Final Engineering
for

PROPOSED HEINEN'S GROCERY STORE

1244 E. CHICAGO AVENUE
CITY OF NAPERVILLE, ILLINOIS

STANDARD SYMBOLS

08-01-16

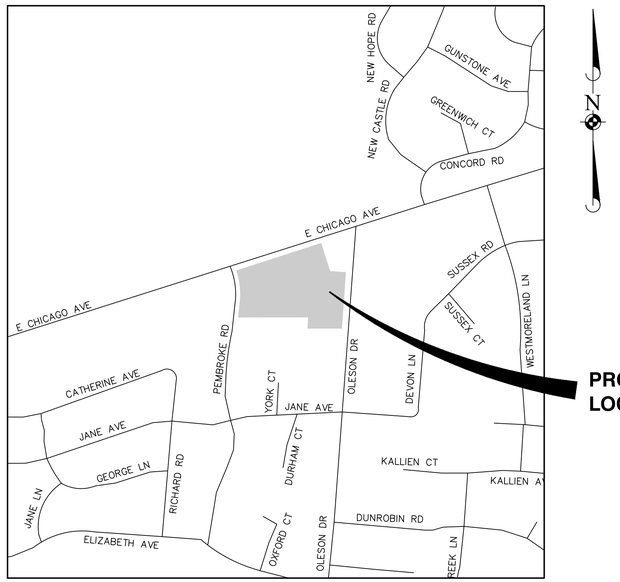
EXISTING		PROPOSED
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
FM	FORCEMAIN	FM
	DRAINTILE	
W	WATER MAIN	W
E	ELECTRIC	E
G	GAS	G
T	TELEPHONE	T
OH	OVERHEAD WIRES	OH
	SANITARY MANHOLE	
	STORM MANHOLE	
	CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	HAY BALES	
	RIP RAP	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	
	BUFFALO BOX	
	FLARED END SECTION	
	STREET LIGHT	
	SUMMIT / LOW POINT	S/L
795.20 / 790.25	RIM ELEVATION / INVERT ELEVATION	795.25 / 790.20
	DITCH OR SWALE	
	DIRECTION OF FLOW	
	OVERFLOW RELIEF SWALE	
764	1 FOOT CONTOURS	764
	CURB AND GUTTER	
	DEPRESSED CURB AND GUTTER	
	REVERSE CURB AND GUTTER	
	SIDEWALK	
	DETECTABLE WARNINGS	
	PROPERTY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	MAIL BOX	
	SIGN	
	TRAFFIC SIGNAL	
	POWER POLE	
	GUY WIRE	
	GAS VALVE	
	HANDHOLE	
E	ELECTRICAL EQUIPMENT	
T	TELEPHONE EQUIPMENT	
	CHAIN-LINK FENCE	
792.8	SPOT ELEVATION	792.8
	BRUSH/TREE LINE	
16"	DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR)	16"
25'	CONIFEROUS TREE WITH HEIGHT IN FEET (TBR)	25'
S	SILT FENCE	S
	RETAINING WALL	
	WETLAND	

ABBREVIATIONS

08-01-16

ADJ	ADJUST	F/L	FLOW LINE	R.O.W.	RIGHT-OF-WAY
AGG.	AGGREGATE	FM	FORCE MAIN	RCP	REINFORCED CONCRETE PIPE
ARCH	ARCHITECT	G	GROUND	REM	REMOVAL
B.A.M.	BITUMINOUS AGGREGATE MIXTURE	G/F	GRADE AT FOUNDATION	REV	REVERSE
B-B	BACK TO BACK	GW	GUY WIRE	RR	RAILROAD
B/C	BACK OF CURB	HDWL	HEADWALL	RT	RIGHT
B/P	BOTTOM OF PIPE	HH	HANDHOLE	SAN	SANITARY
B/W	BACK OF WALK	HWL	HIGH WATER LEVEL	SF	SQUARE FOOT
B-BOX	BUFFALO BOX	HYD	HYDRANT	SHLD.	SHOULDER
BIT.	BITUMINOUS	INL	INLET	SL	STREET LIGHT
BM	BENCHMARK	INV	INVERT	SMH	SANITARY MANHOLE
B.O.	BY OTHERS	IP	IRON PIPE	ST	STORM
C.E.	COMMERCIAL ENTRANCE	LT	LEFT	STA.	STATION
CB	CATCH BASIN	MAX.	MAXIMUM	STD	STANDARD
℄	CENTERLINE	MB	MAILBOX	SW	SIDEWALK
CMP	CORRUGATED METAL PIPE	M/E	MEET EXISTING	SY	SQUARE YARDS
CNTRL	CONTROL	MH	MANHOLE	TBR	TO BE REMOVED
CO	CLEANOUT	MIN.	MINIMUM	T	TELEPHONE
CONC.	CONCRETE	NWL	NORMAL WATER LEVEL	T-A	TYPE A
CY	CUBIC YARD	P.E.	PRIVATE ENTRANCE	T/C	TOP OF CURB
D	DITCH	PC	POINT OF CURVATURE	T/F	TOP OF FOUNDATION
DIA.	DIAMETER	PCC	POINT OF COMPOUND CURVE	T/P	TOP OF PIPE
DIP	DUCTILE IRON PIPE	PGL	PROFILE GRADE LINE	T/W	TOP OF WALK
DWM	DUCTILE IRON WATER MAIN	PI	POINT OF INTERSECTION	T/WALL	TOP OF WALL
DS	DOWNSPOUT	ℙ	PROPERTY LINE	TEMP	TEMPORARY
DT	DRAIN TILE	PP	POWER POLE	TRANS	TRANSFORMER
E	ELECTRIC	PROP.	PROPOSED	V.B.	VALVE BOX
E-E	EDGE TO EDGE	PT	POINT OF TANGENCY	VCP	VITRIFIED CLAY PIPE
ELEV.	ELEVATION	PVC	POLYVINYL CHLORIDE PIPE	V.V.	VALVE VAULT
E/P	EDGE OF PAVEMENT	PVC	POINT OF VERTICAL CURVATURE	WL	WATER LEVEL
EX.	EXISTING	PVI	POINT OF VERTICAL INTERSECTION	WM	WATER MAIN
F.O.	FIELD ENTRANCE	PVT	POINT OF VERTICAL TANGENCY		
F-F	FACE TO FACE	P	PAVEMENT		
F.F.	FINISHED FLOOR	P.U.D.E.	PUBLIC UTILITY & DRAINAGE EASEMENT		
FES	FLARED END SECTION	R	RADIUS		

MANHARD CONSULTING, LTD. IS NOT RESPONSIBLE FOR THE SAFETY OF ANY PARTY AT OR ON THE CONSTRUCTION SITE. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ANY OTHER PERSON OR ENTITY PERFORMING WORK OR SERVICES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR THE JOB SITE SAFETY OF PERSONS ENGAGED IN THE WORK OR THE MEANS OR METHODS OF CONSTRUCTION.



PROJECT LOCATION

LOCATION MAP

N.T.S.

CLIENT:
AODK ARCHITECTURE
14394 DETROIT AVENUE
LAKEWOOD, OHIO 44107

OWNER:
HEINEN'S GROCERY STORE
4540 RICHMOND ROAD
WARRENSVILLE HEIGHTS, OHIO 44128

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
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3	EXISTING CONDITIONS AND DEMOLITION PLAN – SOUTH
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NOTE:

THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A FIELD SURVEY COMPLETED BY MANHARD CONSULTING, LTD. ON JANUARY 19, 2023. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY MANHARD CONSULTING AND THE CLIENT IN WRITING OF ANY DIFFERING CONDITIONS.

BENCHMARKS:

REFERENCE BENCHMARK:
ELEVATIONS AND SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED UTILIZING A TRIMBLE REAL-TIME KINEMATIC (RTK) GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) AND THE TRIMBLE VRS NOW NETWORK. THE OBSERVED ELEVATIONS ARE THE BASIS FOR ALL ELEVATIONS SHOWN HEREON AND THIS INFORMATION HAS NOT BEEN DIRECTLY COMPARED TO ANY OTHER KNOWN OR FIXED BENCHMARK. ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM GEOID18).

SITE BENCHMARK#1:
SOUTHWEST "ARROW" BOLT ON TOP FLANGE OF FIRE HYDRANT LOCATED APPROXIMATELY 35 FEET WEST OF THE CENTERLINE OF OLESEN DRIVE AND 75 FEET SOUTHWEST OF THE INTERSECTION OF EAST CHICAGO AVENUE AND OLESEN DRIVE ALONG THE CENTERLINE OF OLESEN DRIVE.

ELEVATION=754.12' DATUM=NAVD88 (GEOID 18)

SITE BENCHMARK#2:
SOUTHWEST "ARROW" BOLT ON TOP FLANGE OF FIRE HYDRANT LOCATED APPROXIMATELY 155 FEET EAST OF THE CENTERLINE OF PEMBROKE ROAD AND 310 FEET SOUTHWEST OF THE INTERSECTION OF EAST CHICAGO AVENUE AND PEMBROKE ROAD ALONG THE CENTERLINE OF PEMBROKE ROAD.

ELEVATION=755.64' DATUM=NAVD88 (GEOID 18)

SITE BENCHMARK#3:
SOUTHWEST "ARROW" BOLT ON TOP FLANGE OF FIRE HYDRANT LOCATED APPROXIMATELY 40 FEET WEST OF THE CENTERLINE OF OLESEN DRIVE AND 675 FEET SOUTHWEST OF THE INTERSECTION OF EAST CHICAGO AVENUE AND OLESEN DRIVE ALONG THE CENTERLINE OF OLESEN DRIVE.

ELEVATION=757.09' DATUM=NAVD88 (GEOID 18)

CITY OF NAPERVILLE BENCHMARK:
BERNSTEN 3D TOP SECURITY MONUMENT. CONSISTING OF A ⅝" DIA. STAINLESS STEEL DATUM POINT ON THREADED ⅝" BY 4' LONG ROD TOTALING (12') IN LENGTH WITH GREASED TOP SECURITY SLEEVE ENCLOSED IN SAND AND 6" PVC PIPE WITH BMAC 6 ALUMINUM ACCESS COVER.

ELEVATION=733.69 DATUM=NAVD88

UTILITY CONTACTS	
ELECTRIC CITY OF NAPERVILLE 1392 AURORA AVENUE NAPERVILLE, IL 60540 (630) 420-4183 CONTACT: RON RITTER	WATER (REGIONAL) DUPAGE WATER COMMISSION 600E. BUTTERFIELD ROAD ELMHURST, IL 60126 (630) 834-0100 CONTACT:KEN NILES
GAS NICOR 1844 FERRY RD. NAPERVILLE, IL 60563 (630) 388-2362 CONTACT:	WATER (LOCAL) CITY OF NAPERVILLE 180 FORT HILL DR NAPERVILLE, IL 60540 (630) 420-6095 CONTACT:
SEWER (LOCAL) CITY OF NAPERVILLE 400 S. EAGLE ST. NAPERVILLE, IL 60540 (630) 420-6137 CONTACT:	ELECTRICAL (REGIONAL) COMED 2 LINCOLN CENTER OAKBROOK TERRACE, IL 60181 (800) 334-7661 CONTACT:

Call Before You Dig
JULIE ILLINOIS ONE-CALL SYSTEM
Simply Call 811

SEAL

NO.	DATE	REVISIONS	DRAWN BY
6	08-02-24	REVISED PER CITY OF NAPERVILLE REVIEW #6	MJH
5	07-03-24	REVISED PER DUDOT REVIEW #2	MJH
4	05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
3	04-15-24	REVISED PER DUDOT REVIEW	MJH
2	03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
1	02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MJH

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

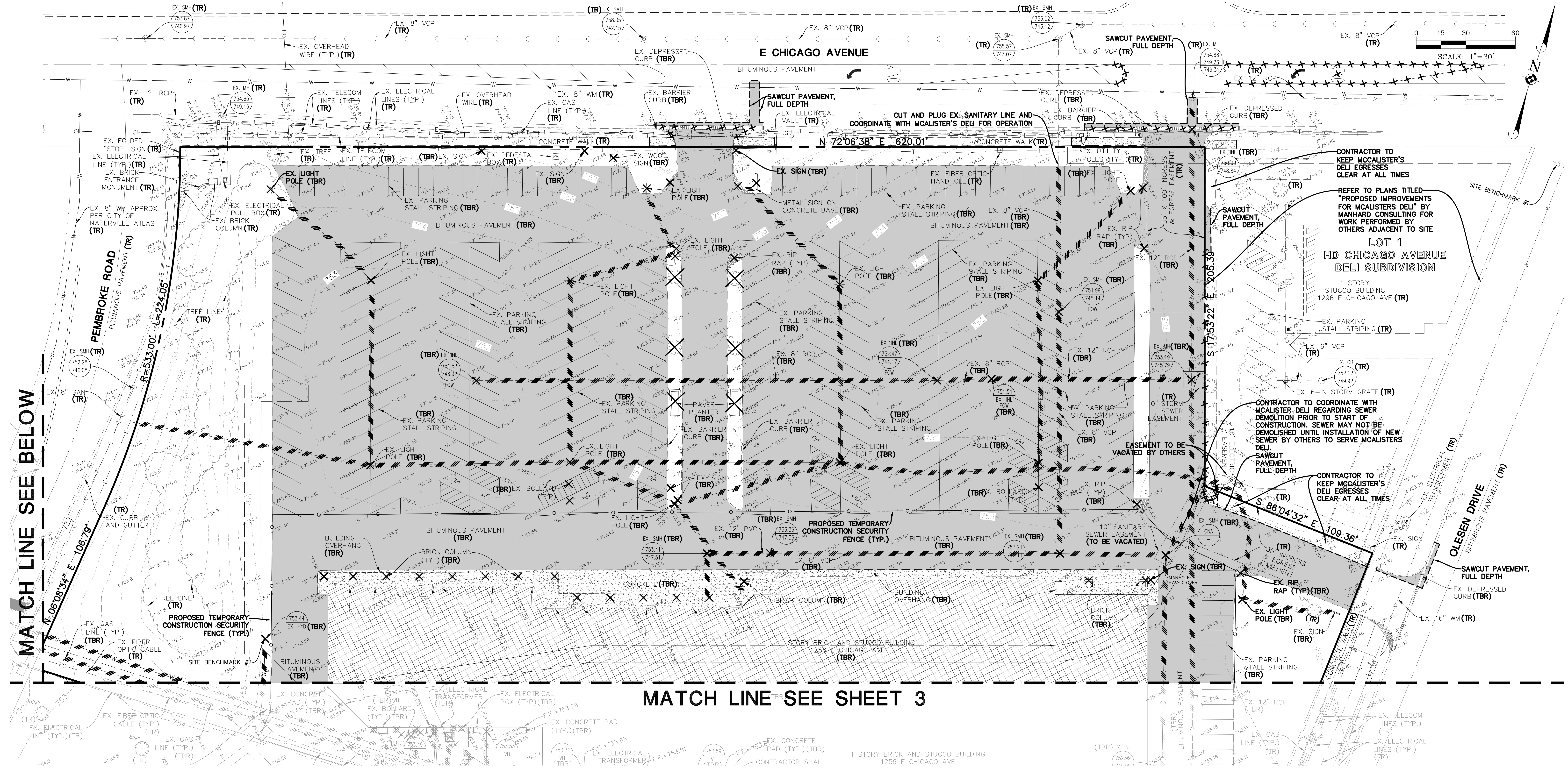
PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
TITLE SHEET

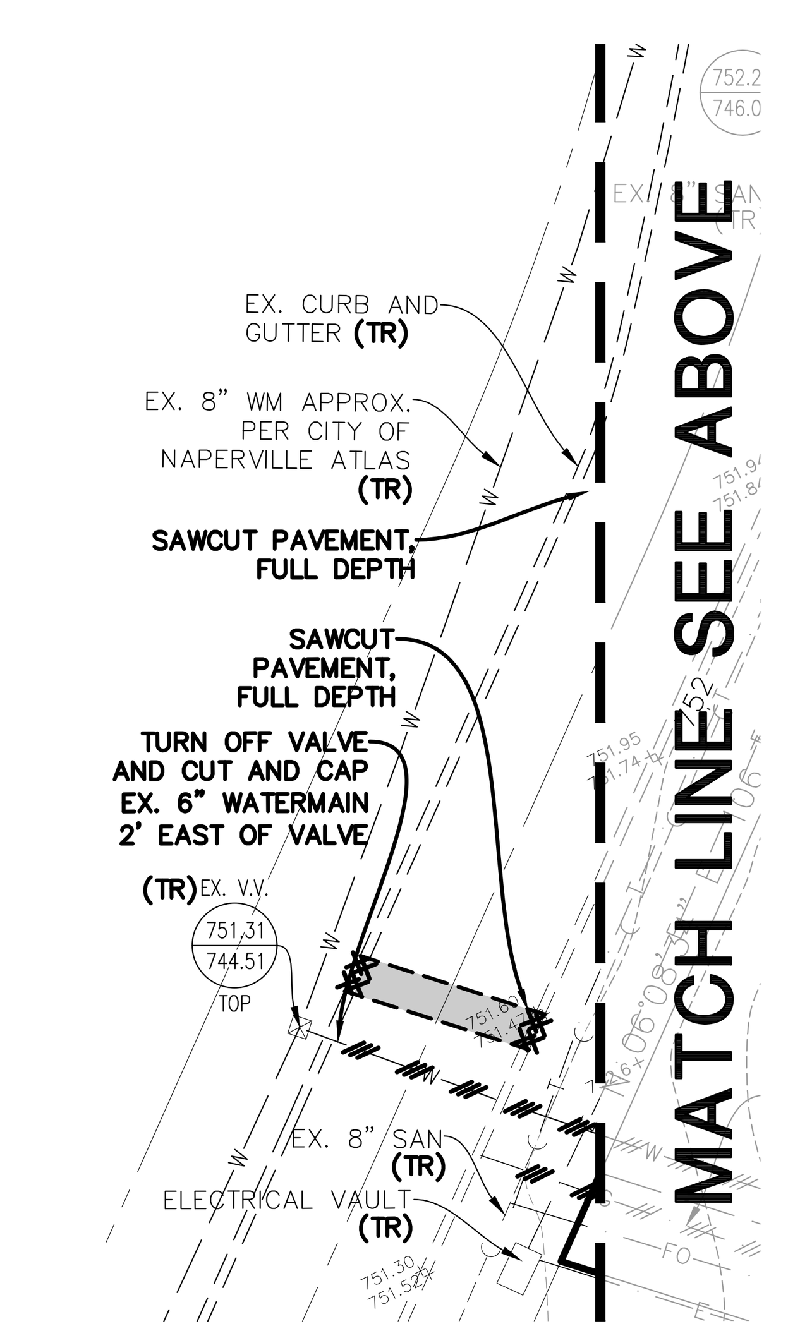
PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: MJH
DATE: 08-30-23
SCALE: N.T.S.

SHEET 1 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

August 21, 2024 - 12:03 Dwg Name: P:\Naperville\Work\Final Drawings\Plan Set\TITLE.dwg Updated By: JMiller


E CHICAGO AVENUE
BITUMINOUS PAVEMENT
PEMBROKE ROAD
OLESEN DRIVE
MATCH LINE SEE BELOW
MATCH LINE SEE SHEET 3
LOT 1
HD CHICAGO AVENUE
DELI SUBDIVISION
1 STORY
STUCCO BUILDING
1296 E CHICAGO AVE (TR)
1 STORY BRICK AND STUCCO BUILDING
1256 E CHICAGO AVE
(TBR)
N 72°06'38" E 620.01'
S 17°53'22" E 205.39'
S 86°04'32" E 109.36'
N 06°08'54" E 106.79'
R=533.00' L=224.05'
SCALE: 1"=30'
0 15 30 60
CUT AND PLUG EX. SANITARY LINE AND COORDINATE WITH MCALISTER'S DELI FOR OPERATION
SAWCUT PAVEMENT, FULL DEPTH
CONTRACTOR TO KEEP MCCALISTER'S DELI EGRESSES CLEAR AT ALL TIMES
REFER TO PLANS TITLED "PROPOSED IMPROVEMENTS FOR MCALISTERS DELI" BY MANHARD CONSULTING FOR WORK PERFORMED BY OTHERS ADJACENT TO SITE
CONTRACTOR TO COORDINATE WITH MCALISTER DELI REGARDING SEWER DEMOLITION PRIOR TO START OF CONSTRUCTION. SEWER MAY NOT BE DEMOLISHED UNTIL INSTALLATION OF NEW SEWER BY OTHERS TO SERVE MCALISTERS DELI.
EASEMENT TO BE VACATED BY OTHERS
PROPOSED TEMPORARY CONSTRUCTION SECURITY FENCE (TYP.)
10' SANITARY SEWER EASEMENT (TO BE VACATED)
10' STORM SEWER EASEMENT
35' X 100' INGRESS & EGRESS EASEMENT
SITE BENCHMARK #1
SITE BENCHMARK #2



DEMOLITION LEGEND	
[shaded]	BITUMINOUS PAVEMENT AND BASE TO BE REMOVED
[stippled]	CONCRETE PAVEMENT AND BASE TO BE REMOVED
[cross-hatched]	BUILDING TO BE REMOVED
– – – – –	SAWCUT LINE
× × ×	FENCE, RETAINING WALL, RAILROAD TIES, POLES, CURB AND GUTTER, ETC. TO BE REMOVED
⊠⊠⊠	UTILITY STRUCTURE TO BE REMOVED
⫽ ⫽ ⫽	UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
[crossed tree]	TREE TO BE REMOVED
(TBR)	TO BE REMOVED
(TR)	TO REMAIN

06-01-16

EXISTING CONDITIONS AND DEMOLITION NOTES:

1. EXISTING CONDITIONS AND DEMOLITION PLAN REPRESENT SITE CONDITIONS AS OF JANUARY 19. 2023. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.

2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.

3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL JURISDICTIONAL GOVERNING ENTITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, ROAD, PARKING LOTS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.

4. REFER TO SPECIFICATIONS SHEET FOR DEMOLITION NOTES.

DATE	REVISIONS	DRAWN BY
08-02-24	REVISED PER CITY OF NAPERVILLE REVIEW #6	JRM
05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MJH

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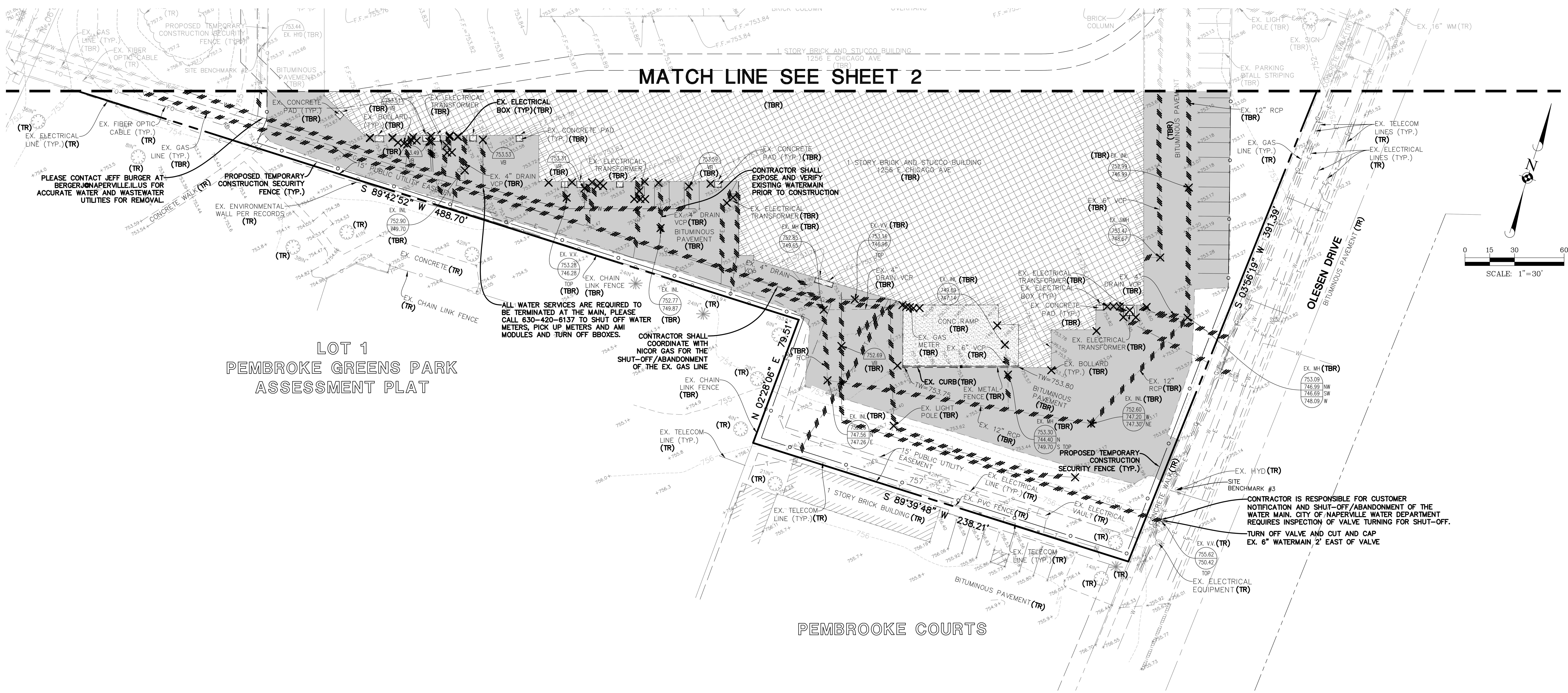
PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
EXISTING CONDITIONS AND DEMOLITION PLAN - NORTH

PROJ. MGR.:	MDE
PROJ. ASSOC.:	JRM
DRAWN BY:	MDE
DATE:	08-30-23
SCALE:	1"=30'

ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION



DEMOLITION LEGEND

[shaded]	BITUMINOUS PAVEMENT AND BASE TO BE REMOVED
[stippled]	CONCRETE PAVEMENT AND BASE TO BE REMOVED
[cross-hatched]	BUILDING TO BE REMOVED
– – – – – –	SAWCUT LINE
× × ×	FENCE, RETAINING WALL, RAILROAD TIES, POLES, CURB AND GUTTER, ETC. TO BE REMOVED
[X symbols]	UTILITY STRUCTURE TO BE REMOVED
///—///—///	UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
[tree symbols]	TREE TO BE REMOVED
(TBR)	TO BE REMOVED
(TR)	TO REMAIN

06-01-16

EXISTING CONDITIONS AND DEMOLITION NOTES:

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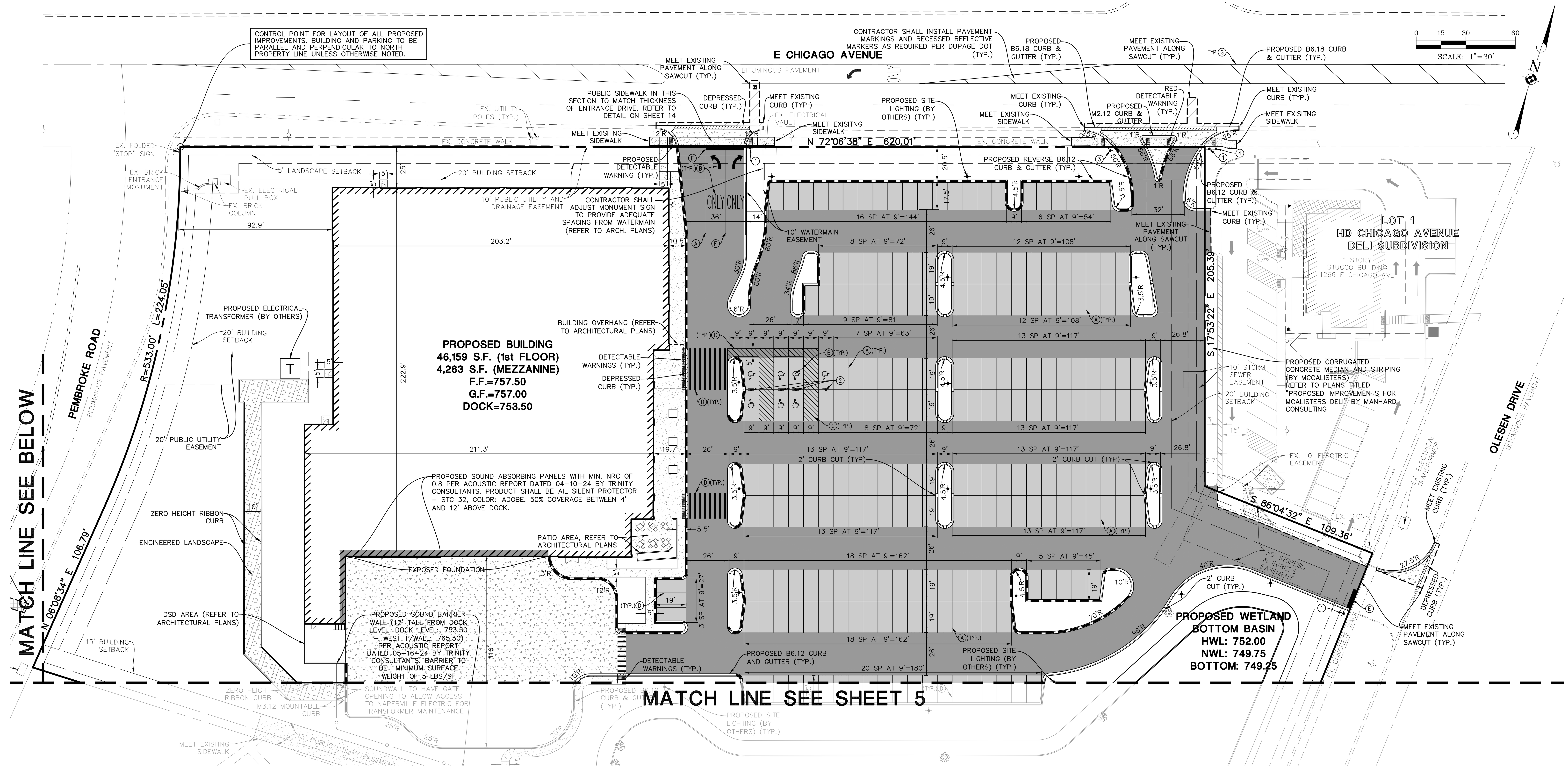
PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
EXISTING CONDITIONS AND DEMOLITION PLAN - SOUTH

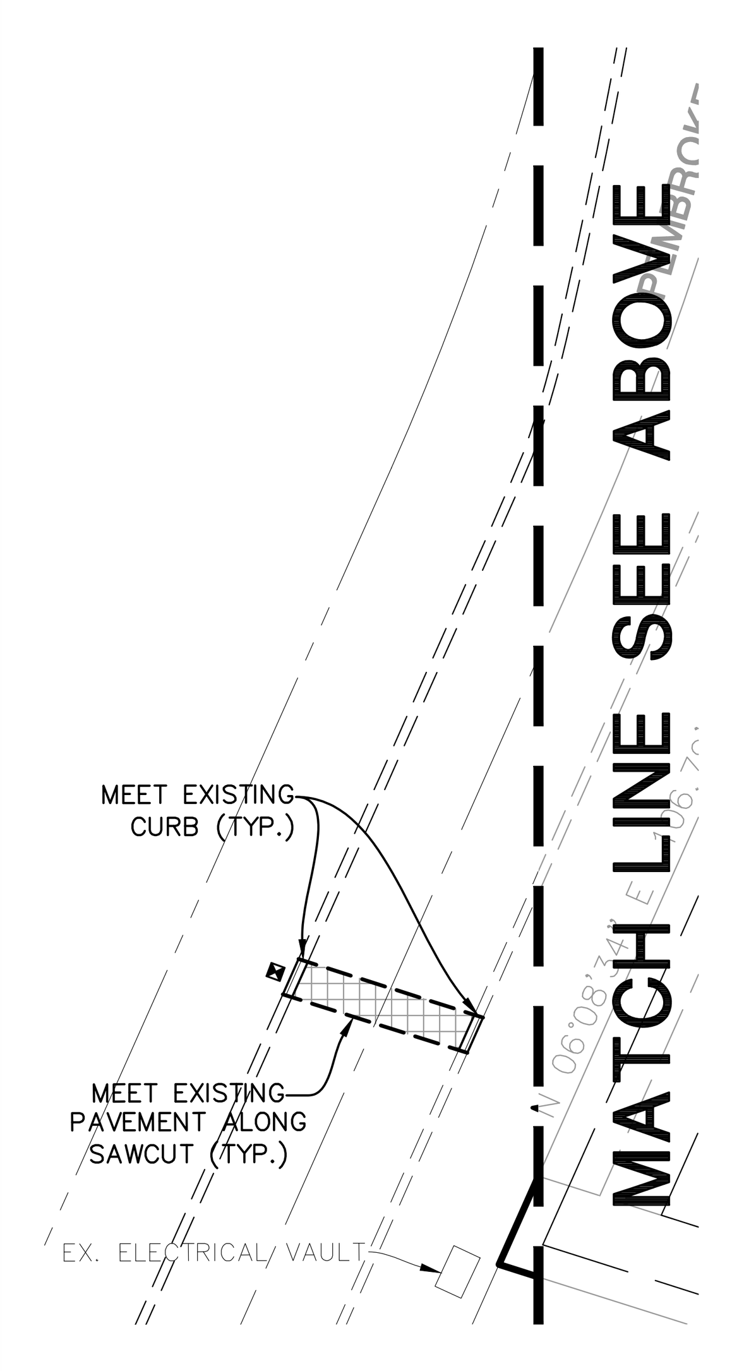
PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JDM
DATE: 08-30-23
SCALE: 1"=30'

SHEET 3 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

August 2, 2024 – 11:58 Dwg Name: P:\Hgsnvil01\dwg\Eng\Final Drawings\Plan Set\EX-DEMO.dwg Updated By: JMiller





SITE DATA

EXISTING ZONING	B1
PROPOSED ZONING	OCI
SITE AREA	7.30 ACRES
FAR	0.15
STANDARD PARKING PROVIDED	220 SPACES
HANDICAP PROVIDED	7 SPACES
TOTAL PARKING PROVIDED	227 SPACES
TOTAL PARKING REQUIRED	227 SPACES (4.5/1000 S.F.)

PAVEMENT MARKING LEGEND

- (A) 4" YELLOW LINE
- (B) LETTERS AND SYMBOLS PAVEMENT MARKINGS
- (C) 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C.
- (D) 12" WHITE BAR CROSSWALK
- (E) 24" WHITE STOP BAR
- (F) 6" WHITE LINE
- (G) 12" YELLOW DIAGONAL AT 45° SPACED 30' O.C. W/ 4" DOUBLE YELLOW BORDER AT 11" C-C

SIGN LEGEND

- (1) R1-1 STOP SIGN
- (2) R7-8 HANDICAP PARKING SIGN (ON BOLLARD)
- (3) R3-2 NO LEFT TURN
- (4) R3-5 RIGHT TURN ONLY

06-01-16

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
2 1/2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
8" AGGREGATE BASE COURSE, TYPE B

HEAVY DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
3" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
12" AGGREGATE BASE COURSE, TYPE B

CONCRETE PAVEMENT
8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF
4" COMPACTED AGGREGATE BASE, TYPE B

CONCRETE SIDEWALK
5" PORTLAND CEMENT CONCRETE
4" COMPACTED AGGREGATE BASE COURSE, TYPE B

CITY OF NAPERVILLE PAVEMENT REPLACEMENT
MATCH EXISTING PAVEMENT SECTION

DUPAGE COUNTY DOT – EAST CHICAGO AVENUE
MATCH EXISTING PAVEMENT SECTION

ENGINEERED LANDSCAPE
GRASSPAVE2
REFER TO DETAIL ON SHEET 15

NOTE:
CONTRACTOR SHALL FOLLOW RECOMMENDATIONS IN THE GEOTECHNICAL REPORT BY TESTING SERVICE CORPORATION (TSC) DATED JULY 25, 2023 INCLUDING SUBGRADE PREPARATION

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF SIDEWALKS, SIDEWALK SCORING, BENCHES, BIKE RACKS, FLAG POLES, ETC., DIMENSIONS OF VESTIBULE, RAMPS AND TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS

06-01-16

SITE DIMENSIONAL AND PAVING NOTES:

1. ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
5. BUILDING DIMENSIONS AND ADJACENT PARKING HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
6. IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
7. LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
8. ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
9. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
11. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.

DATE	REVISIONS	DRAWN BY
08-02-24	REVISED PER CITY OF NAPERVILLE REVIEW #6	JRM
07-03-24	REVISED PER DUDOT REVIEW #2	MJH
05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
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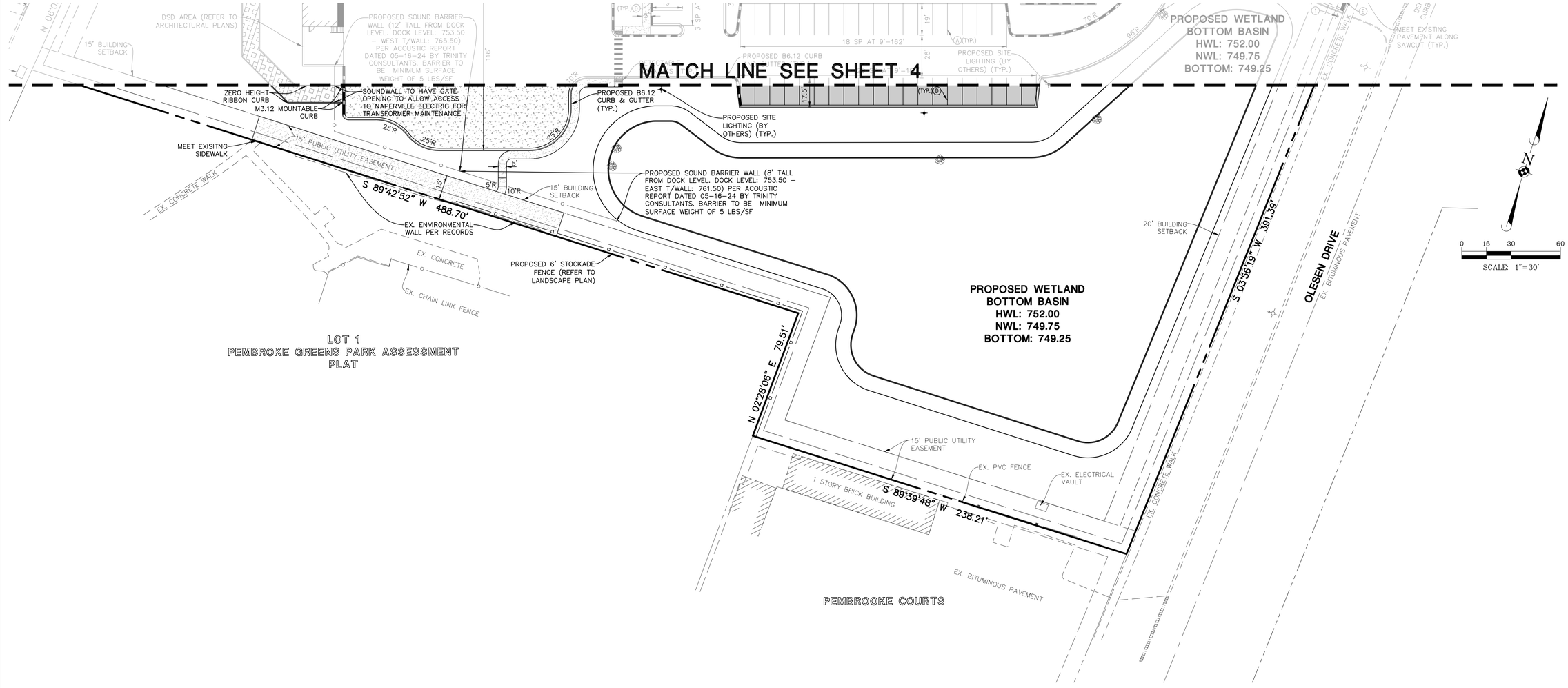
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - NORTH

PROJ. MGR.:	MDE
PROJ. ASSOC.:	JRM
DRAWN BY:	JAW
DATE:	08-30-23
SCALE:	1"=30'

ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION



SIGN LEGEND

1. R1-1 STOP SIGN
2. R7-8 HANDICAP PARKING SIGN (ON BOLLARD)
3. R3-2 NO LEFT TURN
4. R3-5 RIGHT TURN ONLY

PAVEMENT MARKING LEGEND

- (A) 4" YELLOW LINE
- (B) LETTERS AND SYMBOLS PAVEMENT MARKINGS
- (C) 4" YELLOW DIAGONAL AT 45° SPACED 2' O.C.
- (D) 12" WHITE BAR CROSSWALK
- (E) 24" WHITE STOP BAR
- (F) 6" WHITE LINE
- (G) 12" YELLOW DIAGONAL AT 45° SPACED 30' O.C.
- W/ 4" DOUBLE YELLOW BORDER AT 11" O.C.

06-01-16

SITE DATA

EXISTING ZONING	B1
PROPOSED ZONING	OCI
SITE AREA	7.30 ACRES
FAR	0.15
STANDARD PARKING PROVIDED	220 SPACES
HANDICAP PROVIDED	7 SPACES
TOTAL PARKING PROVIDED	227 SPACES
TOTAL PARKING REQUIRED	227 SPACES (4.5/1000 S.F.)

06-01-16

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
2 1/2" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
8" AGGREGATE BASE COURSE, TYPE B

HEAVY DUTY PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
3" BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
12" AGGREGATE BASE COURSE, TYPE B

CONCRETE PAVEMENT
8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF
4" COMPACTED AGGREGATE BASE, TYPE B

CONCRETE SIDEWALK
5" PORTLAND CEMENT CONCRETE
4" COMPACTED AGGREGATE BASE COURSE, TYPE B

CITY OF NAPERVILLE PAVEMENT REPLACEMENT
MATCH EXISTING PAVEMENT SECTION

DUPAGE COUNTY DOT – EAST CHICAGO AVENUE
MATCH EXISTING PAVEMENT SECTION

ENGINEERED LANDSCAPE
GRASSPAVE2
REFER TO DETAIL ON SHEET 15

NOTE:
CONTRACTOR SHALL FOLLOW RECOMMENDATIONS IN THE GEOTECHNICAL REPORT BY TESTING SERVICE CORPORATION (TSC) DATED JULY 25, 2023 INCLUDING SUBGRADE PREPARATION

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF SIDEWALKS, SIDEWALK SCORING, BENCHES, BIKE RACKS, FLAG POLES, ETC., DIMENSIONS OF VESTIBULE, RAMPS AND TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS

06-01-16

SITE DIMENSIONAL AND PAVING NOTES:

1. ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
5. BUILDING DIMENSIONS AND ADJACENT PARKING HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
6. IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
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05-16-24	REVISED PER DUPAGE COUNTY DOT REVIEW	MJH
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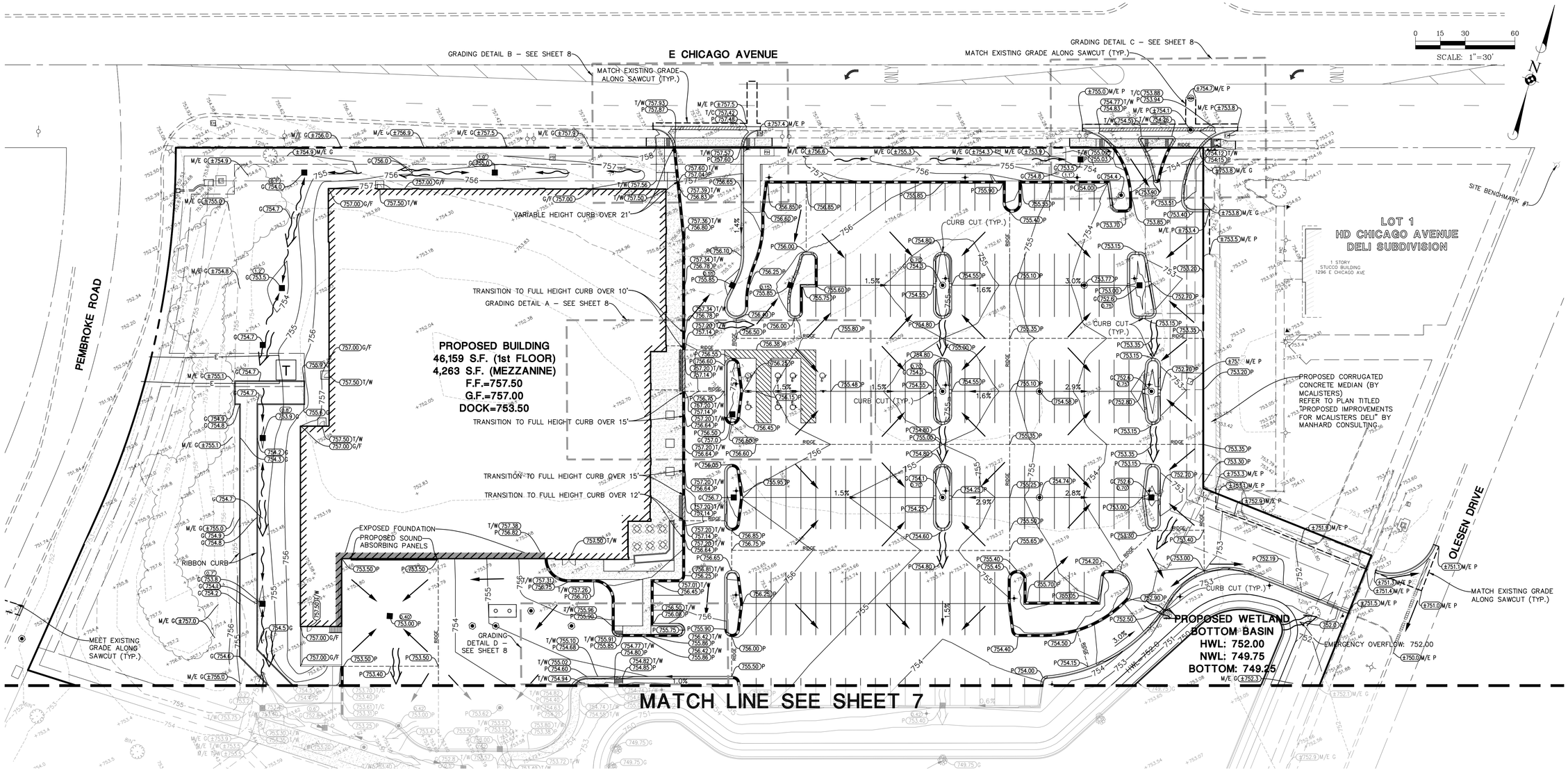
PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - SOUTH

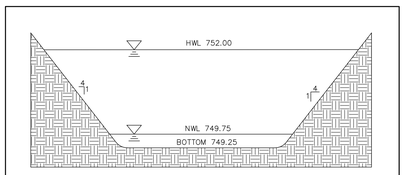
PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JAW
DATE: 08-30-23
SCALE: 1"=30'

SHEET 5 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

August 2, 2024 - 12:08 Dwg Name: P:\Projects\01\dwg\Eng\Plan Drawings\Plan Set\SITE.dwg Updated By: JMiller





PROPOSED WETLAND BOTTOM BASIN CROSS-SECTION
(NOT TO SCALE)

NOTE: REFER TO LANDSCAPE PLANS BY MANHARD CONSULTING FOR PLANTING INFORMATION.

