

City of Detroit,
Wayne County, Michigan
SITE PLAN DOCUMENTS
Prepared For
A-Team Snow Removal

Owner / Developer

A-Team Snow Removal
459 Antoinette St.
Detroit, MI 48202

CONTACT: Sam Grillo, Vice President
Tel. 586-531-3687
Email. sam.grillo@a-teamsnowremoval.com

Architect

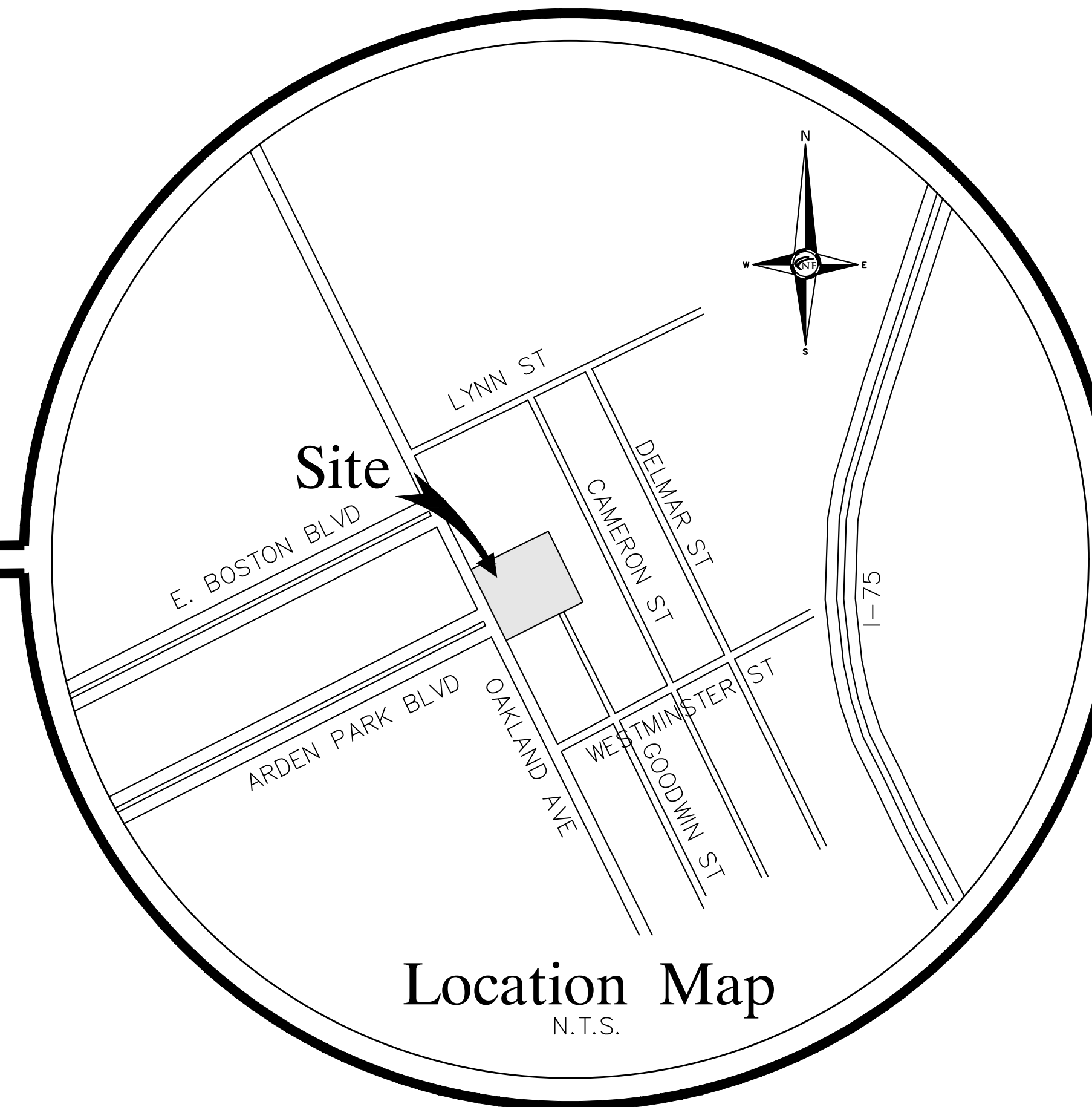
BMK DESIGN AND PLANNING
Shelby Township, MI 48316

CONTACT: Kevin M. Brandon RA, LEED AP
Tel. 248-303-1446
Email. kmb@bmkdp.com

Civil Engineer

NOWAK & FRAUS ENGINEERS
28 W. Adams Ave, Suite 210
Detroit, MI 48226

CONTACT: Chad Findley, P.E., P.S.
Tel. 313-965-2444
Email. cfindley@nfe-engr.com



Location Map
N.T.S.

Project Name

9700 Oakland Ave.

SHEET INDEX

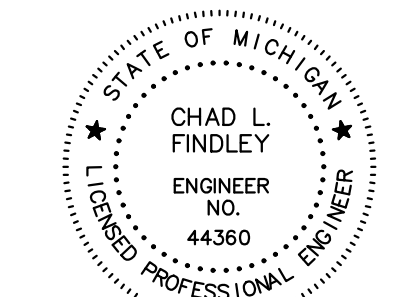
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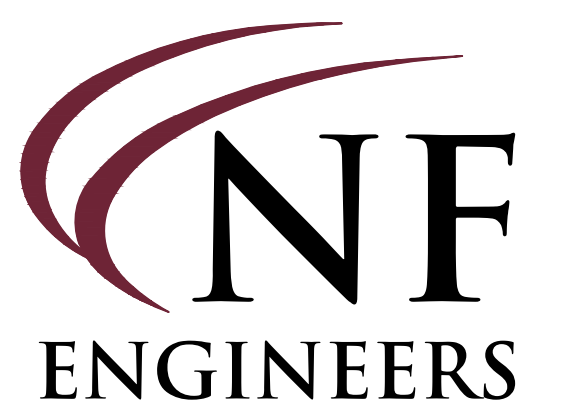
A100 Floor Plan
A300 Exterior Elevations
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N & F JOB #M774

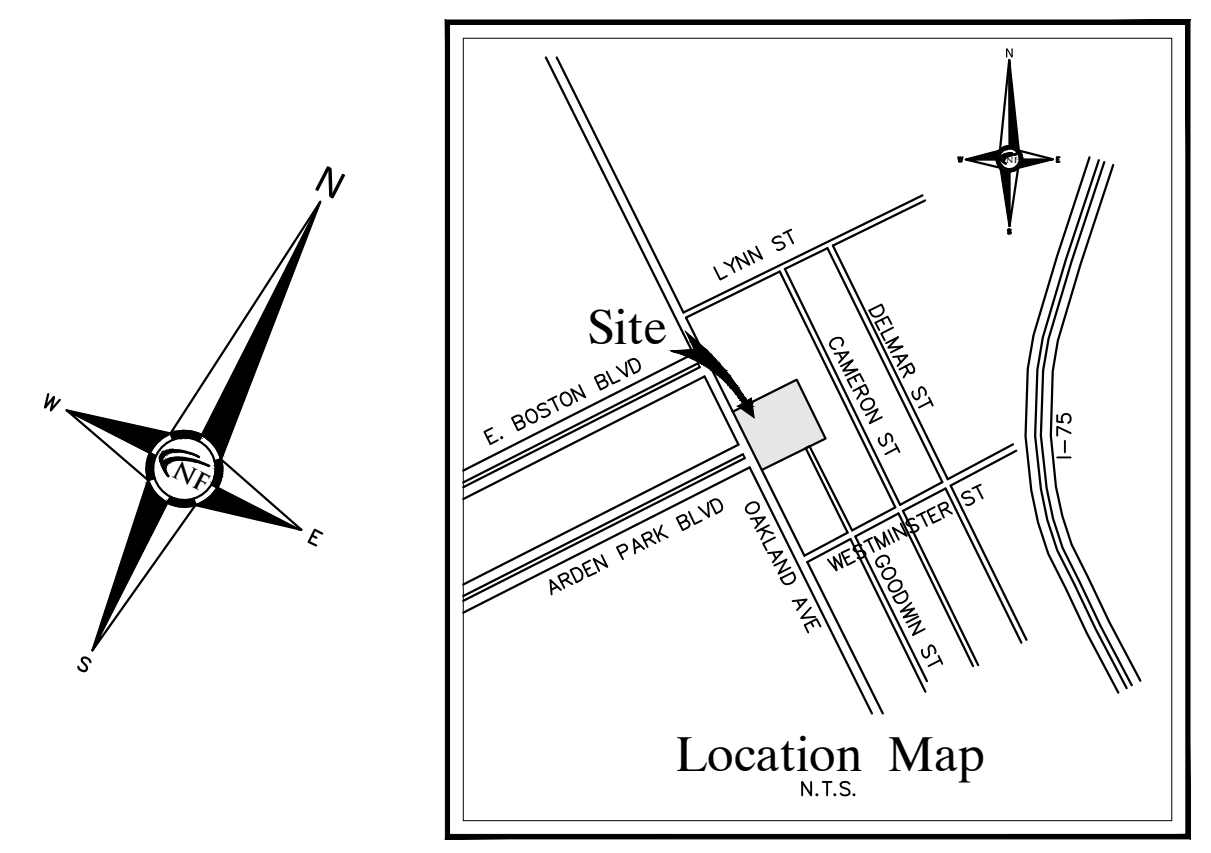
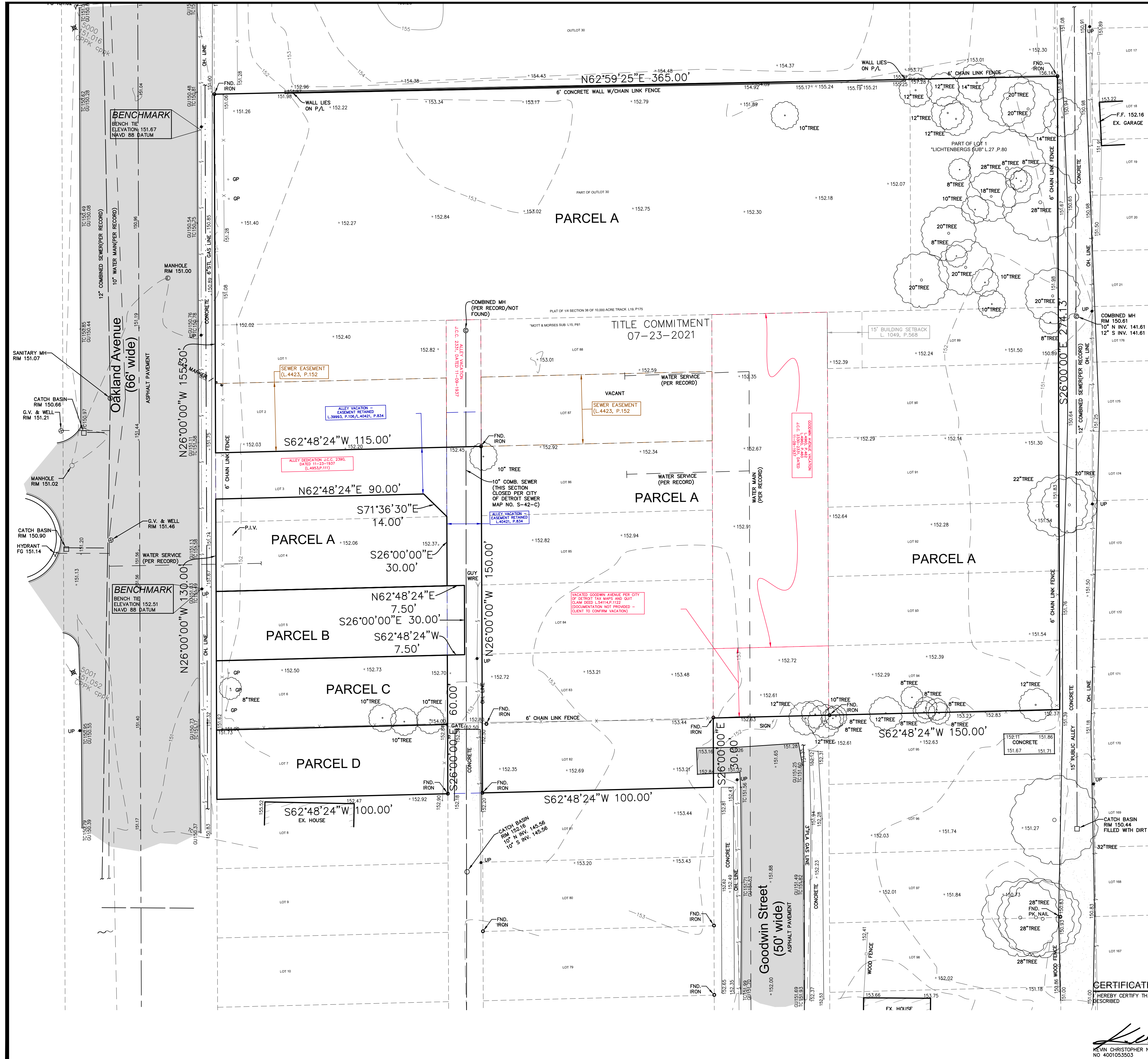


Chad Findley



CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
28 WEST ADAMS, SUITE 210
DETROIT, MI 48226
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LEGAL DESCRIPTION

CITY OF DETROIT, COUNTY OF WAYNE, STATE OF MICHIGAN AND DESCRIBED AS FOLLOWS:

PARCEL A:
THE SOUTH 100 FEET OF LOT 30 OF PLAT OF QUARTER SECTION 38, TEN THOUSAND ACRE TRACT, ACCORDING TO PLAT THEREOF, RECORDED JUNE 9, 1840 IN LIBER 19, PAGE 175 OF DEEDS, WAYNE COUNTY RECORDS.

ALSO,
LOTS 1, 2 AND 3 EXCEPT THAT PART DEEDED TO CITY OF DETROIT, AS DESCRIBED IN DEED LIBER 4953, PAGE 111; ALL OF LOT 4; AND LOTS 82 THROUGH 94, BOTH INCLUSIVE, OF MOTT AND MORSE'S SUBDIVISION OF LOTS 25, 26, 31, 32, QUARTER SECTION 38, TEN THOUSAND ACRE TRACT, ACCORDING TO PLAT THEREOF, AS RECORDED IN LIBER 15 OF PLATS, PAGE 81, WAYNE COUNTY RECORDS.

ALSO,
ALL THAT PART OF VACATED GOODWIN AVENUE, 5- FEET WIDE, LYING BETWEEN EASTERLY LINE OF LOTS 83 TO 88, BOTH INCLUSIVE, AND WESTERLY LINE OF LOTS 89 TO 94, BOTH INCLUSIVE, ALL IN MOTT AND MORSE'S SUBDIVISION OF LOTS 25, 26, 31, 32, QUARTER SECTION 38, TEN THOUSAND ACRE TRACT, HAMTRAMCK, WAYNE COUNTY, MICHIGAN, AS RECORDED IN LIBER 15, PAGE 81 OF PLATS, WAYNE COUNTY RECORDS, AND THE VACATED PORTION OF PUBLIC ALLEY 15 FEET WIDE, LYING BETWEEN OAKLAND AND GOODWIN AVENUE, AND NORTH OF WESTMINSTER AVENUE AND LYING BETWEEN EASTERLY LINE OF LOTS 1 AND 2 AND WESTERLY LINE OF LOTS 87 AND 88 OF MOTT AND MORSE'S SUBDIVISION HERETOFORE MENTIONED, DETROIT, WAYNE COUNTY, MICHIGAN.

ALSO,
THE SOUTH 100 FEET OF LOT 1, LITCHENBURG SUBDIVISION, OF OUTLOT 27, ¼ SECTION 38, TEN THOUSAND ACRE TRACT, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN LIBER 27, PAGE 80, OF PLATS, WAYNE COUNTY RECORDS.

PARCEL B:
LOT 5, INCLUDING ¼ OF THE VACATED ALLEY ADJACENT THERETO, OF MOTT AND MORSE'S SUBDIVISION OF LOTS 25, 26, 31 AND 32, QUARTER SECTION 38, T.T.A.T., HAMTRAMCK, WAYNE COUNTY, MICHIGAN, ACCORDING TO THE RECORDED PLAT THEREOF, AS RECORDED IN LIBER 15, PAGE 81 OF PLATS, WAYNE COUNTY RECORDS.

PARCEL C:
LOT 7, OF MOTT AND MORSE'S SUBDIVISION OF LOTS 25, 26, 31 AND 32, QUARTER SECTION 38, T.T.A.T., HAMTRAMCK, WAYNE COUNTY, MICHIGAN, ACCORDING TO THE RECORDED PLAT THEREOF, AS RECORDED IN LIBER 15, PAGE 81 OF PLATS, WAYNE COUNTY RECORDS.

PARCEL D:
LOT 8, OF MOTT AND MORSE'S SUBDIVISION OF LOTS 25, 26, 31 AND 32, QUARTER SECTION 38, T.T.A.T., HAMTRAMCK, WAYNE COUNTY, MICHIGAN, ACCORDING TO THE RECORDED PLAT THEREOF, AS RECORDED IN LIBER 15, PAGE 81 OF PLATS, WAYNE COUNTY RECORDS.

PARCELS A-D COMBINED CONTAIN 105,204 SQUARE FEET OR 2.415 ACRES

TAX ID NO. ITEM 004762-7 WARD 05 (PARCELS A, B, C, AND D)

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS SURVEY WAS ESTABLISHED BY THE EAST RIGHT OF WAY LINE OF OAKLAND AVENUE (N 26°00'00"W) AS RECORDED IN "MOTT & MORSE'S SUB OF LOTS 25,26,31 AND 32 1/4 SECTION 38, 10,000 A.C., HAMTRAMCK, WAYNE COUNTY, MICHIGAN, AS RECORDED IN LIBER 15 PAGE 81 OF PLATS, WCR

TITLE NOTES

3. ANY FACTS, RIGHTS, INTEREST OR CLAIMS THAT ARE NOT SHOWN IN THE PUBLIC RECORDS BUT THAT COULD BE ASCERTAINED BY MAKING INQUIRY OF PERSONS IN POSSESSION OF THE LAND.

4. EASEMENTS, CLAIMS OF EASEMENTS OR ENCUMBRANCES THAT ARE NOT SHOWN IN THE PUBLIC RECORDS.

19. TERMS, CONDITIONS AND PROVISIONS RECITED IN RESOLUTIONS RECORDED IN LIBER 39993 PAGE 106 AND IN LIBER 40421, PAGE 834. [EASEMENTS ARE WITHIN THE SURVEYED LAND AND ITS LOCATIONS ARE SHOWN]

20. TERMS, CONDITIONS AND PROVISIONS RECITED IN RESOLUTIONS DISCLOSED ON DOCUMENTS RECORDED IN LIBER 4960 PAGE 460 AND IN LIBER 4960, PAGE 462. [SAID VACATIONS ARE SHOWN HEREON]

21. EASEMENTS DISCLOSED ON THE DEED RECORDED IN LIBER 4423, PAGE 152. [EASEMENTS ARE WITHIN THE SURVEYED LAND AND ITS LOCATIONS ARE SHOWN]

22. BUILDING RESTRICTIONS AND OTHER PROVISIONS BUT OMITTING RESTRICTIONS, IF ANY, BASED ON RACE, COLOR, RELIGION OR NATIONAL ORIGIN AS CONTAINED IN THE INSTRUMENT RECORDED IN LIBER 833, PAGE 116, LIBER 1049, PAGE 568 AND IN LIBER 2854, PAGE 518. [SETBACK IS SHOWN HEREON]

ALL EXCEPTIONS SHOWN OR NOTED ON THIS SURVEY WERE OBTAINED FROM TITLE COMMITMENT NO. 2133148, WITH A COMMITMENT DATE OF JULY 23, 2021, ISSUED BY PARKS TITLE

FLOOD HAZARD NOTE

THE PROPERTY DESCRIBED ON THIS SURVEY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. THE PROPERTY LIES WITHIN MAP NO.: 26163C0125E. ACCORDING TO THE MAP INDEX FOR WAYNE COUNTY, MICHIGAN, DATED 02-02-2012, MAP NO.: 26163C0125E IS NOT PRINTED AND IS INDICATED AS BEING A NO SPECIAL FLOOD HAZARD AREA.

MISS DIG / UTILITY DISCLAIMER NOTE

A MISS DIG TICKET NUMBER 2021122801144, PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY. DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS, THE SURVEY MAY NOT REFLECT ALL THE UTILITIES AT THE TIME THE SURVEY WAS ISSUED ON 01-25-2022. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISH PRIOR TO THE DATE THIS SURVEY WAS ISSUED. THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE FACILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.

TOPOGRAPHIC SURVEY NOTES

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.

THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER.

LEGEND

	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		EXISTING SAN. CLEAN OUT
	MANHOLE WITH GATE VALVE		EXISTING WATER MAIN
	MANHOLE WITH CATCH BASIN		EXISTING STORM SEWER
	UTILITY POLE		EX. R.Y. CATCH BASIN
	GUY POLE		EXISTING BURIED CABLES
	GUY WIRE		OVERHEAD LINES
	LIGHT POLE		SIGN
	EXISTING GAS MAIN		

CEAL

STATE OF MICHIGAN
KEVIN CHRISTOPHER NAVAROLI
License No. 4001053503
PROFESSIONAL SURVEYOR

PROJECT
A-Team Snow Removal Site
9700 Oakland Ave.

CLIENT
A-Team Snow Removal
459 Antoinette St.
Detroit, MI 48202

CONTACT
San Grillo, Vice President
Tel: 586-531-3687
Email:
sam.grillo@a-teamsnowremoval.com

PROJECT LOCATION
9700 Oakland Ave.
City of Detroit,
Wayne County,
Michigan

SHEET
Boundary / Topographic
Survey

DATE ISSUED/REVISED

DRAWN BY:
D. McConkey
PROJECT MANAGER:

APPROVED BY:
K. Navaroli

DATE:
March 15, 2022

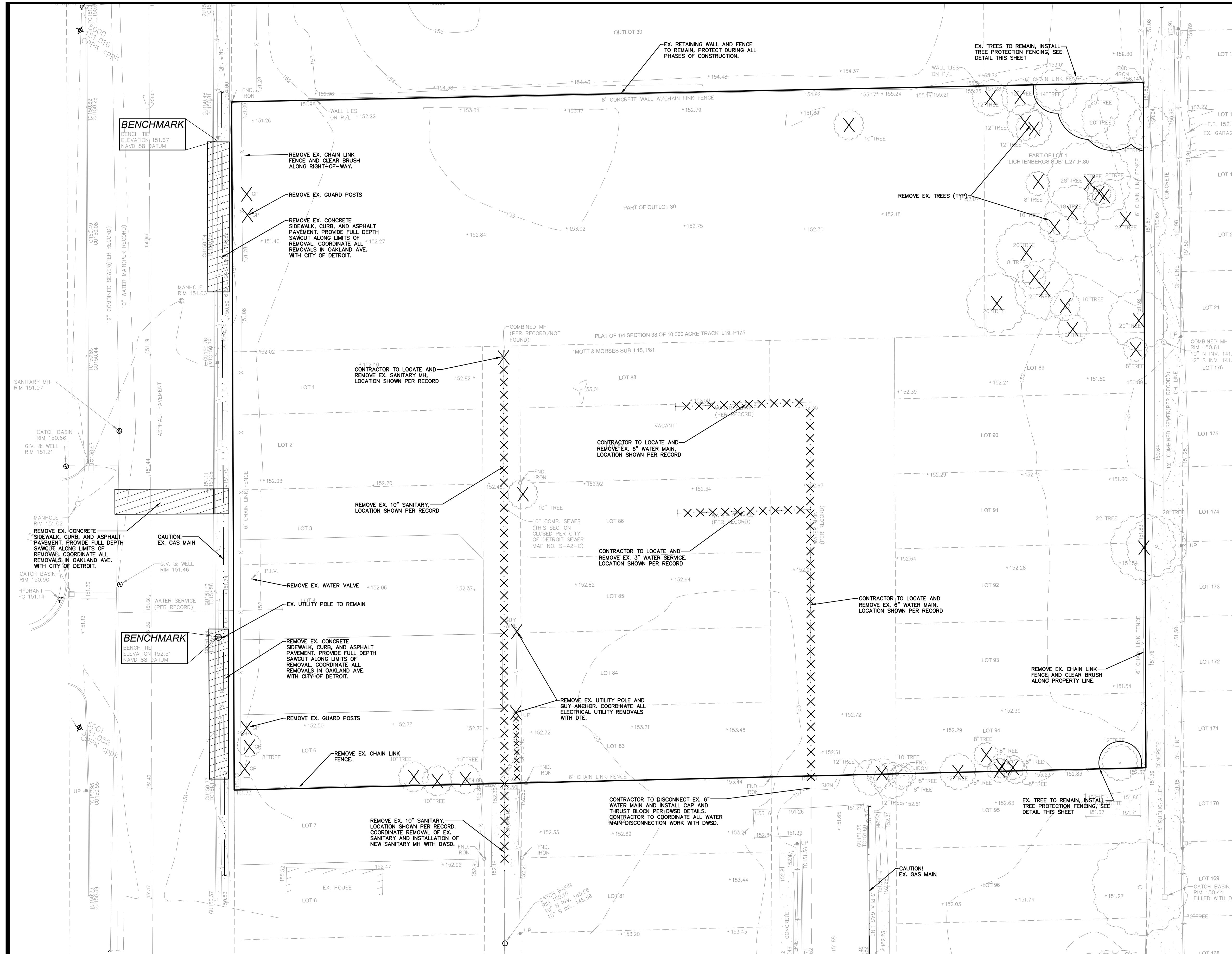
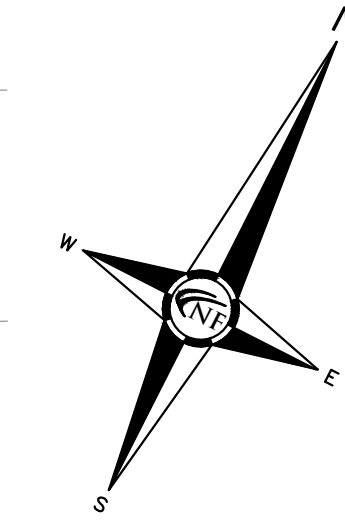
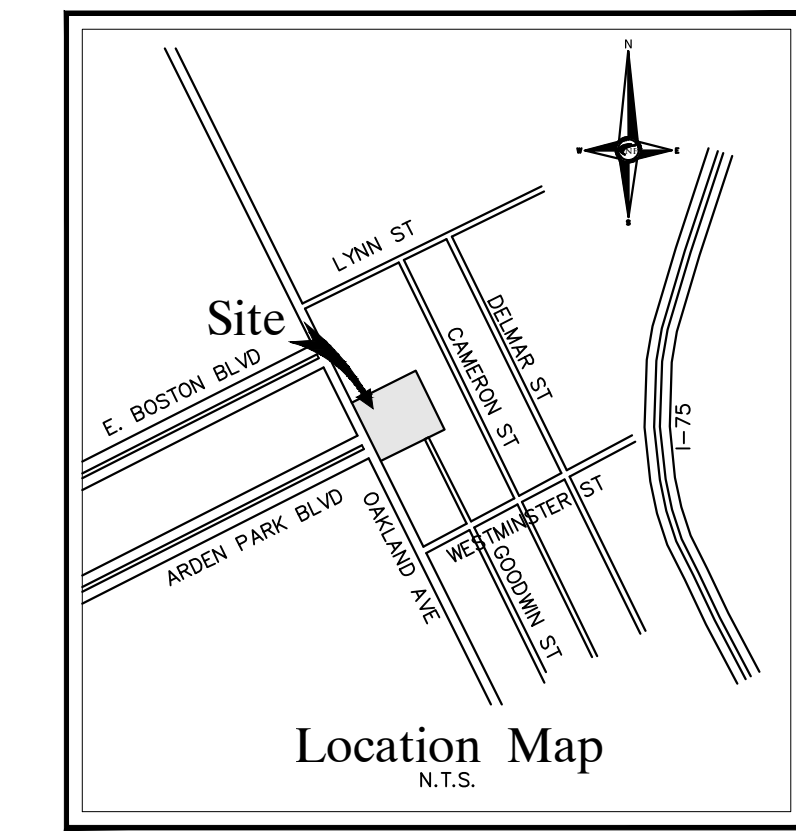
SCALE: 1" = 20'

NFE JOB NO. SHEET NO.
M774 C1

CERTIFICATE OF SURVEY

I HEREBY CERTIFY THAT I HAVE SURVEYED THE PROPERTY HERIN DESCRIBED

KEVIN CHRISTOPHER NAVAROLI, P.S. DATE: 01-25-2022
NO. 4001053503



DEMOLITION NOTES

DEMOLITION OF SITE IMPROVEMENTS SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE PUBLIC AGENCY HAVING JURISDICTION OVER SAID DEMOLITION.

