST INP. PULL VAULT (PV-7) EAST 4TH STREET AND 12TH AVENUE EAST INP. PULL VAULT (PV-8) EAST 4TH STREET AND 13TH AVENUE EAST INP. PULL VAULT (PV-9) EAST 4TH STREET AND 14TH AVENUE EAST INP. PULL VAULT (PV-10) EAST 4TH STREET AND 15TH AVENUE EAST INP. PULL VAULT (PV-11) EAST 4TH STREET AND 16TH AVENUE EAST INP. PULL VAULT (PV-12) EAST 4TH STREET AND 17TH AVENUE EAST INP. PULL VAULT (PV-13)

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

FIBER OPTIC SCHEMATIC

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LUKE S. JAMES
PRINTED NAME

Luke S. James
SIGNATURE

3-15-2023
DATE
55393
LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

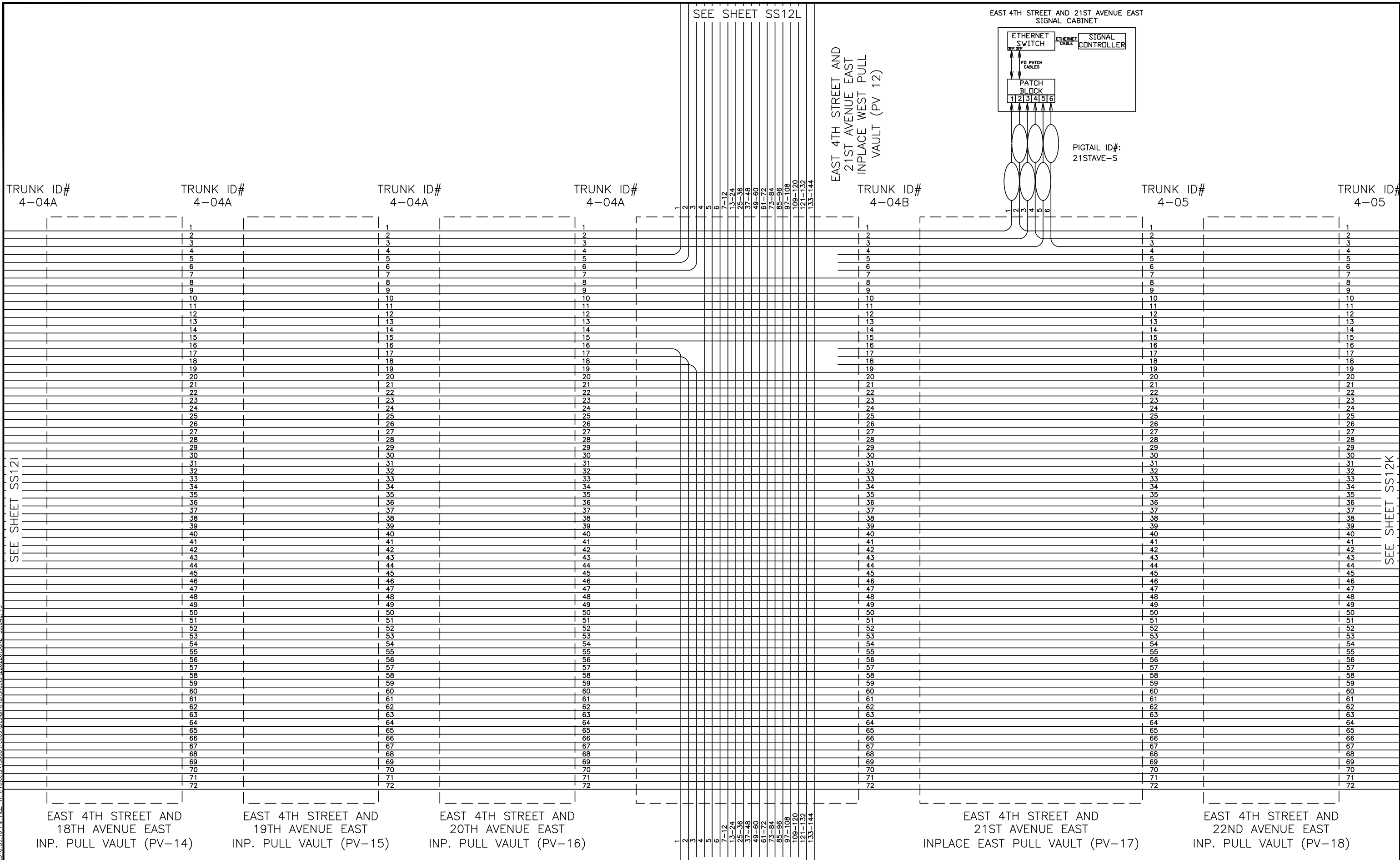
THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS12I OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:10 PM FILE: H:\Projects\15639\Design\PlanSheets\220226\SS12I-SS40.dwg:18

PLOT DATE: 5/17/2023 6:39:10 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS12L_SS12.dwg:19



LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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CITY PROJECT 1462

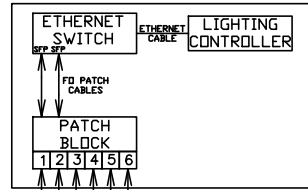
THIRD STREET RECONDITIONING

REVISION
5-17-2023

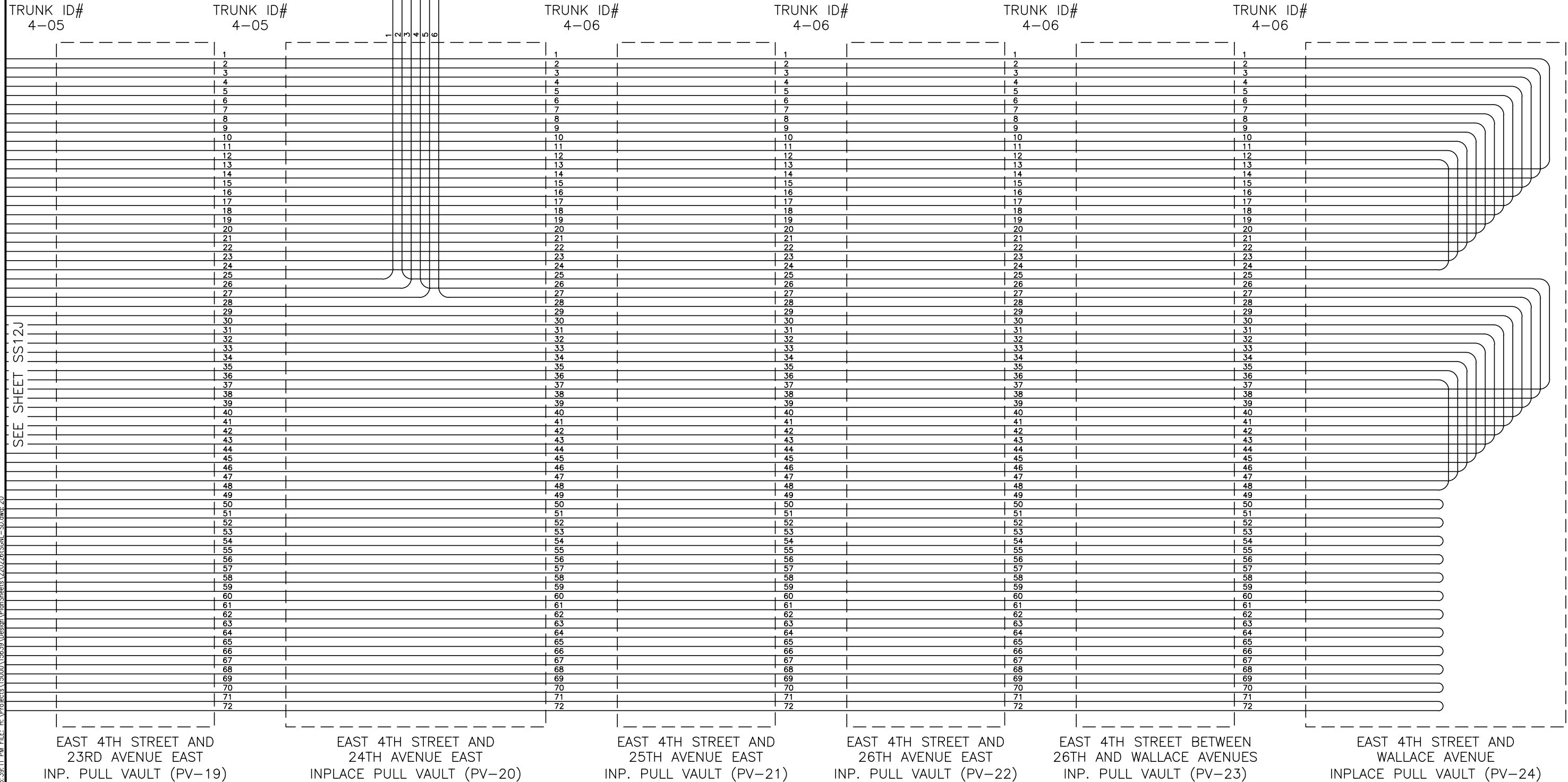
TRAFFIC SIGNAL PLANS
SHEET NO. SS12J OF SS40 SHEETS

FIBER OPTIC SCHEMATIC

EAST 4TH STREET AND 24TH AVENUE EAST
LIGHTING CABINET



PIGTAIL ID#:
24THAVE-L



SEE SHEET SS12J

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

FIBER OPTIC SCHEMATIC

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S.P. 118-126-022
CITY PROJECT 1462

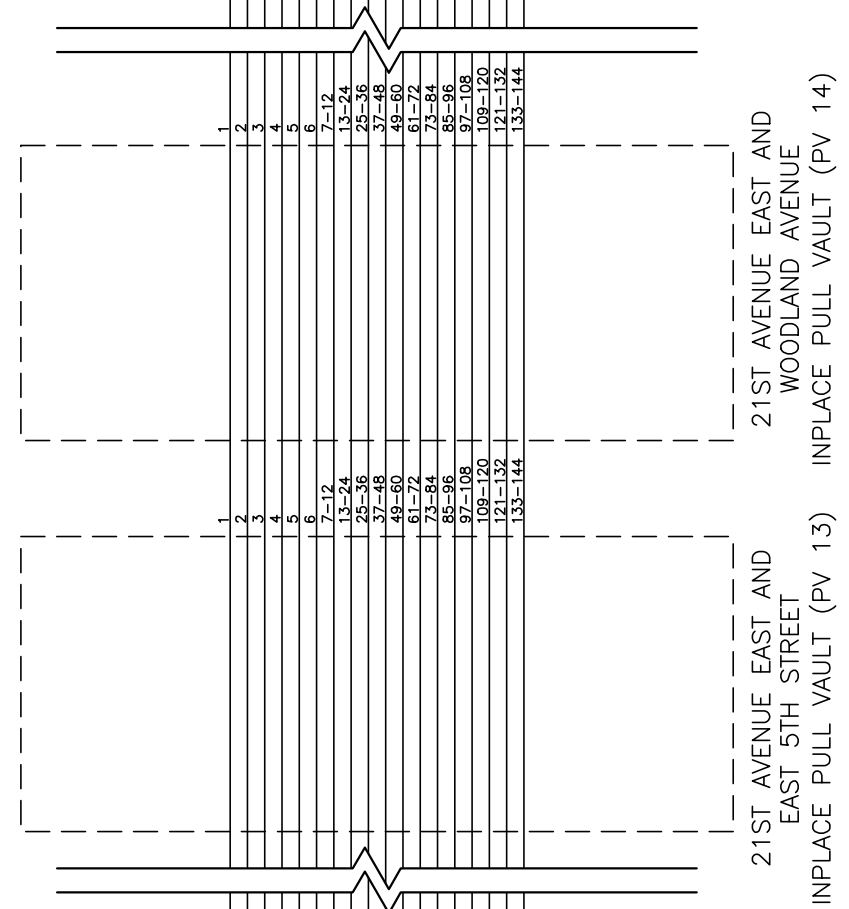
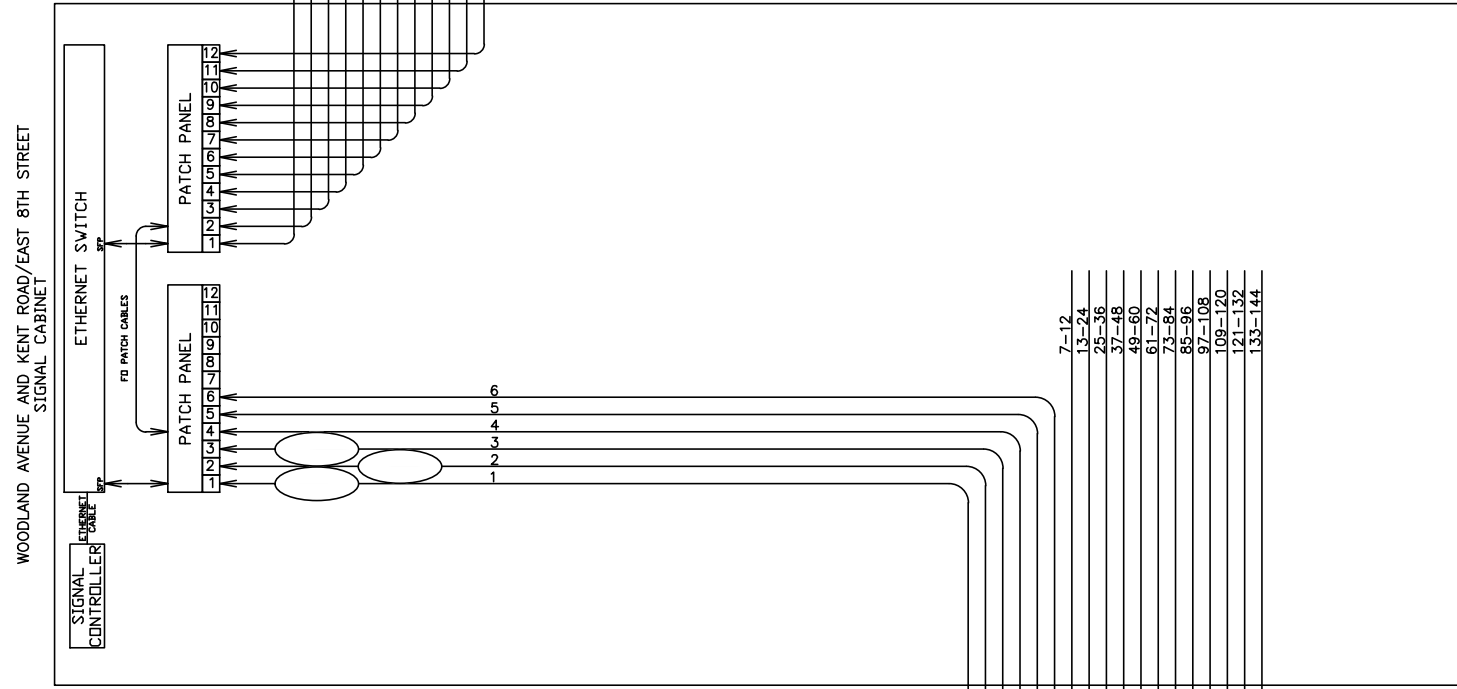
THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS12K OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:12 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS12L-SD.dwg: 31