09-01-16

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
792.8 G	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
0.5'	PROPOSED DEPTH OF PONDING
	RETAINING WALL
L	PROPOSED SWALE LOW POINT
S	PROPOSED SWALE SUMMIT

09-01-16

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY MANHARD CONSULTING LTD. ON JANUARY 19, 2023. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V AT CURBS AND 3H:1V AT SIDEWALKS PER CITY OF NAPERVILLE DETAIL UNLESS OTHERWISE NOTED.

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PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
GRADING PLAN - NORTH

FINAL ENGINEERING - NOT FOR CONSTRUCTION

PROJ. MGR.:	MDE
PROJ. ASSOC.:	JRM
DRAWN BY:	EJB
DATE:	08-30-23
SCALE:	1"=30'

SHEET 6 OF 19
ADK.NVIL01

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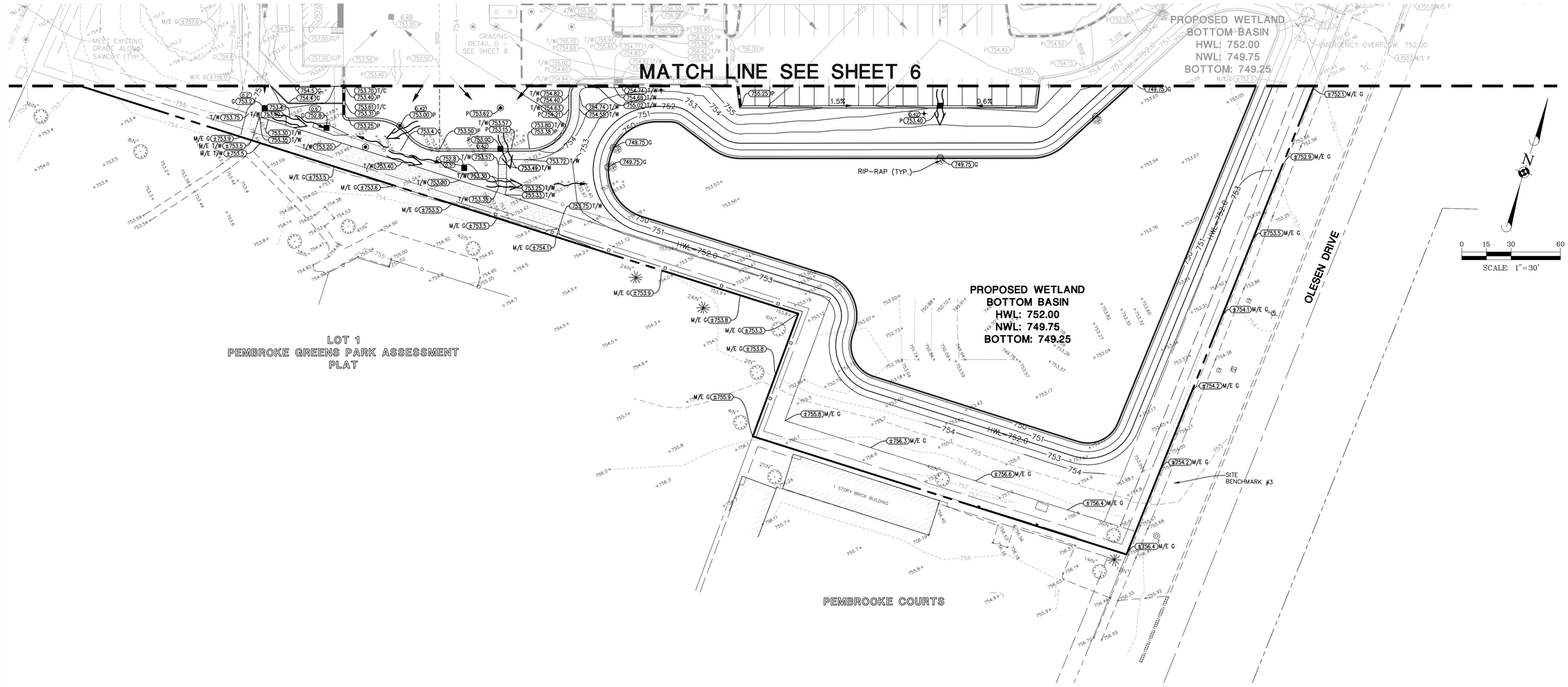

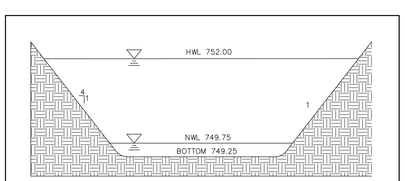

PROPOSED WETLAND BOTTOM
BASIN CROSS-SECTION
(NOT TO SCALE)

NOTE: REFER TO LANDSCAPE PLANS BY MANHARD CONSULTING FOR PLANTING INFORMATION.

08-01-16

GRADING PLAN LEGEND

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	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE
(0.5')	PROPOSED DEPTH OF PONDING
	RETAINING WALL
(L)	PROPOSED SWALE LOW POINT
(S)	PROPOSED SWALE SUMMIT

08-01-16

GRADING NOTES:

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PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
GRADING PLAN - SOUTH

PROJ MGR.:	MDE
PROJ ASSOC.:	JRM
DRAWN BY:	JAW
DATE:	08-30-23
SCALE:	1"=30'

SHEET 7 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

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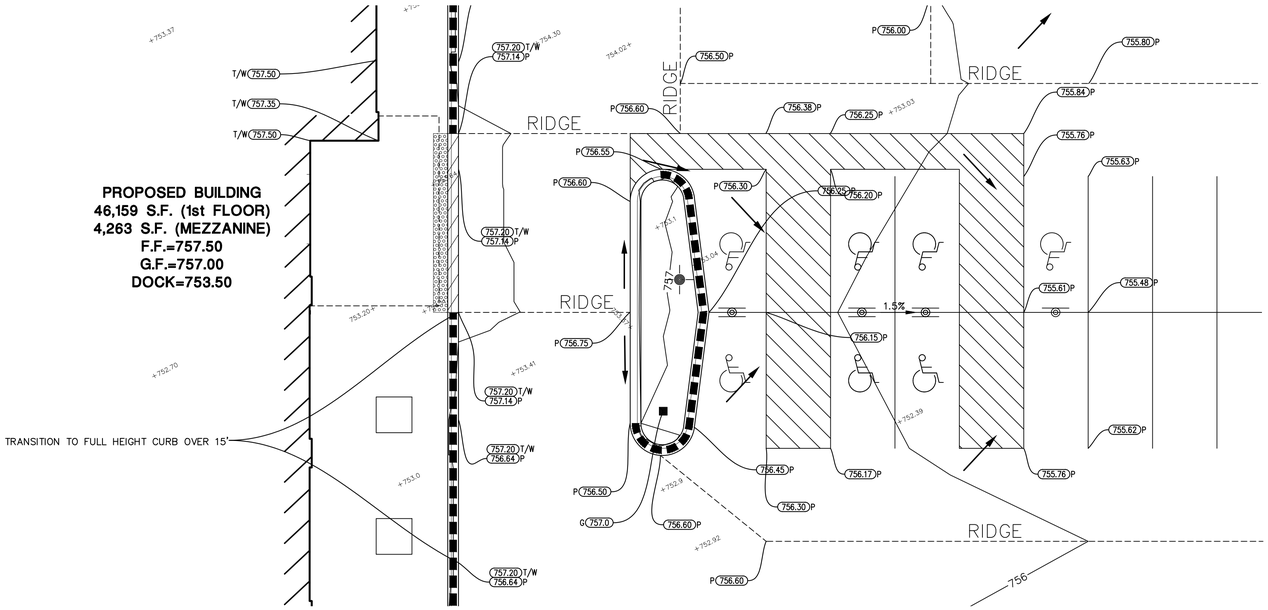

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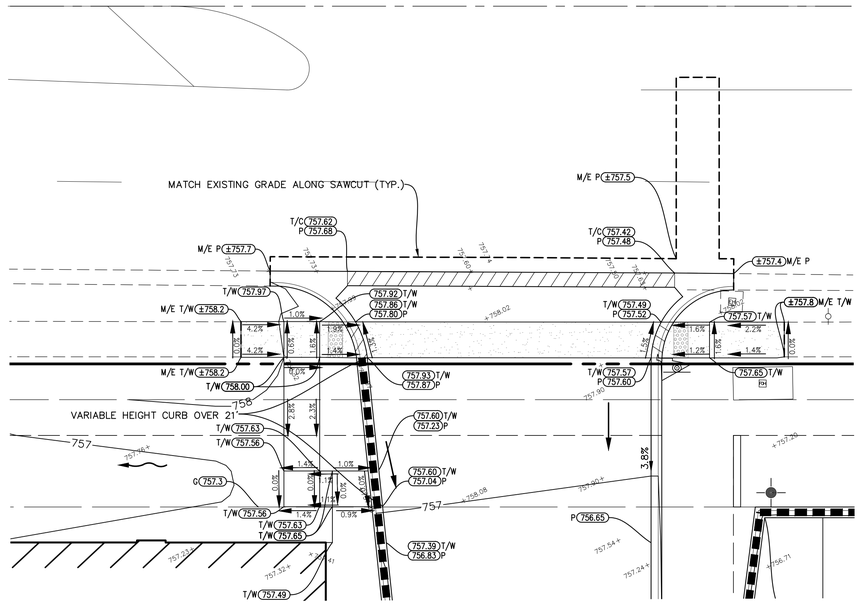

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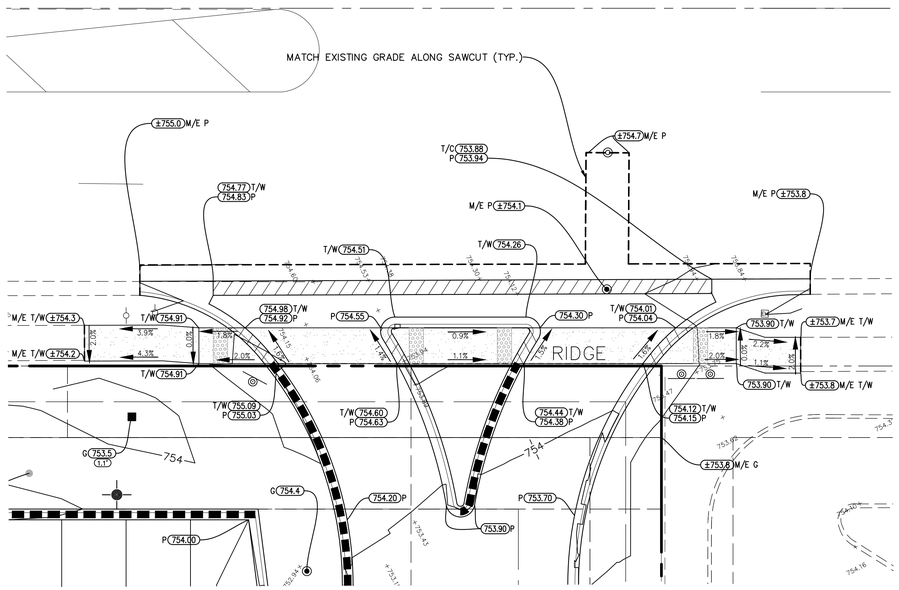

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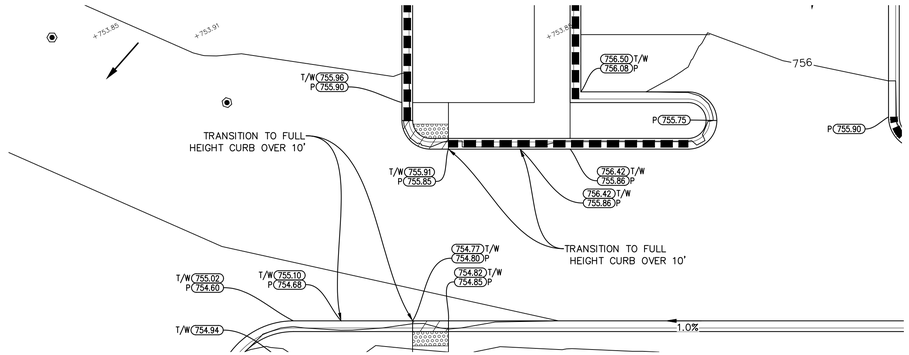

SCALE: 1"=10'

NO.	DATE	REVISIONS	DRAWN BY
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PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
GRADING DETAIL PLAN

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: EJB
DATE: 08-30-23
SCALE: 1"=10'

SHEET 8 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

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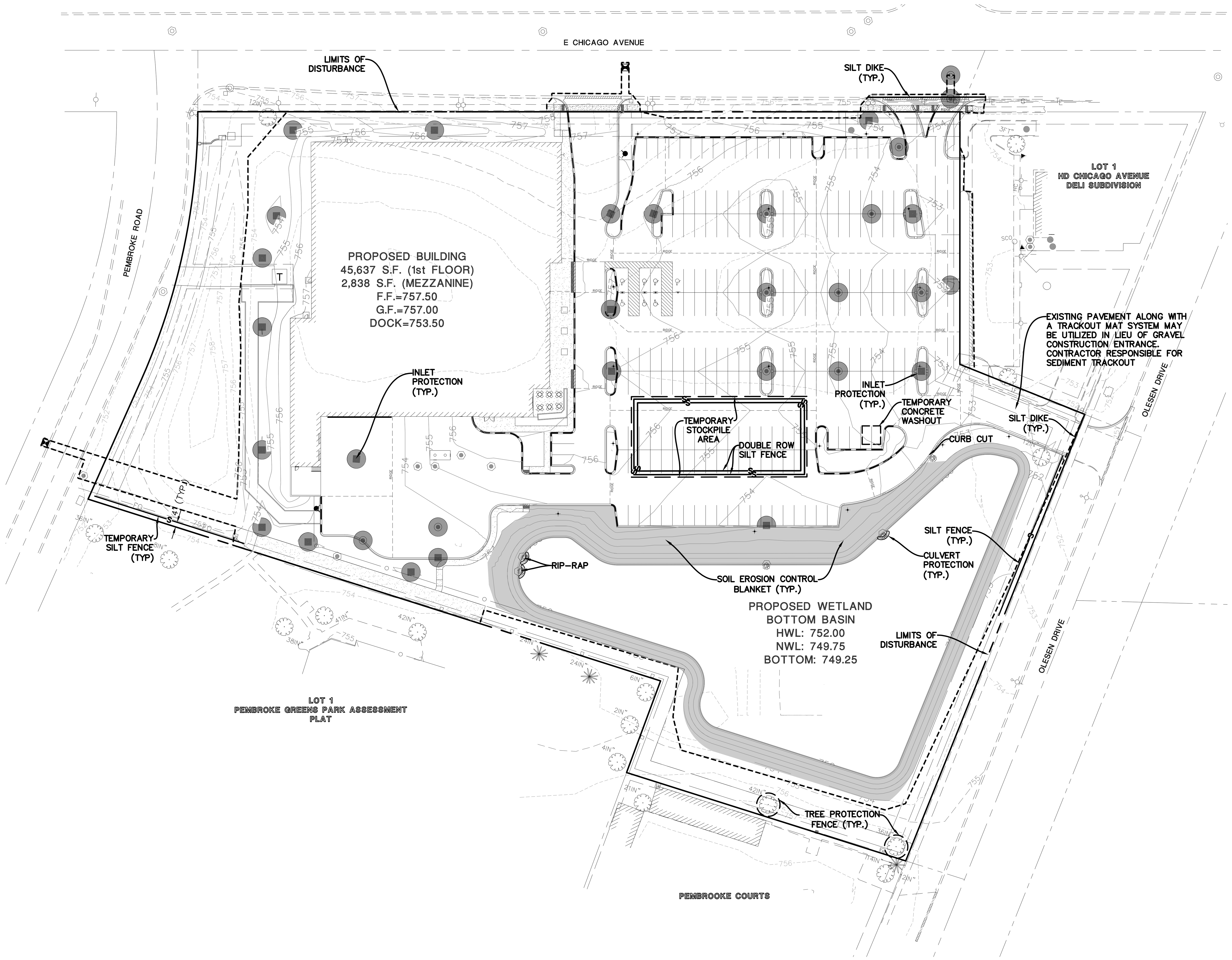

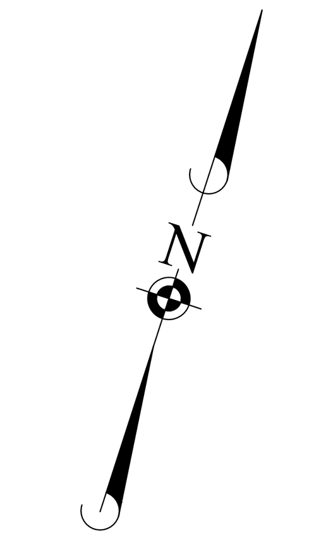

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03-07-24

SOIL EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

1. ALL VEGETATIVE AND STRUCTURAL EROSION CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "ILLINOIS URBAN MANUAL".
2. MAINTENANCE AND REPLACEMENT OF EROSION CONTROL ITEMS, WHEN DIRECTED BY THE OWNER, SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER, OR EQUIVALENT SNOWFALL, WHEN THE SNOW MELTS AND THERE IS POTENTIAL FOR EROSION. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF SAID MEASURES SHALL BE MADE IMMEDIATELY. FOR SITES DISCHARGING DEWATERING WATER, AN INSPECTION MUST BE CONDUCTED DURING THE DISCHARGE, ONCE PER DAY ON WHICH THE DISCHARGE OCCURS AND DOCUMENTED AND KEPT IN THE SWPPP BOOKLET.
4. INSTALL ALL PERIMETER SILT FENCING PRIOR TO ANY CLEARING OR GRADING. ONSITE SEDIMENT CONTROL MEASURES AS SHOWN AND SPECIFIED BY THIS EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE CONSTRUCTED AND FUNCTIONAL PRIOR TO INITIATING CLEARING, GRADING, STRIPPING, EXCAVATION OR FILLING ACTIVITIES ON THE SITE.
5. STORM WATERS FALLING ON THE ENTIRE SITE SHALL BE DIVERTED INTO THE DETENTION BASIN, PRIOR TO BEGINNING MASS EXCAVATION, THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENTATION TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY AND CONVEY THEM TO THE DETENTION BASIN.
6. IF STORMWATER DETENTION IS NOT REQUIRED THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENT TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY.
7. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA.
8. TEMPORARY SEED MIXTURE SHALL BE APPLIED AT 64 LBS/ACRE.
9. INLET PROTECTION SHALL BE INSTALLED UNDER THE GRATING OF EACH DRAINAGE STRUCTURE.
10. STABILIZATION OF TOPSOIL STOCKPILES SHALL BE INITIATED IMMEDIATELY UPON COMPLETION UNLESS THEY WILL BE DISTURBED WITHIN FOURTEEN (14) CALENDAR DAYS. STABILIZATION OF STOCKPILES MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA. ALL SOIL STORAGE PILES SHALL BE PROTECTED FROM EROSION WITH SILT FENCE ON THE DOWN SLOPE SIDE OF THE PILES.
11. DEWATERING DISCHARGES SHALL BE ROUTED THROUGH A SEDIMENT CONTROL (e.g. SEDIMENT TRAP OR BASIN, PUMPED WATER FILTER BAG) DESIGNED TO MINIMIZE DISCHARGES WITH VISUAL TURBIDITY. THE DISCHARGE SHALL NOT INCLUDE VISIBLE FLOATING SOLIDS OR FOAM. THE DISCHARGE MUST NOT CAUSE THE FORMATION OF A VISIBLE SHEEN ON THE WATER SURFACE, OR VISIBLE OILY DEPOSITS ON THE BOTTOM OR SHORELINE OF THE RECEIVING WATER. AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVISE SHALL BE USED TO TREAT OIL, GREASE, OR OTHER SIMILAR PRODUCTS IF DEWATERING WATER IS FOUND TO OR EXPECTED TO CONTAIN THESE MATERIALS. TO THE EXTENT FEASIBLE, USE WELL VEGETATED (e.g. GRASSY OR WOODED), UPLAND AREAS OF THE SITE TO INFILTRATE DEWATERING WATER BEFORE DISCHARGE. USING RECEIVING WATERS AS PART OF THE TREATMENT AREA IS PROHIBITED. TO MINIMIZE DEWATERING RELATED EROSION AND RELATED SEDIMENT DISCHARGES, USE STABLE, EROSION RESISTANT SURFACES (e.g. WELL-VEGETATED GRASSY AREAS, CLEAN FILTER STONE, GEOTEXTILE UNDERLAYMENT) TO DISCHARGE FROM DEWATERING CONTROLS. DO NOT PLACE DEWATERING CONTROLS, SUCH AS PUMPED WATER FILTER BAGS ON STEEP SLOPES (15% OR GREATER IN GRADE. BACKWASH WATER (WATER USED TO BACKWASH/CLEAN ANY FILTERS USED AS PART OF STORMWATER TREATMENT) MUST BE PROPERLY TREATED OR HAULED OFF-SITE FOR DISPOSAL. DEWATERING TREATMENT DEVICES SHALL BE PROPERLY MAINTAINED.
12. DUST CONTROL SHALL BE PERFORMED ON A DAILY BASIS USING WATER DISPERSED FROM A TRUCK MOUNTED TANK WITH STANDARD DISCHARGE HEADER TO PROVIDE A UNIFORM RATE OF APPLICATION.
13. TEMPORARY GRAVEL CONSTRUCTION ENTRANCES SHALL BE MAINTAINED, ADJUSTED OR RELOCATED AS NECESSARY TO PREVENT SEDIMENT FROM BEING TRACKED ONTO PUBLIC ROADWAYS. ANY SEDIMENT REACHING A PUBLIC ROAD SHALL BE REMOVED BY SHOVELING OR STREET CLEANING BEFORE THE END OF EACH WORKING DAY.
14. ANY LOOSE MATERIAL THAT IS DEPOSITED IN THE FLOW LINE OF ANY GUTTER OR DRAINAGE STRUCTURE DURING CONSTRUCTION OPERATIONS SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY.
15. OVERLAND FLOW SHALL BE DIRECTED TO THE DETENTION BASIN PRIOR TO LEAVING THE SITE.
16. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE CLIENT OR OTHER JURISDICTIONAL GOVERNMENTAL ENTITIES.
17. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL JURISDICTIONAL GOVERNMENTAL AGENCY REQUIREMENTS WITHIN 30 DAYS OF FINAL STABILIZATION.

"THESE EROSION CONTROL PLANS ARE A PORTION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) TOTAL REQUIREMENTS FOR A COMPLETE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY THE GENERAL NPDES PERMIT NO. ILR10. CLIENT AND/OR CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT AND COMPILATION OF THE COMPLETE SWPPP."

06-01-16

LEGEND

Symbol	Description
—S——S—	TEMPORARY SILT FENCE (PERIMETER EROSION BARRIER)
—SD——SD—	TEMPORARY SILT DIKE
(shaded rectangle)	EROSION CONTROL BLANKET (NORTH AMERICAN GREEN DS 75) (SEEDING PER LANDSCAPE PLAN)
(shaded circles)	TEMPORARY STORM STRUCTURE PROTECTION
(shaded arc)	TEMPORARY CULVERT INLET PROTECTION
(solid arrow)	PAVEMENT DRAINAGE FLOW
(dashed arrow)	SWALE DRAINAGE FLOW
(heavy dashed line)	LIMITS OF DISTURBANCE/CONSTRUCTION
(dashed circle)	TREE PROTECTION FENCE

06-01-16

CONSTRUCTION SEQUENCE:

1. INSTALL SILT FENCE AT LOCATIONS AS INDICATED ON THE PLANS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY DITCHES, SWALES, SEDIMENT TRAPS AND/OR BASINS.
4. STRIP EXISTING TOPSOIL FROM PROPOSED LIMITS OF DISTURBANCE AND STOCKPILE WHERE SHOWN ON PLANS.
5. PROVIDE SILT FENCE AROUND THE BASE OF THE STOCKPILES.
6. CONSTRUCT STORMWATER MANAGEMENT (DETENTION) FACILITIES TO SUB-GRADE AND INSTALL OUTLET PIPES.
7. COMPLETE TOPSOIL PLACEMENT AND PERMANENT SEEDING AND SODDING OF STORMWATER MANAGEMENT FACILITIES.
8. CUT AND FILL SITE TO PLAN SUB-GRADE.
9. CONSTRUCT UNDERGROUND IMPROVEMENTS, i.e. SANITARY SEWER WATERMAIN AND STORM SEWER**, ETC.
10. CONSTRUCT PAVEMENT IMPROVEMENTS PER PLAN.
11. COMPLETE CONSTRUCTION OF SITE WITH PERMANENT STABILIZATION.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

** INSTALL INLET PROTECTION AROUND DRAINAGE STRUCTURES AS CONSTRUCTED.

SOIL PROTECTION CHART

STABILIZATION CHART	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDINGS			A→	→	→	* →	* →	→	* →			
DORMANT SEEDINGS	B→	→								B→	→	→
TEMPORARY SEEDINGS			C→	→	→	→	→	→	→			
TEMPORARY SEEDINGS	D→	→	→	→	→	→	→	→	→	→	→	→
SODDING			E** →	→	→	→	→	→	→			
MULCHING	F→	→	→	→	→	→	→	→	→	→	→	→

A – KENTUCKY BLUEGRASS 90 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 30 LBS./AC.

B – KENTUCKY BLUEGRASS 135 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 45 LBS./AC. 2 TONS STRAW MULCH PER ACRE

C – SPRING OATS

D – WHEAT OR CEREAL RYE

E – SOD (NURSERY GROWN KENTUCKY BLUEGRASS)

F – STRAW MULCH 2 TONS PER ACRE

* IRRIGATION NEEDED DURING JUNE, JULY AND SEPTEMBER

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SODDING

NOTE: THIS CHART IS A GUIDE TO ASSISTS THE CONTRACTOR IN UNDERSTANDING OPTIONS FOR SOIL STABILIZATION. THE LANDSCAPE PLAN SHALL TAKE PRECEDENCE OVER THIS CHART. ANY CONFLICT SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION.

	DATE	REVISIONS	DRAWN BY
1	05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
	03-29-24	REVISED PER DUDOT REVIEW	MJH
	03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
	02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MJH

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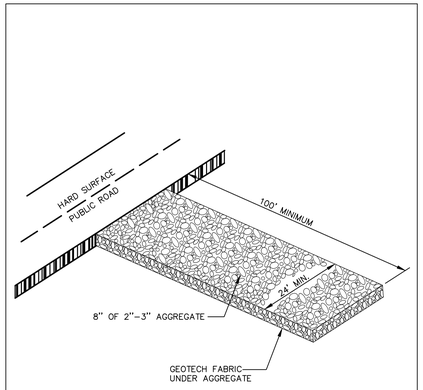
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
SOIL EROSION AND SEDIMENT CONTROL PLAN

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JAW
DATE: 08-30-23
SCALE: 1"=50'

FINAL ENGINEERING - NOT FOR CONSTRUCTION

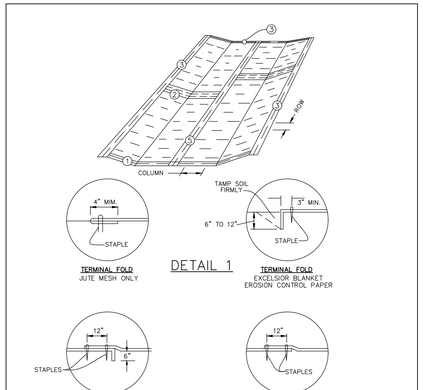


NOTE:
PERIODIC TOP DRESSING OF THE CONSTRUCTION EXIT MAY BE REQUIRED TO PREVENT TRACK OUT.

06-01-15

GRAVEL CONSTRUCTION ACCESS DETAIL

S-EC-CONST-ENTRANCE



DETAIL 1

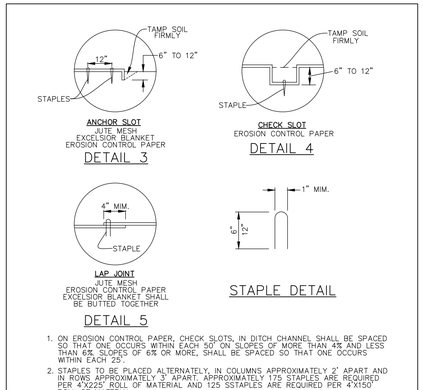
DETAIL 2

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE, ILLINOIS. IL-530

06-01-17

EROSION BLANKET PLAN

S-EC-EROSION-BLANKET1



DETAIL 3

DETAIL 4

DETAIL 5

STAPLE DETAIL

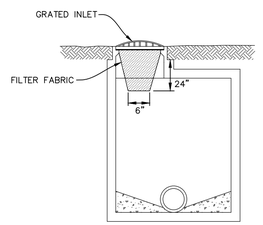
1. ON EROSION CONTROL PAPER, CHECK SLOTS, IN DITCH CHANNEL SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6% SLOPES OF 6% OR MORE, SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. STAPLES TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 SSTAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
3. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
4. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE, ILLINOIS. IL-530

06-01-17

EROSION BLANKET PLAN

S-EC-EROSION-BLANKET



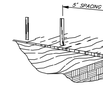
NOTE:
1. CONTRACTOR HAS THE OPTION OF USING A MANUFACTURED PRODUCT SUCH AS DANDY BAG, IPP INLET FILTER, FLEXSTORM OR APPROVED EQUAL.
2. FOR CURB STRUCTURES, CONTRACTOR HAS THE OPTION OF USING A MANUFACTURED PRODUCT SUCH AS DANDY CURB SACK OR APPROVED EQUAL.

06-01-15

FILTER BASKET INLET SEDIMENT FILTER

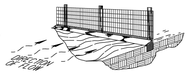
EC-ST-FB-INLETPROTECT

1. SET 2"X2"X36" POSTS 12" INTO THE GROUND & EXCAVATE A 4"X4" TRENCH ALONG THE LINE OF POSTS.

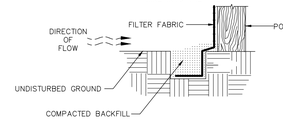


2. ATTACH THE FILTER FABRIC TO POST AND EXTEND IT INTO THE TRENCH.

3. BACKFILL AND COMPACT THE EXCAVATED SOIL.



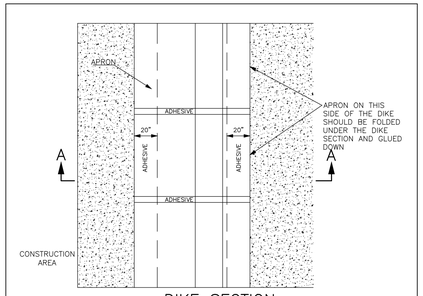
CROSS SECTION OF FABRIC AND WIRE INTO THE TRENCH.



06-01-17

SILT FENCE DETAIL

S-EC-SILT FENCE



DIKE SECTION

DETAIL A-A

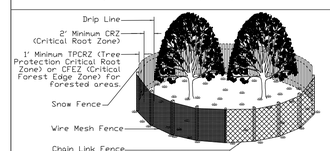
1. SILT DIKE SHALL BE ENVIROBERM BY CASCADE DISTRIBUTION LTD., GEORIDGE BY NILEX CORPORATION, TRIANGULAR SILT DIKE BY TRIANGULAR SILT DIKE COMPANY, INC. OR APPROVED EQUAL.
2. SILT DIKE UNIT INSTALLED SHALL HAVE CONTINUOUS AND FIRM CONTACT WITH SURFACE.
3. ADHESIVES: CONCRETE PAVEMENT USE LIQUID NAIL OR APPROVED EQUAL. ASPHALT PAVEMENT USE EMULSIFIED ASPHALT.
4. ADHESIVE SHALL BE PLACED WHERE THE UNITS OVERLAP AND A 20" STRIP ALONG BOTH EDGES.

01-01-13

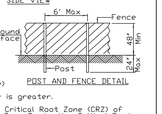
SILT DIKE (ON EXISTING PAVEMENT)

N-EC-SILT-DIKE

TREE PROTECTION - FENCING
(Moderately Urbanized to Open Space Areas)



SIDE VIEW

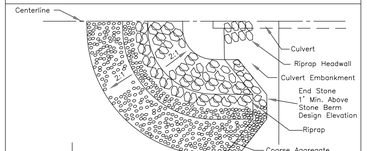


POST AND FENCE DETAIL

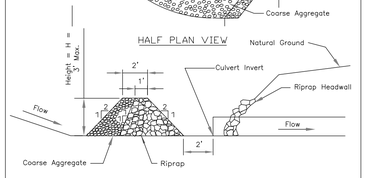
NOTES:
1. Call JULIE (800-892-0123) for the location of existing utilities 48 hours prior to commencement of work.
2. The CRZ is located 2' from the farthest outreaching branch (drip edge) or the distance as determined by the ISA trunk diameter method or whichever is greater.
3. The fence shall be located 1' from the Critical Root Zone (CRZ) of the protected tree, thus creating the Tree Protection Critical Root Zone (TPCRZ) and the Critical Forest Edge Zone (CFEZ) for forested areas.
4. Fence Posts shall be either 6' steel posts @ 1.33Lbs./Ft. or 2" x 2" nominal wood posts.
5. For projects without highly significant or historical trees and that will last for less than 6 months duration, a non-treated wood lath snow fence or wire mesh fencing shall be used with appropriate posts that are securely anchored into the ground. For projects over 6 months in duration or trees considered significant or historical, a chain link fence with Construction Specification Chain Link Fence IUM 91 or better (as approved by the local forester per local ordinances singularly or in tandem with the project Engineer) shall be used. Fencing shall be a minimum height of 4' For chain link fencing, metal posts shall be placed 6' on center (OC) and the fencing securely anchored to the post.
6. Outside the TPCRZ or CFEZ, erosion and sediment control measures shall be installed to prevent sediment reaching the TPCRZ or the CFEZ. These measures shall extend out from the fence 10' and shall be continuous around the perimeter of the fence. These measures include, but are not limited to vegetative filter strip, rolled excelsior blankets and mulch with a 3" to 5" depth. Other measures may be used if approved by the Professional Forester, Certified Arborist or Horticulturalist. Installation shall cause no disturbance to soils.

REFERENCE		STANDARD DWG. NO.
Project		IUM-690-A
Designed _____ Date _____		SHEET 1 OF 1
Checked _____ Date _____		DATE 09-14-2017
Approved _____ Date _____		

CULVERT INLET PROTECTION - STONE



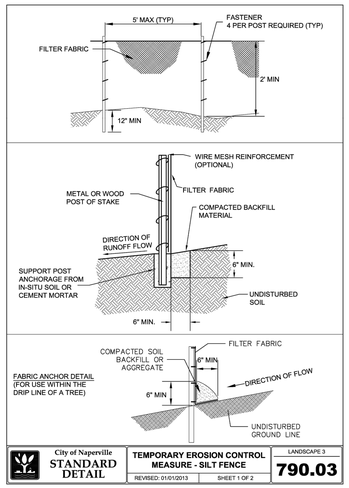
HALF PLAN VIEW



CENTERLINE CROSS SECTION

Notes:
1. Sediment shall be removed when the sediment has accumulated to one-half the height of the stone berm.
2. Coarse aggregate shall meet one of the following IDOT coarse aggregate gradations, CA-1, CA-2, CA-3 or CA-4.
3. Riprap shall meet IDOT gradation RR-3 or RR-4. Any permanent riprap, such as for the culvert headwall, shall meet IDOT Quality Designation A.
4. Coarse aggregate and riprap shall be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
5. The maximum drainage area to the culvert being protected is 3 acres.
6. See plans for H dimension.
7. Tie the stone berm into the culvert embankment a minimum of 1 foot above the design elevation of the stone berm.

REFERENCE		STANDARD DWG. NO.
Project		IL-508ST
Designed _____ Date _____	Natural Resources Conservation Service	SHEET 1 OF 1
Checked _____ Date _____		DATE 1-29-99
Approved _____ Date _____		



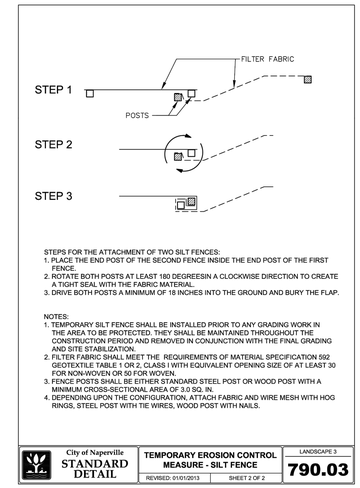
City of Naperville
STANDARD DETAIL

TEMPORARY EROSION CONTROL MEASURE - SILT FENCE

REVISED: 01/01/2013 | SHEET 1 OF 2

LANDSCAPE 3

790.03



STEPS FOR THE ATTACHMENT OF TWO SILT FENCES:
1. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREESIN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
3. DRIVE BOTH POSTS A MINIMUM OF 18 INCHES INTO THE GROUND AND BURY THE FLAP.

NOTES:
1. TEMPORARY SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. THEY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 GEOTEXTILE TABLE 1 OR 2, CLASS I WITH EQUIVALENT OPENING SIZE OF AT LEAST 30 FOR NON-WOVEN OR 50 FOR WOVEN.
3. FENCE POSTS SHALL BE EITHER STANDARD STEEL POST OR WOOD POST WITH A MINIMUM CROSS-SECTIONAL AREA OF 3.0 SQ. IN.
4. DEPENDING UPON THE CONFIGURATION, ATTACH FABRIC AND WIRE MESH WITH HOG RINGS, STEEL POST WITH TIE WIRES, WOOD POST WITH NAILS.

City of Naperville
STANDARD DETAIL

TEMPORARY EROSION CONTROL MEASURE - SILT FENCE

REVISED: 01/01/2013 | SHEET 2 OF 2

LANDSCAPE 3

790.03

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

DRAWN BY	DATE	REVISIONS
MJH		
MJH	04-29-24	REVISED PER DUDOT REVIEW
MJH	03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2
MJH	02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW

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Civil Engineers • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PROPOSED HEINEN'S GROCERY STORE

CITY OF NAPERVILLE, ILLINOIS

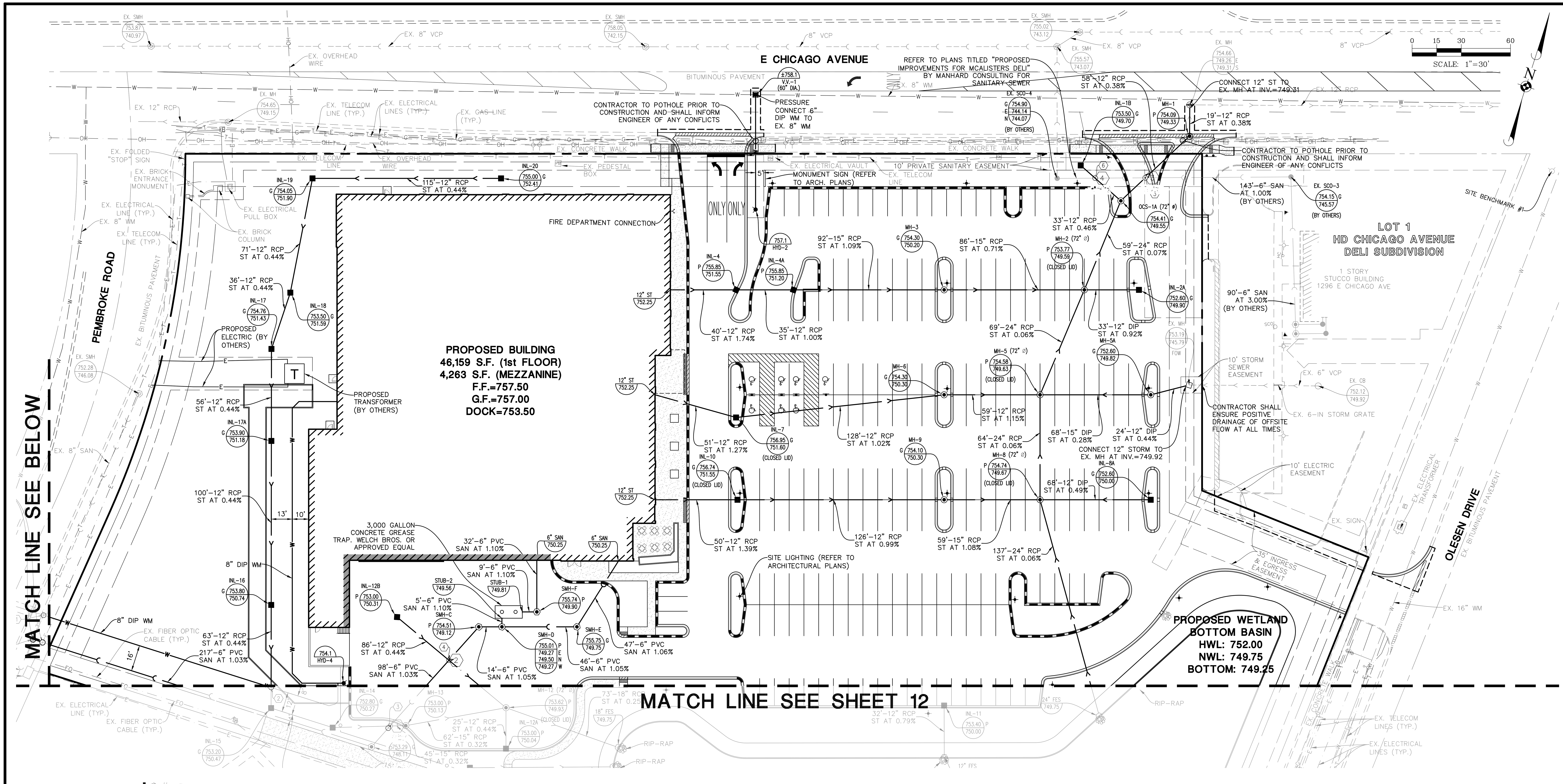
SOIL EROSION AND SEDIMENT CONTROL - DETAILS

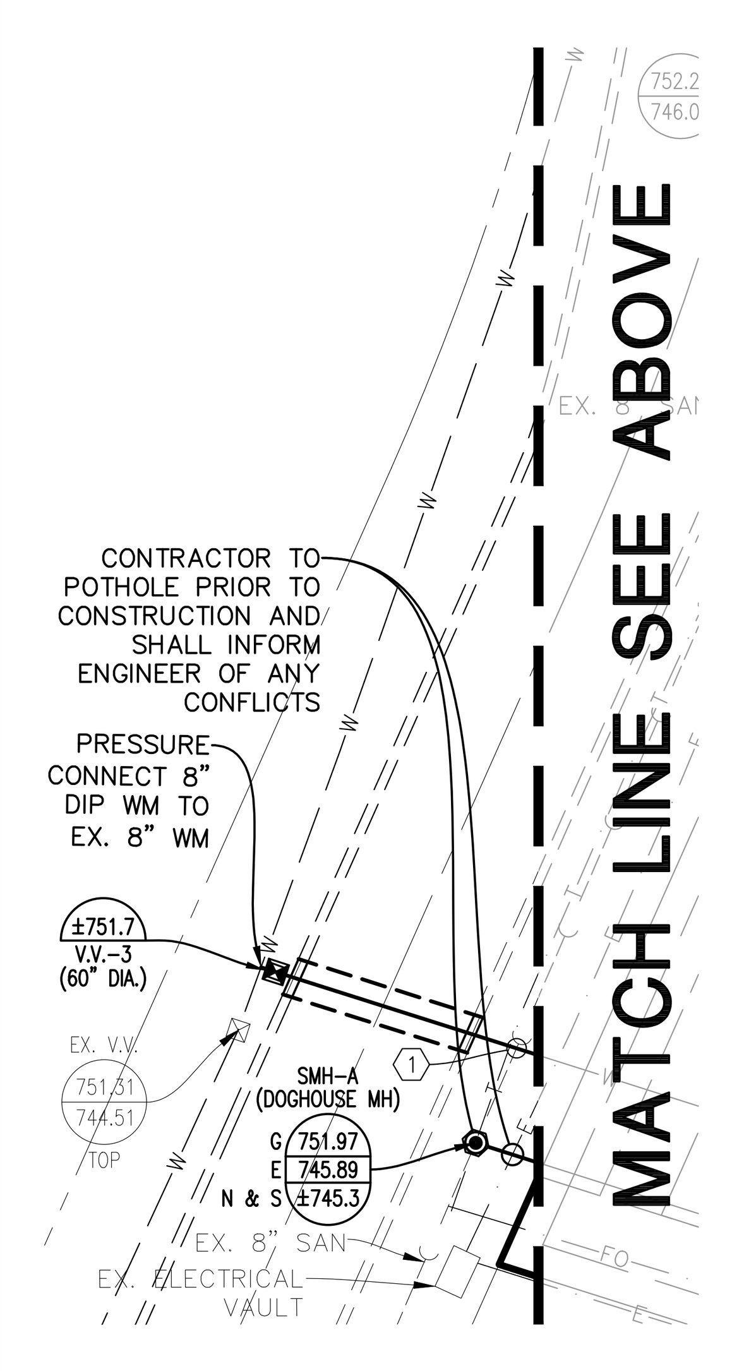
PROJ MGR.:	MDE
PROJ ASSOC.:	JRM
DRAWN BY:	JAW
DATE:	08-30-23
SCALE:	N.T.S.