FOR ANY DEMOLITION WITHIN PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR, AND SECURE, ALL NECESSARY PERMITS AND LIKewise SHALL ARRANGE FOR ALL SITE INSPECTIONS.

SITE DEMOLITION INCLUDES THE COMPLETE REMOVAL OF SITE IMPROVEMENTS AND OFF-SITE DISPOSAL. DEBRIS SHALL BE TRANSPORTED TO AN APPROPRIATE DISPOSAL FACILITY THAT IS LICENSED FOR THAT TYPE OF DEBRIS.

THE CONTRACTOR SHALL COORDINATE TRUCK ROUTES WITH THE MUNICIPALITY PRIOR TO COMMENCEMENT OF SITE DEMOLITION. ALL TRUCKS SHALL BE TARPED OR PROPERLY SECURED TO CONTAIN DEMOLITION DEBRIS PRIOR TO LEAVING SITE.

EXISTING ON-SITE UNDERGROUND UTILITIES AND BUILDING SERVICES HAVE BEEN INDICATED BASED UPON THE BEST AVAILABLE UTILITY RECORDS AND/OR ON-SITE INSPECTION. NO GUARANTEE IS MADE BY THE DESIGN ENGINEER, AS TO THE COMPLETENESS OR ACCURACY OF UTILITY DATA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF UTILITY INFORMATION (THE DESIGN ENGINEER MAKES NO GUARANTEE NOR ASSUMES ANY LIABILITY AS TO THE COMPLETENESS AND/OR ACCURACY OF UTILITY DATA).

PRIOR TO THE REMOVAL OR ABANDONMENT OF ANY EXISTING UNDERGROUND UTILITY OR BUILDING SERVICE LINES CALLED FOR IN THE PLANS OR DISCOVERED DURING EXCAVATION, THE CONTRACTOR MUST DETERMINE IF THE UTILITY LINE OR BUILDING SERVICE IS STILL IN USE. IF THE UTILITY LINE OR BUILDING SERVICE IS STILL IN USE, THE CONTRACTOR MUST TAKE ALL THE NECESSARY STEPS TO GUARANTEE THAT THE UTILITY LINE OR BUILDING SERVICE IS RECONNECTED WITHOUT AN INTERRUPTION IN SERVICE. THE RECONNECTION OF THE UTILITY LINE OR BUILDING SERVICE MUST BE IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS OF THE APPROPRIATE GOVERNMENTAL AGENCY OR PRIVATE UTILITY COMPANY.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO SITE DEMOLITION.

* THE CONTRACTOR SHALL NOTIFY MISS DIG (1-800-482-7171) A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF THE SITE DEMOLITION.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH UTILITY COMPANY. REMOVAL OF THE UTILITY COMPANIES ELECTRICAL SERVICES SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND REQUIREMENTS OF THE UTILITY COMPANY.

ALL UTILITY METERS SHALL BE REMOVED BY THE APPROPRIATE UTILITY COMPANY.

ANY ON-SITE STORM SEWER FACILITIES LOCATED DURING DEMOLITION SHALL BE REMOVED AND BULK HEADS SHALL BE INDICATED FOR REMOVAL ON THE PLANS.

WATER SERVICES AND/OR STOP-BOX SHALL BE PRESERVED AND BULK HEADED AT THE PROPERTY LINE OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

WHERE EXISTING BUILDINGS PLANNED FOR DEMOLITION FALL WITHIN PROPOSED BUILDING FOOT PRINTS, BASEMENT FLOOR SLABS, FOUNDATION WALLS AND FOOTINGS SHALL BE COMPLETELY REMOVED AND BACK FILLED WITH MDT CLASS II GRANULAR MATERIAL AND BE MACHINE COMPACTED TO A MINIMUM OF 98% OF MATERIALS MAXIMUM DENSITY.

SUB-SOIL CONDITIONS

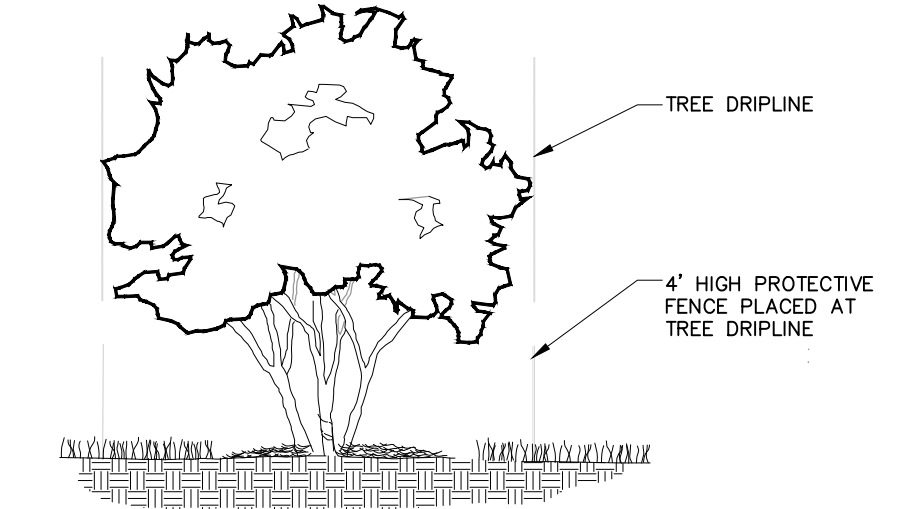
ANY SOIL BORING PROVIDED BY THE OWNER AND/OR ENGINEER IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THIS INFORMATION IS NOT OFFERED AS EVIDENCE OF GROUND CONDITIONS THROUGHOUT THE PROJECT AND ONLY REFLECT THE GROUND CONDITIONS AT THE LOCATION OF THE BORING ON THE DATE THEY WERE TAKEN.

THE ACCURACY AND RELIABILITY OF THE SOIL LOGS AND REPORT ARE NOT WARRANTED OR GUARANTEED IN ANY WAY BY THE OWNER OR ENGINEER AS TO THE SUB-SOIL CONDITIONS FOUND ON THE SITE. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION AND SUB-SOIL INVESTIGATION AND SECURE OTHER SUCH INFORMATION AS THE CONTRACTOR CONSIDERS NECESSARY TO DO THE WORK PROPOSED AND IN PREPARATION OF THEIR BID.

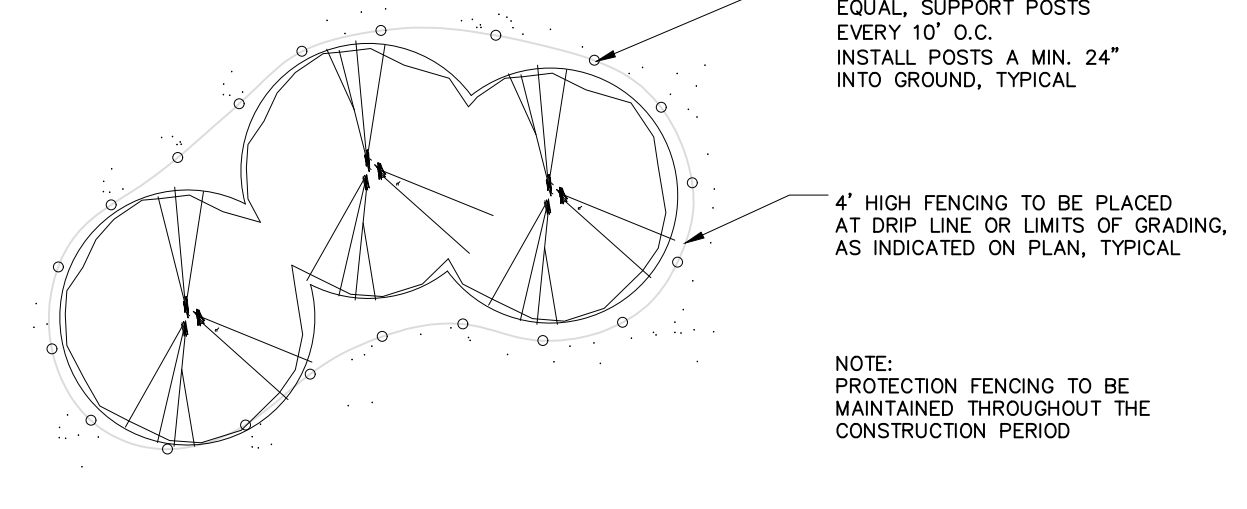
GENERAL TREE PROTECTION NOTES

- APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
- ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
- NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
- WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
- DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY TREE, SCHEDULED TO REMAIN.
- ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
- SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
- TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
- ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
- THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
- THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
- TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REMAIN.
- THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
- TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

LEGEND	
	EXISTING SANITARY SEWER
	EXISTING SAN. CLEAN OUT
	EXISTING WATER MAIN
	EXISTING STORM SEWER
	EX. R. Y. CATCH BASIN
	EXISTING BURIED CABLES
	OVERHEAD LINES
	LIGHT POLE
	SIGN
	EXISTING GAS MAIN
	EXISTING UTILITY TO BE REMOVED
	EXISTING UTILITY TO BE ABANDONED
	INDICATES EXISTING TREE TO BE REMOVED
	INDICATES AREAS OF PAVEMENT, BUILDINGS, ETC. TO BE REMOVED

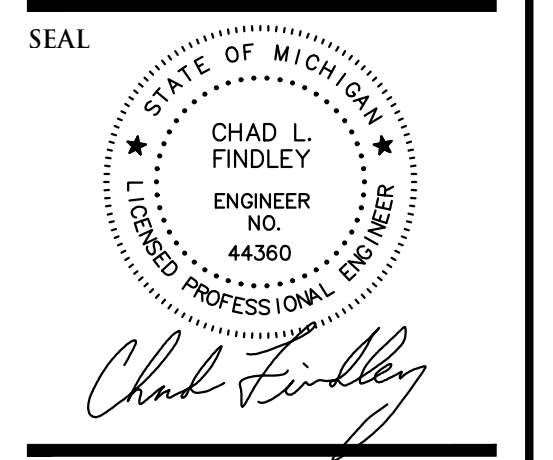


TREE PROTECTION DETAIL-SECTION
N.T.S.



TREE PROTECTION DETAIL-PLAN
N.T.S.

TOPOGRAPHIC SURVEY NOTES
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UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.
THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER



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A-Team Snow Removal
459 Antoinette St.
Detroit, MI 48202

CONTACT
San Grillo, Vice President
Tel: 586-531-3687
Email:
sam.grillo@a-teamsnowremoval.com

PROJECT LOCATION
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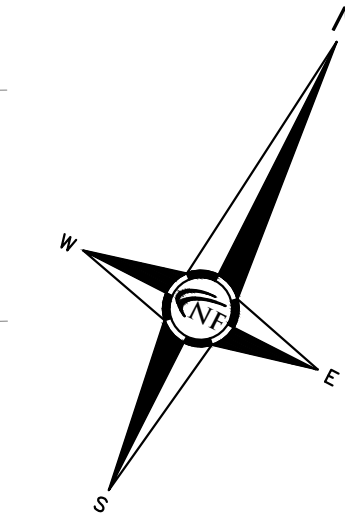
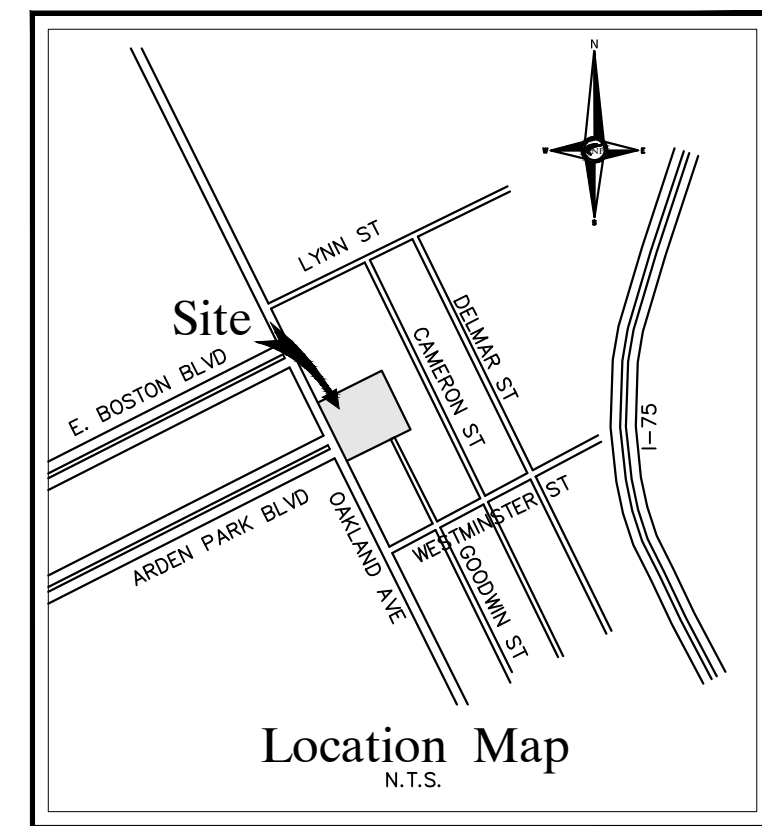
SHEET
Demolition Plan



DATE ISSUED/REVISED

DRAWN BY:
J. Klenk
PROJECT MANAGER:
J. Klenk
APPROVED BY:
C. Findley
DATE:
March 15, 2022

SCALE: 1" = 20'
NFE JOB NO. M774 SHEET NO. C2



GENERAL PAVING NOTES

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

CONCRETE: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

ASPHALT: BASE COURSE - HMA 3C; SURFACE COURSE - HMA 4C; ASPHALT CEMENT PENETRATION GRADE 85-100, BOND COAT - MDO T SS-1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC. SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-5164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LICENSE ARRANGE FOR ALL INSPECTION.

EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STOPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.

SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.

CONTRACTOR TO SUBMIT JOINTING PLAN TO ENGINEER FOR REVIEW.

ESTIMATED QUANTITIES

PUBLIC RIGHT-OF-WAY

DESCRIPTION	QUANTITY	UNITS
8" NON-REINFORCED CONCRETE	98	S.Y.
4" CONCRETE SIDEWALK	55	S.F.
CURB AND GUTTER	10	FT.
HMA, 4C	8	TON
HMA, 3C	7	TON
10" AGGREGATE BASE, 21AA CRUSHED CONC.	44	S.Y.

PRIVATE SITE WORK

DESCRIPTION	QUANTITY	UNITS
6" NON-REINFORCED CONC. PAVT.	6,365	S.Y.
8" AGGREGATE BASE, 21AA CRUSHED CONC.	6,365	S.Y.
4" CONCRETE SIDEWALK	672	S.F.

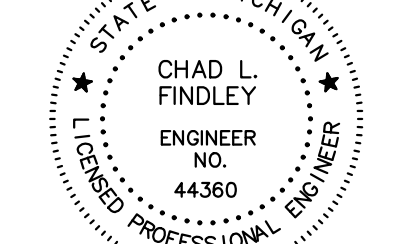
PAVING LEGEND

	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT

LEGEND

	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		SAN. CLEAN OUT
	MANHOLE CATCH BASIN		EXISTING WATERMAIN
	UTILITY POLE		EXISTING STORM SEWER
	GUY POLE		EX. R. Y. CATCH BASIN
	GUY WIRE		EXISTING BURIED CABLES
	LIGHT POLE		OVERHEAD LINES
	SIGN		EXISTING GAS MAIN
	C.O. MANHOLE		PR. SANITARY SEWER
	HYDRANT GATE VALVE		PR. WATER MAIN
	INLET C.B. MANHOLE		PR. STORM SEWER
	PR. R. Y. CATCH BASIN		PROPOSED LIGHT POLE

SEAL



Chad Findley

PROJECT
A-Team Snow Removal Site
9700 Oakland Ave.

CLIENT
A-Team Snow Removal
459 Antoinette St.
Detroit, MI 48202

CONTACT
San Grillo, Vice President
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sam.grillo@a-teamsnowremoval.com

PROJECT LOCATION
9700 Oakland Ave.
City of Detroit,
Wayne County,
Michigan

SHEET

Site Plan



DATE ISSUED/REVISED

DATE ISSUED/REVISED

DRAWN BY:
J. Klenk

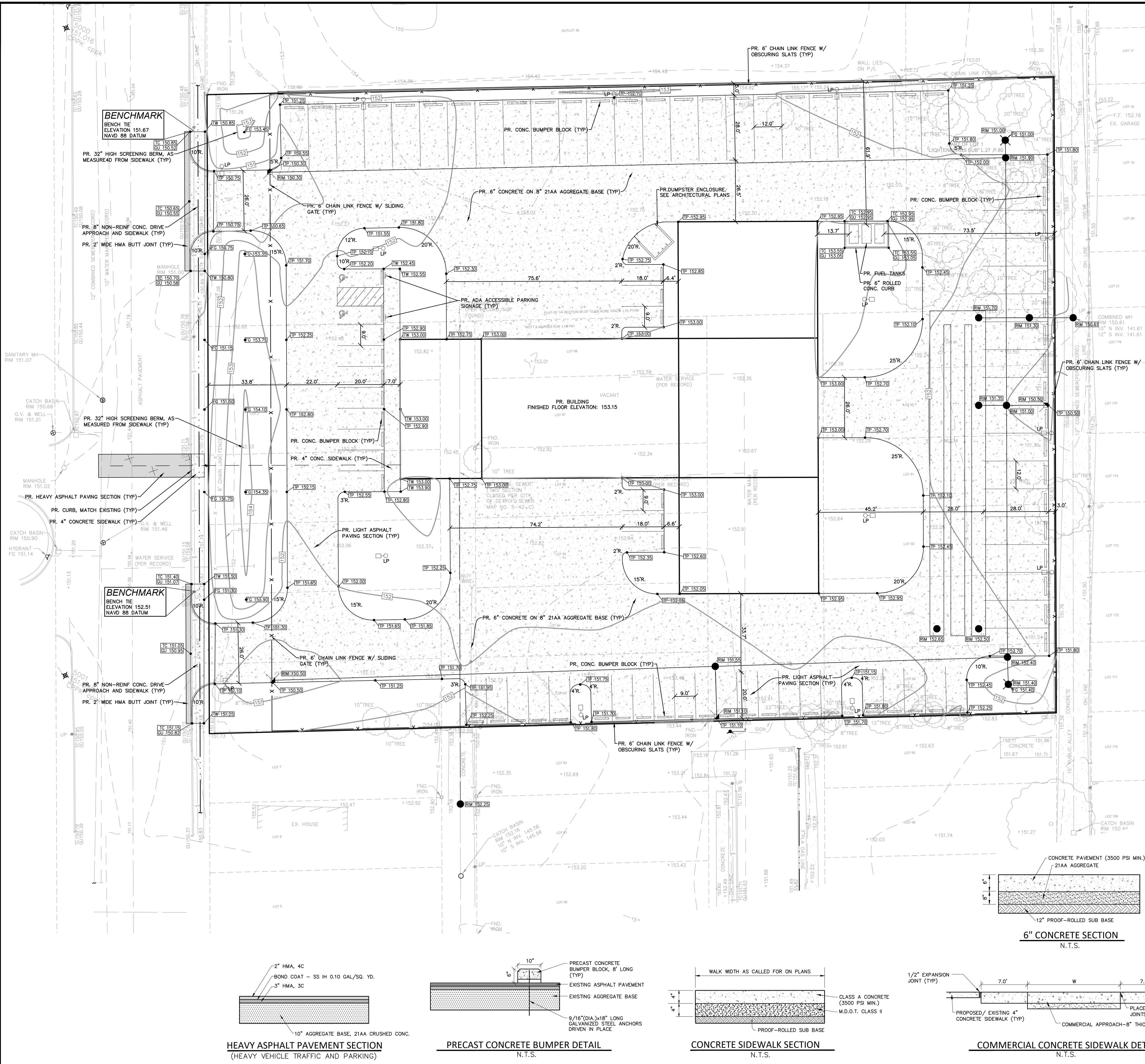
PROJECT MANAGER:
J. Klenk

APPROVED BY:
C. Findley

DATE:
March 15, 2022

SCALE: 1" = 20'

NFE JOB NO. M774 SHEET NO. C3

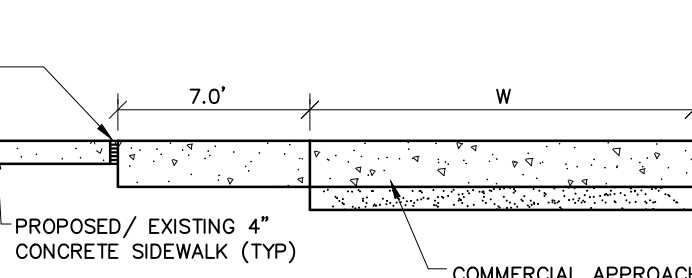
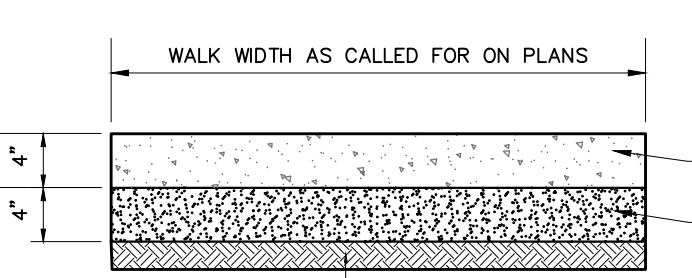
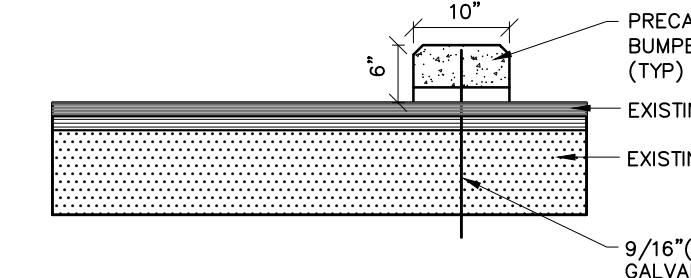
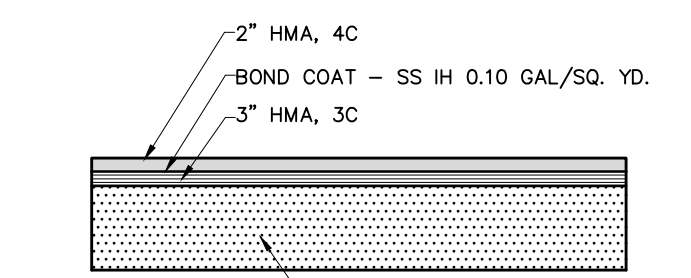
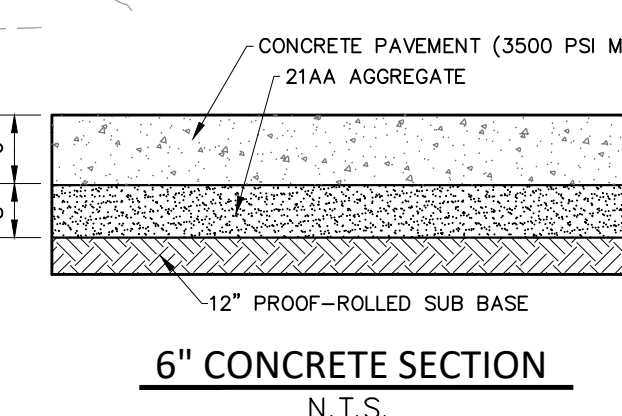


