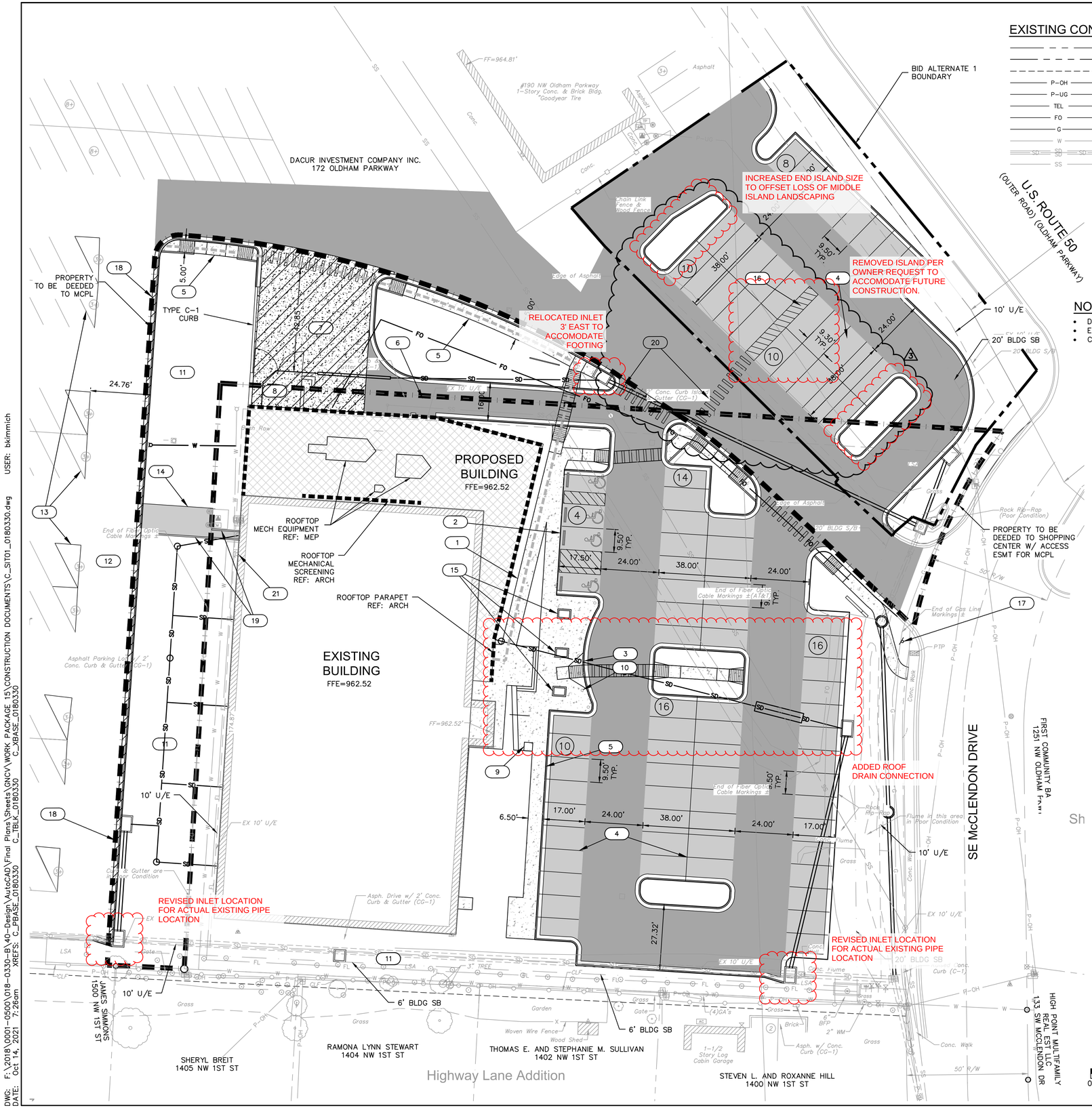


## EXISTING CONDITIONS LEGEND

- PROPERTY LINES
- RIGHT-OF-WAY LINES
- EASEMENT LINES
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- UNDERGROUND FIBER OPTIC
- GAS LINE
- WATER LINE
- STORM SEWER LINE
- SANITARY SEWER LINE

## PROPOSED CONDITIONS LEGEND

- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED FIBER OPTIC
- PROPOSED WATER LINE
- PROPOSED FIRE PROTECTION LINE
- PROPOSED STORM SEWER LINE
- PROPOSED TURF DRAIN LINE
- PROPOSED SANITARY SEWER SERVICE
- PROPOSED AGGREGATE PATH
- TYPE CG-1 CONCRETE CURB & GUTTER
- PROPOSED CONCRETE PAVEMENT (SIDEWALK)
- PROPOSED PCC (PORTLAND CEMENTPAVEMENT)
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- ADA PATH – SIDEWALKS NOT DELINEATED AS ADA PATHS MAY NOT BE ADA COMPLIANT.
- ACCESSIBLE RAMP
- (X) PROPOSED PARKING COUNT

## NOTE

- DIMENSIONS ARE TO BACK OF CURB
- EDGE PARKING STALLS ARE 9.5'X17'
- CENTRAL PARKING STALLS ARE 9.5'X19'

| SITE DATA | | | | | | |
|---|---|---|---|---|---|---|
| | PRE CONSTRUCTION | | | POST CONSTRUCTION | | |
| | TOTAL | LIB | SC | TOTAL | LIB | SC |
| SITE AREA (AC) - ZONING CP-2 | | | | | | |
| SITE AREA : | 18.2 | 1.6 | 16.6 | 18.2 | 1.7 | 16.5 |
| DISTURBED AREA: | 2.6 | 1.6 | 0.9 | 2.6 | 1.7 | 0.9 |
| IMPERVIOUS: | 1.8 | 1.2 | 0.5 | 1.7 | 1.2 | 0.5 |
| PERVIOUS: | 0.8 | 0.4 | 0.4 | 0.9 | 0.5 | 0.4 |
| % IMPERVIOUS: | 69% | 76% | 58% | 66% | 72% | 56% |
| % PERVIOUS | 31% | 24% | 42% | 34% | 28% | 44% |
| BUILDING AREA (SF) | | | | | | |
| BUILDING AREA | 16500 | 16500 | 0 | 22600 | 22600 | 0 |
| FAR (0.55 MAX): | 23% | | | 31% | | |
| PARKING | | | | | | |
| PARKING SPACES | 83 | 53 | 30* | 96 | 68** | 28 |
| ADA | 3 | 3 | 0 | 4 | 4*** | 0 |
| NOTES: (LIB - LIBRARY PROPERTY, SC - SHOPPING CENTER PROPERTY) | | | | | | |
| * 30 SPACES REMOVED WEST OF EXISTING LIBRARY, 28 SPACES WILL BE | | | | | | |
| ** 3 PER 1000 SF = 66 | | | | | | |
| ** 3 ADA SPACES ARE REQUIRED PER CITY TABLE | | | | | | |

## KEYNOTES:

1 CONSTRUCT ADA ACCESSIBLE RAMP
2 ADA PARKING STALL LAYOUT
3 PROPOSED DROP OFF ZONE
4 INSTALL PAVEMENT STRIPING – TYPICAL.
5 INSTALL CONCRETE SIDEWALK
6 PROPOSED DRIVE THRU WINDOW AND LANE
7 SERVICE AREA
8 TRASH ENCLOSURE
9 PROPOSED BOOK DROP-OFF
10 PROPOSED BOLLARD (TYPICAL)
11 ADDITIONAL GREEN SPACE
12 RELOCATED DRIVE LANE
13 REVISED STRIPING IN EXISTING LOT
14 10' ACCESS ASPHALT LANE FOR TRANSFORMER
15 ~~PROPOSED PLANTERS~~
16 PROPOSED STRIPED ISLAND
17 ~~PROPOSED SIGN~~
18 FIRE LANE (RED CURB) – SEE FIRE SIGNAGE AND MARKING NOTE
19 STRAIGHT BACK CURB FOR FLUME FOR SPRINKLER DRAIN
20 CONSTRUCT SPEED TABLE AT PEDESTRIAN CROSSING PER DETAIL ON C8.1
21 ADD SIGNAGE TO EXISTING FDC – SEE FIRE SIGNAGE AND MARKING NOTE

## BID ALTERNATE

1 PROPOSED IMPROVEMENTS WITHIN THIS BOUNDARY SHALL BE INCLUDED IN BID ALTERNATE 1.

FIRE SIGNAGE AND MARKING NOTE:
Where required by the fire code official, approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.