SHEET
10 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

August 1, 2024 - 14:29 Dwn Name: P:\Projects\011\Civil\Eng\Final Drawings\Plan Set\SESC.dwg Updated By: JMiller





DEPARTMENT OF PUBLIC UTILITIES – ELECTRIC GENERAL NOTES:

1. THE DEVELOPER SHALL SUPPLY THE DPU–E ENGINEER WITH CATALOG CUTS FOR ALL CT/METER EQUIPMENT (INCLUDING BUT NOT LIMITED TO METER SOCKETS, PT CABINET, CT CABINET, DISCONNECT CABINET) AND TRANSFORMER PAD/VAULT. THE CATALOG CUTS SHALL BE APPROVED BY DPU–E PRIOR TO PURCHASING.
2. THE CT/METER CABINET SHALL BE TOP FED.
3. CT/METER EQUIPMENT ARE LONG LEAD TIME ITEMS AND DPU–E SHALL NOT BE HELD RESPONSIBLE FOR DELAYS RESULTING FROM NON–COMPLIANT CT/METER EQUIPMENT.
4. PLEASE PROVIDE NAME AND CONTACT INFORMATION FOR ELECTRICAL CONTRACTOR FOR THIS PROJECT.
5. DPUE WILL PROVIDE, INSTALL, AND MAINTAIN THE TRANSFORMERS, ALL PRIMARY (15KV) CABLE AND CONDUIT, AND THE METERS AND INSTRUMENT TRANSFORMERS. DPUE WILL ALSO MAKE THE FINAL CONNECTIONS IN THE TRANSFORMERS ONCE THE INSPECTION IS COMPLETE AND THE BUILDING IS READY TO BE ENERGIZED.
6. THE DEVELOPER IS RESPONSIBLE FOR PROVIDING, INSTALLING, AND MAINTAINING THE TRANSFORMER PAD/VAULT, ALL SERVICE LATERAL (480V) CABLE AND CONDUIT, THE SERVICE ENTRANCE EQUIPMENT INCLUDING THE CT/METER CABINET AND ALL BANKED METER SOCKETS.
7. THE DEVELOPER SHALL COORDINATE SITE CONSTRUCTION WITH DPU–E TO ALLOW ELECTRIC FACILITIES TO BE INSTALLED PRIOR PAVING AND CURBING. DPU–E REQUIRES 30 WORKING DAYS ADVANCE WRITTEN NOTICE PRIOR TO PAVEMENT INSTALLATION TO ALLOW FOR THE INSTALLATION OF ELECTRIC FACILITIES. GRADE ELEVATION MUST BE WITHIN 4" OF FINAL GRADING BEFORE ELECTRIC FACILITIES CAN BE INSTALLED.
8. ELECTRIC FACILITIES SHALL BE INSTALLED PURSUANT TO SECTION 8–1C–3 OF THE CITY OF NAPERVILLE MUNICIPAL CODE, WHICH REQUIRES A CONSTRUCTION FEE PAYMENT FOR INSTALLATION OF ELECTRIC FACILITIES.
9. AT ALL TIMES, THE CUSTOMER SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING A SUITABLE APPROACH TO THE METER LOCATION, WITH NO OBSTRUCTIONS WITHIN FOUR (4') FEET OF THE FRONT AND TWO (2') FEET OF THE SIDES OF THE METER. PER NAPERVILLE SERVICE RULES AND POLICIES 22.2.F.
10. CLEARANCE TO TRANSFORMER PAD SHALL BE 5' FROM ALL SIDES, 10' FROM FRONT, AND THE AREA ABOVE MUST BE COMPLETELY CLEAR OF OBSTRUCTION. NO TREES, SHRUBS, OR OTHER OBSTACLES WILL BE ALLOWED WITHIN THIS AREA. TRANSFORMER PAD SHALL MAINTAIN MINIMUM CLEARANCE OF 20' FROM EGRESS POINTS. PER DPUE SPECIFICATIONS C10–2130 AND C30–0016.
11. DPU–E REQUIRES A MINIMUM 5' OF SEPARATION BETWEEN ITS ELECTRIC FACILITIES AND ANY FIRE HYDRANTS STORM DRAINS, STORM SEWERS, WATER MAINS, GAS MAINS, ETC. THAT RUN PARALLEL TO ITS FACILITIES.
12. TO HAVE AN EXISTING SERVICE DISCONNECTED CALL THE CITY DISPATCH OFFICE AT 630–420–6187. PLEASE ALLOW AT LEAST 24 HOURS NOTICE. METERS AND METER SEALS ARE TO BE REMOVED ONLY BY DPU–E PERSONNEL. THE LOCATION AND TYPE OF NEW OR REPLACEMENT METER RELATED EQUIPMENT MUST BE PRE–APPROVED IN WRITING BY DPU–E. AN ELECTRIC SERVICE MUST BE INSPECTED BY THE DEVELOPMENT SERVICES TEAM ELECTRICAL INSPECTOR PRIOR TO CONNECTION.
13. LABEL ALL METER SOCKETS WITH THE COMPLETE ADDRESS IN 1" LETTERS USING PERMANENT STICKERS. IN MULTIPLE METER BANKS, THE COMPLETE ADDRESS MAY BE ON THE DISCONNECT SWITCH AND THE SUITE NUMBERS ON THE METER SOCKETS. THE ELECTRICAL SERVICE EQUIPMENT WILL NOT PASS INSPECTION WITHOUT APPROPRIATE ADDRESS LABELING.
14. APPROVAL OF METERING EQUIPMENT BY DPU–E DOES NOT REMOVE YOUR RESPONSIBILITY TO COMPLY WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AS ADOPTED BY THE CITY OF NAPERVILLE. DETERMINATION OF COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE WILL BE MADE BY THE TRANSPORTATION, ENGINEERING AND DEVELOPMENT DEPARTMENT.
15. A CUSTOMER'S GROUNDING CONDUCTOR SHALL NOT BE CONNECTED TO DPU–E DISTRIBUTION EQUIPMENT.
16. DUE TO SUPPLY CHAIN ISSUES DPU–E IS EXPERIENCING LONG LEAD TIMES (+400 DAYS) ON TRANSFORMERS. PLEASE TAKE THIS INTO CONSIDERATION WHEN PLANNING CONSTRUCTION. THE TRANSFORMER MUST BE SHOWN ON THE SITE PLAN AND SHOULD BE LOCATED BETWEEN 8' AND 50' FROM COMMERCIAL BUILDINGS. METERS, INSTRUMENTAL TRANSFORMERS, AND MAIN DISCONNECT SHALL BE LOCATED WITHIN 50' OF THE TRANSFORMER AND SHALL BE INSTALLED ON THE EXTERIOR OF THE BUILDING. IF THE TRANSFORMER WILL BE LOCATED AT A DISTANCE GREATER THAN 50', THEN THE METERING CABINET AND MAIN DISCONNECT MUST BE FREE STANDING AND LOCATED BETWEEN 10' AND 15' OF THE TRANSFORMER. THE INSTRUMENT TRANSFORMERS AND MAIN DISCONNECT MAY BE INSTALLED INSIDE THE BUILDING IF THE SERVICE ENTRANCE CAPACITY IS 1200 AMPS OR GREATER. METERS SHALL BE INSTALLED ON THE BUILDING EXTERIOR.
17. THE DEVELOPER IS RESPONSIBLE FOR THE CONSTRUCTION AND INSTALLATION OF A TRANSFORMER PAD AND VAULT. THE DPU–E ENGINEER MUST BE INFORMED PRIOR TO THE INSTALLATION OF THE AND VAULT. A MAIN DISCONNECT OR CIRCUIT BREAKER IS REQUIRED FOR DPU–E ACCESS IN CASE OF A NEED FOR SERVICE OR IN AN EMERGENCY. DPU–E SHALL MAKE THE FINAL CONNECTIONS OF THE CUSTOMER'S SERVICE TO THE TRANSFORMER TERMINALS. A MINIMUM OF EIGHT FEET OF ADDITIONAL CONDUCTOR LENGTH MUST BE LEFT ON THE CUSTOMER'S SERVICE CABLES.

UTILITY NOTES:

1. ALL UTILITY DIMENSIONS ARE TO CENTER OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. BUILDING DIMENSIONS AND ADJACENT UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1–800–892–0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
4. ROUTING OF GAS, ELECTRIC AND TELEPHONE SERVICES IF SHOWN ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE BASED UPON FINAL REVIEW AND APPROVAL BY RESPECTIVE UTILITY COMPANIES AND OWNER. CONTRACTOR SHALL CONTACT EACH UTILITY COMPANY AND COORDINATE FINAL LOCATIONS FOR ALL UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
6. LIGHTING AND UNDERGROUND CABLE IF SHOWN ON PLANS ARE FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS AND DETAILS.
7. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
8. CONTRACTOR TO VERIFY LOCATION, SIZES, AND ELEVATION OF ALL BUILDING SERVICE LOCATIONS WITH ARCHITECTURAL PLANS.
9. AT LOCATIONS WHERE WATER MAIN CROSSES BENEATH OR LESS THAN 18" ABOVE A SEWER, PROVIDE WATER MAIN PROTECTION PER STANDARD SPECIFICATIONS FOR SEWER AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.
10. ELEVATIONS GIVEN FOR STORM SEWER STRUCTURES LOCATED IN CURB LINE ARE PAVEMENT ELEVATIONS.
11. ALL WATER MAIN SHALL BE 5'–6" BELOW FINISHED GRADE TO TOP OF MAINS UNLESS NOTED OTHERWISE.
12. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
13. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HERE ON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED.
14. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
15. CONTRACTOR SHALL CORE AND BOOT ALL PIPE ENTRANCES TO EXISTING SANITARY MANHOLES.
16. EXTERNAL CHIMNEY SEALS ARE REQUIRED ON PROPOSED AND ADJUSTED EXISTING SANITARY MANHOLES.
17. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
18. ALL D.I. WATERMAIN PIPE AND D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.

UTILITY CROSSINGS

1 EX. SAN OVER WM B/P SAN = 745.37 T/P WM = 743.87 *LOWER WM*	4 ST OVER SAN B/P ST = 749.96 T/P SAN = 749.35 **CRITICAL CROSSING**
2 ST OVER WM B/P ST = 750.35 T/P WM = 748.85 *LOWER WM*	5 ST OVER EX. SAN B/P ST = 749.31 T/P SAN = 745.19
3 ST OVER SAN B/P ST = 749.97 T/P SAN = 748.80 **CRITICAL CROSSING**	6 ST OVER EX. SAN B/P ST = 749.40 T/P SAN = 744.89

NOTE: WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)

	DATE	REVISIONS	DRAWN BY
2	08–02–24	REVISED PER CITY OF NAPERVILLE REVIEW #6	MJH
1	07–03–24	REVISED PER DUDOT REVIEW #2	MJH
	05–16–24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
	03–29–24	REVISED PER DUDOT REVIEW	MJH
	03–12–24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
	02–09–24	REVISED PER CITY OF NAPERVILLE REVIEW	MJH

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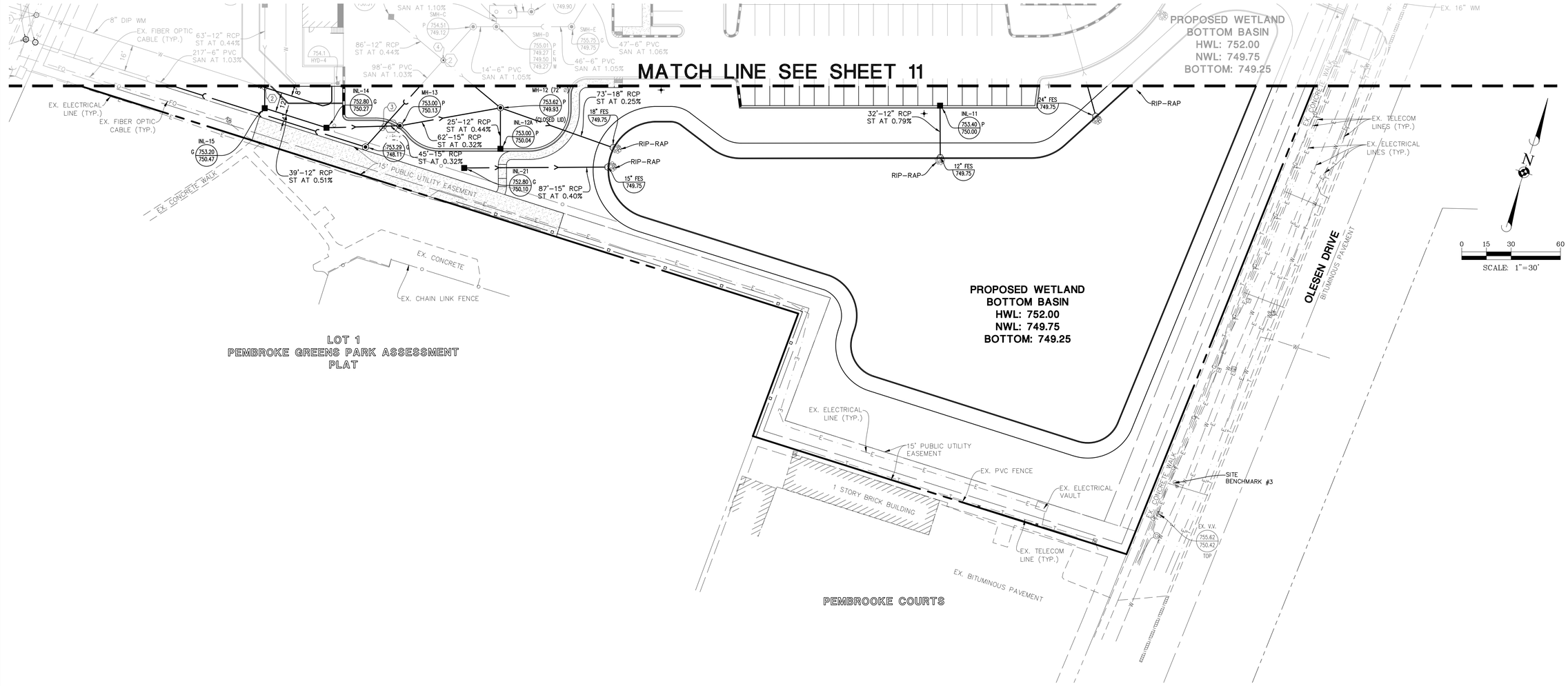
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
UTILITY PLAN - NORTH

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JAW
DATE: 08-30-23
SCALE: 1"=30'

FINAL ENGINEERING - NOT FOR CONSTRUCTION



LOT 1
PEMBROKE GREENS PARK ASSESSMENT PLAT

PEMBROOKE COURTS

DEPARTMENT OF PUBLIC UTILITIES – ELECTRIC GENERAL NOTES:

1. THE DEVELOPER SHALL SUPPLY THE DPU-E ENGINEER WITH CATALOG CUTS FOR ALL CT/METER EQUIPMENT (INCLUDING BUT NOT LIMITED TO METER SOCKETS, PT CABINET, CT CABINET, DISCONNECT CABINET) AND TRANSFORMER PAD/VAULT. THE CATALOG CUTS SHALL BE APPROVED BY DPU-E PRIOR TO PURCHASING.
2. THE CT/METER CABINET SHALL BE TOP FED.
3. CT/METER EQUIPMENT ARE LONG LEAD TIME ITEMS AND DPU-E SHALL NOT BE HELD RESPONSIBLE FOR DELAYS RESULTING FROM NON-COMPLIANT CT/METER EQUIPMENT.
4. PLEASE PROVIDE NAME AND CONTACT INFORMATION FOR ELECTRICAL CONTRACTOR FOR THIS PROJECT.
5. DPUE WILL PROVIDE, INSTALL, AND MAINTAIN THE TRANSFORMERS, ALL PRIMARY (15KV) CABLE AND CONDUIT, AND THE METERS AND INSTRUMENT TRANSFORMERS. DPUE WILL ALSO MAKE THE FINAL CONNECTIONS IN THE TRANSFORMERS ONCE THE INSPECTION IS COMPLETE AND THE BUILDING IS READY TO BE ENERGIZED.
6. THE DEVELOPER IS RESPONSIBLE FOR PROVIDING, INSTALLING, AND MAINTAINING THE TRANSFORMER PAD/VAULT, ALL SERVICE LATERAL (480V) CABLE AND CONDUIT, THE SERVICE ENTRANCE EQUIPMENT INCLUDING THE CT/METER CABINET AND ALL BANKED METER SOCKETS.
7. THE DEVELOPER SHALL COORDINATE SITE CONSTRUCTION WITH DPU-E TO ALLOW ELECTRIC FACILITIES TO BE INSTALLED PRIOR PAVING AND CURBING. DPU-E REQUIRES 30 WORKING DAYS ADVANCE WRITTEN NOTICE PRIOR TO PAVEMENT INSTALLATION TO ALLOW FOR THE INSTALLATION OF ELECTRIC FACILITIES. GRADE ELEVATION MUST BE WITHIN 4" OF FINAL GRADING BEFORE ELECTRIC FACILITIES CAN BE INSTALLED.
8. ELECTRIC FACILITIES SHALL BE INSTALLED PURSUANT TO SECTION 8-1C-3 OF THE CITY OF NAPERVILLE MUNICIPAL CODE, WHICH REQUIRES A CONSTRUCTION FEE PAYMENT FOR INSTALLATION OF ELECTRIC FACILITIES.
9. AT ALL TIMES, THE CUSTOMER SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING A SUITABLE APPROACH TO THE METER LOCATION, WITH NO OBSTRUCTIONS WITHIN FOUR (4') FEET OF THE FRONT AND TWO (2') FEET OF THE SIDES OF THE METER. PER NAPERVILLE SERVICE RULES AND POLICIES 22.2.F.
10. CLEARANCE TO TRANSFORMER PAD SHALL BE 5' FROM ALL SIDES, 10' FROM FRONT, AND THE AREA ABOVE MUST BE COMPLETELY CLEAR OF OBSTRUCTION. NO TREES, SHRUBS, OR OTHER OBSTACLES WILL BE ALLOWED WITHIN THIS AREA. TRANSFORMER PAD SHALL MAINTAIN MINIMUM CLEARANCE OF 20' FROM EGRESS POINTS. PER DPUE SPECIFICATIONS C10-2130 AND C30-0016.
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15. A CUSTOMER'S GROUNDING CONDUCTOR SHALL NOT BE CONNECTED TO DPU-E DISTRIBUTION EQUIPMENT.
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UTILITY NOTES:

1. ALL UTILITY DIMENSIONS ARE TO CENTER OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. BUILDING DIMENSIONS AND ADJACENT UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
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5. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
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10. ELEVATIONS GIVEN FOR STORM SEWER STRUCTURES LOCATED IN CURB LINE ARE PAVEMENT ELEVATIONS.
11. ALL WATER MAIN SHALL BE 5'-6" BELOW FINISHED GRADE TO TOP OF MAINS UNLESS NOTED OTHERWISE.
12. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
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UTILITY CROSSINGS

1. EX. SAN OVER WM
   B/P SAN = 745.37
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NOTE: WATER AND SEWER CROSSINGS SHALL MEET STATE EPA SEPARATION AND PIPE MATERIAL REQUIREMENTS. (SEE DETAIL SHEET)

DATE	REVISIONS	DRAWN BY
05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
04-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #3	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MJH

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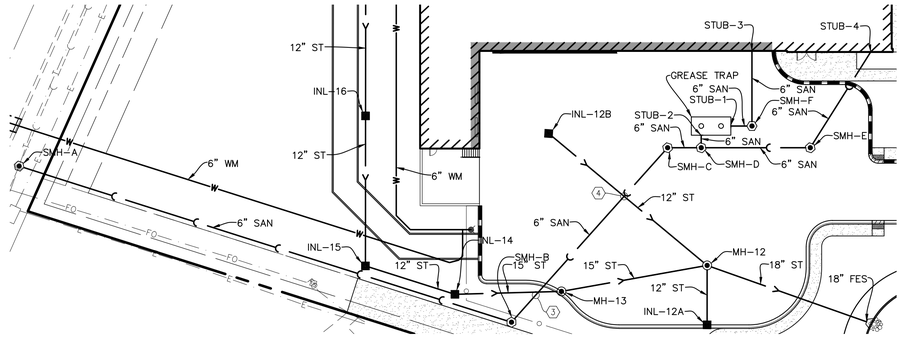
PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
UTILITY PLAN - SOUTH

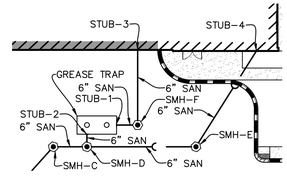
PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: MJH
DATE: 08-30-23
SCALE: 1"=30'

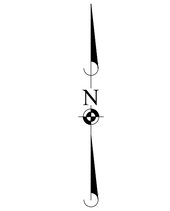
SHEET 12 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

August 7, 2024 - 11:59 Dwg Name: P:\Naperville\Civil\Eng\Plan Drawings\Plan Set\UTILITY.dwg Updated By: JMiller

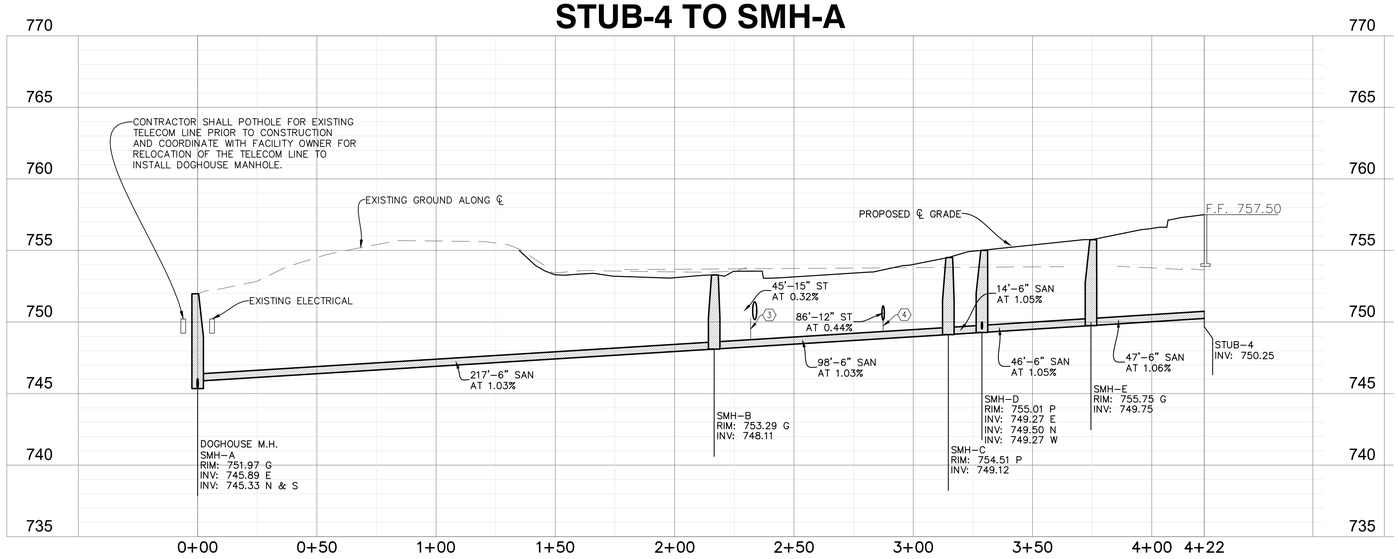




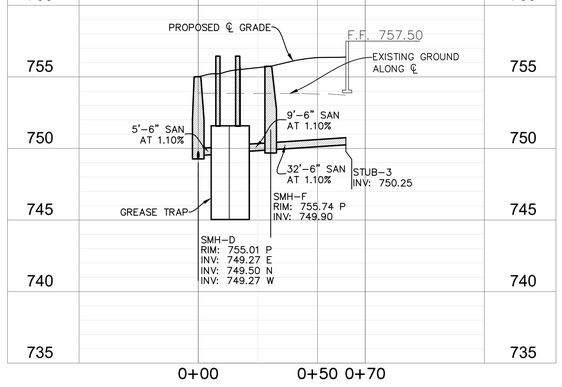


SCALE: 1"=30'
VERTICAL SCALE: 1"=5'

STUB-4 TO SMH-A



STUB-3 TO SMH-D



DATE	REVISIONS	DRAWN BY
05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
03-15-24	REVISED PER VILLAGE OF ROMEOVILLE REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MDE

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

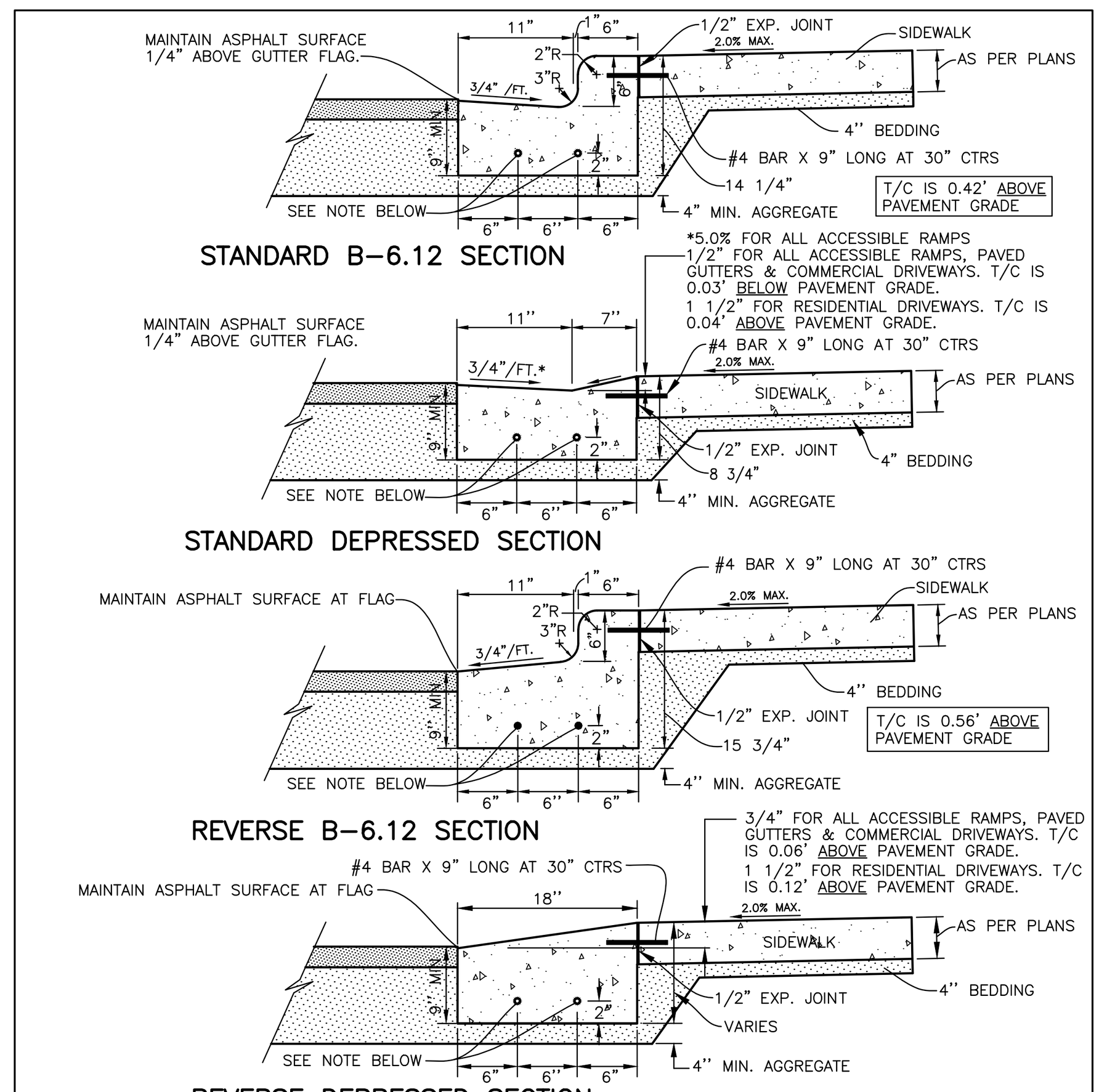
PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
PLAN AND PROFILE - SANITARY SEWER

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: MJH
DATE: 08-30-23
SCALE: H:1"=30',V:1"=5'

SHEET
13 OF 19
ADK.NVIL01

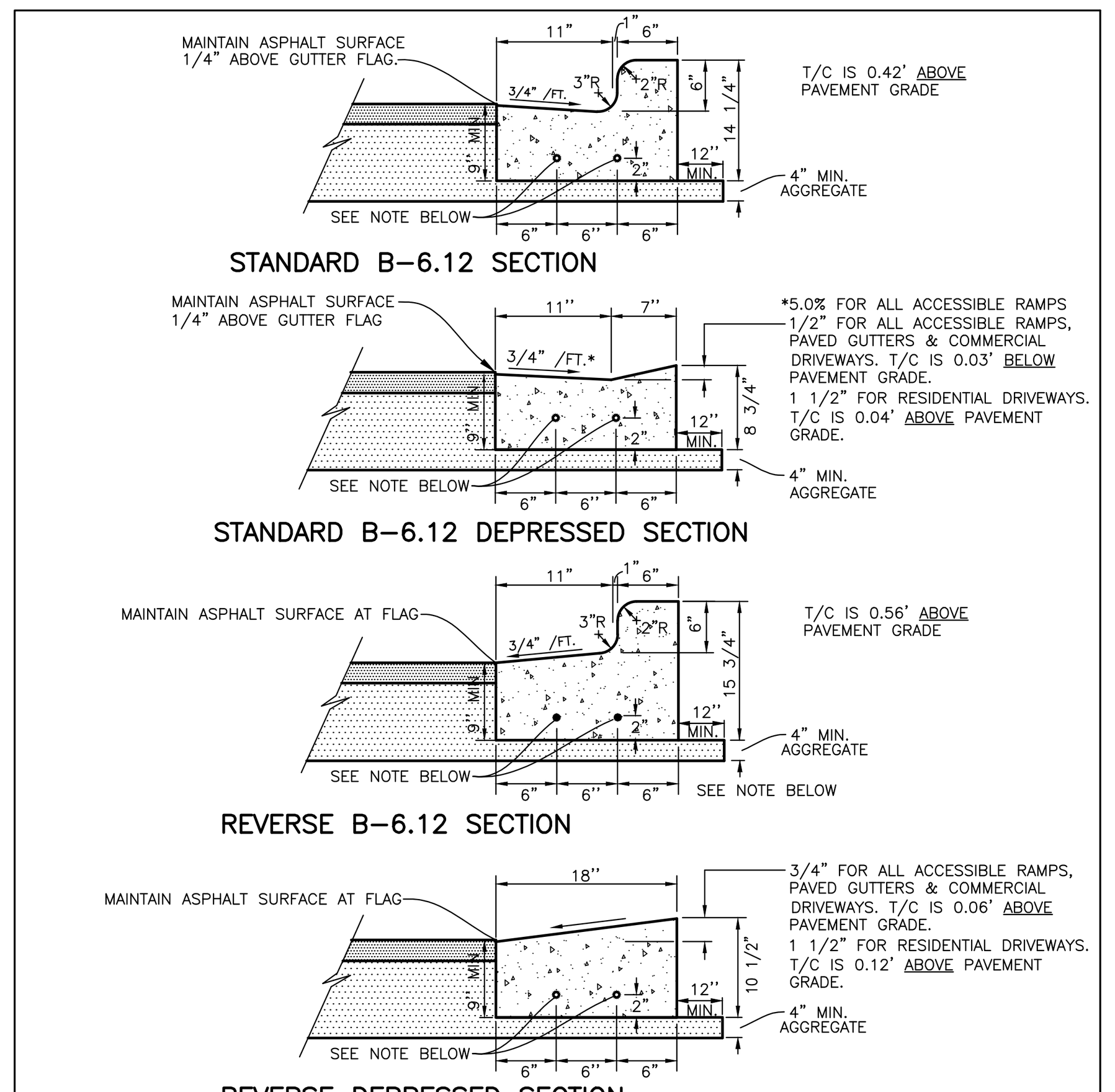
FINAL ENGINEERING - NOT FOR CONSTRUCTION

July 3, 2024 - 11:14 Dwg Name: P:\Naperville\Civil\Final Drawings\Plan Set\SANITARY PP.dwg Updated By: JMiller



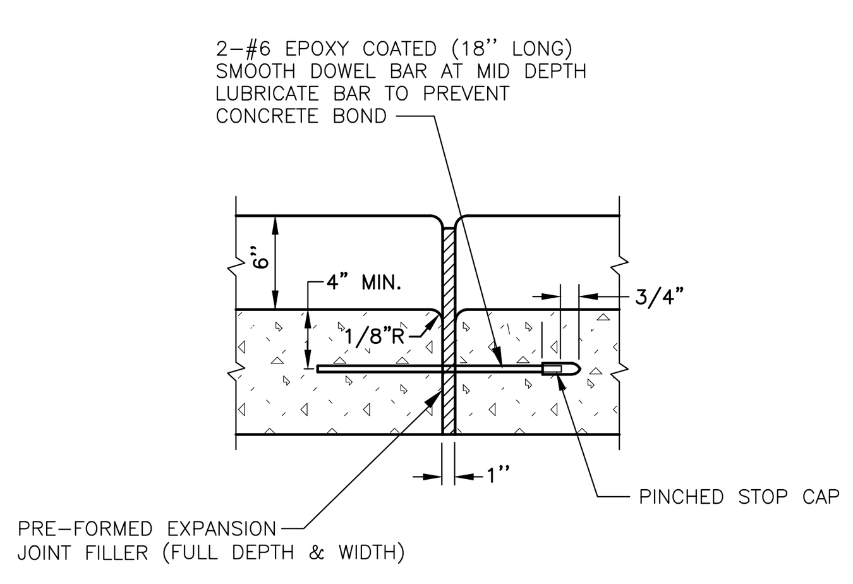
NOTES:
1. EXPANSION JOINTS TO BE LOCATED AT HIGH POINTS, UTILITY STRUCTURES, CURB RETURNS, COLD JOINTS OR 50' MAX. (SEE DETAIL)
2. CONTRACTION JOINTS ARE TO BE SAW CUT 2" DEEP AT 20' INTERVALS MAX. ALONG CURB, 5' INTERVALS MAX. FOR SIDEWALK.
3. INSTALL 2-#4 DEFORMED BARS X 10'-0" LONG OVER ALL TRENCHES.
4. TRANSITION CURB AND GUTTER AS NECESSARY TO MEET DRAINAGE STRUCTURE FRAME AND GRATE
5. IF CURB & GUTTER & SIDEWALK ARE POURED MONOLITHICALLY, NO #4x9" LONG REINFORCING BARS ARE REQUIRED.

12-01-23
MODIFIED B-6.12 CURB & GUTTER W/ADJACENT SIDEWALK DETAIL
S-RD-B612-CURB-SW2



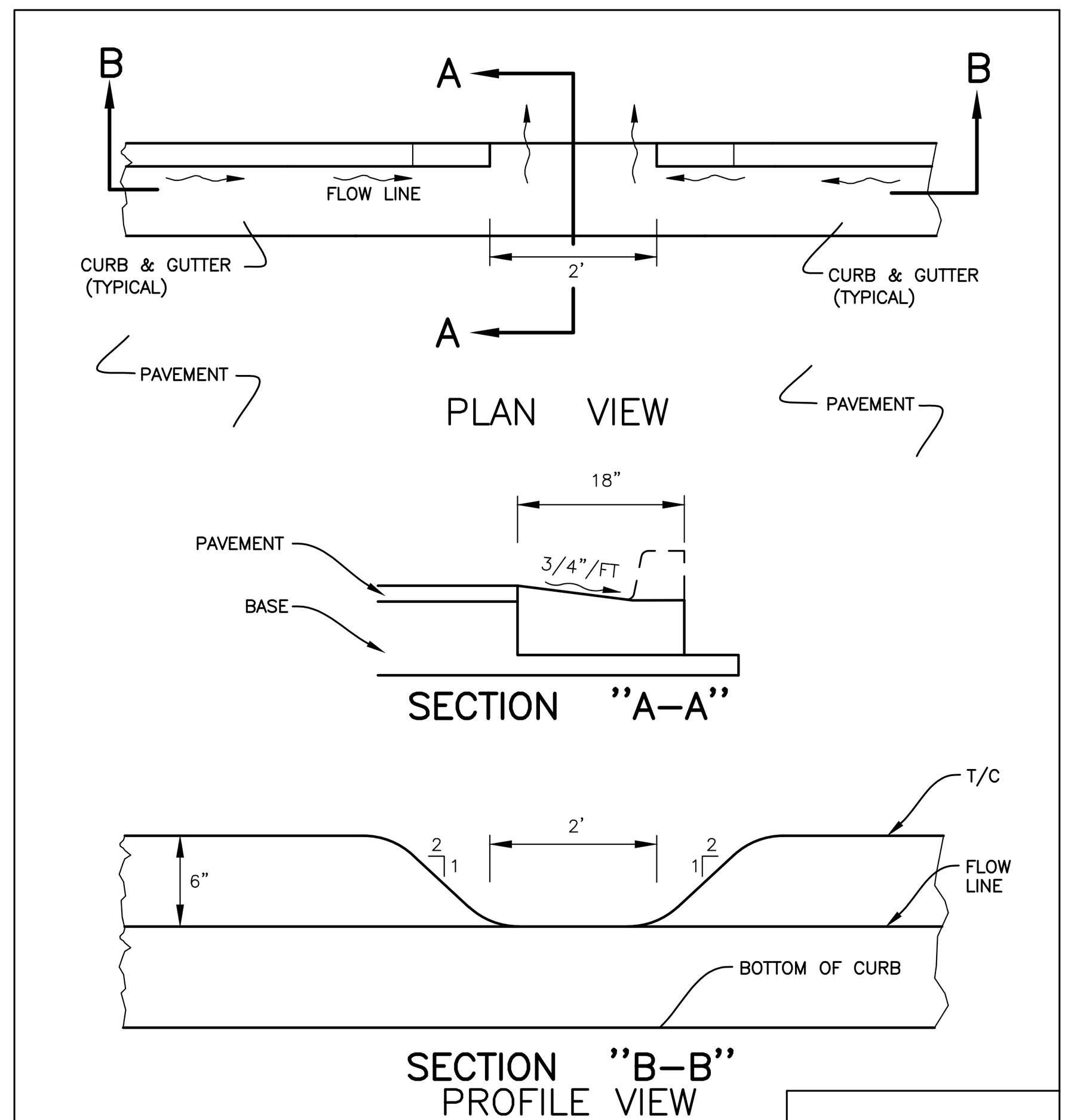
NOTE:
1. EXPANSION JOINTS TO BE LOCATED AT HIGH POINTS, UTILITY STRUCTURES, CURB RETURNS, COLD JOINTS OR 60' MAX. (SEE DETAIL)
2. CONTRACTION JOINTS ARE TO BE SAW CUT 2" DEEP AT 20' INTERVALS MAX.
3. INSTALL 2-#4 DEFORMED BARS X 10'-0" LONG OVER ALL TRENCHES.
4. TRANSITION CURB AND GUTTER AS NECESSARY TO MEET DRAINAGE STRUCTURE FRAME AND GRATE

12-01-23
MODIFIED B-6.12 CURB & GUTTER DETAIL
S-RD-B612-CURB
SHEET 1 OF 2



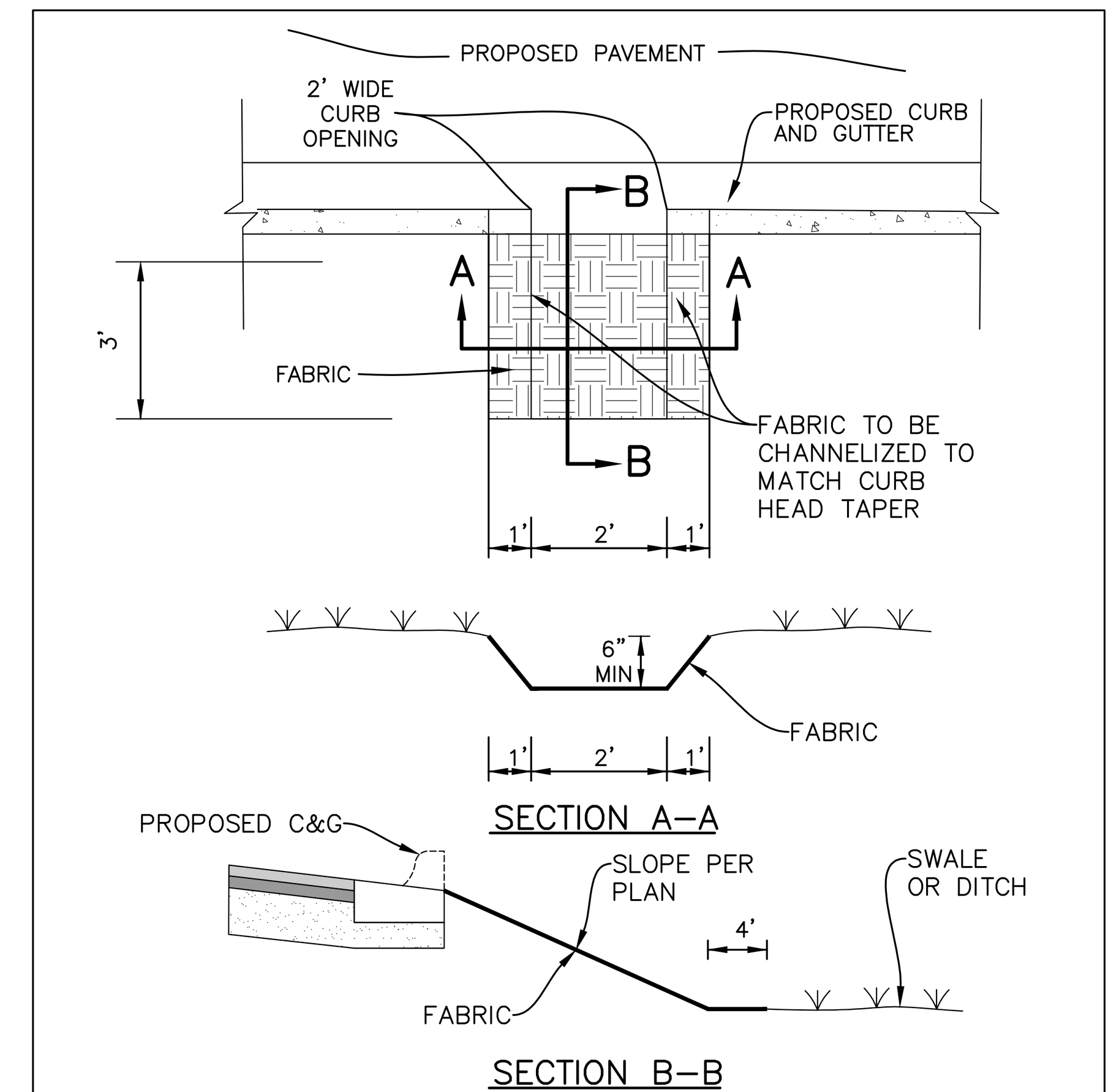
TYPICAL
EXPANSION JOINT DETAIL
CROSS SECTION

06-01-17
CURB EXPANSION JOINT
S-RD-EXPANSION-JOINT
SHEET 2 OF 2



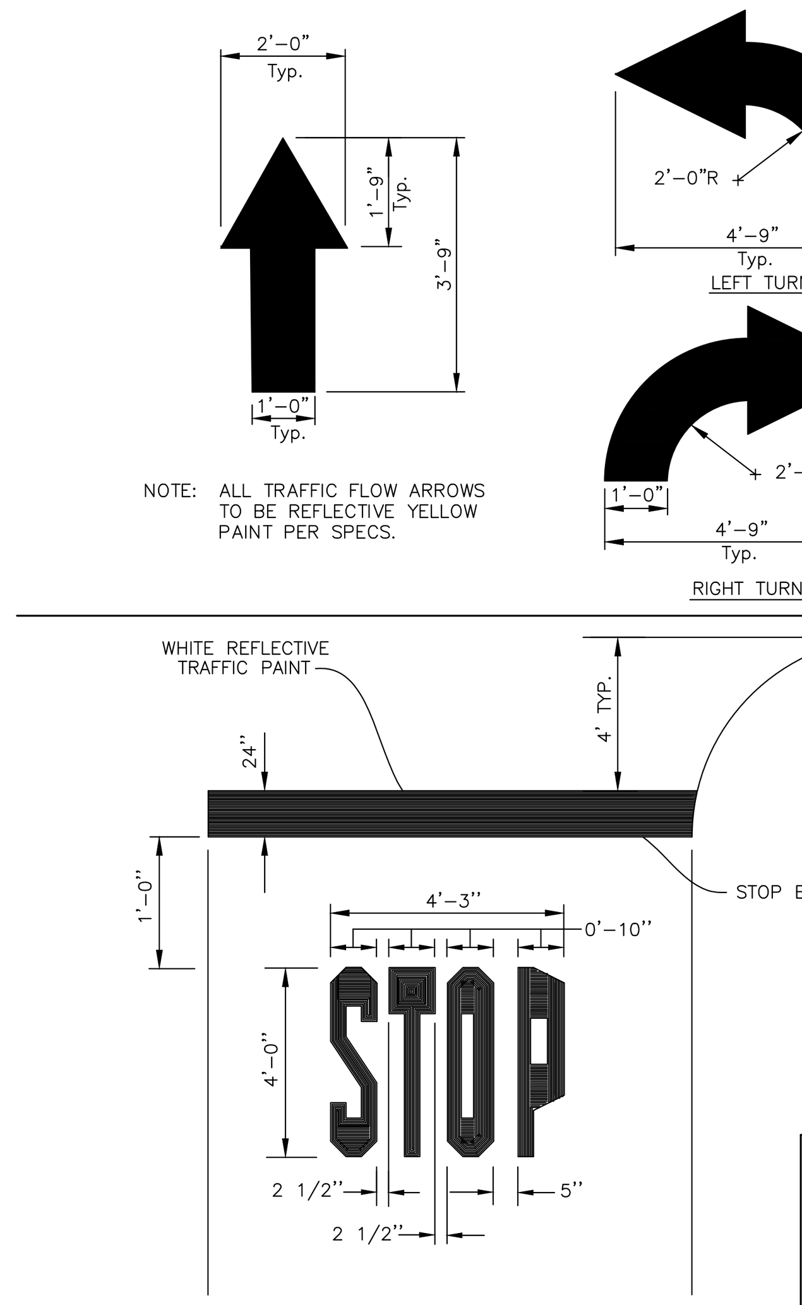
NOTE:
CONSTRUCT AS PER CURB & GUTTER DETAIL.