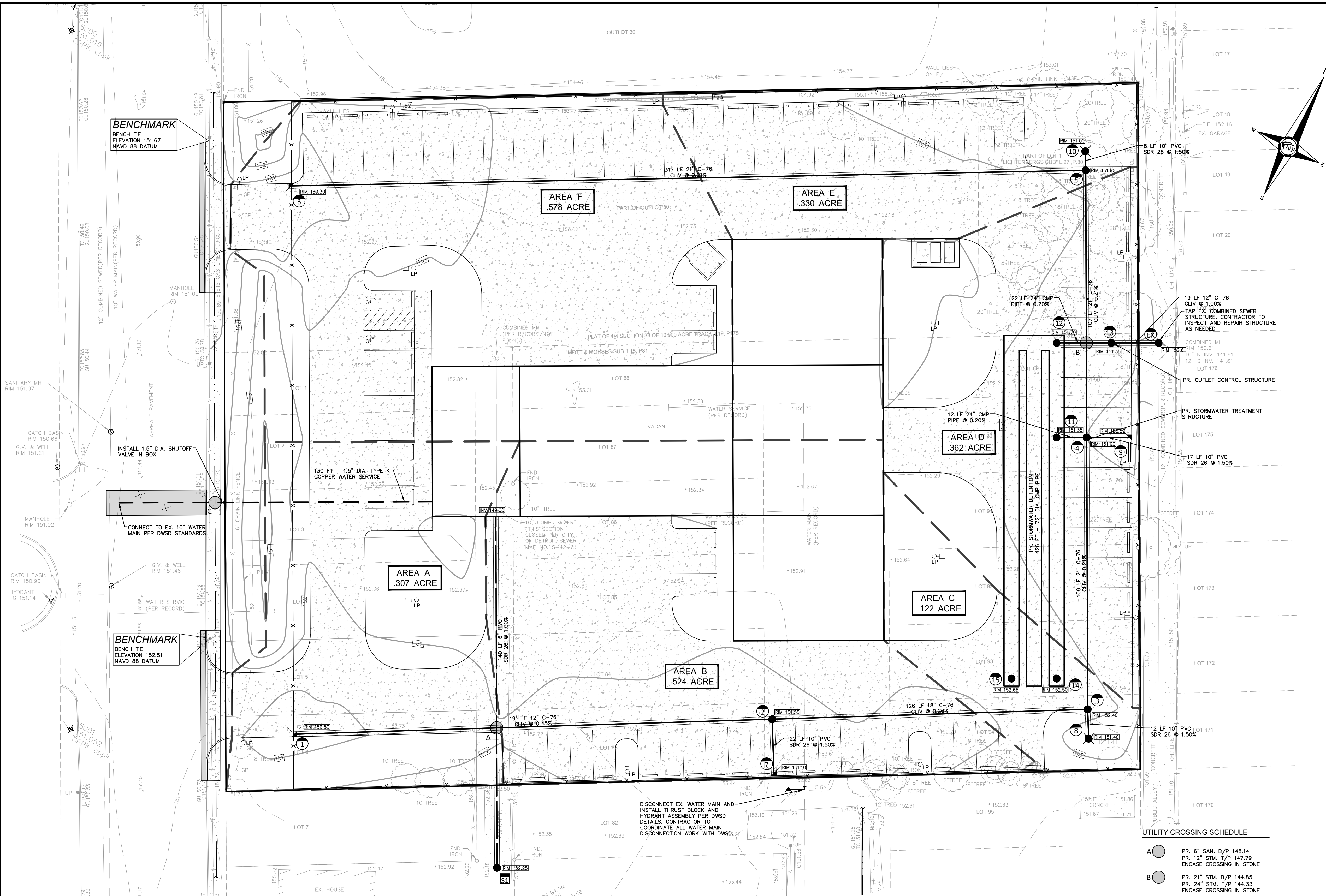
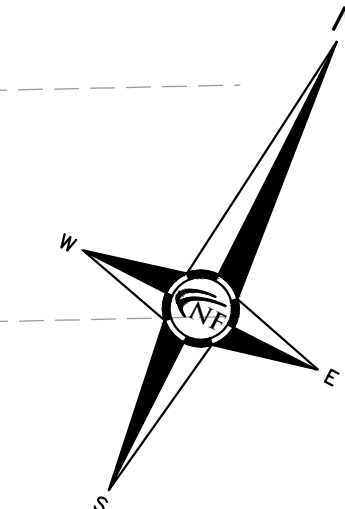
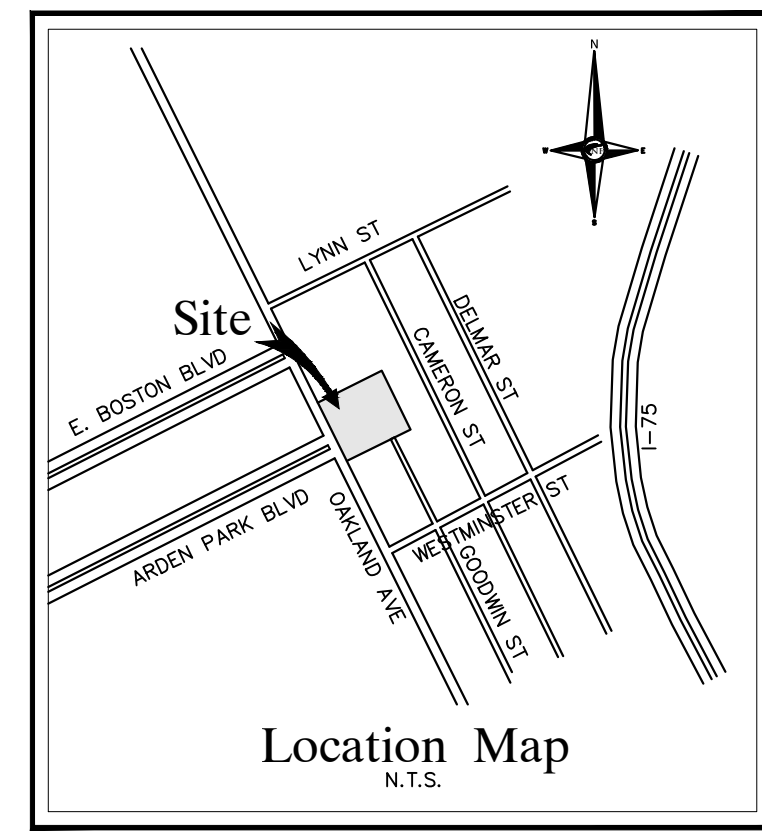
HEAVY ASPHALT PAVEMENT SECTION
(HEAVY VEHICLE TRAFFIC AND PARKING)

PRECAST CONCRETE BUMPER DETAIL
N.T.S.

CONCRETE SIDEWALK SECTION
N.T.S.

COMMERCIAL CONCRETE SIDEWALK DETAIL
N.T.S.





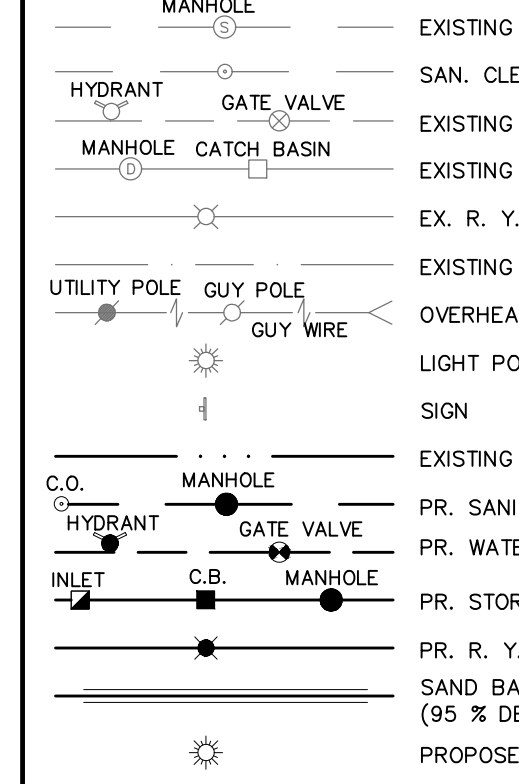
Storm Drainage Structure Schedule

Structure Name	Structure Details
#1 2' DIA. LOW HEAD INLET EIJW 5105 FRAME AND TYPE M1 COVER	PR. RIM 150.50 PR. 12" NE. INV. 147.00
#2 4' DIA. STORM MH W/ 2' SUMP EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 151.55 PR. 12" SW. INV. 146.14 PR. 10" SE. INV. 146.78 PR. 18" NE. INV. 145.74
#3 4' DIA. STORM MH W/ 2' SUMP EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 152.40 PR. 18" SW. INV. 145.41 PR. 10" SE. INV. 147.22 PR. 21" NW. INV. 145.21
#4 CONTECH CS-5 TREATMENT STRUCTURE (OR APPROVED EQUAL)	PR. RIM 151.00 PR. 21" SE. INV. 144.99 PR. 10" NE. INV. 146.25 PR. 21" NW. INV. 145.01 PR. 24" SW. INV. 144.85
#5 4' DIA. STORM MH W/ 2' SUMP EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 151.90 PR. 21" SW. INV. 145.33 PR. 10" NW. INV. 146.89 PR. 21" SE. INV. 145.23
#6 2' DIA. LOW HEAD INLET EIJW 5105 FRAME AND TYPE M1 COVER	PR. RIM 150.30 PR. 21" NE. INV. 146.00
#7 2' DIA. STORM INLET EIJW 5105 FRAME AND TYPE M1 COVER	PR. RIM 151.10 PR. 10" NW. INV. 147.10
#8 2' DIA. INLET EIJW 1040 FRAME AND TYPE O2 COVER	PR. RIM 151.40 PR. 10" NW. INV. 147.40
#9 2' DIA. INLET EIJW 5105 FRAME AND TYPE M1 COVER	PR. RIM 150.50 PR. 10" SW. INV. 146.50
#10 2' DIA. INLET EIJW 1040 FRAME AND TYPE O2 COVER	PR. RIM 151.00 PR. 10" SE. INV. 147.00
#11 30" DIA. CMP STANDPIPE W/ CONCRETE COLLAR AND EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 151.35 PR. 24" NE. INV. 144.82 PR. 72" SE. INV. 142.30 PR. 72" NW. INV. 142.30
#12 30" DIA. CMP STANDPIPE W/ CONCRETE COLLAR AND EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 151.70 PR. 72" SW. INV. 142.28 PR. 72" SE. INV. 142.28 PR. 24" NE. INV. 142.28
#13 6' DIA. OUTLET CONTROL STRUCTURE EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 151.30 PR. 24" SW. INV. 142.24 PR. 12" NE. INV. 142.04
#14 30" DIA. CMP STANDPIPE W/ CONCRETE COLLAR AND EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 152.51 PR. 72" NW. INV. 142.34
#15 30" DIA. CMP STANDPIPE W/ CONCRETE COLLAR AND EIJW 1040 FRAME AND TYPE B COVER	PR. RIM 152.60 PR. 72" NW. INV. 142.34
#EX EX. COMBINED SEWER MH TAP AND RECONSTRUCT AS NEEDED	PR. RIM 150.61 PR. 12" SW. INV. 141.85 EX. 10" NW. INV. 141.61 EX. 12" SE. INV. 141.61

UTILITY CROSSING SCHEDULE

A	PR. 6" SAN. B/P 148.14 PR. 12" STM. T/P 147.79 ENCASE CROSSING IN STONE
B	PR. 21" STM. B/P 144.85 PR. 24" STM. T/P 144.33 ENCASE CROSSING IN STONE
C	EX. 6" GAS B/P 148.25 (V.I.F.) PR. 1.5" WTR. T/P 146.75

LEGEND



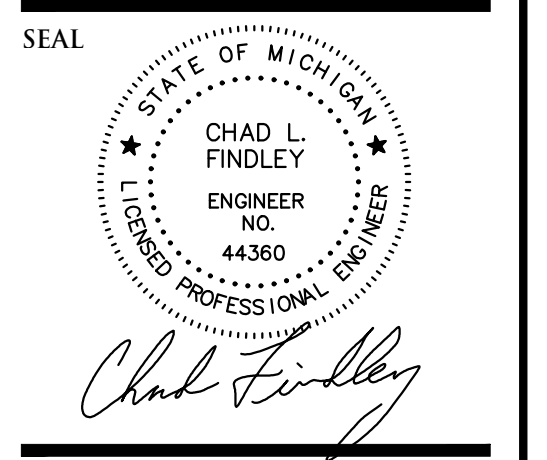
Sanitary Structure Schedule

Structure Name	Structure Details
#51 4' DIA. SANITARY MH EAST JORDAN COM320066A01 PRESSURE TIGHT FRAME AND COVER	PR. RIM 152.25 PR. 6" NW. INV. 147.60 EX. 10" SE. INV. 145.95

Pipe Dia (Inches)	X-sec area (sq. ft.)	Length (LF)	Detention Volume	Units
72	28.29	426	12049.71	Cu. Ft.
Volume Provided - Pipe Storage:			12,049.71	Cu. Ft.
Total Volume Provided			12,049.71	Cubic Feet

ESTIMATED QUANTITIES

DESCRIPTION	QUANTITY	UNITS
STORM SEWER		
72" DIA. CMP	426	FT.
24" DIA. CMP	34	FT.
21" DIA. C-76, CLASS IV	533	FT.
18" DIA. C-76, CLASS IV	126	FT.
12" DIA. C-76, CLASS IV	210	FT.
10" DIA. SDR 26 PVC	59	FT.
CONTECH CS-5 TREATMENT STRUCTURE	1	EA.
6" DIA. OUTLET CONTROL STRUCTURE	1	EA.
4' DIA. MANHOLE W/ 2' SUMP	3	EA.
2' DIA. INLET	6	EA.
TAP/CONNECTION	1	EA.
SANITARY SEWER		
DESCRIPTION	QUANTITY	UNITS
6" PVC, SDR 23.5, BUILDING LEAD	140	FT.
4' DIA. MANHOLE SEWER	1	EA.
TAP/CONNECTION	1	EA.
WATER MAIN		
DESCRIPTION	QUANTITY	UNITS
1.5" K' COPPER BUILDING SERVICE	130	FT.
6" HYDRANT ASSEMBLY	1	EA.
WATER MAIN CONNECTION	2	EA.



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PROJECT LOCATION
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City of Detroit,
Wayne County,
Michigan

SHEET
Utility Plan



DATE	ISSUED/REVISED

DRAWN BY:
J. Klenk

PROJECT MANAGER:
J. Klenk

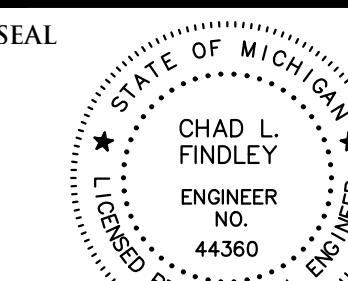
APPROVED BY:
C. Findley

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SCALE: 1" = 20'

NFE JOB NO. M774 SHEET NO. C4

SEAL



Chad L. Findley

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SHEET
Stormwater Calculations
and Details - Sheet 2



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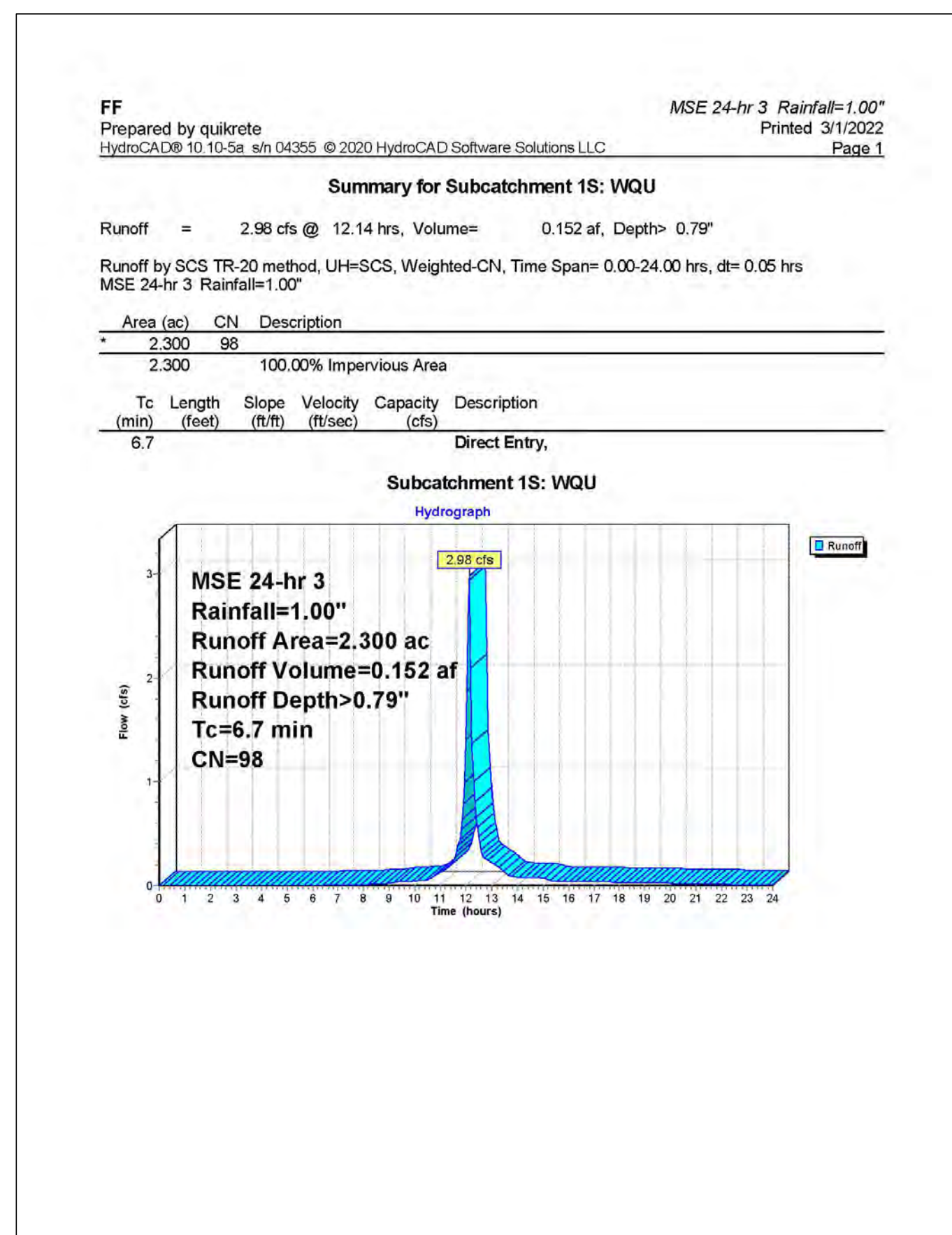
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Estimated Net Annual Solids Load Reduction
Based on the Rational Rainfall Method

A-Team Snow Removal Site
Detroit, MI
Water Quality Unit

CASCADE MODEL: CS-5
PARTICLE SIZE (µm): 110
RAINFALL STATION: 78

Rainfall Intensity (in/hr)	Percent Rainfall Volume	Cumulative Rainfall Volume	% Rainfall Volume Treated	Total Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	13.13%	13.13%	13.1%	0.03	100.0	13.1
0.04	11.36%	24.5%	11.4%	0.07	100.0	11.4
0.06	10.08%	34.6%	10.1%	0.10	100.0	10.1
0.08	7.49%	42.1%	7.5%	0.14	100.0	7.5
0.10	7.01%	49.1%	7.0%	0.17	100.0	7.0
0.12	5.37%	54.4%	5.4%	0.21	100.0	5.4
0.14	4.73%	59.2%	4.7%	0.24	100.0	4.7
0.16	4.13%	63.3%	4.1%	0.28	100.0	4.1
0.18	3.53%	66.8%	3.5%	0.31	100.0	3.5
0.20	2.99%	69.8%	3.0%	0.35	100.0	3.0
0.25	5.50%	75.3%	5.5%	0.44	100.0	5.5
0.30	4.47%	79.8%	4.5%	0.52	100.0	4.5
0.35	3.85%	83.6%	3.9%	0.61	98.8	3.8
0.40	2.16%	85.8%	2.2%	0.70	96.9	2.1
0.45	2.09%	87.9%	2.1%	0.78	95.1	2.0
0.50	1.31%	89.2%	1.3%	0.87	93.2	1.2
0.75	5.07%	94.3%	5.1%	1.31	83.8	4.3
1.00	2.58%	96.9%	2.6%	1.74	74.5	1.9
1.50	2.50%	99.4%	2.5%	2.61	55.8	1.4
2.00	0.51%	99.9%	0.5%	3.48	37.1	0.2
2.54	0.15%	100.0%	0.1%	4.42	29.0	0.0
						96.7
Removal Efficiency Adjustment =						6.5%
Predicted % Annual Rainfall Treated =						93.5%
Predicted Net Annual Load Removal Efficiency =						90.2%

1- Based on 5.5 years of 15 minute precipitation data from NCDC station 2102 at Detroit City Airport in Detroit, MI
2- Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