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| 03 | ASI02 | 08.30.21 |

| Project No. | Date | Drawn |
|---|---|---|
| B18-0330 | 10.12.2020 | HMO |

Drawing No. **C2.0**

**SITE DIMENSION PLAN**



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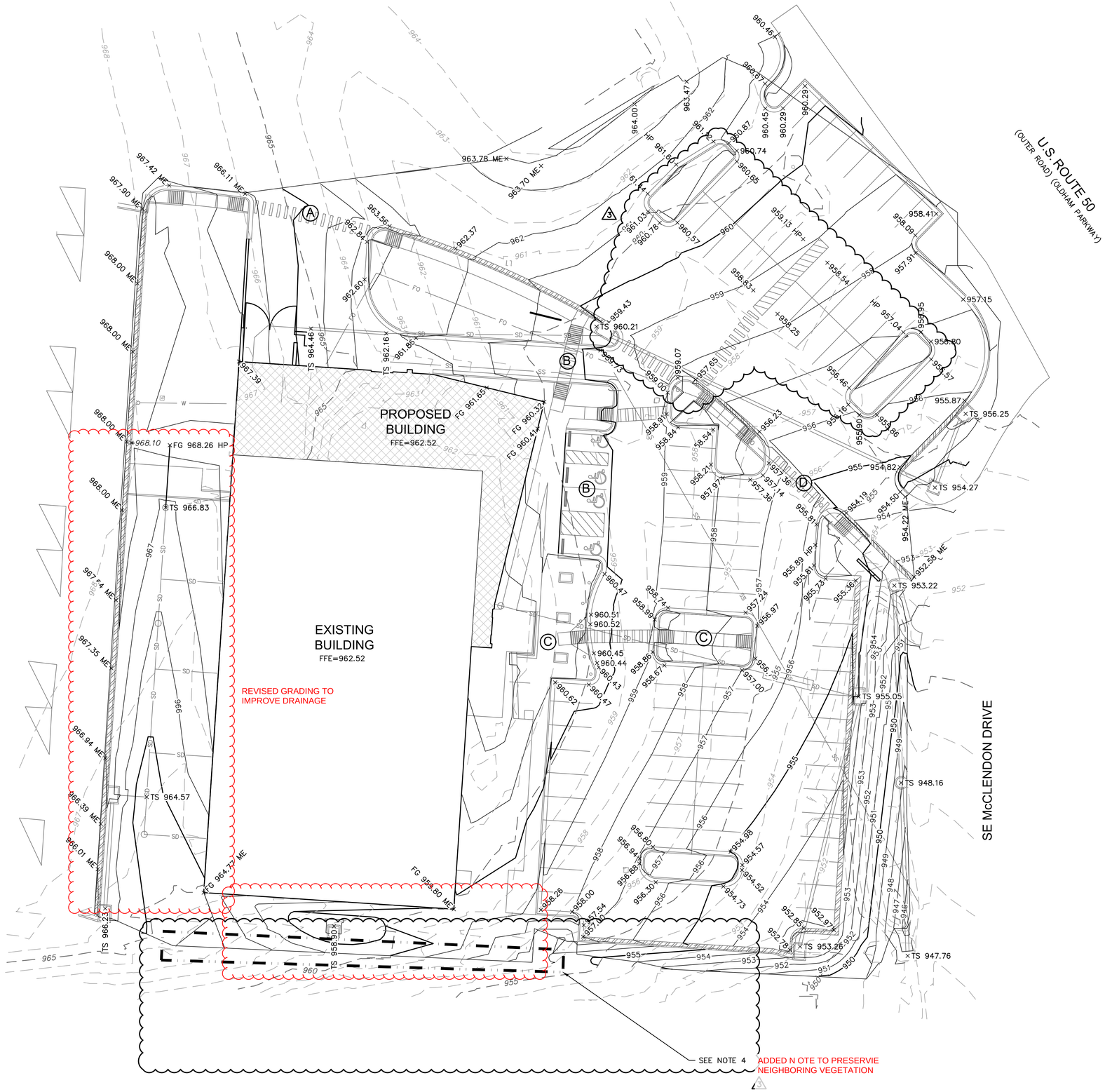


## LEGEND

- PROPERTY LINE
- 995 EXISTING MAJOR CONTOUR
- 995 EXISTING MINOR CONTOUR
- 998 PROPOSED MAJOR CONTOUR
- 998 PROPOSED MINOR CONTOUR
- RAMP
- CONCRETE CURB & GUTTER TYPE "CG-1"
- CONCRETE CURB & GUTTER TYPE "CG-1 DRY"
- CONCRETE CURB TYPE "C-1" MODIFIED
- (A) GRADING DETAIL

## NOTES:

1. CONTRACTOR TO REMOVE AND REPLACE ALL SIDEWALK NECESSARY FOR CONNECTION TO EXISTING.
2. ALL ADA ACCESSIBLE SIDEWALK CROSS SLOPES SHALL HAVE A MAXIMUM CROSS SLOPE OF 2.00% AND MAXIMUM LONGITUDINAL SLOPE OF 5.00%.
3. ALL ADA ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 2.00% IN ANY DIRECTION.
4. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISITNG LANDSCAPING AT FENCE AND NEIGHBORING PROPERTY.

3

## SPOT ELEVATION LEGEND

ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT ELEVATION UNLESS NOTED OTHERWISE. RE: PLAN VIEW, LEGEND AND DETAILS FOR CURB TYPE AND TO CALCULATE TOP OF CURB ELEVATION.

| | |
|---|---|
| TC= | TOP OF CURB |
| FG= | FINISHED GRADE WITHIN GREENSPACE |
| TS= | TOP OF STRUCTURE |
| TP=TC= | CURB DEPRESSED TO BE FLUSH WITH ADJACENT PAVEMENT |
| HP= | HIGH POINT |
| LP= | LOW POINT |
| MATCH EX.= | MATCH EXISTING |
| FFE= | FINISH FLOOR ELEVATION AT TOP OF SLAB |

N

0' 10' 20' 40'
SCALE IN FEET

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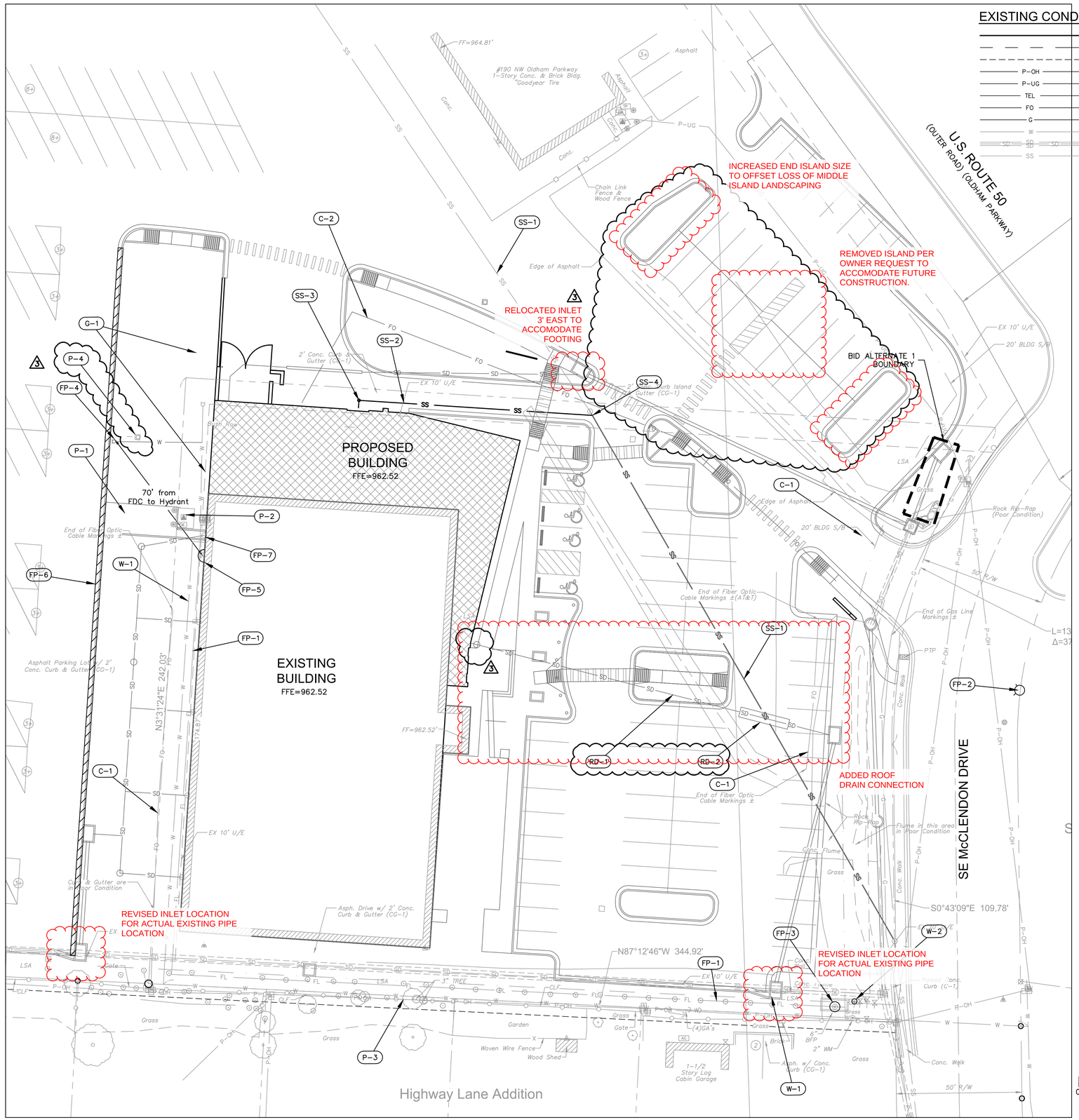
Drawing No.