TO WOODLAND AVENUE AND CLOVER STREET



SEE SHEET SS12J

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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PRINTED NAME

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SIGNATURE

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DATE
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LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

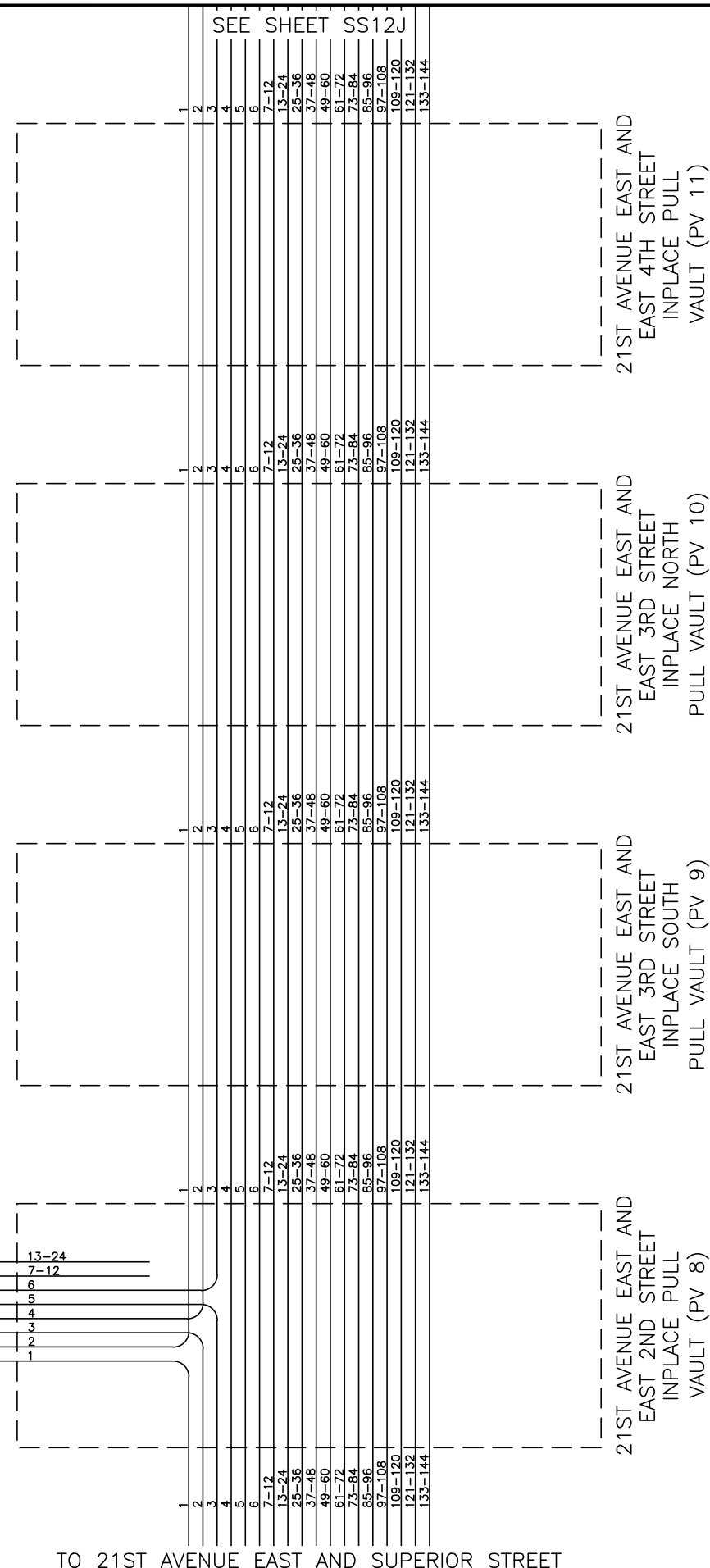
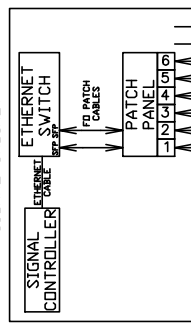
FIBER OPTIC SCHEMATIC

TRAFFIC SIGNAL PLANS

SHEET NO. **SS12L** OF **SS40** SHEETS

PLOT DATE: 5/17/2023 6:39:12 PM FILE: H:\Projects\15639\Design\PlanSheets\220226\SS12M-SD.dwg:32

21ST AVENUE EAST AND EAST 2ND STREET



SEE SHEET SS12J

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

TO 21ST AVENUE EAST AND SUPERIOR STREET

FIBER OPTIC SCHEMATIC

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LUKE S. JAMES
PRINTED NAME

Luke S. James
SIGNATURE

3-15-2023
DATE
55393
LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS

SHEET NO. SS12M OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:13 PM FILE: H:\Projects\15639\Design\PlanSheets\220226\SS40.dwg:21

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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3-15-2023
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S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

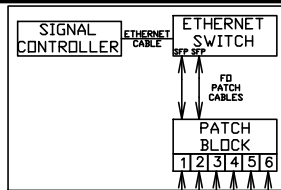
REVISION
5-17-2023

TRAFFIC SIGNAL PLANS-FIBER OPTIC SCHEMATIC
SHEET NO. SS40 OF SS40 SHEETS

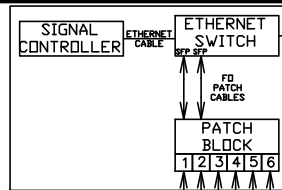


SEE SHEET SS12D

SIGNAL CABINET
2ND AVE W AT SUPERIOR ST

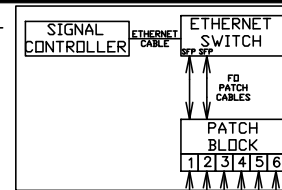


SIGNAL CABINET
1ST AVE W AT SUPERIOR ST



TO LIGHTING
CONTROLLER/CABINET

SIGNAL CABINET
LAKE AVE AT SUPERIOR ST



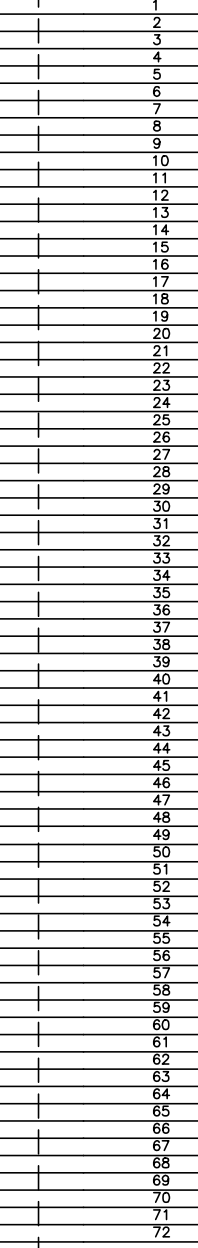
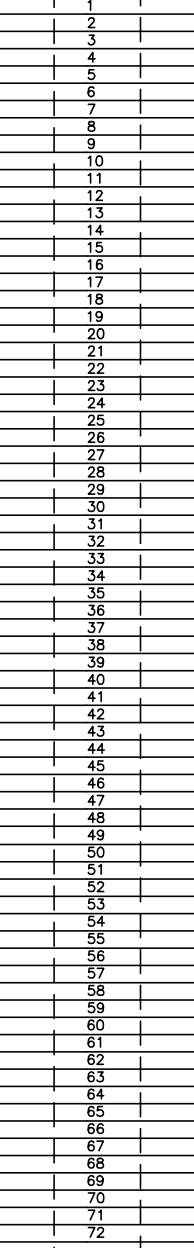
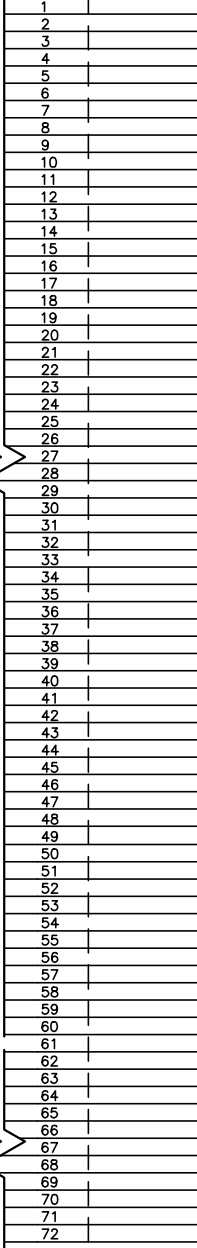
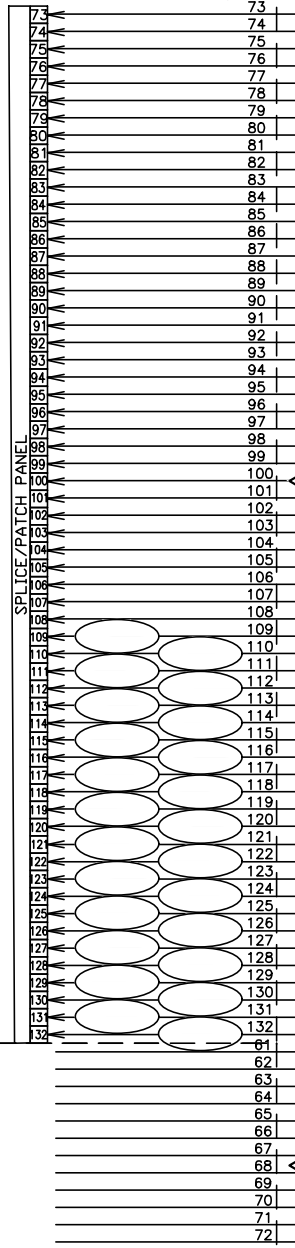
SUPERIOR STREET AND LAKE AVENUE
INPLACE PULL VAULT (PV 12)

CITY HALL
(SOUTH ENTRY)

TRUNK
ID#
SUPERIOR-04

TRUNK
ID#
SUPERIOR-05

TRUNK
ID#
SUPERIOR-06

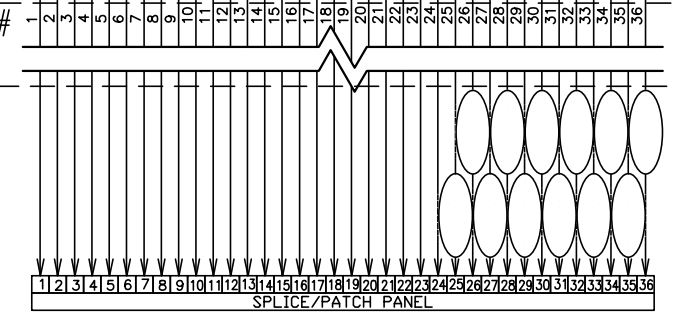


SUPERIOR STREET AND
3RD AVENUE WEST
INPLACE PULL VAULT (PV 8)

SUPERIOR STREET AND
2ND AVENUE WEST
INPLACE PULL VAULT (PV 10)

SUPERIOR STREET AND
1ST AVENUE WEST
INPLACE PULL VAULT (PV 11)

TRUNK ID#
LAKE-01



LIFT
BRIDGE
SOUTH
TOWER
OFFICE

SEE SHEET SS12P

PLOT DATE: 5/17/2023 6:39:14 PM FILE: H:\Projects\15639\Design\PlanSheets\220226\SS12P-SP.dwg:22

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3-15-2023
DATE
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LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS-FIBER OPTIC SCHEMATIC
SHEET NO. SS120 OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:15 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS120-SP.dwg 23