01-01-16
CURB CUT DETAIL
N-RD-CURB CUT



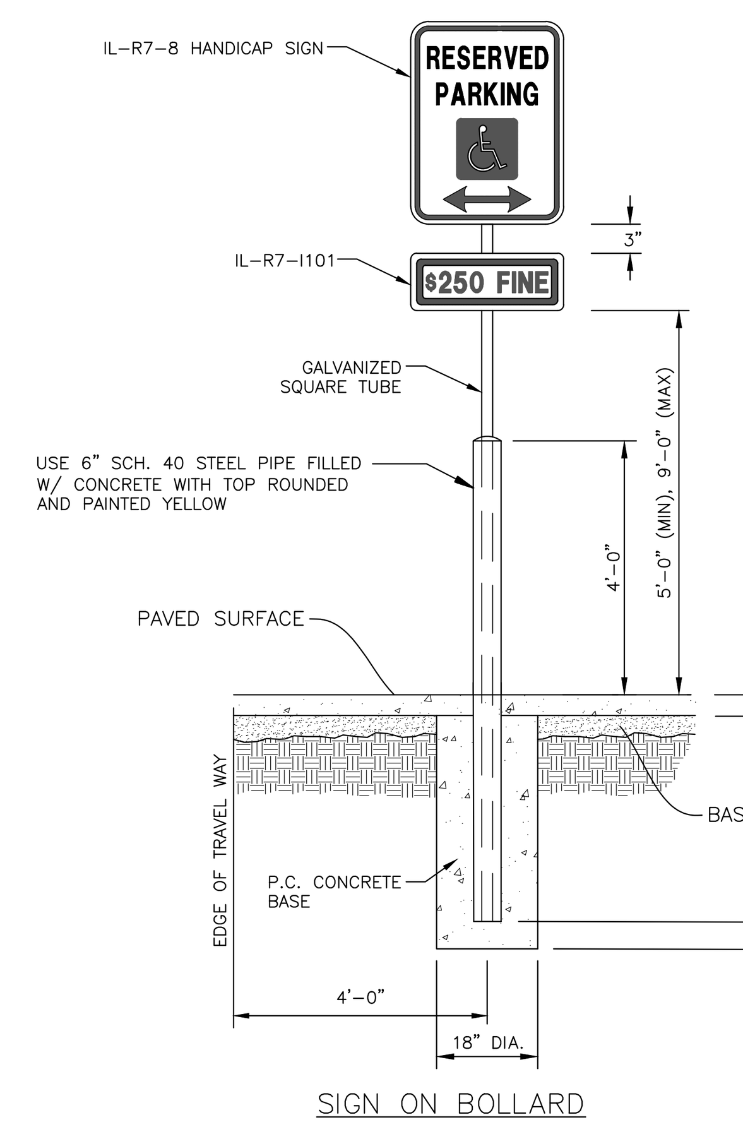
1. RIP RAP SHALL BE CONSTRUCTED BASED ON 12" DIA PIPE (SEE RIP RAP DETAIL)
2. FABRIC TO BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL

2' CURB CUT FABRIC DETAIL
N.T.S.
S-ST-CURB-CUT-FABRIC



NOTE: ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE YELLOW PAINT PER SPECS.

06-01-15
PARKING LOT & DRIVE PAVEMENT MARKING DETAIL
S-MS-PAVMARKING



SIGN ON BOLLARD
N.T.S.

NOTES:
1. ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

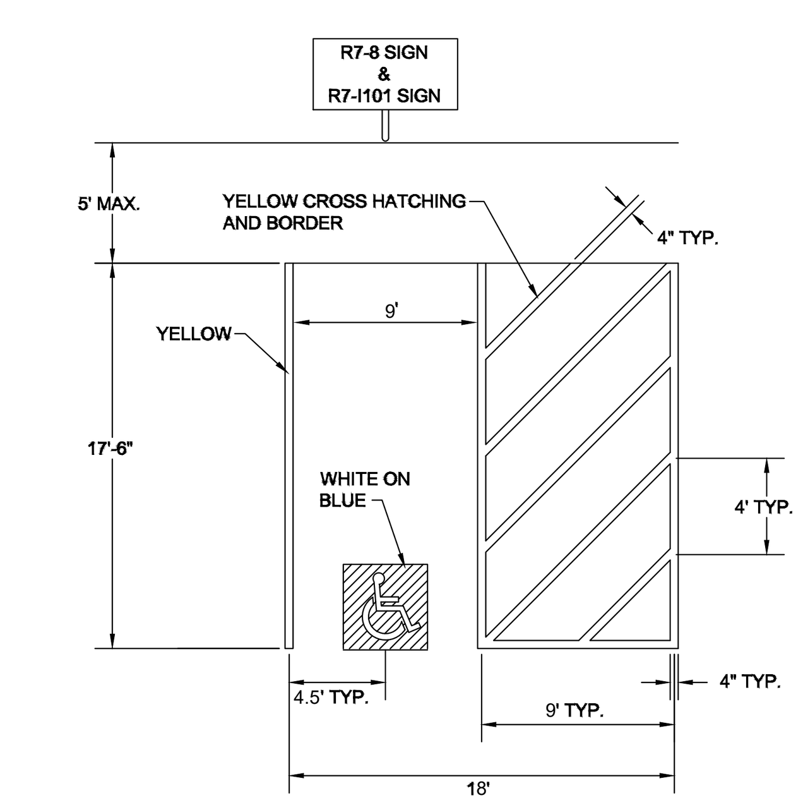
06-01-15
SIGN ON BOLLARD AND BASE
S-RD-BOLLARD-SIGN

NOTES FOR ACCESSIBLE PARKING SPACES:

1. EACH PARKING SPACE SHALL BE AT LEAST 16' WIDE, WITH AN 8' WIDE ACCESS AISLE.
2. TWO PARKING SPACES MAY SHARE AN ACCESS AISLE EXCEPT FOR ANGLED PARKING SPACES.
3. PARKING SPACE IDENTIFICATION SIGN WITH INTERNATIONAL SYMBOL OF ACCESSIBILITY (R7-8) SHALL BE MOUNTED ON A PERMANENT POST OR WALL AT THE FRONT CENTER OF THE ACCESSIBLE PARKING SPACE, SET AT A MINIMUM OF 5' ABOVE THE GROUND SURFACE MEASURED TO THE BOTTOM OF THE SIGN AND NO MORE THAN 5' HORIZONTALLY FROM THE FRONT OF A PARKING SPACE.
4. ACCESSIBLE PARKING SIGNS SHALL ALSO EXHIBIT THE WORDS "$250 FINE" OR THE "$250 FINE" SIGN (R7-I101) SHALL BE PLACED BENEATH THE ACCESSIBLE PARKING SIGN (R7-8).
5. PARKING SPACES DESIGNED FOR PERSONS WITH DISABILITIES AND ACCESSIBLE PASSENGER LOADING ZONES THAT SERVE A PARTICULAR BUILDING, SHALL BE LOCATED ON THE SHORTEST POSSIBLE ACCESSIBLE CIRCULATION ROUTE TO AN ACCESSIBLE ENTRANCE OF THE BUILDING.
6. IN SEPARATE PARKING STRUCTURES OR LOTS THAT DO NOT SERVE A PARTICULAR BUILDING, PARKING SPACES FOR PERSONS WITH DISABILITIES SHALL BE LOCATED ON THE SHORTEST POSSIBLE CIRCULATION ROUTE TO AN ACCESSIBLE PEDESTRIAN ENTRANCE OF THE PARKING FACILITY.

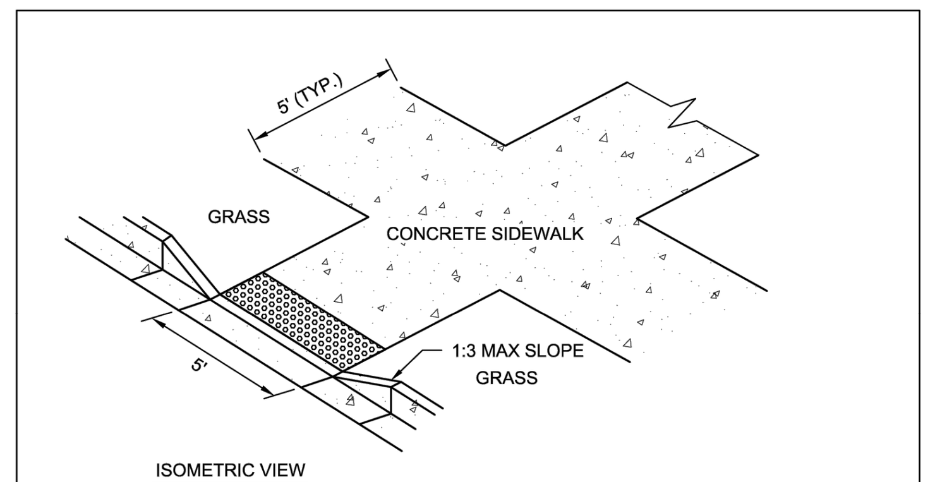
# OF ACCESSIBLE SPACES REQUIRED PER # OF OFF STREET PARKING	
TOTAL OFF STREET PARKING SPACES REQUIRED	REQUIRED MINIMUM NUMBER OF ACCESSIBLE PARKING SPACES
1 TO 25	1
26 TO 50	2
51 TO 75	3
76 TO 100	4
101 TO 150	5
151 TO 200	6
201 TO 300	7
301 TO 400	8
401 TO 500	9
501 TO 1000	2% OF TOTAL NUMBER
OVER 1000	20 PLUS 1 FOR EACH 100 OVER 1000

City of Naperville STANDARD DETAIL | **ACCESSIBLE PARKING SPACE MARKINGS** | REVISED: 10/04/2023 | SHEET 3 OF 3 | PAVEMENT 35 | **590.35**



NOTE:
FOR MULTIPLE ACCESSIBLE PARKING SPACES IN A ROW, THE DESIGN ENGINEER HAS THE OPTION OF USING THE ABOVE SHOWN UNIT IN A COMBINATION OF LEFT-HANDED AND RIGHT-HANDED LAYOUTS IF IT PROVIDES FOR BETTER SITE DESIGN.

City of Naperville STANDARD DETAIL | **ACCESSIBLE PARKING SPACE MARKINGS** | REVISED: 10/04/2023 | SHEET 2 OF 3 | PAVEMENT 35 | **590.35**



ISOMETRIC VIEW

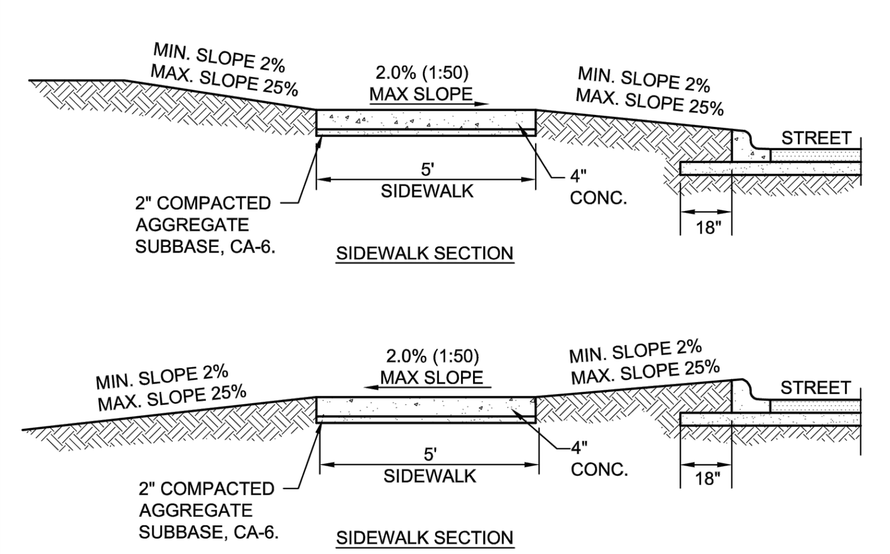
NOTES:
1. ALL AGGREGATE SUB-BASE SHALL BE MECHANICALLY COMPACTED.
2. SIDEWALK THICKNESS AT CURB RAMPS SHALL BE A MINIMUM OF 6" PCC ON 2" AGGREGATE SUB BASE.
3. SIDEWALK CONSTRUCTION SHALL FOLLOW APPLICABLE IDOT STANDARDS.
4. SIDEWALKS SHALL FOLLOW CURRENT ADA GUIDELINES.

APPLICABLE IDOT STANDARD DETAILS (USE LATEST REVISION:

424001-XX	PERPENDICULAR CURB RAMPS FOR SIDEWALKS
424006-XX	DIAGONAL CURB RAMPS FOR SIDEWALKS
424011-XX	CORNER PARALLEL CURB RAMPS FOR SIDEWALKS
424016-XX	MID-BLOCK CURB RAMPS FOR SIDEWALKS
424021-XX	DEPRESSED CORNER FOR SIDEWALKS
424026-XX	ENTRANCE/ALLEY PEDESTRIAN CROSSINGS
424031-XX	MEDIAN PEDESTRIAN CROSSINGS
606001-XX	CONCRETE CURB TYPE B AND COMB CONCRETE CURB AND GUTTER

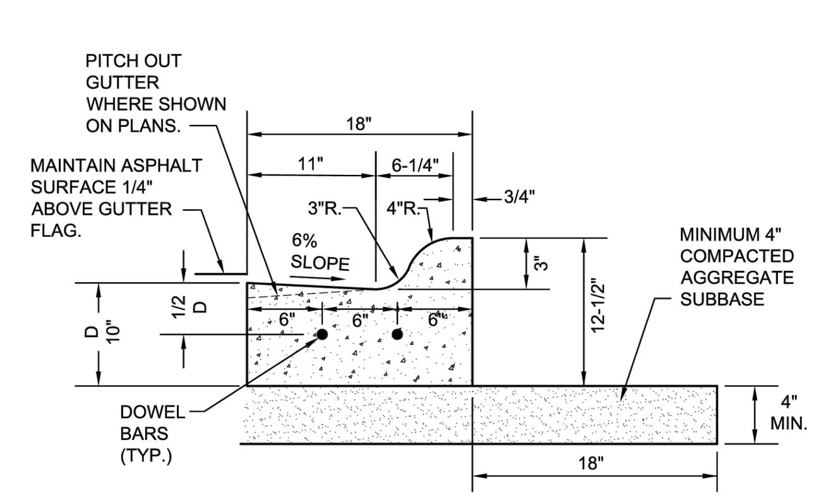
APPROVED ADA DETECTABLE WARNING TILES:
1. ADA SOLUTIONS - CAST IN PLACE REPLACEABLE
2. ARMOR TILE - CAST IN PLACE
3. DETECTILE - SLIMTEK II
4. TUFTILE - POLYMER WET-SET

City of Naperville STANDARD DETAIL | **CURB RAMPS** | REVISED: 08/01/2018 | SHEET 1 OF 1 | PAVEMENT 32 | **590.32**



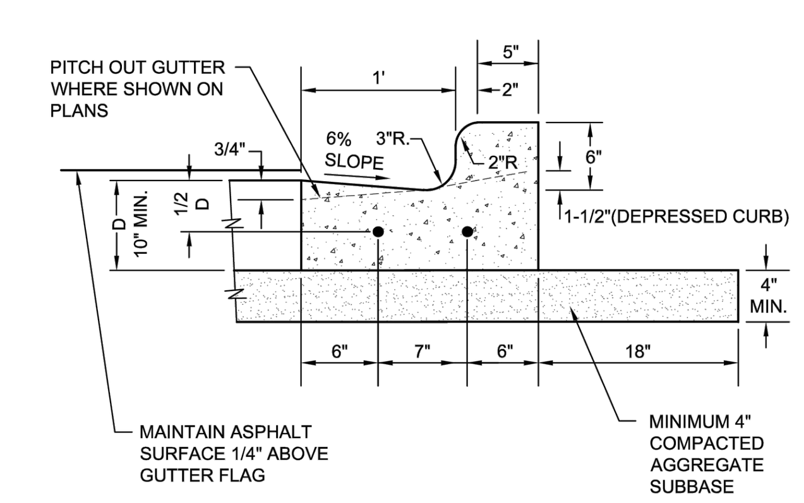
NOTES:
1. CONCRETE SHALL BE IDOT CLASS SI.
2. MINIMUM SIDEWALK THICKNESS SHALL BE 4".
3. SIDEWALK THICKNESS ACROSS DRIVEWAYS SHALL BE AT A MINIMUM 6" FOR RESIDENTIAL DRIVEWAYS AND 8" FOR COMMERCIAL DRIVEWAYS.
4. MAXIMUM LONGITUDINAL SLOPE SHALL NOT EXCEED 5% (20:1). FOR ANY SLOPE IN EXCESS OF 5%, ALL REQUIREMENTS OF THE ILLINOIS ACCESSIBILITY CODE (LATEST EDITION) SHALL BE MET.
5. MINIMUM TRANSVERSE SLOPE SHALL BE 1.0% (1:100). MAXIMUM TRANSVERSE SLOPE SHALL BE 2.0% (1:50).
6. A MINIMUM 2" AGGREGATE SUBBASE (CA-6) SHALL BE PROVIDED. (4" THROUGH COMMERCIAL DRIVEWAYS).
7. AGGREGATE SUBBASE SHALL BE MECHANICALLY COMPACTED.
8. ALL SIDEWALKS SHALL BE PROMPTLY BACKFILLED AND PROTECTED FROM DAMAGE.
9. SIDEWALK CONSTRUCTION SHALL FOLLOW APPLICABLE IDOT STANDARDS.
10. SIDEWALKS SHALL FOLLOW CURRENT ADA GUIDELINES.

City of Naperville STANDARD DETAIL | **SIDEWALK** | REVISED: 01/01/2013 | SHEET 1 OF 1 | PAVEMENT 30 | **590.30**



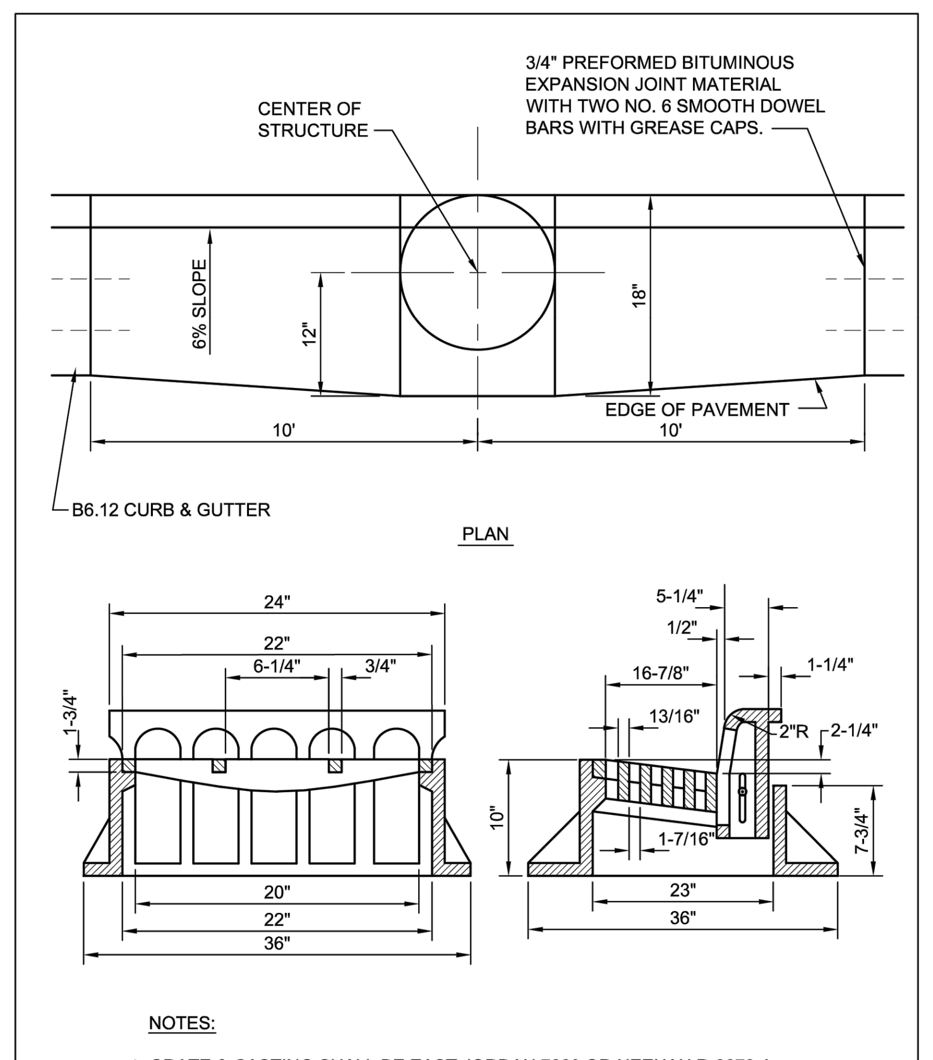
NOTES:
1. 3/4" PREFORMED BITUMINOUS EXPANSION JOINT WITH TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4" DIA. X 18") WITH GREASE CAPS SHALL BE PLACED EVERY 150', 10' EITHER SIDE OF DRAINAGE STRUCTURES, P.C.'S, RADIUS POINTS AND BACK OF CUL-DE-SACS. WHEN EXPANSION JOINTS ARE CONSTRUCTED ADJACENT TO EXISTING CURB & GUTTER THE EXISTING CURB SHALL BE DRILLED AND TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4" X 18") GROUTED IN PLACE. GREASE CAPS SHALL BE PLACED ON THE SIDE OF THE NEW CURB AND GUTTER SHALL HAVE A PINCHED STOP THAT WILL PROVIDE A MINIMUM 1" EXPANSION.
2. TOOLED CONTROL JOINTS OR SAWCUTS SHALL BE MADE EVERY 15'.
3. SAWCUTS SHALL BE MADE WITHIN TWENTY-FOUR (24) HOURS AND SEALED WITH A CITY APPROVED JOINT SEALANT. JOINTS SHALL BE CLEAN AND DRY PRIOR TO APPLICATION OF SEALANT.
4. FOR CURB AND GUTTER CONSTRUCTED OVER UTILITY TRENCHES, TWO (2) EPOXY COATED REINFORCING BARS (NO. 4) SHALL BE PLACED IN THE CURB AND GUTTER, CENTERED OVER THE TRENCH.

City of Naperville STANDARD DETAIL | **M3.12 MOUNTABLE CURB & GUTTER** | REVISED: 01/01/2013 | SHEET 1 OF 1 | PAVEMENT 22 | **590.22**



NOTES:
1. 3/4" PREFORMED BITUMINOUS EXPANSION JOINT WITH TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4" DIA. X 18") WITH GREASE CAPS SHALL BE PLACED EVERY 150', 10' EITHER SIDE OF DRAINAGE STRUCTURES, P.C.'S, RADIUS POINTS AND BACK OF CUL-DE-SACS. WHEN EXPANSION JOINTS ARE CONSTRUCTED ADJACENT TO EXISTING CURB & GUTTER THE EXISTING CURB SHALL BE DRILLED AND TWO (2) NUMBER 6 COATED SMOOTH DOWEL BARS (3/4" X 18") GROUTED IN PLACE. GREASE CAPS SHALL BE PLACED ON THE SIDE OF THE NEW CURB AND GUTTER SHALL HAVE A PINCHED STOP THAT WILL PROVIDE A MINIMUM 1" EXPANSION.
2. TOOLED CONTROL JOINTS OR SAWCUTS SHALL BE MADE EVERY 15'.
3. SAWCUTS SHALL BE MADE WITHIN TWENTY-FOUR (24) HOURS AND SEALED WITH A CITY APPROVED JOINT SEALANT. JOINTS SHALL BE CLEAN AND DRY PRIOR TO APPLICATION OF SEALANT.
4. FOR CURB AND GUTTER CONSTRUCTED OVER UTILITY TRENCHES, TWO (2) EPOXY COATED REINFORCING BARS (NO. 4) SHALL BE PLACED IN THE CURB AND GUTTER, CENTERED OVER THE TRENCH.

City of Naperville STANDARD DETAIL | **B6.12 BARRIER CURB & GUTTER** | REVISED: 01/01/2013 | SHEET 1 OF 1 | PAVEMENT 20 | **590.20**



NOTES:
1. GRATE & CASTING SHALL BE EAST JORDAN 7220 OR NEENAH R-3278-A OR AS APPROVED BY THE CITY ENGINEER.
2. ALL CASTINGS SHALL BE SHOP PAINTED WITH AN ASPHALTIC BASE.

City of Naperville STANDARD DETAIL | **B6.12 BARRIER CURB & GUTTER AT CURB INLETS** | REVISED: 01/01/2013 | SHEET 1 OF 1 | PAVEMENT 21 | **590.21**

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

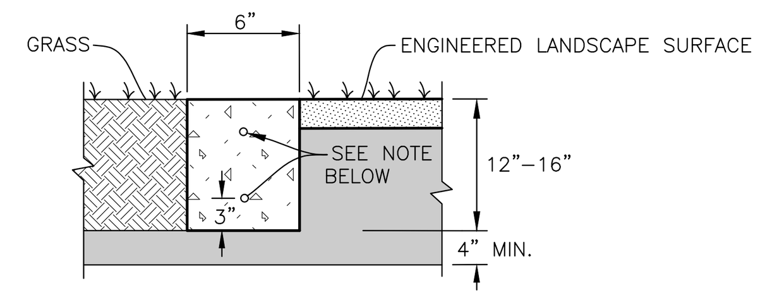
DATE	REVISIONS	DRAWN BY
05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MDE

Manhard CONSULTING
1 East Wacker Drive, Suite 2700, Chicago, IL 60601 ph:312.824.3801 fx:847.634.0095 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
CONSTRUCTION DETAILS

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JAW
DATE: 08-30-23
SCALE: N.T.S.

FINAL ENGINEERING - NOT FOR CONSTRUCTION

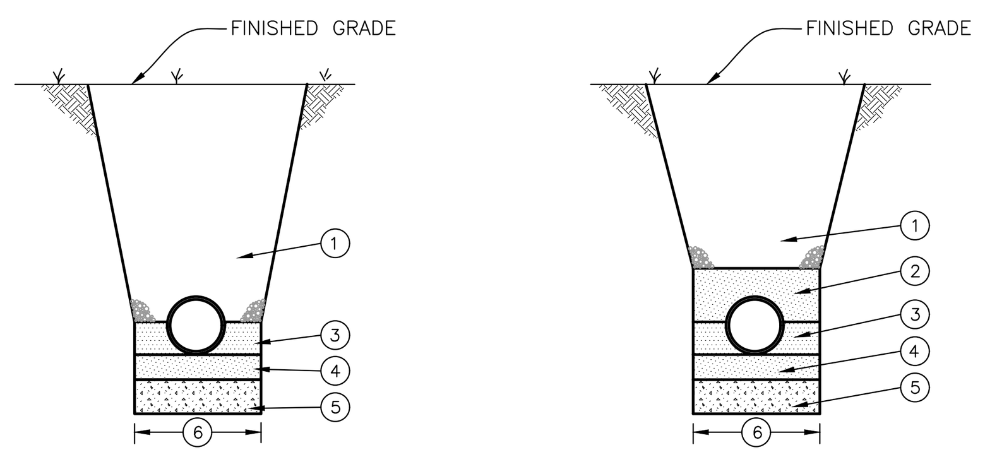


RIBBON CURB

NOTES:

1. EXPANSION JOINTS TO BE LOCATED AT HIGH POINTS, UTILITY STRUCTURES CURB RETURNS, CUL JOINTS OR 60' MAX. (SEE DETAIL)
2. CONTRACTION JOINTS ARE TO BE SAW CUT 2" DEEP AT 20' INTERVALS MAX.
3. INSTALL 2-#4 DEFORMED BARS X 10'-0" LONG OVER ALL TRENCHES.

10-01-08 RIBBON CURB DETAIL N-RD-BC-RIBBON



RIGID PIPE
CONCRETE PIPE
VITRIFIED CLAY PIPE
DUCTILE IRON PIPE
STEEL PIPE

FLEXIBLE PIPE
POLYVINYL CHLORIDE (PVC) PIPE
COMPOSITE SEWER PIPE
HIGH DENSITY POLYETHYLENE (HDPE) PIPE
CORRUGATED METAL PIPE

1. MECHANICALLY COMPACTED SELECTED GRANULAR BACKFILL IN 6 INCH LIFTS UNDER OR WITHIN 2 FEET OF ANY PAVEMENT, CURB & GUTTER OR SIDEWALK. MACHINE COMPACTION OF EXCAVATED MATERIAL IN OTHER LOCATIONS WHERE SUITABLE.
2. MECHANICALLY COMPACTED SELECTED GRANULAR BACKFILL IN 6 INCH LIFTS TO 12'' ABOVE TOP OF PIPE.
3. RIGID PIPE: WELL-COMPACTED HAUNCHING MATERIAL PLACED IN MAXIMUM 6 INCH LIFTS TO SPRING LINE OF PIPE
   FLEXIBLE PIPE: WELL-COMPACTED HAUNCHING MATERIAL PLACED IN MAXIMUM 6 INCH LIFTS TO SPRING LINE OF PIPE.
4. 4'' WELL-COMPACTED BEDDING MATERIAL
5. UNSUITABLE MATERIAL TO BE REMOVED AND REPLACED WITH GRANULAR FOUNDATION MATERIAL WHERE SOIL CONDITIONS WARRANT
6. TRENCH WIDTH:
   TRENCH DEPTH OF 5 FEET AND LESS, WITHOUT PROTECTION
   OUTSIDE DIAMETER + 12 INCHES ON EACH SIDE OF THE PIPE.
   TRENCH DEPTH OF 5 FEET AND LESS, WITH PROTECTION
   OUTSIDE DIAMETER + 18 INCHES ON EACH SIDE OF THE PIPE.
   TRENCH DEPTH OF GREATER THAN 5 FEET
   OUTSIDE DIAMETER + 18 INCHES ON EACH SIDE OF THE PIPE.

06-01-15 PIPE INSTALLATION DETAIL S-MS-PIPEINSTALL

STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS, LATEST EDITION.

41-2.01 PROTECTION OF WATER MAIN AND WATER SERVICE LINES

41-2.01A GENERAL

Water mains and water service lines shall be protected from sanitary sewers, storm sewers, combined sewers, house sewer service connections and drains as follows:

41-2.01B HORIZONTAL SEPARATION – WATER MAINS AND SEWERS

(1.) Water mains shall be located at least ten (10) feet (3.1 m) horizontally from any existing or proposed drain, storm sewer, sanitary sewer, combined sewer or sewer service connection.

(2.) Water mains may be located closer than ten (10) feet (3.1 m) to a sewer line when:

(a) local conditions prevent a lateral separation of ten (10) feet (3.1 m); and

(b) the water main invert is at least eighteen (18) inches (460 mm) above the crown of the sewer; and

(c) the water main is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.

(3.) When it is impossible to meet (1) or (2) above, both the water main and drain or sewer shall be constructed of slip-on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction. The drain or sewer shall be pressure tested to the maximum expected surcharge head before backfilling. See Standard Drawing No. 18.

02-01-19 WATER AND SEWER SEPARATION REQUIREMENTS (HORIZONTAL SEPARATION) S-WM-SEP-HORIZONTAL

STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS, LATEST EDITION.

41-2.01C VERTICAL SEPARATION – WATER MAINS AND SEWERS

(1.) A water main shall be separated from a sewer so that its invert is a minimum of eighteen (18) inches (460mm) above the crown of the drain or sewer whenever water mains cross storm sewers, sanitary sewers or sewer service connections. The vertical separation shall be maintained for that portion of the water main located within ten (10) feet (3.1m) horizontally of any sewer or drain crossed. A length of water main pipe shall be centered over the sewer to be crossed with joints equidistant from the sewer or drain.

(2.) Both the water main and sewer shall be constructed of slip-on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction when:

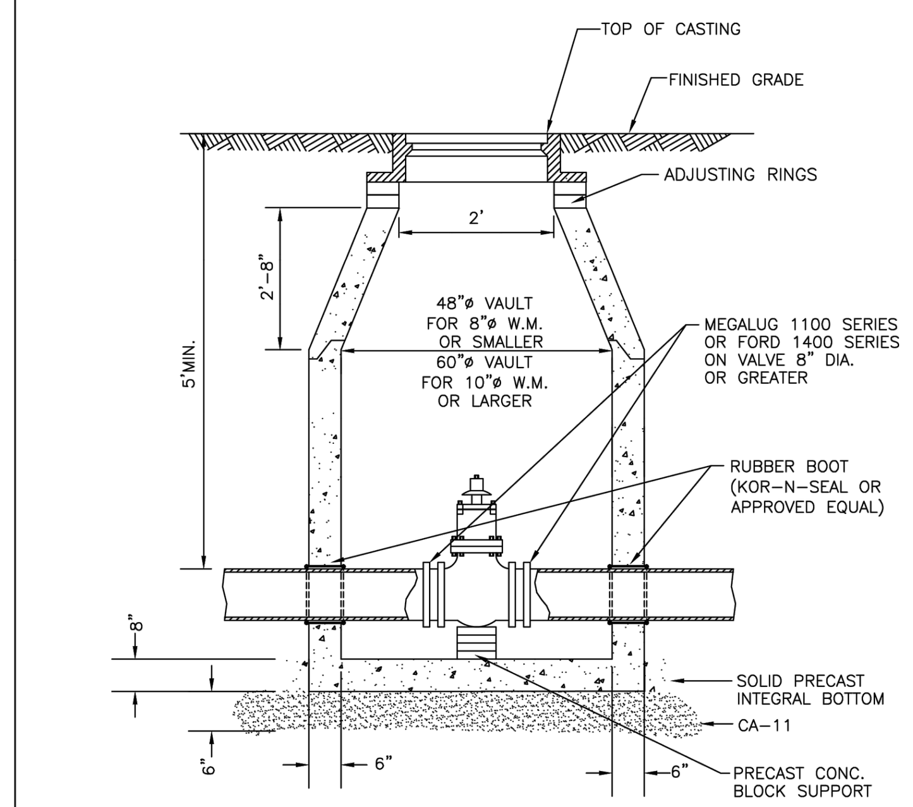
(a) it is impossible to obtain the proper vertical separation as described in (1) above; or

(b) the water main passes under a sewer or drain.

(3.) A vertical separation of eighteen (18) inches (460 mm) between the invert of the sewer or drain and the crown of the water main shall be maintained where a water main crosses under a sewer. Support the sewer or drain lines to prevent settling and breaking the main, as shown on the Plans or as approved by the ENGINEER.

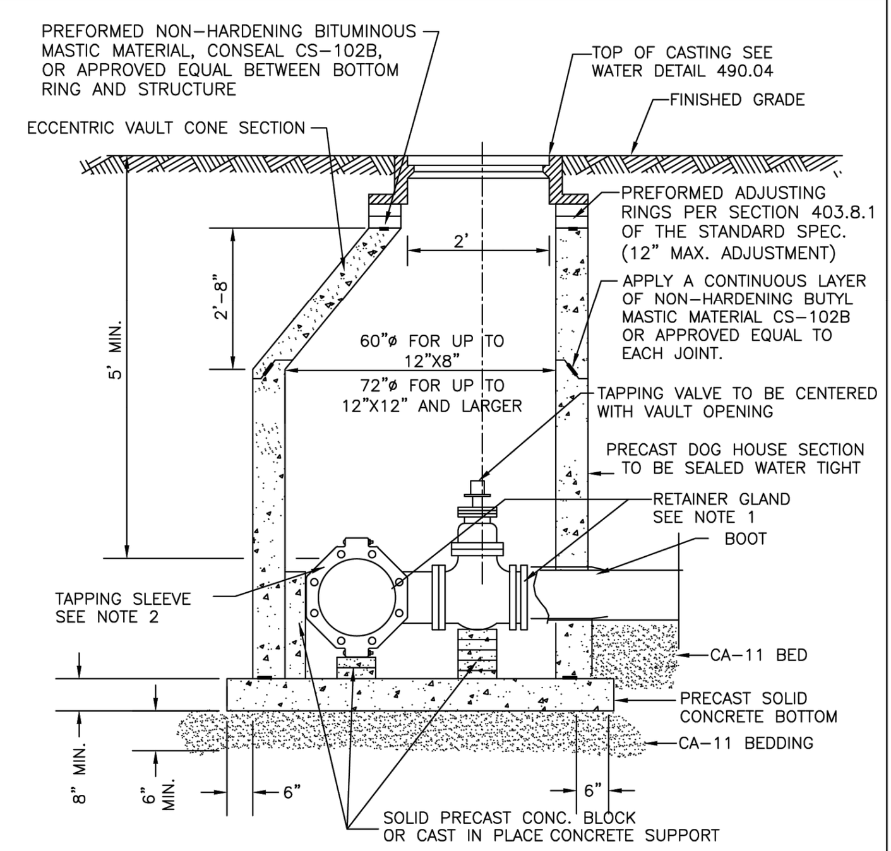
(4.) Construction of water main quality pipe shall extend on each side of the crossing until the perpendicular distance from the water main to the sewer or drain line is at least ten (10) feet (3.1 m) See Standard Drawings No. 19-23.

02-01-19 WATER AND SEWER SEPARATION REQUIREMENTS (VERTICAL SEPARATION) S-WM-SEP-VERTICAL



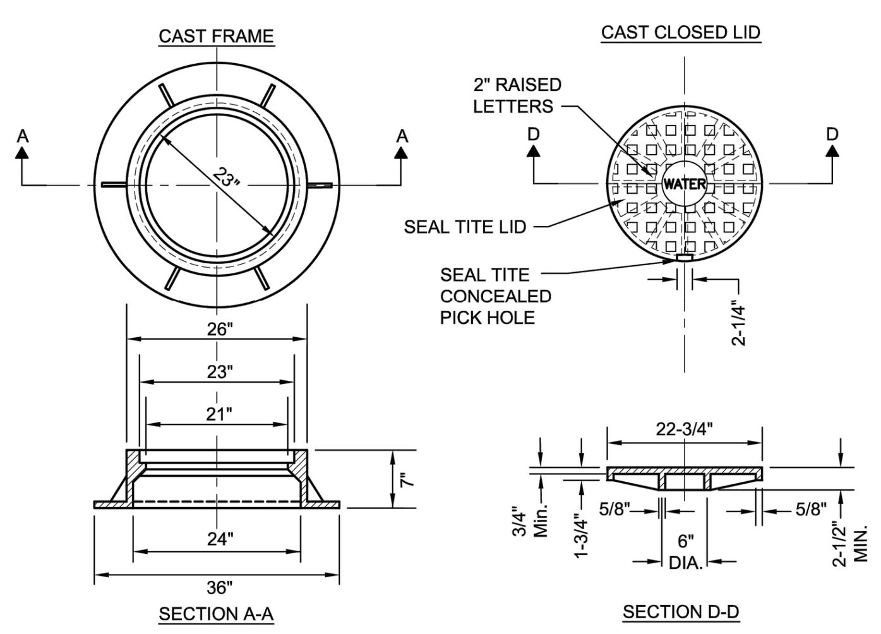
1. VALVE MUST ALIGN WITH THE CENTER OF VAULT OPENINGS.
2. CONCENTRIC CONES TO BE USED FOR VALVES 12" AND SMALLER.
3. VALVES SHALL BE RESILIENT WEDGE GATE VALVES WITH MECHANICAL JOINT ENDS TO COMPLY WITH ANSI/AWWA C515-09 OR LATEST VERSION VALVES TO BE CLOW, AMERICAN, WATEROUS, KENNEDY OR APPROVED EQUAL.
4. ALL RINGS SHALL BE HIGH DENSITY POLYETHYLENE PLASTIC (HDPE), RECYCLED RUBBER, HIGH DENSITY EXPANDING POLYSTYRENE, EXPANDED POLYPROPYLENE (EPP), OR OTHER MATERIAL AS APPROVED BY THE CITY ENGINEER. PRECAST CONCRETE RINGS, BRICKS, ROCKS, SHIMS, OR CONCRETE BLOCKS WILL NOT BE ALLOWED. TAPERED ADJUSTING RINGS SHALL BE REQUIRED WHEN THE FRAME WILL NEED TO MATCH THE SLOPE OF THE ROADWAY.

City of Naperville STANDARD DETAIL | VALVE VAULT | REVISED: 10/03/2023 | SHEET 1 OF 1 | WATER 1 | 490.01



1.) USE MEGALUG SERIES 1100 OR FORD UNI-FLANGE SERIES 1400 RETAINER GLANDS WITH STAINLESS STEEL T-BOLTS COATED WITH ANTI-SIEZE COMPOUND.
2) TAPPING SLEEVES SHALL BE CAST OR DUCTILE IRON MECHANICAL JOINT CONFORMING TO ANSI/AWWA C110/A21.10-82 (TYLER/UNION OR APPROVED EQUAL). EXISTING PIPE TO BE DISINFECTED PRIOR TO INSTALLATION OF TAPPING SLEEVE. TAPPING SLEEVE TO BE PRESSURE TESTED HYDROSTATICALLY TO OPERATING PRESSURE PLUS 50 PERCENT PRIOR TO MAKING PRESSURE CONNECTION.
3) EXISTING PIPE TO BE DISINFECTED PRIOR TO INSTALLATION OF TAPPING SLEEVE AND TAPPING SLEEVE IS TO BE PRESSURE TESTED TO OPERATING PRESSURE PLUS 50 PERCENT PRIOR TO MAKING PRESSURE CONNECTION.
4) DO NOT USE STAINLESS STEEL SLEEVE ON SIZE TAPS OR PIPES LARGER THAN 12" DIAMETER
5) IN THE EVENT IT IS NECESSARY TO USE A PRECAST SPLIT BOTTOM FLOOR DUE TO SPACE CONSTRAINTS THE FLOOR MUST BE GROUTED WATER TIGHT.
6) TAPPING VALVES SHALL CONFORM TO C515-09 OR LATEST REVISION: AMERICAN SERIES 2500 RESILIENT WEDGE TAPPING VALVES WITH FLANGED X MECHANICAL JOINT ENDS OR APPROVED EQUAL.