**C3.0**
**GRADING PLAN**




## EXISTING CONDITIONS LEGEND

- PROPERTY LINES
- RIGHT-OF-WAY LINES
- EASEMENT LINES
- P-OH — OVERHEAD ELECTRIC
- P-UG — UNDERGROUND ELECTRIC
- TEL — UNDERGROUND TELEPHONE
- FO — UNDERGROUND FIBER OPTIC
- G — GAS LINE
- W — WATER LINE
- SD — STORM SEWER LINE
- SS — SANITARY SEWER LINE

## PROPOSED CONDITIONS LEGEND

- E — PROPOSED UNDERGROUND ELECTRIC
- FO — PROPOSED FIBER OPTIC
- W — PROPOSED WATER LINE
- FP — PROPOSED FIRE PROTECTION LINE
- SD — PROPOSED STORM SEWER LINE
- T — PROPOSED TURF DRAIN LINE
- SS — PROPOSED SANITARY SEWER SERVICE
- CONCRETE CURB & GUTTER
- PROPOSED BUILDING

## UTILITY KEYNOTES: (XX)

WATER

W-1 EXISTING 2" SERVICE LINE TO REMAIN

W-2 EXISTING 2" WATER METER TO REMAIN

FIRE PROTECTION

FP-1 EXISTING 6" FIRE SERVICE TO REMAIN

FP-2 EXISTING HYDRANT TO REMAIN

FP-3 BACKFLOW PREVENTOR AND VAULT TO REMAIN

FP-4 RELOCATE EXISTING HYDRANT

FP-5 EXISTING FDC TO REMAIN

FP-6 PAINT PROPOSED CURB RED AT BACK OF BUILDING FOR FIRE LANE PER CITY STANDARDS

FP-7 EXTEND EXISTING SPRINKLER DRAIN TO OUTFLOW ONTO PROPOSED ASPHALT FLUME

SANITARY SEWER

SS-1 EXISTING 8" PUBLIC SANITARY MAIN

SS-2 INSTALL 4" PVC SERVICE LINE

SS-3 INSTALL STANDARD CLEANOUT

SS-4 CONNECT TO EXISTING WYE ON THE EXISTING 8" MAIN (APPROX. FL=962.68)

ROOF DRAIN AND LANDSCAPE DRAINS

RD-1 CONNECT TO PROPOSED CANOPY ROOF DRAIN AND INSTALL 147 LF 4" PVC PIPE WITH STD CLEANOUT AT BLDG AND CONNECT TO PROP. INLET (IE = 951.82)

RD-2 INSTALL 20 LF OF CONCRETE ENCASEMENT ON STORM LINE PER CITY STANDARDS

RE: STORM SEWER PLAN & PROFILE – SHEETS C5.0 THRU C5.4 FOR REMAINDER OF ROOF DRAINS

POWER

P-1 PRIMARY SERVICE

P-2 PROPOSED TRANSFORMER TO REMAIN

P-3 OVERHEAD POWER TO REMAIN

P-4 EXISTING LIGHT POLE TO REMAIN

GAS

G-1 EXISTING GAS METER TO BE REMOVED AND RESET DURING ADDTION CONSTRUCTION. RELOCATE GAS LINE (COORDINATE FINAL LOCATION WITH PROVIDER).

COMMUNICATION

C-1 EXISTING FIBER LINE TO REMAIN

C-2 INSTALL 3 – 4" PVC CONDUITS PER PROVIDER STANDARDS. COORDINATE FINAL LOCATION WITH PROVIDER

## BID ALTERNATE

1 PROPOSED STORM IMPROVEMENTS WITHIN THIS BOUNDARY SHALL BE INCLUDED IN BID ALTERNATE 1.

CONTRACTOR NOTE (W-2):

CONTRACTOR TO VERIFY DEPTH OF EXISTING 2" WATERLINE AT METER. 4 FT OF MINIMUM COVER IS DESIRED. IF THE DEPTH OF THE SERVICE LINE IS LESS THAN DESIRED THE CONTRACTOR SHALL NOTIFY THE ENGINEER. GRADE ADJUSTMENTS MAY BE REQUIRED TO THE METER PIT AND BFP VAULT. SEGMENTAL RETAINING WALL MAY ALSO BE REQUIRED TO PREVENT DISTURBANCE OF NEIGHBORING PROPERTY. THE CONTRACTOR SHALL CARRY AN ALLOWANCE FOR AN INCREASE OF 1' IN HEIGHT TO THE PIT AND VAULT AND 30 SF OF WALL FACE.

N

0' 10' 20' 40'
SCALE IN FEET

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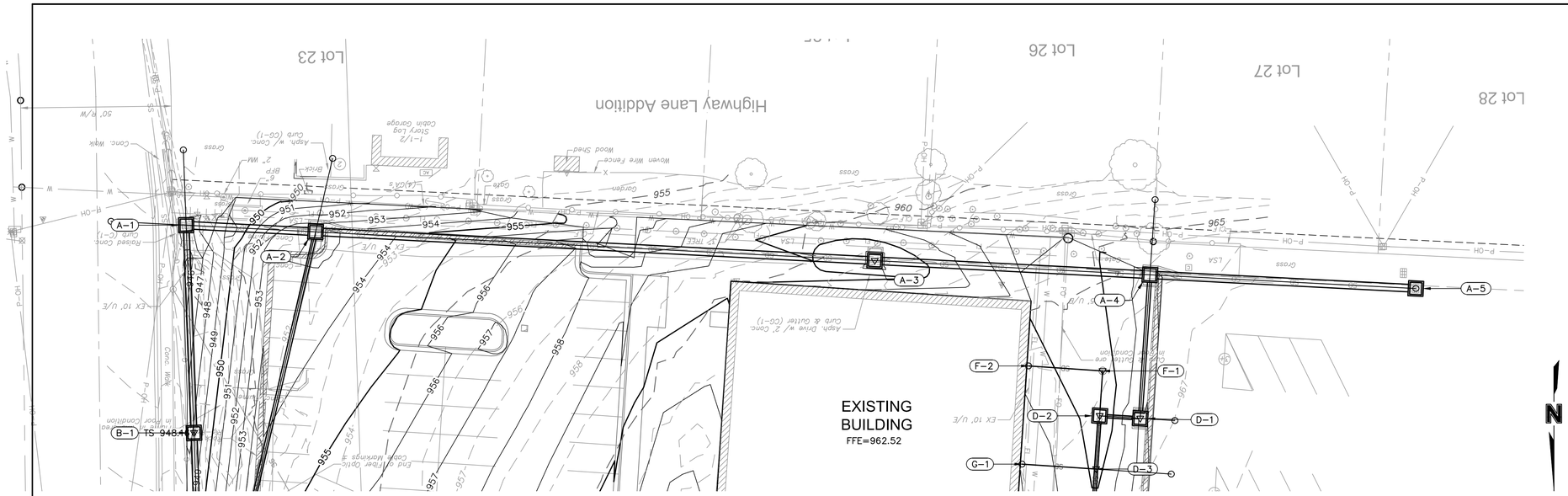
| B18-0330 | 10.12.2020 | HMO |

Drawing No.