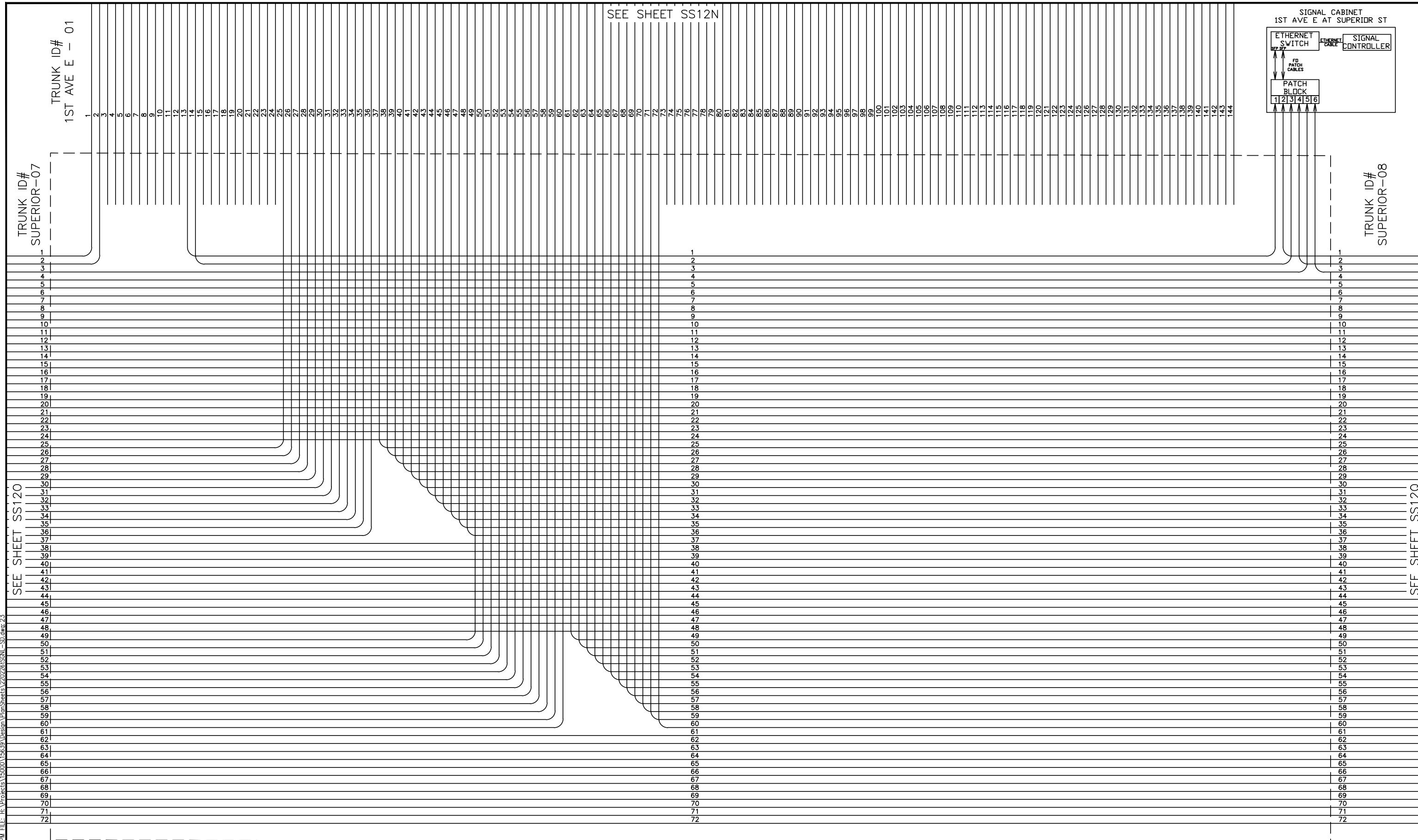
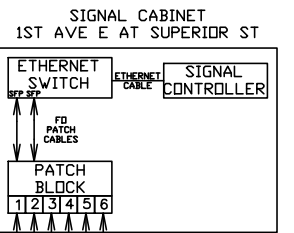
SEE SHEET SS120

TRUNK ID#
SUPERIOR-07

TRUNK ID#
1ST AVE E - 01

SEE SHEET SS12N

TRUNK ID#
SUPERIOR-08



SUPERIOR STREET AND 1ST AVENUE EAST
INPLACE PULL VAULT (PV 14)

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

FIBER OPTIC SCHEMATIC

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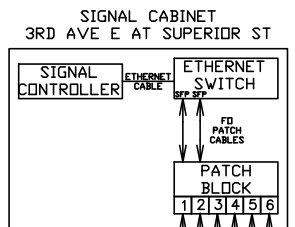
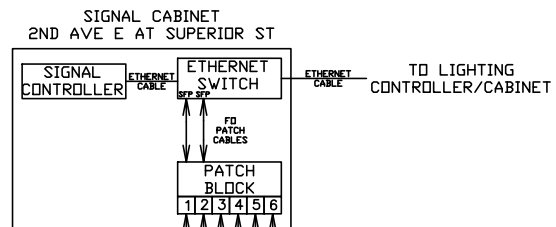
S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS

SHEET NO. SS12P OF SS40 SHEETS



TRUNK
ID#
SUPERIOR-09

TRUNK
ID#
SUPERIOR-10



SEE SHEET SS12P

SUPERIOR STREET AND PARKING RAMP INPLACE PULL VAULT (PV 15) SUPERIOR STREET AND 2ND AVENUE EAST INPLACE PULL VAULT (PV 16) SUPERIOR STREET AND 3RD AVENUE EAST INPLACE PULL VAULT (PV 17)

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

FIBER OPTIC SCHEMATIC

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CITY PROJECT 1462

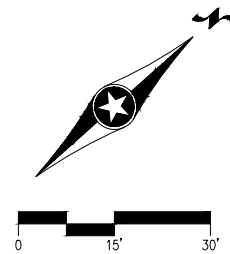
THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS

SHEET NO. SS120 OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:16 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SSCNL-SD.dwg:24



SEE SHEET SS28 FOR INPLACE COMPONENTS THAT ARE NOT IMPACTED BY INTERCONNECT WORK.

101+00 102+00 103+00 104+00 105+00

MESABA AVENUE

5TH AVENUE WEST

WEST 3RD STREET

INPLACE - HH

BEGIN S.P. 118-126-022
STA: 102+06.31

INPLACE - CONDUIT
INPLACE - SIGNAL CABLES
** REMOVE - 1 - 25PR 19
** 1 - 12SM FO PIGTAIL
** 1 - 1/C 14

** ADJUST HANDHOLE

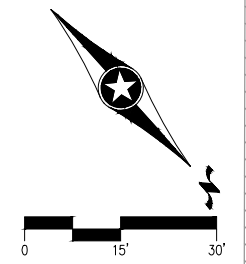
INPLACE - EQUIPMENT PAD
INPLACE - CONTROLLER AND CABINET
** FO SPLICE/PATCH PANEL
** FO PIGTAIL TERMINATION

INPLACE - 2" NMC
** REMOVE - 1 - 25PR 19
** 1 - 12SM FO PIGTAIL
** 1 - 1/C 14

MATCH LINE - SEE LEFT

NOTES:

1. ALL ITEMS ARE FURNISH AND INSTALL UNLESS OTHERWISE NOTED.
2. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
3. LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
4. THE EXACT LOCATION OF PULL VAULTS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE FIELD ENGINEER.
5. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS AND SIDEWALK, SEE CONSTRUCTION PLANS.
6. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. NEW CONDUIT UNDER NON-IMPACTED SURFACES REQUIRES BORING.
7. USE PVC (SCHEDULE 80) OR HDPE (SCHEDULE 80) FOR ALL NEW CONDUIT.
8. CONDUIT SIZES ARE NOMINAL DIAMETER.
9. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
10. ITEMS DENOTED WITH ** ARE INCLUDED IN PAYMENT FOR FIBER OPTIC INTERCONNECT PAY ITEMS.

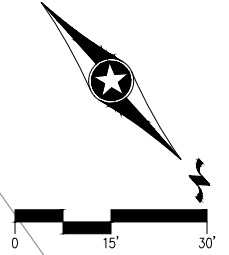


CONTINUE INTO CITY HALL BUILDING, PROVIDING 400 FEET OF FO CABLE BEYOND THIS POINT
COORDINATE CONSTRUCTION AND ROUTE OF FIBER OPTIC CABLE IN CITY HALL WITH CITY OF DULUTH IT (CHRIS MAJERLE 218-730-5170)

AT DATA ROOM:
COIL 70 FEET OF FO CABLE
** FO SPLICE/PATCH PANEL (RACK MOUNTED)
** FO CABLE TERMINATION (PAID FOR AS FO PIGTAIL TERMINATION)

INPLACE - PV
COIL 140 FEET OF FO CABLE

INPLACE - CONDUIT
** 1 - 144SM FO CABLE
** 1 - 1/C 14



MATCH LINE - SEE RIGHT

INPLACE - HH

INPLACE - CONDUIT
** 1 - 144SM FO CABLE
** 1 - 1/C 14

INPLACE - PV
** FO SPLICE ENCLOSURE
** FO CABLE SPLICING

WEST 2ND STREET

INPLACE - CONDUIT
** 1 - 144SM FO CABLE
** 1 - 12SM FO PIGTAIL
** 2 - 1/C 14

INPLACE - CONDUIT

INPLACE - HH

INPLACE - HH

INPLACE - HH

INPLACE - CONDUIT
INPLACE - SIGNAL CABLES
** REMOVE - 1 - 25PR 19
** 1 - 144SM FO CABLE
** 1 - 1/C 14

SEE SHEET SS29 FOR INPLACE COMPONENTS THAT ARE NOT IMPACTED BY INTERCONNECT WORK.

INPLACE - CONDUIT
INPLACE - SIGNAL CABLES
** REMOVE - 1 - 25PR 19
** 1 - 12SM FO PIGTAIL
** 1 - 1/C 14

INPLACE - HH
INPLACE - EQUIPMENT PAD
INPLACE - CONTROLLER AND CABINET
** FO SPLICE/PATCH PANEL
** FO PIGTAIL TERMINATION

INPLACE - 2" NMC
INPLACE - 1 - COAXIAL CABLE
** REMOVE - 1 - 25PR 19
** 1 - 144SM FO CABLE
** 1 - 1/C 14

4TH AVENUE WEST

INPLACE - HH

INPLACE - 2" NMC
** REMOVE - 1 - 25PR 19
** 1 - 144SM FO CABLE
** 1 - 1/C 14

MATCH LINE A - SEE SHEET SS14

MATCH LINE B - SEE SHEET SS14

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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LUKE S. JAMES
PRINTED NAME

Luke S. James
SIGNATURE

3-15-2023
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S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

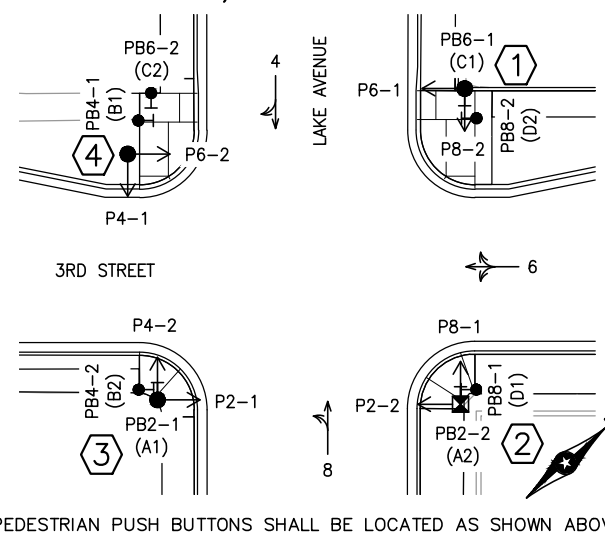
INTERCONNECT LAYOUT

TRAFFIC SIGNAL PLANS

SHEET NO. SS13 OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:23 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SSCN-PLAN.dwg:1

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, AND PUSH BUTTONS



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE.
- PHASE 6 SHALL BE ON VEHICLE RECALL.

VIDEO DETECTION CHART		
NUMBER	CAMERA	LOCATION
D4-1	V-3	120
D4-2	V-3	5
D6-1, D6-2	V-4	120
D6-3, D6-4, D6-5	V-4	5
D8-1	V-1	120
D8-2	V-1	5

-LOCATION: DISTANCE FROM CROSSWALK IN FEET

SIGNAL HEAD CHART			
FACE	R	Y	G
4-1, 4-2	●	●	●
6-1, 6-2, 6-3, 6-4	●	●	●
8-1, 8-2, 8-3	●	●	●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
 -INCLUDE 3 INCH YELLOW RETROREFLECTIVE TAPE ON THE ENTIRE PERIMETER OF THE BACKGROUND SHIELDS

PED PB STATION
 1 - APS PB AND SIGN (RT ARROW) (PB6-2)
 1" CONDUIT TO HH 4:
 1 - 2/C 14
 1 - 1/C 6 INS. GR.

PED PB STATION
 1 - APS PB AND SIGN (LT ARROW) (PB4-1)
 1" CONDUIT TO HH 4:
 1 - 2/C 14
 1 - 1/C 6 INS. GR.

2 - 3" CONDUIT
 7 - 4/C 14
 * 1 - 3/C 14
 * 1 - 3/C 20
 1 - 3/C 18 (VIDEO)
 2 - 2/C 14
 1 - 1/C 6 INS. GR.

PED PB STATION
 1 - APS PB AND SIGN (RT ARROW) (PB8-2)
 1" CONDUIT TO HH 5:
 1 - 2/C 14
 1 - 1/C 6 INS. GR.

** 2" CONDUIT
 ** 1 - 144SM FO CABLE
 ** 1 - 1/C 14

INPLACE - 2" NMC
 ** REMOVE - 1 - 6PR 19
 ** 1 - 144SM FO CABLE
 ** 1 - 1/C 14

** 1.5" CONDUIT
 ** 1 - 144SM FO CABLE
 ** 1 - 1/C 14

4 - 3" CONDUIT
 9 - 4/C 14
 1 - 3/C 14 (LUM)
 * 1 - 3/C 14
 * 1 - 3/C 20
 1 - 3/C 18 (VIDEO)
 4 - 2/C 14
 1 - 1/C 6 INS. GR.

PED PB STATION
 1 - APS PB AND SIGN (RT ARROW) (PB4-2)
 1" CONDUIT TO HH 3:
 1 - 2/C 14
 1 - 1/C 6 INS. GR.