City of Naperville STANDARD DETAIL | VALVE VAULT WITH CAST/DUCTILE IRON SLEEVE PRESSURE TAP | REVISED: 01/01/2013 | SHEET 1 OF 1 | WATER 2 | 490.02



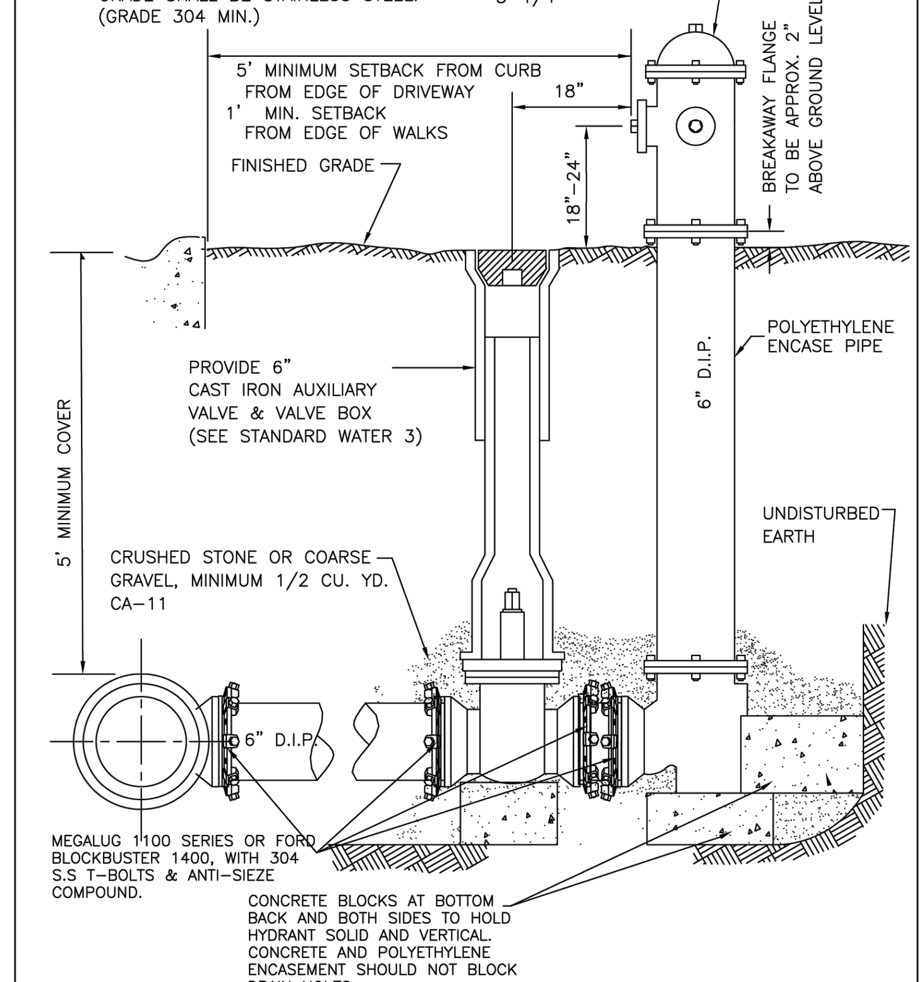
NOTES:

1. DUCTILE IRON SHALL BE GRADE 65-45-12 AND SHALL BE TESTED IN ACCORDANCE WITH FEDERAL SPECIFICATIONS.
2. ALL FRAMES AND COVERS SHALL HAVE MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES. PICK HOLES SHALL NOT CREATE OPENINGS IN THE COVER.
3. THE MANHOLE COVERS SHALL HAVE RAISED LETTERS AS SHOWN.
4. ALTERNATIVE TO DUCTILE IRON LID, GREY IRON CL 35 LID MAY BE USED.
5. DIMENSIONS FOR CASTINGS ARE COMPARABLE TO EAST JORDAN 1022 OR NEENAH R-1772-C, HEAVY DUTY.
6. LIDS AND FRAMES TO MEET AASHTO M306 PROOF LOADING SPECIFICATIONS.

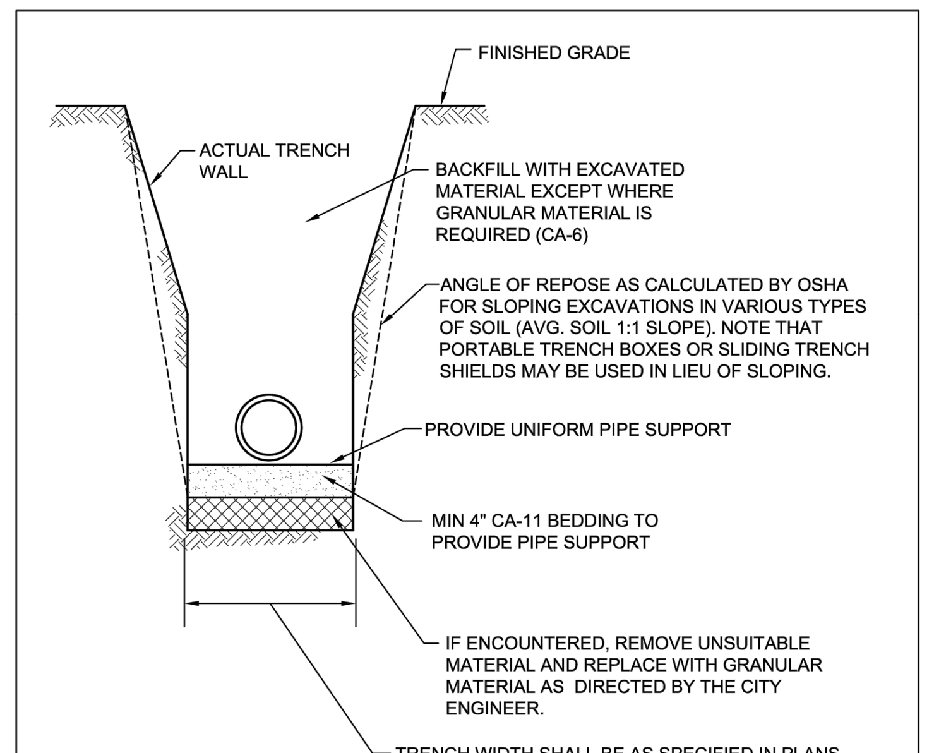
City of Naperville STANDARD DETAIL | VALVE VAULT - FRAME & COVER | REVISED: 01/01/2013 | SHEET 1 OF 1 | WATER 4 | 490.04

NOTES:
1. CHAIN AND CHAIN HOOKS SHALL BE REMOVED FROM HYDRANT
2. HYDRANT SHALL BE FACTORY PAINTED WITH 2 COATS OF TNEMEC VERSATONE 82 HS (OR APPROVED EQUAL) SAFETY ORANGE
3. ALL FASTENERS/HARDWARE BELOW GRADE SHALL BE STAINLESS STEEL. (GRADE 304 MIN.)

PERMITTED TYPES:
-WATEROUS PACER WB-67 5-1/4"
-CLOW MEDALLION 5-1/4"
-MUELLER A-423 5-1/4"



City of Naperville STANDARD DETAIL | HYDRANT | REVISED: 05/15/2015 | SHEET 1 OF 1 | WATER 6 | 490.06



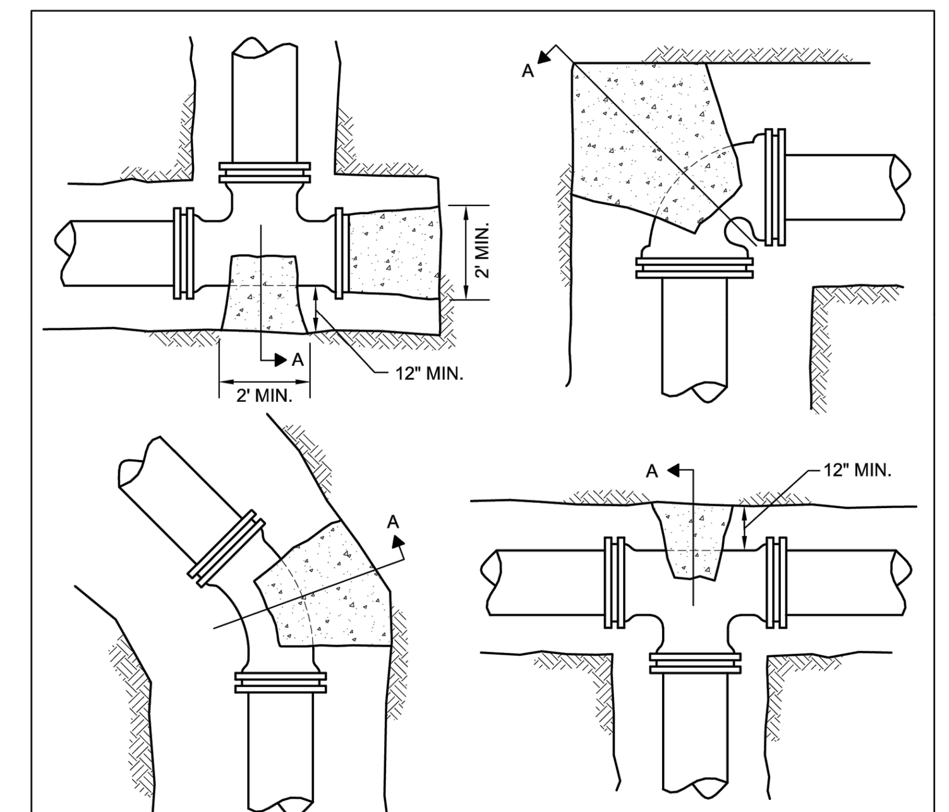
NOTES:

1. IN PAVED AREAS ALL TRENCHES SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 550.07 OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. METHOD 1. 95% MINIMUM STANDARD PROCTOR.

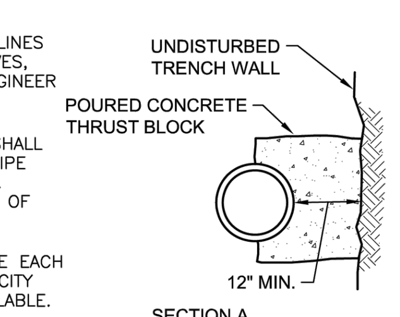
2. DUCTILE IRON WATER MAIN TO BE CLASS 52. ALL DUCTILE IRON PIPE IS TO BE ENCASED IN POLYETHYLENE FILM. POLYETHYLENE ENCASEMENT TO BE INSTALLED IN ACCORDANCE WITH AWWAC105A21.5-99.(OR LATEST EDITION)

3. STAINLESS STEEL NUTS, BOLTS/T-BOLTS, AND WASHERS, TYPE 304 OR BETTER, WILL BE REQUIRED ON ALL WATER MAIN INSTALLATIONS. THIS WOULD APPLY TO HYDRANTS, TAPPING SLEEVES, VALVES, FITTINGS, RESTRAINT, AND OTHER APPURTENANCES BURIED OR IN VALVE VAULTS. MECHANICAL JOINTS AND RESTRAINT GLANDS REQUIRE 304 STAINLESS STEEL T-BOLTS. AN ANTI-SEIZE COMPOUND SHALL BE FACTORY APPLIED TO NUTS OR BOLTS - ANY DAMAGE TO THIS COATING SHALL BE REPAIRED WITH FIELD-APPLIED, APPROVED ANTI-SEIZE COMPOUND THAT IS A MOLYBDENUM-BASE LUBRICANT, BOSTIK NEVER-SEEZ OR APPROVED EQUAL.

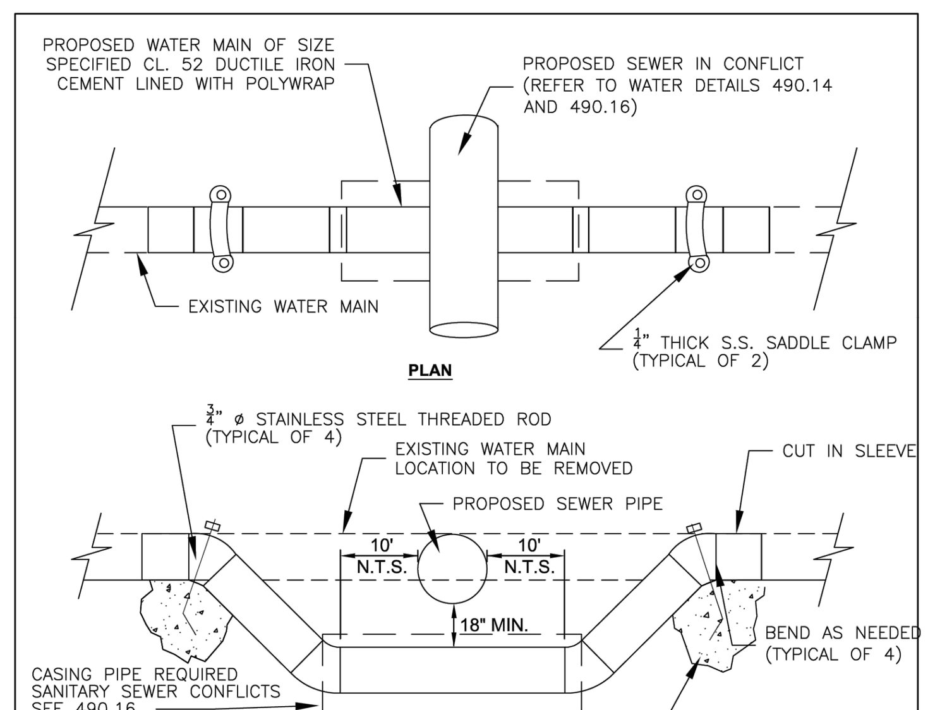
City of Naperville STANDARD DETAIL | WATER MAIN TRENCH SECTION | REVISED: 01/01/2013 | SHEET 1 OF 1 | WATER 10 | 490.10



1. THRUST BLOCKING TO PREVENT MOVEMENT OF LINES UNDER PRESSURE AT BENDS, TEES, CAPS, VALVES, HYDRANTS, & AT POINTS SPECIFIED BY THE ENGINEER SHALL BE CLASS "SI".
2. CONCRETE A MINIMUM OF 12" THICK, PLACED BETWEEN SOLID GROUND & THE FITTING, AND SHALL BE ANCHORED IN SUCH A MANNER THAT THE PIPE AND FITTING WILL BE ACCESSIBLE FOR REPAIRS.
3. THRUST BLOCKS SHALL BE PLACED AT BENDS OF 11-1/4° OR MORE.
4. PIPE BENDS TO BE POLYETHYLENE ENCASED.
5. JOINT RESTRAINT AT BEND AND LENGTH OF PIPE EACH DIRECTION FROM BENDS AS REQUIRED BY THE CITY OF NAPERVILLE IF UNDISTURBED SOIL NOT AVAILABLE.
6. THRUST BLOCK FOR PIPES LARGER THAN 12"⌀ MUST BE POURED IN PLACE



City of Naperville STANDARD DETAIL | THRUST BLOCK | REVISED: 05/15/2015 | SHEET 1 OF 1 | WATER 11 | 490.11



1.) PIPING TO BE DISINFECTED DURING INSTALLATION. ALL NEW JOINTS SHALL BE INSTALLED WITH MEG-A-LUG, OR APPROVED EQUAL, JOINT RESTRAINT. CONTRACTOR SHALL USE 22 1/2 OR 11 1/4 DEGREE BENDS IN LIEU OF 45 DEGREE BENDS WHERE POSSIBLE.

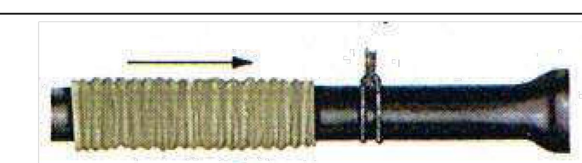
2.) VERTICAL THRUST BLOCKS UNDER BENDS SHALL BE 1 C.Y. MINIMUM OR SIZED AS NEEDED TO RESTRAIN BENDS. CONCRETE TO SUFFICIENTLY CURE PRIOR TO TESTING. POURED CONCRETE SHALL NOT BE PLACED AROUND PIPE BOLTS OR HINDER FUTURE MAINTENANCE.

3.) POLYWRAP SHOULD BE IN SHEETS INSTALLED UNDER WATER MAIN WITH ALL PIPING JOINTS EXPOSED UNTIL AFTER PRESSURE TEST IS COMPLETE, THEN WRAPPED AND TAPED IN PLACE PRIOR TO BACKFILLING.

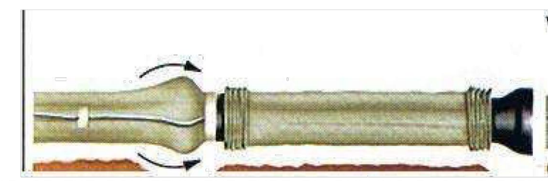
4.) SEWERS INSTALLED ABOVE WATER MAIN SHALL BE DESIGNED TO PROVIDE WATER MAIN PROTECTION AS REQUIRED BY I.E.P.A

5.) ALL PIPING TO BE FLUSHED AND TWO SAFE CONSECUTIVE BACTERIAL SAMPLES TAKEN PRIOR TO CITY PLACING MAIN BACK IN SERVICE.

City of Naperville STANDARD DETAIL | LOWERING/ADJUSTING WATER MAIN | REVISED: 05/15/2015 | SHEET 1 OF 1 | WATER 13 | 490.13



CUT A SECTION OF POLYETHYLENE TUBE APPROXIMATELY TWO FEET LONGER THAN THE PIPE SECTION. REMOVE ALL LUMPS OF CLAY, MUD, CINDERS, OR OTHER MATERIAL THAT MIGHT HAVE ACCUMULATED ON THE PIPE SURFACE DURING STORAGE. SLIP THE POLYETHYLENE TUBE AROUND THE PIPE, STARTING AT THE SPIGOT END. BUNCH THE TUBE ACCORDION-FASHION ON THE END OF THE PIPE. PULL BACK THE OVERHANGING END OF THE TUBE UNTIL IT CLEARS THE PIPE END.



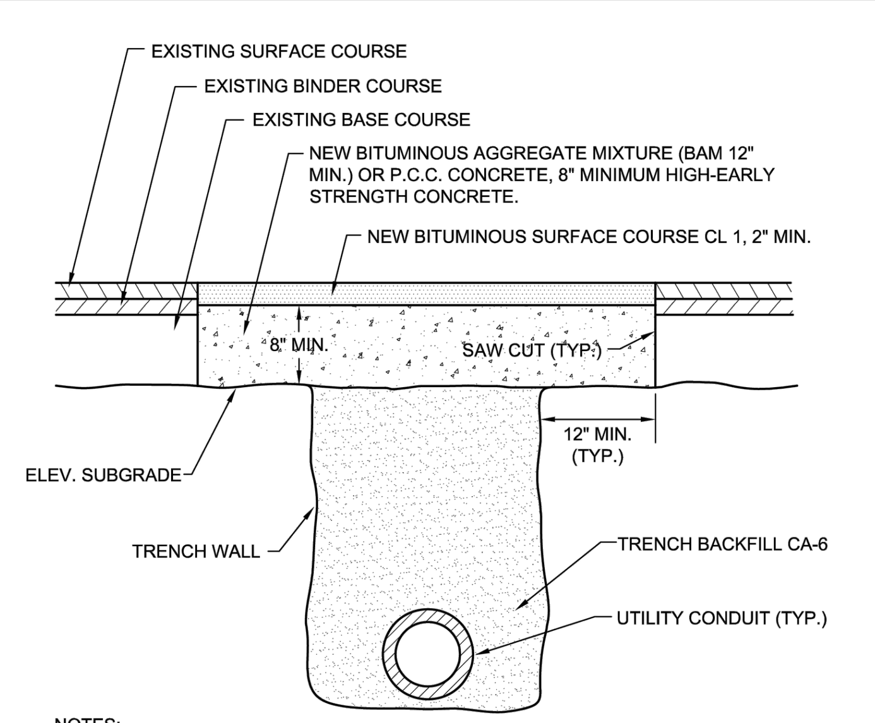
MAKE THE OVERLAP OF THE POLYETHYLENE TUBE BY PULLING BACK THE BUNCHED POLYETHYLENE FROM THE PRECEDING LENGTH OF PIPE AND SECURING IT IN PLACE. NOTE: THE POLYETHYLENE MAY BE SECURED IN PLACE BY USING TAPE, STRING, PLASTIC TIE STRAPS, OR ANY OTHER MATERIAL CAPABLE OF HOLDING THE POLYETHYLENE ENCASEMENT SNUGLY AGAINST THE PIPE.

TAKE UP SLACK IN THE TUBE ALONG THE BARREL OF THE PIPE TO MAKE A SNUG, BUT NOT TIGHT, FIT. FOLD EXCESS POLYETHYLENE BACK OVER THE TOP OF THE PIPE.

REPAIR ALL SMALL RIPS, TEARS OR OTHER TUBE DAMAGE WITH MANUFACTURER APPROVED ADHESIVE TAPE.

1. COVER BENDS, REDUCERS AND OTHER PIPE-SHAPED APPURTENANCES WITH POLYETHYLENE IN THE SAME MANNER AS THE PIPE.
2. WRAP VALVES, TEES AND OTHER ODD-SHAPED APPURTENANCES WITH A FLAT SHEET OR SPLIT LENGTH OF POLYETHYLENE TUBE BY PASSING THE SHEET UNDER THE APPURTENANCES AND BRINGING IT UP AROUND THE BODY. MAKE SEAMS BY BRINGING THE EDGES OF THE POLYETHYLENE SHEET TOGETHER, FOLDING OVER TWICE, AND TAPING DOWN.
3. POLYETHYLENE ENCASEMENT TO BE IN ACCORDANCE WITH A.W.W.A. C105-99OR LATEST VERSION.
4. COPPER SERVICE TAPS ARE TO BE WRAPPED WITH POLYETHELENE OR A SUITABLE DIELECTRIC APE FOR A MINIMUM CLEAR DISTANCE OF 3' AWAY FROM THE MAIN.

City of Naperville STANDARD DETAIL | POLYETHYLENE ENCASEMENT | REVISED: 01/01/2013 | SHEET 1 OF 1 | WATER 15 | 490.15



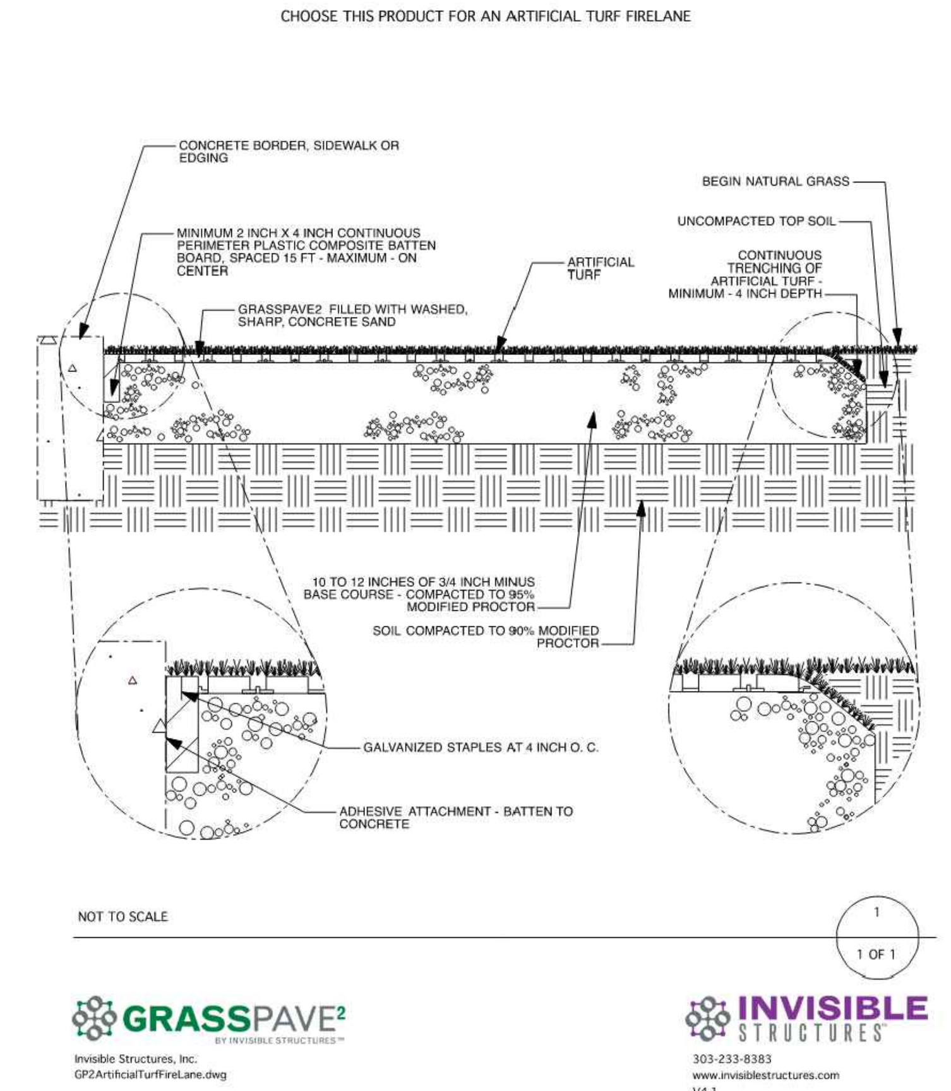
NOTES:

1. THE TRENCH SHALL BE BACKFILLED WITH AGGREGATE (CA-6) AND COMPACTED TO 95% OF THE STANDARD PROCTOR DENSITY. TRENCH SPOILS OR EXCAVATED MATERIAL SHALL BE DISCARDED BY THE CONTRACTOR, AT HIS EXPENSE, AT DUMP SITES OR IN A SUITABLE FASHION AS APPROVED BY THE CITY ENGINEER.
2. PRIOR TO PLACING OF P.C.C. CONCRETE, THE EXPOSED EDGES OF ALL EXISTING PAVEMENT SHALL BE SAW CUT TO PROVIDE A SMOOTH, CLEAN EDGE, FREE OF LOOSE MATERIAL.
3. EXCAVATIONS SHALL BE PROTECTED BY BARRICADES WITH FLASHING LIGHTS. A 1" STEEL PLATE SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR AT LOCATIONS WHERE ADJUSTMENTS ARE LOCATED IN TRAVEL LANES UNTIL THE SURFACE RESTORATION IS COMPLETE. THE PLATE SHALL BE PROTECTED FROM SLIDING AND PROVIDED WITH BITUMINOUS RAMPS.
4. TRENCH TO BE COMPACTED IN CONFORMANCE WITH ARTICLE 603.08(METHOD 3) OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

City of Naperville STANDARD DETAIL | UTILITY TRENCH PAVING SECTION (FLEXIBLE PAVEMENTS) | REVISED: 01/01/2013 | SHEET 1 OF 1 | PAVEMENT 13 | 590.13

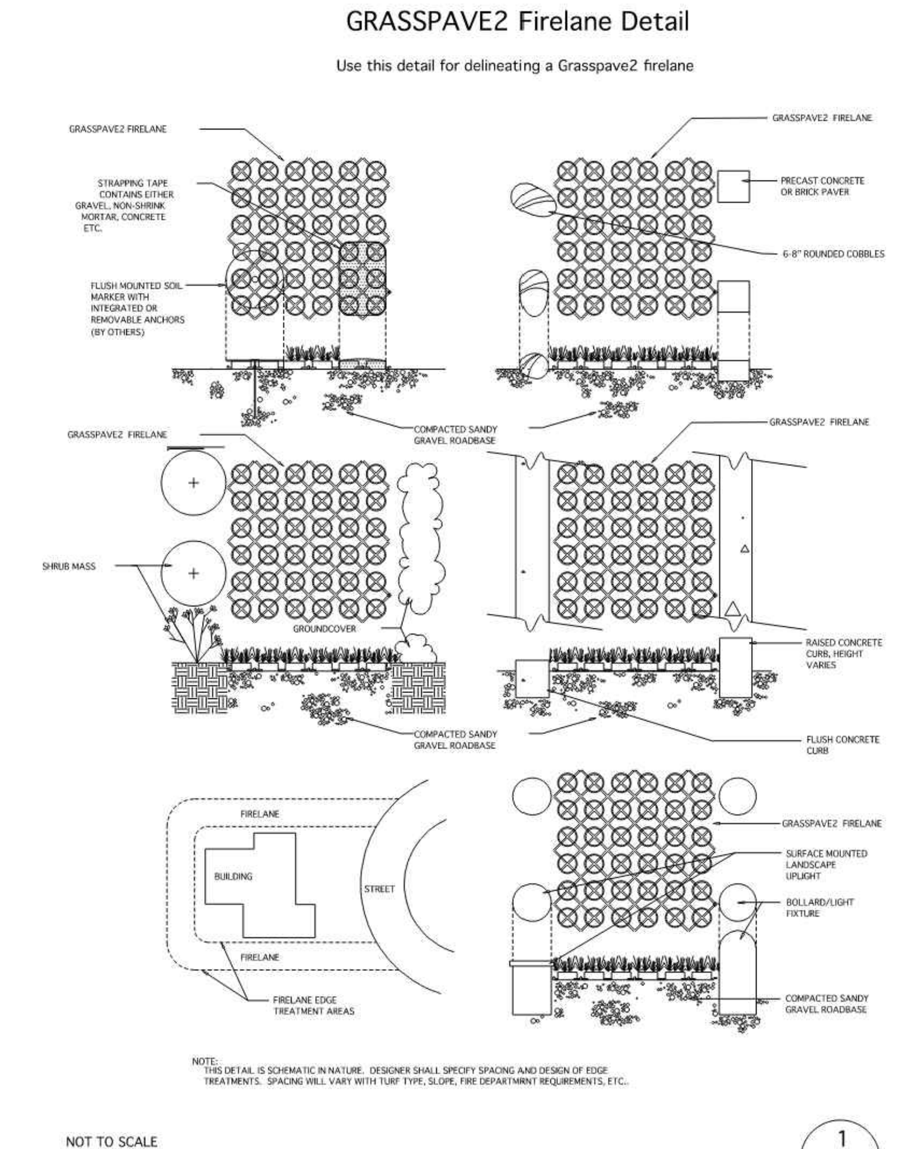
ARTIFICIAL TURF FIRELANE SUPPORTED WITH GRASSPAVE2

CHOOSE THIS PRODUCT FOR AN ARTIFICIAL TURF FIRELANE



GRASSPAVE2 Firelane Detail

Use this detail for delineating a Grasspave2 firelane



SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

PROPOSED HEINEN'S GROCERY STORE

CITY OF NAPERVILLE, ILLINOIS

CONSTRUCTION DETAILS

Manhard CONSULTING
1 East Wacker Drive, Suite 2700, Chicago, IL 60601 ph:312.624.3801 fx:847.634.0095 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

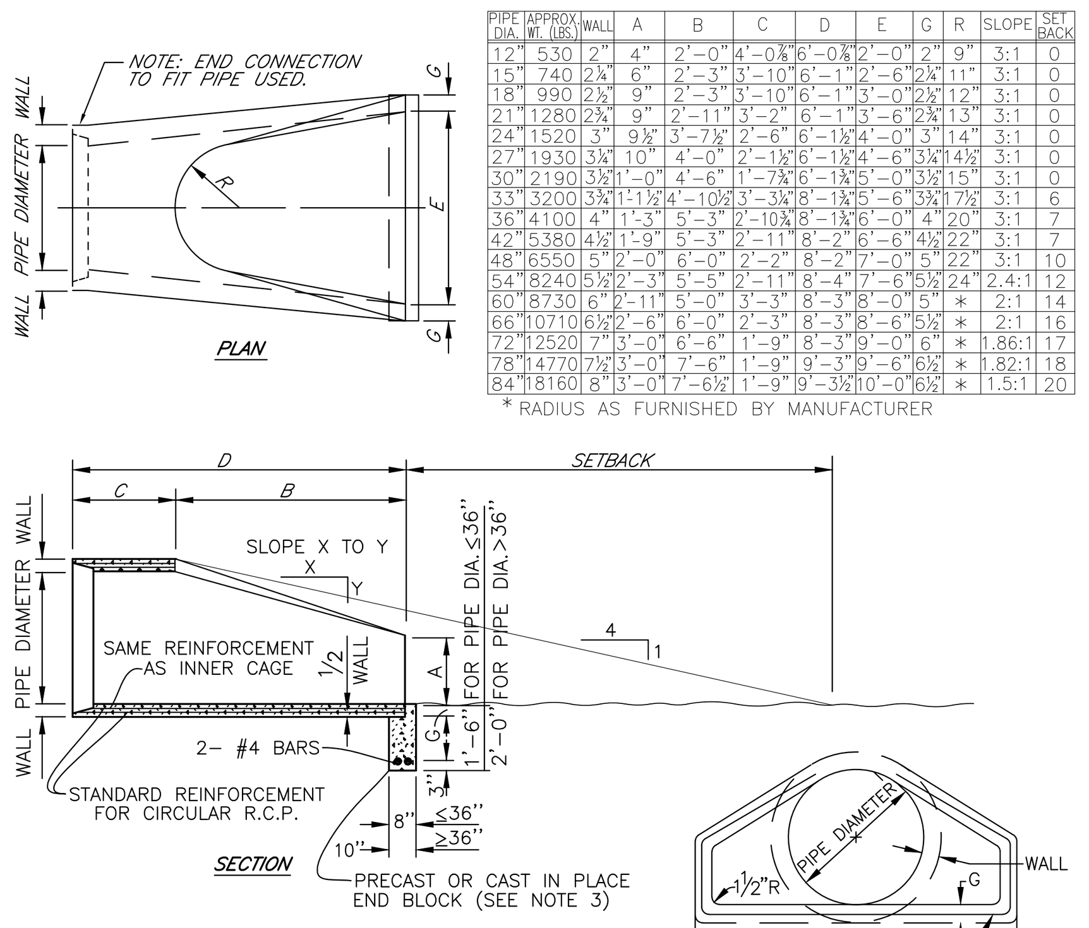
DATE	REVISIONS	DRAWN BY
05-16-24	REVISED PER CITY OF NAPERVILLE REVIEW #3/#4	MJH
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY COMMENTS 1	MDE

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JRM
DATE: 08-30-23
SCALE: N.T.S.

SHEET 15 OF 19

ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION



NOTES:

1. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
2. PRECAST CONCRETE FLARED END SECTION FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.
3. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE CONSTRUCTED IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS
4. ALL FLARED END SECTIONS SHALL HAVE GRATINGS AS PER IDOT STANDARD.
5. PROVIDE CLAY DAM UNDER COLLAR AND AROUND UPSTREAM END OF FES AND FIRST PIPE THE FULL WIDTH OF TRENCH AND 10 FEET LONG AT LOCATIONS WHERE THEY DISCHARGE INTO A DETENTION BASIN.
6. PROVIDE SETBACK FROM NORMAL WATER LEVEL OR TOE OF SIDE SLOPE ON DRY BASINS, STREAMS OR CHANNELS FOR PIPE 33" AND LARGER.

06-01-15
CONCRETE FLARED END SECTION DETAIL
S-ST-FLARED-END

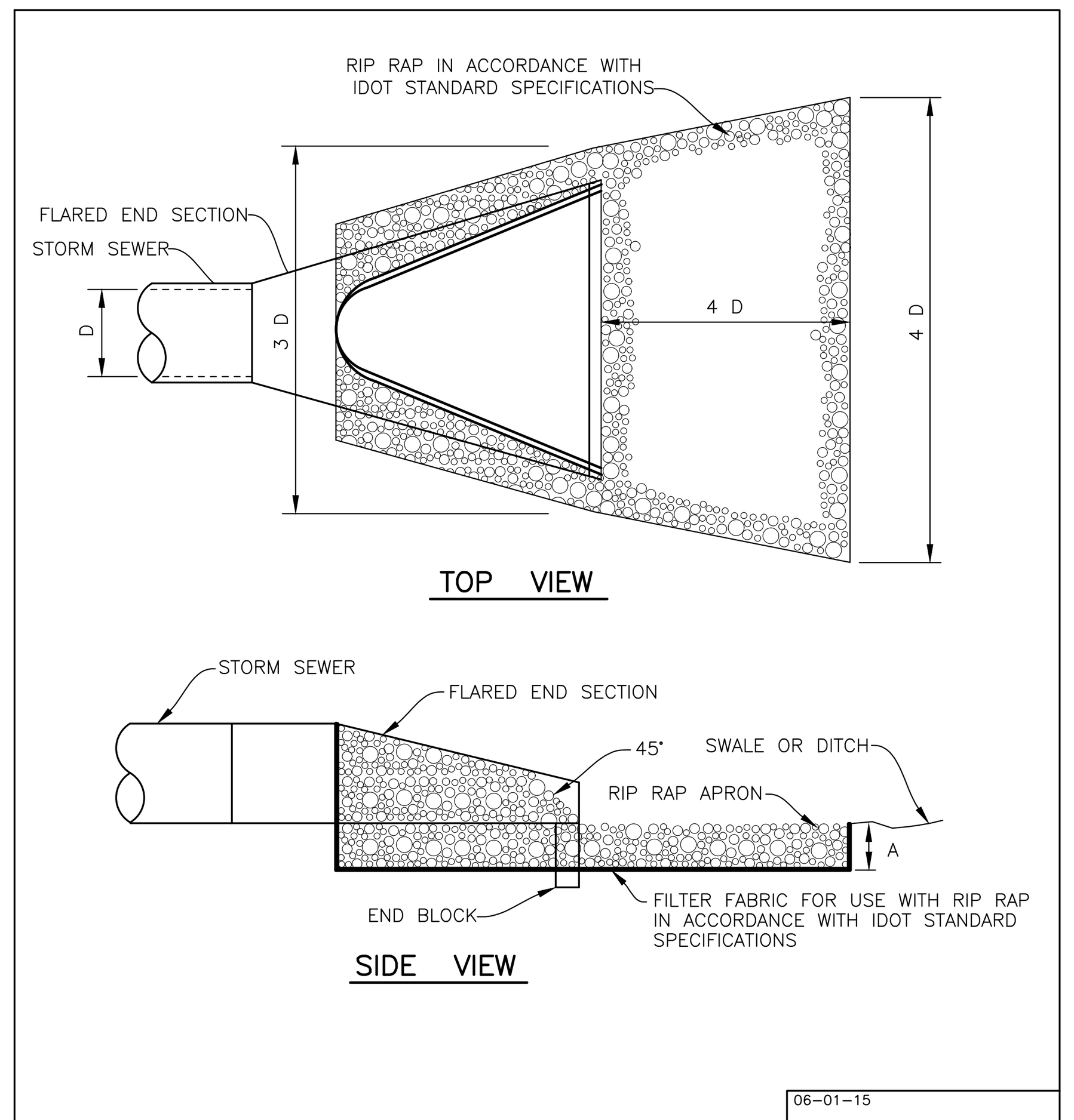
RIP-RAP

PIPE DIAMETER (IN.) D	STONE RIP-RAP							BEDDING
	QUALITY DESIGNATION	GRADATION NUMBER RR	MINIMUM THICKNESS (IN.) A	MINIMUM LENGTH (FT.) 4D	WEIGHT RANGE (#)	WEIGHT AVERAGE (#)	SIZE AVERAGE (IN.)	MINIMUM THICKNESS (IN.)
12"	B	3	8"	4'	1-50	10	4.5"	N/A
15"	B	3	8"	5	1-50	10	4.5"	N/A
18"	B	4	16"	6'	1-150	40	7"	6"
21"	B	4	16"	7'	1-150	40	7"	6"
24"	B	4	16"	8'	1-150	40	7"	6"
27"	B	4	16"	9'	1-150	40	7"	6"
30"	B	4	16"	10'	1-150	40	7"	6"
36"	B	5	22"	12'	3-400	90	10"	8"
42"	B	5	22"	14'	3-400	90	10"	8"
48"	B	6	26"	16'	6-600	170	12"	10"
54"	B	6	26"	18'	6-600	170	12"	10"
60"	B	6	26"	20'	6-600	170	12"	10"
72"	B	6	26"	24'	6-600	170	12"	10"

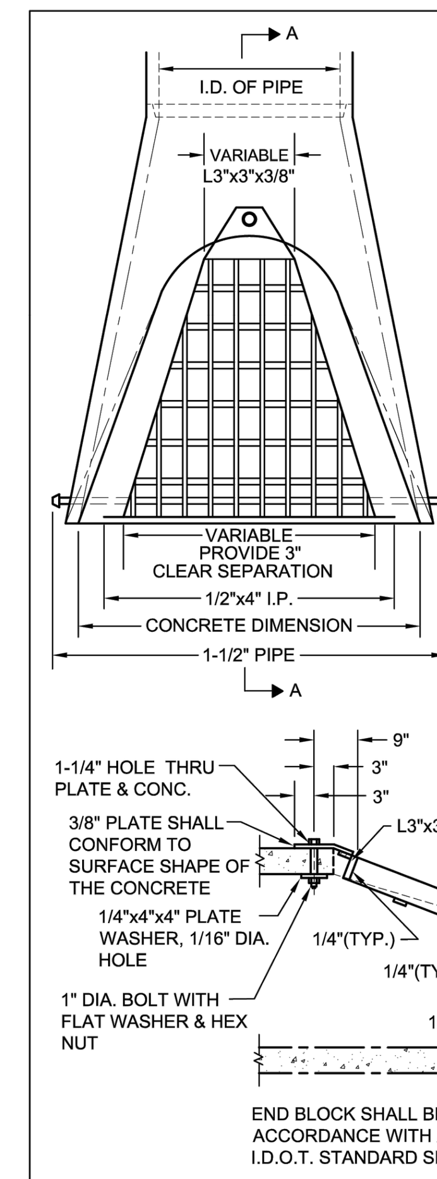
NOTE:

1. FOR PIPE LARGER THAN 72" A SPECIAL DESIGN OF RIP-RAP OR APRON IS REQUIRED.
2. REFER TO I.D.O.T. SPECIFICATIONS AND STANDARDS FOR BEDDING GRADTION.

06-01-15
STONE RIP RAP DETAIL
S-ST-RIPRAP-STONE



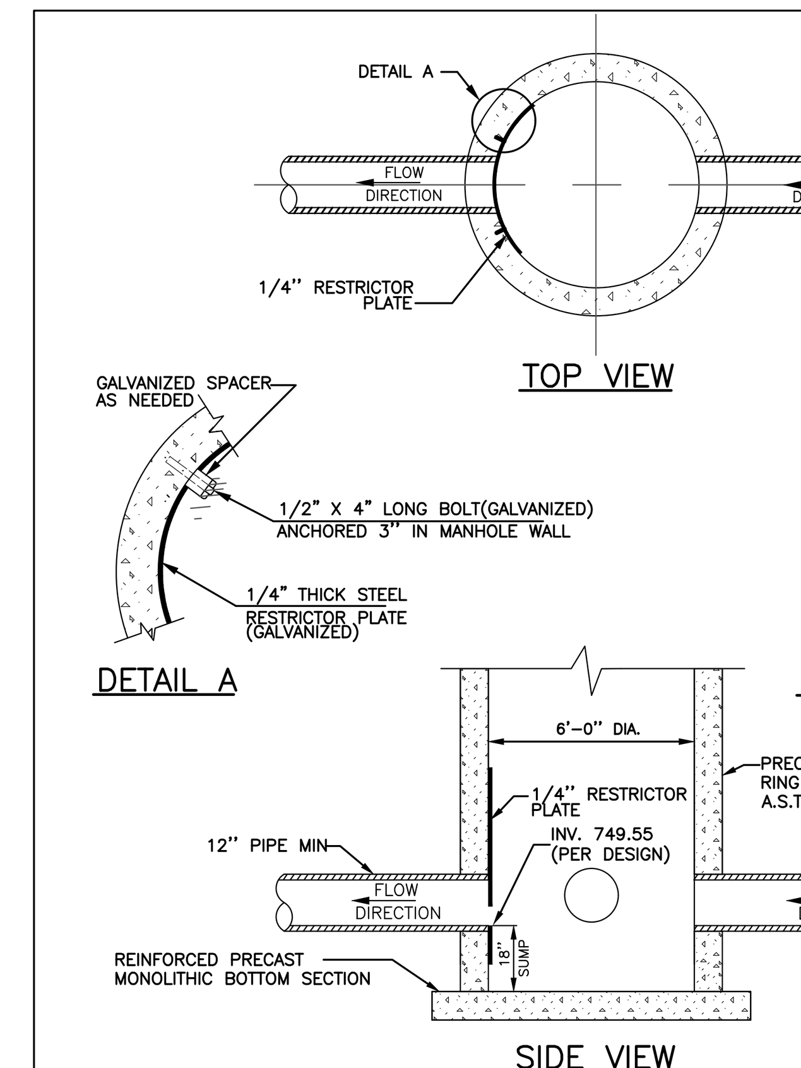
06-01-15
RIP RAP DETAIL (DISCHARGE TO DITCH)
S-ST-RIPRAP-DITCH



NOTES:

1. STRUCTURAL STEEL SHAPES AND PLATES SHALL BE IN ACCORDANCE WITH ARTICLE 710.04 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. GALVANIZED STEEL PIPE SHALL BE IN ACCORDANCE WITH ARTICLE 710.33 (B) OF THE STANDARD SPECIFICATIONS.
3. BOLTS, NUTS AND WASHERS SHALL BE IN ACCORDANCE WITH ARTICLE 710.33 (G) OF THE STANDARD SPECIFICATIONS.
4. ALL FABRICATION SHALL BE COMPLETED AND ASSEMBLED BEFORE GALVANIZING.
5. THE CORED HOLES IN THE PRECAST CONCRETE FLARED END SECTIONS SHALL BE TO THE DIAMETERS NOTED. IF CONE-OUT ON THE OTHER END OF THE HOLE OCCURS, THE HOLE SHALL BE FILLED WITH GROUT TO CORRECT DIAMETER OF THE HOLE.
6. ALL FLARED END SECTIONS FOR PIPE GREATER THAN 12" IN DIAMETER SHALL BE PROVIDED WITH A GRATE.
7. GRATES SHALL BE CONSTRUCTED TO PROVIDE 8" VERT. X 3" HORZ. CLEAR SEPARATION BETWEEN BARS.