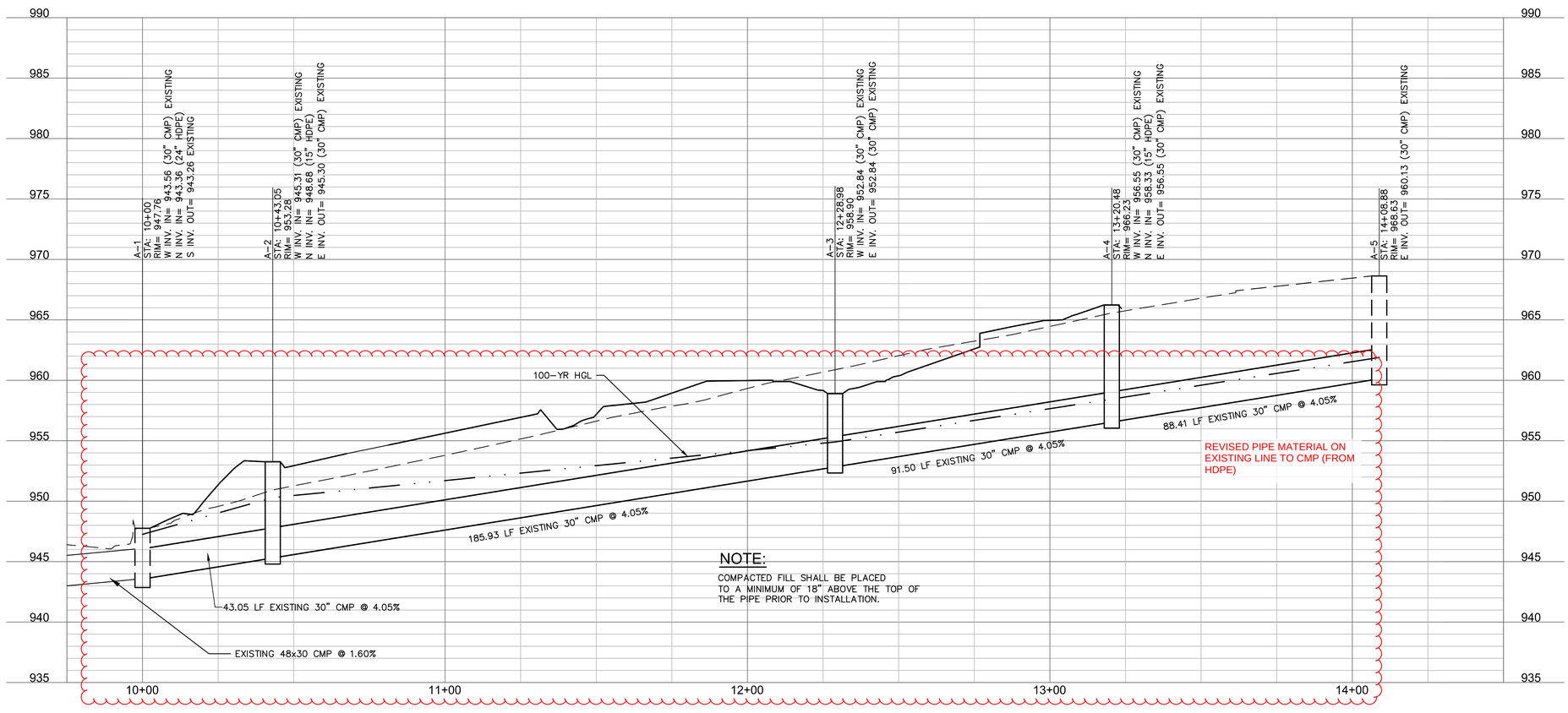
**C4.0**

**UTILITY PLAN**




| STRUCTURES | |
|---|---|
| ID | DESCRIPTION |
| A–1 | EXISTING 5'X3' AREA INLET<br>RECONSTRUCT TO AREA INLET<br>WITH THROAT OPENING (N.)<br>10+00, 0.00'<br>STORM LINE A<br>RIM= 947.76<br>INV IN = 943.56 (30" CMP) EXISTING<br>INV IN = 943.36 (24" HDPE) EXISTING<br>N: 1000826.723; E: 2817077.444 |
| A–2 | INSTALL STD. 5'X4' NON–SETBACK CURB INLET<br>10+43.05, –0.02' LT<br>STORM LINE A<br>RIM= 953.28<br>INV IN = 945.31 (30" CMP)<br>INV IN = 948.68 (15" HDPE)<br>INV OUT = 945.30 (30" CMP)<br>N: 1000828.919; E: 2817034.454 |
| A–3 | INSTALL STD. 4'X4' JUNCTION BOX<br>ON EXISTING 30" HDPE<br>12+28.98, 0.00'<br>STORM LINE A<br>RIM= 958.90<br>INV IN = 952.84 (30" CMP)<br>INV OUT = 952.84 (30" CMP)<br>N: 1000838.496; E: 2816848.767 |
| A–4 | INSTALL STD. 6'X4' NON–SETBACK<br>CURB INLET ON EXISTING 30" HDPE<br>13+20.48, 0.00'<br>STORM LINE A<br>RIM= 966.23<br>INV IN = 956.55 (30" CMP)<br>INV IN = 958.33 (15" HDPE)<br>INV OUT = 956.55 (30" CMP)<br>N: 1000843.200; E: 2816757.391 |
| A–5 | EXISTING 5'X3' AREA INLET<br>14+08.88, 0.00'<br>STORM LINE A<br>RIM= 968.63<br>INV OUT = 960.13 (30" CMP)<br>N: 1000847.745; E: 2816669.102 |

## STORM LINE A (9+75 - 14+50)




NOTE:

COMPACTED FILL SHALL BE PLACED TO A MINIMUM OF 18" ABOVE THE TOP OF THE PIPE PRIOR TO INSTALLATION.

0' 10' 20' 40'
SCALE IN FEET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Drawing No.
**C5.0**
**STORM SEWER PLAN & PROFILE**