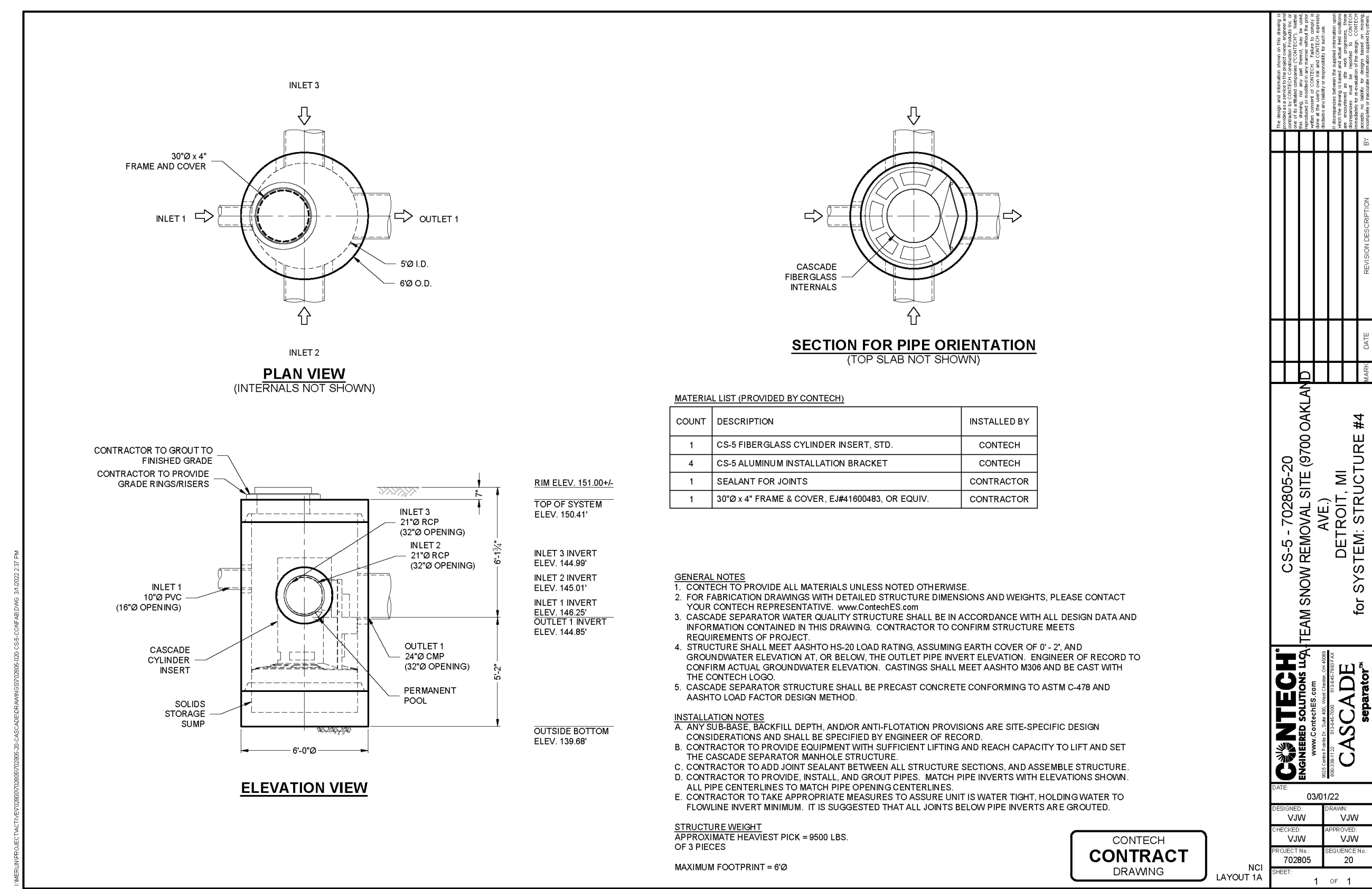


TABLE 1
STORM WATER MANAGEMENT SYSTEM LONG-TERM MAINTENANCE SCHEDULE

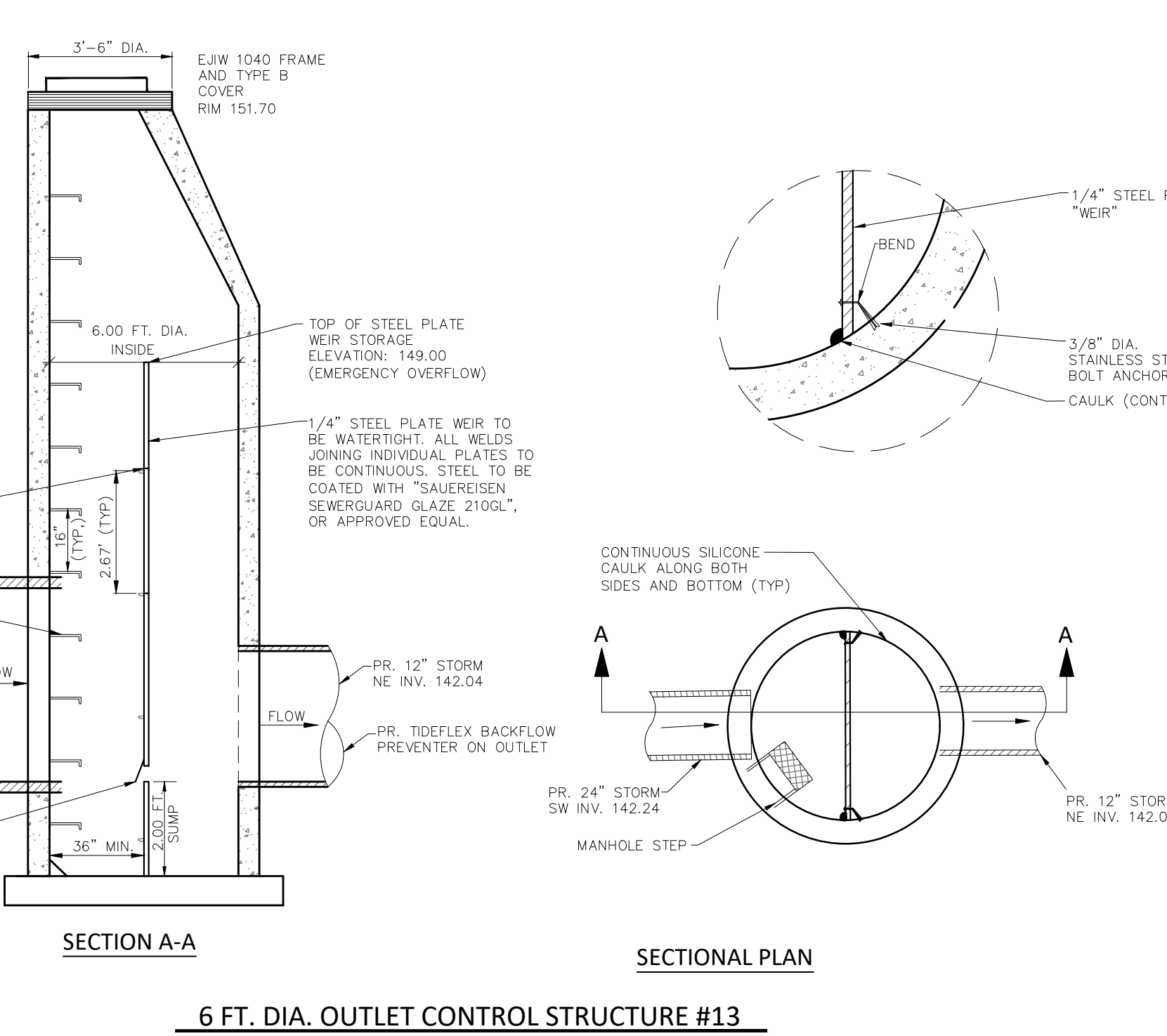
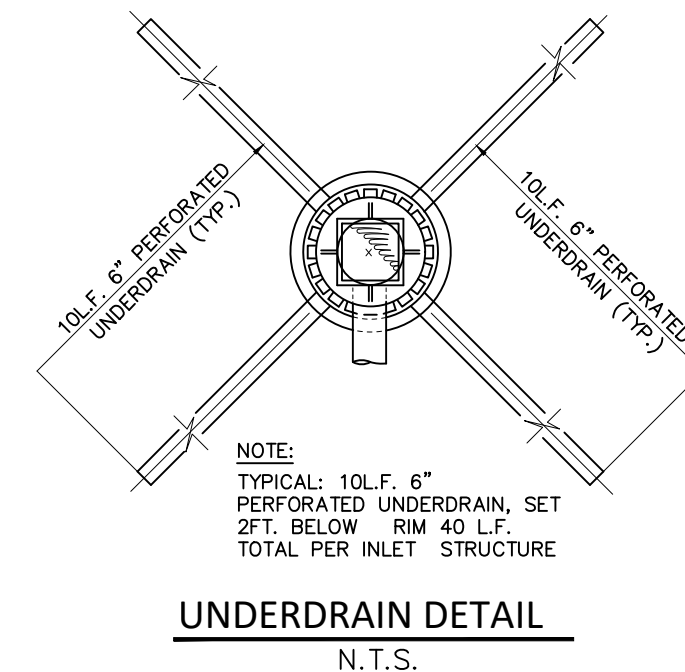
MAINTENANCE ACTIVITIES	Storm Collection System (Sewers, Sinks, Catch Basins, Manholes)	Manufactured Treatment System	Inlets to Treatment & Detention Systems	Underground Detention System	Flow Restrictor Structure & Outlet Pipe	Pavement Areas	FREQUENCY
Monitoring/Inspection							
Inspect for Sediment Accumulation	X	X	X	X	X	X	2-4 times/year*
Inspect for Floatables, Dead Vegetation & Debris	X	X	X	X	X	X	2-4 times/year & After Major Events
Inspect for Integrity of System	X	X	X	X	X	X	2-4 times/year & After Major Events
Inspect All Components During Wet Weather & Compare to As-Built Plans	X	X	X	X	X	X	2-4 times/year
Ensure Maintenance Access Remain Open/Clear	X	X	X	X	X	X	2-4 times/year
Preventative Maintenance							
Remove Accumulated Sediments	X	X	X	X	X	X	As needed*
Remove Floatables, Invasive & Dead Vegetation & Debris	X	X	X	X	X	X	As Needed
Sweeping of Paved Surfaces					X		As Needed
Replace Storm Filter Cartridges							Every 1-5 years, depending on sediment loading**
Remedial Actions							
Repair/Stabilize Areas of Erosion	X						Annually, or as needed
Structural Repairs	X	X	X	X	X	X	As Needed
Make Adjustments/Repairs to Ensure Proper Functioning	X	X	X	X	X	X	As Needed
Manage Nuisance Wildlife	X						Biweekly, or as needed

NOTES: *Manufactured Treatment System & underground detention system to be cleaned whenever sediments accumulate to a depth of 6-12 inches, or if sediment resuspension is observed. **Refer to manufacturer's O&M guidelines for additional maintenance considerations.

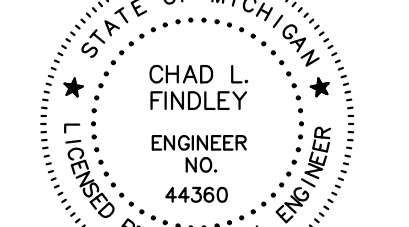
PROPERTY INFORMATION:
9700 Oakland Ave.
Detroit, MI

PROPERTY OWNER:
A-Team Snow Removal
459 Antoinette St.
Detroit, MI 48202
Contact: Sam Grillo, Vice President Tel: 586-531-3687
Email: sam.grillo@a-teamsnowremoval.com

ENGINEER:
Nowak & Fraus Engineers
28 W. Adams Suite 210
Detroit, MI 48226
Contact: Justin Klenk
Phone: 313 965 2444



SEAL



Chad Findley

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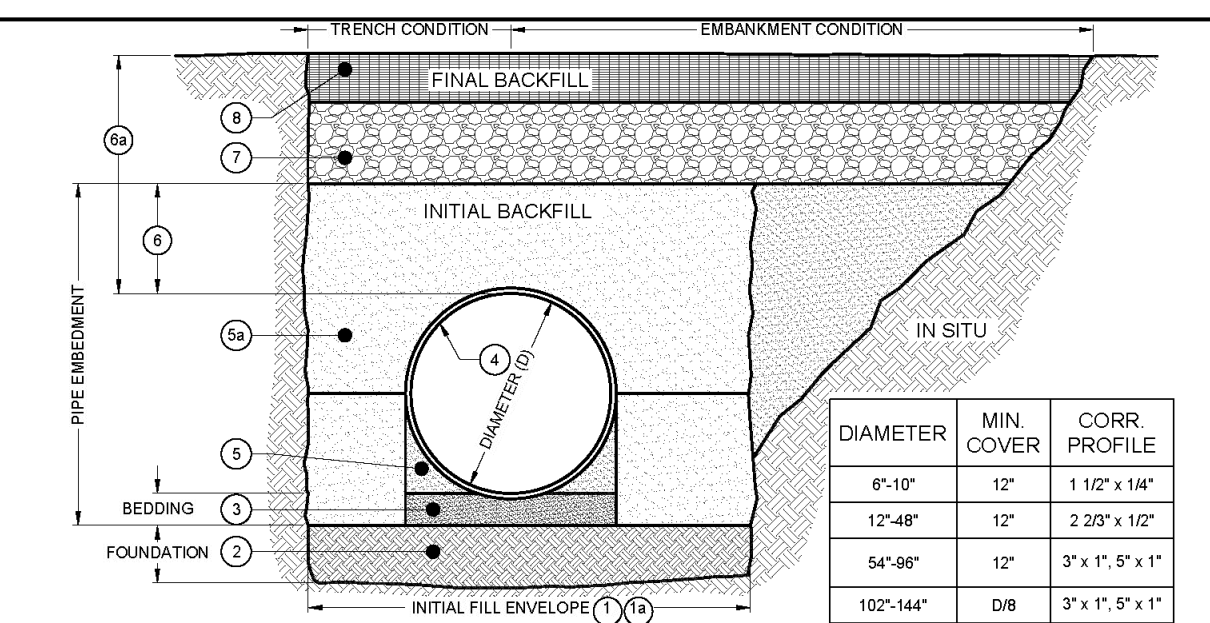
PROJECT LOCATION
9700 Oakland Ave.
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SHEET
Stormwater Calculations
and Details - Sheet 3



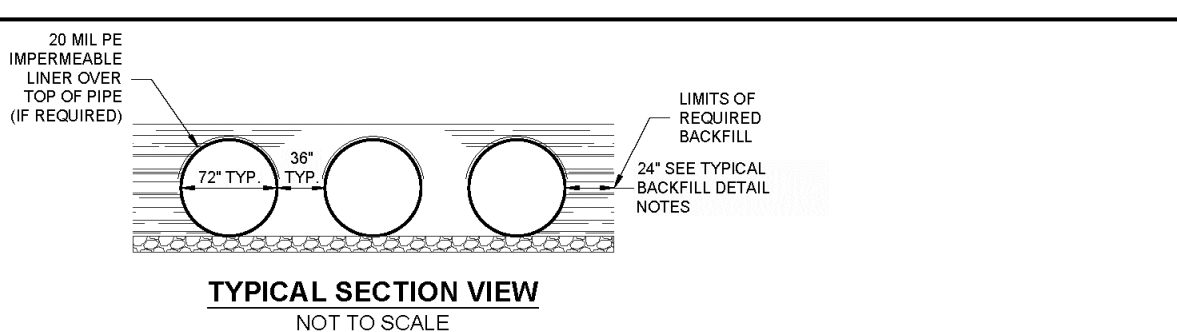
DATE ISSUED/REVISED

DRAWN BY:
J. Klenk
PROJECT MANAGER:
J. Klenk
APPROVED BY:
C. Findley
DATE:
March 15, 2022
SCALE: N.T.S.

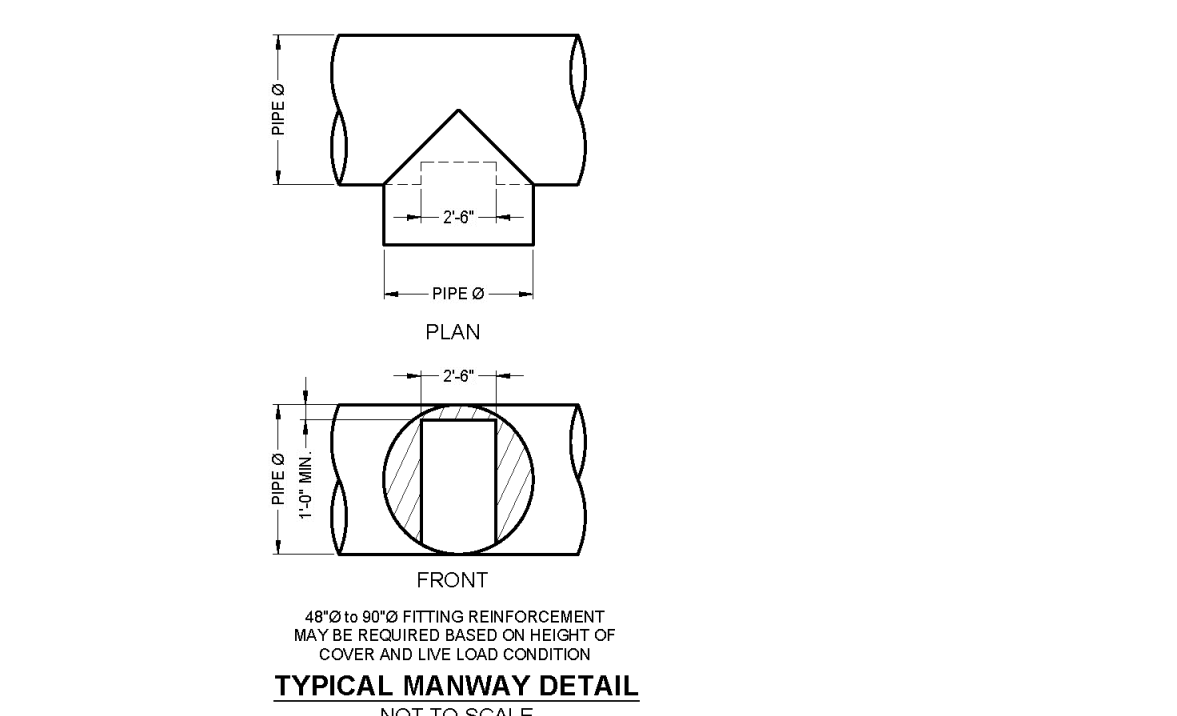


- BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AASHTO LRFD BRIDGE DESIGN (SEC 12) AND CONSTRUCTION (SEC 29)**
- MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE.
THE MINIMUM TRENCH WIDTH (12.6.6.1):
PIPE = 12" - 1.50 + 12"
PIPE = 12" - 1.50 + 12"
 - THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (28.5.2).
 - BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, AND A MINIMUM OF TWICE THE CORRUGATION DEPTH IN THICKNESS, WITH THE MAXIMUM PARTICLE SIZE OF ONE-HALF OF THE CORRUGATION DEPTH (28.5.1, 28.5.3).
 - CORRUGATED STEEL PIPE (CSP) (HEL-COR), CSP GAGE PER AASHTO SECTION 12, MDOOT 2003 OR WAYNE COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 - HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLIDED INTO PLACE TO ALLOW FOR PROPER COMPACTION (28.5.4).
 - INITIAL BACKFILL SHALL BE MDOOT 20, 3/4, OR 2 1/2" STONE OR GRAVEL, COMPACTED TO A MINIMUM OF 95% (90% MIN. REQUIRED FOR 84 AND 21AA) OF THE BACKFILL MATERIALS MAXIMUM NET WEIGHT AT MOISTURE CONTENT NOT GREATER THAN OPTIMUM PER WAYNE COUNTY SPECIFICATION PARS 8.008, 8.007, 2003. MAXIMUM PARTICLE SIZE NOT TO EXCEED 2" (12.4.1.2). ALL LIFTS PLACED IN A CONTROLLED MANNER. IT IS RECOMMENDED THAT LIFTS NOT EXCEED AN 8" UNCOMPACTED LIFT HEIGHT TO PREVENT UNEVEN LOADING, AND THE LESSER OF 1/3 THE DIAMETER OR 24" AS THE MAXIMUM DIFFERENTIAL, SIDE-TO-SIDE (28.5.4), NO CRUSHED CONCRETE.
 - INITIAL BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.
 - TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT (12.6.6.3).
 - GRANULAR ROAD BASE (MDOOT 21-AA OR EQUAL).
 - RIGID OR FLEXIBLE PAVEMENT.
 - GEOTEXTILE SHOULD BE CONSIDERED FOR USE TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES (PROJECT ENGINEER).
 - FOR MULTIPLE BARREL INSTALLATIONS THE RECOMMENDED SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE PIPE DIA/2 BUT NO LESS THAN 12" OR 3P FOR PIPE DIAMETERS 72" AND LARGER. CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING (TABLE C12.6.7-1).

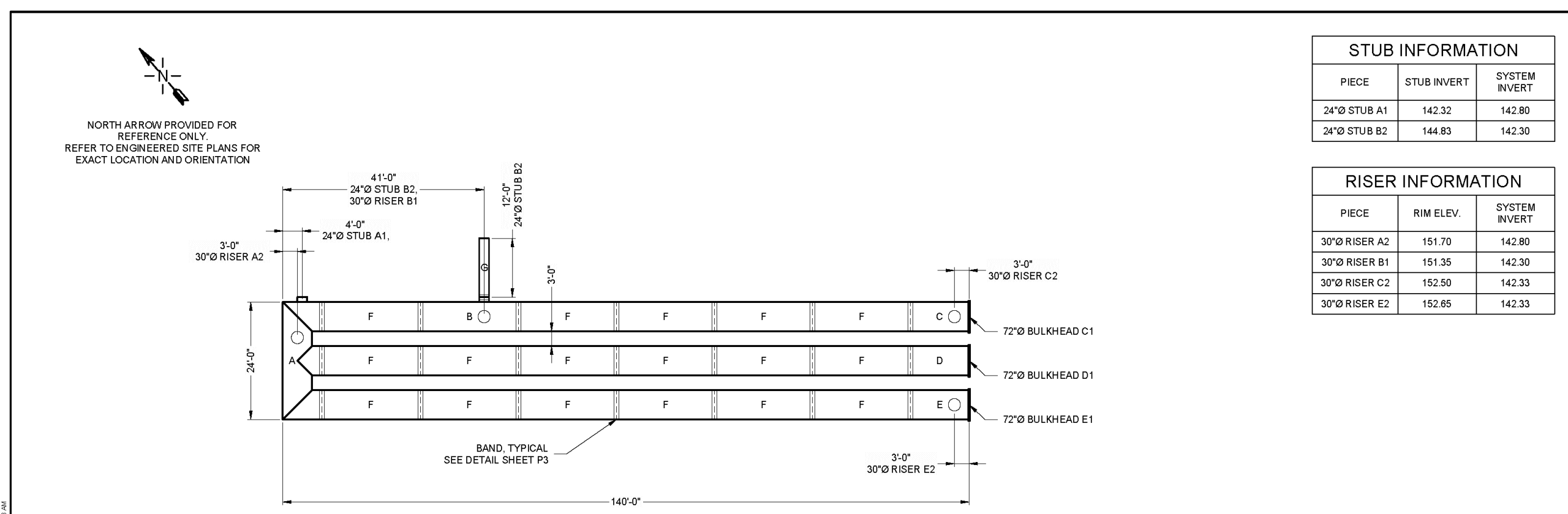
TYPICAL BACKFILL DETAIL
NOT TO SCALE



NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.



702805	010	3/1/2022
DESIGNED BY	VJW	VJW
CHECKED BY	MSB	MSB
SHEET	P2	OF 4



STUB INFORMATION

PIECE	STUB INVERT	SYSTEM INVERT
24"Ø STUB A1	142.32	142.80
24"Ø STUB B2	144.83	142.30

RISER INFORMATION

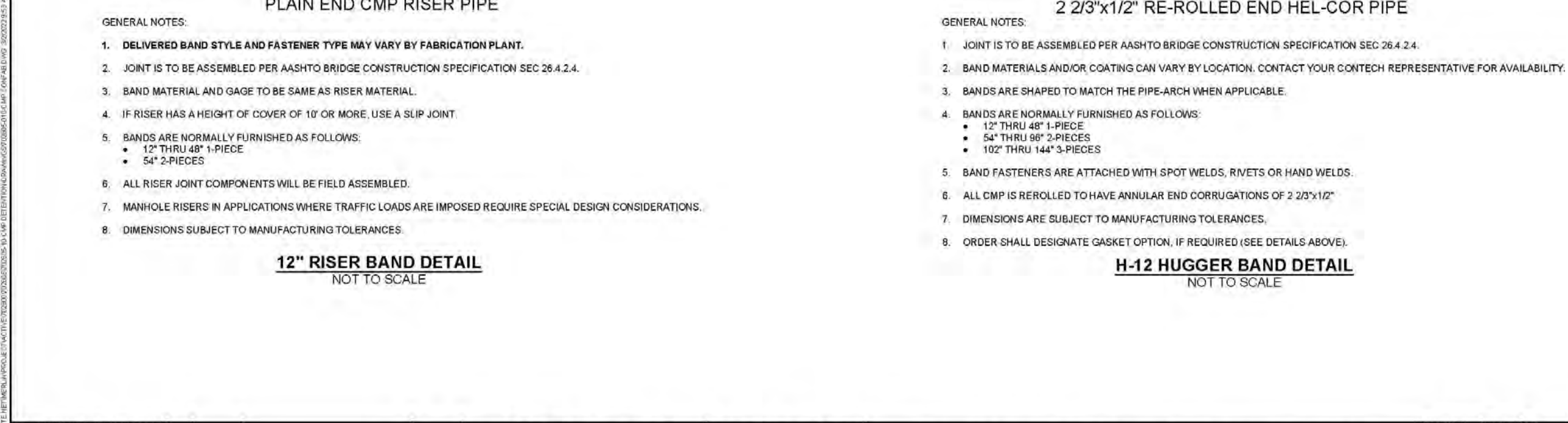
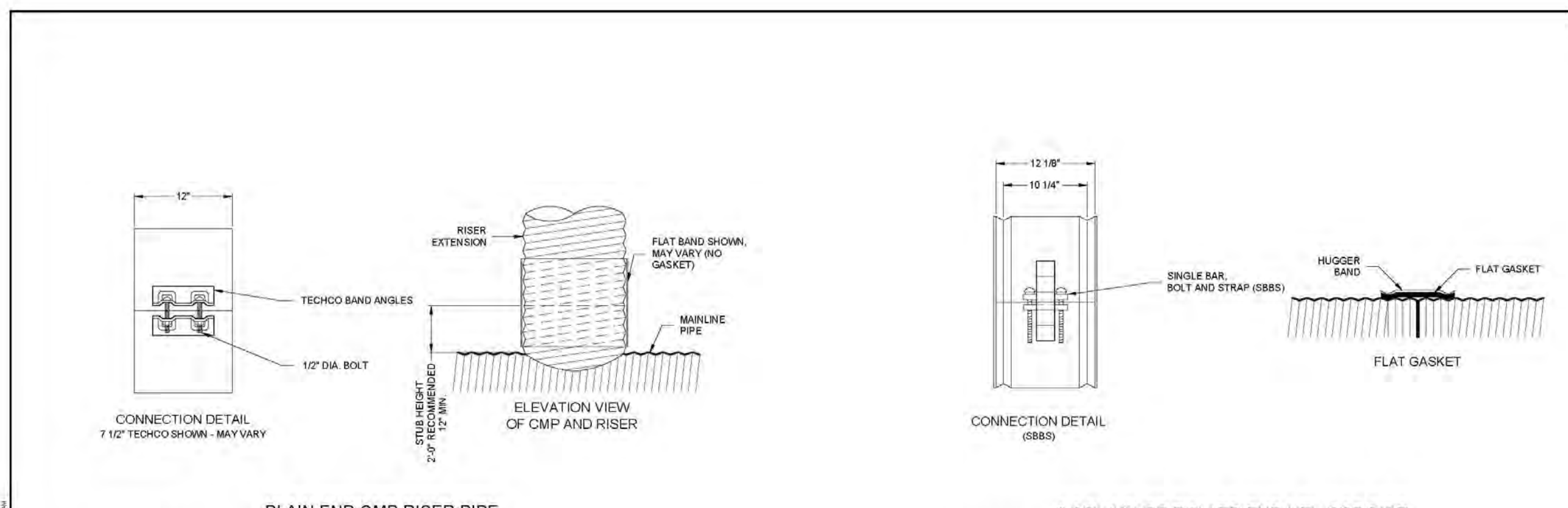
PIECE	RIM ELEV.	SYSTEM INVERT
30"Ø RISER A2	151.70	142.80
30"Ø RISER B1	151.35	142.30
30"Ø RISER C2	152.50	142.33
30"Ø RISER E2	152.65	142.33

- NOTES**
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
 - ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD (EOR) PRIOR TO RELEASING FOR FABRICATION.
 - ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A898.
 - ALL RISERS AND STUBS ARE 2 1/2" x 1/2" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
 - RISERS TO BE FIELD TRIMMED TO GRADE AS REQUIRED, BY CONTRACTOR.
 - QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAIL ED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
 - ALL ACCESS CASTINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE NOT SUPPLIED BY CONTECH.
 - THIS CONTECH CMP PIPE DESIGN SUBMITTAL PACKAGE IS NOT APPLICABLE TO AND SHALL NOT BE USED BY OTHER MANUFACTURERS, AS IT IS THE PROPERTY OF CONTECH ENGINEERED SOLUTIONS LLC. FABRICATION DRAWINGS, PERFORMANCE DETAILS, MANUFACTURING PROCEDURES, AND FIELD OPERATIONS ARE SPECIFIC TO CONTECH'S CMP PRODUCT AND ARE NOT TO BE DUPLICATED.
 - RISERS ARE TO BE MANUFACTURED 1" BELOW GRADE AND ANTERIOR TO BE PAINTED WITH ZINC RICH PAINT UNLESS OTHERWISE NOTED.
 - DUE TO SALTING AGENTS FOR SNOW AND ICE REMOVAL ALL CMP WILL BE REQUIRED TO HAVE FL EXLER AND/OR GEOMEMBRANE AS INDICATED ON SHEET P3 OR C2. THIS NOTE SUPERCEDES ANY OTHER RECOMMENDATIONS ON THIS TOPIC WITHIN THIS SUBMITTAL.