PED PB STATION
 1 - APS PB AND SIGN (LT ARROW) (PB8-1)
 1" CONDUIT TO HH 2:
 1 - 2/C 14
 1 - 1/C 6 INS. GR.

2 - 3" CONDUIT
 6 - 4/C 14
 1 - 3/C 14 (LUM)
 * 1 - 3/C 14
 * 1 - 3/C 20
 1 - 3/C 18 (VIDEO)
 2 - 2/C 14
 1 - 1/C 6 INS. GR.

** 2" CONDUIT
 ** 1 - 1/C 14

INPLACE - 2" NMC
 ** REMOVE - 1 - 6PR 19
 ** 1 - 1/C 14

- NOTES:
1. ALL ITEMS ARE FURNISH AND INSTALL UNLESS OTHERWISE NOTED.
 2. REMOVE THE EXISTING SIGNAL SYSTEM, SEE DIVISION SS FOR REMOVAL AND SALVAGE REQUIREMENTS.
 3. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
 4. LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
 5. THE EXACT LOCATION OF POLES, PEDESTALS, PUSH BUTTON STATIONS, EQUIPMENT PAD, HANDHOLES, AND PULL VAULTS SHALL BE DETERMINED IN THE FIELD BY THE FIELD ENGINEER.
 6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR THE HOOKUP CHARGES.
 7. FOR SIGNS MOUNTED ON SIGNAL EQUIPMENT, SEE SHEET SS18. ALL SIGNS REQUIRED ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL SIGNAL SYSTEM A PAY ITEM.
 8. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS AND SIDEWALK, SEE CONSTRUCTION PLANS.
 9. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. NEW CONDUIT UNDER NON-IMPACTED SURFACES REQUIRES BORING.
 10. USE PVC (SCHEDULE 80) OR HDPE (SCHEDULE 80) FOR ALL NEW CONDUIT.
 11. CONDUIT SIZES ARE NOMINAL DIAMETER.
 12. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
 13. ITEMS DENOTED WITH * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM A PAY ITEM.
 14. ITEMS DENOTED WITH ** ARE INCLUDED IN PAYMENT FOR FIBER OPTIC INTERCONNECT PAY ITEMS.

CONTINUE TRACER WIRE TO LAKE AVENUE AND 2ND STREET CONTROLLER CABINET (SEE SHEET SS32 FOR INPLACE COMPONENTS)

MATCH LINE F - SEE SHEET SS15

MATCH LINE G - SEE SHEET SS19

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 CITY PROJECT 1462

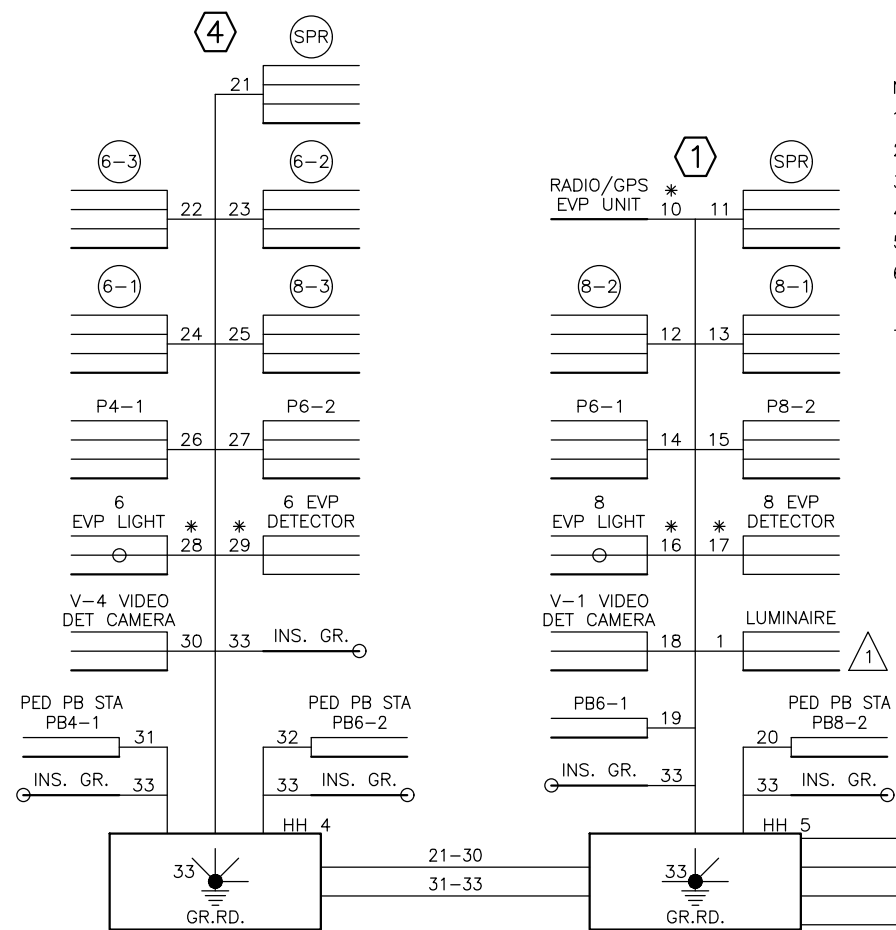
THIRD STREET RECONDITIONING

REVISION
 5-17-2023

SYSTEM A - INTERSECTION LAYOUT
 3RD STREET/LAKE AVENUE

TRAFFIC SIGNAL PLANS
 SHEET NO. SS16 OF SS40 SHEETS

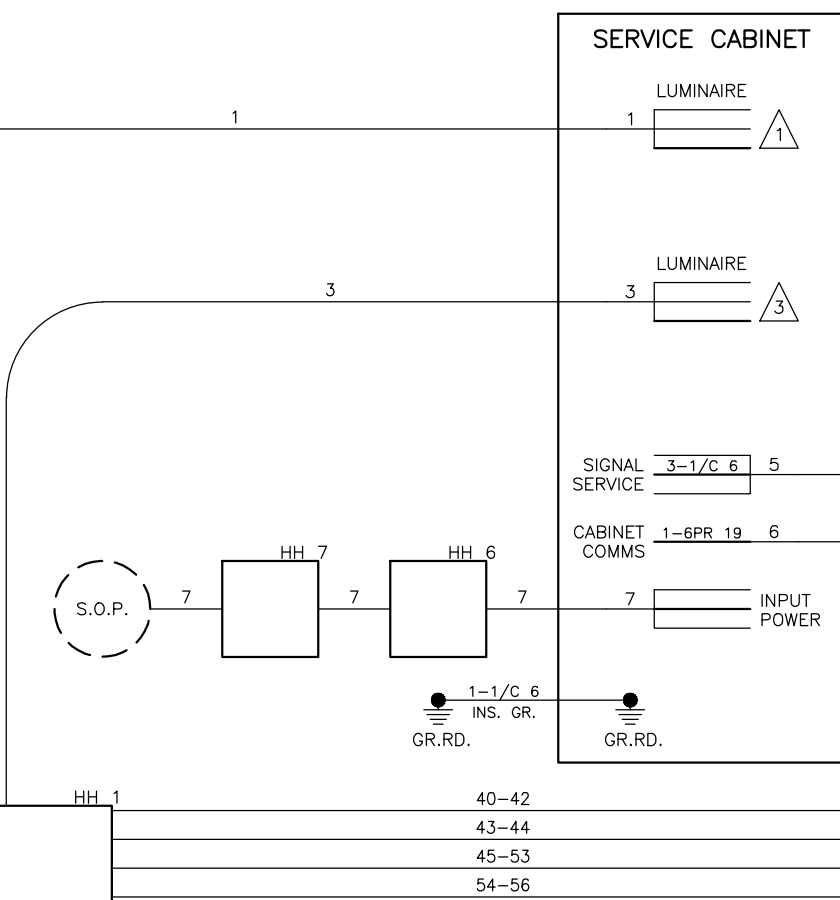
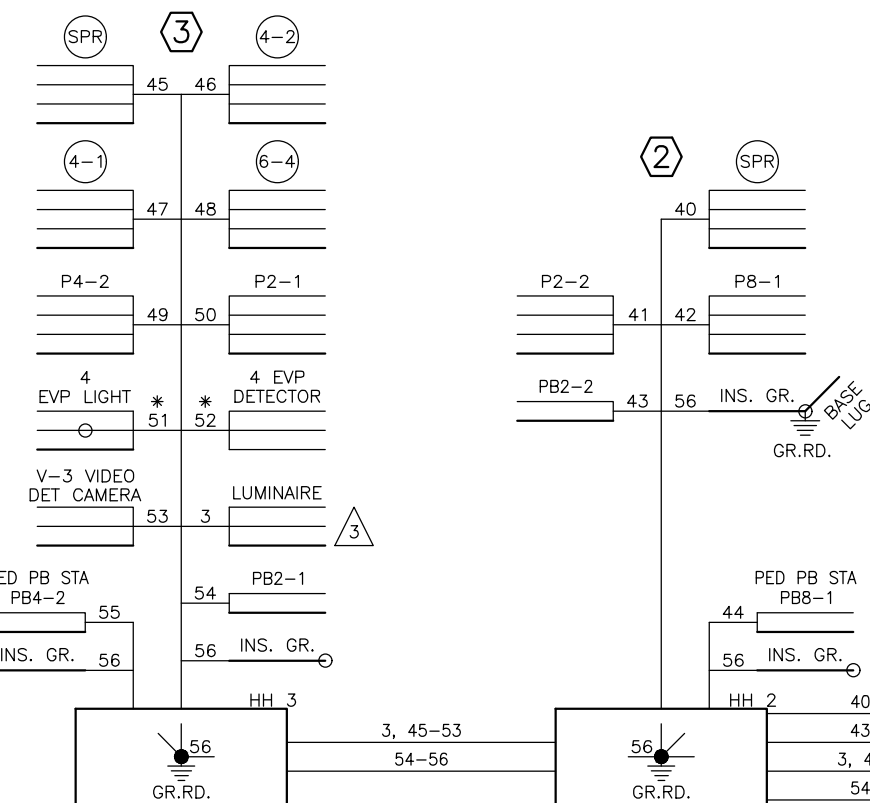
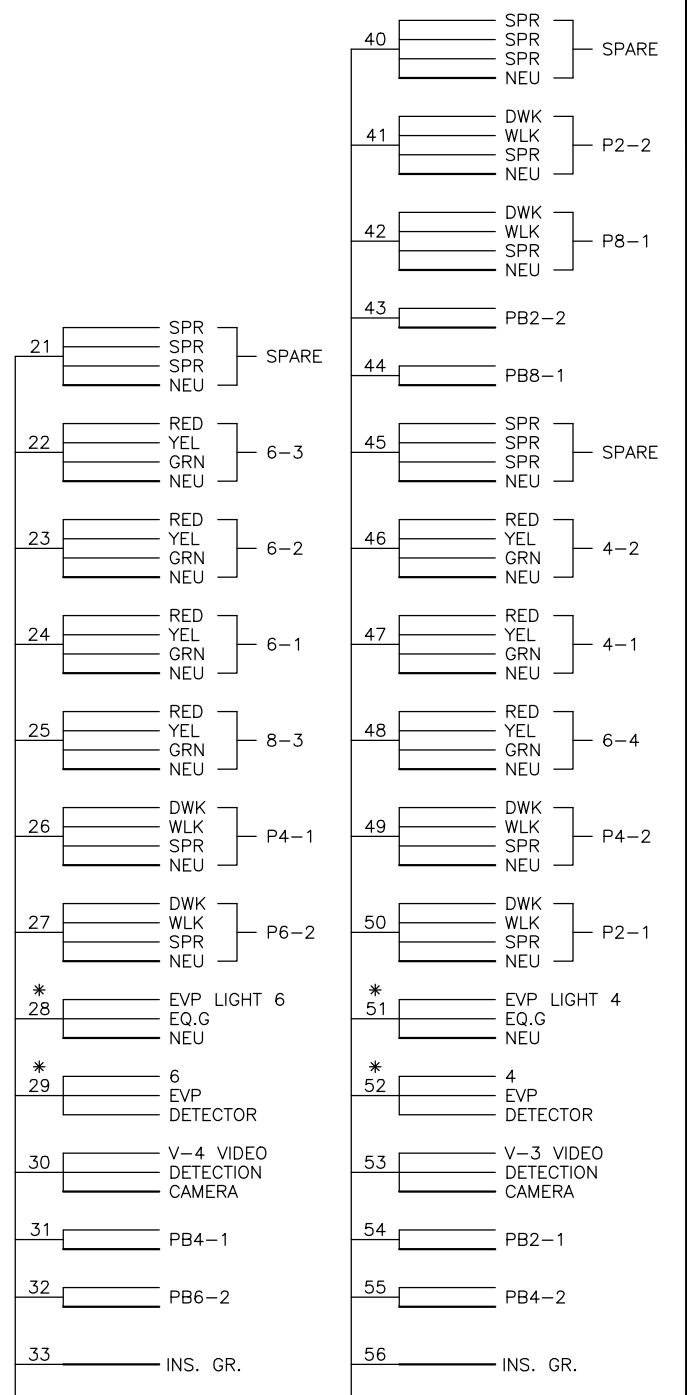
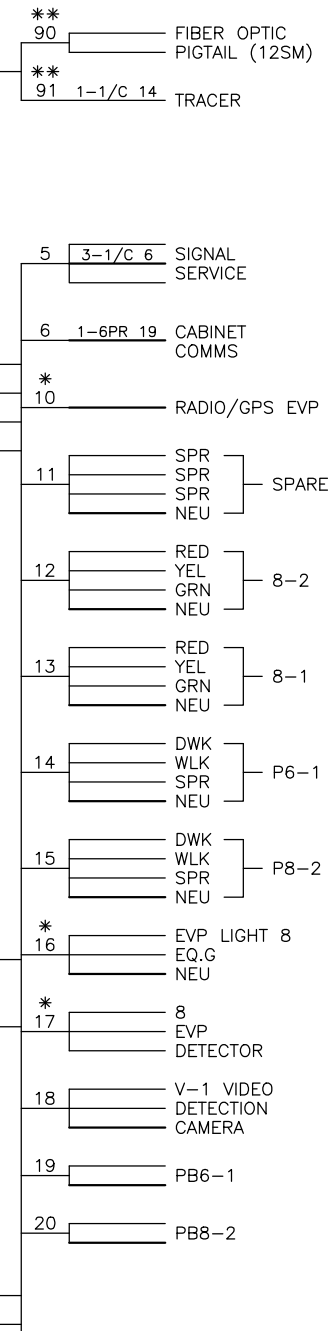
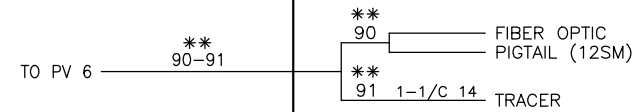
PLOT DATE: 5/17/2023 6:39:30 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS16\PLAN.dwg: A1



NOTES:

1. SPLICES ARE NOT ALLOWED.
2. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (NO BATTERIES).
3. FOR CONDUCTOR COLOR CODE SEE SHEET SS1.
4. ITEMS DENOTED WITH * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM A PAY ITEM.
5. ITEMS DENOTED WITH ** ARE INCLUDED IN PAYMENT FOR FIBER OPTIC INTERCONNECT PAY ITEMS.
6. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HAND HOLE NEAREST EACH POLE.
7. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.