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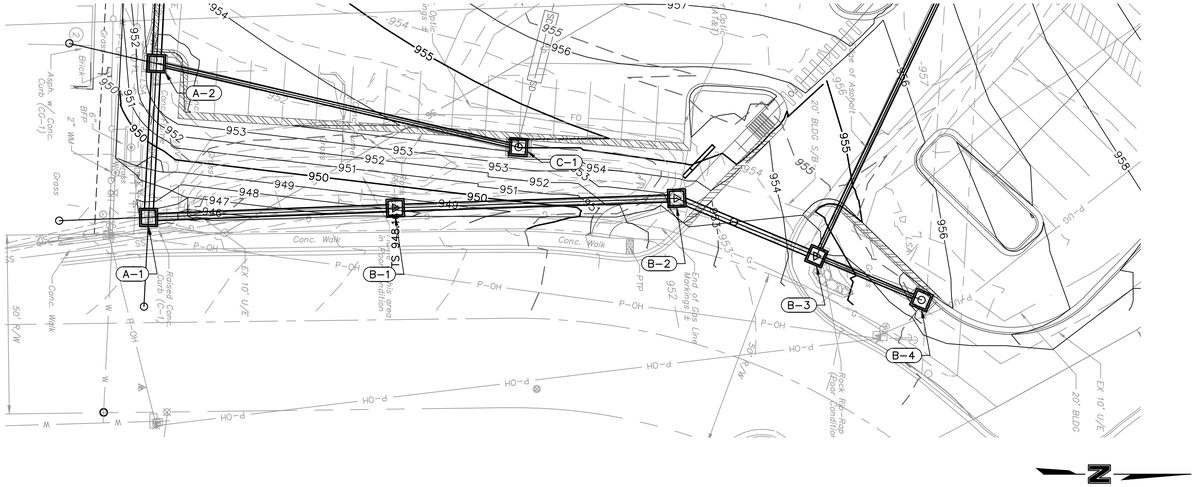
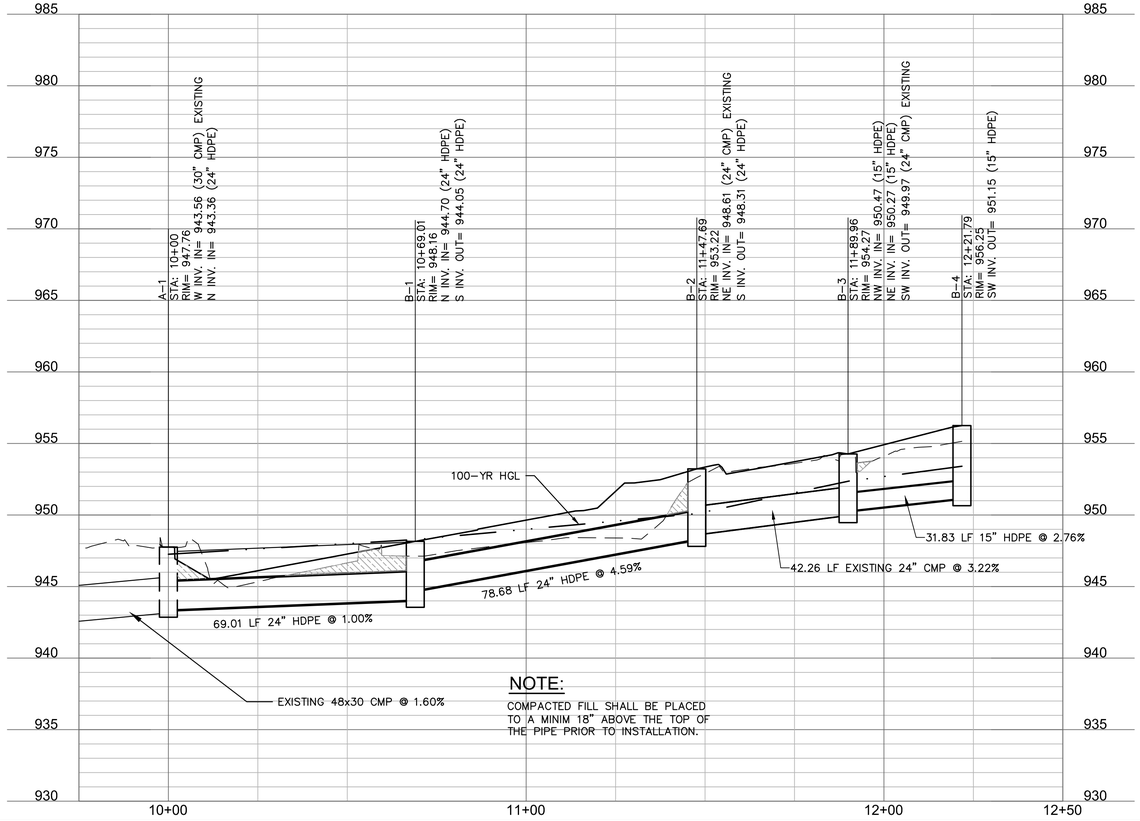



| STRUCTURES | |
|---|---|
| ID | DESCRIPTION |
| A–1 | EXISTING 5'X3' AREA INLET<br>RECONSTRUCT TO AREA INLET<br>WITH THROAT OPENING (N.)<br>10+00, 0.00'<br>STORM LINE A<br>RIM= 947.76<br>INV IN = 943.56 (30" CMP)<br>INV IN = 943.36 (24" HDPE)<br>N: 1000826.723; E: 2817077.444 |
| B–1 | INSTALL STD. 4'X4' GRATE INLET<br>10+69.01, 0.00'<br>STORM LINE B<br>RIM= 948.16<br>INV IN = 944.70 (24" HDPE)<br>INV OUT = 944.05 (24" HDPE)<br>N: 1000895.688; E: 2817074.834 |
| B–2 | INSTALL STD. 4'X4' JUNCTION BOX<br>11+47.69, 0.00'<br>STORM LINE B<br>RIM= 953.22<br>INV IN = 948.61 (24" CMP)<br>INV OUT = 948.31 (24" HDPE)<br>N: 1000974.321; E: 2817072.115 |
| B–3 | INSTALL STD. 4'X4' GRATE INLET<br>11+89.96, 0.00'<br>STORM LINE B<br>RIM= 954.27<br>INV IN = 950.47 (15" HDPE)<br>INV IN = 950.27 (15" HDPE)<br>INV OUT = 949.97 (24" CMP)<br>N: 1001013.366; E: 2817088.293 |
| B–4 | INSTALL STD. 6'X4' NON–SETBACK CURB INLET<br>12+21.79, 0.00'<br>STORM LINE B<br>RIM= 956.25<br>INV OUT = 951.15 (15" HDPE)<br>N: 1001042.746; E: 2817100.544 |

| STRUCTURES | |
|---|---|
| ID | DESCRIPTION |
| A–2 | INSTALL STD. 5'X4' NON–SETBACK CURB INLET<br>10+43.05, –0.02' LT<br>STORM LINE A<br>RIM= 953.28<br>INV IN = 945.31 (30" CMP)<br>INV IN = 948.68 (15" HDPE)<br>INV OUT = 945.30 (30" CMP)<br>N: 1000828.919; E: 2817034.454 |
| C–1 | INSTALL STD. 6'X4' NON–SETBACK CURB INLET<br>11+03.86, 0.00'<br>STORM LINE C<br>RIM= 955.05<br>INV OUT = 950.50 (15" HDPE)<br>N: 1000930.117; E: 2817057.827 |

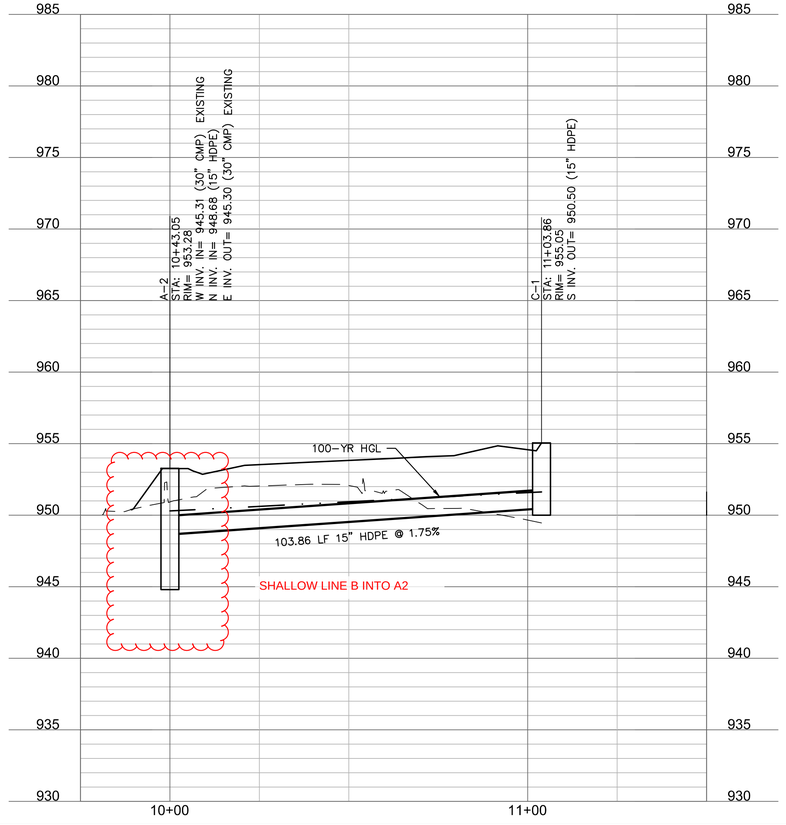
10'
5'
2.5'
0'
0' 10' 20' 40'
SCALE IN FEET

## STORM LINE B (9+75 - 12+50)




NOTE:
COMPACTED FILL SHALL BE PLACED TO A MINIM 18" ABOVE THE TOP OF THE PIPE PRIOR TO INSTALLATION.

## STORM LINE C (9+75 - 11+50)





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Drawing No.