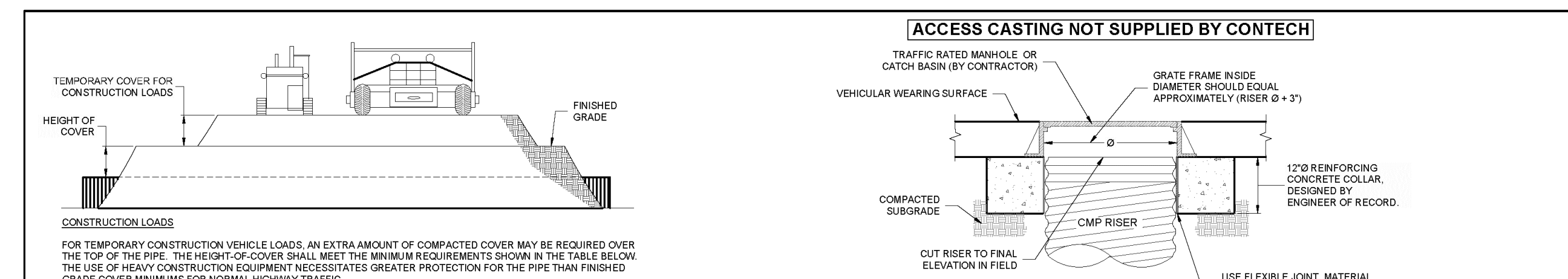
THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (4) PAGES INCLUDING THE FOLLOWING:
• PIPE STORAGE = 12,045 CF
• MAINLINE PIPE GAGE = 14
• WALL TYPE = SOLID
• DIAMETER = 72"
• FINISH = ALT2
• CORRUGATION = 5x1

CUSTOMER _____ DATE _____

702805	010	3/1/2022
DESIGNED BY	VJW	VJW
CHECKED BY	MSB	MSB
SHEET	P1	OF 4



702805	010	3/1/2022
DESIGNED BY	VJW	VJW
CHECKED BY	MSB	MSB
SHEET	P3	OF 4



FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED ABOVE THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-102	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL
THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M214 OR ASTM A696.

PIPE
THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M214 OR ASTM A696. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

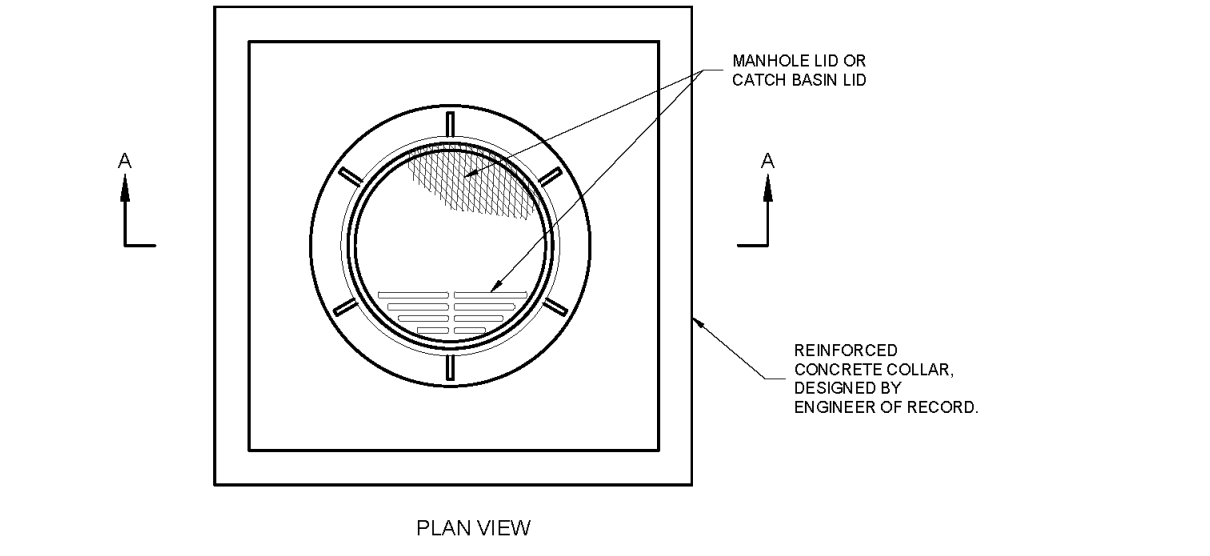
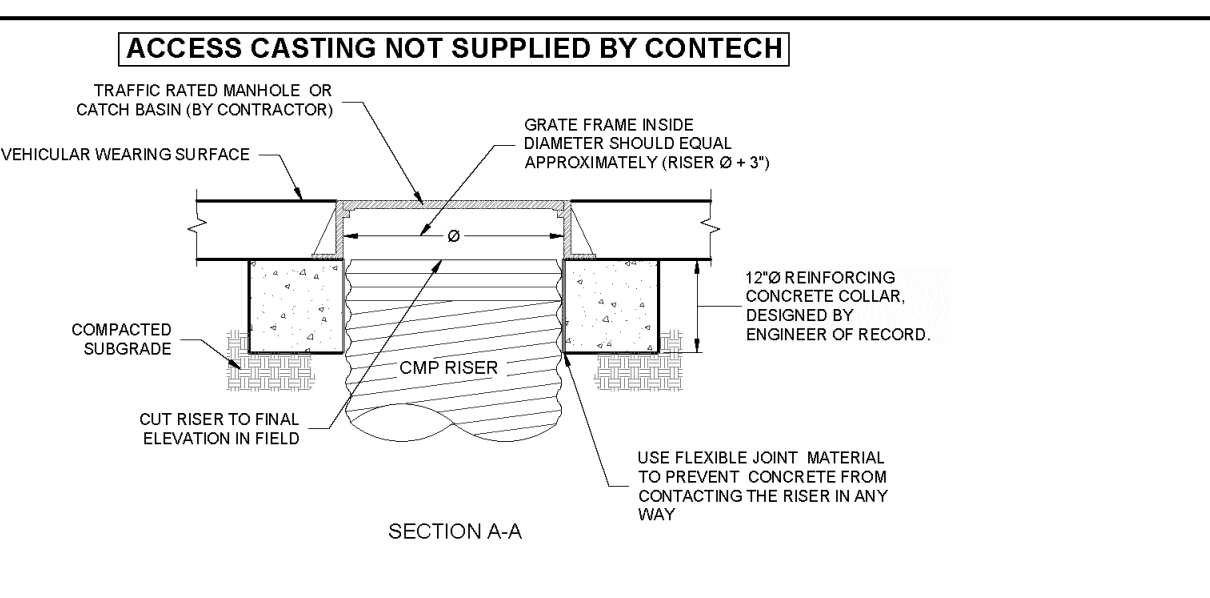
HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPA).

INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 28, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY RECONSTRUCTIONS OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

ANTI-FLOTATION PROVISIONS DUE TO HIGH GROUNDWATER OR OTHER FLOTATION CONCERNS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.

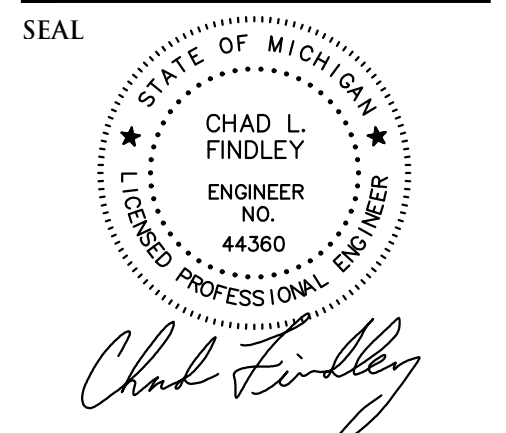
MATERIAL SPECIFICATION
NOT TO SCALE



- NOTES:**
- REINFORCED CONCRETE COLLAR SHALL BE SIZED AND DESIGNED BY ENGINEER OF RECORD SO THAT THE LOADS ARE TRANSMITTED TO THE SOIL AND NOT THE RISER.
 - REINFORCED CONCRETE COLLAR SHALL BE SIZED TO PROVIDE AN ADEQUATE BOTTOM AREA BASED ON THE ALLOWABLE BEARING CAPACITY OF THE SOIL.
 - THE FLEXIBLE JOINT MATERIAL (RECYCLED VNYL OR EQUIVALENT) TO BE STIFF ENOUGH SO THAT THE CONCRETE CAN NEVER ENGAGE WITH THE RISER CORRUGATIONS.

702805	010	3/1/2022
DESIGNED BY	VJW	VJW
CHECKED BY	MSB	MSB
SHEET	P4	OF 4

DRAWN BY:
J. Klenk
PROJECT MANAGER:
J. Klenk
APPROVED BY:
C. Findley
DATE:
March 15, 2022
SCALE: N.T.S.



PROJECT
A-Team Snow Removal Site
9700 Oakland Ave.

CLIENT
A-Team Snow Removal
459 Antoinette St.
Detroit, MI 48202
CONTACT
San Grillo, Vice President
Tel: 586-531-3687
Email:
sam.grillo@a-teamsnowremoval.com

PROJECT LOCATION
9700 Oakland Ave.
City of Detroit,
Wayne County,
Michigan

SHEET
Storm Sewer Profiles
Sheet 1



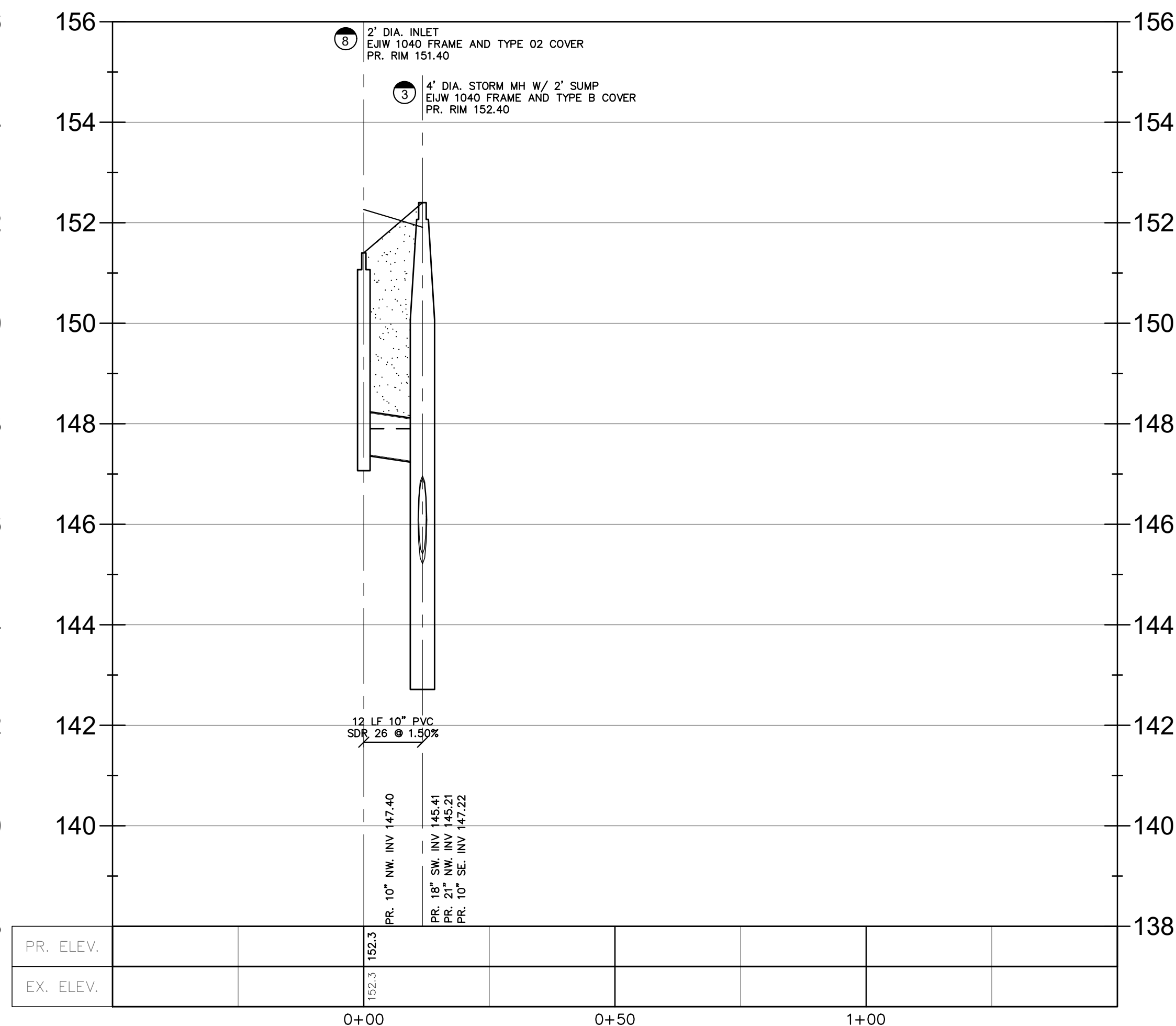
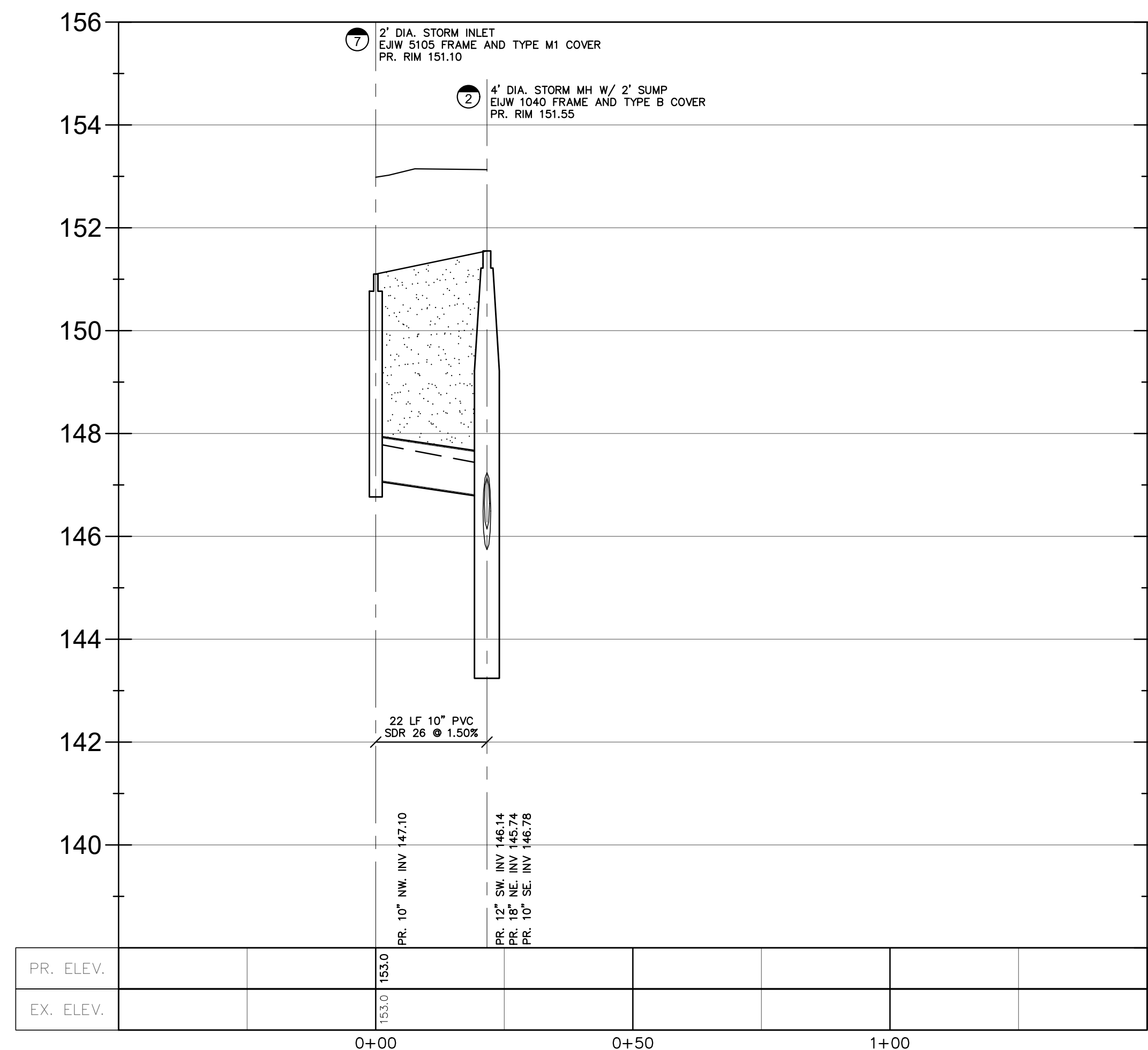
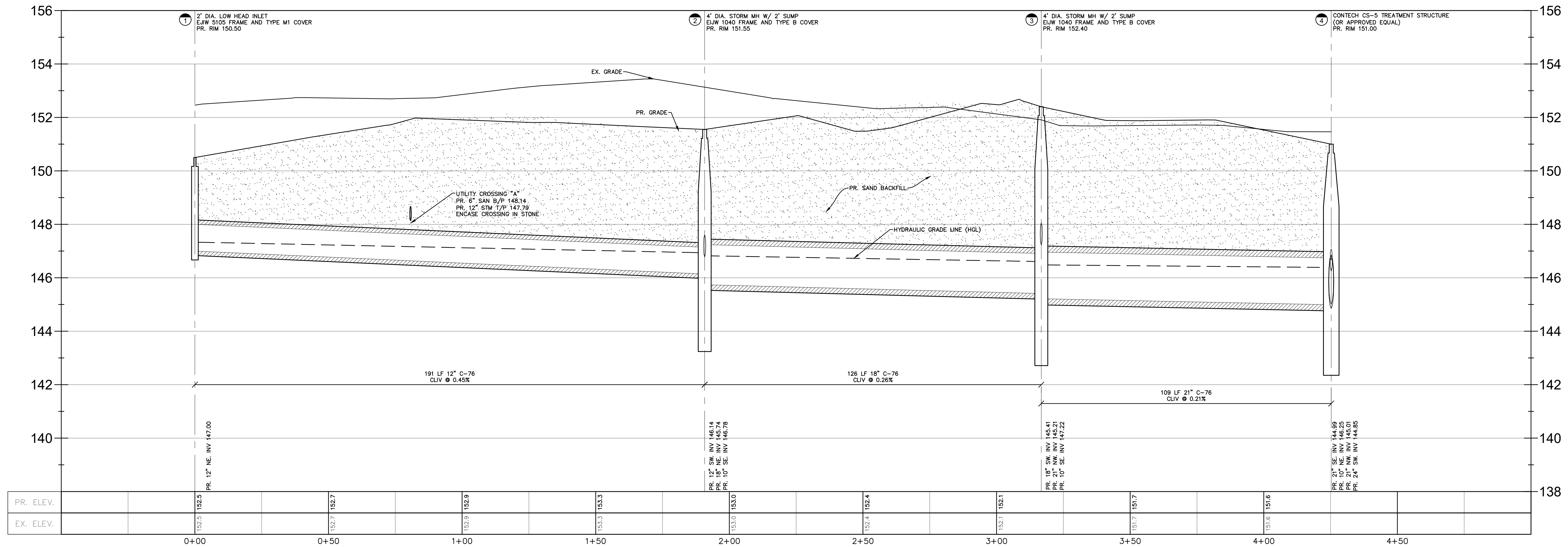
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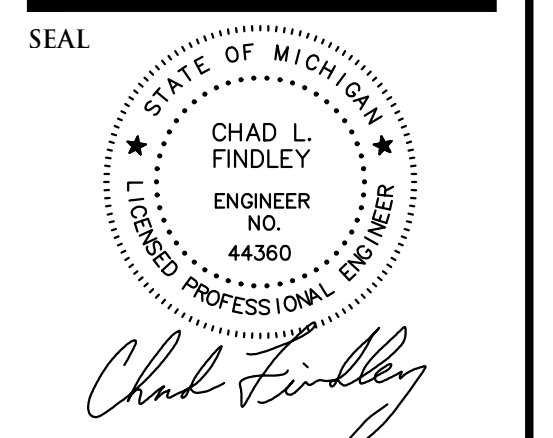
DRAWN BY:
J. Klenk
PROJECT MANAGER:
J. Klenk
APPROVED BY:
C. Findley

DATE:
March 15, 2022

SCALE: 1" = 20' / 1"=2'
0 10 20 30

NFE JOB NO. SHEET NO.
M774 C8





PROJECT
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9700 Oakland Ave.