CONTROLLER CABINET



SYSTEM A - FIELD WIRING DIAGRAM
3RD STREET/LAKE AVENUE

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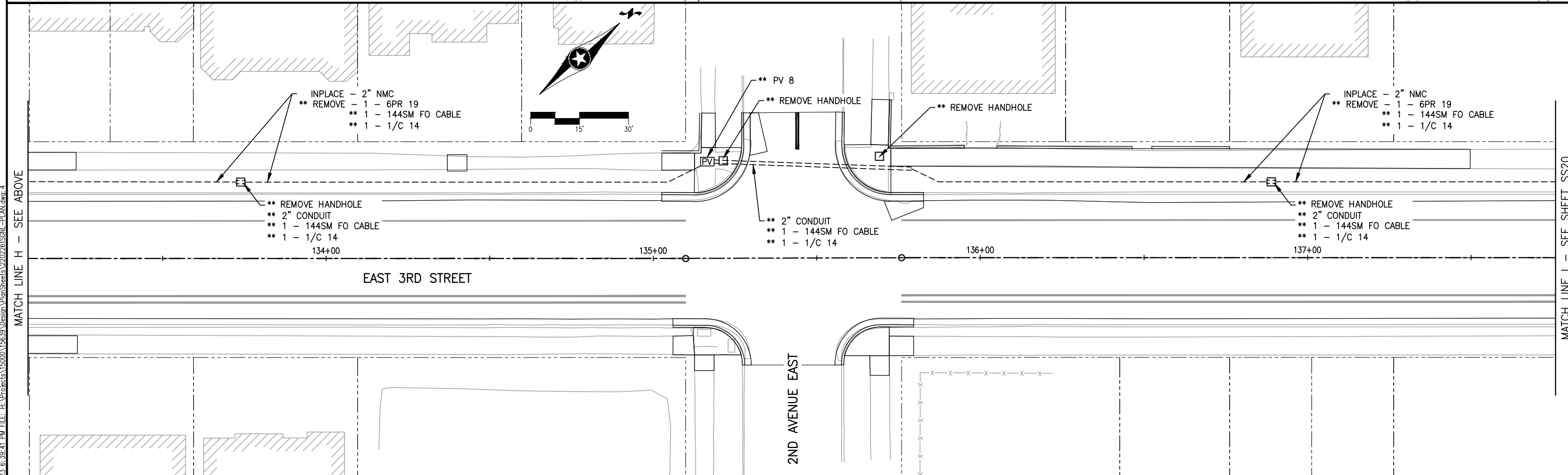
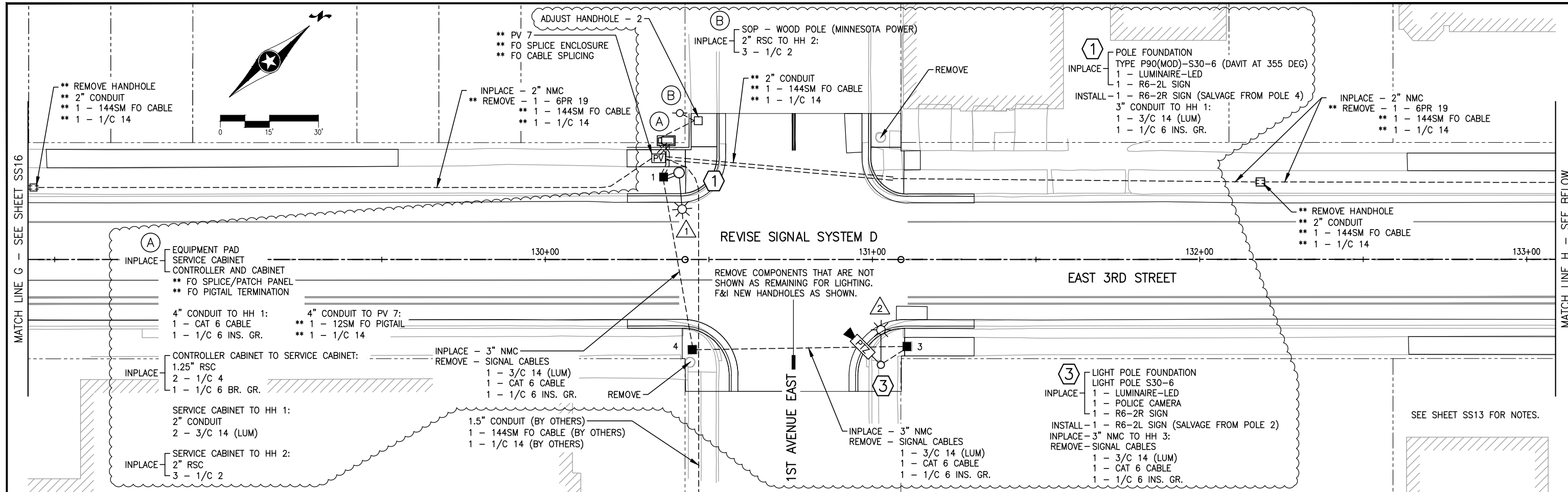
S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS17A OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:36 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SSCN-10.dwg-A



LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

INTERCONNECT LAYOUT

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PRINTED NAME

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SIGNATURE

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CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS19 OF SS40 SHEETS

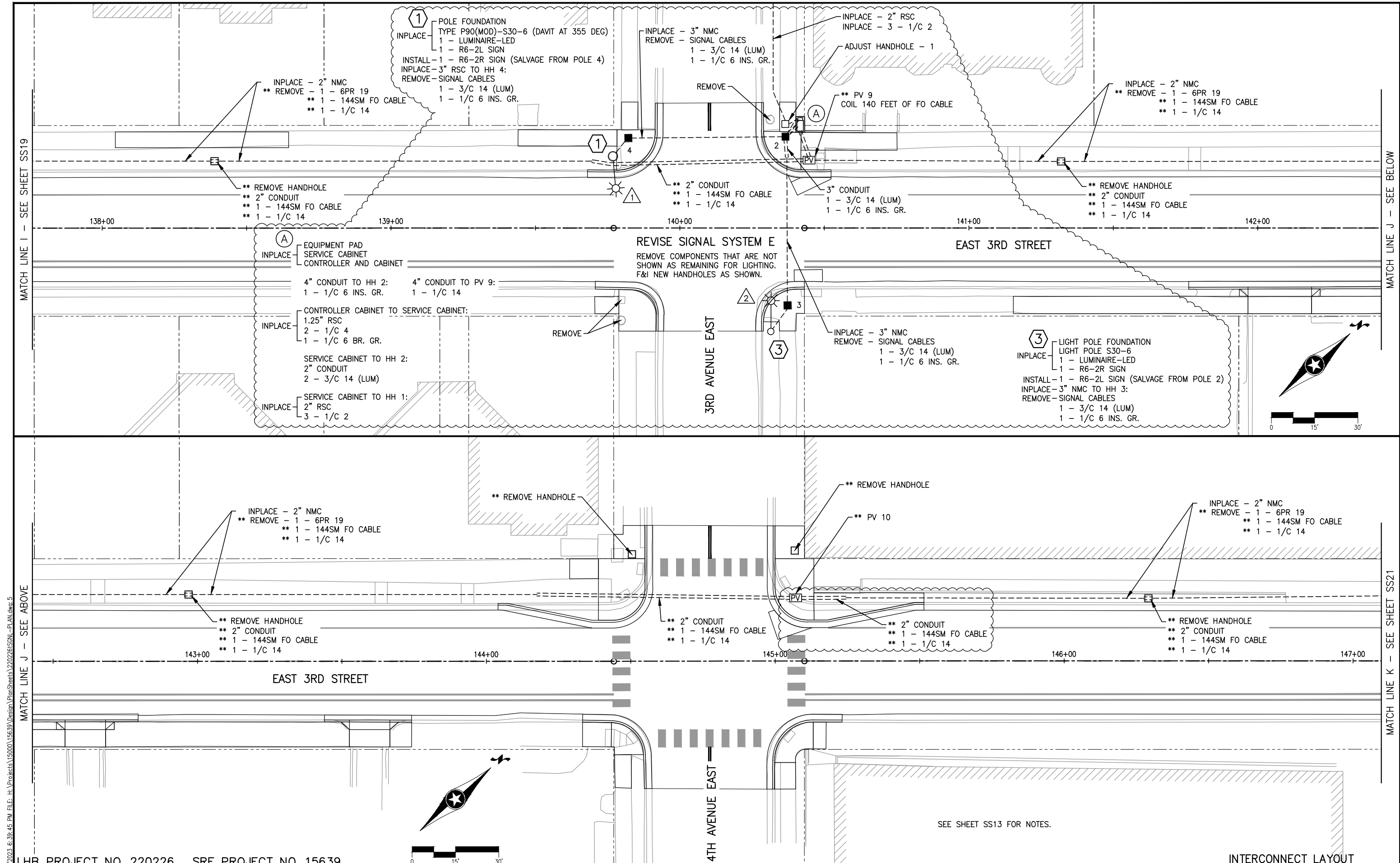
PLOT DATE: 5/17/2023 6:39:41 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS19-PLAN.dwg 4

MATCH LINE G - SEE SHEET SS16

MATCH LINE H - SEE ABOVE

MATCH LINE H - SEE BELOW

MATCH LINE I - SEE SHEET SS20



MATCH LINE I - SEE SHEET SS19

MATCH LINE J - SEE BELOW

MATCH LINE J - SEE ABOVE

MATCH LINE K - SEE SHEET SS21

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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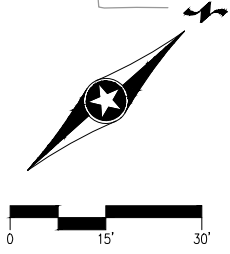
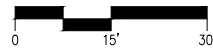
3-15-2023
DATE
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S.P. 118-126-022
CITY PROJECT 1462