**C5.1**
**STORM SEWER PLAN & PROFILE**



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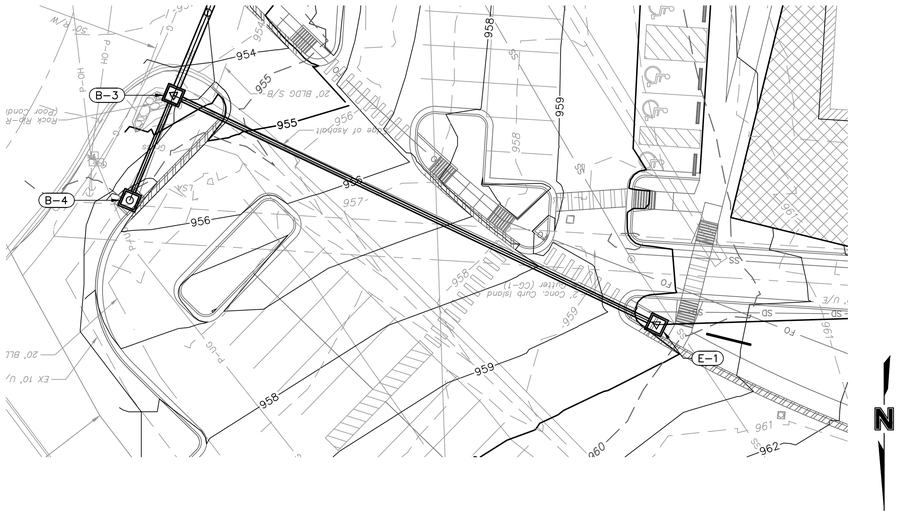
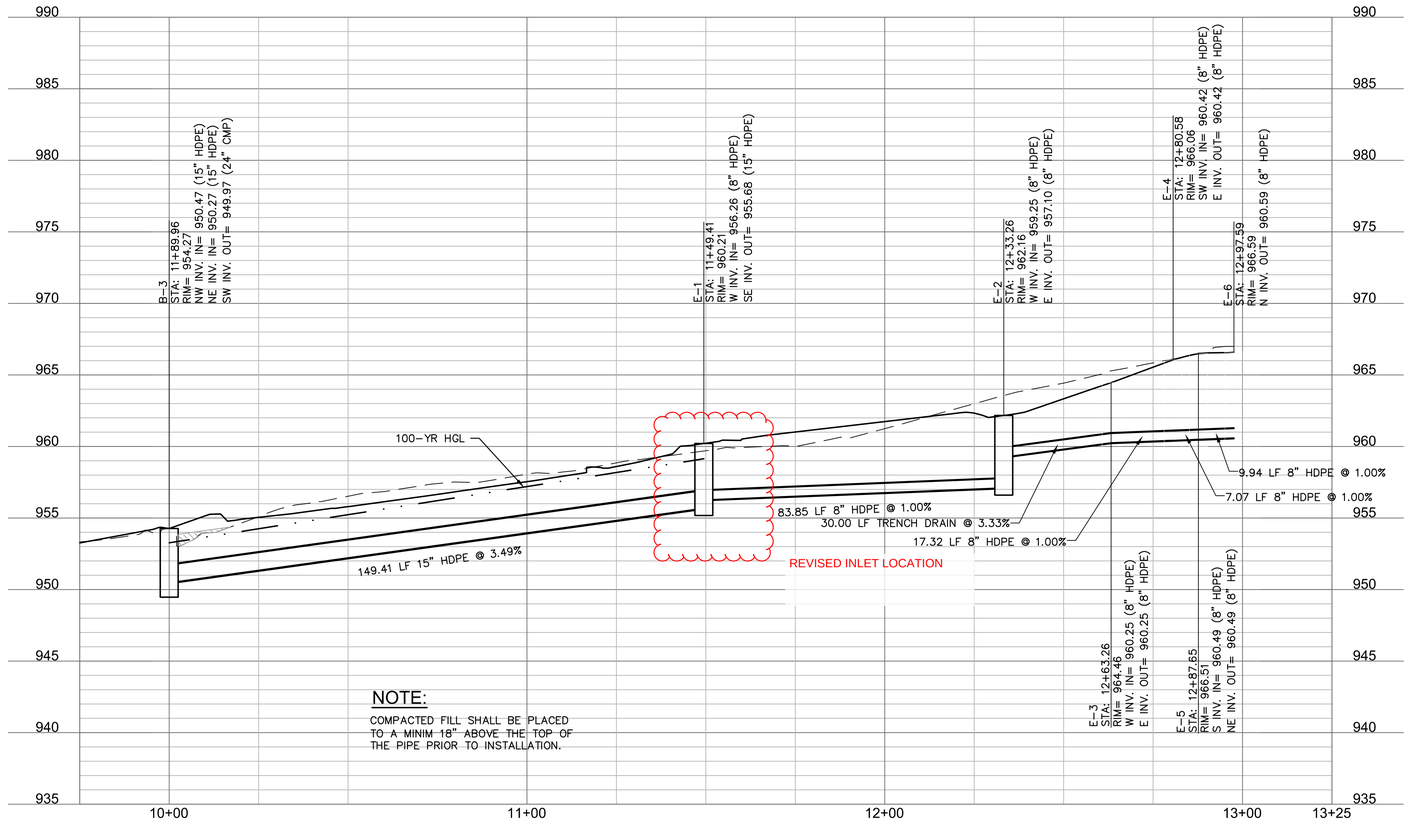


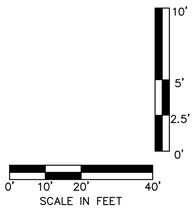

| STRUCTURES | |
|---|---|
| ID | DESCRIPTION |
| B-3 | INSTALL STD. 4'X4' GRATE INLET<br>11+89.96, 0.00'<br>STORM LINE B<br>RIM= 954.27<br>INV IN = 950.47 (15" HDPE)<br>INV IN = 950.27 (15" HDPE)<br>INV OUT = 949.97 (24" CMP)<br>N: 1001013.366; E: 2817088.293 |
| E-1 | INSTALL STD. 6'X4' NON-SETBACK CURB INLET<br>11+49.41, 0.00'<br>STORM LINE E<br>RIM= 960.21<br>INV IN = 956.26 (8" HDPE)<br>INV OUT = 955.68 (15" HDPE)<br>N: 1001077.512; E: 2816953.349 |
| E-2 | INSTALL ACO FG200 FLOWDRAIN TRENCH DRAIN WITH F660 CLASS E IRON SLOTTED GRATE<br>12+33.26, 0.00'<br>STORM LINE E<br>RIM= 962.16<br>INV IN = 959.25 (8" HDPE)<br>INV OUT = 957.10 (8" HDPE)<br>N: 1001074.822; E: 2816869.545 |
| E-3 | END TRENCH DRAIN<br>12+63.26, 0.00'<br>STORM LINE E<br>RIM= 964.46<br>INV IN = 960.25 (8" HDPE)<br>INV OUT = 960.25 (8" HDPE)<br>N: 1001076.726; E: 2816839.605 |
| E-4 | INSTALL 45 DEGREE BEND<br>12+80.58, 0.00'<br>STORM LINE E<br>RIM= 966.06<br>INV IN = 960.42 (8" HDPE)<br>INV OUT = 960.42 (8" HDPE)<br>N: 1001077.825; E: 2816822.323 |
| E-5 | INSTALL 45 DEGREE BEND<br>12+87.65, 0.00'<br>STORM LINE E<br>RIM= 966.51<br>INV IN = 960.49 (8" HDPE)<br>INV OUT = 960.49 (8" HDPE)<br>N: 1001073.153; E: 2816817.015 |
| E-6 | CONNECT TO ROOF DRAIN<br>RE: MEP<br>12+97.59, 0.00'<br>STORM LINE E<br>RIM= 966.59<br>INV OUT = 960.59 (8" HDPE)<br>N: 1001063.232; E: 2816816.384 |

## STORM LINE E (9+75 - 13+25)




NOTE:

COMPACTED FILL SHALL BE PLACED TO A MINIM 18" ABOVE THE TOP OF THE PIPE PRIOR TO INSTALLATION.





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| Revision No. | Description | Date |
|---|---|---|
| 02 | ASI01 | 06.26.21 |

| Project No. | Date | Drawn |
|---|---|---|
| B18-0330 | 10.12.2020 | HMO |

Drawing No.