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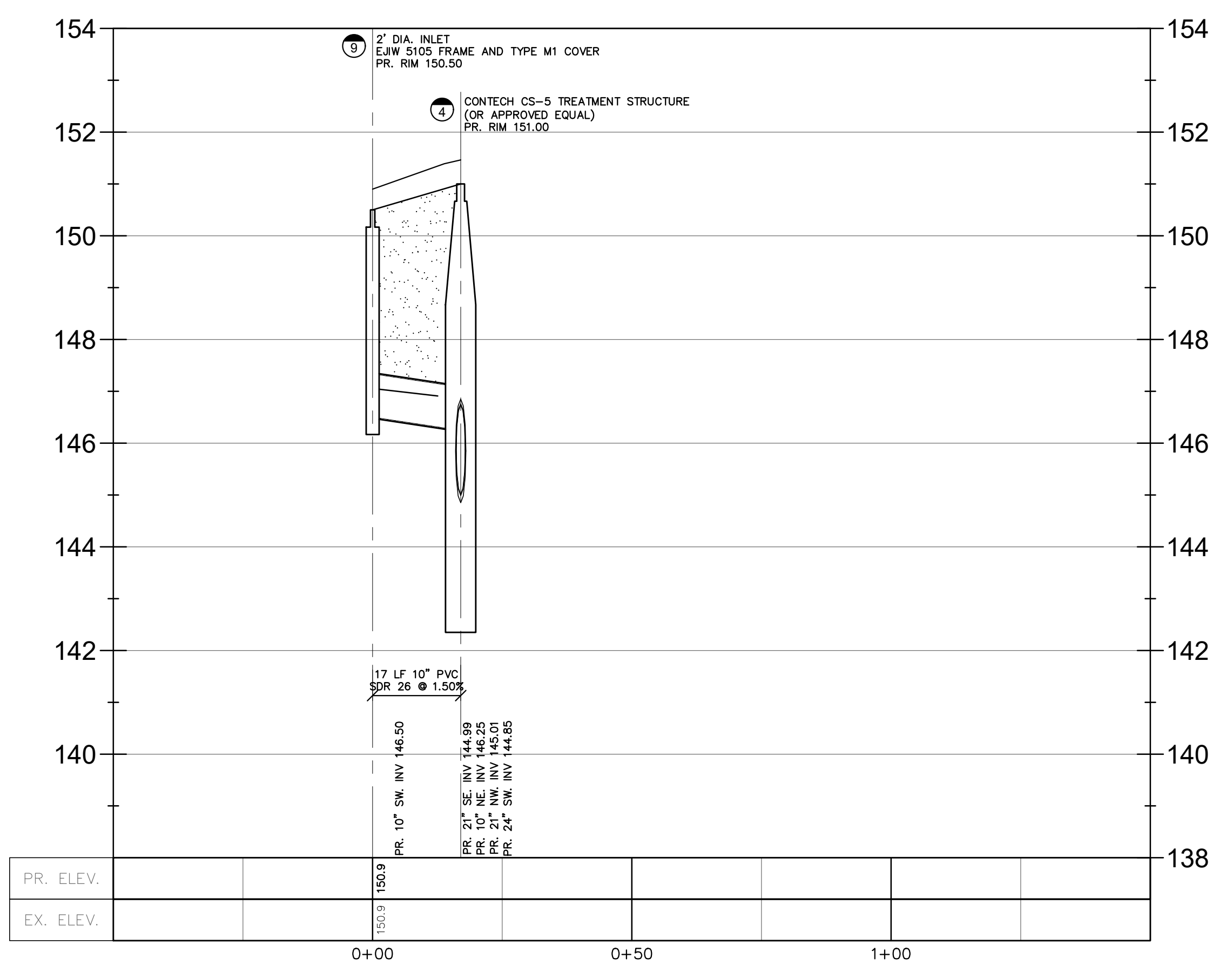
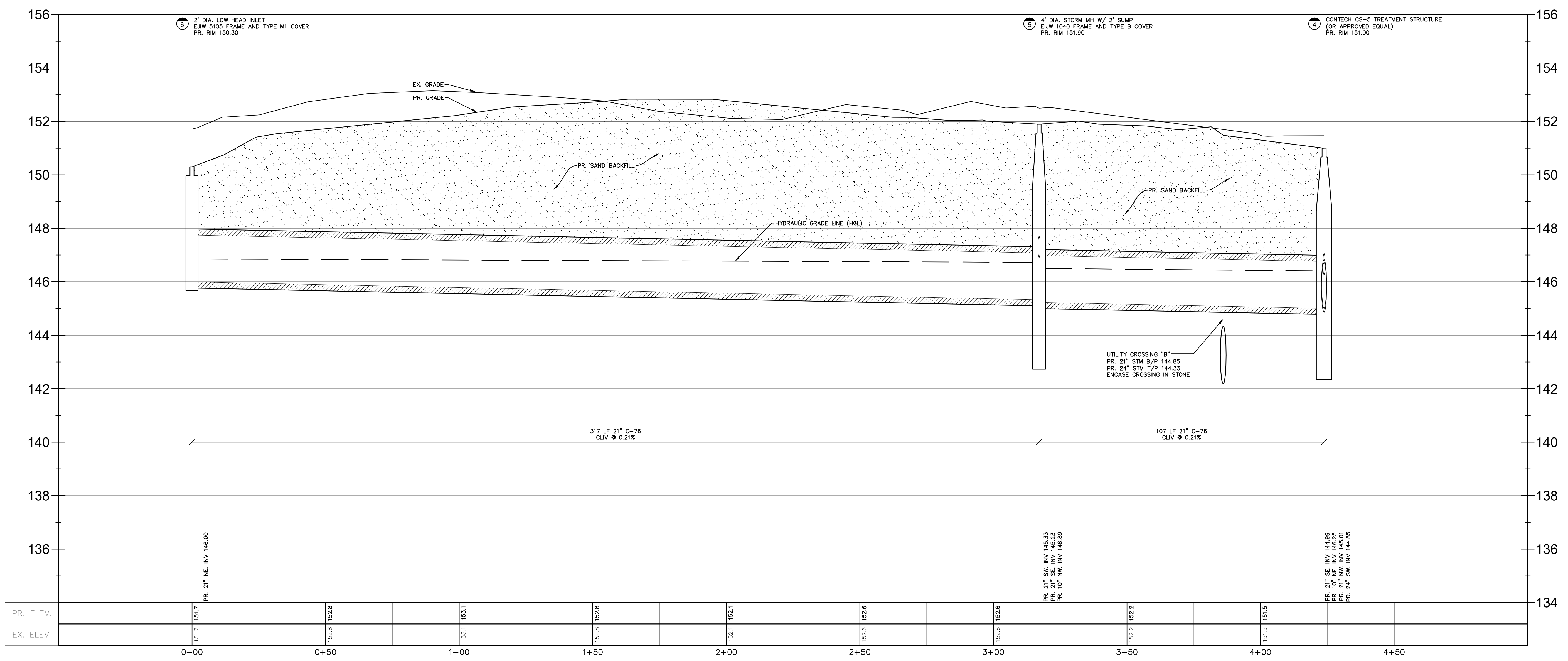
PROJECT LOCATION
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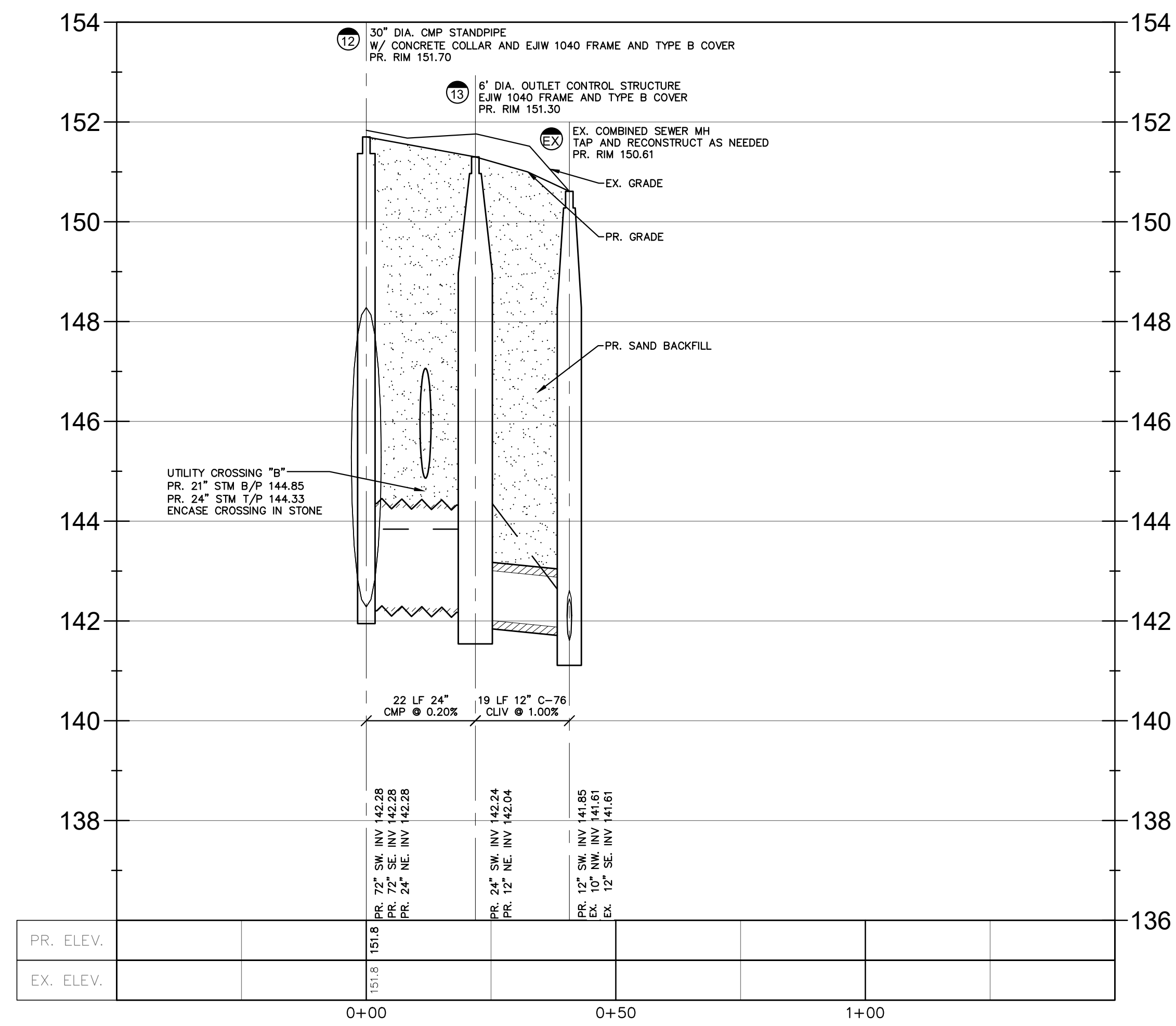
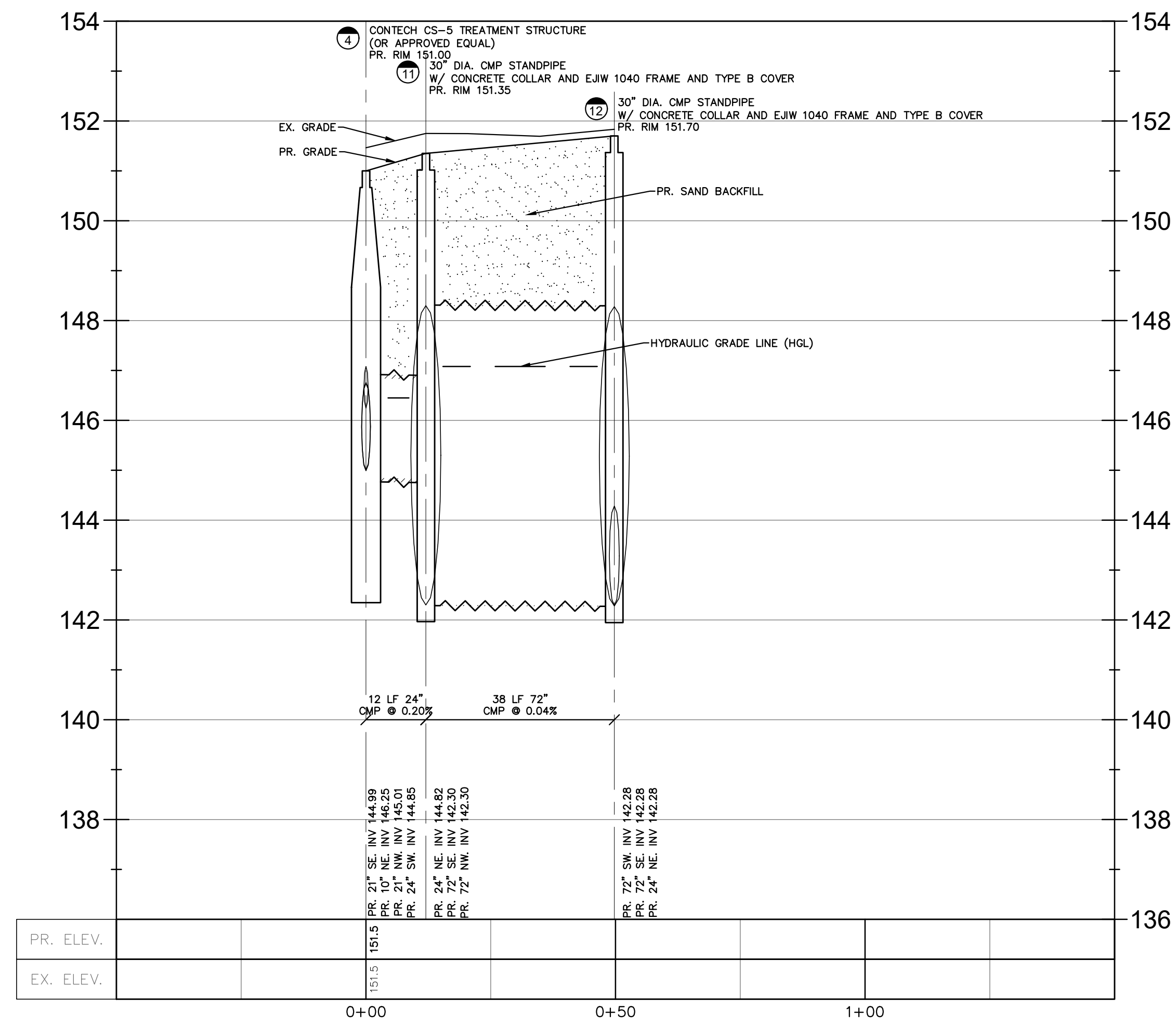
SHEET
Storm Sewer Profiles
Sheet 2



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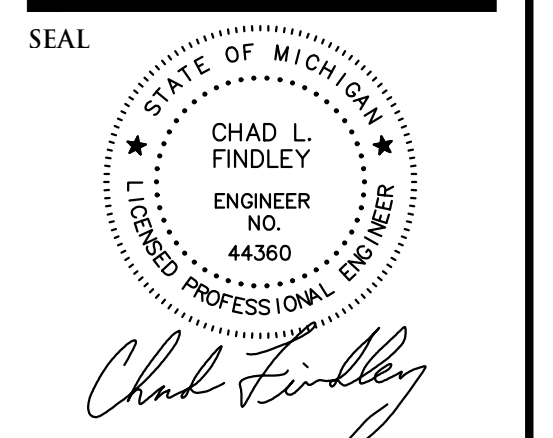
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PROJECT MANAGER:
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C. Findley
DATE:
March 15, 2022
SCALE: 1" = 20' / 1"=2'
NFE JOB NO. M774 SHEET NO. C9





CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
28 WEST ADAMS, SUITE 210
DETROIT, MI 48226
TEL. (313) 965-2444
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM



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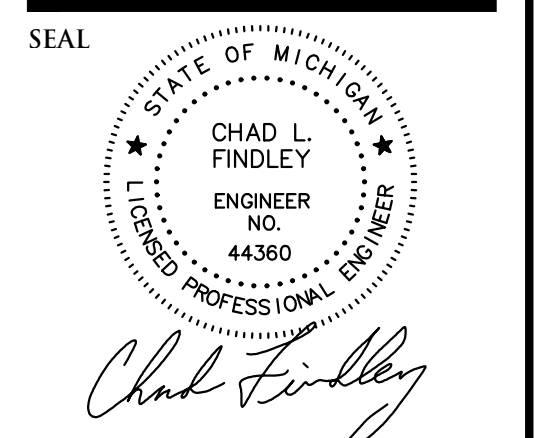
PROJECT LOCATION
9700 Oakland Ave.
City of Detroit,
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Michigan

SHEET
Storm Sewer Profiles
Sheet 3



DATE	ISSUED/REVISED

DRAWN BY:
J. Klenk
PROJECT MANAGER:
J. Klenk
APPROVED BY:
C. Findley
DATE:
March 15, 2022
SCALE: 1" = 20' / 1" = 2'
NFE JOB NO. M774 SHEET NO. C10



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PROJECT LOCATION
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City of Detroit,
Wayne County,
Michigan

SHEET
Notes and Details
Sheet 1



DATE	ISSUED/REVISED

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J. Klenk

PROJECT MANAGER:
J. Klenk

APPROVED BY:
C. Findley

DATE:
March 15, 2022

SCALE: N.T.S.

SOIL EROSION AND SEDIMENTATION CONTROL MAINTENANCE NOTES

THE CONTRACTOR SHALL MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROL DEVICES THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.

MAINTENANCE INCLUDES ALL WORK NECESSARY FOR PROPER OPERATION OF THE DEVICES WHICH CAN NOT BE REPAIRED MAY NEED TO BE REPLACED. MAINTENANCE OF THE DEVICES SHALL BE PERFORMED WITHIN 24 HOURS OF INSPECTION.

SEDIMENT SHALL BE REMOVED AS NECESSARY TO MAINTAIN THE EFFECTIVENESS OF SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.

SEDIMENT DEPOSITED ALONG SILT FENCE SHALL BE REMOVED WHEN IT REACHES 18 TO 20 THE HEIGHT OF THE FENCE.

IF USE ESTABLISHMENT MEASURES SHALL BE MAINTAINED AS WOULD ANY OTHER DEVICES PRIOR TO ESTABLISHMENT OF PERMANENT USE.

ALL MUD DIRT AND DEBRIS TRACKED OFF OF EXISTING ROADS FROM THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.

CONTRACTOR SHALL ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES PROTECT AGAINST LOSS OF SOIL BY THE ACTION OF WIND OR SOIL CARRY-OFF WIND.

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

SOIL EROSION AND SEDIMENTATION CONTROL TEMPORARY FACILITIES

THE CONTRACTOR SHALL CONSIDER THE PROTECTION OF NEARBY AREAS WITHIN THE ACT OF THE MICHIGAN CONTROLLED LANDS BY THE SOIL EROSION AND SEDIMENTATION CONTROL ACT. THE CONTRACTOR SHALL MAINTAIN THE CONTROL OF THE LOCAL PERMIT AGENCY THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL MAINTAIN THE CONTROL OF THE LOCAL PERMIT AGENCY THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL MAINTAIN THE CONTROL OF THE LOCAL PERMIT AGENCY THROUGHOUT THE CONSTRUCTION PERIOD.

ALL DISTURBED SURFACE AREAS INCLUDING UTILITY TRENCHES SHALL BE TEMPORARILY GRADED AND DITCHED TO DIRECT ALL WATER AWAY FROM SUCH AREAS TO SEDIMENTATION CONTROL DEVICES WHICH WILL PREVENT WATER CARRIED BY SOIL FROM ENTERING A WATERWAY. SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. SUCH SEDIMENTATION CONTROL DEVICES SHALL INCLUDE BUT NOT BE LIMITED TO PROTECTIVE DITCHES, SEDIMENT TRAPS, SEDIMENT FILTERS, DITCH TRAPS, TIRE BARRIERS, AND FILTERS AS DETAILED AND REQUIRED AND INDICATED ON THE DRAWINGS. AFTER THE PROJECT WORK HAS BEEN COMPLETED, INSPECTED AND APPROVED, THE CONTRACTOR SHALL REMOVE ALL SEDIMENTATION CONTROL DEVICES MATERIAL AND THEIR COLLECTED SILT AND DEBRIS AND RESTORE THE AREA IN ACCORDANCE WITH THE DRAWINGS.

IF SEASONAL CONDITIONS PREVENT FINAL DRAINAGE AND RESTORATION, THE CONTRACTOR SHALL PROCEED WITH TEMPORARY STABILIZATION OF THE DISTURBED AREA. TEMPORARY STABILIZATION SHALL CONSIST OF SOIL COVERING THE DISTURBED AREA IN ACCORDANCE WITH THESE SPECIFICATIONS. TEMPORARY STABILIZATION MATERIALS SHALL BE REMOVED AND DISPOSED OF AND FINAL CLEANUP AND RESTORATION SHALL BE COMPLETED LATER THAN 30 DAYS AFTER SEASONAL CONDITIONS ALLOW PERFORMANCE OF THE REQUIRED WORK.

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

GRAVEL ACCESS APPROACH

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

INLET PROTECTION FABRIC DROP

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

EROSION CONTROL SILT FENCE

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

BUTT JOINT DETAIL

N.T.S.

UNDERDRAIN DETAIL

N.T.S.

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

ALLEY RETURN OR COMMERCIAL DRIVE APPROACH

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

TREE PLANTING

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

SOIL EROSION AND SEDIMENTATION CONTROL GENERAL NOTES

1. THE CONTRACTOR SHALL MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROL DEVICES THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.

2. MAINTENANCE INCLUDES ALL WORK NECESSARY FOR PROPER OPERATION OF THE DEVICES WHICH CAN NOT BE REPAIRED MAY NEED TO BE REPLACED. MAINTENANCE OF THE DEVICES SHALL BE PERFORMED WITHIN 24 HOURS OF INSPECTION.

3. SEDIMENT SHALL BE REMOVED AS NECESSARY TO MAINTAIN THE EFFECTIVENESS OF SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.

4. SEDIMENT DEPOSITED ALONG SILT FENCE SHALL BE REMOVED WHEN IT REACHES 18 TO 20 THE HEIGHT OF THE FENCE.

5. IF USE ESTABLISHMENT MEASURES SHALL BE MAINTAINED AS WOULD ANY OTHER DEVICES PRIOR TO ESTABLISHMENT OF PERMANENT USE.

6. ALL MUD DIRT AND DEBRIS TRACKED OFF OF EXISTING ROADS FROM THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.

7. CONTRACTOR SHALL ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES PROTECT AGAINST LOSS OF SOIL BY THE ACTION OF WIND OR SOIL CARRY-OFF WIND.

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

UTILITIES

AT LEAST 72 HOURS (3 WORKING DAYS) PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY MISS DIG AND THE LOCAL COMMUNITY (WHERE APPLICABLE) TO STAKE LOCATIONS OF EXISTING UTILITIES.

THE CONTRACTOR SHALL EXPOSE AND VERIFY EXISTING UTILITIES FOR LOCATION, SIZE, DEPTH, MATERIAL AND CONFIGURATION PRIOR TO CONSTRUCTION. COSTS FOR EXPOSURE, EXCAVATION IS AN INCIDENTAL COST AND SHALL NOT BE CONSIDERED AN EXTRA TO THE CONTRACT.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY EXISTING UTILITIES WHICH DO NOT MATCH THE PLANS AND SPECIFICATIONS PRIOR TO COMMENCING WORK. ANY FIELD CHANGES OF THE PROPOSED UTILITIES SHALL BE APPROVED BY THE OWNER AND ENGINEER BEFORE THE WORK IS DONE.

THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE. ANY SERVICE OR UTILITY DAMAGED OR REMOVED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR, IN CONFORMANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY PROVIDER.

MAINTENANCE OF TRAFFIC

DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL ACCOMMODATE BOTH VEHICULAR AND PEDESTRIAN TRAFFIC IN THE ROAD RIGHTS OF WAY. THE CONTRACTOR SHALL PROVIDE ALL SIGNS, BARRICADES, FLAG PERSONS AND OTHER TRAFFIC CONTROL MEASURES AS REQUIRED BY MOU, THE COUNTY, OR THE COMMUNITY HAVING JURISDICTION OF THE ROAD AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

IN ADDITION, WHERE THE WORK REQUIRES THE CLOSURE OF ONE OR MORE LANES OR IS WITHIN THE INFLUENCE OF THE ROAD OR PEDESTRIAN RIGHT OF WAY, THE CONTRACTOR SHALL PROVIDE ALL SIGNS, BARRICADES, FLAG PERSONS AND OTHER TRAFFIC CONTROL MEASURES AS REQUIRED BY MOU, THE COUNTY, OR THE COMMUNITY HAVING JURISDICTION OF THE ROAD AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

COMPENSATION FOR TRAFFIC CONTROL SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE(S) UNLESS SPECIFIC TRAFFIC CONTROL ITEMS ARE INCLUDED IN THE ACCEPTED BID PROPOSAL.

DAMAGE TO PRIVATE PROPERTY

ALL SIDEWALKS, DRIVEWAYS, LAWNS, FENCING, TREES, SHRUBS, SPRINKLERS, LANDSCAPING, ETC., THAT ARE DAMAGED DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED, IN KIND OR BETTER, BY THE CONTRACTOR. ALL STREET SIGNS, MAIL BOXES, ETC., REMOVED SHALL BE REPLACED IN KIND OR BETTER, BY THE CONTRACTOR. ALL THE REPAIRS OR REPLACEMENTS DUE TO THE CONTRACTOR'S WORK ARE TO BE INCLUDED IN THE CONTRACT PRICE(S) AND SHALL NOT BE AN EXTRA TO THE CONTRACT.

THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM ADJACENT PROPERTY OWNERS PRIOR TO ENTERING UPON ANY ADJACENT PROPERTY UNLESS OTHERWISE SPECIFIED IN WRITING ALREADY OBTAINED BY THE OWNER AND ARE PART OF THE CONTRACT DOCUMENTS.

SUB-SOIL CONDITIONS

ANY SOIL BORING PROVIDED BY THE OWNER AND/OR ENGINEER IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THIS INFORMATION IS NOT OFFERED AS EVIDENCE OF GROUND CONDITIONS THROUGHOUT THE PROJECT AND ONLY REFLECTS THE GROUND CONDITIONS AT THE LOCATION OF THE BORING ON THE DATE THEY WERE TAKEN.

THE ACCURACY AND RELIABILITY OF THE SOIL LOGS AND REPORT ARE NOT WARRANTED OR GUARANTEED IN ANY WAY BY THE OWNER OR ENGINEER AS TO THE SUB-SOIL CONDITIONS FOUND ON THE SITE. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION AND SUB-SOIL INVESTIGATION AND SECURE OTHER SUCH INFORMATION AS THE CONTRACTOR CONSIDERS NECESSARY TO DO THE WORK PROPOSED AND IN PREPARATION OF THEIR BID.

SUBGRADE UNDERCUTTING AND PREPARATION

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY AND ALL SOILS WHICH DO NOT CONFORM TO THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A SUBGRADE IN CONFORMANCE WITH THE PROJECT PLANS AND/OR SPECIFICATIONS. THE MEANS AND METHODS USED TO ACHIEVE THE REQUIRED RESULT SHALL REST SOLELY WITH THE CONTRACTOR.

ANY AREAS OF UNDERCUTTING THAT RESULT IN ADDITIONAL OR EXTRA WORK BECAUSE THEY COULD NOT BE IDENTIFIED BY THE CONTRACTOR'S PRE-BID SITE OBSERVATION OR ARE NOT SET FORTH IN THE PLANS AND SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER BEFORE ANY EXTRA WORK IS PERFORMED. THE CONTRACTOR SHALL MAKE A REQUEST FOR ANY ADDITIONAL COMPENSATION FOR THE UNDERCUTTING IN WRITING AND THE REQUEST SHALL CONFORM TO THE CONTRACT'S CHANGE ORDER PROVISIONS.