City of Naperville STANDARD DETAIL — GRATING FOR CONCRETE FLARED END SECTION — STORM 22 — 290.22 — REVISED: 01/01/2013 — SHEET 1 OF 1

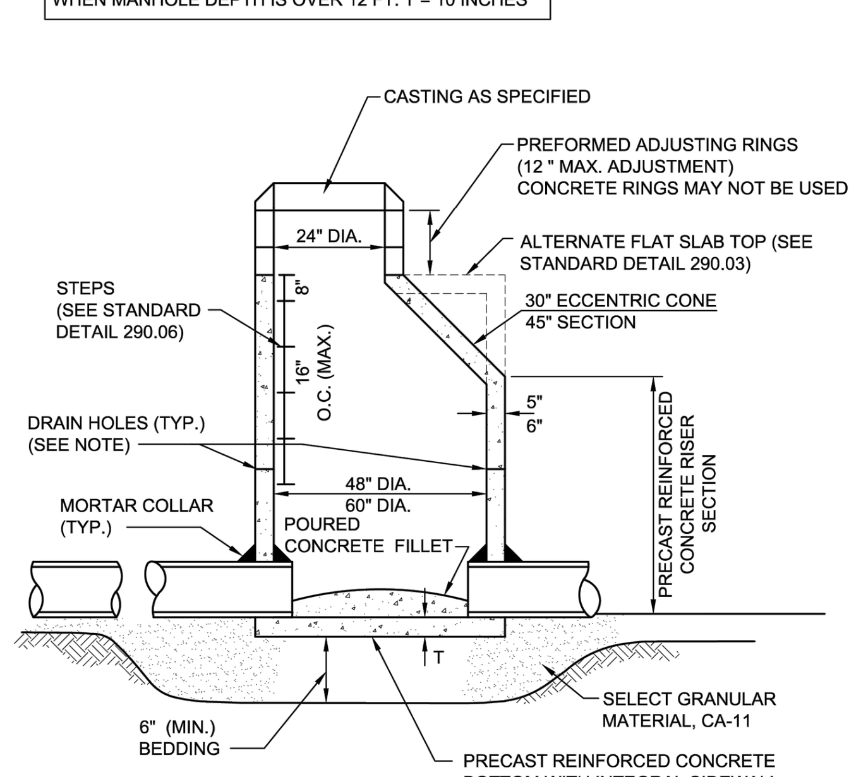


NOTES:

1. RESTRICTOR PLATE SHALL BE PERMANENTLY MOUNTED TO THE MANHOLE WALL BY MEANS OF 1/2" X 4" ANCHOR BOLTS. THE ANCHOR BOLTS SHALL BE WELDED TO THE RESTRICTOR PLATE AFTER INSTALLATION.
2. THE RESTRICTOR PLATE, SPACER AND ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED AFTER THE ORIFICE HAS BEEN CUT AND THE ANCHOR BOLTS HAVE BEEN WELDED.
3. THE ORIFICE OPENING SHALL BE 9.5" IN DIAMETER.
4. CONSTRUCT MANHOLE AS PER CITY OF NAPERVILLE STORM MANHOLE DETAIL.
5. PROVIDE MINIMUM 4" OF CA6 BEDDING MATERIAL UNDER MANHOLE BOTTOM SECTION & FILL ENTIRE EXCAVATION ALL AROUND MANHOLE UP TO C.L. OF SEWER WITH BEDDING MATERIAL.

01-01-13
OCS-1A RESTRICTOR MANHOLE DETAIL
N-ST-RESTRICTOR-MANHOLE

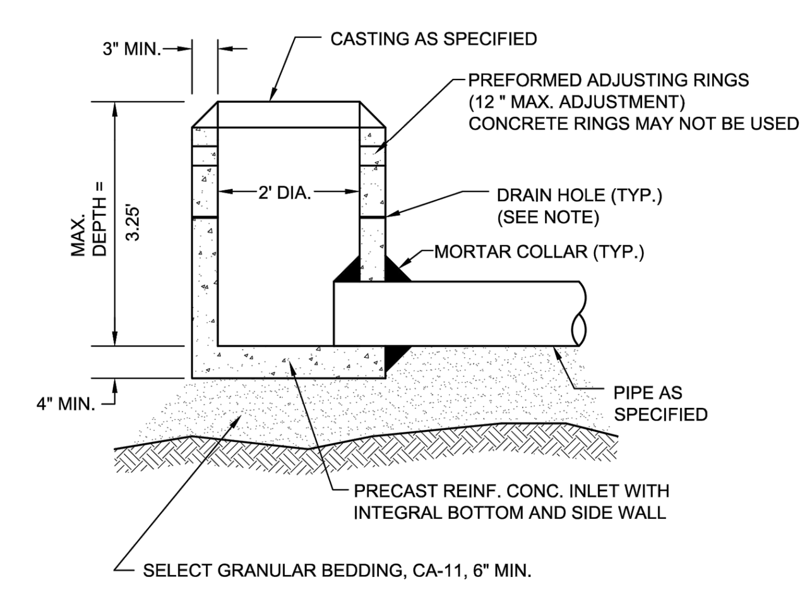
WHEN MANHOLE DEPTH IS 12 FT OR LESS T = 8 INCHES
WHEN MANHOLE DEPTH IS OVER 12 FT. T = 10 INCHES



NOTE:

A MINIMUM OF 4 PRECAST OR DRILLED 1" DIAMETER HOLES SHALL BE PROVIDED WITHIN 1' OF THE LOWEST PIPE INVERT. THE HOLES SHALL BE DISTRIBUTED EQUIDISTANT AROUND THE PERIMETER OF THE STRUCTURE. A 1' BY 1' SQUARE OF UNDERDRAIN FILTER CLOTH MATERIAL SHALL BE FIXED OVER EACH DRAIN HOLE ON THE OUTSIDE OF THE STRUCTURE WITH MASTIC MATERIAL TO PREVENT SLIPPAGE DURING BACKFILLING.

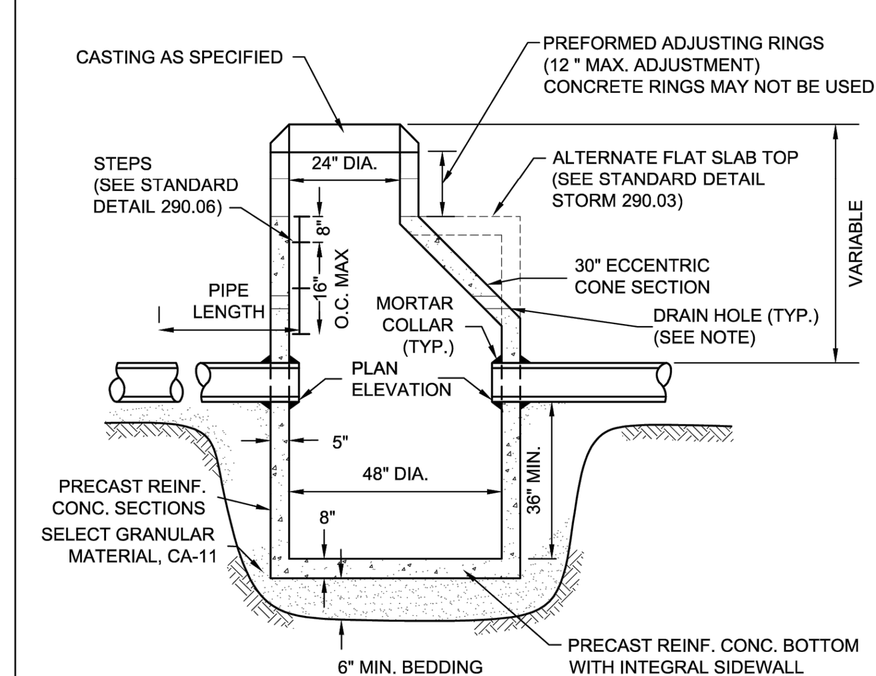
City of Naperville STANDARD DETAIL — STORM MANHOLE-TYPE A — STORM 1 — 290.01 — REVISED: 08/01/2018 — SHEET 1 OF 1



NOTE:

IN PAVED AREAS A MINIMUM OF 4 PRECAST OR DRILLED 1" DIAMETER HOLES SHALL BE PROVIDED WITHIN 1' OF THE LOWEST PIPE INVERT. THE HOLES SHALL BE DISTRIBUTED EQUIDISTANT AROUND THE PERIMETER OF THE STRUCTURE. A 1' BY 1' SQUARE OF UNDERDRAIN FILTER CLOTH MATERIAL SHALL BE FIXED OVER EACH DRAIN HOLE ON THE OUTSIDE OF THE STRUCTURE WITH MASTIC MATERIAL TO PREVENT SLIPPAGE DURING BACKFILLING.

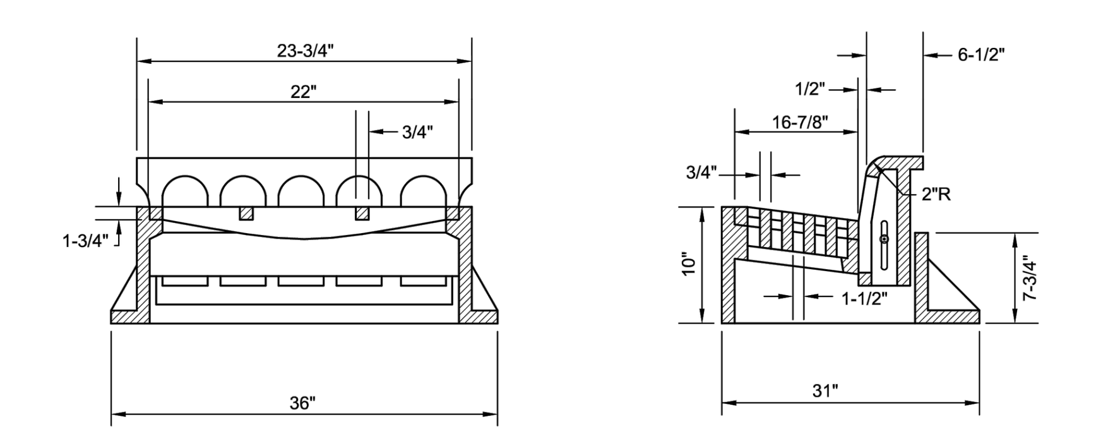
City of Naperville STANDARD DETAIL — INLET - TYPE A — STORM 5 — 290.05 — REVISED: 08/01/2018 — SHEET 1 OF 1



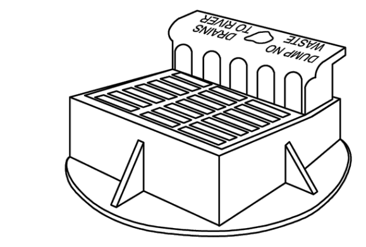
NOTE:

A MINIMUM OF 4 PRECAST OR DRILLED 1" DIAMETER HOLES SHALL BE PROVIDED WITHIN 1' OF THE LOWEST PIPE INVERT. THE HOLES SHALL BE DISTRIBUTED EQUIDISTANT AROUND THE PERIMETER OF THE STRUCTURE. A 1' BY 1' SQUARE OF UNDERDRAIN FILTER CLOTH MATERIAL SHALL BE FIXED OVER EACH DRAIN HOLE ON THE OUTSIDE OF THE STRUCTURE WITH MASTIC MATERIAL TO PREVENT SLIPPAGE DURING BACKFILLING.

City of Naperville STANDARD DETAIL — CATCH BASIN - TYPE A — STORM 2 — 290.02 — REVISED: 08/01/2018 — SHEET 1 OF 1



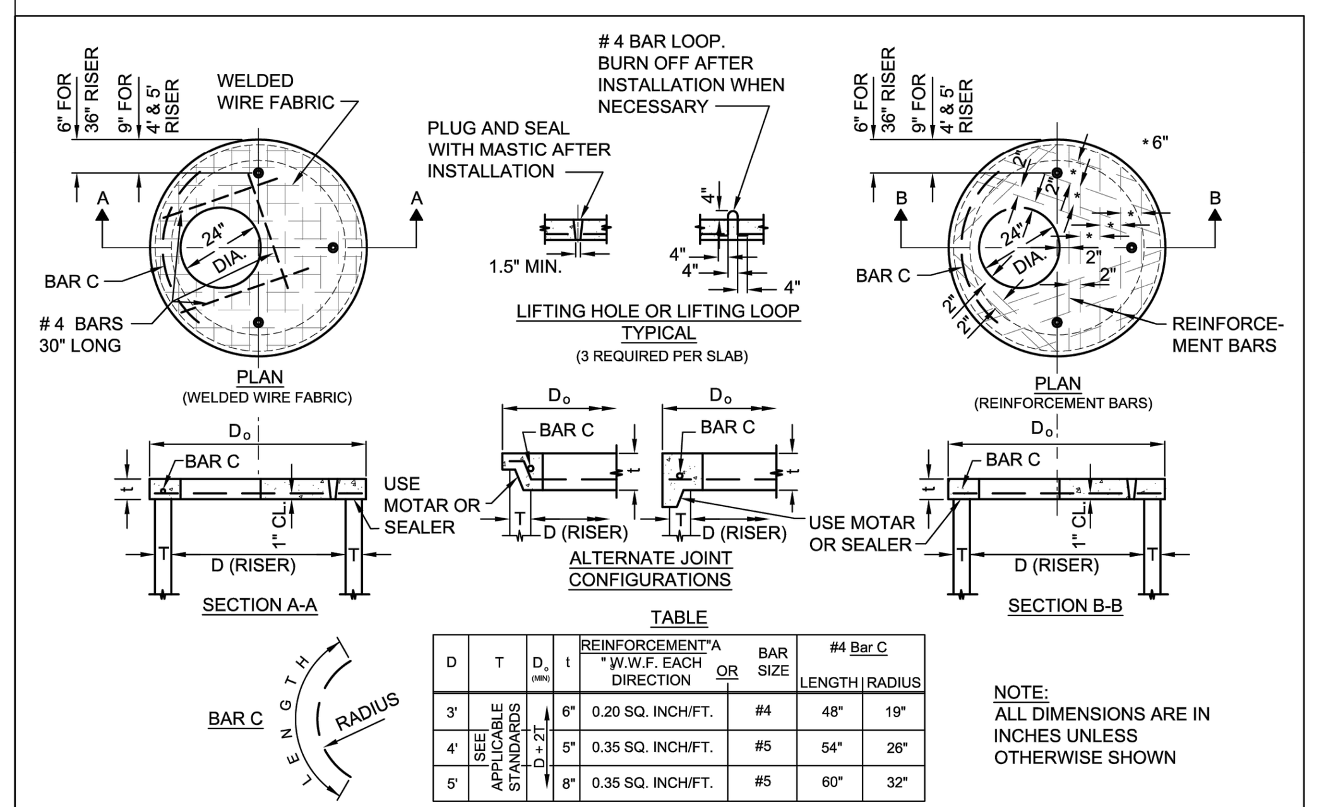
CAST FRAME AND GRATE GRAY IRON
TOTAL WT. 500 LBS.



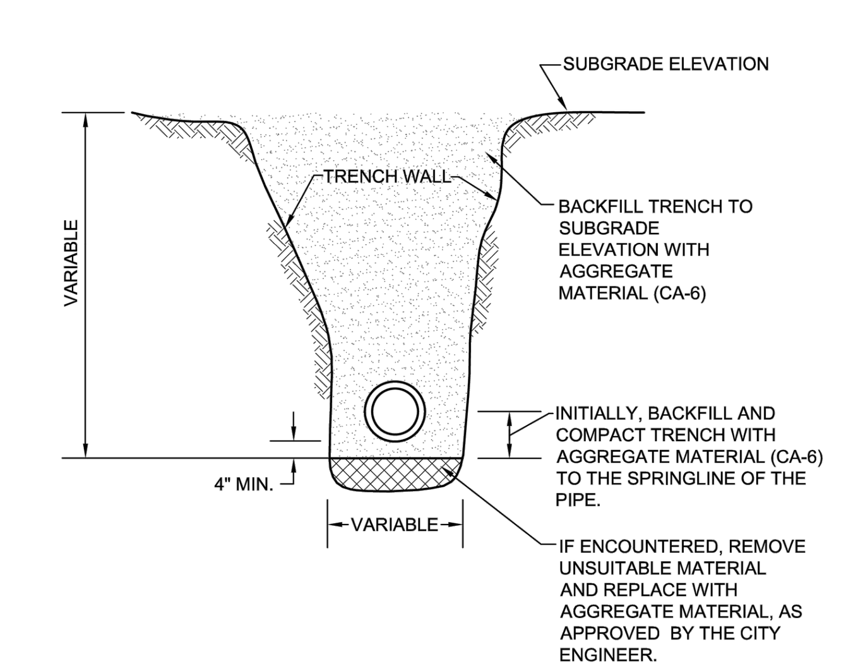
NOTES:

1. FRAME AND GRATE SHALL BE NEENAH R-3278-A, EAST JORDAN IRON 7220, OR EQUAL APPROVED BY THE CITY ENGINEER.
2. ALL CASTING SHALL BE SHOP PAINTED WITH AN ASPHALTIC BASE PAINT.
3. SEE STANDARD DETAIL 590.20 FOR CORRESPONDING CURB.
4. ALL CASTINGS SHALL INCLUDE "DUMP NO WASTE. DRAINS TO RIVER".

City of Naperville STANDARD DETAIL — FRAME & GRATE FOR B-6.12 CURB & GUTTER — STORM 11 — 290.11 — REVISED: 05/15/2015 — SHEET 1 OF 1



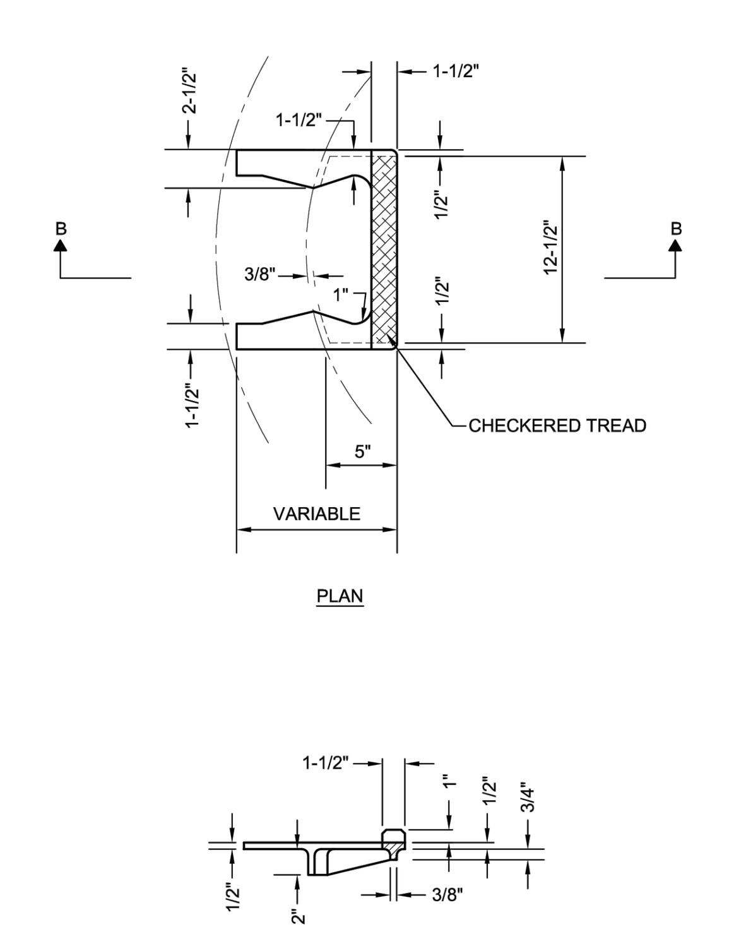
City of Naperville STANDARD DETAIL — FLAT SLAB TOP PRECAST REINFORCED CONCRETE — STORM 3 — 290.03 — REVISED: 01/01/2013 — SHEET 1 OF 1



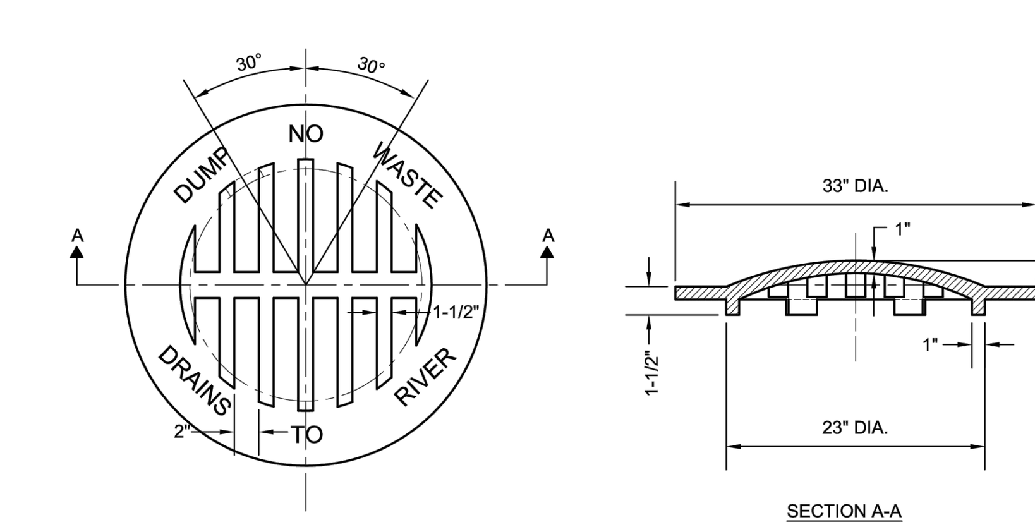
NOTES:

1. TRENCH BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 550.07 OF THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. THIS DETAIL SHALL BE USED WHEREVER THE TRENCH IS MADE IN THE PROPOSED ROADWAY SUBGRADE, AND WHEREVER THE INNER EDGE OF THE TRENCH IS CLOSER THAN 2' TO THE EDGE OF THE PROPOSED PAVEMENT, CURB AND GUTTER, AND SIDEWALK.

City of Naperville STANDARD DETAIL — STORM SEWER TRENCH SECTION IN PAVED AREAS — STORM 20 — 290.20 — REVISED: 01/01/2013 — SHEET 1 OF 1



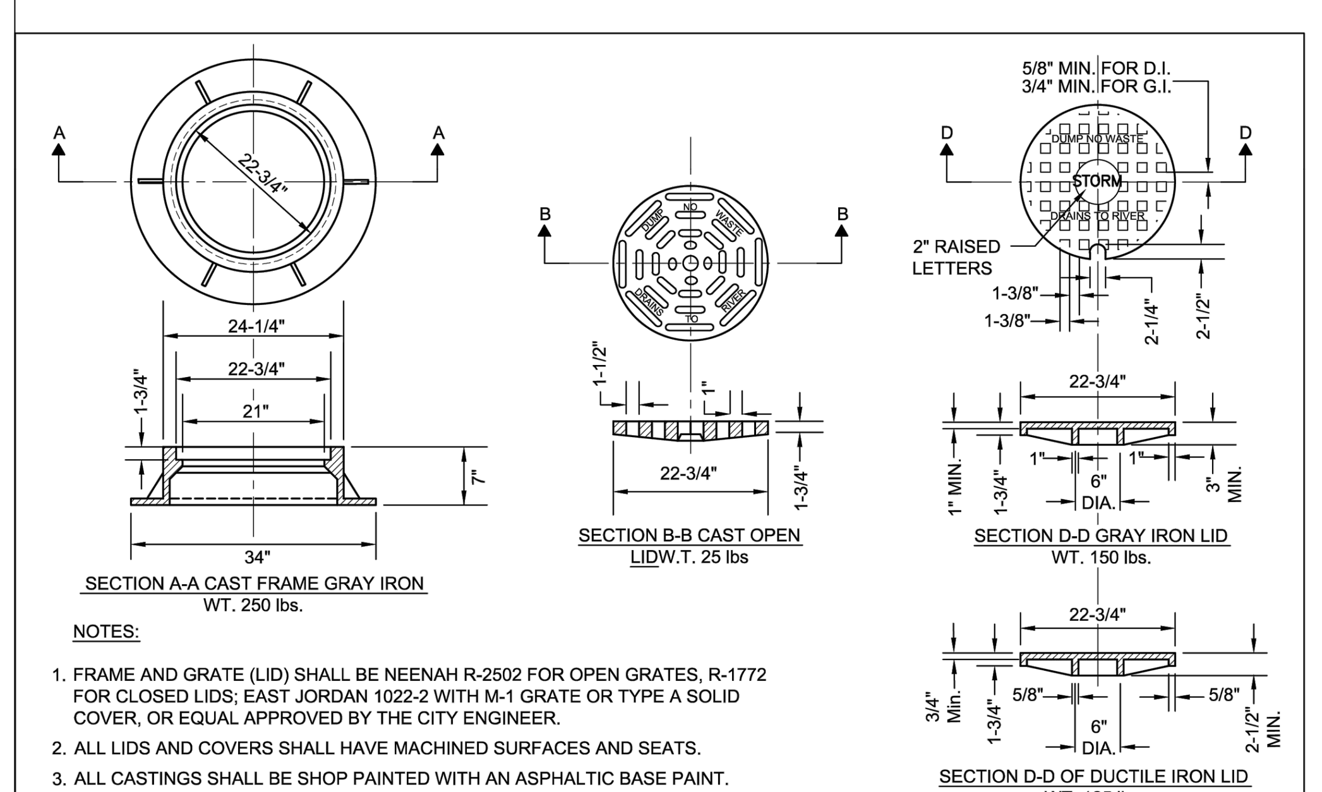
City of Naperville STANDARD DETAIL — CAST IRON STEPS — STORM 6 — 290.06 — REVISED: 01/01/2013 — SHEET 1 OF 1



NOTES:

1. BEEHIVE GRATE SHALL BE NEENAH R4340B, EAST JORDAN 6527, OR EQUAL APPROVED BY THE CITY ENGINEER.
2. ALL CASTINGS SHALL BE SHOP PAINTED WITH AN ASPHALTIC BASE PAINT.
3. ALL CASTINGS SHALL INCLUDE "DUMP NO WASTE. DRAINS TO RIVER".

City of Naperville STANDARD DETAIL — BEEHIVE GRATE — STORM 14 — 290.14 — REVISED: 05/15/2015 — SHEET 1 OF 1



NOTES:

1. FRAME AND GRATE (LID) SHALL BE NEENAH R-2502 FOR OPEN GRATES, R-1772 FOR CLOSED LIDS; EAST JORDAN 1022-2 WITH M-1 GRATE OR TYPE A SOLID COVER, OR EQUAL APPROVED BY THE CITY ENGINEER.
2. ALL LIDS AND COVERS SHALL HAVE MACHINED SURFACES AND SEATS.
3. ALL CASTINGS SHALL BE SHOP PAINTED WITH AN ASPHALTIC BASE PAINT.
4. ALL CASTINGS SHALL INCLUDE "DUMP NO WASTE. DRAINS TO RIVER".

City of Naperville STANDARD DETAIL — FRAME & LID OR GRATE — STORM 10 — 290.10 — REVISED: 05/15/2015 — SHEET 1 OF 1

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

DATE	REVISIONS	DRAWN BY
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY COMMENTS 1	MDE

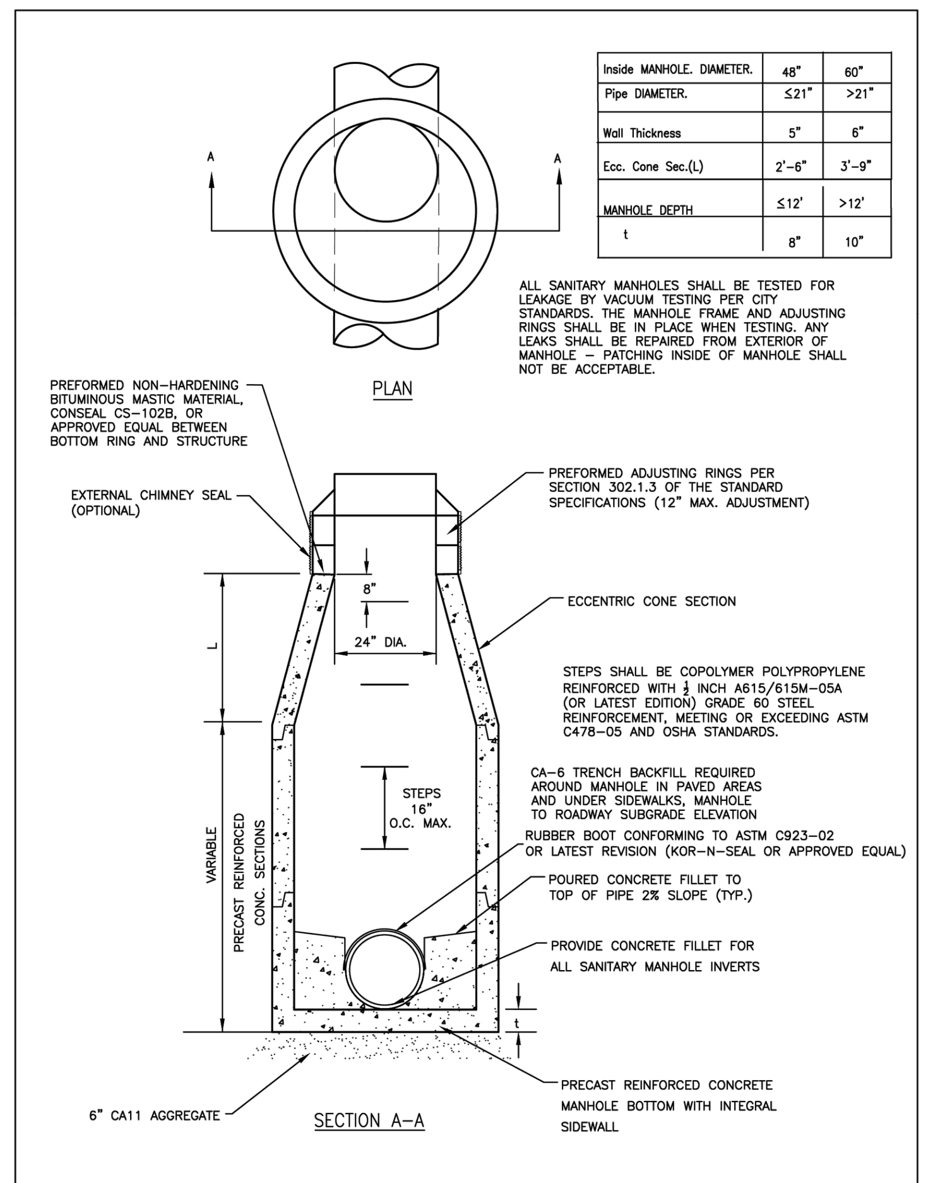
Manhard CONSULTING
1 East Wacker Drive, Suite 2700, Chicago, IL 60601 ph:312.624.3801 fx:847.634.0095 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
CONSTRUCTION DETAILS

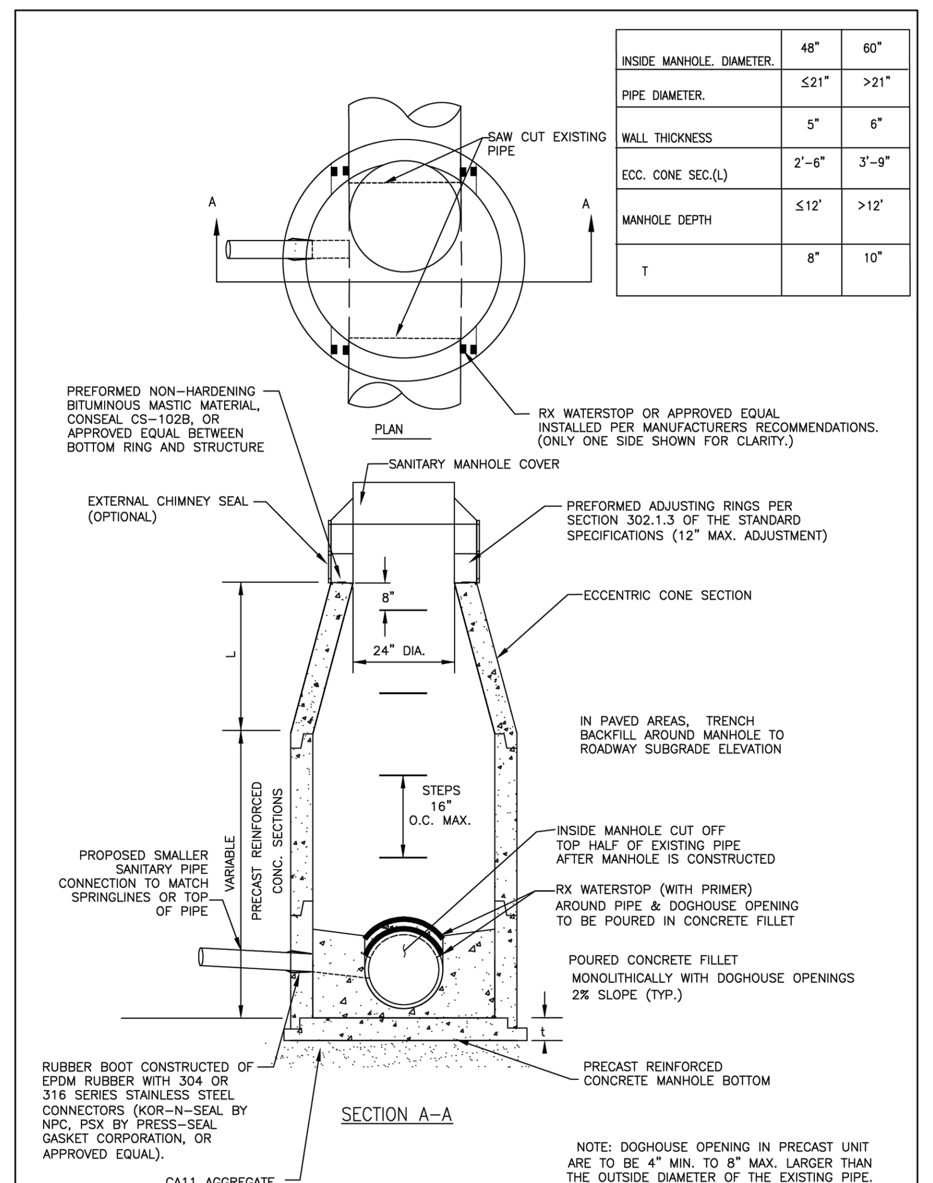
PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JRM
DATE: 08-30-23
SCALE: N.T.S.

ADK.NVIL01

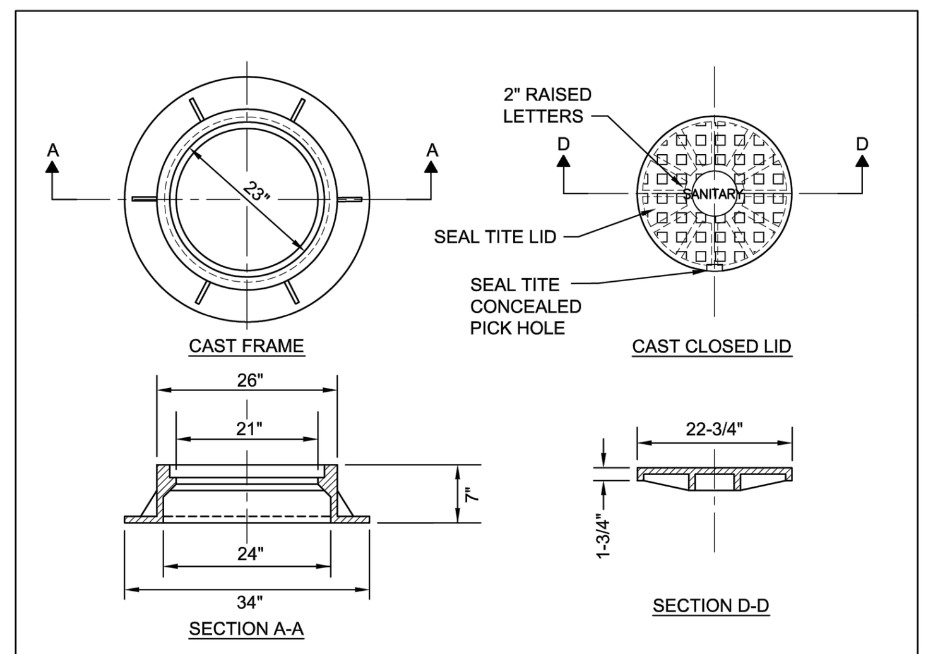
FINAL ENGINEERING - NOT FOR CONSTRUCTION



City of Naperville STANDARD DETAIL | SANITARY SEWER MANHOLE | SANITARY 1 **390.01**
REVISED: 08/01/2018 | SHEET 1 OF 1



City of Naperville STANDARD DETAIL | SANITARY MANHOLE - DOG HOUSE CONNECTION | SANITARY 5 **390.05**
REVISED: 08/01/2018 | SHEET 1 OF 1



NOTES:

1) DUCTILE IRON SHALL BE GRADE 65-45-12 AND SHALL BE TESTED IN ACCORDANCE WITH FEDERAL SPECIFICATIONS.

2) ALL FRAMES AND COVERS SHALL HAVE MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES. PICK HOLES SHALL NOT CREATE OPENINGS IN THE COVER.

3) THE MANHOLE COVERS SHALL HAVE 2" RAISED LETTERS AS SHOWN.

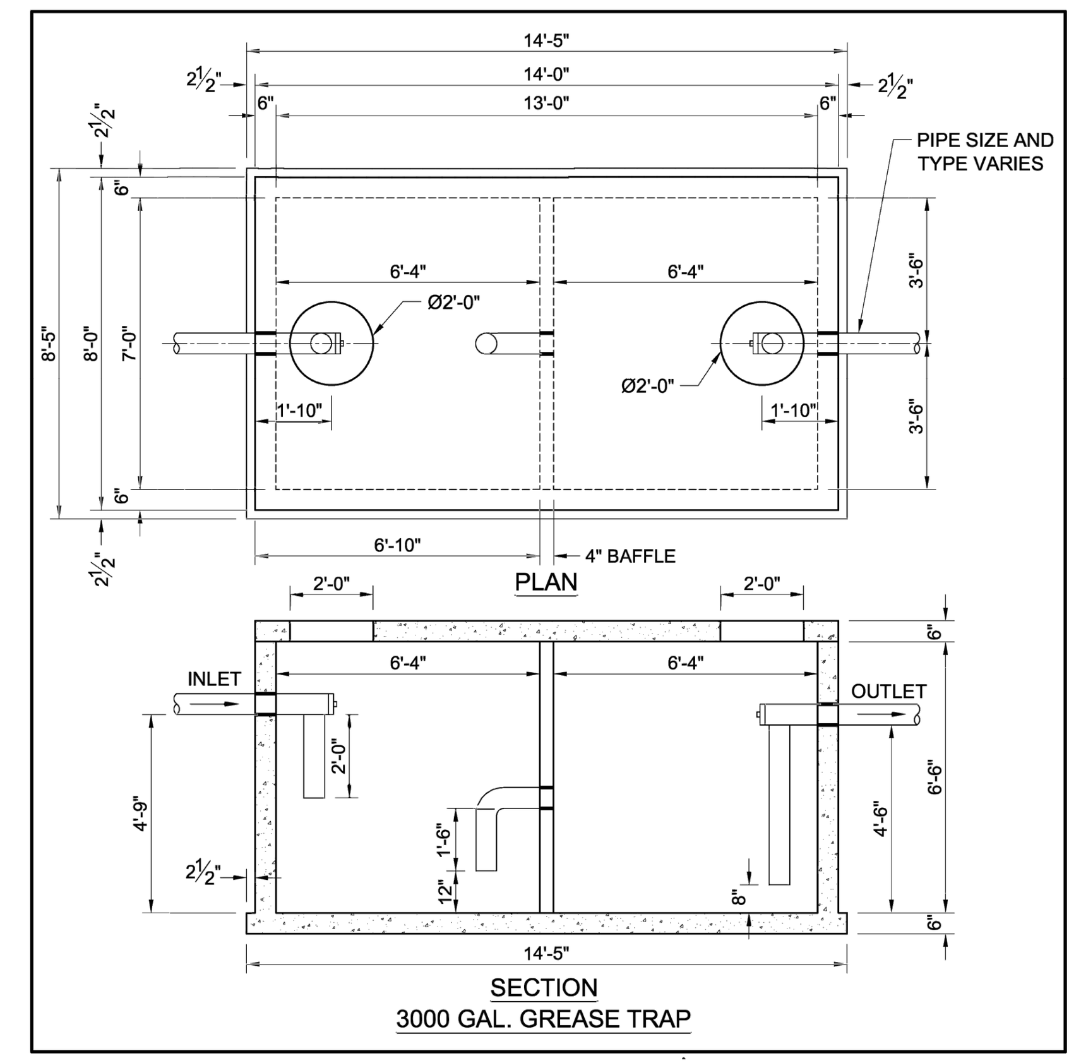
4) ALTERNATIVE TO DUCTILE IRON LID, GREY IRON CL 35 LID MAY BE USED.

5) CASTINGS ARE SHALL BE EAST JORDAN 1022-Z3; NEENAH R-1772 OR APPROVED EQUAL.

6) WATERPROOF, BOLTDOWN FRAME AND COVER SHALL BE USED IN FLOOD PLAIN AREA, AND AS NOTED ON THE PLANS. NEENAH R-1916-F1, EAST JORDAN IRON WORKS 1022-Z1PT OR APPROVED EQUAL.