**C5.3**
**STORM SEWER PLAN & PROFILE**




DWG: F:\2018\0001-0500\018-0330-B\40-Design\AutoCAD\Final Plans\Sheets\GNCV WORK PACKAGE 15\CONSTRUCTION DOCUMENTS\C-STM01_0180330.dwg USER: bkimmich
DATE: Oct 14, 2021 7:29am XREFS: C_TBLK_0180330 C_PBASE_0180330 C_XBASE_0180330 C_PSURF_0180330 C_PSTM_0180330

## STORM SEWER PIPE AND STRUCTURE TABLE

STORM SEWER PIPE AND STRUCTURE TABLE
TITLE: LEES SUMMIT LIBRARY
JOB #: B18-0330

**DESIGN CONDITIONS: 10 YEAR STORM EVENT**

| STRUCTURES | | RUNOFF CALCULATIONS | | | | | | | | PIPE DESIGN | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FROM | TO | DIRECT AREA (ACRES) | TOTAL AREA (ACRES) | C | KC (K=1.00) | Tc (MIN) | FLOW TIME (MIN) | INTENSITY (IN/HR) | DESIGN Q (CFS) | DESCRIPTION | PIPE LENGTH (L.F.) | PIPE SLOPE (%) | PIPE DIA (IN) | Q FULL (CFS) | PIPE AREA (SQ.FT.) | V FULL (F/S) | DESIGN V (F/S) | Hw/D | MH TOP ELEVATION | UPSTREAM FLOWLINE | DOWNSTREAM FLOWLINE | DOWNSTREAM WATER ELEVATION | Comments |
| A5 | | 0.30 | | 0.90 | 0.90 | 5.0 | - | 7.35 | 1.98 | EXISTING STRUCTURE | | | | | | | | | 968.63 | | | | EXISTING STRUCTURE TO REMIAN |
| | A4 | | 0.73 | 0.75 | 0.75 | 5.0 | - | 7.35 | 4.02 | EXISTING 30" CMP | 88.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 8.71 | 0.68 | | 960.13 | 956.55 | 958.30 | |
| A4 | | 0.43 | | 0.89 | 0.89 | 5.0 | - | 7.35 | 2.81 | 6X4 CURB INLET OF EX. PIPE | | | | | | | | | 967.36 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | A3 | | 1.16 | 0.78 | 0.78 | 5.0 | - | 7.35 | 6.65 | EXISTING 30" CMP | 92.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 10.10 | 0.70 | | 956.55 | 952.84 | 954.64 | |
| A3 | | 0.04 | | 0.30 | 0.30 | 5.0 | - | 7.35 | 0.09 | 4X4 AREA INLET OF EX. PIPE | | | | | | | | | 960.88 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | A2 | | 1.58 | 0.75 | 0.75 | 5.0 | - | 7.35 | 8.71 | EXISTING 30" CMP | 182.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 10.93 | 0.72 | | 952.84 | 945.23 | 947.88 | |
| A2 | | 0.45 | | 0.70 | 0.70 | 5.0 | - | 7.35 | 2.32 | 6X4 CURB INLET OF EX. PIPE | | | | | | | | | 952.68 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | A1 | | 4.72 | 0.70 | 0.70 | 5.0 | - | 7.35 | 24.28 | EXISTING 30" CMP | 47.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 14.63 | 1.06 | | 945.23 | 943.58 | 946.52 | |
| A1 | | 0.12 | | 0.30 | 0.30 | 5.0 | - | 7.35 | 0.26 | 5x5 AREA INLET OVER EX. PIPE | | | | | | | | | 947.76 | | | | RECONSTRUCT AREA INLET |
| | A0 | | 4.84 | 0.67 | 0.67 | 5.0 | - | 7.35 | 23.83 | EXISTING 36" EQ CMP PIPE | 118.00 | 1.60 | 36 | 49.99 | 7.07 | 7.07 | 10.27 | 0.82 | | 943.58 | 941.69 | 945.55 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| B4 | | 0.30 | | 0.72 | 0.72 | 5.0 | - | 7.35 | 1.59 | 6x4 CURB INLET | | | | | | | | | 955.15 | | | | |
| | B3 | | 0.30 | 0.72 | 0.72 | 5.0 | - | 7.35 | 1.59 | 15 in. HDPE | 32.00 | 2.76 | 15 | 10.76 | 1.23 | | | | | 951.15 | 950.27 | 951.36 | |
| B3 | | 0.81 | | 0.40 | 0.40 | 5.0 | - | 7.35 | 2.38 | RECONS EX. AREA INLET | | | | | | | | | 954.27 | | | | RECONSTRUCT AREA INLET |
| | B3 | | 1.11 | 0.42 | 0.42 | 5.0 | - | 7.35 | 3.43 | 24 in. HDPE | 42.00 | 3.22 | 24 | 40.70 | 3.14 | 7.86 | 9.69 | | | 949.97 | 948.61 | 950.29 | |
| B2 | | 0.00 | | 0.30 | 0.30 | 5.0 | - | 7.35 | 0.00 | JUNCTION BOX | | | | | | | | | 952.61 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | B1 | | 2.55 | 0.67 | 0.67 | 5.0 | - | 7.35 | 12.56 | 24 in. HDPE | 79.00 | 3.32 | 24 | 41.33 | 3.14 | 13.16 | 11.52 | 0.99 | | 948.31 | 945.70 | 947.51 | |
| B1 | | 0.14 | | 0.42 | 0.42 | 5.0 | - | 7.35 | 0.43 | 5x5 AREA INLET | | | | | | | | | 948.50 | | | | |
| | A1 | | 2.69 | 0.67 | 0.67 | 5.0 | - | 7.35 | 13.25 | 24 in. HDPE | 69.00 | 1.90 | 24 | 31.27 | 3.14 | 9.95 | 9.52 | 1.02 | | 945.20 | 943.88 | 946.57 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| C1 | | 0.38 | | 0.68 | 0.68 | 5.0 | - | 7.35 | 1.90 | 6x4 CURB INLET | | | | | | | | | 954.82 | | | | |
| | A2 | | 0.38 | 0.68 | 0.68 | 5.0 | - | 7.35 | 1.90 | 15 in. HDPE | 103.00 | 1.76 | 15 | 8.59 | 1.23 | 7.00 | 5.62 | 0.75 | | 950.50 | 948.68 | 948.01 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| D1 | | 0.43 | | 0.89 | 0.89 | 5.0 | - | 7.35 | 2.81 | 6x4 CURB INLET | | | | | | | | | 967.36 | | | | |
| | A4 | | 0.43 | 0.71 | 0.71 | 5.0 | - | 7.35 | 2.24 | 15 in. HDPE | 48.00 | 1.76 | 15 | 8.59 | 1.23 | 7.00 | 5.90 | 0.78 | | 962.50 | 962.02 | 958.30 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| E2 | | 0.19 | | 0.52 | 0.52 | 5.0 | - | 7.35 | 0.73 | TRENCH DRAIN | | | | | | | | | 961.75 | | | | |
| | E1 | | 0.19 | 0.33 | 0.33 | 5.0 | - | 7.35 | 0.46 | 15 in. HDPE | 82.00 | 4.10 | 12 | 7.23 | 0.79 | 9.21 | 5.20 | 0.68 | | 959.95 | 956.68 | 956.67 | |
| E1 | | 1.25 | | 0.87 | 0.87 | 5.0 | - | 7.35 | 7.99 | 6x4 CURB INLET | | | | | | | | | 960.23 | | | | |
| | B3 | | 1.44 | 0.83 | 0.83 | 5.0 | - | 7.35 | 8.78 | 18 in. HDPE | 148.00 | 3.49 | 18 | 19.68 | 1.77 | 11.13 | 10.81 | 1.33 | | 955.68 | 950.47 | 951.36 | |
| | | | | | | | | | | | | | | | | | | | | | | | |

REVISED PIPE MATERIAL ON EXISTING LINE TO CMP (FROM HDPE). REVISED CAPACITY CALC FROM MANNINGS N OF 0.013 TO 0.024.