MEANS AND METHODS FOR PIPE CONSTRUCTION

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MEANS AND METHODS FOR CONSTRUCTING THE UNDERGROUND PIPE SYSTEMS PROPOSED ON THE PLANS, INCLUDING BUT NOT LIMITED TO THE NEED FOR SHORING/BRACING OF TRENCHES, EXCAVATING OF TRENCHES, SCHEDULING THE WORK AT OFF PEAK HOURS, AND/OR MAINTAINING EXISTING FLOWS THAT MAY BE ENCOUNTERED VIA PUMPING, BY-PASS PIPING OR OTHER MEANS. THE CONTRACTOR SHALL NOT BE PAID ANY ADDITIONAL COMPENSATION TO IMPLEMENT ANY MEANS AND METHODS TO SATISFACTORILY COMPLETE THE CONSTRUCTION.

EARTH BALANCE / GRADING

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHETHER THE SITE EARTHWORK BALANCES OR NOT. ANY EXCESS CUT MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR. IN A LIKE MANNER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMPORT APPROVED FILL MATERIAL AND PLACE IT AS REQUIRED TO ATTAIN THE SITE GRADE AND COMPACTION REQUIREMENTS PER THE ENGINEER'S PLAN AND ALL APPLICABLE GOVERNMENTAL STANDARDS. THE ENGINEER AND OWNER MAKE NO REPRESENTATION AS TO THE QUANTITIES THAT MAY BE NEEDED TO CREATE A BALANCED EARTHWORK CONDITION OR THAT THE SITE EARTHWORK IS BALANCED.

UTILITY CROSSING STONE ENCASEMENT DETAIL

N.T.S.

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

PR. STORM CROSS-SECTION

N.T.S.

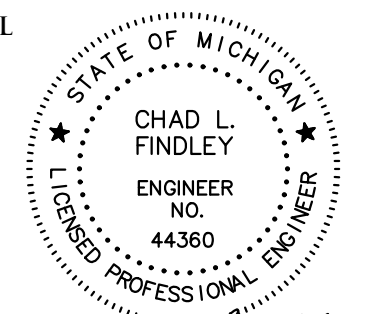
CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

EX. SEWER CROSS-SECTION

N.T.S.

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION SHEET 1 OF 1 DATE 03/15/22

SEAL



Chad Findley

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Michigan

SHEET
Notes and Details
Sheet 2



DATE ISSUED/REVISED

DRAWN BY:
J. Klenk
PROJECT MANAGER:
J. Klenk
APPROVED BY:
C. Findley
DATE:
March 15, 2022
SCALE: N.T.S.

SIZE OF PIPE (IN)	A MIN. (FT)	B MIN. (FT)	C (FT)	D (FT)	E (FT)	F (FT)	G (FT)
8	1.92	0.76	1.17	2.00	1.28	1.90	0.76
10	2.40	0.76	1.17	2.00	1.90	2.00	1.00
12	2.88	0.76	1.33	4.00	2.00	3.00	1.50
16	2.87	1.00	1.87	5.00	2.50	4.00	2.00

NOTES:
1. THE THRUST BLOCK FACE SHALL BE FOURED AGAINST UNDISTURBED EARTH.
2. CLASS B CONCRETE, MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS = 4,000 PSI.
3. THRUST BLOCK TO ABUT OR REST AGAINST UNDISTURBED SOIL OR EARTH COMPACTED TO 90% MODIFIED PROCTOR.
4. THRUST BLOCKS FOR HOPE PIPE SHALL BE PER PIPE MANUFACTURER.

1	UPDATED	06/2020	
REV	DESCRIPTION	DATE	REVISIONS

THRUST BLOCK, PLUGS AND CAPS (TRADITIONAL DWSD SIZING)

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION
SCALE: NONE SHEET: 1 OF 1
DATE: 06/2018 DWG. No.: 33143-03

NOTES:
1. ALL INSTALLATION OR REPLACEMENT WORK FROM PROPOSED WATER MAIN AND TO HYDRANT SHALL BE CONSIDERED A COMPLETE ASSEMBLY.
2. HYDRANT TO BE A MINIMUM OF 3 FEET BEHIND CURB.
3. THRUST BLOCKS TO BE SIZED ACCORDING TO THRUST BLOCK STANDARD DETAIL DRAWING.
4. SEE TRENCH DETAIL FOR BACKFILL AND COMPACTION.
5. SEE DETAIL 30419-08 FOR TRACER WIRE INSTALLATION.
6. PUMPER NOZZLE SHALL FACE STREET.
7. TAPPING SLEEVE & VALVE SHALL NOT BE USED TO ESTABLISH A HYDRANT CONNECTION TO THE WATER MAIN.
8. UNDER NO CIRCUMSTANCES SHALL A WATER SERVICE BE TAPPED OFF OF THE 6-INCH DI HYDRANT SERVICE PIPE.

1	UPDATED	06/2020	
REV	DESCRIPTION	DATE	REVISIONS

HYDRANT, 6 INCH INSTALLATION STRAIGHT AWAY

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION
SCALE: NONE SHEET: 1 OF 1
DATE: 06/2018 DWG. No.: 33149-03

I.D. PIPE SIZE (INCHES)	LESS THAN 18	21	21	30	36	42	48	54	60	66	72
MINIMUM TRENCH WIDTH (FEET)	3.00	3.50	4.00	5.00	6.00	7.00	8.00	9.50	10.00	10.50	11.00

STANDARD TRENCH DETAIL FOR SEWER UNDER ROAD BED, PARKING LOTS, SIDEWALKS, DRIVEWAYS, CURBS, GRAVEL ROADS AND ALLEYS

1	UPDATED	06/2020	
REV	DESCRIPTION	DATE	REVISIONS

SANITARY SEWER TRENCH DETAIL

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION
SCALE: NONE SHEET: 1 OF 1
DATE: 06/2018 DWG. No.: 31233-01

NOTES:
1. REFER TO DETAIL SHEET 330691-06 FOR MANHOLE ASSEMBLY TABLE **
2. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ALL THE REQUIREMENTS OF *SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE RISERS AND TOPS* ASTM C-478 WITH SINGLE OFF-SET JOINT CONFORMS TO ASTM C-443.
3. EACH SECTION SHALL HAVE NOT MORE THAN TWO HOLES FOR HANDLING PURPOSES. THESE HOLES SHALL BE SATISFACTORILY PLUGGED WITH GROUT AFTER INSTALLATION.

1	UPDATED	06/2020	
REV	DESCRIPTION	DATE	REVISIONS

STANDARD MANHOLE PRECAST

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION
SCALE: NONE SHEET: 1 OF 1
DATE: 06/2018 DWG. No.: 330691-02

NOTE:
EAST JORDAN 00104000.01 ERGO COVER AND FRAME OR APPROVED EQUAL.

1	UPDATED	06/2020	
REV	DESCRIPTION	DATE	REVISIONS

MANHOLE FRAME AND COVER WITH LOGO - SEWER

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION
SCALE: NONE SHEET: 1 OF 1
DATE: 06/2018 DWG. No.: 330691-03

REPAIR MANHOLE OPENING, AS NEEDED, AND FILL ANNULAR SPACE WITH NON-SHRINK GROUT FOR A WATER-TIGHT SEAL. CONNECT BOOT TO MANHOLE WALL PER MANUFACTURER'S SPECIFICATIONS.

1	UPDATED	06/2020	
REV	DESCRIPTION	DATE	REVISIONS

SEWER PIPE CONNECTION WITH MANHOLE

CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION
SCALE: NONE SHEET: 1 OF 1
DATE: 06/2018 DWG. No.: 33311-07

DISTANCE BETWEEN TRAFFIC SIGNS, "D"

"D" DISTANCES	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
	25	30	35	40	45	50	55	60	65	70	75
D (FEET)	250	300	350	400	450	500	550	600	650	700	750

GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE, "B"

"B" LENGTHS	SPEED, MPH (PRIOR TO WORK AREA)											
	20	25	30	35	40	45	50	55	60	65	70	75
B (FEET)	33	50	83	132	181	230	279	329	411	476	542	625

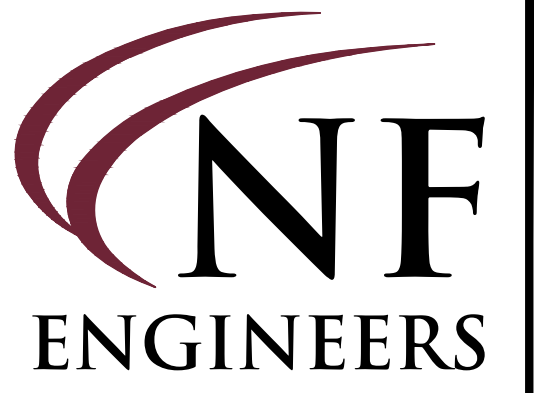
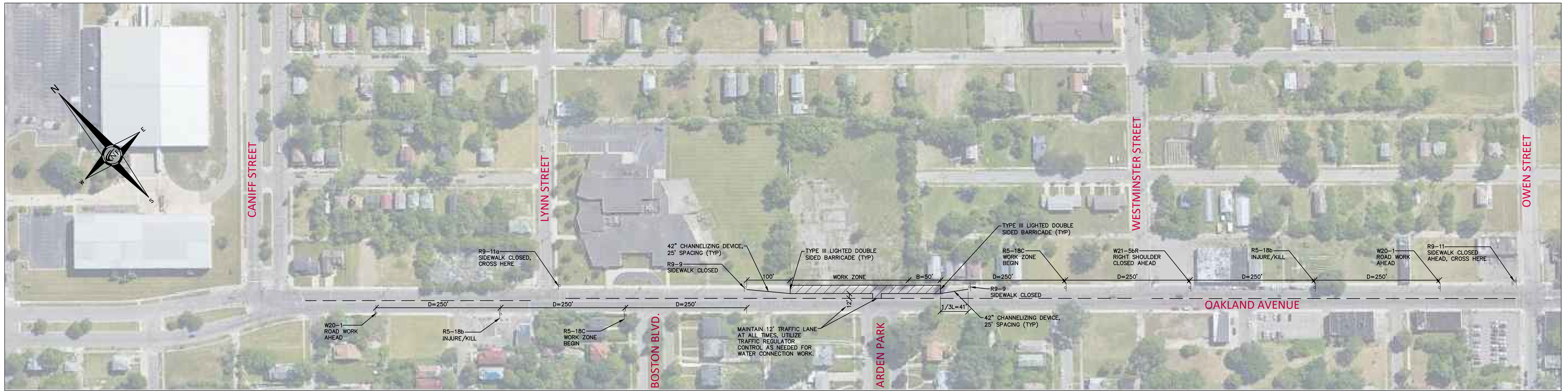
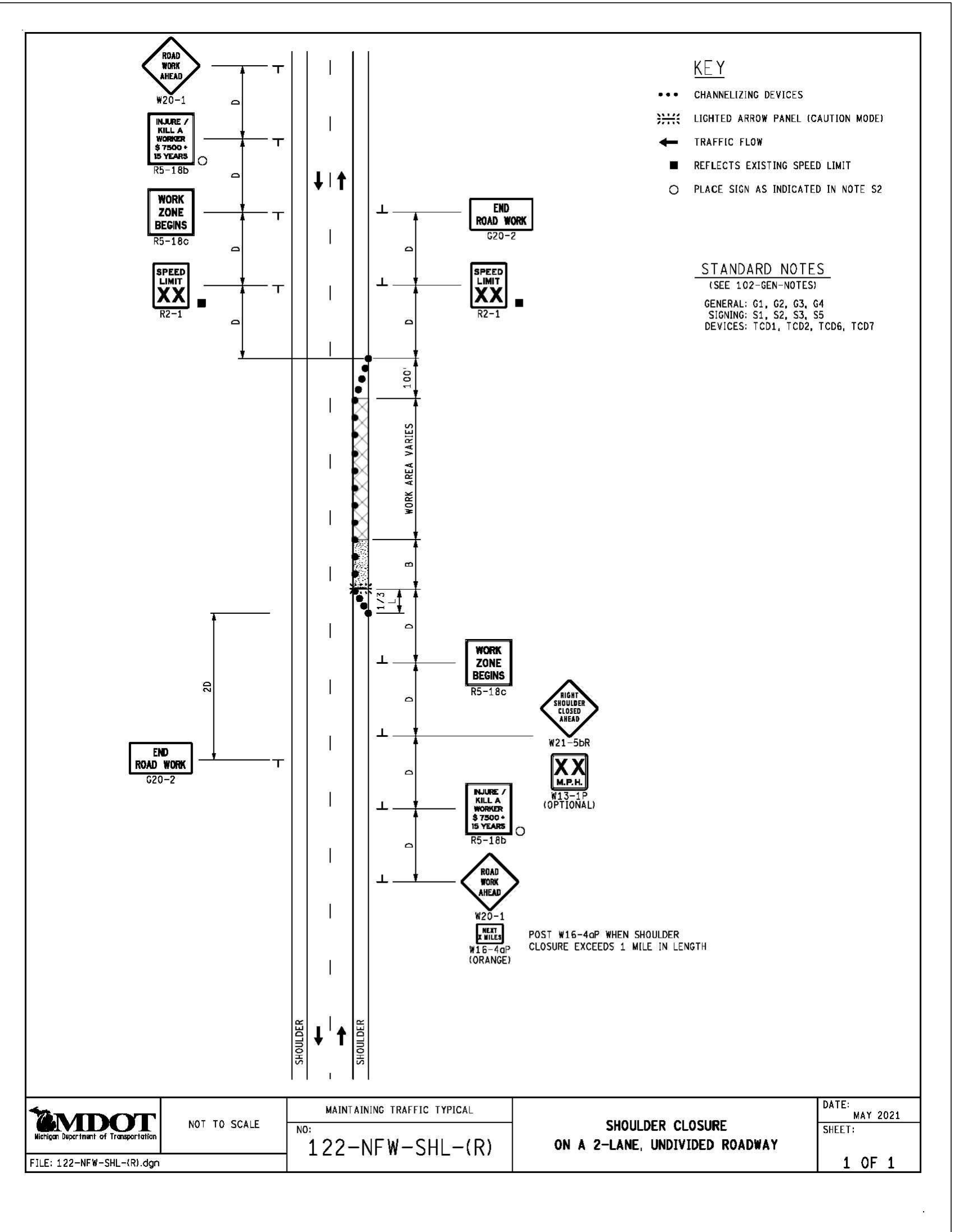
* POSTED SPEED, OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED.

MINIMUM MERGING TAPER LENGTH, "L" (FEET)

OFFSET (FEET)	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
	25	30	35	40	45	50	55	60	65	70	75
1	11	15	21	27	45	50	55	60	65	70	75
2	21	30	41	54	90	100	110	120	130	140	150
3	32	45	62	80	135	150	165	180	195	210	225
4	42	60	82	107	180	200	220	240	260	280	300
5	53	75	103	134	225	250	275	300	325	350	375
6	63	90	123	160	270	300	330	360	390	420	450
7	73	105	143	187	315	350	385	420	455	490	525
8	84	120	164	214	360	400	440	480	520	560	600
9	94	135	184	240	405	450	495	540	585	630	675
10	105	150	205	267	450	500	550	600	650	700	750
11	115	165	225	294	495	550	605	660	715	770	825
12	125	180	245	320	540	600	660	720	780	840	900
13	136	195	266	347	585	650	715	780	845	910	975
14	146	210	286	374	630	700	770	840	910	980	1050
15	157	225	307	400	675	750	825	900	975	1050	1125

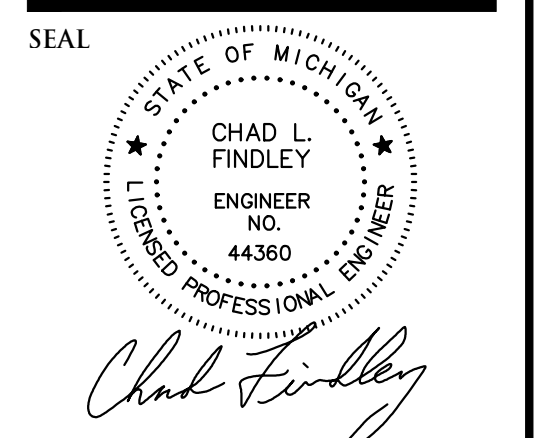
NOT TO SCALE

AMDOT Michigan Department of Transportation	NOT TO SCALE	MAINTAINING TRAFFIC TYPICAL	DATE: MAY 2021
FILE: 101-GEN-SPACING-CHARTS.dgn	NO: 101-GEN-SPACING-CHARTS	"B", "D" AND "L" TABLES CHANNELIZING DEVICE SPACING, SIGN BORDER KEY, AND ROLL-AHEAD SPACING	SHEET: 1 OF 3



**CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS**

NOWAK & FRAUS ENGINEERS
28 WEST ADAMS, SUITE 210
DETROIT, MI 48226
TEL. (313) 965-2444
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM



PROJECT
A-Team Snow Removal Site
9700 Oakland Ave.

CLIENT
A-Team Snow Removal
459 Antoinette St.
Detroit, MI 48202

CONTACT
San Grillo, Vice President
Tel: 586-531-3687
Email:
sam.grillo@a-teamsnowremoval.com

PROJECT LOCATION
9700 Oakland Ave.
City of Detroit,
Wayne County,
Michigan

SHEET
Traffic Control Plan



DATE	ISSUED/REVISED

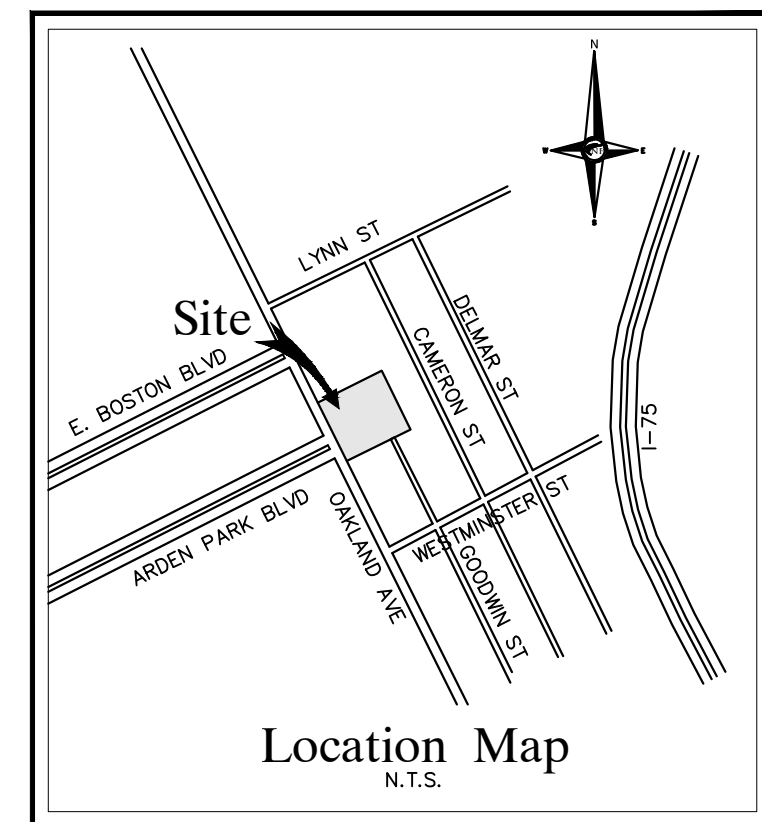
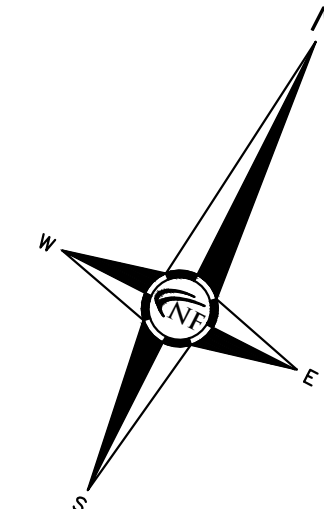
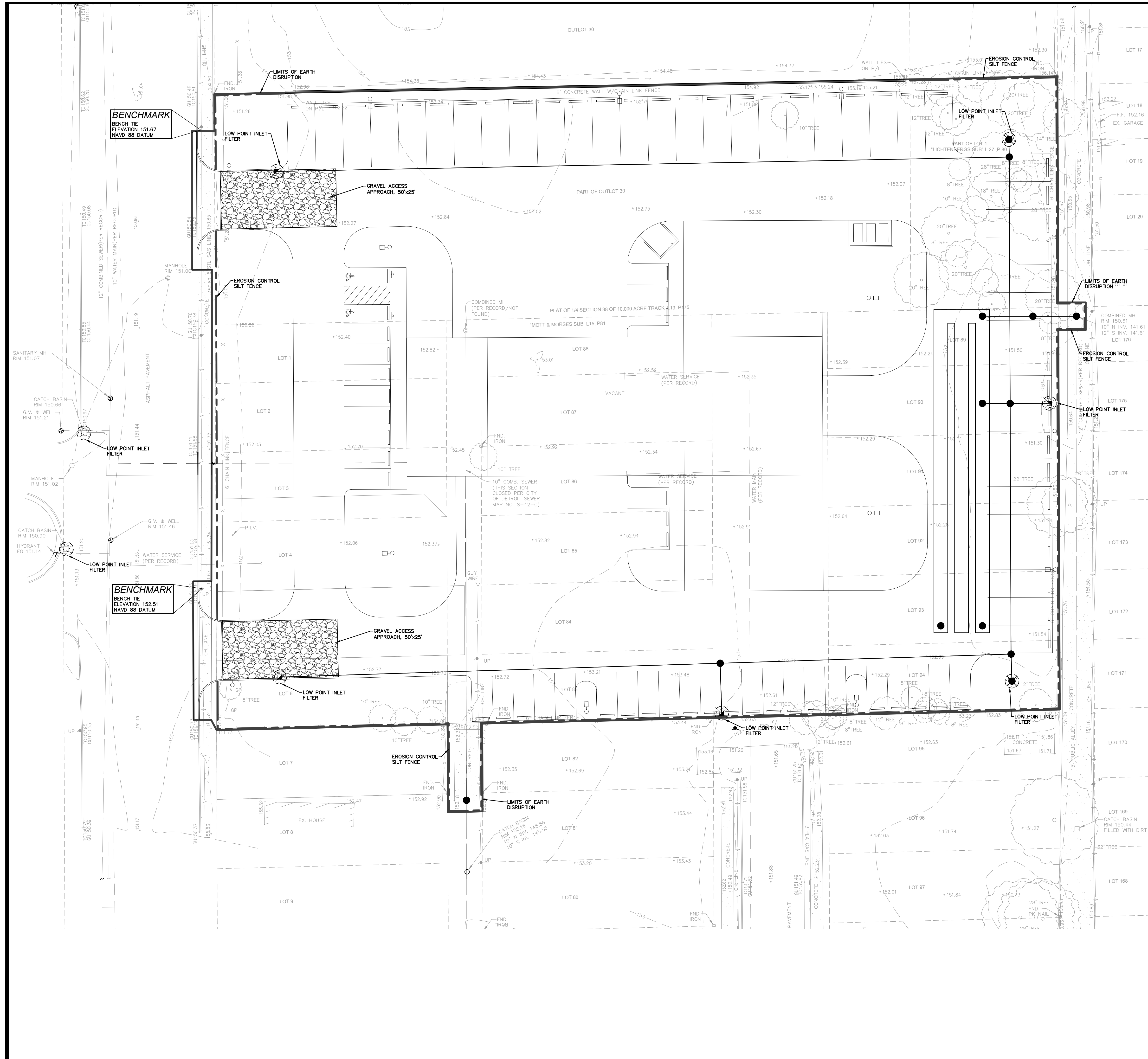
DRAWN BY:
J. Klenk

PROJECT MANAGER:
J. Klenk

APPROVED BY:
C. Findley

DATE:
March 15, 2022

SCALE: N.T.S.

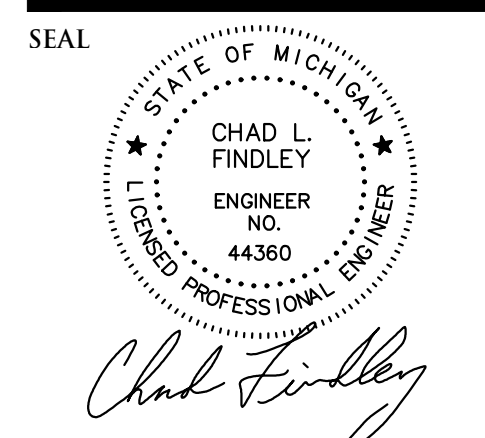


NF ENGINEERS
 CIVIL ENGINEERS
 LAND SURVEYORS
 LAND PLANNERS

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SOIL EROSION CONTROL - SEQUENCE OF OPERATION (NEW CONSTRUCTION)

- INSTALL CRUSHED CONCRETE ACCESS DRIVE AS INDICATED ON THE PLANS.
- INSTALL SILT FENCE OR SIMILAR APPROVED SILT BARRIER ALONG PROPERTY LINES AND AROUND SENSITIVE NATURAL FEATURES AS INDICATED ON THE PLANS.
- IF INDICATED ON CONSTRUCTION PLANS, SEDIMENTATION BASINS, DETENTION POND, ETC., SHALL BE CONSTRUCTED PRIOR TO THE INSTALLATION OF ANY OTHER WORK.
- STRIP EXISTING TOPSOIL, VEGETATION AND ORGANIC MATTER FROM BUILDING PAD AND PARKING AREAS. COMMENCE LAND BALANCE AND MASS GRADING OPERATIONS. MAINTAIN A MINIMUM BUFFER OF 15' OF EXISTING VEGETATION WHEREVER POSSIBLE AROUND SITE PERIMETER. STOCK PILES SHOULD BE LOCATED AWAY FROM EXISTING DRAINAGE FACILITIES.
- EXCAVATE AND INSTALL UNDERGROUND UTILITIES. INSTALL PEASTONE INLET FILTERS AROUND ALL NEW STORM SEWER FACILITIES AS INDICATED ON THE PLANS. EXISTING AND PROPOSED STORM SEWER FACILITIES SHALL BE PROTECTED FROM EROSION AND SEDIMENT INFILTRATION AT ALL TIMES.
- COMMENCE FINAL GRADING AND TRIMMING OPERATIONS. PREPARE SUBGRADE FOR INSTALLATION OF PROPOSED PAVEMENT.
- SEED AND MULCH ALL DISTURBED SITE AREAS AND INSTALLED SITE LANDSCAPING.
- REMOVE CONSTRUCTION DEBRIS AND JET VAC NEWLY INSTALLED STORM SEWER SYSTEM AS REQUIRED BY THE MUNICIPALITY.
- REMOVE ALL REMAINING TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ONCE PERMANENT MEASURES ARE ESTABLISHED.
- WHENEVER POSSIBLE, THE SITE SHALL BE GRADED TO WITHIN SIX INCHES (6") OF THE PROPOSED FINISH GRADE PRIOR TO INSTALLATION OF UNDERGROUND FACILITIES.
- STAGING OF PROPOSED WORK SHALL BE COMPLETED BY THE CONTRACTOR AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED AREAS.