7. LIDS AND FRAMES TO MEET ASSHTO M306 PROOF LOADING SPECIFICATIONS

City of Naperville STANDARD DETAIL | SANITARY MANHOLE - FRAME & COVER | SANITARY 6 **390.06**
REVISED: 01/01/2013 | SHEET 1 OF 1



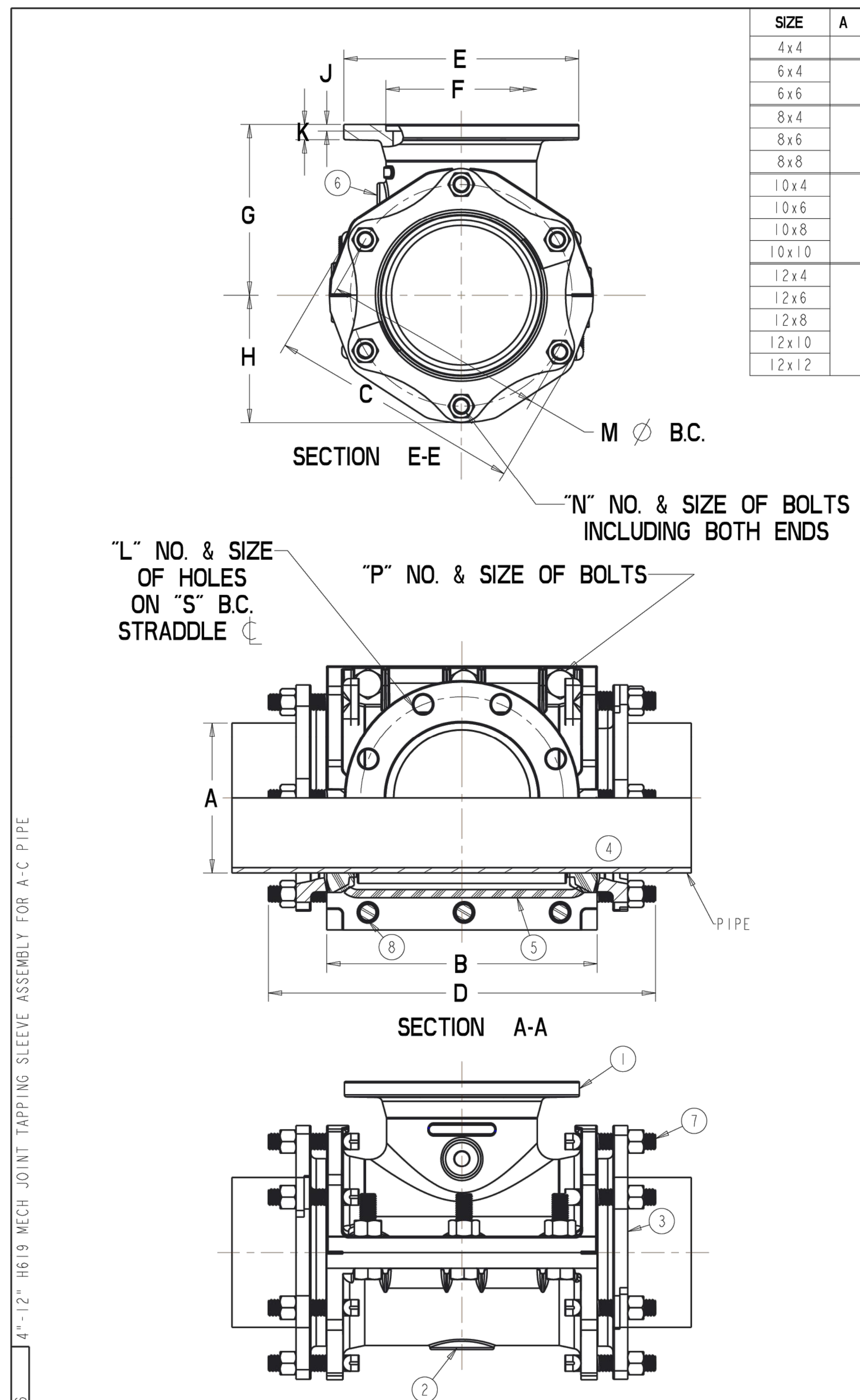
Contractor Name	Date	Project Name	Project Location

SCALE: NTS

WELCH BROS., INC.
WWW.WELCHBROTHERS.COM

CONTACT INFORMATION
ELGIN MAIN OFFICE
PHONE: 847.741.6134
FAX: 847.741.6195
BARTLETT PRECAST OFFICE
PHONE:847.214.3052
FAX:847.697.0123
BELVIDERE OFFICE
PHONE: 815.547.3000
FAX: 815.544.9481

NOTES:
1. WALLS & BOTTOMS TO HAVE #4 BARS AT 6" O.C. E.W.
2. TOP TO HAVE #4 BARS @ 6" O.C. E.W.
3. CONCRETE TO BE 5000 PSI AT 28 DAYS.
4. PIPE, FITTINGS AND CASTINGS ARE NOT INCLUDED AND AVAILABLE AT ADDITIONAL COST.



SIZE	A (H-619) O.D. RANGE	B	C	D REF	E	F	G	H	J	K	L	M	N	P	S
4x4	4.97 - 5.57	10.94	9.875	16.51	9.00	5.032	7.000	4.25	.250	.655	8 - .750	8.25	8 - .750	6 - .750	7.50
6x4	7.05 - 7.60	12.66	12.250	18.17	9.00	5.035	8.000	5.96	.250	.715	8 - .750	10.38	12 - .750	6 - .750	7.50
6x6					11.00	7.060			.313		8 - .875				9.50
8x4	9.22 - 9.79	11.97	14.375	18.36	9.00	5.065	8.825	7.19	.250	.685	8 - .750	12.75	12 - .750	6 - .750	7.50
8x6		11.97		18.36	11.00	7.065	9.342		.313	.765	8 - .875			6 - .750	9.50
8x8		14.86		21.25	13.50	9.080	9.539		.313	.775	8 - .875			8 - .750	11.75
10x4	11.77 - 12.25	13.50	17.188	19.13	9.00	5.016	11.125	8.33	.250	.938	8 - .750	15.44	16 - .750	8 - .875	7.50
10x6		13.50		19.13	11.00	7.016	11.000		.313	1.000	8 - .875			8 - .875	9.50
10x8		18.63		24.25	13.50	9.016	11.000		.313	1.125	8 - .875			10 - .875	11.75
10x10		18.63		24.25	16.00	11.016	11.000		.313	1.188	8 - 1.000			10 - .875	14.25
12x4	14.03 - 14.51	13.50	19.688	19.00	9.00	5.016	12.00	9.44	.250	.938	8 - .750	17.81	16 - .750	8 - .875	7.50
12x6		13.50		19.00	11.00	7.016			.313	1.000	8 - .875			8 - .875	9.50
12x8		15.50		21.00	13.50	9.016			.313	1.125	8 - .875			10 - .875	11.75
12x10		21.75		27.25	16.00	11.016			.313	1.188	12 - 1.000			14 - .875	14.25
12x12		21.75		27.25	19.00	13.016			.313	1.250	12 - 1.000			14 - .875	17.00

PARTS LIST

ITEM	DESCRIPTION	REQ"D	MATERIAL	ASTM	NOTES
1	OUTLET	1	DUCTILE IRON	A536 65-45-12	
2	CAP	1	DUCTILE IRON	A536 65-45-12	
3	PIPE GLAND	2	CAST IRON	A126 CLASS B	
4	MJ GASKET	2	EPDM		MUELLER RUBBER SPEC R42
5	SIDE GASKET	2	EPDM		MUELLER RUBBER SPEC R46
6	PIPE PLUG	1	CAST IRON		
7	PIPE GLAND BOLTS & NUT	"N"	588 OR A242	GRADE B OR TYPE I	
8	SQUARE SIDE BOLT NUTS	"P"	STEEL ZINC PLATED	GRADE B	SC3

APPROVED
By Jason W. Bradley at 2:03 pm, Jun 02, 2009

4"-12" H619 MECH JOINT TAPPING SLEEVE ASSEMBLY FOR A-C PIPE
Mueller Co. 6806

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE CITY DETAILS, THE CITY DETAILS SHALL TAKE PRECEDENCE.

DATE	REVISIONS	DRAWN BY
08-02-24	REVISED PER CITY OF NAPERVILLE REVIEW #6	JRM
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MDE

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PROPOSED HEINEN'S GROCERY STORE
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PROJ. MGR.: MDE
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SCALE: N.T.S.

SHEET 17 OF 19
ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

06-01-16

MANHARD CONSULTING
STANDARD SPECIFICATIONS

GENERAL CONDITIONS

CONTRACTOR acknowledges and agrees that the use and reliance of these Plans and Specifications is sufficient consideration for CONTRACTOR'S covenants stated herein.

DEFINITION OF TERMS

a. "CLIENT" shall mean AODK Architecture, which is the person or entity with whom Manhard Consulting has contracted with to prepare Civil Engineering PLANS and SPECIFICATIONS.
b. "ENGINEER" shall mean Manhard Consulting, a Civil Engineering consultant on the subject project.
c. "PLANS and SPECIFICATIONS" shall mean the Civil Engineering PLANS and SPECIFICATIONS prepared by the ENGINEER, which may be a part of the contract documents for the subject project.
d. "CONTRACTOR" shall mean any person or entity performing any work described in the PLANS and SPECIFICATIONS.
e. "JURISDICTIONAL GOVERNMENTAL ENTITY" shall mean any municipal, county, state or federal unit of government from whom an approval, permit and/or review is required for any aspect of the subject project.

INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the PLANS and SPECIFICATIONS is to set forth certain requirements of performance, type of equipment and structures, and standards of materials and construction. They may also identify labor and materials, equipment and transportation necessary for the proper execution of the work but are not intended to be infinitely determined so as to include minor items obviously required as part of the work. The PLANS and SPECIFICATIONS require new material and equipment unless otherwise indicated, and to require complete performance of the work in spite of omissions of specific references to any minor component part. It is not intended, however, that materials or work not covered by or properly inferred from any heading, branch, class or trade of the SPECIFICATIONS shall be supplied unless distinctly so noted. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

INTERPRETATION OF PLANS AND SPECIFICATIONS

a. The CLIENT and/or CONTRACTOR shall promptly report any errors or ambiguities in the PLANS and SPECIFICATIONS to the ENGINEER. Questions as to meaning of PLANS and SPECIFICATIONS shall be interpreted by the ENGINEER, whose decision shall be final and binding on all parties concerned.
b. The ENGINEER will provide the CLIENT with such information as may be required to show revised or additional details of construction.
c. Should any discrepancies or conflicts on the PLANS or SPECIFICATIONS be discovered either prior to or after award of the contract, the ENGINEER's attention shall be called to the same before the work is begun thereon and the proper corrections made. Neither the CLIENT nor the CONTRACTOR may take advantage of any error or omissions in the PLANS and SPECIFICATIONS. The ENGINEER will provide information when errors or omissions are discovered.

GOVERNING BODIES

All works herein proposed shall be completed in accordance with all requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, and all such pertinent laws, directives, ordinances and the like shall be considered to be a part of these SPECIFICATIONS. If a discrepancy is noted between the PLANS and SPECIFICATIONS and requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, the CLIENT and/or the CONTRACTOR shall immediately notify the ENGINEER in writing.

LOCATION OF UNDERGROUND FACILITIES AND UTILITIES

When the PLANS and SPECIFICATIONS include information pertaining to the location of existing underground facilities and utilities (including but not limited to water mains, sanitary sewers, storm sewers, electric, telephone, gas and cable TV lines), such information represents only the opinion of the ENGINEER as to the approximate location and elevation of such facilities and utilities. At the locations wherein detailed positions of these facilities and utilities become necessary to the new construction, including all points of connection, the CONTRACTOR shall furnish all labor and tools to verify or definitely establish the horizontal location, elevation, size and material (if appropriate) of the facilities and utilities. The CONTRACTOR shall notify the ENGINEER at least 48 hours prior to construction if any discrepancies in existing utility information or conflicts with existing utilities exist. The ENGINEER assumes no responsibility whatever with respect to the sufficiency or accuracy of the information shown on the PLANS and SPECIFICATIONS relative to the location of underground facilities and utilities, nor the manner in which they are removed or adjusted.

It shall be the CONTRACTOR's responsibility prior to construction, to notify all Utility Companies of the intent to begin construction and to verify the actual location of all such facilities and utilities. The CONTRACTOR shall also obtain from the respective Utility Companies the working schedules for removing or adjusting these facilities.

UNSUITABLE SOILS

The PLANS have been prepared by the ENGINEER based on the assumption that all soils on the project are suitable to support the proposed improvements shown. The CLIENT or CONTRACTOR shall immediately notify the ENGINEER if he discovers or encounters an obstruction that prevents the installation of the improvement according to the line and grades shown on the PLANS.

PROTECTION OF TREES

All trees that are not to be removed shall be protected from damage. Trees shall not be removed unless requested to do so in writing by the CLIENT.

NOTIFICATION OF OWNERS OF FACILITIES AND UTILITIES

The CONTRACTOR shall notify all applicable Jurisdictional Governmental Entities or utility companies, i.e., water, sewer, electric, telephone, gas and cable TV prior to beginning any construction so that said entity or company can establish the location and elevation of underground pipes, conduits or cables adjoining or crossing proposed construction.

TRAFFIC CONTROL

The CONTRACTOR shall provide when required by any JURISDICTIONAL GOVERNMENTAL ENTITY, all signs, equipment, and personnel necessary to provide for safe and efficient traffic flow in all areas where the work will interrupt, interfere or cause to change in any form, the conditions of traffic flow that existed prior to the commencement of any portions of the work. The CLIENT may, at his discretion, require the CONTRACTOR to furnish traffic control under these or other circumstances where in his opinion it is necessary for the protection of life and property. Emergency vehicle access shall be maintained at all times. Unless authorized by the CLIENT or CLIENT's construction representative, all existing access points shall be maintained at all times by the CONTRACTOR. The need for traffic control shall be anticipated by the CLIENT.

WORK AREA

The CONTRACTOR, his agents and employees and their employees and all equipment, machinery and vehicles shall confine their work within the boundaries of the project or work area specified by the Client. The CONTRACTOR shall be solely liable for damage caused by him or his agents and employees and their equipment, machinery and vehicles on adjacent property or areas outside designated work areas.

UTILITY POLES

It shall be the responsibility of the CONTRACTOR to arrange for the relocation or bracing of existing utility poles that may be within the working limits of this contract. It is expressly understood that all work and costs connected with the maintenance of these utility poles, their temporary relocations, etc., shall be the responsibility of the CLIENT or the CONTRACTOR.

RESTORATION

It is the intent of these SPECIFICATIONS that clean-up and final restoration shall be performed immediately upon completion of each phase of the work, both inside and outside the Project, or when so directed by the CLIENT so that these areas will be restored as nearly as possible to their original condition or better, and shall include but not be limited to, restoration of maintained lawns and rights-of-way, roadways, driveways, sidewalks, ditches, bushes, hedges, trees, shrubs, fences, mailboxes, sewers, drain tiles, water mains, etc.

CLEANING UP

The CONTRACTOR shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish, tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified.

ROAD CLEANING

The CONTRACTOR shall maintain roadways adjoining the project site free from mud and debris at all times. If mud and/or debris is carried onto the roadways from vehicles entering onto the highway from either the CONTRACTOR's trucks, his employees' vehicles, or his material suppliers, the CONTRACTOR shall immediately remove said mud and/or debris.

SAFETY AND PROTECTION

The CONTRACTOR shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. The CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all work is completed and the CLIENT has notified CONTRACTOR that the work is acceptable. The duties of the ENGINEER do not include review of the adequacy of either the CONTRACTOR's or the general public's safety in, on, or near the construction site.

HOLD HARMLESS

To the fullest extent permitted by law, any CONTRACTOR; material supplier or other entity by use of these plans and specifications hereby waives any right of contribution and agrees to indemnify, defend, save and hold harmless the CLIENT and ENGINEER and its agents, employees and consultants from and against all manner of claims, causes, causes of action, damages, losses and expenses, including but not limited to, attorneys' fees arising out of, resulting from or in connection with the performance of any work, pursuant to or with respect to these plans and specifications. However, this indemnity shall not be construed to indemnify ENGINEER, its consultants, agents or employees against its own negligence.

Claims, damages, losses and expenses as these words are used in the Agreement shall mean and include, but not be limited to (1) injury or damage occurring by reason of the failure of or use or misuse of any hoist, riggings, blocking, scaffolding or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by any part or entity, including any contractor; (2) all attorneys' fees and costs incurred in bringing an action to enforce the provisions of this indemnity; (3) costs for time expended by the indemnified party and its employees, at its usual rates plus costs or travel, long distance telephone and reproduction of documents and (4) consequential damages.

In any and all claims against the CLIENT or ENGINEER or any of their agents or employees and consultants by any party, including any employee of the CONTRACTOR or any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts or any insurance maintained by CONTRACTOR or any Subcontractor or any other party.

INSURANCE

Any party using or relying on these plans, including any contractor, material supplier, or other entity shall obtain, (prior to commencing any work) general public liability insurance insuring against all damages and claims for any bodily injuries, death or property damage arising out of any work, including the construction work provided for in these plans, and shall name the CLIENT and ENGINEER and its consultants, agents and representatives as additional insureds under such insurance policy; provided that any party using or relying on these plans having obligations to maintain specific insurance by reason of any agreement with CLIENT or any CONTRACTOR or ENGINEER shall provide evidence and certificates of insurance as required by such contract or agreement. Such insurance must contain a clause stating that the insurance is primary coverage for ENGINEER and ENGINEER's other applicable coverage is considered secondary. Such insurance shall not limit any liability of any party providing work or services or providing materials.

THIRD PARTY BENEFICIARY

Manhard Consulting, Ltd., the ENGINEER, is intended to be a third party beneficiary of this willing agreement and requirement.

Note: These Specifications are for Northern Illinois.

DETAILED SPECIFICATIONS

I. DEMOLITION

The CONTRACTOR shall coordinate with respective utility companies prior to the removal and/or relocation of utilities. The CONTRACTOR shall coordinate with the utility company concerning portions of work which may be performed by the Utility Company's forces and any fees which are to be paid to the utility company for their services. The CONTRACTOR is responsible for paying for all fees and charges.

Should removal and/or relocation activities damage features indicated to remain, the CONTRACTOR shall provide new materials/structures in accordance with the contract documents. Except for materials designed to be relocated on this plan, all other construction materials shall be new.

Prior to demolition occurring, all erosion control devices are to be installed.

All existing utility lines and conduits located under proposed buildings shall be removed and properly backfilled. All utility lines and conduits located under drives, on-site roads, parking lots or sidewalks shall be filled with a flowable backfill and end plugged. All existing structures shall be removed. All existing utility lines located under landscape areas shall be left in place and plugged at all structures.

The CONTRACTOR is responsible for demolition, removal and disposal (in a location approved by all JURISDICTIONAL GOVERNING ENTITIES) of all structures, pads, walls, flumes, foundations, road, parking lots, drives, drainage structures, utilities, etc., such that the improvements shown on these plans can be constructed. All demolition work shall be in accordance with all applicable federal, state and local requirements. All facilities to be removed shall be undercut to suitable material and brought to grade with suitable compacted fill material per the specifications.

The CONTRACTOR is responsible for obtaining all permits required for demolition and disposal.

Electrical, telephone, cable, water, fiber optic cable and/or gas lines needing to be removed shall be coordinated by the CONTRACTOR with the affected utility company.

CONTRACTOR must protect the public at all times with fencing, barricades, enclosures, and other appropriate best management practices.

Continuous access shall be maintained for surrounding properties at all times during demolition.

All fire access lanes within the project area shall remain in service, clean of debris, and accessible for use by emergency vehicles.

The CONTRACTOR shall coordinate water main work with the Fire Department and the JURISDICTIONAL GOVERNING ENTITY to plan the proposed improvements and to ensure adequate fire protection is available to the facility and site throughout this specific work and through all phases of construction. CONTRACTOR shall be responsible for any required water main shut offs with the JURISDICTIONAL GOVERNING ENTITY during construction. Any costs associated with water main shut offs will be the responsibility of the CONTRACTOR and no extra compensation will be provided.

CONTRACTOR shall maintain all existing parking areas, sidewalks, drives, etc. clear and free from any construction activity and/or material to ensure easy and safe pedestrian and vehicular traffic to and from the site. CONTRACTOR shall coordinate/phase all construction activity within proximity of the building and utility interruptions with the facility manager to minimize disturbance and inconvenience to facility operations.

CONTRACTOR may limit saw-cut and pavement removal to only those areas where it is required as shown on these construction plans, however if any damage is incurred on any of the surrounding pavement, etc. the CONTRACTOR shall be responsible for ITS removal and repair.

Any existing wells encountered shall be exposed and sealed 3' below proposed finish grade by the CONTRACTOR in accordance with Section 920.120 (latest edition) of the Illinois Water Well Construction Code, Department of Public Health, and all applicable local rules and regulations. CONTRACTOR is responsible for obtaining all permits required by JURISDICTIONAL GOVERNMENTAL ENTITIES for abandoning existing wells.

Any existing septic tanks and grease traps encountered shall have all liquids and solids removed and disposed of by a licensed commercial hauler in accordance with JURISDICTIONAL GOVERNING ENTITY regulations, and the tank and grease traps shall then be filled with suitable materials or removed from the site and disposed of by the CONTRACTOR.

Voids left by any item removed under any proposed building, pavement, walk, etc. or within 24" thereof shall be filled and compacted with suitable materials by the CONTRACTOR.

The CONTRACTOR shall be responsible for the disconnection of utility services to the existing buildings prior to demolition of the buildings.

Any material containing asbestos found within existing structures shall be removed from the site and disposed of off-site by the CONTRACTOR in accordance with County, State and Federal regulations.

CONTRACTOR shall develop and implement a daily program of dust control and shall submit and obtain JURISDICTIONAL GOVERNING ENTITY approval of dust control procedures prior to demolition of any structures. Modification of dust control procedures shall be performed by the CONTRACTOR to the satisfaction of the JURISDICTIONAL GOVERNING ENTITY as requested.

The CONTRACTOR shall coordinate all demolition with the JURISDICTIONAL GOVERNING ENTITY and CLIENT to ensure protection and maintenance of sanitary sewer and water utilities as necessary and to provide stormwater conveyance until new facilities are constructed, tested and placed into operation.

The locations of all existing utilities shown on this plan have been determined from the best information available and are given for the convenience of the CONTRACTOR and are not to be interpreted as the exact location, or as the only obstacles that may occur on the site. The ENGINEER assumes no responsibility for their accuracy. Prior to the start of any demolition activity, the CONTRACTOR shall notify the utility companies for location of existing utilities and shall verify existing conditions and proceed with caution around any anticipated features.

The CONTRACTOR is responsible for removing the existing irrigation system in the areas of proposed improvements. The contractor shall cap the existing irrigation system to remain such that the remaining system shall continue to function properly.

The parking lot shall be completed in sections such that it does not interrupt the facility operations. The CONTRACTOR shall coordinate with the construction manager for work to be performed.

II.EARTHWORK

STANDARDS

This work shall be completed in conformance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition except as modified below.

SOIL BORING DATA

Copies of results of soil boring and reports, if such borings were taken by the CLIENT in the vicinity of the proposed construction site, should be made available by the CLIENT to the CONTRACTOR. These borings are presented for whatever purpose the CONTRACTOR chooses to make of them. The ENGINEER makes no representation or warranty regarding the number, location, spacing or depth of borings taken, nor of the accuracy or reliability of the information given in the results thereof.

Further, the ENGINEER does not assume responsibility for the possibility that during construction, the soil and groundwater condition may be different than indicated. Neither does the ENGINEER assume responsibility for variations of soil and groundwater at location between borings. The CONTRACTOR is required to make its own borings, explorations and observations to determine soil and groundwater conditions.

EARTHWORK CALCULATIONS AND CROSS SECTIONS

The CONTRACTOR understands that any earthwork calculations, quantities or cross sections that have been furnished by the ENGINEER are for information only and are provided without any guarantee by the CLIENT or ENGINEER whatsoever as to their sufficiency or accuracy. CONTRACTOR warrants that he has performed his own subsurface investigations as necessary and his own calculations and cross sections to determine site soil conditions and earthwork volumes. The ENGINEER makes no representation or guarantee regarding earthwork quantities or that the earthwork for this project will balance due to the varying field conditions, changing soil types, allowable construction to tolerances and construction methods that are beyond the control of the ENGINEER.

CLEARING, GRUBBING AND TREE REMOVAL

The site shall be cleared, grubbed, and trees and stumps removed where designated on the PLANS. Trees designated to remain shall be protected from damage.

TOPSOIL STRIPPING

Upon completion of demolition, clearing, grubbing and tree removal, all topsoil shall be stripped from under all buildings and pavements areas, and other areas necessary to complete the work. Topsoil stripped shall be placed in stockpiles in locations as designated by the CLIENT.

TOPSOIL RESPREAD

Upon completion of roadway and/or parking lot improvements and installation of underground utilities a minimum of six inches (6") of topsoil shall be respread over all unpaved areas which have been disturbed by earthwork construction, except building pads and other designated areas, which shall be kept free from topsoil.

SEEDING

Upon completion of topsoil respread, the CONTRACTOR shall apply seed and fertilizer to all respread areas in accordance with IDOT standards or as designated on landscape drawings and specifications provided by the CLIENT.

SODDING

Upon completion of topsoil respread, the CONTRACTOR shall install sod to all areas designated on the plans or as designated on the landscape drawings and specifications provided by the CLIENT.

***EXCAVATION AND EMBANKMENT**

Upon completion of topsoil stripping, all excavation and embankments shall be completed as shown on the PLANS. All suitable excavated materials shall be hauled, placed (moisture conditioned if necessary) and compacted in the embankment areas. The CONTRACTOR shall include all dewatering, temporary ditching and culverts necessary to complete the excavation and embankment.

Specifically included in the scope of Excavation and Embankments is grading and shaping of all cut or fill areas including swales and ditches; handling of sewer spoil, etc., and all work required to provide positive drainage at the end of each working day and upon completion of a section.

The CONTRACTOR shall be responsible for the excavation of all swales and ditches and for the excavation or filling of the roads, building pads and parking lots within the work limits to lines & grades shown on the plans. He shall be responsible for obtaining compaction in accordance with the minimum values listed in the table below for all embankments unless more stringent values are listed in the soils report or are approved by the CLIENT, and to use any method approved by the CLIENT necessary to obtain this compaction (i.e., soil fabric or any undercutting that may be required).

Type Material	Percent Compaction Standard	Pavement & Floor Slabs	Grass Areas
Sandy Soils	Modified Proctor	95%	90%
Clayey Soils	Standard Proctor	95%	90%

The CONTRACTOR shall notify the CLIENT if proper compaction cannot be obtained so that the CLIENT may determine what remedial measures may be needed.

A soils testing firm employed by the CLIENT shall determine which soils are unsuitable. Materials in their natural state being defined as unsuitable that would be suitable material if moisture conditioned, shall be conditioned by the CONTRACTOR and used as suitable embankment material or hauled from the site.

For purposes of definition, unsuitable material shall be as follows unless determined otherwise by the Soils Engineer:

1. Any soil whose optimum moisture content exceeds 25%.
2. Any cohesive soil with an unconfined compressive strength of 1.5 tons per square foot or less.
3. Any soil whose silt content exceeds 60% by weight.
4. Any soil whose maximum density is less than 100 pounds per cubic foot.
5. Any soil containing organic, deleterious, or hazardous material.

Ditches and swales are to be excavated to the lines and grades indicated on the PLANS. All suitable materials excavated from the ditches shall be used in construction of the embankments.

The CONTRACTOR shall notify the CLIENT immediately upon encountering groundwater during excavation. If in the opinion of the CLIENT or the JURISDICTIONAL GOVERNING ENTITY this condition necessitates the installation of perforated drain tile bedded in washed gravel or open storm sewer joints wrapped with fabric, the CONTRACTOR shall install the same.

During excavation and embankment, grades may be adjusted to achieve an overall site earthwork balance. The CONTRACTOR shall cooperate fully with the CLIENT in adjustment of grades, construction methods and placement of material to meet the above goals and shall immediately advise CLIENT if he believes that the earthwork will not balance.

It is the intent of these PLANS that storm waters falling on the site be diverted into sedimentation / lake / detention basins during construction. The CONTRACTOR shall construct and maintain any temporary ditches or swales that are necessary to accomplish this prior to beginning mass excavation.

EROSION CONTROL

Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and Sedimentation Control ordinances and the PLANS.

UNDERCUTTING DURING EARTHWORK

If the subgrade cannot be dried adequately by discing as outlined above for placement of material to planned grades and if the CLIENT determines that the subgrade does not meet the standards set forth above, the CLIENT may require undercutting.

MISCELLANEOUS CONTRACT ITEMS

The following items may be required at the CLIENT's option, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY:

(1) **GEOTEXTILE FABRIC**

Geotextile fabric or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY where proper compaction of embankments over existing soft soils is not possible. Geotextile fabric shall meet the material specifications of and shall be installed in accordance with the above standards.

(2) **EROSION CONTROL BLANKET**

Erosion control blanket or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY for the stabilization of disturbed areas. Erosion control blanket shall meet the material specifications of and shall be installed in accordance with the above standards, the Illinois Urban Manual and/or the details shown on the PLANS.

III.UNDERGROUND IMPROVEMENTS

A. GENERAL

STANDARDS

All underground improvements shall be constructed and tested in accordance with the Standard Specifications for Water and Sewer Construction in Illinois and Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition. In the event of conflicting guidelines, the more restrictive shall govern.

SELECTED GRANULAR BACKFILL

Selected Granular Backfill shall be required for all sewer and water main trenches lying under existing or proposed streets, driveways, parking lots and within 24" thereof, and where noted on PLANS. All material placed in such trenches shall be in accordance with the above standards.

MANHOLES, CATCH BASIN, INLETS & VALVE VAULTS

All Manholes, Catch Basins, Inlets, and Valve Vaults shall be constructed of reinforced precast concrete ring construction with tongue and groove joints in conformance with the latest revision of ASTM designation C-478. All joints between sections and frames (except sanitary manholes, see Section IIIB Manholes, below) shall be sealed with mastic type bituminous jointing compound. CONTRACTOR shall remove all excess mastic on inside of structure and butter joints with mortar. Manholes are to have offset cones except that no cone shall be used on storm manholes 6'-0" deep or less in which case a reinforced concrete flat top section shall be used, and Valve Vaults shall have concentric cones. Only concrete adjustment rings will be permitted where necessary and shall be limited to two adjustment rings totaling not more than 8" in height. All manholes and catch basin steps shall be copolymer polypropylene with continuous ½" steel reinforcement as manufactured by MA Industries, or approved equal.

AUGER/BORING AND CASING

Casing pipe shall be welded steel pipe, installed where shown on the PLANS. The carrier pipe shall be securely blocked and banded and sanitary and storm sewers shall maintain the specified gradient. Upon installing the carrier pipe the ends shall be sealed with hydraulic cement.

AUGER (OPEN BORE)

The CONTRACTOR shall auger (open bore) where noted on PLANS.

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS

Horizontal and vertical separation of water and sewer mains shall be in accordance with Standard Specifications for Water and Sewer Construction in Illinois Section 41-2.01A and 41-2.01B and Standard Drawing 18, 19, 20, 21, 22, 23 and 24.

STRUCTURE ADJUSTMENTS

Structures shall be adjusted to the finished grade as shown on PLANS.

B. SANITARY SEWERS AND APPURTENANCES

SANITARY SEWER PIPE

Sanitary sewer pipe including building services, shall conform to the following:

(1) Polyvinyl Chloride (PVC) Sewer Pipe shall conform to ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 48-inch) minimum SDR 26 with flexible elastomeric seal gasket gasketed joints conforming to ASTM D3212 and F477.

(2) Ductile Iron Sewer Pipe shall conform with ANSI/AWWA C151/A21.51 Class 50, cement lined with push on type joints conforming to ANSI/AWWA C111/A21.11.

Sanitary sewers shall include bedding and backfilling.

MANHOLES

Manholes shall be constructed in conformance with Section IIIA Manholes, etc. above. The concrete base and bottom section shall be constructed of precast reinforced concrete monolithically cast sections including benches, pipe connection and invert flow lines. Manhole frame and lids shall be Neenah R-1772 or approved equal, with lids imprinted "SANITARY", with recessed pick holes. Manhole joints between adjustment rings and frames and between manhole sections shall be set on preformed plastic gasket consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler to provide a water tight seal. All pipe connection openings shall be precast with resilient rubber watertight pipe sleeves. A 10" elastomeric band (chimney seal) shall be installed extending from the manhole top to the manhole frame as shown on detail. Manholes shall include steps, frame & grate, bedding, and trench backfill.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TESTING

Sanitary sewers shall be air tested and tested for deflection in accordance with the requirements of Section 31-1.12 "TESTING AND INSPECTION FOR ACCEPTANCE OF SANITARY SEWERS" of the Standard Specifications for Water and Sewer Construction in Illinois or the JURISDICTIONAL GOVERNING ENTITY, whichever is more restrictive. In addition, a televised inspection of the completed sanitary sewers shall be conducted and a copy of the videotape and report furnished to the JURISDICTIONAL GOVERNING ENTITY.

All sanitary manholes are to be tested for water tightness in accordance with ASTM C969 "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines", or ASTM C1244 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test".

SERVICES

A wye branch or "tee" and sanitary service line, properly plugged and sealed shall be constructed as shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted red. The CONTRACTOR shall keep accurate records of all Wye or Tee locations as measured from the downstream manhole as well as the service lengths and furnish same to CLIENT.

RISERS

Risers shall be constructed in locations as shown on the PLANS and according to the detail.

DROP MANHOLE CONNECTIONS

Drop manhole connections to existing manholes shall be constructed according to the PLANS and the detail.

***SANITARY SEWER FORCE MAIN** - INTENTIONALLY OMITTED

TELEVISION INSPECTION

Upon completion of construction a television inspection of the sanitary sewer system shall be performed on all portions of the sewer if required by the JURISDICTIONAL GOVERNING ENTITY. Videotapes and written report of all television inspections shall be provided to the CLIENT. The form of report and type and format of the videotape shall be approved by the JURISDICTIONAL GOVERNING ENTITY.

All sewers and appurtenances shall be cleaned prior to inspection and testing required by this section.

All defects and corrective work required as the result of television inspection shall be performed by the CONTRACTOR without delay. All dips, cracks, leaks, improperly sealed joints and departures from approved grades and alignment shall be repaired by removing and replacing the involved sections of pipe. Upon completion thereof, the sewer shall be retested and such further inspection made as may appear warranted by the CLIENT.

MISCELLANEOUS

All floor drains shall be connected to the sanitary sewer.

C. WATER MAINS AND APPURTENANCES

***WATER MAIN PIPE (3" AND LARGER)**

Water main pipe shall conform to the following:

(1) Ductile iron pipe shall be per ANSI/AWWA C151/A21.51, Thickness Class 52, minimum 150 psi working pressure, cement lined in accordance with ANSI/AWWA C104/A21.4, with "push on" type joints.(2)

Installation shall be in accordance with ANSI/AWWA C600 (Ductile Iron). All water main shall have mechanical joint cast iron or ductile iron fittings in accordance with ANSI/AWWA C110/A21.10 or compact ductile iron fittings in accordance with ANSI/AWWA C153/A21.53 with 250 psi working pressure.

Poured or monolithic concrete thrust blocks are required to brace all tees, plugs, caps, and bends of 11 1/4 degree deflection or greater. Minimum cover for all water mains, including services, shall be 5'-6" from the finished grade. Water main shall include bedding and backfilling.

WATER VALVES

All valves shall be resilient wedge gate valves conforming to the latest revision of ANSI/AWWA C515, with a rated working pressure of 200 psi in accordance with JURISDICTIONAL GOVERNING ENTITY requirements, except that butterfly valves conforming to ANSI/AWWA C504 shall be constructed on all water mains 16" diameter and larger. Valves shall be non-rising stem and shall close by turning clockwise.

VALVE VAULTS

Valve vaults shall be constructed in conformance with Section IIIA Manholes, etc. above. Frame and lids shall be as approved by the JURISDICTIONAL GOVERNING ENTITY and shall be imprinted "WATER".

***VALVE BOXES** - INTENTIONALLY OMITTED

FIRE HYDRANTS

Fire Hydrants shall be per JURISDICTIONAL GOVERNING ENTITY requirements. All fire hydrants shall be located as shown on the PLANS and shall be painted in a manner acceptable to the JURISDICTIONAL GOVERNING ENTITY after installation and shall be adjusted to final grade.

TAP, STOPS AND BOX

The CONTRACTOR shall determine from the JURISDICTIONAL GOVERNING ENTITY as to the exact style, type, and manufacture of corporation stops, ground key stops and services boxes preferred by the JURISDICTIONAL GOVERNING ENTITY and shall furnish same.

***SMALL WATER SERVICES (2" DIAMETER OR LESS)** - INTENTIONALLY OMITTED

DISINFECTION

Disinfections shall meet all of the requirements of the State of Illinois, Environmental Protection Agency, Public Water Supplies Division. The safe quality of the water supply shall be demonstrated by bacteriological analysis of samples collected at sampling taps on at least two consecutive days following disinfection of the mains and copies of the said report submitted to the JURISDICTIONAL GOVERNING ENTITY and the CLIENT.

PRESSURE TEST

Allowable leakage, test pressure and duration shall be as per the requirements of the JURISDICTIONAL GOVERNING ENTITY.

PRESSURE CONNECTION TO EXISTING WATER MAIN

The CONTRACTOR shall maintain system pressure on existing water main at all times. Existing water main shall be located and material excavated, and valve basin slab and main supports installed. The existing water main shall be cleaned and the exterior disinfected prior to installing the tapping tee (material to conform to AWWA C110). The tapping valve shall be installed (valve to conform to AWWA C500) and the pressure tap completed in accordance with the detail on the plans. Valve shall be constructed in conformance with the detail. Payment for pressure connection to existing water main shall include disinfection, tapping valve and tee, valve vault, frame and lid, bedding, and trench backfill.

***DRY CONNECTION TO EXISTING WATER MAIN** - INTENTIONALLY OMITTED

POLYETHYLENE ENCASEMENT (FOR DUCTILE IRON WATER MAIN ONLY)

The CLIENT, or JURISDICTIONAL GOVERNING ENTITY may request that portions of the water main be enclosed in a polyethylene encasement in accordance with ANSI/AWWA C105/A21.5 should soil conditions so warrant its use.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TRACER WIRE

If the distance between valves when installing PVC pipe exceeds 1,000', tracer wire stations will be required for current induction. Tracer wire stations in grass areas will be Rhino TriView Flex Tracing Wire Stations or approved equal. In paved areas, they will be Valvco Tracer Wire Access Box for H2O loading or approved equal.

For open cut construction, using PVC pipe, a continuous, insulated, 12 gauge copper wire suitable for direct burial shall be taped on top of all piping to provide for locating following construction. This wire shall be securely terminated inside every valve vault on stainless steel hardware with an exposed lead of at least 12". A mechanically secure and soldered connection shall be provided for all wire splices. Where construction is by directional drilling or similar trenchless technology the tracer wire shall be 3/16" 7x19 PVC coated stainless steel aircraft cable with minimum breaking strength of 3,700 lbs (Lexco, Chicago, IL). Or Trace-Safe water blocking tracerwire RT series 19 gauge conductor (RT 1802W water, RT 1803W sewer).

Before final approval of any water main, there will be a monitored tracer wire continuity test in order to confirm proper installation of any tracer wire.

D. STORM SEWERS AND APPURTENANCES

STORM SEWER PIPE

Storm sewer pipe shall conform to the following:

(1) Reinforced concrete pipe minimum Class IV in conformance with the latest revision of ASTM designation C76 with C443 flexible gasket joints, except that bituminous mastic joints may be used in grass areas.

(2) Polyvinyl Chloride (PVC) Pipe: ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 36-inch), rated SDR 35, continually marked with manufacturer's name, pipe size, cell classification, SDR rating. Joints shall be flexible elastomeric seals conforming to ASTM D3212. (Only permitted when specifically indicated on PLANS.)

(3) Ductile Iron Pipe (DIP) shall conform to ANSI/AWWA C151/21.5, Class 50 cement lined with push on type joints conforming to ANSI/AWWA C111/A21.11.

Precast tees, bends, and manholes may be used if permitted by the JURISDICTIONAL GOVERNMENTAL ENTITY.

Storm sewer shall include bedding and trench backfill.

MANHOLES, INLETS & CATCH BASINS

Manholes, Inlets and Catch Basins shall be constructed in conformance with Section IIIA Manholes, etc. above. The space between connecting pipes and the wall of the manhole shall be completely filled with non-shrink hydraulic cement mortar. Frames and lids shall be Neenah or approved equal unless specified otherwise on the PLANS. All frames and grates shall be provided such that the flange fully covers the opening plus 2" of the structure as a minimum. * Provide **"Vane"** Type frame & grate for all structures located in curb where gradient exceed 2.0%. Manholes shall include steps, frame & grate, bedding and trench backfill.

FLARED END SECTION

Flared end sections shall be pre-cast reinforced concrete flared end section with an end block cast separate as per the Illinois Department of Transportation Standard 542301 and shall be installed where shown on the PLANS. All flared end sections for storm sewers 12" in diameter and larger shall be installed with a grating per Standard 542311 and/or as detailed on the PLANS. Work shall include end block.

RIP RAP

Stone rip rap consisting of pieces of "A" quality stone 4" to 8" in diameter shall be furnished and installed in accordance with IDOT Specifications and shall be placed where shown on the plans, to a minimum thickness of 12" and a width as indicated on the plans. Broken concrete or concrete blocks will not be acceptable.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

***UNDERDRAINS** - INTENTIONALLY OMITTED

MISCELLANEOUS

(1) All existing field drainage tile or storm sewers encountered or damaged during construction shall either be restored to their original condition, properly rerouted and/or connected to the storm sewer system.

(2) Footing drains shall be connected to sump pumps or discharged directly into storm sewers. Footing drains or drainage tile shall not be connected to the sanitary sewer.

CONNECTION FOR STORM SERVICE TO STORM MAIN

Connections of storm sewer services to storm sewer mains should be made with manufactured tees when available. Availability of manufactured tees will be a function of the storm sewer material and pipe diameter size of the service sewer and main. If manufactured tees are not reasonably available, connections should be made in accordance with manufacturer's recommendations for all storm sewer other than concrete pipe. For concrete pipe connections without manufactured tees the storm sewer main shall be machine cored and the service sewer connected using non-shrink grout for the void between pipes. The service sewer shall be cut flush with the inside wall of the sewer main and not extend into the inside flow area of the main or otherwise impede flow.

IV. ROADWAY AND PARKING LOT IMPROVEMENTS

STANDARDS

Work shall be completed in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition (hereinafter referred to collectively as the "Standard Specifications") except as modified below and except that payment will be defined as detailed in the contract documents between the CLIENT and the CONTRACTOR. Supplementing the Standard Specifications shall be the applicable sections of the latest editions of the "Supplemental Specifications and Recurring Special Provisions", the "Manual on Uniform Traffic Control Devices for Streets and Highways" and the Illinois Supplement thereto, (hereinafter referred to collectively as the "MUTCD"). Any references to "ENGINEER" in the "Standard Specifications" shall be interpreted as the CLIENT or CLIENT's Construction Representative.

SUBGRADE PREPARATION

The CONTRACTOR shall be responsible for all subgrade compaction and preparation to the lines and grades shown on the plans.

AGGREGATE BASE COURSE TYPE 'B'

Aggregate Base Course Type B shall be limited to CA-6 or CA-10 gradation. Aggregate base courses shall be proof rolled as outlined below.

PROOF ROLL

The CONTRACTOR shall proof roll the subgrade with either a 2-axle truck loaded to 27,000 lbs. Or a 3-axle truck loaded to 45,000 lbs. or as specified by the JURISDICTIONAL GOVERNING ENTITY. The CLIENT and JURISDICTIONAL GOVERNING ENTITY shall observe and approve the proof rolling of the subgrade and the base course. Proof rolling tolerances shall be a maximum deflection of 1" for the subgrade and ½" for the base course. The above criteria is intended as a maximum deflection standard and that proof rolling of a majority of the area will have less deflection than specified above. In any case of deficiency, the subgrade and/or base course shall be repaired and retested before proceeding with the pavement construction.

Pavement subgrade material shall not be removed, placed or disturbed after proof roll testing has been completed prior to the pavement construction. Additional testing will be required if the pavement subgrade is disturbed and/or material is removed from or placed on the pavement subgrade after proof rolling approval.

Trucks or heavy equipment shall not travel on any pavement subgrade after final testing prior to pavement construction.

HOT-MIX ASPHALT BASE COURSE

HMA Base Course shall meet the requirements of IDOT or N50 mix design as indicated and shown on the plans. The maximum amount of recycled asphalt pavement allowed shall be 30% in a N30 mix design and 25% in a N50 mix design.

HOT-MIX ASPHALT BINDER AND SURFACE COURSE

HMA binder and surface courses, shall be constructed to the compacted thickness as shown on the PLANS. The base course shall be cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. The surface course shall be placed after the base and courses have gone through one winter season, or as directed by the CLIENT. Before applying the surface course, the binder course shall be thoroughly cleaned and primed in accordance with the JURISDICTIONAL GOVERNING ENTITY. Prior to the placement of the surface course, the JURISDICTIONAL GOVERNING ENTITY shall examine the completed pavement, including curb and gutter, and all failures shall be corrected by the CONTRACTOR.

CONCRETE PAVEMENTS

Concrete pavements shall be constructed in accordance with American Concrete Institute Standard ACI330R-08 and as shown on the PLANS.

Slabs and driveway aprons shall be constructed with 6" x 6" - W1.4 x W1.4 welded wire fabric positioned on steel chair supports. Placing fabric during the concrete pouring operation will not be allowed.

Sawing of joints shall commence as soon as the concrete has cured and hardened sufficiently to permit sawing without excessive raveling, but no later than eight hours after the concrete has been placed. All joints shall be sawed to a depth equal to 1/3 of the pavement thickness before uncontrolled shrinkage cracking take place. If necessary, the sawing operation shall occur during the day or at night, regardless of weekends, holidays or weather conditions. The CONTRACTOR shall be aware of jurisdictional noise ordinances and holiday restrictions for scheduling purposes.

The CONTRACTOR is responsible to guard fresh concrete until it sets and hardens sufficiently to prevent people from writing, walking, riding bicycles or otherwise permanently marking, defacing or causing depressions of any type in the concrete. Any concrete so marked will be removed and replaced by the CONTRACTOR at the CONTRACTOR's expense.

The CONTRACTOR shall protect the pavement against all traffic, including that of their own employees or other workers, until test specimens have attained the specified strength.