## STORM SEWER PIPE AND STRUCTURE TABLE

STORM SEWER PIPE AND STRUCTURE TABLE
TITLE: LEES SUMMIT LIBRARY
JOB #: B18-0330

**DESIGN CONDITIONS: 100 YEAR STORM EVENT**

| STRUCTURES | | RUNOFF CALCULATIONS | | | | | | | | PIPE DESIGN | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FROM | TO | DIRECT AREA (ACRES) | TOTAL AREA (ACRES) | C | KC (K=1.25) | Tc (MIN) | FLOW TIME (MIN) | INTENSITY (IN/HR) | DESIGN Q (CFS) | DESCRIPTION | PIPE LENGTH (L.F.) | PIPE SLOPE (%) | PIPE DIA (IN) | Q FULL (CFS) | PIPE AREA (SQ.FT.) | V FULL (F/S) | DESIGN V (F/S) | Hw/D | MH TOP ELEVATION | UPSTREAM FLOWLINE | DOWNSTREAM FLOWLINE | DOWNSTREAM WATER ELEVATION | Comments |
| A5 | | 0.30 | | 0.90 | 1.00 | 5.0 | - | 10.32 | 3.10 | EXISTING STRUCTURE | | | | | | | | | 968.63 | | | | EXISTING STRUCTURE TO REMIAN |
| | A4 | | 0.73 | 0.75 | 0.94 | 5.0 | - | 10.32 | 7.06 | EXISTING 30" CMP | 81.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 10.28 | 0.70 | | 960.13 | 956.55 | 958.45 | |
| A4 | | 0.43 | | 0.89 | 1.11 | 5.0 | - | 10.32 | 4.94 | 6X4 CURB INLET OF EX. PIPE | | | | | | | | | 967.36 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | A3 | | 1.16 | 0.78 | 0.98 | 5.0 | - | 10.32 | 11.67 | EXISTING 30" CMP | 92.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 11.90 | 0.76 | | 956.55 | 952.84 | 954.90 | |
| A3 | | 0.04 | | 0.30 | 0.38 | 5.0 | - | 10.32 | 0.15 | 4X4 AREA INLET OF EX. PIPE | | | | | | | | | 960.88 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | A2 | | 1.58 | 0.75 | 0.94 | 5.0 | - | 10.32 | 15.29 | EXISTING 30" CMP | 202.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 12.85 | 0.82 | | 952.84 | 945.23 | 949.91 | |
| A2 | | 0.45 | | 0.70 | 0.88 | 5.0 | - | 10.32 | 4.06 | 6X4 CURB INLET OF EX. PIPE | | | | | | | | | 952.68 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | A1 | | 4.72 | 0.70 | 0.88 | 5.0 | - | 10.32 | 42.62 | EXISTING 30" CMP | 27.00 | 4.05 | 30 | 44.83 | 4.91 | 9.13 | 16.95 | 1.87 | | 945.23 | 943.58 | 946.70 | |
| A1 | | 0.12 | | 0.30 | 0.38 | 5.0 | - | 10.32 | 0.46 | 5x5 AREA INLET OVER EX. PIPE | | | | | | | | | 947.76 | | | | RECONSTRUCT AREA INLET |
| | A0 | | 4.84 | 0.67 | 0.84 | 5.0 | - | 10.32 | 41.83 | EXISTING 36" EQ CMP PIPE | 118.00 | 1.60 | 36 | 49.99 | 7.07 | 7.07 | 11.91 | 1.14 | | 943.58 | 941.69 | 946.54 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| B4 | | 0.30 | | 0.72 | 0.90 | 5.0 | - | 10.32 | 2.79 | 6x4 CURB INLET | | | | | | | | | 955.15 | | | | |
| | B3 | | 0.30 | 0.72 | 0.90 | 5.0 | - | 10.32 | 2.79 | 15 in. HDPE | 110.00 | 2.76 | 15 | 10.76 | 1.23 | | | | | 951.15 | 950.27 | 952.98 | |
| B3 | | 0.81 | | 0.40 | 0.50 | 5.0 | - | 10.32 | 4.18 | RECONS EX. AREA INLET | | | | | | | | | 954.27 | | | | RECONSTRUCT AREA INLET |
| | B3 | | 1.11 | 0.42 | 0.53 | 5.0 | - | 10.32 | 6.01 | 24 in. HDPE | 55.00 | 3.22 | 24 | 40.70 | 3.14 | 9.27 | 10.74 | | | 949.97 | 948.61 | 951.61 | |
| B2 | | 0.00 | | 0.30 | 0.38 | 5.0 | - | 10.32 | 0.00 | JUNCTION BOX | | | | | | | | | 952.61 | | | | CONSTRU CT BOX OVER EXISTING PIPE |
| | B1 | | 2.55 | 0.67 | 0.84 | 5.0 | - | 10.32 | 22.04 | 24 in. HDPE | 67.00 | 3.32 | 24 | 41.33 | 3.14 | 13.16 | 13.34 | 1.65 | | 948.31 | 945.70 | 947.26 | |
| B1 | | 0.14 | | 0.42 | 0.53 | 5.0 | - | 10.32 | 0.76 | CURB INLET | | | | | | | | | 948.50 | | | | |
| | A1 | | 2.69 | 0.67 | 0.84 | 5.0 | - | 10.32 | 23.25 | 24 in. HDPE | 69.00 | 1.90 | 24 | 31.27 | 3.14 | 9.95 | 10.88 | 1.76 | | 945.20 | 943.88 | 947.76 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| C1 | | 0.38 | | 0.68 | 0.85 | 5.0 | - | 10.32 | 3.33 | 6x4 CURB INLET | | | | | | | | | 954.82 | | | | |
| | A2 | | 0.38 | 0.68 | 0.85 | 5.0 | - | 10.32 | 3.33 | 15 in. HDPE | 98.00 | 1.76 | 15 | 8.59 | 1.23 | 7.00 | 6.56 | 0.91 | | 950.50 | 948.68 | 950.03 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| D1 | | 0.43 | | 0.89 | 1.00 | 5.0 | - | 10.32 | 4.44 | 6x4 CURB INLET | | | | | | | | | 967.36 | | | | |
| | A4 | | 0.43 | 0.71 | 0.89 | 5.0 | - | 10.32 | 3.94 | 15 in. HDPE | 47.00 | 1.76 | 15 | 8.59 | 1.23 | 7.00 | 6.84 | 1.00 | | 960.84 | 958.33 | 958.45 | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| E2 | | 0.19 | | 0.52 | 0.65 | 5.0 | - | 10.32 | 1.27 | TRENCH DRAIN | | | | | | | | | 961.75 | | | | |
| | E1 | | 0.19 | 0.33 | 0.41 | 5.0 | - | 10.32 | 0.81 | 12 in. HDPE | 79.00 | 4.10 | 12 | 7.23 | 0.79 | 9.21 | 6.09 | 0.71 | | 959.95 | 956.68 | 958.58 | |
| E1 | | 1.25 | | 0.87 | 1.00 | 5.0 | - | 10.32 | 12.90 | 6x4 CURB INLET | | | | | | | | | 960.23 | | | | |
| | B3 | | 1.44 | 0.83 | 1.00 | 5.0 | - | 10.32 | 14.86 | 18 in. HDPE | 148.00 | 3.49 | 18 | 19.68 | 1.77 | 11.13 | 12.21 | 2.55 | | 955.68 | 950.27 | 953.27 | |
| | | | | | | | | | | | | | | | | | | | | | | | |

REVISED PIPE MATERIAL ON EXISTING LINE TO CMP (FROM HDPE). REVISED CAPACITY CALC FROM MANNINGS N OF 0.013 TO 0.024.


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Kansas City, MO 64108 816.300.0300
Helix Architecture + Design
Missouri State Certificate of Authority #000720


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JACKSON COUNTY

PACKAGE 15

Engineer of Record

Terry M Parsons, Engineer MO PE-2018010505


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FAX 913.381.1174
www.olsson.com
Olsson
Missouri State Certificate of Authority #001592


| Revision No. | Description | Date |
|---|---|---|
| 02 | ASI01 | 06.26.21 |

| Project No. | Date | Drawn |
|---|---|---|
| B18-0330 | 10.12.2020 | HMO |

Drawing No.

**C6.1**

DRAINAGE CALCULATIONS




DWG: F:\2018\0001-0500\018-0330-B\40-Design\AutoCAD\Final Plans\Sheets\GNCV\WORK PACKAGE 15\CONSTRUCTION DOCUMENTS\C-DRN01_0180330 USER: bkimmich
DATE: Oct 14, 2021 7:30am XREFS: C_TBLK_0180330 C_PBASE_0180330 C_XBASE_0180330 C_PSURF_0180330