PROJECT
 A-Team Snow Removal Site
 9700 Oakland Ave.

CLIENT
 A-Team Snow Removal
 459 Antoinette St.
 Detroit, MI 48202

CONTACT
 San Grillo, Vice President
 Tel: 586-531-3687
 Email:
 sam.grillo@a-teamsnowremoval.com

PROJECT LOCATION
 9700 Oakland Ave.
 City of Detroit,
 Wayne County,
 Michigan

SHEET
 Soil Erosion Control Plan



NOTES

REFER TO THE CITY OF DETROIT SOIL EROSION AND SEDIMENTATION CONTROL DETAIL SHEET FOR ALL ADDITIONAL NOTES & DETAILS (TYP)

A DISTANCE OF 4.70 MILES TO THE NEAREST BODY OF WATER, THE DETROIT RIVER.

THE TOTAL AREA OF EARTH DISRUPTION IS 2.35 ACRES.

THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE CONTRACTOR.

A SOIL EROSION PERMIT IS REQUIRED FROM THE CITY OF DETROIT.

SOIL DATA

THIS SITE CONSISTS OF 93.1% ShubbB; SHEBEON-URBAN LAND-AVOCA COMPLEX, 0 TO 4 PERCENT SLOPES and 6.9% Tedubb; TEDROW-URBAN LAND COMPLEX, DENSE SUBSTRATUM, 0 TO 4 PERCENT SLOPES

BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, AS ACCESSED FEBRUARY 28, 2022.

ESTIMATED QUANTITIES

DESCRIPTION	QUANTITY	UNITS
SILT FABRIC FENCING	1,051	L.F.
INLET FILTER	6	E.A.
GRAVEL ACCESS APPROACH	278	SY.

LEGEND

- INDICATES LIMITS OF SILT FABRIC FENCE
- - - - - INDICATES LIMITS OF DRAINAGE DISTRICT AREA
- INDICATES LIMITS OF SOIL DISRUPTION
- INDICATES LOW POINT INLET FILTER OR PROPOSED DRAINAGE STRUCTURE

DATE	ISSUED/REVISED

DRAWN BY:
 J. Klenk

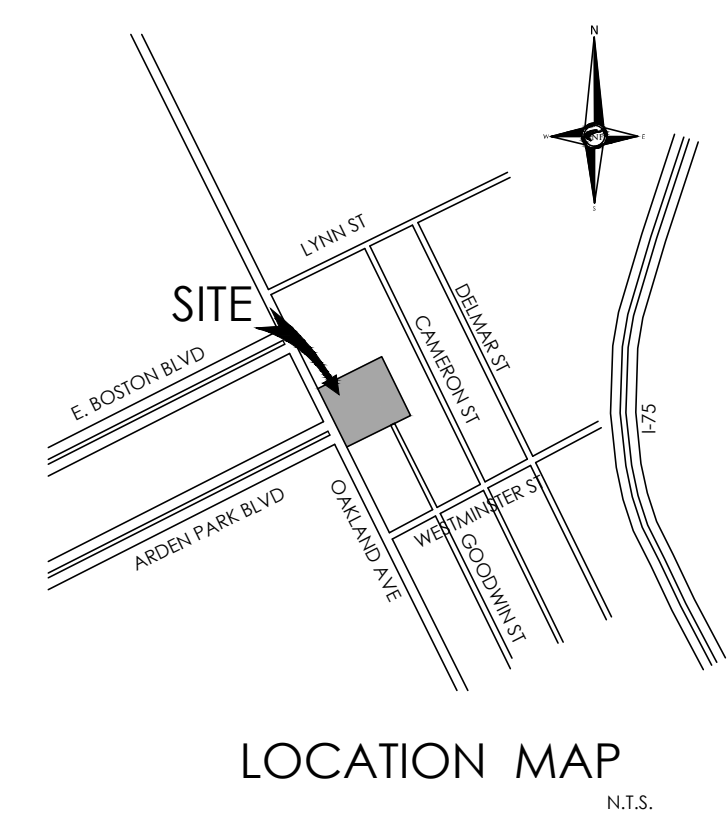
PROJECT MANAGER:
 J. Klenk

APPROVED BY:
 C. Findley

DATE:
 March 15, 2022

SCALE: 1" = 20'

NFE JOB NO. **M774** SHEET NO. **C14**



GENERAL LANDSCAPE NOTES

- LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, THE PLAN SHALL GOVERN QUANTITIES, CONTACT THE LANDSCAPE ARCHITECT WITH ANY CONCERNS.
- THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ANY DAMAGE OR INTERFERENCE OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES, AND SHALL REPORT ANY UNACCEPTABLE SITE CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT.
- PLANTS SHALL BE FULLY WELL-BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
- PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
- ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) YEAR FOLLOWING PLANTING.
- ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK".
- CONTRACTOR WILL SUPPLY FINISHED GRADE AND EXCAVATE AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS AND A DEPTH OF 4" IN ALL LAWN AREAS.
- PROVIDE CLEAN BACKFILL SOIL, USING MATERIAL STOCKPILED ON-SITE. SOIL SHALL BE SCREENED AND FREE OF DEBRIS, FOREIGN MATERIAL AND STONE. SLOW-RELEASE FERTILIZER SHALL BE ADDED TO THE PLANT MIX BEFORE BEING BACKFILLED. APPLICATION SHALL BE AT THE MANUFACTURER'S RECOMMENDED RATES.
- AMENDED PLANT MIX (PREPARED TOPSOIL) SHALL CONSIST OF 1/3 SCREENED TOPSOIL, 1/3 SAND, AND 1/3 "DARBY DOO" COMPOST, MIXED WELL AND SPREAD TO A DEPTH AS INDICATED IN PLANTING DETAILS.
- ALL PLANTINGS SHALL BE MULCHED WITH SHREDDED HARDWOOD BARK. SPREAD TO A DEPTH OF 3" FOR TREES AND SHRUBS, AND 2" ON ANNUALS, PERENNIALS, AND CROICUS/COVER PLANTS. MULCH SHALL BE FREE FROM DEBRIS AND FOREIGN MATERIAL, AND PIECES ON INCONSISTENT SIZE.
- NO SUBSTITUTIONS OR CHANGES OF LOCATION, OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
- THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO INSTALLATION.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A VERTICAL POSITION THROUGHOUT THE GUARANTEED PERIOD.
- THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS AND/OR SPECIFICATIONS.
- THE LANDSCAPE CONTRACTOR SHALL SEED AND MULCH OR SOO (AS INDICATED ON PLANS) ALL AREAS DESIGNATED AS SUCH ON THE PLANS, THROUGHOUT THE CONTRACT LIMITS. FURTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING AREAS DISTURBED DURING CONSTRUCTION, NOT IN THE CONTRACT LIMITS, TO EQUAL OR GREATER CONDITION.
- ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
- ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND SYSTEM.



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Email:
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PROJECT LOCATION
9700 Oakland Ave.
City of Detroit,
Wayne County,
Michigan

SHEET
Landscape Plan



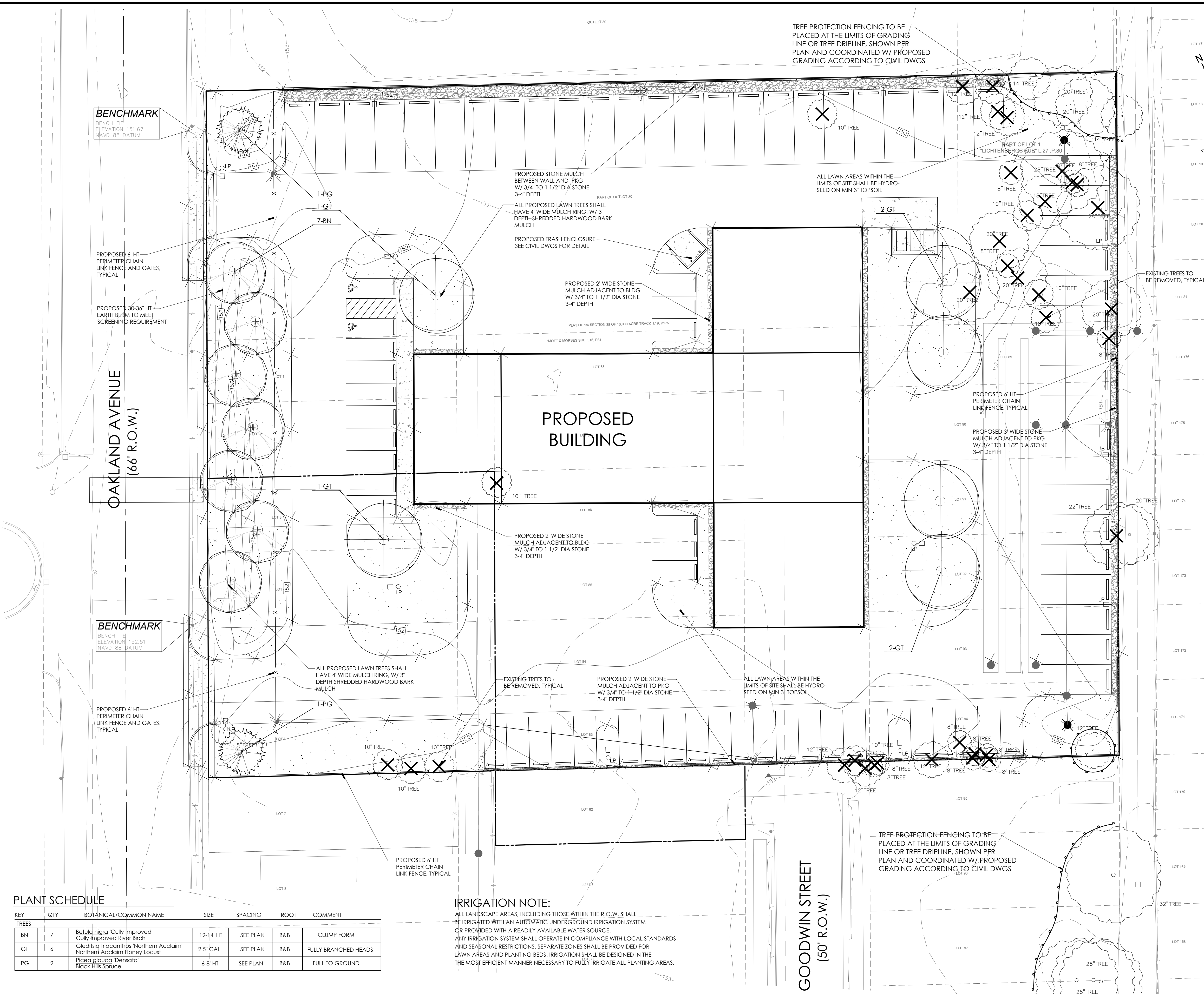
DATE	ISSUED/REVISED

DRAWN BY:
G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski

DATE:
February 10, 2022

SCALE: 1" = 20'
0 10 20 30

NFE JOB NO. M774 SHEET NO. L1



PLANT SCHEDULE

KEY	QTY	BOTANICAL/COMMON NAME	SIZE	SPACING	ROOT	COMMENT
BN	7	Betula nigra Cully Improved Cully Improved River Birch	12-14' HT	SEE PLAN	B&B	CLUMP FORM
GT	6	Gleditsia triacanthos Northern Acclaim Northern Acclaim Honey Locust	2.5' CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
PG	2	Picea glauca 'Demora' Black Hills Spruce	6-8' HT	SEE PLAN	B&B	FULL TO GROUND

IRRIGATION NOTE:
ALL LANDSCAPE AREAS, INCLUDING THOSE WITHIN THE R.O.W. SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM OR PROVIDED WITH A READILY AVAILABLE WATER SOURCE. ANY IRRIGATION SYSTEM SHALL OPERATE IN COMPLIANCE WITH LOCAL STANDARDS AND SEASONAL RESTRICTIONS. SEPARATE ZONES SHALL BE PROVIDED FOR LAWN AREAS AND PLANTING BEDS. IRRIGATION SHALL BE DESIGNED IN THE MOST EFFICIENT MANNER NECESSARY TO FULLY IRRIGATE ALL PLANTING AREAS.

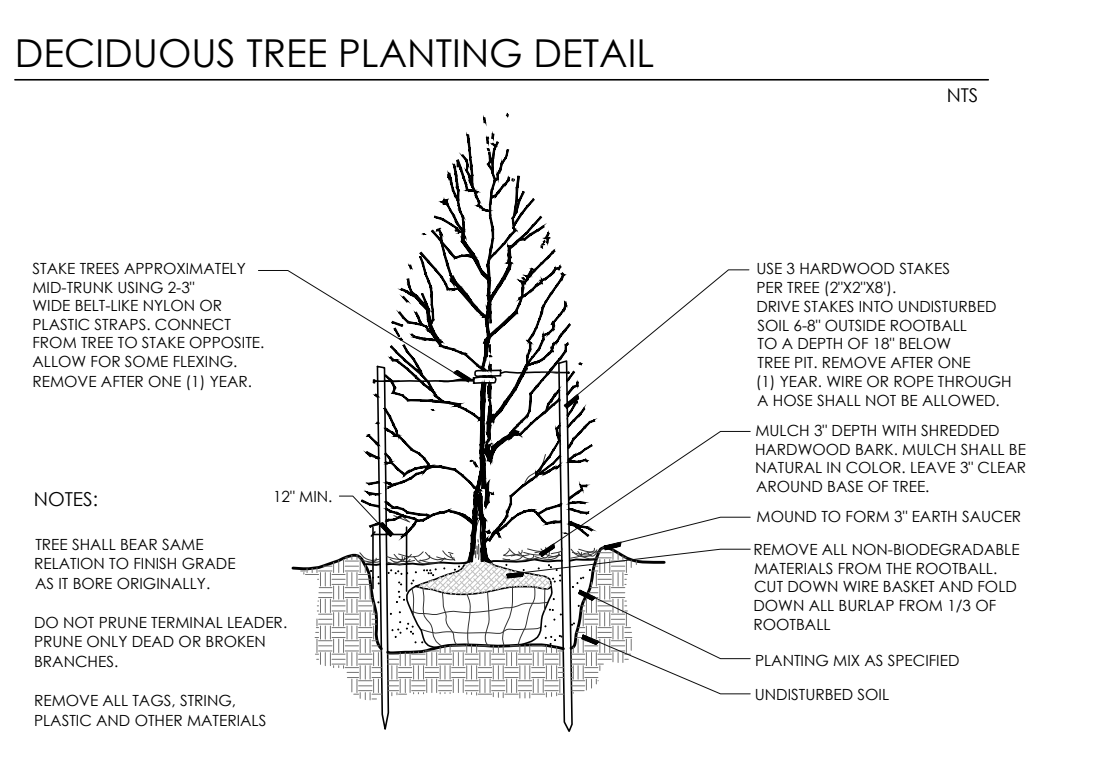
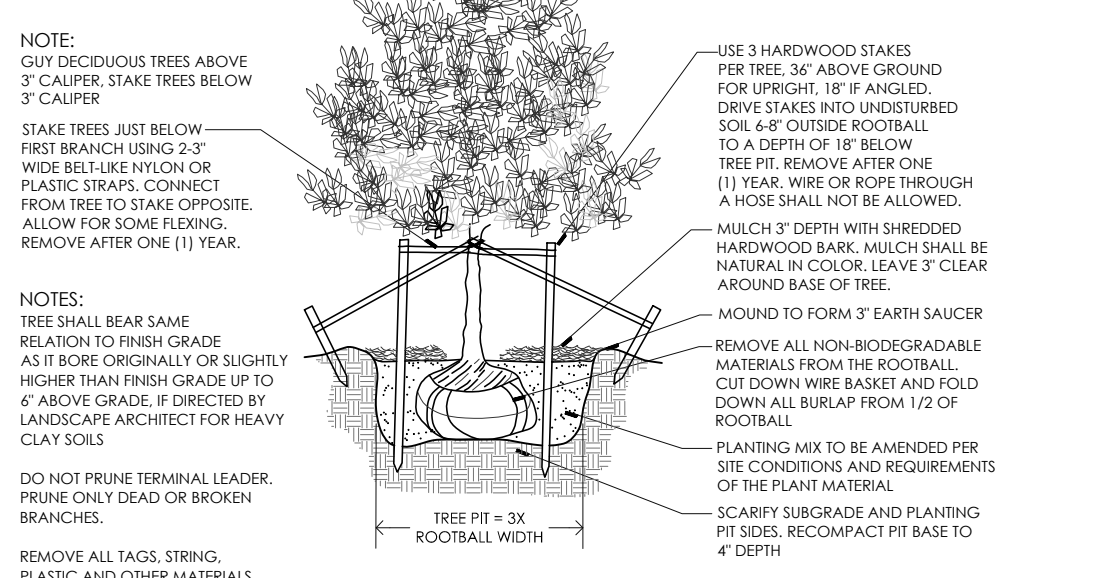
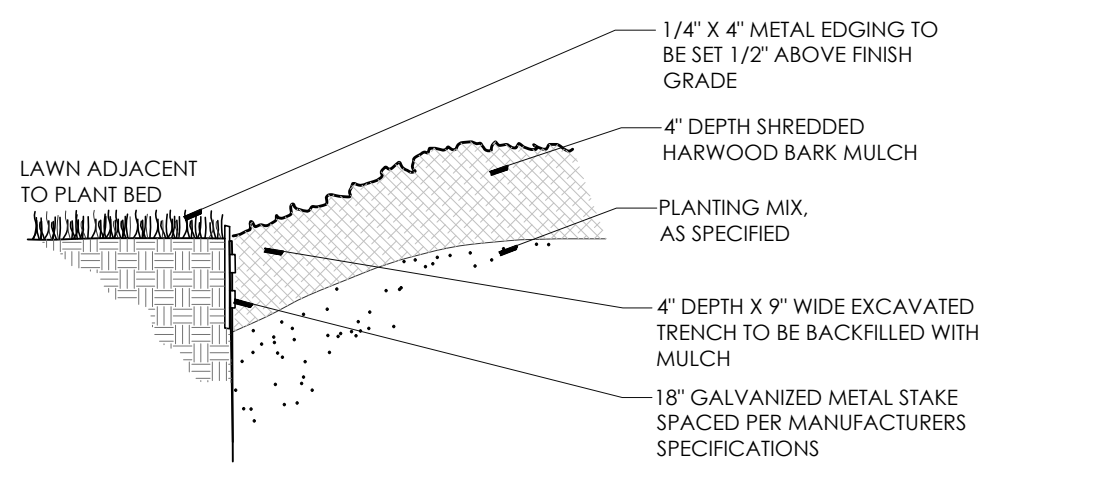
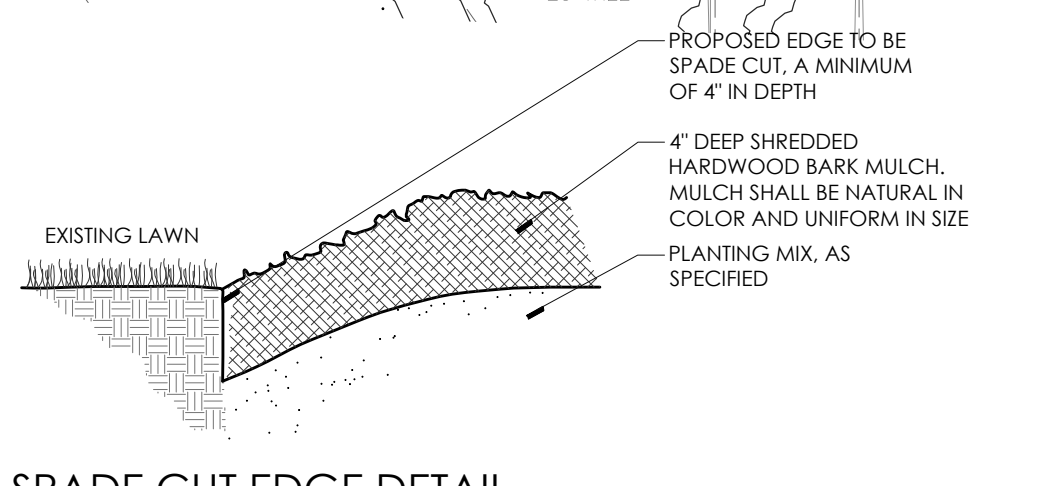
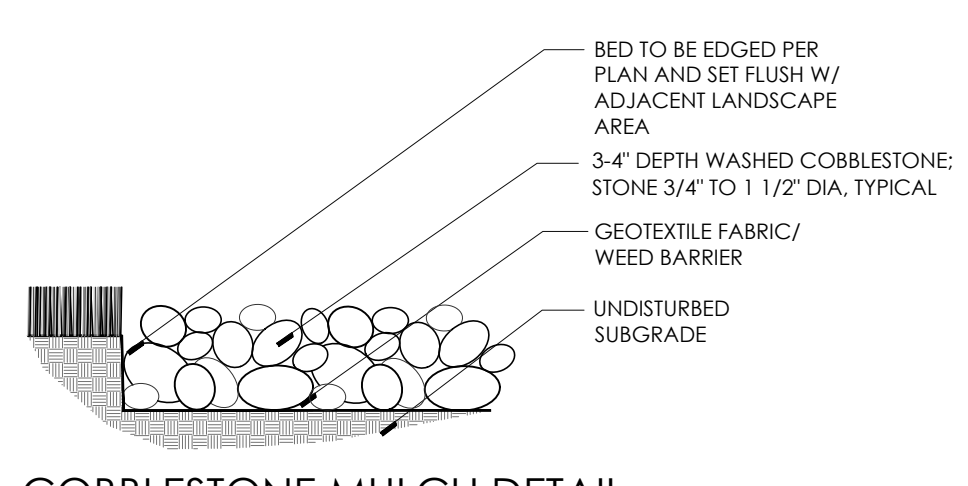
LANDSCAPE REQUIREMENTS
EXISTING SITE ZONING: I-1, LIGHT INDUSTRIAL DISTRICT
EXISTING SITE AREA: 103,942 S.F. OR 2.39 ACRES

R.O.W. SCREENING
1 DECIDUOUS OR EVERGREEN TREE PER 30 L.F. OF FRONTAGE INCLUDING BERM, WALL OR HEDGE
REQUIRED: 275.30 L.F. OF FRONTAGE / 30 L.F. = 9.18 OR 9 TREES REQUIRED PROVIDED: 9 TREES AND 30'-36" HT BERM

PARKING LOT LANDSCAPE REQUIREMENTS
18 S.F. OF INTERIOR LANDSCAPING FOR EACH PARKING SPACE
1 TREE PER 250 S.F.
82 SPACES X 18 S.F. = 1,476 S.F. REQUIRED
1,476 S.F. / 250 S.F. = 5.9 OR 6 TREES REQUIRED PROVIDED: 10,294 S.F. AND 6 TREES

GENERAL SEED NOTE:
ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDRO-SEEDED WITH SPECIFIED BLENDS, AND STABILIZED WITH WOOD CELLULOSE FIBER MULCH (2,000 LBS PER ACRE) IN AREAS SUBJECT TO EROSION. SEEDED LAWN SHALL BE FURTHER STABILIZED WHERE NECESSARY WITH BIODEGRADABLE EROSION BLANKET AND STAKED UNTIL ESTABLISHED. ALL SEED SHALL BE APPLIED OVER A MINIMUM 3" PREPARED TOPSOIL, AND SHALL BE KEPT MOIST AND WATERED DAILY UNTIL ESTABLISHED. SEEDING INSTALLATION SHALL OCCUR ONLY: SPRING: APRIL TO JUNE! FALL: AUGUST 15 TO OCTOBER 15

TYPICAL SEEDED LAWN MIX:
ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDROSEEDED WITH TYPICAL DROUGHT TOLERANT, DURABLE BLENDED SEED MIX, AT A RATE OF 220 LBS PER ACRE
MIX IS COMPRISED OF:
30% NITE HAWK PERENNIAL RYE
30% KENTUCKY BLUEGRASS
20% CREEPING RED FESCUE
10% MERIT KENTUCKY BLUEGRASS
10% NEWPORT KENTUCKY BLUEGRASS



COBBLESTONE MULCH DETAIL

SPADE CUT EDGE DETAIL

METAL EDGING DETAIL

DECIDUOUS TREE PLANTING DETAIL

EVERGREEN TREE PLANTING DETAIL