SIDEWALKS

Concrete sidewalks shall be constructed to width and thickness as shown on the PLANS. Sidewalks shall be thickened to a minimum of 6" at all driveways. All sidewalks shall be IDOT Class SI concrete, on aggregate base as shown on the detail. A ¾" expansion joint shall be provided when meeting existing sidewalk.

CURB AND GUTTER

Curb and gutter shall be as per the detail shown on the PLANS, which shall include compacted aggregate base course under the curb and gutter. All contraction and expansion joints shall be constructed as per the detail.

CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT

The CONTRACTOR shall saw cut and remove the existing concrete curb where shown on the PLANS and install a curb of similar cross section and pavement to that removed (or depressed curb and gutter if shown on the PLANS). Upon completion of the curb and gutter any voids between the existing pavement and the new curb shall be filled with concrete to within 2" of the final surface, which is to be filled with bituminous pavement. The area behind the curb shall be filled and compacted with embankment material within 6" of the top of the new curb. The CONTRACTOR shall then restore the remaining 6" to its original condition (i.e., sod, gravel, topsoil). Where proposed curb connects to an existing curb, the existing curb shall be saw cut and then two 18" long x ¾" (#6) dowel bars shall be drilled and installed 9" into the existing and proposed curb. Bars shall be installed in a location similar to the expansion joint in the curb.

FRAME ADJUSTMENTS

The road contractor shall be responsible for making final adjustments and the setting on a bituminous mastic jointing compound all castings located in the roadway, sidewalks, and parking areas prior to construction of any curbing, sidewalk, or final surface. Any structures that need to be lowered, or raised in excess of 4" shall be completed and the work backcharged against the underground contractor. This Contractor shall also be responsible for cleaning all of the above structures immediately upon completion of his phase of work. This work shall be incidental to the cost of the pavement.

PAVEMENT MARKING - PAINT

The CONTRACTOR shall furnish and apply painted marking lines, letters & symbols of the patterns, sizes and colors where shown on the PLANS. Paint pavement marking shall be applied in accordance with the IDOT Standard Specifications.

***PAVEMENT MARKING - THERMOPLASTIC** - INTENTIONALLY OMITTED

QUALITY CONTROL

The CONTRACTOR shall provide all testing necessary to ensure improvements are in accordance with the project specifications and provide testing documentation that specifications were met.

SHOULD A CONFLICT ARISE BETWEEN THE MANHARD SPECIFICATIONS AND THE CITY SPECIFICATIONS, THE CITY SPECIFICATIONS TAKE PRECEDENCE.

DATE	REVISIONS	DRAWN BY
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MDE

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Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PROPOSED HEINEN'S GROCERY STORE
CITY OF NAPERVILLE, ILLINOIS
CONSTRUCTION SPECIFICATIONS

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: JAW
DATE: 08-30-23
SCALE: N.T.S.

FINAL ENGINEERING - NOT FOR CONSTRUCTION

July 23, 2024 – 09:06 Dwg Name: P:\Hqsnvil01\dwg\Eng\Final Drawings\Plan Set\SPECS.dwg Updated By: MHarbut

08-01-23

CIT Y OF NAPERVILLE
TRANSPORTATION, ENGINEERING AND DEVELOPMENT BUSINESS GROUP
STANDARD CONSTRUCTION PLAN NOTES FOR DEVELOPMENT PROJECTS

GENERAL NOTES

1. THE OWNER OR THEIR REPRESENTATIVE IS RESPONSIBLE TO OBTAIN ANY AND ALL PERMITS REQUIRED BY APPLICABLE GOVERNMENTAL AGENCIES.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF NAPERVILLE DESIGN MANUAL AND STANDARD SPECIFICATIONS (CURRENT EDITION) AND WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (CURRENT EDITION).
3. ALL CONTRACTORS DOING WORK IN THE PUBLIC RIGHT-OF-WAY MUST BE LICENSED (WHEN APPLICABLE) TO MAKE PUBLIC IMPROVEMENTS WITHIN THE NAPERVILLE CORPORATE LIMITS.
4. THE CONTRACTOR/DEVELOPER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR ANY ACTION RESULTING FROM THEIR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
5. THE CONTRACTOR/DEVELOPER SHALL INDEMNIFY AND HOLD HARMLESS THE CITY OF NAPERVILLE.
6. PRIOR TO COMMENCEMENT OF ANY OFF-SITE CONSTRUCTION, THE CONTRACTOR SHALL SECURE WRITTEN AUTHORIZATION THAT ALL OFF-SITE EASEMENTS HAVE BEEN SECURED AND THAT PERMISSION HAS BEEN GRANTED TO ENTER ONTO PRIVATE PROPERTY.
7. THE CONTRACTOR AND THEIR ON-SITE REPRESENTATIVES WILL BE REQUIRED TO ATTEND A PRE-CONSTRUCTION MEETING WITH THE CITY OF NAPERVILLE PRIOR TO ANY WORK BEING STARTED. A PRE-CONSTRUCTION MEETING WILL NOT BE SCHEDULED UNTIL THE PROJECT HAS BEEN APPROVED BY THE CITY OF NAPERVILLE DEVELOPMENT REVIEW TEAM AND THE REQUIRED SURETY HAS BEEN POSTED.
8. A MINIMUM OF 48 HOURS NOTICE SHALL BE GIVEN TO THE CITY OF NAPERVILLE TED BUSINESS GROUP (630-420-6100 OPTION 1) PRIOR TO STARTING WORK OR RESTARTING WORK AFTER SOME ABSENCE OF WORK FOR ANY REASON.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ADEQUATELY IDENTIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO EXCAVATION. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT JULIE FOR THE LOCATION OF ANY AND ALL UTILITIES. THE TOLL-FREE NUMBER IS 800-892-0123. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY PRIVATE FACILITIES OR NON-JULIE MEMBER FACILITIES.
10. THE CONTRACTOR CAN SCHEDULE ALL NECESSARY SITE INSPECTIONS WITH THE CITY OF NAPERVILLE BY CALLING (630) 420-6100 OPTION 1 BETWEEN THE HOURS OF 8:00AM AND 4:00PM (CLOSED 1:00PM TO 2:00PM DAILY) ON WEEKDAYS WHEN THE CITY IS OPEN FOR BUSINESS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE SITE PERMIT NUMBER FOR THE PROJECT IN ORDER TO SCHEDULE THE INSPECTION(S).
11. RECORD DRAWINGS ARE REQUIRED TO BE SUBMITTED AND APPROVED BY THE CITY OF NAPERVILLE PRIOR TO FINAL OCCUPANCY BEING GRANTED.
12. FINAL ACCEPTANCE OF PUBLIC IMPROVEMENTS SHALL BE GRANTED ONLY AFTER A FINAL INSPECTION HAS BEEN COMPLETED AND HAS REVEALED THAT ALL IMPROVEMENTS HAVE BEEN SATISFACTORILY COMPLETED IN ACCORDANCE WITH THE NAPERVILLE STANDARD SPECIFICATIONS. UTLITIES ARE NOT CONSIDERED ACCEPTED UNTIL THEY ARE FORMALLY ACCEPTED BY THE CITY COUNCIL AS REQUIRED IN ACCORDANCE WITH THE NAPERVILLE MUNICIPAL CODE.

GENERAL NOTES (PROJECT SPECIFIC)

1. TRAFFIC SIGNALS AND THEIR ASSOCIATED EQUIPMENT UNDER THE JURISDICTION OF DUPAGE COUNTY ARE NOT INCLUDED IN THE JULIE SYSTEM. THE CONTRACTOR SHALL CONTACT DUPAGE COUNTY DOT AND IDOT DIRECTLY REGARDING THE LOCATION OF TRAFFIC SIGNALS (CABLING AND ASSOCIATED SYSTEMS) UNDER DUPAGE COUNTY OR IDOT JURISDICTION.

STORM SEWER NOTES (GENERAL)

1. NO CONNECTION TO AN EXISTING PUBLIC STORM SEWER MAY BE MADE WITHOUT PERMISSION OF THE CITY ENGINEER.
2. THE CONTRACTOR SHALL REPAIR ANY EXISTING FIELD DRAINAGE TILE DAMAGED DURING CONSTRUCTION AND PROPERLY REROUTE AND/OR CONNECT SAID TILE TO THE NEAREST STORM SEWER OUTLET. ALL LOCATIONS OF ENCOUNTERED FIELD DRAINAGE TILE SHALL BE PROPERLY INDICATED ON THE CONTRACTOR'S RECORD DRAWINGS.

STORM SEWER NOTES (STORM SEWER WORKS IN PLANS)

1. THE FOLLOWING MATERIALS ARE PERMITTED FOR STORM SEWER AND PIPE CULVERTS. WHERE A PARTICULAR MATERIAL IS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS, NO OTHER KIND OF MATERIAL WILL BE PERMITTED:

   1a. REINFORCED CONCRETE PIPE (RCP) - REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM DESIGNATION C 76, CLASSES I, II, III, IV OR V. BITUMINOUS JOINTS SHALL CONFORM TO ASTM DESIGNATIONS C 14 OR C 76 AS MAY BE APPLICABLE. BITUMINOUS MATERIAL SHALL CONSIST OF A HOMOGENEOUS BLEND OF BITUMEN, INERT FILLER, AND SUITABLE SOLVENT APPROVED BY THE CITY ENGINEER. RUBBER GASKET JOINTS SHALL CONFORM TO ASTM C 433. REINFORCED CONCRETE PIPE SHALL ALSO BE PERMITTED AS ROUND, ELLIPTICAL, OR BOX SHAPED OR AS REINFORCED CONCRETE ARCH CULVERT.

   1b. NON-REINFORCED CONCRETE PIPE - NON-REINFORCED CONCRETE PIPE SHALL BE ALLOWED FOR PIPES WITH A 10 INCH OR SMALLER DIAMETER. NON-REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM DESIGNATION C 14, CLASS 3. BITUMINOUS JOINTS SHALL CONFORM TO ASTM DESIGNATIONS C 14 OR C 76 AS MAY BE APPLICABLE. BITUMINOUS MATERIAL SHALL CONSIST OF A HOMOGENEOUS BLEND OF BITUMEN, INERT FILLER, AND SUITABLE SOLVENT APPROVED BY THE CITY ENGINEER. RUBBER GASKET JOINTS SHALL CONFORM TO ASTM C 433.THE CONTRACTOR'S RECORD DRAWINGS.

   1c. DUCTILE IRON PIPE (DIP) - DUCTILE IRON PIPE SHALL CONFORM TO ANSI A 21.51 (AWWA C-151), CLASS THICKNESS DESIGNED PER ANSI A 21.50 (AWWA C-150), TAR (SEAL) COATED AND CEMENT LINED PER ANSI A 21.4 (AWWA C-104), WITH MECHANICAL OR RUBBER RING (SLIP SEAL OR PUSH ON) JOINTS. ALL DUCTILE IRON PIPE SHALL BE WRAPPED WITH POLYETHYLENE.

   1d. POLYVINYL CHLORIDE PIPE (PVC) - POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM D 3034, TYPE PSM. THE MINIMUM STANDARD DIMENSION RATIO (SDR) SHALL BE 26. THE PIPE SHALL BE MADE OF PVC PLASTIC HAVING A MINIMUM CELL CLASSIFICATION OF 12454-C, AND SHALL HAVE A MINIMUM PIPE STIFFNESS OF FORTY-SIX (46) LBS. PER INCH (317 KPA). JOINTS FOR PVC PIPE SHALL BE FLEXIBLE ELASTOMETRIC SEALS PER ASTM D 3212.

   1e. HIGH DENSITY POLYETHELYNE PIPE (HDPE) - HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 252 AND M 294. PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN PE COMPOUNDS WHICH CONFORM TO THE REQUIREMENTS OF CELL CLASS 324420C AS DEFINED AND DESCRIBED IN ASTM D 3350. RUBBER GASKET JOINTS SHALL BE USED.

   1f. FULLY GALVANIZED CORRUGATED STEEL PIPE - FULLY GALVANIZED CORRUGATED STEEL PIPE MAY BE USED FOR RESIDENTIAL DRIVEWAY CROSSINGS ONLY WHEN A DITCH SECTION IS PRESENT. THE MINIMUM CULVERT SIZE IS 12" DIAMETER.
2. BEDDING, OTHER THAN CONCRETE EMBEDMENT, SHALL CONSIST OF GRAVEL, CRUSHED GRAVEL, OR CRUSHED STONE 1/4 INCH TO 1 INCH IN SIZE. AS A MINIMUM, THE MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF IDOT STANDARD SPECIFICATIONS. THE GRADATION SHALL CONFORM TO GRADATION CA-7 OR CA-11 OF THE STANDARD SPECIFICATIONS.
3. BACKFILL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF IDOT STANDARD SPECIFICATIONS. THE GRADATION SHALL CONFORM TO GRADATION CA-6 OF THE STANDARD SPECIFICATIONS. BACKFILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
4. JOINTS CONNECTING DISSIMILAR PIPE MATERIALS SHALL BE MADE WITH SEWER CLAMP NON-SHEAR TYPE COUPLINGS; CASCADE CSS, ROMAC LSS, FERNCO, INC. SHEAR RING, OR APPROVED EQUAL. WHEN AVAILABLE, A STANDARD JOINT WITH A TRANSITION GASKET MAY BE USED. THE NAME OF THE MANUFACTURER, CLASS, AND DATE OF ISSUE SHALL BE CLEARLY IDENTIFIED ON ALL SECTIONS OF PIPE. THE CONTRACTOR SHALL ALSO SUBMIT BILLS OF LADING, OR OTHER QUALITY ASSURANCE DOCUMENTATION WHEN REQUESTED BY THE CITY ENGINEER. ALL NUTS AND BOLTS FOR COUPLINGS SHALL BE STAINLESS STEEL.
5. MANHOLES FOR STORM SEWERS SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES AND SHALL BE CONSTRUCTED OF PRECAST CONCRETE UNITS IN ACCORDANCE WITH ASTM C478-05 (OR LATEST EDITION) AND SHALL CONFORM TO THE CITY OF NAPERVILLE STANDARD DETAIL. ALL MANHOLES SHALL BE WATER-TIGHT. ALL VISIBLE LEAKS SHALL BE SEALED IN A MANNER ACCEPTABLE TO THE CITY ENGINEER.
6. MANHOLES SHALL BE FURNISHED WITH A SELF-SEALING FRAME AND SOLID COVER (EAST JORDAN IRON WORKS 1022 WITH TYPE A SOLID COVER, OR APPROVED EQUAL) WITH THE WORD "STORM" IMPRINTED ON THE COVER IN RAISED LETTERS. ALL FRAMES AND LIDS SHALL MEET OR EXCEED AASHTO H-20 LOADING SPECIFICATIONS. FRAMES SHALL BE SHOP PAINTED WITH ASPHALTIC BASE PAINT. BOTH THE MANHOLE FRAME AND COVER SHALL HAVE MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES. INVERTED MANHOLE FRAMES ARE NOT ALLOWED. PICK HOLES SHALL NOT CREATE OPENINGS IN THE MANHOLE COVER.
7. MANHOLE STEPS ON MAXIMUM 16 INCH CENTER SHALL BE FURNISHED WITH EACH MANHOLE, SECURELY ANCHORED IN PLACE, TRUE TO VERTICAL ALIGNMENT, IN ACCORDANCE WITH THE NAPERVILLE STANDARD DETAILS. STEPS SHALL BE COPOLYMER POLYPROPYLENE REINFORCED WITH 1/2 INCH A615/A615M-05A (OR LATEST EDITION) GRADE 60 STEEL REINFORCEMENT, MEETING OR EXCEEDING ASTM C 478-05 (OR LATEST EDITION) AND OSHA STANDARDS.
8. CATCH BASINS AND INLETS SHALL HAVE A MINIMUM INSIDE DIAMETER OF 24 INCHES AND SHALL BE CONSTRUCTED OF PRECAST CONCRETE UNITS IN ACCORDANCE WITH ASTM C478-05 (OR LATEST EDITION) AND SHALL CONFORM TO THE CITY OF NAPERVILLE STANDARD DETAIL. ALL CATCH BASINS AND INLETS SHALL BE WATER-TIGHT AT ALL POINTS BELOW GRADE. ALL VISIBLE LEAKS SHALL BE SEALED IN A MANNER ACCEPTABLE TO THE CITY ENGINEER. CATCH BASINS AND INLETS SHALL BE FURNISHED WITH A FRAME AND GRATE BASED UPON THE LOCATION OF THE INSTALLATION AS LISTED BELOW. ALL FRAMES AND GRATES SHALL MEET OR EXCEED AASHTO H-20 LOADING SPECIFICATIONS. FRAMES SHALL BE SHOP PAINTED WITH ASPHALTIC BASE PAINT.
   A) PAVEMENT: EAST JORDAN IRON WORKS 1022 FRAME WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL.
   B) BARRIER CURB AND GUTTER: EAST JORDAN IRON WORKS 7220 FRAME WITH TYPE M1 GRATE AND T1 CURB BOX, OR APPROVED EQUAL.
   C) DEPRESSED CURB: EAST JORDAN IRON WORKS 5120 FRAME AND GRATE, OR APPROVED EQUAL.
   D) MOUNTABLE CURB: EAST JORDAN IRON WORKS 7525 FRAME AND GRATE, OR APPROVED EQUAL.
   E) NON-PAVED AREAS: EAST JORDAN IRON WORKS 6527 BEEHIVE GRATE, OR APPROVED EQUAL. ALTERNATELY, IN AREAS WHERE THERE IS THE LIKELIHOOD OF PEDESTRIAN TRAFFIC, EAST JORDAN IRON WORKS 1022 FRAME WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL MAY BE USED.
9. THE STEEL CASING PIPE SHALL BE BITUMINOUS COATED, A MINIMUM OF 30 MILS THICKNESS INSIDE AND OUT, AND SHALL BE OF LEAK PROOF CONSTRUCTION, CAPABLE OF WITHSTANDING THE ANTICIPATED LOADINGS. SEE TABLE 200-1 IN THE NAPERVILLE STANDARD SPECIFICATIONS FOR THE MINIMUM WALL THICKNESSES OF VARIOUS STEEL CASING DIAMETERS. THE STEEL CASING PIPE SHALL HAVE MINIMUM YIELD STRENGTH OF 35,000 PSI AND SHALL MEET THE REQUIREMENTS OF A139/A139M-04 (OR LATEST EDITION), GRADE B. RING DEFLECTION SHALL NOT EXCEED 2% OF THE NOMINAL DIAMETER. THE STEEL CASING PIPE SHALL BE DELIVERED TO THE JOBSITE WITH BEVELED ENDS TO FACILITATE FIELD WELDING.
10. ALL PIPE SHALL BE LAID TRUE TO LINE AND GRADE. DIRT AND OTHER FOREIGN MATERIAL SHALL BE PREVENTED FROM ENTERING THE PIPE OR PIPE JOINT DURING HANDLING OR LAYING OPERATIONS. ALL STORM SEWER PIPE TO PIPE CONNECTIONS SHALL BE SEALED WITH BUTYL MASTIC TO ENSURE WATER TIGHTNESS. LIFT HOLES TO BE SEALED USING BUTYL MASTIC AND CONCRETE PLUGS. AT NO TIME SHALL CONNECTIONS BETWEEN THE STORM SEWER AND SANITARY SEWER BE ALLOWED.
11. FOR STRUCTURES LOCATED IN PAVED AREAS, A MINIMUM OF FOUR, 2-INCH DIAMETER HOLES SHALL BE DRILLED OR PRECAST INTO THE STRUCTURE WITHIN 1 FOOT OF THE LOWEST PIPE INVERT. THE HOLES SHALL BE DISTRIBUTED EQUIDISTANT AROUND THE PERIMETER OF THE STRUCTURE. A 1-FOOT BY 1- FOOT SECTION OF UNDERDRAIN FILTER CLOTH MATERIAL SHALL BE SUFFICIENTLY FIXED TO THE OUTSIDE OF THE MANHOLE WITH MASTIC MATERIAL TO PREVENT SLIPPAGE DURING BACKFILLING.
12. ALL STORM SEWER STRUCTURE FRAMES WITHOUT INSIDE FLANGES SHALL BE SHAPED WITH NONSHRINKING HYDRAULIC CEMENT TO FORM A FILLET TO THE STRUCTURE OR ADJUSTING RING.

WHEN ADJUSTMENTS ARE NECESSARY, NO MORE THAN 12 INCHES OF VERTICAL ADJUSTMENT MAY BE MADE USING THE MINIMUM PRACTICAL NUMBER OF INDIVIDUAL RINGS.

ALL RINGS SHALL BE HIGH DENSITY POLYETHYLENE PLASTIC (HDPE), RECYCLED RUBBER, HIGH DENSITY EXPANDING POLYSTYRENE, EXPANDED POLYPROPYLENE (EPP), OR OTHER MATERIAL AS APPROVED BY THE CITY ENGINEER. PRECAST CONCRETE RINGS, BRICKS, ROCKS, SHIMS, OR CONCRETE BLOCKS WILL NOT BE ALLOWED. TAPERED ADJUSTING RINGS SHALL BE REQUIRED WHEN THE FRAME WILL NEED TO MATCH THE SLOPE OF THE ROADWAY.

A RESILIENT, FLEXIBLE, NON-HARDENING, PREFORMED BITUMINOUS MASTIC MATERIAL, CONSEAL 102 B OR APPROVED EQUAL, SHALL BE USED BETWEEN THE CONE OR TOP BARREL SECTION OF THE STRUCTURE AND THE ADJUSTING RINGS. A THICK BEAD OF NON-HARDENING ELASTOMERIC JOINT SEALANT CONFORMING TO ASTM C-920, TYPE S, GRADE NS, SHALL BE APPLIED BETWEEN ALL INDIVIDUAL RINGS, AND BETWEEN THE ADJUSTING RINGS AND THE FRAME. THE SEALANT OR MASTIC MATERIAL SHALL BE APPLIED IN SUCH A MANNER THAT NO SURFACE WATER OR GROUND WATER INFLOW CAN ENTER THE STRUCTURE.

EROSION CONTROL AND DRAINAGE NOTES (GENERAL)

1. THE CONTRACTOR SHALL MAINTAIN PROPER DRAINAGE AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND PREVENT STORM WATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS.
2. DURING EXTENDED DRY PERIODS, THE CONSTRUCTION AREA(S) MAY NEED TO BE WATERED DOWN TO PREVENT THE BLOWING OF SOIL FROM THE SITE.
3. DURING CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE UTILIZED TO MINIMIZE THE TRACKING OF DIRT ONTO THE PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO KEEP PUBLIC STREET PAVEMENT CLEAN OF DIRT AND DEBRIS. ANY DIRT THAT IS TRACKED ONTO THE PUBLIC STREETS SHALL BE REMOVED THE SAME DAY. IF THE AMOUNT TRACKED ON THE PUBLIC STREET IS EXCESSIVE, CLEANING MAY BE REQUIRED MORE FREQUENTLY.

EROSION CONTROL AND DRAINAGE NOTES (PROJECT SPECIFIC)

1. ALL EROSION CONTROL MEASURES SHALL BE PROPERLY INSTALLED, AS PERMITTED, PRIOR TO ANY LAND DISTURBANCE ACTIVITIES. ALL EROSION CONTROL SHALL BE MAINTAINED UNTIL TURF IS ESTABLISHED.
2. ACCEPTABLE PERIMETER EROSION CONTROL INCLUDES SILT FENCE, SILT WORM AND ANY OTHER APPLICATION APPROVED BY THE CITY ENGINEER.
3. ALL OPEN GRATE STRUCTURES SHALL HAVE EROSION CONTROL PROTECTION IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS. INLET BASKETS ARE THE PREFERRED METHOD; STRAW BALES SHALL NOT BE USED
4. STOCKPILES NOT BEING DISTURBED FOR MORE THAN 14 DAYS SHALL BE SEEDED.
5. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY, AFTER ANY 0.5 INCH RAINFALL, OR MORE FREQUENTLY AS NECESSARY TO MAINTAIN THEIR FUNCTION.

EROSION CONTROL AND DRAINAGE NOTES (NPDES PERMIT)

1. IT IS THE RESPONSIBILITY OF THE OWNER OR HIS DESIGNEE TO INSPECT ALL TEMPORARY EROSION CONTROL MEASURES PER THE REQUIREMENTS OF THE NPDES PERMIT AND CORRECT ANY DEFICIENCIES AS NEEDED.

GEOMETRIC AND PAVING NOTES

1. THE DEVELOPER AND CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO ADEQUATELY PROTECT THE PAVEMENT AND PROPERTY, CURB AND GUTTER AND OTHER RIGHT-OF-WAY IMPROVEMENTS, WHETHER NEWLY CONSTRUCTED OR EXISTING, FROM ANY AND ALL DAMAGE. SUFFICIENT MEANS SHALL BE EMPLOYED BY THE CONTRACTOR TO PROTECT AGAINST SUCH DAMAGE TO THE SATISFACTION OF THE CITY ENGINEER.
2. ANY NEW OR EXISTING IMPROVEMENTS THAT ARE DAMAGED SHALL BE REPAIRED OR REPLACED IN A MANNER THAT IS SATISFACTORY TO THE CITY ENGINEER.
3. THE CONTRACTOR AND/OR DEVELOPER SHALL SECURE ALL NECESSARY RIGHTS AND PERMISSIONS TO PERFORM ANY WORK ON PRIVATE PROPERTY NOT WITHIN THE OWNERSHIP RIGHTS OF THE DEVELOPER. THE DEVELOPER SHALL BEAR THE SOLE RESPONSIBILITY FOR DAMAGES THAT MAY OCCUR AS A RESULT OF WORK PERFORMED UNDER CONTRACTS THEY INITIATE.
4. THE CONTRACTOR/DEVELOPER WILL BE RESPONSIBLE FOR BRINGING PAVEMENTS (STREET, CURB AND GUTTER, SIDEWALK, DRIVEWAY) ON THE PROPERTY UP TO CITY STANDARDS INCLUDING ANY REPAIRS TO SUBSTANDARD PAVEMENTS THAT EXISTED PRIOR TO OR OCCURRED DURING CONSTRUCTION.
5. WHEREVER NEW WORK WILL MEET EXISTING CONDITIONS OTHER THAN LAWN AREAS, REGARDLESS OF WHETHER THE NEW OR EXISTING WORK IS ASPHALT OR CONCRETE, THE EXISTING ADJACENT SIDEWALK, DRIVEWAYS, PAVEMENT OR CURB SHALL BE NEATLY SAW CUT. THE SAW CUT SHALL BE IN A NEAT STRAIGHT LINE SUFFICIENTLY DEEP SO THAT IT RENDERS A SMOOTH VERTICAL FACE TO MATCH TO. IF THE CONTRACTOR IS NOT CAREFUL OR DOES NOT SAW DEEP ENOUGH AND THE CUT LINE BREAKS OUT OR CHIPS TO AN IMPERFECT EDGE, THEN THE EXISTING SIDE MUST BE RE-CUT SQUARE AND DONE OVER UNTIL IT IS CORRECT.
6. ALL PAVEMENT PATCHES WITHIN THE PUBLIC RIGHT-OF-WAY MUST CONFORM TO CITY STANDARDS. REFERENCE NAPERVILLE STANDARD DETAILS 590.12 AND 590.13.

TRAFFIC CONTROL AND PROTECTION NOTES

1. ALL DEVELOPERS AND CONTRACTORS SHALL PROVIDE SUITABLE TRAFFIC CONTROL FOR THEIR CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH PART 6 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. TRAFFIC CONTROL MUST BE PROVIDED FOR ANY ACTIVITY THAT IMPACTS TRAFFIC FLOW. THIS INCLUDES, BUT IS NOT LIMITED TO, ROAD CLOSURES REQUIRING DETOURS, DAILY LANE CLOSURES, LONG TERM LANE CLOSURES, NARROW LANES, AND CONSTRUCTION VEHICLES ENTERING AND EXITING THE PUBLIC ROADWAY. ALL TRAFFIC CONTROL SET- UPS MAY BE INSPECTED BY THE CITY OF NAPERVILLE TO ENSURE THAT THEY ARE PROVIDING POSITIVE GUIDANCE TO MOTORISTS AND ARE NOT IN THEMSELVES PRESENTING A HAZARDOUS SITUATION. A REPRESENTATIVE OF THE DEVELOPER OR CONTRACTOR MUST PROVIDE PHONE NUMBERS AT WHICH THEY CAN BE REACHED 24 HOURS A DAY AND ON WEEKENDS SO THAT THEY CAN MAINTAIN TRAFFIC CONTROL DEVICES.
2. PEDESTRIANS MUST BE PROVIDED WITH A SAFE ALTERNATE ROUTE IF PEDESTRIAN FACILITIES ARE TO BE CLOSED AS A RESULT OF CONSTRUCTION ACTIVITIES. GUIDANCE MUST BE PROVIDED TO PEDESTRIANS SO THAT THEY MAY AVOID THE WORK ZONE. SAID PEDESTRIAN DETOUR PLAN (WITH SIGNAGE) IS TO BE REVIEWED AND ACCEPTED BY THE CITY IN WRITING, PRIOR TO THE COMMENCEMENT OF THE WORK.
3. THE CONTRACTOR SHALL EMPLOY THE APPROPRIATE METHODS OF TRAFFIC CONTROL IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, SUCH THAT THE SAFETY OF VEHICLES, AND PEDESTRIANS IS PRESERVED AT ALL TIMES. THE ERECTION AND MAINTENANCE OF THE TRAFFIC CONTROL DEVICES SHALL BE TO THE SATISFACTION OF THE AGENCY OF JURISDICTION AND THE CITY ENGINEER.
4. ANY TEMPORARY OPEN HOLES SHOULD BE BARRICADED AND PROTECTED IN ACCORDANCE WITH APPLICABLE STANDARDS.

TRAFFIC CONTROL AND PROTECTION NOTES (ARTERIAL ROADS)

1. LANE CLOSURES ON ARTERIAL ROADWAYS WITHIN THE CITY OF NAPERVILLE ARE NOT PERMITTED BETWEEN THE HOURS OF 6AM-9AM AND 3PM-7PM MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE CITY ENGINEER. LANE CLOSURES ON ARTERIAL STREETS ARE PERMITTED BETWEEN 7AM AND 7PM ON WEEKENDS, UNLESS OTHERWISE PERMITTED BY THE CITY ENGINEER. ARTERIAL ROADWAYS ARE DEFINED AS BOTH MAJOR AND MINOR ARTERIAL ROADWAYS AS DESIGNATED ON THE CITY'S MASTER THOROUGHFARE PLAN, LATEST EDITION.
2. ANY WORK THAT IMPACTS A TRAFFIC LANE ON AN ARTERIAL ROADWAY REQUIRES AN ARROWBOARD AS PART OF THE TRAFFIC CONTROL.
3. AT THE END OF EACH DAY OF WORK, THE ROADWAY MUST BE COMPLETELY REOPENED TO TRAFFIC. ANY OPEN HOLES MUST BE PLATED OR COLD PATCHED; THE CITY WILL NOT ALLOW THE HOLES TO BE FILLED WITH GRAVEL.

V. WATER UTILITES GENERAL NOTES

A. NEW WATER MAIN VALVES, INCLUDING PRESSURE TAP VALVES, ADJACENT TO AN EXISTING WATER MAIN, AND EXISTING WATER MAIN VALVES SHALL ONLY BE OPERATED BY THE CITY OF NAPERVILLE, DEPARTMENT OF PUBLIC UTILITIES CEE/CM DIVISION PERSONNEL WITH 48-HOUR NOTICE (MONDAY-FRIDAY). CONTACT NAPERVILLE TED BUSINESS GROUP AT 630-420-6082 FOR SCHEDULING.

B. ANY EXISTING UTILITY STRUCTURES REQUIRING ADJUSTMENT OR RECONSTRUCTION SHALL BE COMPLETED BY THE CONTRACTOR TO THE SATISFACTION OF THE UTILITY OWNER. ADJUSTMENTS AND/OR RECONSTRUCTIONS NOT CALLED FOR ON THE PLANS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. NO MORE THAN A TOTAL OF 12 INCHES OF ADJUSTING RINGS AND/OR 2 ADJUSTING RINGS SHALL BE ALLOWED. ALL STRUCTURE FRAMES SHALL BE FLUSH WITH FINAL GRADE. CONCRETE ADJUSTMENT RINGS ARE NOT PERMITTED.

C. TREES SHALL BE INSTALLED A MINIMUM OF FIVE (5) FEET HORIZONTALLY FROM UNDERGROUND ELECTRICAL FEEDERS, SANITARY SEWERS, SANITARY SERVICES, WATER MAINS, AND WATER SERVICES. TREES SHALL BE INSTALLED A MINIMUM OF TEN (10) FEET HORIZONTALLY FROM UTILITY STRUCTURES AND APPURTENANCES, INCLUDING, BUT NOT LIMITED TO, MANHOLES, VALVE VAULTS, VALVE BOXES AND FIRE HYDRANTS. NO TREES, SHRUBS OR OBSTACLES WILL BE ALLOWED 10' IN FRONT OF, 5' ON THE SIDES, AND 7' TO THE REAR OF THE ELECTRICAL TRANSFORMER.

D. ALL RETAINER GLANDS WHEN REQUIRED TO RESTRAIN VALVES, FITTINGS, HYDRANTS, AND PIPE JOINTS SHALL BE MECHANICAL JOINT WEDGE ACTION TYPE MEGALUG 1100 SERIES AS MANUFACTURED BY EBBA IRON, INC. OR UNI-FLANGE BLOCKBUSTER 1400 SERIES AS MANUFACTURED BY FORD METER BOX CO. AND SHALL BE FOR USE ON DUCTILE IRON PIPE CONFORMING TO ANSI/AWWA C151/A21.51, FOR NOMINAL PIPE SIZES 3" THROUGH 48".

E. EXISTING DUCTILE IRON SYSTEMS FOR RESTRAINING PUSH-ON PIPE BELLS SHALL BE MEGALUG SERIES 1100HD OR FORD SERIES 1390.

F. EXISTING DUCTILE IRON SYSTEMS REQUIRING RESTRAINT SHALL BE MEGALUG SERIES 1100SD (SPLIT MEGALUG) FOR MECHANICAL JOINTS.

G. DUCTILE IRON WATER MAIN TO BE CLASS 52. ALL DUCTILE IRON PIPE IS TO BE ENCASED IN POLYETHYLENE FILM POLYETHYLENE ENCASEMENT TO BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C105/A21.5-05.

H. A SET OF AS-BUILT RECORD DRAWING SHALL BE GIVEN TO THE CITY OF NAPERVILLE UPON COMPLETION OF IMPROVEMENTS SHOWING THE ELEVATION AND LOCATION (TIED TO TWO POINTS) OF ALL NEW AND EXISTING STRUCTURES INCLUDING FIRE HYDRANTS, VALVE BOXES AND VAULTS, LINESTOP SLEEVES, WATER SERVICE CORPORATION STOPS, WATER MAIN FITTINGS/BENDS, MANHOLES, SANITARY SERVICE WYES (MEASURED FROM DOWNSTREAM MANHOLE), AND ABANDONED WATER OR SANITARY SERVICE LINES. ALL ELEVATIONS SHOULD BE REFERENCED TO THE SAME BENCHMARK DATUM AS THE ORIGINAL DESIGN PLANS. HORIZONTAL TIES SHALL BE REFERENCED TO LOT LINES, BACK OF CURB, OR PROPERTY CORNERS.

I. ALL SANITARY SEWER PIPING SHALL BE PVC PIPE MEETING THE REQUIREMENTS OF ASTM D-2241 WITH JOINTS CONFORMING TO ASTM D-3139. ALL SANITARY SEWER FITTINGS SHALL BE PVC MEETING THE FOLLOWING REQUIREMENTS: 4" TO 12" SHALL BE INJECTION MOLDED FITTINGS MEETING ASTM D-2241. GREATER THAN 12" SHALL BE FABRICATED FITTINGS MEETING ASTM D-2241 OR C905. MINIMUM PRESSURE RATING SHALL BE 150 PSI.

J. THE VALVES LESS THAN 16" SHALL BE STANDARD PATTERN, GATE VALVES AND SHALL HAVE THE NAME OR MARK OF THE MANUFACTURER, SIZE AND WORKING PRESSURE PLAINLY CAST IN RAISED LETTERS ON THE VALVE BODY. VALVES MAY BE APPROVED FROM ONE OF THE FOLLOWING MANUFACTURERS: AMERICAN, CLOW, WATEROUS OR KENNEDY.

K. STAINLESS STEEL NUTS, BOLTS/T-BOLTS, AND WASHERS, TYPE 304 OR BETTER, WILL BE REQUIRED ON ALL WATER MAIN INSTALLATIONS. THIS WOULD APPLY TO HYDRANTS, TAPPING SLEEVES, VALVES, FITTINGS, RESTRAINT, AND OTHER APPURTENANCES BURIED OR IN VALVE VAULTS. MECHANICAL JOINTS AND RESTRAINT GLANDS REQUIRE 304 STAINLESS STEEL T-BOLTS. AN ANTI-SEIZE COMPOUND SHALL BE FACTORY APPLIED TO NUTS OR BOLTS - ANY DAMAGE TO THIS COATING SHALL BE REPAIR WITH FIELD APPLIED APPROVED ANTI-SEIZE COMPOUND THAT IS A MOLYBDENUM-BASE LUBRICANT, BOSTIK NEVER-SEEZ OR APPROVED EQUAL.

L. THE CONTRACTOR SHALL ROTATE AND/OR ADJUST ANY EXISTING AND/OR NEW HYDRANT TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC UTILITIES.

M. WATER MAINS SHALL BE SUBJECTED TO A HYDROSTATIC/LEAKAGE TEST IN ACCORDANCE WITH NAPERVILLE STANDARD SPECIFICATIONS. TEST PRESSURE SHALL BE NO LESS THAN 150 PSI FOR A PERIOD OF 4 HOURS AND NOT VARY BY MORE THAN + 5 PSI. DURING THE TEST. THE TEST GAUGE SHALL BE APPROVED BY THE CITY AND SHALL BE GLYCERIN OR OIL FILLED, WITH A RANGE OF NOT MORE THAN 200 PSI AND INCREMENTS NOT GREATER THAN 5 PSI, 4 " MINIMUM DIAL SIZE. WATER RECOVERY TEST SHALL BE COMPLETED AT THE END OF THE TESTING PERIOD TO SHOW ACTUAL LEAKING AND THAT THE WATER MAIN DID NOT HAVE TOO MUCH TRAPPED AIR IN THE TESTED SECTION.

N. THE CITY OF NAPERVILLE PUBLIC UTILITIES DOES NOT GUARANTEE THAT ANY VALVE OR FITTING IN THE EXISTING WATER DISTRIBUTION SYSTEM WILL HOLD AGAINST A HYDROSTATIC/LEAKAGE TEST. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND ACCEPTABLE PRESSURE TEST WHICH SHALL INCLUDE PROVISIONS AROUND EXISTING VALVES AND FITTINGS.

O. FIRE HYDRANT SHOULD BE BAGGED "NOT IN SERVICE" UNTIL ALL TESTING AND DISINFECTION HAS BEEN COMPLETED AND NEW WATER MAIN SECTION IS SERVICE.

P. SANITARY SEWER AND WATER SHALL BE CONSTRUCTED, TESTED, AND PLACED INTO SERVICE IN ACCORDANCE WITH CITY OF NAPERVILLE STANDARD SPECIFICATION AND SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.

Q. ALL VALVE BOXES, VAULTS, HYDRANTS, AND MANHOLES SHALL NOT BE COVERED WITH CONSTRUCTION DEBRIS AND SHALL REMAIN ACCESSIBLE TO THE RESPECTIVE UTILITY COMPANY.

R. WATER SERVICE LINE SMALLER THAN 3" SHALL BE TYPE K COPPER. IF JOINTS ARE REQUIRED DUE TO LENGTH OF SERVICE, THEN ONLY COMPRESSION TYPE COUPLING SHALL BE PERMITTED. NO SOLDERED OR FLARED TYPE JOINTS ARE ALLOWED.

S. ALL SANITARY MANHOLES SHALL BE TESTED FOR LEAKAGE BY VACUUM TESTING. THE MANHOLE FRAME AND ADJUSTING RINGS SHALL BE IN PLACE WHEN TESTING. ANY LEAKS SHALL BE REPAIRED FROM EXTERIOR OF MANHOLE - PATCHING INSIDE OF MANHOLE SHALL NOT BE ACCEPTABLE. A VACUUM OF 10" (254 MM) HG SHALL BE PLACE ON THE MANHOLE AND THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9" (229 MM) HG. THE VACUUM SHALL NOT DROP BELOW 9" (229 MM) HG FOR THE FOLLOWING TIME PERIODS FOR EACH SIZE OF MANHOLE:

   A)48-INCH DIAMETER - 60 SECONDS
   B)60-INCH DIAMETER - 75 SECONDS
   C)72-INCH DIAMETER - 90 SECONDS
   D)84-INCH DIAMETER - 105 SECONDS

   ANY MANHOLES THAT FAIL THE TEST SHALL BE SEALED AND RE-TESTED UNTIL ACCEPTABLE.

T. THE CONTRACTOR SHALL PROVIDE INTERNAL TELEVISED INSPECTION OF ALL INSTALLED SANITARY SEWER, LATERALS, MANHOLES AND CONNECTIONS TO THE PUBLIC SYSTEM. FOLLOWING COMPLETION OF TELEVISING WORK, THE CONTRACTOR SHALL SUBMIT VIDEO RECORDINGS ON DVD OR FLASH DRIVE ALONG WITH A COMPREHENSIVE TELEVISING REPORT WHICH WILL INDICATE THE LOCATION, FOOTAGES AND NATURE OF ANY DEFECTS. PRIOR TO FINAL ACCEPTANCE, THESE DEFECTS SHALL BE REPAIRED TO THE SATISFACTION OF THE WATER/WASTEWATER UTILITY AND RE-TELEVISED.

U. CONTRACTOR WORK HOURS ARE ONLY ALLOWED FROM 7:00 A.M. TO 5:00 P.M., MONDAY THROUGH SATURDAY. NO WORK SHALL BE PERMITTED ON SUNDAYS.

V. SANITARY PIPES WITH LESS THAN 4 FEET OR MORE THAN 25 FEET OF COVER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPING (CLASS 50, MINIMUM) AND ENCASED IN POLYWRAP.

W. ALL EXCAVATIONS MORE THAN 20 FEET DEEP MUST BE PROTECTED BY A SYSTEM DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.

X. CONTRACTOR SHALL MAINTAIN 2' MINIMUM CLEARANCE BETWEEN EXISTING UTILITIES AND NEW FOUNDATIONS AND UNDERGROUND FACILITIES. IN AREAS WHERE FOUNDATIONS AND UNDERGROUND FACILITIES ARE PROPOSED ADJACENT TO EXISTING UTILITIES, THE CONTRACTOR SHALL POT HOLE BY VACUUM EXCAVATION OR HAND EXCAVATION TO LOCATE THE EXISTING UTILITY TO VERIFY MINIMUM CLEARANCE REQUIREMENT.

Y. FENCES SHALL BE INSTALLED A MINIMUM OF 5 FEET FROM ANY WATER OR SANITARY MAINS WHEN RUNNING PARALLEL WITH THEM. WHERE FENCES ARE INSTALLED CROSSING WATER OR SANITARY MAINS, THE POSTS SHALL BE LOCATED TO HAVE THE MAIN BETWEEN THEM.

Z. ALL BRASS COMPONENTS SHALL BE CERTIFIED TO BE LEAD FREE IN COMPLIANCE WITH NSF 61 AND NSF 372 AND IDENTIFIED WITH APPLICABLE MARKINGS.

AA. SANITARY FORCE MAIN - FORCE MAN SHALL BE TESTED A MINIMUM OF 1 HOUR AT 1.5 THE SHUT OFF HEAD OF THE PUMP, 2.5 TIMES THE OPERATING PRESSURE, OR 20 PSI WHICHEVER IS GREATEST. ALLOWABLE LEAKAGE SHALL BE IN ACCORDANCE WITH SECTION 41-2.14C OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION.

SHOULD A CONFLICT ARISE BETWEEN THE MANHARD SPECIFICATIONS AND THE VILLAGE SPECIFICATIONS, THE VILLAGE SPECIFICATIONS TAKE PRECEDENCE.

DATE	REVISIONS	DRAWN BY
03-29-24	REVISED PER DUDOT REVIEW	MJH
03-12-24	REVISED PER CITY OF NAPERVILLE REVIEW #2	MJH
02-09-24	REVISED PER CITY OF NAPERVILLE REVIEW	MDE

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PROPOSED HEINEN'S GROCERY STORE

CITY OF NAPERVILLE, ILLINOIS

CONSTRUCTION SPECIFICATIONS

PROJ. MGR.: MDE
PROJ. ASSOC.: JRM
DRAWN BY: MJH
DATE: 08-30-23
SCALE: N.T.S.

SHEET 19 OF 19

ADK.NVIL01

FINAL ENGINEERING - NOT FOR CONSTRUCTION

July 23, 2024 – 09:06 Dwg Name: P:\Hgsnvil01\dwg\Eng\Final Drawings\Plan Set\SPECS.dwg Updated By: MHarbut