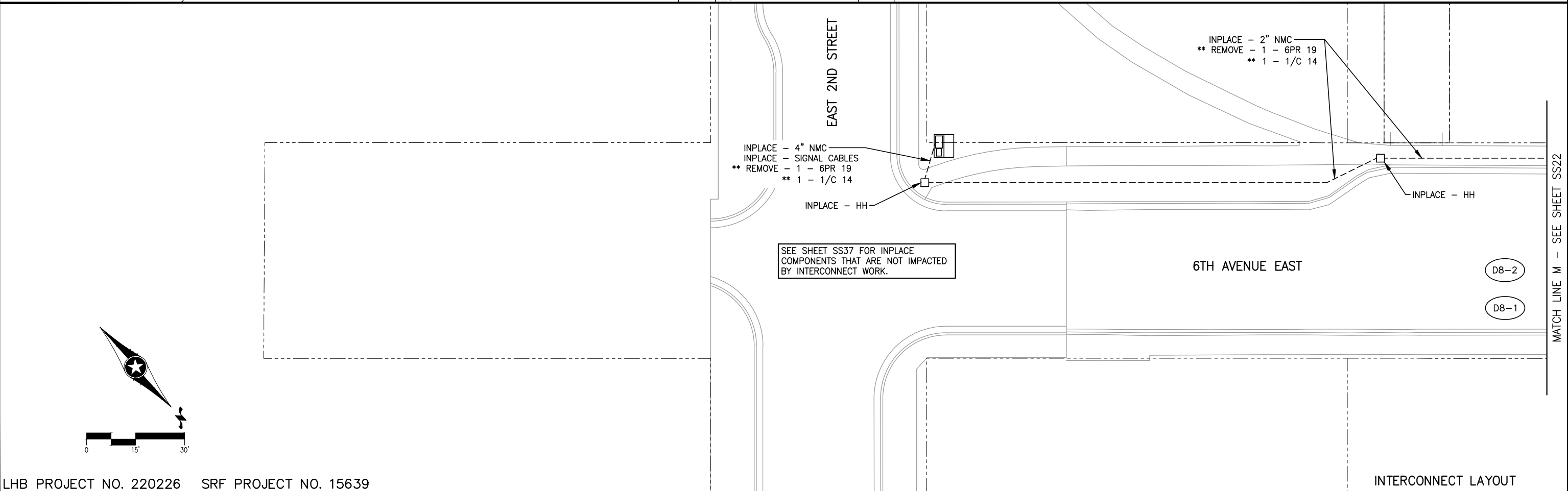
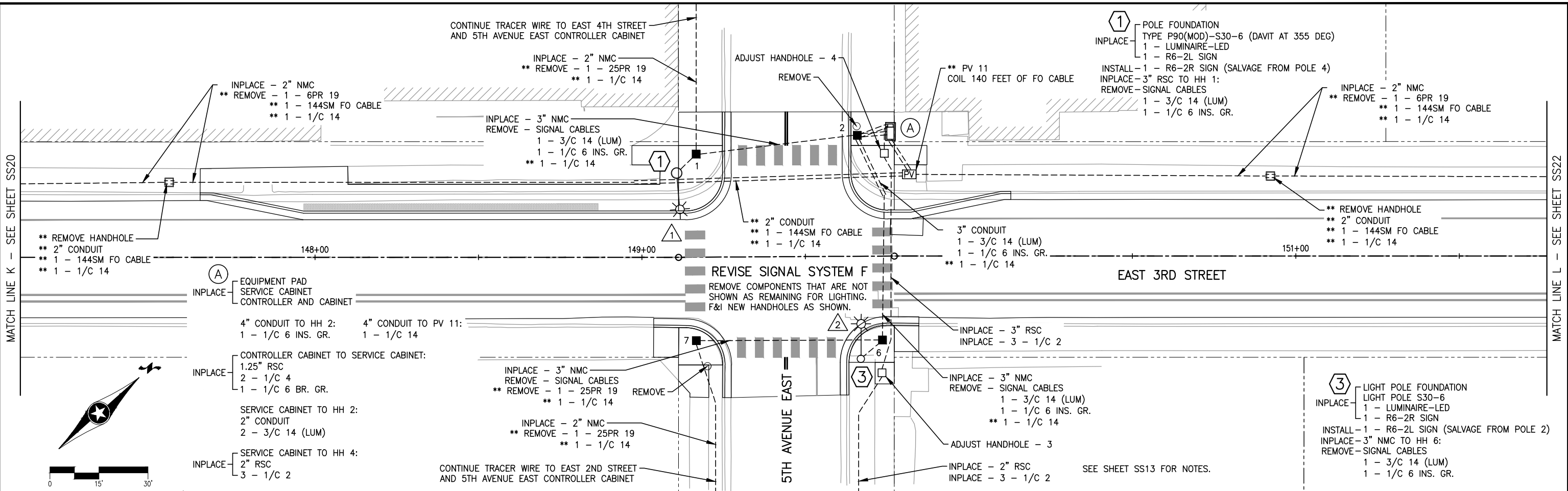
THIRD STREET RECONDITIONING

REVISION
5-17-2023

INTERCONNECT LAYOUT
TRAFFIC SIGNAL PLANS
SHEET NO. SS20 OF SS40 SHEETS

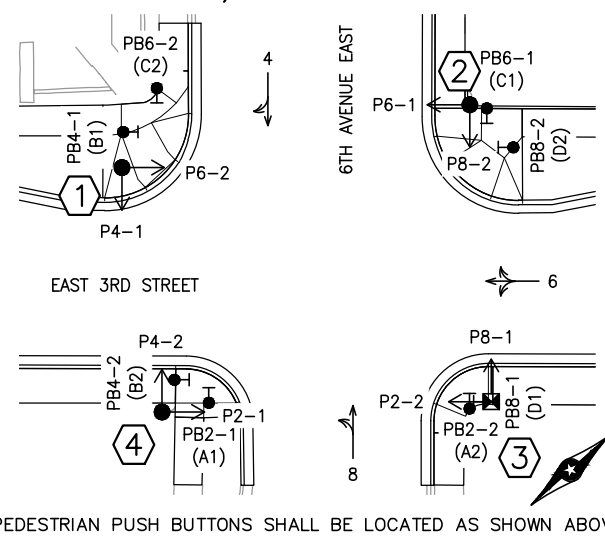


SEE SHEET SS13 FOR NOTES.



PLOT DATE: 5/17/2023 6:39:48 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS21-PLAN.dwg:6

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, AND PUSH BUTTONS



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE.
- PHASE 6 SHALL BE ON VEHICLE RECALL.

VIDEO DETECTION CHART

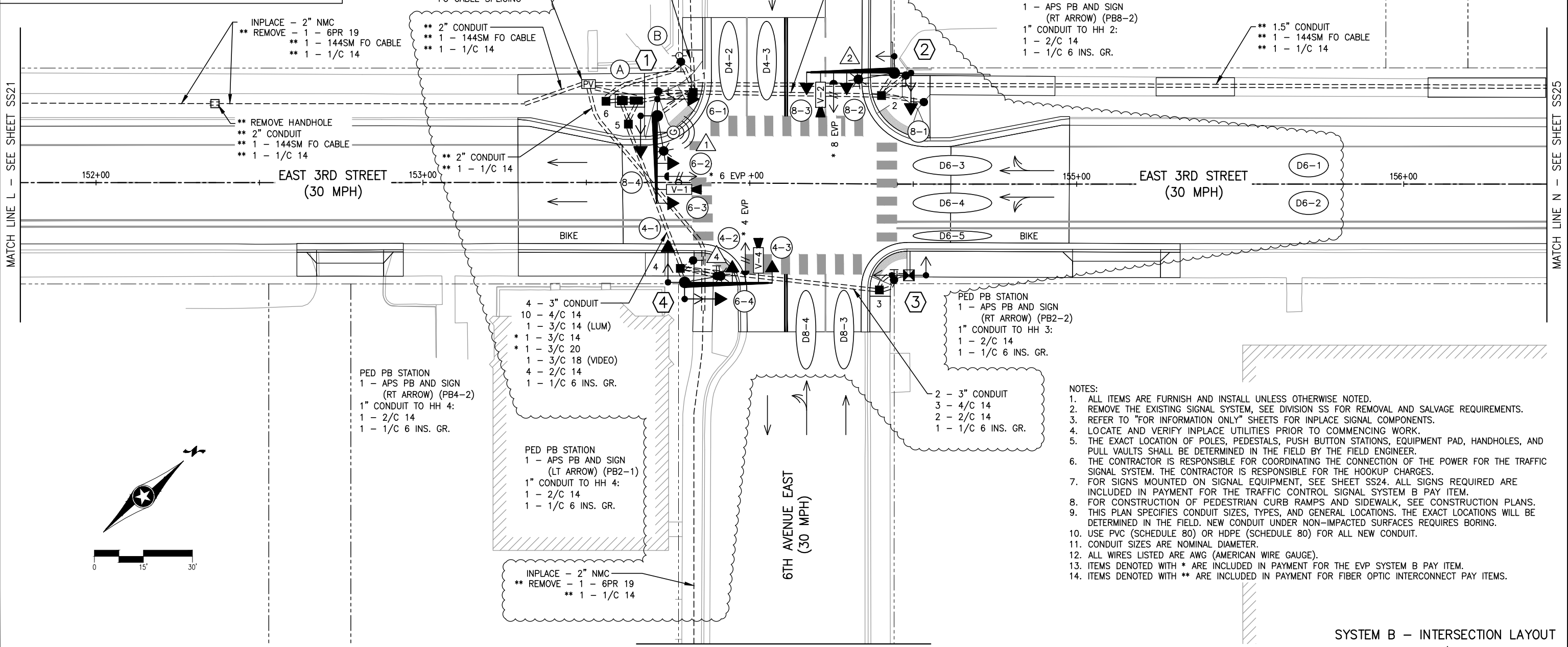
NUMBER	CAMERA	LOCATION
D4-1	V-4	120
D4-2, D4-3	V-4	5
D6-1, D6-2	V-1	120
D6-3, D6-4, D6-5	V-1	5
D8-1, D8-2	V-2	120
D8-3, D8-4	V-2	5

-LOCATION: DISTANCE FROM CROSSWALK IN FEET

SIGNAL HEAD CHART

FACE	R	Y	G
4-1, 4-2, 4-3	●	●	●
6-1, 6-2, 6-3, 6-4	●	●	●
8-1, 8-2, 8-3, 8-4	●	●	●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-INCLUDE 3 INCH YELLOW RETROREFLECTIVE TAPE ON THE ENTIRE PERIMETER OF THE BACKGROUND SHIELDS



- NOTES:**
1. ALL ITEMS ARE FURNISH AND INSTALL UNLESS OTHERWISE NOTED.
 2. REMOVE THE EXISTING SIGNAL SYSTEM, SEE DIVISION SS FOR REMOVAL AND SALVAGE REQUIREMENTS.
 3. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
 4. LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
 5. THE EXACT LOCATION OF POLES, PEDESTALS, PUSH BUTTON STATIONS, EQUIPMENT PAD, HANDHOLES, AND PULL VAULTS SHALL BE DETERMINED IN THE FIELD BY THE FIELD ENGINEER.
 6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR THE HOOKUP CHARGES.
 7. FOR SIGNS MOUNTED ON SIGNAL EQUIPMENT, SEE SHEET SS24. ALL SIGNS REQUIRED ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL SIGNAL SYSTEM B PAY ITEM.
 8. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMP AND SIDEWALK, SEE CONSTRUCTION PLANS.
 9. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. NEW CONDUIT UNDER NON-IMPACTED SURFACES REQUIRES BORING.
 10. USE PVC (SCHEDULE 80) OR HDPE (SCHEDULE 80) FOR ALL NEW CONDUIT.
 11. CONDUIT SIZES ARE NOMINAL DIAMETER.
 12. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
 13. ITEMS DENOTED WITH * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM B PAY ITEM.
 14. ITEMS DENOTED WITH ** ARE INCLUDED IN PAYMENT FOR FIBER OPTIC INTERCONNECT PAY ITEMS.

LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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THIRD STREET RECONDITIONING

REVISION
5-17-2023

SYSTEM B - INTERSECTION LAYOUT
EAST 3RD STREET/6TH AVENUE EAST
TRAFFIC SIGNAL PLANS
SHEET NO. SS22 OF SS40 SHEETS

PLOT DATE: 5/17/2023 6:39:51 PM FILE: H:\Projects\15639\Design\PlanSheets\220226\SS22-PLAN.dwg B1

- ① PA85 POLE FOUNDATION
 TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
 MODIFIED WITH THE FOLLOWING ADDITION:
 3/4" HALF COUPLING ON TOP OF MAST ARM AT 20.5' (4.5' FROM POLE) FOR RADIO/GPS EVP
- 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 - 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
 - 2 - ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
 - 2 - ANGLE MOUNT COUNTDOWN PED HEADS AT 90 AND 180 DEG
 - 1 - VIDEO DETECTION CAMERA (V-1) AT 5.5' MOUNTED ON 6' EXTENSION BRACKET
 - * 1 - ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT AT 6' (PHASE 6)
 - * 1 - RADIO/GPS EVP UNIT AT 20.5'
 - 1 - LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 - 1 - SIGN (6TH AVE E) (SEE SIGNS SHEET)
 - 1 - R6-2R SIGN (SEE SIGNS SHEET)
 - 1 - R6-2L SIGN (SEE SIGNS SHEET)
 - 3" CONDUIT TO HH 1:
 - 7 - 4/C 14
 - 1 - 3/C 14 (LUM)
 - * 1 - 3/C 14
 - * 1 - 3/C 20
 - 1 - 3/C 18 (VIDEO)
 - * 1 - RADIO/GPS CABLE
 - 1 - 1/C 6 INS. GR.

- ② PA85 POLE FOUNDATION
 TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
- 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 - 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
 - 1 - ANGLE MOUNT SIGNAL AT 90 DEG
 - 2 - ANGLE MOUNT COUNTDOWN PED HEADS AT 90 AND 180 DEG
 - 1 - VIDEO DETECTION CAMERA (V-2) AT 5.5' MOUNTED ON 6' EXTENSION BRACKET
 - * 1 - ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT AT 6' (PHASE 8)
 - 1 - LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 - 1 - SIGN (E 3RD ST) (SEE SIGNS SHEET)
 - 1 - R6-2L SIGN (SEE SIGNS SHEET)
 - 3" CONDUIT TO HH 2:
 - 6 - 4/C 14
 - 1 - 3/C 14 (LUM)
 - * 1 - 3/C 14
 - * 1 - 3/C 20
 - 1 - 3/C 18 (VIDEO)
 - 1 - 1/C 6 INS. GR.

- Ⓐ EQUIPMENT PAD (SEE DETAIL SHEET)
 SERVICE CABINET (SSB) NO BATTERY BACKUP SYSTEM OR BATTERIES
 CONTROLLER AND CABINET
- ** FO SPLICE/PATCH PANEL
 - ** FO PIGTAIL TERMINATION

- | | |
|-------------------------|-------------------------|
| 4 - 3" CONDUIT TO HH 5: | 4 - 3" CONDUIT TO HH 1: |
| 10 - 4/C 14 | 13 - 4/C 14 |
| * 1 - 3/C 14 | * 2 - 3/C 14 |
| * 1 - 3/C 20 | * 2 - 3/C 20 |
| 1 - 3/C 18 (VIDEO) | 2 - 3/C 18 (VIDEO) |
| 4 - 2/C 14 | 4 - 2/C 14 |
| 1 - 1/C 6 INS. GR. | * 1 - RADIO/GPS CABLE |
| | 1 - 1/C 6 INS. GR. |

- ** 1.5" CONDUIT TO PV 12:
- ** 1 - 12SM FO PIGTAIL
- ** 1 - 1/C 14

- 1 - 3" CONDUIT STUBBED OUT OF CONTROLLER CABINET (CAPPED BOTH ENDS)
- 2 - 2" CONDUIT STUBBED OUT OF CONTROLLER CABINET (CAPPED BOTH ENDS)

- CONTROLLER CABINET TO SERVICE CABINET:
 2" CONDUIT
 3 - 1/C 6

- CONTROLLER CABINET TO SERVICE CABINET (COMMS):
 2" CONDUIT
 1 - 6PR 19

- | | |
|--------------------------|--------------------------|
| SERVICE CABINET TO HH 5: | SERVICE CABINET TO HH 1: |
| 2" CONDUIT | 2" CONDUIT |
| 1 - 3/C 14 (LUM) | 3 - 3/C 14 (LUM) |

- 1 - 2" CONDUIT STUBBED OUT OF SERVICE CABINET (CAPPED BOTH ENDS)

- SERVICE CABINET TO EXTERNAL GROUND ROD (SEE EQUIPMENT PAD LAYOUT):
 1" CONDUIT
 1 - 1/C 6 INS. GR.

- SERVICE CABINET TO HH 6:
 3" CONDUIT
 1 - 1/4" PULL ROPE
 MINNESOTA POWER WILL SUPPLY, INSTALL, AND TERMINATE SERVICE LATERAL CONDUCTORS

- ④ PA85 POLE FOUNDATION
 TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
- 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 - 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
 - 2 - ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
 - 2 - ANGLE MOUNT COUNTDOWN PED HEADS AT 90 AND 180 DEG
 - 1 - VIDEO DETECTION CAMERA (V-4) AT 5.5' MOUNTED ON 6' EXTENSION BRACKET
 - * 1 - ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT AT 6' (PHASE 4)
 - 1 - LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 - 1 - SIGN (E 3RD ST) (SEE SIGNS SHEET)
 - 1 - R6-2R SIGN (SEE SIGNS SHEET)
 - 3" CONDUIT TO HH 4:
 - 7 - 4/C 14
 - 1 - 3/C 14 (LUM)
 - * 1 - 3/C 14
 - * 1 - 3/C 20
 - 1 - 3/C 18 (VIDEO)
 - 1 - 1/C 6 INS. GR.

- ③ PEDESTAL FOUNDATION
 10' PEDESTAL POLE PLUS BASE
- 2 - STRAIGHT MOUNT COUNTDOWN PED HEADS AT 90 AND 270 DEG
 - 1 - APS PB AND SIGN (LT ARROW) (PBB-1) AND MOUNTING SPACERS
 - 1 - R6-2R SIGN (SEE SIGNS SHEET)
 - 1 - R6-2L SIGN (SEE SIGNS SHEET)
 - 3" CONDUIT TO HH 3:
 - 3 - 4/C 14
 - 1 - 2/C 14
 - 1 - 1/C 6 INS. GR.

- ⑤ FOUNDATION LIGHT POLE
- | | |
|---------|--------------------|
| INPLACE | 1 - LUMINAIRE-LED |
| | 2" NMC: |
| REMOVE | 2 - 1/C 10 |
| | 1 - 1/C 6 BR. GR. |
| | 1 - 3/C 14 (LUM) |
| | 1 - 1/C 6 INS. GR. |

- Ⓑ SOP - INPLACE WOOD POLE (MINNESOTA POWER)
 3" CONDUIT (STUB OUT 1 FOOT ABOVE GROUND ON WOOD POLE) TO HH 6:
 1 - 1/4" PULL ROPE
 MINNESOTA POWER WILL SUPPLY, INSTALL, AND TERMINATE SERVICE LATERAL CONDUCTORS

SEE SHEET SS22 FOR NOTES.

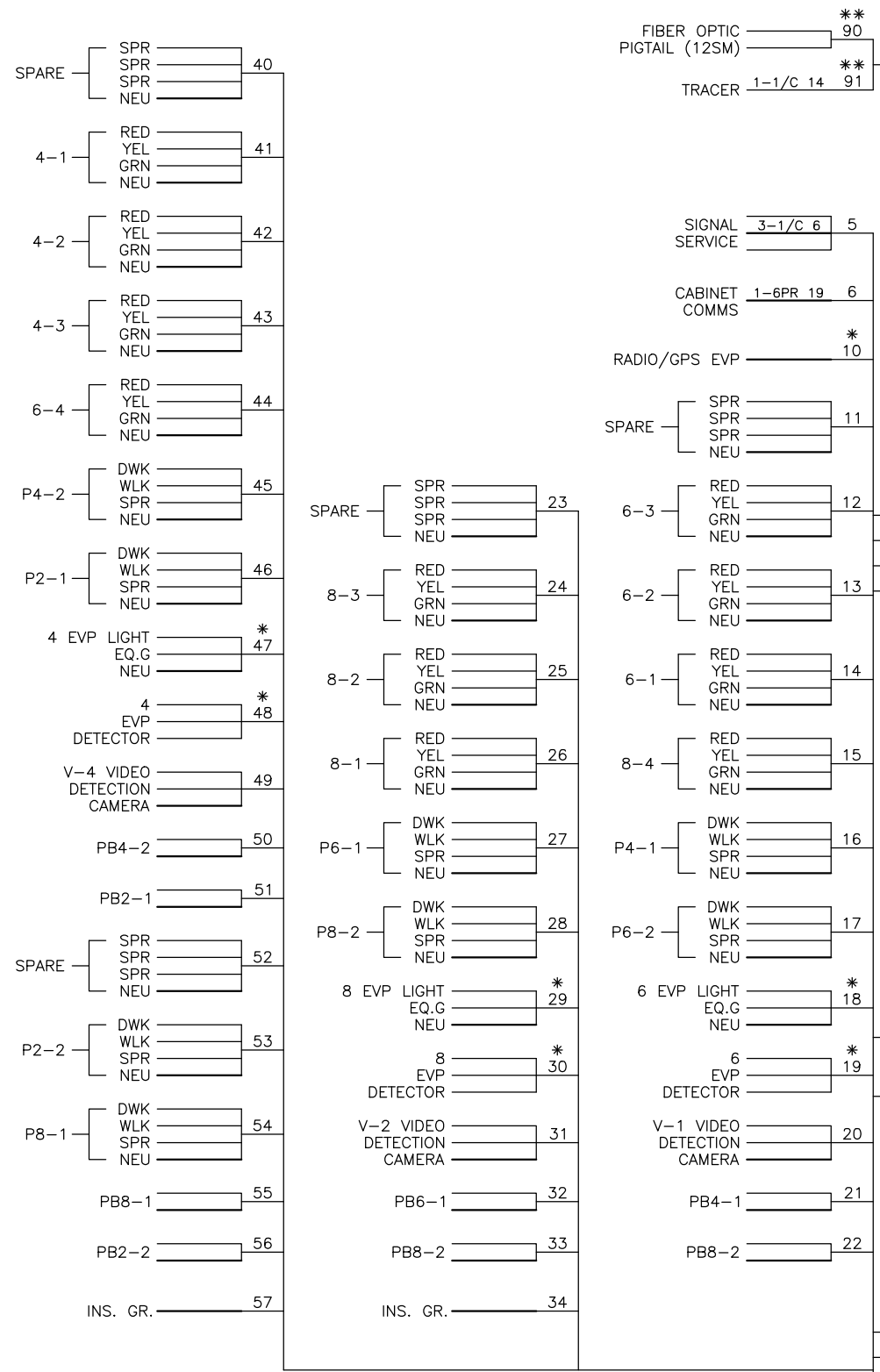
LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

SYSTEM B - INTERSECTION NOTES
 EAST 3RD STREET/6TH AVENUE EAST

I HEREBY CERTIFY that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.	LUKE S. JAMES PRINTED NAME	<i>Luke S. James</i> SIGNATURE	3-15-2023 DATE	S.P. 118-126-022	THIRD STREET RECONDITIONING	REVISION	TRAFFIC SIGNAL PLANS
			55393 LIC. NO.	CITY PROJECT 1462		5-17-2023	SHEET NO. SS23 OF SS40 SHEETS

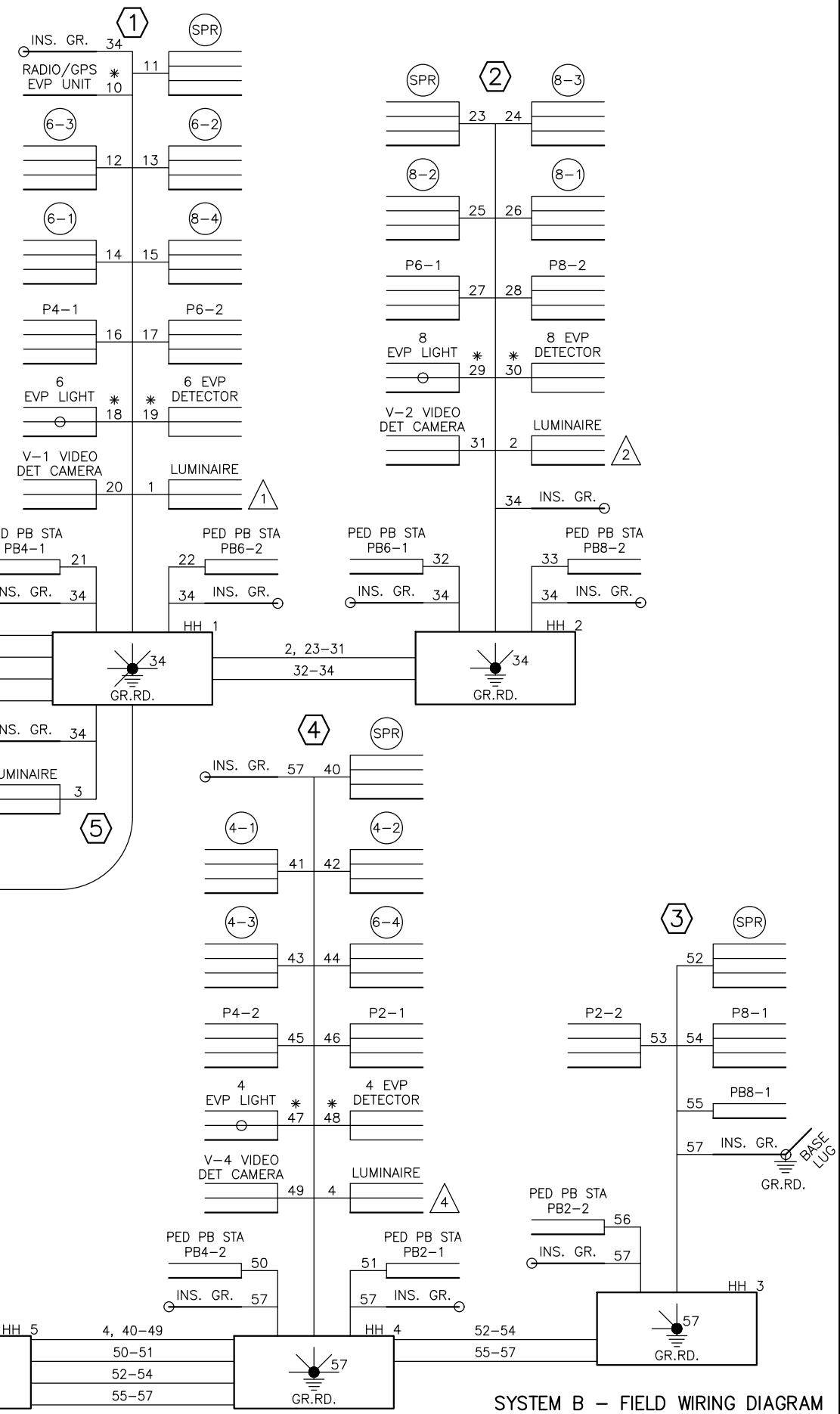
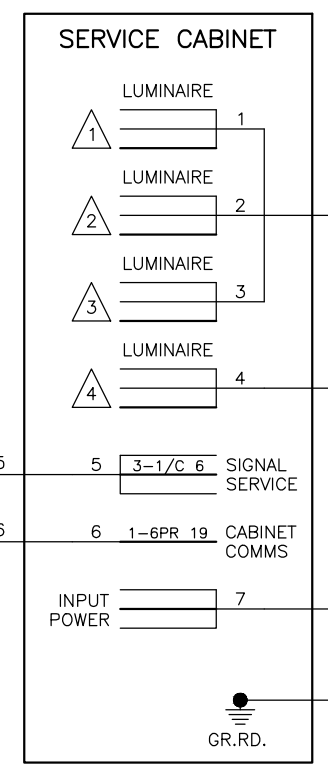
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CONTROLLER CABINET



** 90-91 TO PV 12

- NOTES:
1. SPLICES ARE NOT ALLOWED.
 2. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (NO BATTERIES).
 3. FOR CONDUCTOR COLOR CODE SEE SHEET SS1.
 4. ITEMS DENOTED WITH * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM B PAY ITEM.
 5. ITEMS DENOTED WITH ** ARE INCLUDED IN PAYMENT FOR FIBER OPTIC INTERCONNECT PAY ITEMS.
 6. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HAND HOLE NEAREST EACH POLE.
 7. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.



LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

SYSTEM B - FIELD WIRING DIAGRAM
EAST 3RD STREET/6TH AVENUE EAST

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LUKE S. JAMES
PRINTED NAME

Luke S. James
SIGNATURE

3-15-2023
DATE
55393
LIC. NO.

S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

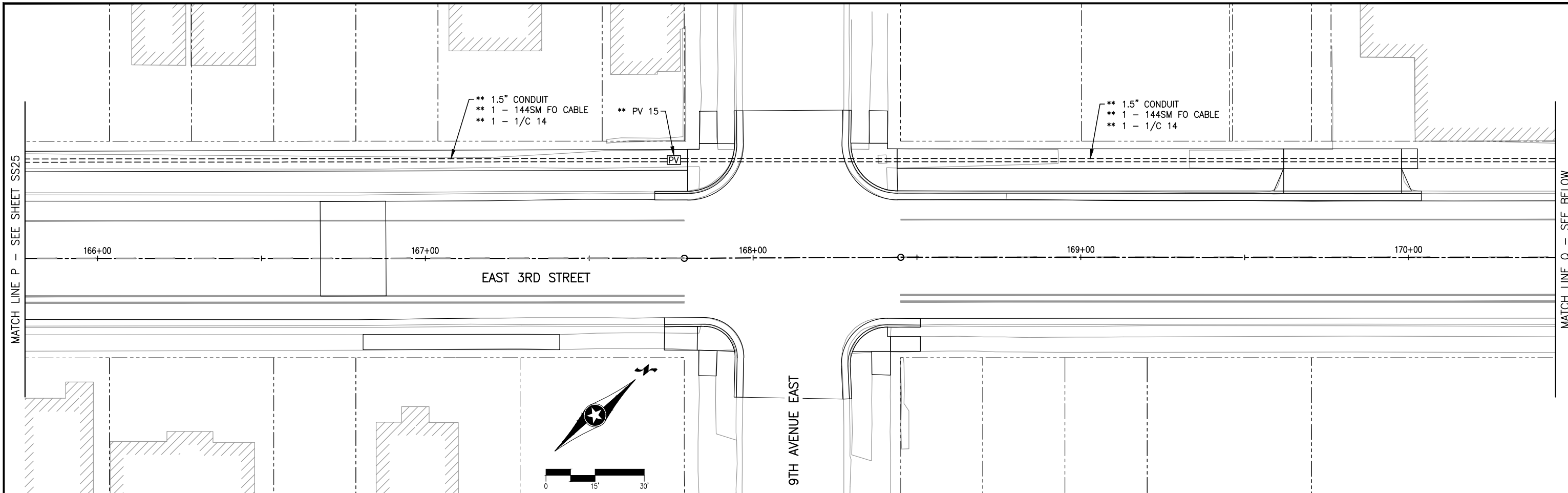
REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS23A OF SS40 SHEETS

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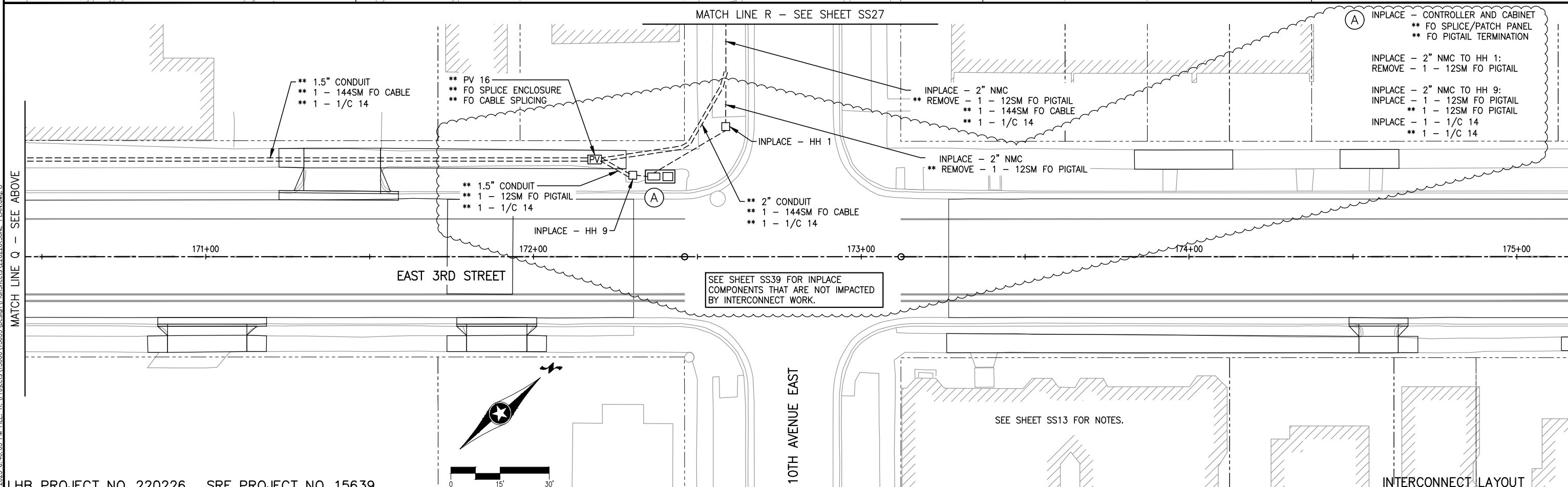
MATCH LINE P - SEE SHEET SS25

MATCH LINE Q - SEE BELOW



MATCH LINE Q - SEE ABOVE

MATCH LINE R - SEE SHEET SS27



LHB PROJECT NO. 220226 SRF PROJECT NO. 15639

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LUKE S. JAMES
PRINTED NAME

Luke S. James
SIGNATURE

3-15-2023
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S.P. 118-126-022
CITY PROJECT 1462

THIRD STREET RECONDITIONING

REVISION
5-17-2023

TRAFFIC SIGNAL PLANS
SHEET NO. SS26 OF SS40 SHEETS

INTERCONNECT LAYOUT

PROJECT DATE: 5/17/2023 8:40:03 PM FILE: H:\Projects\15000\15639\Design\PlanSheets\220226\SS26\SS26-PLAN.dwg:8

SPECIAL PROVISIONS
City Job Number: 1462
3rd Street Reconditioning
Addendum #1 May 17, 2023

(2503) CLEAN STORM SEWER

MnDOT 2503 is supplemented with the following:

DESCRIPTION

Prior to work starting, all storm sewers shall be assumed to be free flowing and free of sediment or debris, unless otherwise documented by the Contractor. Every effort shall be made to prevent construction debris from entering into the system per project erosion and sediment control plan and the general stormwater permit. If construction debris does enter into the sewer system it must be removed immediately, or as soon as is reasonably possible as determined by the Engineer.

The Contractor shall televise all storm sewers within the project construction limits. All televising will be along the entire run of pipe from center of manhole/catch basin to center of manhole/catch basin. The Engineer may require that downstream pipe segment(s) receiving stormwater from new storm sewer be televised to inspect for construction debris and/or sediments needing to be removed by the Contractor (removal of construction debris or sediments is incidental). Any video that does not clearly and accurately show the pipe condition will be rejected and re-televised at no additional cost to Department.

The City Engineer/Authorized City Representative shall have access to view the televising monitor throughout televising. Prior to televising the lines, the Contractor shall clean the lines and remove all debris and sediments from the storm sewer system using sewer jet cleaning equipment.

The Contractor shall notify the Engineer a minimum forty-eight (48) hours prior to televising the storm sewer lines.

The Contractor shall submit a USB drive to the Engineer that includes the televising video and a televising report utilizing the manhole and catch basin designations in the Plan listing all observed defects or pipe condition issues. All cleaning and televising shall be performed in accordance with NASSCO Pipe Assessment Certification Program (PACP) standards.

All work to clean and televise the storm sewer pipe, including providing required information (USB flash drive including the report and video) shall be submitted to the Engineer for review and comment a minimum of ten (10) working days prior to the wear course being installed.

BASIS OF PAYMENT

No separate measurement shall be made for work required to clean the storm sewer system and the lump sum Contract Unit Price for Clean Storm Sewer shall be considered compensation in full for all equipment, materials and labor required to complete the Work including, but not limited to, cleaning storm sewer pipe during construction if construction sediment or debris enters the storm sewer system, final cleaning and televising of the system, and all other work incidental thereto.

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The Department will pay Clean Storm Sewer on the basis of the following schedule:

Item No.	Item	Unit
2503.601	Clean Storm Sewer.....	lump sum

(2506) REPAIR DRAINAGE STRUCTURE

MnDOT 2506 is supplemented with the following:

DESCRIPTION

This work shall consist of repairing inplace drainage structures as follows:

1. Brick or Block Catch Basin Structures:
 - a. Remove and dispose of existing frame, grate, and casting.
 - b. Excavate and backfill as specified for excavation for structures as indicated in the plans and per MnDOT 2106 and 2451. Do not backfill concrete brick or block masonry, brick masonry, or precast concrete set on mortar beds until at least 3 days after completing the repair.
 - c. Provide selective demolition to remove inplace deteriorated or displaced brick and mortar construction to the specified line and grade identified in the Plans or as directed by the Engineer in the field.
 - d. Provide and construct brick masonry and concrete brick or block masonry as specified in MnDOT 2506.
 - e. Place and secure grade riser rings and adjustment rings per the City of Duluth Standard Construction Specifications.
2. Precast or Cast-In-Place Concrete Structure:
 - a. Remove and dispose of existing frame, grate, and casting.
 - b. Excavate and backfill as specified for excavation for structures as indicated in the plans and per MnDOT 2106 and 2451. Do not backfill cast in place concrete until at least 3 days after completing the repair.
 - c. Provide selective demolition to remove inplace deteriorated concrete construction to the specified line and grade identified in the Plans or as directed by the Engineer in the field as follows:
 - i. Remove entire precast riser section, OR
 - ii. Sawcut inplace structure to minimum 1-inch depth as directed by Engineer. Remove concrete, preserving existing reinforcement bars. In the event that existing reinforcement bars cannot be reused, anchor bars shall be provided.
 - d. Place new riser section.
 - i. Place gaskets and new precast riser section, OR
 - ii. Replace existing bars which are either removed or missing with sizing and spacing as shown on Standard Plates 4003, 4006 or 4021, as applicable, or as directed by the Engineer. Anchor bars at least 12" into the top of the retained structure. Place bars with cement grout

SPECIAL PROVISIONS
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as approved by the Engineer. Furnish and place 3G52 concrete to required dimensions to conform to in-place structure dimensions per the applicable standard plate(s), as directed by the Engineer, and per MnDOT 2411, 2506, and 2461. Place structure to grade, slope, texture, and apply cure. All reinforcing and dowel bars shall be epoxy coated.

- e. Place and secure grade riser rings and adjustment rings per the City of Duluth Standard Construction Specifications.
3. For the 3rd Street Reconditioning project the in-place drainage structures to be repaired consist of the following:
- a. The following structures are Brick or Block Catch Basin Structures:
 - i. ST0460202
 - ii. ST0460183
 - iii. ST0460162
 - b. The following structures are Precast or Cast-In-Place Concrete Structure:
 - i. None included in repairs.

BASIS OF PAYMENT

The Engineer will measure Repair Drainage Structure by the vertical height of in-place structure removed and replaced to complete the repair.

The Contract Unit Price for Repair Drainage Structure is compensation in full for equipment, materials, and labor required to complete the Work as described. No additional compensation or adjustment to the contract price bid shall be made regardless of the repair method(s) used.

The Department will pay Repair Drainage Structure on the basis of the following schedule:

Item No.	Item	Unit
2506.603	Repair Drainage Structure.....	linear foot

- END -

SPECIAL PROVISIONS
City Job Number: 1462
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DIVISION ST

ST-1 (2564) TRAFFIC SIGNS AND DEVICES

The Contractor shall furnish and install traffic signs in accordance with 2564, "Traffic Signs and Devices," except as modified in these Special Provisions.

SP-1.1 CONSTRUCTION REQUIREMENTS

The provisions of 2564.3A, "Construction Requirements: General" are modified and supplemented as follows:

The following replaces the second paragraph of 2564.3A:

Sign locations and sign structure posts lengths indicated in the Contract are approximate. Locate and stake final sign and delineator/marker locations. Obtain approval of locations by the Engineer. Determine the final post lengths for signs and delineator/markers in accordance with the offsets, mounting heights, and clearances detailed in the Contract and field verification of the proposed or in-place ground slopes. Obtain approval of the final required post lengths for I-Beam, Monotube, and Overhead Signs prior to starting fabrication of the posts. Provide shop drawings for I-Beam, Monotube, and Overhead signs in accordance with 2471.3C, "Shop Drawings."

The provisions of 2564.3A.1, "Sign Fabrication" are modified and supplemented as follows:

The following replaces the second paragraph of 2564.3A.1:

Use sheet aluminum sign base material for Sign Panels.

New Posts Installed

Base post lengths for ground mounted square tube signs shall be 60 inches instead of 48 inches.

Install Sign Special

This work shall consist of installing salvaged street name signs in accordance with City of Duluth standard details T-3 and T-5

The Engineer will measure install sign panel as a complete unit, including new mounting hardware and stringers and posts used to install salvaged sign panel.

Sign

Fabricate the sign panel in accordance with 3352, "Signs."

Package, deliver, store, and install sign panels in accordance with 1607, "Handling Materials," 3352, "Signs," and the retroreflective sheeting manufacturer's recommendations.

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Attach new panel to support structure using new stringers as needed and mounting hardware.

Affix a Department-provided warning sticker to the backside of each sign panel directly above the fabrication sticker. Warning stickers are available at the Department's Transportation District Office specified in the Contract. Give the Transportation District's contact person thirty calendar days advance notice before picking up the stickers.

The Engineer will measure sign panel by square foot based on the nominal dimensions of the sign panel. Sign panel is considered rectangular for the purpose of measurement except that the Engineer will measure a triangular shaped sign panel as the actual area of the triangle. The Engineer will not make deductions for rounded corners. Sign panel includes new sign panel, new stringers, new mounting hardware, and installing Department provided warning sticker. Payment for sign panel shall include all posts and mounting hardware.

SP-1.2 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The Engineer will measure each item according to the Contract and the 2564, "Traffic Signs and Devices: Construction Requirements" section of these Special Provisions.

The Department will include all work described in the Contract and the 2564, "Traffic Signs and Devices: Construction Requirements" section of these Special Provisions as part of the contract unit price per unit of measure.

The Department will pay for traffic signs and devices on the basis of the following schedule:

Item No.:	Item:	Unit:
2564.602	Install Sign Special	Each
2564.618	Sign Type C	Square Foot

The Department's payment for each item shall be compensation in full for all work, material, and costs involved in performing the work specified on the Plans and these Special Provisions.

- END -